Idaho National Engineering Laboratory

INEL-95/0310
(Formerly EGG-WM-10903)
Rev. 1
August 1995

A Comprehensive Inventory of Radiological and Nonradiological Contaminants in Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952–1983

Volume 4

Lockheed
Idaho Technologies Company

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Idaho National Engineering Laboratory
Lockheed Idaho Technologies Company
Idaho Falls, Idaho 83415

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U.S. Department of Energy
Office of Environmental Restoration and Waste Management
Under DOE Idaho Operations Office
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PREFACE

This report, *A Comprehensive Inventory of Radiological and Nonradiological Contaminants in Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952–1983*, is comprised of five volumes. Volume 1 consists of the main body of the report and Appendices A, C, D, E, F, and G. Appendix B, the complete printout of the inventory database, is provided in Volumes 2 through 5. Because of its size, distribution of Appendix B has been limited.

Appendix B

Complete Printout of the Contaminant Inventory and Other Information from the CIDRA Database

(continued)

Test Area North

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 161

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
TAN-603 contaminated piping and insulation.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1963 Ending year 1971

9. Waste stream volume:
Amount 47.1000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Service Building containing medical facility, steam plant (boilers), soft water tanks, diesel generator, located in the TSF area of TAN and connected to the TAN Hot Shop.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
44.

2. Details on physical form(particularly confinement related)
Surface-contaminated piping and insulation.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
1. "Other" is insulation, possibly polyurethane.
4. Virtually all TAN waste shipments featured one or more plastic barriers.
5. "Other" is included in RWMIS. Additional description of "Other" may be present in shipping manifests.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
C-14	Surface contamination.	Unknown.	T .00000022000000	CI	1963	1963				
Co-60	Surface contamination.	Unknown.	T 1.0000000000000	CI	1963	1963	N			
Ni-59	Surface contamination.	Unknown.	T .00400000000000	CI	1963	1963	N			
Cs-137	Surface contamination.	Unknown.	T .36000000000000	CI	1963	1963	N			
H-3	Surface contamination.	Unknown.	T .48000000000000	CI	1963	1963	N			
Sr-90	Surface contamination.	Unknown.	T .16000000000000	CI	1963	1963	N			
Tc-99	Surface contamination.	Unknown.	T .00000002500000	CI	1963	1963	N			
C-14	Surface contamination.	Unknown.	T .00000007700000	CI	1967	1967	N			
Co-60	Surface contamination.	Unknown.	T .35000000000000	CI	1967	1967	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Surface contamination.	Unknown.	T .00140000000000	CI	1967	1967	N			
Cs-137	Surface contamination.	Unknown.	T .05400000000000	CI	1967	1967	N			
H-3	Surface contamination.	Unknown.	T .07200000000000	CI	1967	1967	N			
Sr-90	Surface contamination.	Unknown.	T .02400000000000	CI	1967	1967	N			
Tc-99	Surface contamination.	Unknown.	T .00000000375000	CI	1967	1967	N			
Cs-137	Surface contamination.	Unknown.	T .00072000000000	CI	1971	1971	N			
H-3	Surface contamination.	Unknown.	T .00096000000000	CI	1971	1971	N			
Sr-90	Surface contamination.	Unknown.	T .00032000000000	CI	1971	1971	N			
Tc-99	Surface contamination.	Unknown.	T .00000000005000	CI	1971	1971	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
RWMIS covered 1963, 1967, and 1971.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
N/A.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Principal source appears to be condensate backup from TAN Hot Shop whose activities and contents at the time are unknown.

8. Key assumptions used to deal with the unknowns:
Described in Part D.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 162

1. Preparer: Henry Peterson

2. Date prepared: 08/04/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 606
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Unidentified minor wastes from the TAN Manufacturing Building during the LOFT era.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1971 Ending year 1971

9. Waste stream volume:
Amount 6.1200 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Manufacturing Building (for SMC since 1985), located in the TSF area of TAN.

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Unknown.	Unknown.	T .00422000000000	CI	1971	1971	N			
Cs-137	Unknown.	Unknown.	T .02770000000000	CI	1971	1971	N			
Pu-241	Unknown.	Unknown.	T .00000123000000	CI	1971	1971	N			
Sr-90	Unknown.	Unknown.	T .01190000000000	CI	1971	1971	N			
Tc-99	Unknown.	Unknown.	T .00000000075000	CI	1971	1971	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which would be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Stan Jacobson cannot imagine any wastes emanating from TAN 606 in that era. L.E. Plansky and S.A. Hoiland, Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment, EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
N/A.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:
N/A.

7. Major unknowns in inventories of contaminants:
Listed as unidentified beta.

8. Key assumptions used to deal with the unknowns:
See isotopic interpretation of unidentified beta in Part D.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 163

1. Preparer: Henry Peterson

2. Date prepared: 01/27/94

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 607
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Decontamination and disposed contaminated parts from GE-ANP HTRE No. 1 IET #3, #4 and #6 tests.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1956 Ending year 1956

9. Waste stream volume:
Amount ______ Units Cubic meters.
Check box: [ ] annual or [ ] total over all years
Check box: [ ] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. This waste stream is hypothesized based on reports and interviews with personnel employed with the GE-ANP Program. Half of the yearly curie waste value is ascribed to this facility and half is ascribed to the TAN Radiation Measurements Laboratory (RML)/ Hot Cells (TAN-633).

1. General physical form (see attached list)

[X] other (specify)
2, 5, 21.

2. Details on physical form(particularly confinement related)
Contaminated stainless steel engine parts, insulation shrouds, and contaminated rags and paper used in decontamination.

3. Chemical form:
Oxides and metal parts melted in high temperature tests. Solids.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Unknown.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
1. Discussion with personnel employed during the GE-ANP project (G.J. Briscoe, Lofthouse, O'Brien) indicated that decontamination of the engine parts and the 76-inch duct were necessary so that further testing could be accomplished. Therefore, rags, blotting paper, contaminated personal protective clothing, and damaged and contaminated pieces of fuel elements and damaged insulation shrouds were reported to be discarded Heat Transfer Reactor Experiment No. 1, by G. Thornton, et al., General Electric, Direct-Air-Cycle Aircraft Nuclear Propulsion Program, APEX-904, February 28th, 1962.
5. The personnel interviewed indicated that contaminated material generated by a test was always packaged in a fiberboard or metal barrel, closed with a metal ring clamp.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-02-0 Nickel	Solid.	Metal.	T 1095.0000000000	GM	1956	1956	N			
7440-47-3 Chromium	Solid.	Metal.	T 275.00000000000	GM	1956	1956	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cr-51	Particulate.	Oxide.	T 950.00000000000	CI	1956	1956	N			
Ni-63	Particulate.	Oxide.	T 3.5000000000000	CI	1956	1956	N			
Sr-89	Particulate.	Oxide.	T 60.000000000000	CI	1956	1956	N			
Y-91	Particulate.	Oxide.	T 68.000000000000	CI	1956	1956	N			
Zr-95	Particulate.	Oxide.	T 70.000000000000	CI	1956	1956	N			
Nb-95	Particulate.	Oxide.	T 40.000000000000	CI	1956	1956	N			
Ru-103	Particulate.	Oxide.	T 44.000000000000	CI	1956	1956	N			
Ru-106	Particulate.	Oxide.	T 1.0000000000000	CI	1956	1956	N			
Cs-137	Particulate.	Oxide.	T .50000000000000	CI	1956	1956	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ba-140	Particulate.	Oxide.	T 78.000000000000	CI	1956	1956	N			
La-140	Particulate.	Oxide.	T 90.000000000000	CI	1956	1956	N			
Ce-141	Particulate.	Oxide.	T 88.000000000000	CI	1956	1956	N			
Ce-144	Particulate.	Oxide.	T 18.000000000000	CI	1956	1956	N			
U-235	Particulate.	Oxide.	T .00071000000000	CI	1956	1956	N			
U-234	Particulate.	Oxide.	T .02240000000000	CI	1956	1956	N			
U-238	Particulate.	Oxide.	T .00000660000000	CI	1956	1956	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

Additional information or explanations (indicate pertinent contaminant)

The HTRE-1 testing of IET #3, #4, and #6 was completed by the end of February 1957. Of the three tests IET #3 and #4, which were completed during 1956, sustained most damage to the fuel, releasing 99.3% of the 704 gram total release of uranium assumed for the three tests. Since the fuel was nichrome (80% nickel and 20% chromium) clad, the ratio of grams of clad to the grams of fuel was calculated and activated for the length of time used to generate the fission product inventory, calculated by the RSAC-5 computer code as programmed for the IET #4 operational history. The calculation resulted in 2738 grams of clad associated with 704 grams of fuel. Activation of the nichrome clad resulted in 17,307 curies of Cr-51, 0.257 curies of curies of Ni-59, 30.3 curies of Ni-63 and 64,520 curies of Ni-65. The fission product inventory was calculated assuming the reactor operated at 10.64 MW for 194 hours. All activity values were decayed for 30 days to account for the time for decontamination of the contaminated parts of the reactor and packaging of the waste for shipment to RWMC. From the 30 day decay list of radionuclides, the radionuclides chosen for listing above were the 13 nuclides with the highest curie values. The curie content of uranium nuclides, 234, 235,and 238 were calculated by the methodology as outlined in "Health Physics Manual of Good Practices for Uranium Facilities", Rich et al, 1988. (The complete analysis is documented in Peterson, 1994.)

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviews with J.D. Burtenshaw and G.J. Briscoe provided information concerning methods of decontamination of the jet engine, reactor exhaust plenum, and 76-inch exhaust duct and the types of materials that would have been used and the types of waste that would have been generated.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS contained no INEL data prior to 1960.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:
The curie amount for this waste stream is estimated to be on the order of 1500 curies for the year of 1956 (1/2 of the total assumed for the TAN area) and is assumed to be associated with a maximum or 1/2 of the 704 grams of U-235 that was assumed to be released for the three IET tests performed in HTRE-1. The fuel releases were deduced from "Heat Transfer Teactor Experiment No. 1", by G. Thornton, et al., General Electric, Direct-Air-Cycle Aircraft Nuclear Propulsion Program, APEX-904, February 28th, 1962. The fission product inventory was based on the modeled HTRE-1, IET #4, reactor operation as described in "Idaho National Engineering Laboratory Historical Dose Evaluation", DOE/ID-12119, August 1991, and was calculated with the RSAC-5 computer code described by "The Radiological Safety Analysis Computer Program (RSAC-5) User's Manual", by D.R. Wenzel, WINCO-1123, October, 1993.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 235

1. Preparer: Henry Peterson

2. Date prepared: 01/27/94

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 607
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Contamination and contaminated parts from GE-ANP HTRE-2 testing (IET #8 through IET #26).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1957 Ending year 1961

9. Waste stream volume:
Amount ______ Units Cubic meters.
Check box: [ ] annual or [ ] total over all years
Check box: [ ] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. Since there are no waste manifests available for review for the period prior to 1960, this waste stream is hypothesized based on reports and interviews with personnel employed with the GE-ANP Program. Ninety percent of the yearly curie waste values are ascribed to the TAN Radiation Measurements Laboratory (RML)/ Hot Cells (TAN-633) and 10% is ascribed to the TAN Hot Shop (TAN-607).

1. General physical form (see attached list)

[X] other (specify)
2, 5, 10.

2. Details on physical form(particularly confinement related)
Interviews with J.D. Burtenshaw and G.J. Briscoe provided information concerning methods of decontamination of the jet engine, reactor exhaust plenum, and 76-inch exhaust duct and the types of materials that would have been used and the types of waste that would have been generated.

3. Chemical form:
Oxides and metal parts from insulation shrouds and engine parts.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

1. According to waste manifests from TAN 607 for the year 1960, 74% of the total curies disposed were associated with contaminated or activated stainless steel. In 1961, 96% of the curies disposed were associated with "scrap metal". According to the waste manifests, in 1961, the electrostatic precipitator, used in the exhaust ducting of the IET tests, 100 feet of 2-foot diameter ducting, and 7 jet engines were disposed. All of these items would have been contaminated by fission products and fuel volatilized from the fuel during the IET insert tests.

2,4, and 5. Interviews with some of the personnel that worked in the Hop Shop and RML (Harold Rau, R.G. Mitchell, R.R. Jones, R. Drexler, E.C. Adamson, and T.L. Murphy) indicated that smaller aluminum or stainless steel containers were used to put RML or Hot Cell samples into before, they were put into the fiber or steel drums that would be the disposal container. One individual indicated that the inner containers may have been welded shut, and yet another individual indicated that the inner containers had a screw type lid.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
1304-56-9 Beryllium Oxide	Solid particulate.	Oxide.	Unknown.	GM	1957	1961	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-89	Particulate.	Oxide.	A 17.000000000000	CI	1957	1957	N			
Sr-90	Particulate.	Oxide.	A .15000000000000	CI	1957	1957	N			
Y-91	Particulate.	Oxide.	A 19.000000000000	CI	1957	1957	N			
Zr-95	Particulate.	Oxide.	A 20.000000000000	CI	1957	1957	N			
Nb-95	Particulate.	Oxide.	A 11.000000000000	CI	1957	1957	N			
Ru-103	Particulate.	Oxide.	A 13.000000000000	CI	1957	1957	N			
Rh-103m	Particulate.	Oxide.	A 11.000000000000	CI	1957	1957	N			
Cs-136	Particulate.	Oxide.	A .03000000000000	CI	1957	1957	N			
Cs-137	Particulate.	Oxide.	A .16000000000000	CI	1957	1957	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ba-140	Particulate.	Oxide.	A 24.000000000000	CI	1957	1957	N			
La-140	Particulate.	Oxide.	A 28.000000000000	CI	1957	1957	N			
Ce-141	Particulate.	Oxide.	A 25.500000000000	CI	1957	1957	N			
Pr-143	Particulate.	Oxide.	A 26.000000000000	CI	1957	1957	N			
Ce-144	Particulate.	Oxide.	A 5.0000000000000	CI	1957	1957	N			
U-234	Particulate.	Oxide.	A .00033000000000	CI	1957	1957	N			
U-235	Particulate.	Oxide.	A .00001100000000	CI	1957	1957	N			
U-238	Particulate.	Oxide.	A .00000009900000	CI	1957	1957	N			
Sr-89	Particulate.	Oxide.	A 17.000000000000	CI	1958	1958	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

* Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Particulate.	Oxide.	A .15000000000000	CI	1958	1958	N			
Y-91	Particulate.	Oxide.	A 19.000000000000	CI	1958	1958	N			
Zr-95	Particulate.	Oxide.	A 20.000000000000	CI	1958	1958	N			
Nb-95	Particulate.	Oxide.	A 11.000000000000	CI	1958	1958	N			
Ru-103	Particulate.	Oxide.	A 13.000000000000	CI	1958	1958	N			
Rh-103m	Particulate.	Oxide.	A 11.000000000000	CI	1958	1958	N			
Cs-136	Particulate.	Oxide.	A .03000000000000	CI	1958	1958	N			
Cs-137	Particulate.	Oxide.	A .16000000000000	CI	1958	1958	N			
Ba-140	Particulate.	Oxide.	A 24.000000000000	CI	1958	1958	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
La-140	Particulate.	Oxide.	A 28.000000000000	CI	1958	1958	N			
Ce-141	Particulate.	Oxide.	A 25.500000000000	CI	1958	1958	N			
Pr-143	Particulate.	Oxide.	A 26.000000000000	CI	1958	1958	N			
Ce-144	Particulate.	Oxide.	A 5.0000000000000	CI	1958	1958	N			
U-234	Particulate.	Oxide.	A .00033000000000	CI	1958	1958	N			
U-235	Particulate.	Oxide.	A .00001100000000	CI	1958	1958	N			
U-238	Particulate.	Oxide.	A .00000009900000	CI	1958	1958	N			
Sr-89	Particulate.	Oxide.	A 16.000000000000	CI	1959	1959	N			
Sr-90	Particulate.	Oxide.	A .14000000000000	CI	1959	1959	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Y-91	Particulate.	Oxide.	A 18.000000000000	CI	1959	1959	N			
Zr-95	Particulate.	Oxide.	A 19.000000000000	CI	1959	1959	N			
Nb-95	Particulate.	Oxide.	A 10.600000000000	CI	1959	1959	N			
Ru-103	Particulate.	Oxide.	A 12.500000000000	CI	1959	1959	N			
Rh-103m	Particulate.	Oxide.	A 10.600000000000	CI	1959	1959	N			
Cs-136	Particulate.	Oxide.	A .03000000000000	CI	1959	1959	N			
Cs-137	Particulate.	Oxide.	A .15000000000000	CI	1959	1959	N			
Ba-140	Particulate.	Oxide.	A 23.000000000000	CI	1959	1959	N			
La-140	Particulate.	Oxide.	A 27.000000000000	CI	1959	1959	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ce-141	Particulate.	Oxide.	A 24.500000000000	CI	1959	1959	N			
Pr-143	Particulate.	Oxide.	A 25.000000000000	CI	1959	1959	N			
Ce-144	Particulate.	Oxide.	A 5.0000000000000	CI	1959	1959	N			
U-234	Particulate.	Oxide.	A .00033000000000	CI	1959	1959	N			
U-235	Particulate.	Oxide.	A .00001100000000	CI	1959	1959	N			
U-238	Particulate.	Oxide.	A .00000009900000	CI	1959	1959	N			
Sr-89	Particulate.	Oxide.	A 14.500000000000	CI	1960	1960	N			
Sr-90	Particulate.	Oxide.	A .13000000000000	CI	1960	1960	N			
Y-91	Particulate.	Oxide.	A 16.000000000000	CI	1960	1960	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Zr-95	Particulate.	Oxide.	A 17.000000000000	CI	1960	1960	N			
Nb-95	Particulate.	Oxide.	A 9.5000000000000	CI	1960	1960	N			
Ru-103	Particulate.	Oxide.	A 11.000000000000	CI	1960	1960	N			
Rh-103m	Particulate.	Oxide.	A 9.5000000000000	CI	1960	1960	N			
Cs-136	Particulate.	Oxide.	A .02500000000000	CI	1960	1960	N			
Cs-137	Particulate.	Oxide.	A .14000000000000	CI	1960	1960	N			
Ba-140	Particulate.	Oxide.	A 20.500000000000	CI	1960	1960	N			
La-140	Particulate.	Oxide.	A 24.000000000000	CI	1960	1960	N			
Ce-141	Particulate.	Oxide.	A 22.000000000000	CI	1960	1960	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pr-143	Particulate.	Oxide.	A 22.000000000000	CI	1960	1960	N			
Ce-144	Particulate.	Oxide.	A 4.0000000000000	CI	1960	1960	N			
U-234	Particulate.	Oxide.	A .00033000000000	CI	1960	1960	N			
U-235	Particulate.	Oxide.	A .00001100000000	CI	1960	1960	N			
U-238	Particulate.	Oxide.	A .00000009900000	CI	1960	1960	N			
Sr-89	Solid particulate.	Oxide.	A 18.000000000000	CI	1961	1961	N			
Sr-90	Solid particulate.	Oxide.	A .15000000000000	CI	1961	1961	N			
Y-91	Solid particulate.	Oxide.	A 20.000000000000	CI	1961	1961	N			
Zr-95	Solid particulate.	Oxide.	A 22.000000000000	CI	1961	1961	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Nb-95	Solid particulate.	Oxide.	A 12.000000000000	CI	1961	1961	N			
Ru-103	Solid particulate.	Oxide.	A 13.000000000000	CI	1961	1961	N			
Rh-103m	Solid particulate.	Oxide.	A 12.000000000000	CI	1961	1961	N			
Cs-136	Solid particulate.	Oxide.	A .03000000000000	CI	1961	1961	N			
Cs-137	Solid particulate.	Oxide.	A .17000000000000	CI	1961	1961	N			
Ba-140	Solid particulate.	Oxide.	A 25.000000000000	CI	1961	1961	N			
La-140	Solid particulate.	Oxide.	A 30.000000000000	CI	1961	1961	N			
Ce-141	Solid particulate.	Oxide.	A 27.000000000000	CI	1961	1961	N			
Pr-143	Solid particulate.	Oxide.	A 27.000000000000	CI	1961	1961	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ce-144	Solid particulate.	Oxide.	A 5.0000000000000	CI	1961	1961	N			
U-234	Solid particulate.	Oxide.	A .00033000000000	CI	1961	1961	N			
U-235	Solid particulate.	Oxide.	A .00001100000000	CI	1961	1961	N			
U-238	Solid particulate.	Oxide.	A .00000009900000	CI	1961	1961	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

Additional information or explanations (indicate pertinent contaminant)

The HTRE-2 testing of the IET inserts was completed by the end of February 1961. During the tests of these inserts, the high temperatures experienced in the insert ceramic fuels caused fission products, UO2, and BeO to migrate and boil off the fuel tubes. This material contaminated parts of the reactor, the jet engines, and the 76-inch duct. Before further testing could continue, these materials had to be removed from these components and discarded. Based on the summary of the tests, documented in "Idaho National Engineering Laboratory Historical Dose Evaluation", DOE/ID-12119, August 1991, about 260 grams of 93.4% enriched U-235 was released during this test period, or about 52 grams per year during the five-year period. The fission product inventory was calculated using the RSAC-5 computer program, described by "The Radiological Safety Analysis Computer Program (RSAC-5) User's Manual", by D.R. Wenzel, WINCO-1123, October, 1993 assuming that the insert generated 7.4% of the reactor power of 14 MW for a period of 100 hours. All activity values were decayed for 30 days to account for the time for decontamination of the contaminated parts of the reactor and packaging of the waste for shipment to the RWMC. From the 30-day decay list of radionuclides, the radionuclides chosen for listing above were the 13 nuclides with the highest curie values with the sum total normalized to the total yearly curie total for this waste stream. The curie content of uranium nuclides, 234, 235, and 238 were calculated by the methodology as outlined in "Health Physics Manual of Good Practices for Uranium Facilities", Rich et al., 1988. (The complete analysis is documented in Peterson, 1994.)

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[X] other
Waste shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
Interviews with some of the personnel that worked in the Hot Shop and RML (Harold Rau, R.G. Mitchell, R.R. Jones, R. Drexler, E.C.Adamson, and T.L. Murphy) and personnel that were responsible for waste disposal (G.J. Briscoe, J.H. Lofthouse, and R.B. O'Brien were consulted. The reports used were: a) "Heat Transfer Reactor Experiment No. 2", by P.N. Flagella, May 25, 1962, APEX-905, and b) "Idaho National Engineering Laboratory Historical Dose Evaluation", DOE/ID-12119, August 1991.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS contains no data prior to 1960.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:
There are no TAN waste manifests available for review and no data in the RWMIS for the years 1957-1959. The major TAN waste stream curie disposal values were estimated based on work completed during this time frame and compared against similar work performed in 1960 and 1961. Therefore, 2000 curies was estimated for each year for 1957 and 1958. In 1959, 1915 curies were reported as waste to the RWMC (USAEC, 1960); in 1960, 1710 curies were reported for TAN (USAEC, 1961). The total curie value summed from the waste shipping manifests for 1961 was 2110 curies. Testing of the HTRE-2 IET tests was responsible for the release of a maximum of 265 grams of U-235, which was assumed to be disposed of at the rate of 52 grams per year over the five year period. Of the total curie and U-235 values, 90% was ascribed to the RML/Hot Cells TAN-633-2 waste stream and 10% was ascribed to the Hot Shop operation waste stream TAN-607-2.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 236

1. Preparer: Henry Peterson

2. Date prepared: 02/07/94

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 607
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Activated SL-1 reactor parts contaminated during SL-1 reactor accident of Jan. 3, 1961, and activated experiment and fuel element associated stainless steel.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1962 Ending year 1963

9. Waste stream volume:
Amount 653.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. Although this waste stream occurred during the time that the SL-1 reactor vessel and internals were being examined at the TAN Hot Shop (TAN-607), a review of the radioactive waste shipping manifests for 1962 shows that very little of the radioactivity is due to the contamination, due to the SL-1 reactor accident. The greatest majority, or 98%, is attributed to irradiated and activated hardware (stainless steel) associated with an ETR test, fuel element hardware, and another unspecified irradiated hardware sample. Canisters and shield assemblies from the SUSIE reactor account for another 50 to 100 curies of activated material. Ten curies are attributed to fifteen polonium-beryllium sources that were discarded. Of the total curies disposed, only 1.25%, or about 200 curies, most of which were activation products created in the structural materials of the reactor internals, are attributed to the SL-1 reactor vessel examination. Again, in 1963, only about 200 curies are attributed to SL-1 hardware, most of which were activated stainless steel.

1. General physical form (see attached list)

[X] other (specify)
2, 4, 5, 10.

2. Details on physical form(particularly confinement related)
Ninety-nine+% of the radioactivity of this waste stream is activation products incorporated into structural stainless steel components, assumed to be type 304L SS.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Some materials with relatively low radioactive material content, such as activated stainless steel components that were too large to fit in a fiber or steel drum, were loaded into a plastic lined plywood box, which was designated as the waste container.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-41-7 Beryllium	Solid.	Metal.	Unknown.	GM	1962	1962				
7439-92-1 Lead	Solid.	Metal.	Unknown.	GM	1962	1962				
7439-97-6 Mercury	Liquid.	Elemental.	Unknown.	GM	1962	1962				
60-29-7 Ether	Liquid.		Unknown.	GM	1962	1962				

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cr-51	Solid.	Metal.	T 260.00000000000	CI	1962	1962	N			
Mn-54	Solid.	Metal.	T 1210.0000000000	CI	1962	1962	N			
Fe-55	Solid.	Metal.	T 10650.000000000	CI	1962	1962	N			
Fe-59	Solid.	Metal.	T 32.000000000000	CI	1962	1962	N			
Co-58	Solid.	Metal.	T 264.00000000000	CI	1962	1962	N			
Co-60	Solid.	Metal.	T 3115.0000000000	CI	1962	1962	N			
Ni-63	Solid.	Metal.	T 270.00000000000	CI	1962	1962	N			
Nb-94	Solid.	Metal.	T .01000000000000	CI	1962	1962	N			
Nb-95	Solid.	Metal.	T .30000000000000	CI	1962	1962	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Addition of the curie values from the 1962 radioactive waste manifests yields a value of 16,040 curies. Of this total curie value, 7000 is attributed to scrap of an irradiated ERT test specimen, 5300 curies is due to an unspecified "irradiated radioactive sample", and 3400 curies is from "scrap metal from fuel elements". Between 50 and 100 curies is activated material from the SUSIE reactor, and 10 curies is attributed to 15 polonium-beryllium sources. About 200 curies is from fission products from the SL-1 accident. Since the majority of the SL-1 work was accomplished in 1962, 88% of the unrecovered 93.2% enriched U-235 was assumed to be disposed of in 1962, with the remaining 12% disposed to the RWMC in 1963. Activation products were calculated for the stainless steel assuming a 304 type, irradiated for a high burnup and decayed for 6 months. The methodology used for this calculation is provided in "Characteristics of Potential Repository Wastes", ORNL/TM-10213.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Particulate.	Oxide.	T 31.000000000000	CI	1962	1962	N			
Ru-106	Particulate.	Oxide.	T 6.0000000000000	CI	1962	1962	N			
Cs-134	Particulate.	Oxide.	T 2.4000000000000	CI	1962	1962	N			
Cs-137	Particulate.	Oxide.	T 33.000000000000	CI	1962	1962	N			
Ce-144	Particulate.	Oxide.	T 49.000000000000	CI	1962	1962	N			
Pm-147	Particulate.	Oxide.	T 78.000000000000	CI	1962	1962	N			
U-234	Particulate.	Oxide.	T .05400000000000	CI	1962	1962	N			
U-235	Particulate.	Oxide.	T .00170000000000	CI	1962	1962	N			
U-238	Particulate.	Oxide.	T .00001600000000	CI	1962	1962	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Po-210	Solid.	Metal.	T 10.000000000000	CI	1962	1962	N			
Cr-51	Solid.	Metal.	T 35.000000000000	CI	1963	1963	N			
Mn-54	Solid.	Metal.	T 160.00000000000	CI	1963	1963	N			
Fe-55	Solid.	Metal.	T 1415.0000000000	CI	1963	1963	N			
Fe-59	Solid.	Metal.	T 4.2000000000000	CI	1963	1963	N			
Co-58	Solid.	Metal.	T 35.000000000000	CI	1963	1963	N			
Co-60	Solid.	Metal.	T 415.00000000000	CI	1963	1963	N			
Ni-63	Solid.	Metal.	T 36.000000000000	CI	1963	1963	N			
Nb-94	Solid.	Metal.	T .00100000000000	CI	1963	1963	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Addition of the curie values from the 1962 radioactive waste manifests yields a value of 16,040 curies. Of this total curie value, 7000 is attributed to scrap of an irradiated ERT test specimen, 5300 curies is due to an unspecified "irradiated radioactive sample", and 3400 curies is from "scrap metal from fuel elements". Between 50 and 100 curies is activated material from the SUSIE reactor, and 10 curies is attributed to 15 polonium-beryllium sources. About 200 curies is from fission products from the SL-1 accident. Since the majority of the SL-1 work was accomplished in 1962, 88% of the unrecovered 93.2% enriched U-235 was assumed to be disposed of in 1962, with the remaining 12% disposed to the RWMC in 1963. Activation products were calculated for the stainless steel assuming a 304 type, irradiated for a high burnup and decayed for 6 months. The methodology used for this calculation is provided in "Characteristics of Potential Repository Wastes", ORNL/TM-10213.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Nb-95	Solid.	Metal.	T .04000000000000	CI	1963	1963	N			
Sr-90	Particulate.	Oxide.	T 31.000000000000	CI	1963	1963	N			
Ru-106	Particulate.	Oxide.	T 6.0000000000000	CI	1963	1963	N			
Cs-134	Particulate.	Oxide.	T 2.4000000000000	CI	1963	1963	N			
Cs-137	Particulate.	Oxide.	T 33.000000000000	CI	1963	1963	N			
Ce-144	Particulate.	Oxide.	T 49.000000000000	CI	1963	1963	N			
Pm-147	Particulate.	Oxide.	T 78.000000000000	CI	1963	1963	N			
U-234	Particulate.	Oxide.	T .00800000000000	CI	1963	1963	N			
U-235	Particulate.	Oxide.	T .00025000000000	CI	1963	1963	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Addition of the curie values from the 1962 radioactive waste manifests yields a value of 16,040 curies. Of this total curie value, 7000 is attributed to scrap of an irradiated ERT test specimen, 5300 curies is due to an unspecified "irradiated radioactive sample", and 3400 curies is from "scrap metal from fuel elements". Between 50 and 100 curies is activated material from the SUSIE reactor, and 10 curies is attributed to 15 polonium-beryllium sources. About 200 curies is from fission products from the SL-1 accident. Since the majority of the SL-1 work was accomplished in 1962, 88% of the unrecovered 93.2% enriched U-235 was assumed to be disposed of in 1962, with the remaining 12% disposed to the RWMC in 1963. Activation products were calculated for the stainless steel assuming a 304 type, irradiated for a high burnup and decayed for 6 months. The methodology used for this calculation is provided in "Characteristics of Potential Repository Wastes", ORNL/TM-10213.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-238	Particulate.	Oxide.	T .00000230000000	CI	1963	1963	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Addition of the curie values from the 1962 radioactive waste manifests yields a value of 16,040 curies. Of this total curie value, 7000 is attributed to scrap of an irradiated ERT test specimen, 5300 curies is due to an unspecified "irradiated radioactive sample", and 3400 curies is from "scrap metal from fuel elements". Between 50 and 100 curies is activated material from the SUSIE reactor, and 10 curies is attributed to 15 polonium-beryllium sources. About 200 curies is from fission products from the SL-1 accident. Since the majority of the SL-1 work was accomplished in 1962, 88% of the unrecovered 93.2% enriched U-235 was assumed to be disposed of in 1962, with the remaining 12% disposed to the RWMC in 1963. Activation products were calculated for the stainless steel assuming a 304 type, irradiated for a high burnup and decayed for 6 months. The methodology used for this calculation is provided in "Characteristics of Potential Repository Wastes", ORNL/TM-10213.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[X] other
Radioactive waste shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
Interviews with R.B. O'Brien, Dr. J.F. Kunze, G.J. Briscoe, and J.H. Lofthouse provided information concerning the types of material that constituted the source term. Also, the reports IDO-19304,-19305,-19306,-19307, and 19311 were used to determine the components and activation products of the SL-1 structural materials.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Types of stainless steel for which activation products are calculated. Also, the time of irradiation is a large unknown. Different irradiation times can change the ratios of radionuclides significantly.

8. Key assumptions used to deal with the unknowns:
To obtain the activation products in the stainless steel that constituted the majority of the irradiated structural and experiment hardware, type 304 Stainless steel was assumed since that is the most prevalent type used in reactors. An irradiation time of 5 years was used so that long-lived activation products would outweigh the shorter lived radionuclides.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION   HDT - 241

1. Preparer: Henry Peterson

2. Date prepared: 02/07/94

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 607
(building number - use code from attached list)

5. Number of waste stream from this facility:
4H

6. Waste stream:
Reactor and auxiliary components from ML-1, PM-2A, and 2 SNAPTRAN Systems.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1964 Ending year 1966

9. Waste stream volume:
Amount 255.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. This waste stream originated at the TAN Hot Shop (TAN-607) and covers a period of three years: 1964, 1965, and 1966. Originally, this waste stream was to be subdivided into several smaller units, but the documentation is not specific enough to allow this subdivision. Therefore, this waste stream covers two minor projects and two major projects that were accomplished at the TAN facilities: the two minor projects involved the two SNAPTRAN tests that were conducted in April 1964 and January 1966. The two major projects involved the ML-1 and PM-2A reactor vessel examinations. The final report for the ML-1 examination was published in June 1966 and the report for the PM-2A examination was published in March 1967. Since these projects cannot presently be divided, they are all included in the same waste stream. A review of the waste shipping manifests provides data to illustrate the magnitude of this stream compared to the other major waste stream for TAN.

TAN HOT SHOP AND RML/HOT CELL WASTE FOR 1964, 1965, AND 1966
(From review of the shipping manifests)

	Total TAN Area		Hot Shop		RML/Hot Cells	
Year	Curies	Vol.(M3)	Curies	Vol.(m3)	Curies	Vol. (M3)
1964	3624	412	0.86	23.2	1019	28.9
RWMIS	2864	457	----	----	----	----
1965	1454	400	8.27	160.9	1421	43.6
RWMIS	1364	405	----	----	----	----
1966	4852	854	3.62	70.6	4842	89.3
RWMIS	3842	862	----	----	----	----

1. General physical form (see attached list)

[X] other (specify)
5.

2. Details on physical form(particularly confinement related)
The majority of the volume is routine radioactive waste and is therefore paper, cloth, and plastic, contaminated during decontamination. The majority of the activity is due to SL-1 fission product contamination. The items so contaminated were plastic bagged and contained in cardboard boxes or in fiber or metal drums, closed with a clamp-type ring.

3. Chemical form:
Metal, paper, and plastic.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
1. The majority of the 1964 HS waste was routine radioactive waste, consisting of blotting paper, plastic, rags, etc. used in decontamination and setting materials on. During this year, some metal ducting was disposed that was wrapped in plastic before being shipped to the RWMC. In 1965, less than 25% of the waste volume consisted of routine rad waste and the remaining was attributed to waste scrap (metal), stainless steel and lead (Pb) remaining from the SL-1 examination, which contributes to the majority of the activity. The PM-2A shielding was also disposed during 1965. During 1966, all Hot Shop radioactive waste is attributed to "routine hot waste" according to the waste shipping manifests.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-92-1 Lead	Solid.	Metal.	Unknown.	GM	1964	1966				
7440-41-7 Beryllium	Solid.	Metal.	T 5500.0000000000	GM	1964	1964	N			
7440-41-7 Beryllium	Solid.	Metal.	T 16500.000000000	GM	1966	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The amount of beryllium contained in the SNAPTRAN internal and external reflectors is based on a calculation that involves the volume of beryllium inside and outside of the reactor vessel and the density of the material. Therefore, it is estimated that the calculation could be in error by about +/-200 grams.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid particulate.	Oxide.	A .26000000000000	CI	1964	1964	N			
Ru-106	Solid particulate.	Oxide.	A .01900000000000	CI	1964	1964	N			
Sb-125	Solid particulate.	Oxide.	A .00600000000000	CI	1964	1964	N			
Cs-134	Solid particulate.	Oxide.	A .01300000000000	CI	1964	1964	N			
Cs-137	Solid particulate.	Oxide.	A .28000000000000	CI	1964	1964	N			
Ce-144	Solid particulate.	Oxide.	A .11000000000000	CI	1964	1964	N			
Pm-147	Solid particulate.	Oxide.	A .46000000000000	CI	1964	1964	N			
Eu-155	Solid particulate.	Oxide.	A .00500000000000	CI	1964	1964	N			
Sr-90	Solid particulate.	Oxide.	A 3.0000000000000	CI	1965	1965	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
For this year, the waste stream was mainly composed of routine Hot Shop waste, which is assumed to be composed mainly of SL-1 fission products that have remained from the examination of the SL-1 reactor. Review of the radioactive waste shipping manifests, for the year, indicated that the facility was in the process of house cleaning, getting ready for the two large examinations that were impending: the ML-1 and the PM-2A reactor examinations. Although the first SNAPTRAN test was conducted on April 1, 1964, this test contributed little to the radiological source term that was disposed of at the RWMC. RSAC-5 calculations of the fission product inventory, after only 60 days, was 12 millicuries for the whole core. The significant material that was sent to the RWMC from these tests was the core reflector, made of beryllium; about 5,500 grams for the internal reflector and 11,000 grams of beryllium for the external reflector, which was present only for the January 11, 1966 test. This would not have been detected by a gamma detector used to measure gamma field of waste containers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ru-106	Solid particulate.	Oxide.	A .11000000000000	CI	1965	1965	N			
Sb-125	Solid particulate.	Oxide.	A .06000000000000	CI	1965	1965	N			
Cs-134	Solid particulate.	Oxide.	A .11000000000000	CI	1965	1965	N			
Cs-137	Solid particulate.	Oxide.	A 3.2000000000000	CI	1965	1965	N			
Ce-144	Solid particulate.	Oxide.	A .55000000000000	CI	1965	1965	N			
Pm-147	Solid particulate.	Oxide.	A 4.2000000000000	CI	1965	1965	N			
Eu-155	Solid particulate.	Oxide.	A .05000000000000	CI	1965	1965	N			
Sr-90	Solid particulate.	Oxide.	A 1.6000000000000	CI	1966	1966	N			
Ru-106	Solid particulate.	Oxide.	A .03000000000000	CI	1966	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For this year, the waste stream was mainly composed of routine Hot Shop waste, which is assumed to be composed mainly of SL-1 fission products that have remained from the examination of the SL-1 reactor. Review of the radioactive waste shipping manifests, for the year, indicated that the facility was in the process of house cleaning, getting ready for the two large examinations that were impending: the ML-1 and the PM-2A reactor examinations. Although the first SNAPTRAN test was conducted on April 1, 1964, this test contributed little to the radiological source term that was disposed of at the RWMC. RSAC-5 calculations of the fission product inventory, after only 60 days, was 12 millicuries for the whole core. The significant material that was sent to the RWMC from these tests was the core reflector, made of beryllium; about 5,500 grams for the internal reflector and 11,000 grams of beryllium for the external reflector, which was present only for the January 11, 1966 test. This would not have been detected by a gamma detector used to measure gamma field of waste containers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sb-125	Solid particulate.	Oxide.	A .02000000000000	CI	1966	1966	N			
Cs-134	Solid particulate.	Oxide.	A .04000000000000	CI	1966	1966	N			
Cs-137	Solid particulate.	Oxide.	A 1.7000000000000	CI	1966	1966	N			
Ce-144	Solid particulate.	Oxide.	A .12000000000000	CI	1966	1966	N			
Pm-147	Solid particulate.	Oxide.	A 1.7000000000000	CI	1966	1966	N			
Eu-155	Solid particulate.	Oxide.	A .03000000000000	CI	1966	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
For this year, the waste stream was mainly composed of routine Hot Shop waste, which is assumed to be composed mainly of SL-1 fission products that have remained from the examination of the SL-1 reactor. Review of the radioactive waste shipping manifests, for the year, indicated that the facility was in the process of house cleaning, getting ready for the two large examinations that were impending: the ML-1 and the PM-2A reactor examinations. Although the first SNAPTRAN test was conducted on April 1, 1964, this test contributed little to the radiological source term that was disposed of at the RWMC. RSAC-5 calculations of the fission product inventory, after only 60 days, was 12 millicuries for the whole core. The significant material that was sent to the RWMC from these tests was the core reflector, made of beryllium; about 5,500 grams for the internal reflector and 11,000 grams of beryllium for the external reflector, which was present only for the January 11, 1966 test. This would not have been detected by a gamma detector used to measure gamma field of waste containers.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[X] other
Waste shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
Interviews with G.J. Briscoe, R.B. O'Brien, and D.R. Mousseau provided details on the types of sources and methods of packaging the waste. The reports "PM-2A Reactor Vessel Test Program Final Report", by D.R. Mousseau and J.C. Pruden, March 1967, IN-1061, and "Final Disassembly and Examination of the ML-1 Reactor Core", by T.L. Murphy, et al., June 1966, IDO-17190, gave details on the source terms and the types of operations that were conducted in the TAN Hot Shop and TAN RML/Hot Cells.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 188

1. Preparer: Henry Peterson

2. Date prepared: 08/12/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 607
(building number - use code from attached list)

5. Number of waste stream from this facility:
5H

6. Waste stream:
Myriad manufacturing, assembly, health physics and Hot Shop activities associated with TAN programs.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1967 Ending year 1983

9. Waste stream volume:
Amount 7208.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Manufacturing, Assembly and Health Physics and Safety Building, located in the TSF area of TAN. Includes the Hot Shop Facility.
9. Gross weight equals 2.80 Gg sent to RWMC pits and trenches. Cumulative disposal equals 13.6 kCi.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
1,2,4,5,6,7,8,11,13,14,16,17,21,22,23,24,31,41,42,43,44.

2. Details on physical form(particularly confinement related)
To first approximations, all radioactivity is on the surface.

3. Chemical form:
1.0E+5 to 1.0E+6 individual items, generally in an oxidized state.

4. Inner packaging: [ ] plastic bag [X] plastic liner [ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. To first approximation, all radioactive materials face one or more plastic barriers. This is especially true for small items and "hot" items. Large bulky materials face less barriers, but offer low surface area and intrinsic self-containment.
5. BLF, BLM, BLX, BXW, I, and "Other". Containers included 4392 BXC, 695 BLF, 231 BLM, 1737 BLX, 819 BXW, 3 I, and 535; for a total of 8412. "Other" is according to RWMIS. Additional description of "Other" may be present in shipping manifests.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7439-97-6 Mercury	Unknown.	Metallic.	Unknown.	GM	1962	1962	N			
7439-92-1 Lead	Unknown.	Metallic.	Unknown.	GM	1960	1984	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Some mercury in canned mud in a 120 cubic foot container. Amount of mud or mercury unknown.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
C-14	Numerous physical forms in 37 different shipments.	Unknown.	T .00000160000000	CI	1967	1967	N			
Co-60	Numerous physical forms in 37 different shipments.	Unknown.	T 7.2700000000000	CI	1967	1967	N			
Ni-59	Numerous physical forms in 37 different shipments.	Unknown.	T .02910000000000	CI	1967	1967	N			
Cs-137	Numerous physical forms in 37 different shipments.	Unknown.	T 2.6200000000000	CI	1967	1967	N			
H-3	Numerous physical forms in 37 different shipments.	Unknown.	T 3.4900000000000	CI	1967	1967	N			
I-129	Numerous physical forms in 37 different shipments.	Unknown.	Unknown.	CI	1967	1967	N			
Sr-90	Numerous physical forms in 37 different shipments.	Unknown.	T 1.1600000000000	CI	1967	1967	N			
Tc-99	Numerous physical forms in 37 different shipments.	Unknown.	T .00000018200000	CI	1967	1967	N			
Cr-51	Numerous physical forms in 32 different shipments.	Unknown.	T 7.5000000000000	CI	1968	1968	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Fe-59	Numerous physical forms in 32 different shipments.	Unknown.	T 7.5000000000000	CI	1968	1968	N			
C-14	Numerous physical forms in 32 different shipments.	Unknown.	T .00000111000000	CI	1968	1968	N			
Co-60	Numerous physical forms in 32 different shipments.	Unknown.	T 5.0400000000000	CI	1968	1968	N			
Ni-59	Numerous physical forms in 32 different shipments.	Unknown.	T .02020000000000	CI	1968	1968	N			
Cs-137	Numerous physical forms in 32 different shipments.	Unknown.	T .77900000000000	CI	1968	1968	N			
H-3	Numerous physical forms in 32 different shipments.	Unknown.	T 1.0400000000000	CI	1968	1968	N			
I-129	Numerous physical forms in 32 different shipments.	Unknown.	Unknown.	CI	1968	1968	N			
Sr-90	Numerous physical forms in 32 different shipments.	Unknown.	T .34600000000000	CI	1968	1968	N			
Tc-99	Numerous physical forms in 32 different shipments.	Unknown.	T .00000005410000	CI	1968	1968	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
C-14	Numerous physical forms in 41 different shipments.	Unknown.	T .00000202000000	CI	1969	1969	N			
Co-60	Numerous physical forms in 41 different shipments.	Unknown.	T 9.1700000000000	CI	1969	1969	N			
Ni-59	Numerous physical forms in 41 different shipments.	Unknown.	T .03670000000000	CI	1969	1969	N			
Cs-137	Numerous physical forms in 41 different shipments.	Unknown.	T 1.4200000000000	CI	1969	1969	N			
H-3	Numerous physical forms in 41 different shipments.	Unknown.	T 1.8900000000000	CI	1969	1969	N			
I-129	Numerous physical forms in 41 different shipments.	Unknown.	Unknown.	CI	1969	1969	N			
Sr-90	Numerous physical forms in 41 different shipments.	Unknown.	T .63000000000000	CI	1969	1969	N			
Tc-99	Numerous physical forms in 41 different shipments.	Unknown.	T .00000009840000	CI	1969	1969	N			
Cm-242	Numerous physical forms in 41 different shipments.	Unknown.	Unknown.	CI	1969	1969	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

* Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
I-129	Numerous physical forms in 41 different shipments.	Unknown.	Unknown.	CI	1969	1969	N			
Pu-241	Numerous physical forms in 41 different shipments.	Unknown.	T .00000015400000	CI	1969	1969	N			
C-14	Numerous physical forms in 38 different shipments.	Unknown.	T .00012100000000	CI	1970	1970	N			
Co-60	Numerous physical forms in 38 different shipments.	Unknown.	T 604.00000000000	CI	1970	1970	N			
Ni-59	Numerous physical forms in 38 different shipments.	Unknown.	T 54.700000000000	CI	1970	1970	N			
Cs-137	Numerous physical forms in 38 different shipments.	Unknown.	T 210.00000000000	CI	1970	1970	N			
I-129	Numerous physical forms in 38 different shipments.	Unknown.	T .00000000005000	CI	1970	1970	N			
Sr-90	Numerous physical forms in 38 different shipments.	Unknown.	T 122.00000000000	CI	1970	1970	N			
Tc-99	Numerous physical forms in 38 different shipments.	Unknown.	T .00001090000000	CI	1970	1970	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Numerous physical forms in 38 different shipments.	Unknown.	T .00003750000000	CI	1970	1970	N			
U-238	Numerous physical forms in 38 different shipments.	Unknown.	T .00023900000000	CI	1970	1970	N			
Cm-242	Numerous physical forms in 38 different shipments.	Unknown.	Unknown.	CI	1970	1970	N			
Pu-241	Numerous physical forms in 38 different shipments.	Unknown.	T .00000008400000	CI	1970	1970	N			
Ce-144	Numerous physical forms in 19 different shipments.	Unknown.	T .62000000000000	CI	1971	1971	N			
Co-58	Numerous physical forms in 19 different shipments.	Unknown.	T .01400000000000	CI	1971	1971	N			
Co-60	Numerous physical forms in 19 different shipments.	Unknown.	T 526.00000000000	CI	1971	1971	N			
Cs-134	Numerous physical forms in 19 different shipments.	Unknown.	T .13000000000000	CI	1971	1971	N			
Cs-137	Numerous physical forms in 19 different shipments.	Unknown.	T 131.00000000000	CI	1971	1971	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Fe-59	Numerous physical forms in 19 different shipments.	Unknown.	T 475.00000000000	CI	1971	1971	N			
H-3	Numerous physical forms in 19 different shipments.	Unknown.	T .70700000000000	CI	1971	1971	N			
I-129	Numerous physical forms in 19 different shipments.	Unknown.	Unknown.	CI	1971	1971	N			
Sr-90	Numerous physical forms in 19 different shipments.	Unknown.	T 3.4300000000000	CI	1971	1971	N			
Tc-99	Numerous physical forms in 19 different shipments.	Unknown.	T .00000005540000	CI	1971	1971	N			
Ni-59	Numerous physical forms in 19 different shipments.	Unknown.	T 1100.0000000000	CI	1971	1971	N			
Rh-106	Numerous physical forms in 19 different shipments.	Unknown.	T 2.9000000000000	CI	1971	1971	N			
Ru-106	Numerous physical forms in 19 different shipments.	Unknown.	T 2.9000000000000	CI	1971	1971	N			
U-235	Numerous physical forms in 19 different shipments.	Unknown.	T .00041700000000	CI	1971	1971	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-238	Numerous physical forms in 19 different shipments.	Unknown.	T .00038800000000	CI	1971	1971	N			
Cm-242	Numerous physical forms in 19 different shipments.	Unknown.	T .00000000004000	CI	1971	1971	N			
Pu-241	Numerous physical forms in 19 different shipments.	Unknown.	T .00003060000000	CI	1971	1971	N			
Y-90	Numerous physical forms in 19 different shipments.	Unknown.	T 1.0000000000000	CI	1971	1971	N			
Ce-144	Numerous physical forms in 32 different shipments.	Unknown.	T 1.3000000000000	CI	1972	1972	N			
Co-60	Numerous physical forms in 32 different shipments.	Unknown.	T 224.00000000000	CI	1972	1972	N			
Cs-134	Numerous physical forms in 32 different shipments.	Unknown.	T 1.9500000000000	CI	1972	1972	N			
Cs-137	Numerous physical forms in 32 different shipments.	Unknown.	T 180.00000000000	CI	1972	1972	N			
Fe-59	Numerous physical forms in 32 different shipments.	Unknown.	T 215.00000000000	CI	1972	1972	N			

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Numerous physical forms in 32 different shipments.	Unknown.	T 495.00000000000	CI	1972	1972	N			
Rb-86	Numerous physical forms in 32 different shipments.	Unknown.	T 4.2100000000000	CI	1972	1972	N			
Rh-106	Numerous physical forms in 32 different shipments.	Unknown.	T 1.6000000000000	CI	1972	1972	N			
Ru-106	Numerous physical forms in 32 different shipments.	Unknown.	T 5.2300000000000	CI	1972	1972	N			
Sr-90	Numerous physical forms in 32 different shipments.	Unknown.	T 22.300000000000	CI	1972	1972	N			
U-235	Numerous physical forms in 32 different shipments.	Unknown.	T .00020000000000	CI	1972	1972	N			
U-238	Numerous physical forms in 32 different shipments.	Unknown.	T .00040300000000	CI	1972	1972	N			
Cm-242	Numerous physical forms in 32 different shipments.	Unknown.	T .00000000120000	CI	1972	1972	N			
Pu-241	Numerous physical forms in 32 different shipments.	Unknown.	T .00060000000000	CI	1972	1972	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Numerous physical forms in 32 different shipments.	Unknown.	T .10200000000000	CI	1972	1972	N			
I-129	Numerous physical forms in 32 different shipments.	Unknown.	Unknown.	CI	1972	1972	N			
Tc-99	Numerous physical forms in 32 different shipments.	Unknown.	T .00000035900000	CI	1972	1972	N			
Y-90	Numerous physical forms in 32 different shipments.	Unknown.	T 7.6600000000000	CI	1972	1972	N			
Ce-144	Numerous physical forms in 17 different shipments.	Unknown.	T 1.2200000000000	CI	1973	1973	N			
Co-60	Numerous physical forms in 17 different shipments.	Unknown.	T 550.00000000000	CI	1973	1973	N			
Cs-134	Numerous physical forms in 17 different shipments.	Unknown.	T .28400000000000	CI	1973	1973	N			
Cs-137	Numerous physical forms in 17 different shipments.	Unknown.	T 56.400000000000	CI	1973	1973	N			
Fe-59	Numerous physical forms in 17 different shipments.	Unknown.	T 450.00000000000	CI	1973	1973	N			

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Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Numerous physical forms in 17 different shipments.	Unknown.	T 970.00000000000	CI	1973	1973	N			
Rb-86	Numerous physical forms in 17 different shipments.	Unknown.	T 4.1600000000000	CI	1973	1973	N			
Rh-106	Numerous physical forms in 17 different shipments.	Unknown.	T 1.2800000000000	CI	1973	1973	N			
Ru-106	Numerous physical forms in 17 different shipments.	Unknown.	T 5.1500000000000	CI	1973	1973	N			
Sr-90	Numerous physical forms in 17 different shipments.	Unknown.	T 1.7400000000000	CI	1973	1973	N			
Cm-242	Numerous physical forms in 17 different shipments.	Unknown.	T .00000000005000	CI	1973	1973	N			
I-129	Numerous physical forms in 17 different shipments.	Unknown.	Unknown.	CI	1973	1973	N			
Pu-241	Numerous physical forms in 17 different shipments.	Unknown.	T .00004540000000	CI	1973	1973	N			
Tc-99	Numerous physical forms in 17 different shipments.	Unknown.	T .00000002750000	CI	1973	1973	N			

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Y-90	Numerous physical forms in 17 different shipments.	Unknown.	T 1.4000000000000	CI	1973	1973	N			
Ce-144	Numerous physical forms in 44 different shipments.	Unknown.	T 14.100000000000	CI	1974	1974	N			
Co-60	Numerous physical forms in 44 different shipments.	Unknown.	T 1600.0000000000	CI	1974	1974	N			
Cs-134	Numerous physical forms in 44 different shipments.	Unknown.	T 3.2100000000000	CI	1974	1974	N			
Cs-137	Numerous physical forms in 44 different shipments.	Unknown.	T 242.00000000000	CI	1974	1974	N			
Fe-59	Numerous physical forms in 44 different shipments.	Unknown.	T 1430.0000000000	CI	1974	1974	N			
Hf-181	Numerous physical forms in 44 different shipments.	Unknown.	T .07000000000000	CI	1974	1974	N			
H-3	Numerous physical forms in 44 different shipments.	Unknown.	T .39300000000000	CI	1974	1974	N			
I-129	Numerous physical forms in 44 different shipments.	Unknown.	Unknown.	CI	1974	1974	N			

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Numerous physical forms in 44 different shipments.	Unknown.	T 7.6800000000000	CI	1974	1974	N			
Tc-99	Numerous physical forms in 44 different shipments.	Unknown.	T .00000050000000	CI	1974	1974	N			
Cm-242	Numerous physical forms in 44 different shipments.	Unknown.	T .00000000089000	CI	1974	1974	N			
Pu-241	Numerous physical forms in 44 different shipments.	Unknown.	T .00078300000000	CI	1974	1974	N			
Y-90	Numerous physical forms in 44 different shipments.	Unknown.	T 16.800000000000	CI	1974	1974	N			
Ce-144	Numerous physical forms in 14 different shipments.	Unknown.	T 1.3000000000000	CI	1975	1975	N			
Cs-134	Numerous physical forms in 14 different shipments.	Unknown.	T .31500000000000	CI	1975	1975	N			
Cs-137	Numerous physical forms in 14 different shipments.	Unknown.	T 7.0900000000000	CI	1975	1975	N			
Rb-86	Numerous physical forms in 14 different shipments.	Unknown.	T 5.8500000000000	CI	1975	1975	N			

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ru-106	Numerous physical forms in 14 different shipments.	Unknown.	T 5.4500000000000	CI	1975	1975	N			
Sr-90	Numerous physical forms in 14 different shipments.	Unknown.	T 1.8900000000000	CI	1975	1975	N			
U-235	Numerous physical forms in 14 different shipments.	Unknown.	T .00002140000000	CI	1975	1975	N			
U-238	Numerous physical forms in 14 different shipments.	Unknown.	T .00000033300000	CI	1975	1975	N			
Cm-242	Numerous physical forms in 14 different shipments.	Unknown.	T .00000000006000	CI	1975	1975	N			
Co-60	Numerous physical forms in 14 different shipments.	Unknown.	T .17500000000000	CI	1975	1975	N			
I-129	Numerous physical forms in 14 different shipments.	Unknown.	Unknown.	CI	1975	1975	N			
Pu-241	Numerous physical forms in 14 different shipments.	Unknown.	T .00005100000000	CI	1975	1975	N			
Tc-99	Numerous physical forms in 14 different shipments.	Unknown.	T .00000003090000	CI	1975	1975	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Y-90	Numerous physical forms in 14 different shipments.	Unknown.	T 1.5300000000000	CI	1975	1975	N			
Ce-144	Numerous physical forms in 100 different shipments	Unknown.	T 1.7500000000000	CI	1976	1976	N			
Co-60	Numerous physical forms in 100 different shipments	Unknown.	T 15.900000000000	CI	1976	1976	N			
Cs-134	Numerous physical forms in 100 different shipments	Unknown.	T 2.1300000000000	CI	1976	1976	N			
Cs-137	Numerous physical forms in 100 different shipments	Unknown.	T 221.00000000000	CI	1976	1976	N			
Eu-154	Numerous physical forms in 100 different shipments	Unknown.	T .37100000000000	CI	1976	1976	N			
H-3	Numerous physical forms in 100 different shipments	Unknown.	T 1.9700000000000	CI	1976	1976	N			
I-129	Numerous physical forms in 100 different shipments	Unknown.	Unknown.	CI	1976	1976	N			
Sr-90	Numerous physical forms in 100 different shipments	Unknown.	T 51.100000000000	CI	1976	1976	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Tc-99	Numerous physical forms in 100 different shipments	Unknown.	T .00000160000000	CI	1976	1976	N			
Mn-54	Numerous physical forms in 100 different shipments	Unknown.	T .20200000000000	CI	1976	1976	N			
Ru-106	Numerous physical forms in 100 different shipments	Unknown.	T 1.5600000000000	CI	1976	1976	N			
U-238	Numerous physical forms in 100 different shipments	Unknown.	T .00002430000000	CI	1976	1976	N			
Cm-242	Numerous physical forms in 100 different shipments	Unknown.	T .00000000001000	CI	1976	1976	N			
Pu-241	Numerous physical forms in 100 different shipments	Unknown.	T .00000012000000	CI	1976	1976	N			
U-235	Numerous physical forms in 100 different shipments	Unknown.	T .00264000000000	CI	1976	1976	N			
Co-58	Numerous physical forms in 35 different shipments.	Unknown.	T 620.00000000000	CI	1977	1977	N			
Co-60	Numerous physical forms in 35 different shipments.	Unknown.	T 84.100000000000	CI	1977	1977	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-134	Numerous physical forms in 35 different shipments.	Unknown.	T 3.0000000000000	CI	1977	1977	N			
Cs-137	Numerous physical forms in 35 different shipments.	Unknown.	T 86.600000000000	CI	1977	1977	N			
C-14	Numerous physical forms in 35 different shipments.	Unknown.	T .00000058300000	CI	1977	1977	N			
Ni-59	Numerous physical forms in 35 different shipments.	Unknown.	T .01060000000000	CI	1977	1977	N			
H-3	Numerous physical forms in 35 different shipments.	Unknown.	T 5.4000000000000	CI	1977	1977	N			
I-129	Numerous physical forms in 35 different shipments.	Unknown.	Unknown.	CI	1977	1977	N			
Sr-90	Numerous physical forms in 35 different shipments.	Unknown.	T 1.8000000000000	CI	1977	1977	N			
Tc-99	Numerous physical forms in 35 different shipments.	Unknown.	T .00000028100000	CI	1977	1977	N			
Mn-54	Numerous physical forms in 35 different shipments.	Unknown.	T 593.00000000000	CI	1977	1977	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cm-242	Numerous physical forms in 35 different shipments.	Unknown.	Unknown.	CI	1977	1977	N			
Pu-241	Numerous physical forms in 35 different shipments.	Unknown.	T .00000045800000	CI	1977	1977	N			
Co-58	Numerous physical forms in 33 different shipments.	Unknown.	T 778.00000000000	CI	1978	1978	N			
Co-60	Numerous physical forms in 33 different shipments.	Unknown.	T 247.00000000000	CI	1978	1978	N			
Cs-134	Numerous physical forms in 33 different shipments.	Unknown.	T 10.000000000000	CI	1978	1978	N			
Cs-137	Numerous physical forms in 33 different shipments.	Unknown.	T 280.00000000000	CI	1978	1978	N			
C-14	Numerous physical forms in 33 different shipments.	Unknown.	T .00000047300000	CI	1978	1978	N			
Ni-59	Numerous physical forms in 33 different shipments.	Unknown.	T .00859000000000	CI	1978	1978	N			
H-3	Numerous physical forms in 33 different shipments.	Unknown.	T 4.1100000000000	CI	1978	1978	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
I-129	Numerous physical forms in 33 different shipments.	Unknown.	Unknown.	CI	1978	1978	N			
Sr-90	Numerous physical forms in 33 different shipments.	Unknown.	T 2.2600000000000	CI	1978	1978	N			
Tc-99	Numerous physical forms in 33 different shipments.	Unknown.	T .00000027000000	CI	1978	1978	N			
Mn-54	Numerous physical forms in 33 different shipments.	Unknown.	T 690.00000000000	CI	1978	1978	N			
Cm-242	Numerous physical forms in 33 different shipments.	Unknown.	T .00000000011000	CI	1978	1978	N			
Pu-241	Numerous physical forms in 33 different shipments.	Unknown.	T .00009200000000	CI	1978	1978	N			
C-14	Numerous physical forms in 44 different shipments.	Unknown.	T .00000000011000	CI	1979	1979	N			
Co-60	Numerous physical forms in 44 different shipments.	Unknown.	T .03980000000000	CI	1979	1979	N			
Ni-59	Numerous physical forms in 44 different shipments.	Unknown.	T .00000200000000	CI	1979	1979	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Numerous physical forms in 44 different shipments.	Unknown.	T 4.7100000000000	CI	1979	1979	N			
H-3	Numerous physical forms in 44 different shipments.	Unknown.	T 5.9300000000000	CI	1979	1979	N			
I-129	Numerous physical forms in 44 different shipments.	Unknown.	Unknown.	CI	1979	1979	N			
Sr-90	Numerous physical forms in 44 different shipments.	Unknown.	T 2.0900000000000	CI	1979	1979	N			
Tc-99	Numerous physical forms in 44 different shipments.	Unknown.	T .00000031600000	CI	1979	1979	N			
Cm-242	Numerous physical forms in 44 different shipments.	Unknown.	T .00000000001000	CI	1979	1979	N			
Pu-241	Numerous physical forms in 44 different shipments.	Unknown.	T .00001150000000	CI	1979	1979	N			
C-14	Numerous physical forms in 46 different shipments.	Unknown.	T .00000000044000	CI	1980	1980	N			
Co-60	Numerous physical forms in 46 different shipments.	Unknown.	T .00200000000000	CI	1980	1980	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Numerous physical forms in 46 different shipments.	Unknown.	T .00000800000000	CI	1980	1980	N			
Cs-137	Numerous physical forms in 46 different shipments.	Unknown.	T 8.2200000000000	CI	1980	1980	N			
H-3	Numerous physical forms in 46 different shipments.	Unknown.	T 11.000000000000	CI	1980	1980	N			
I-129	Numerous physical forms in 46 different shipments.	Unknown.	Unknown.	CI	1980	1980	N			
Sr-90	Numerous physical forms in 46 different shipments.	Unknown.	T 3.6500000000000	CI	1980	1980	N			
Tc-99	Numerous physical forms in 46 different shipments.	Unknown.	T .00000057100000	CI	1980	1980	N			
Pu-238	Numerous physical forms in 46 different shipments.	Unknown.	T .00000373000000	CI	1980	1980	N			
Pu-239	Numerous physical forms in 46 different shipments.	Unknown.	T .00001820000000	CI	1980	1980	N			
U-234	Numerous physical forms in 46 different shipments.	Unknown.	T .00002670000000	CI	1980	1980	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Numerous physical forms in 46 different shipments.	Unknown.	T .00000138000000	CI	1980	1980	N			
U-236	Numerous physical forms in 46 different shipments.	Unknown.	T .00000054800000	CI	1980	1980	N			
U-238	Numerous physical forms in 46 different shipments.	Unknown.	T .00000122000000	CI	1980	1980	N			
Cs-137	Numerous physical forms in 20 different shipments.	Unknown.	T .39600000000000	CI	1981	1981	N			
H-3	Numerous physical forms in 20 different shipments.	Unknown.	T .52800000000000	CI	1981	1981	N			
I-129	Numerous physical forms in 20 different shipments.	Unknown.	Unknown.	CI	1981	1981	N			
Sr-90	Numerous physical forms in 20 different shipments.	Unknown.	T .17600000000000	CI	1981	1981	N			
Tc-99	Numerous physical forms in 20 different shipments.	Unknown.	T .00000002750000	CI	1981	1981	N			
C-14	Numerous physical forms in 31 different shipments.	Unknown.	T .00000001320000	CI	1982	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Numerous physical forms in 31 different shipments.	Unknown.	T .06000000000000	CI	1982	1982	N			
Ni-59	Numerous physical forms in 31 different shipments.	Unknown.	T .00024000000000	CI	1982	1982	N			
Cs-137	Numerous physical forms in 31 different shipments.	Unknown.	T 1.8500000000000	CI	1982	1982	N			
H-3	Numerous physical forms in 31 different shipments.	Unknown.	T 2.4600000000000	CI	1982	1982	N			
I-129	Numerous physical forms in 31 different shipments.	Unknown.	Unknown.	CI	1982	1982	N			
Sr-90	Numerous physical forms in 31 different shipments.	Unknown.	T .82000000000000	CI	1982	1982	N			
Tc-99	Numerous physical forms in 31 different shipments.	Unknown.	T .00000012800000	CI	1982	1982	N			
Cs-134	Numerous physical forms in 63 different shipments.	Unknown.	T .60100000000000	CI	1983	1983	N			
Cs-137	Numerous physical forms in 63 different shipments.	Unknown.	T 31.900000000000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Numerous physical forms in 63 different shipments.	Unknown.	T 2.5700000000000	CI	1983	1983	N			
I-129	Numerous physical forms in 63 different shipments.	Unknown.	Unknown.	CI	1983	1983	N			
Sr-90	Numerous physical forms in 63 different shipments.	Unknown.	T 1.0100000000000	CI	1983	1983	N			
Tc-99	Numerous physical forms in 63 different shipments.	Unknown.	T .00000013400000	CI	1983	1983	N			
Rh-106	Numerous physical forms in 63 different shipments.	Unknown.	T .15000000000000	CI	1983	1983	N			
Ru-106	Numerous physical forms in 63 different shipments.	Unknown.	T .15000000000000	CI	1983	1983	N			
Y-90	Numerous physical forms in 63 different shipments.	Unknown.	T .15000000000000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
TAN questionaire reported in Plansky and Hoiland.

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
For CY 1981, WM-F1-81-027 reported 1.1 Ci shipped from TAN 607 consisting of 1/3 soil, 1/3 concrete door plug, and 1/3 miscellaneous. In contrast, RWMIS reported 0.59 Ci disposed of.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 165

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 607
(building number - use code from attached list)

5. Number of waste stream from this facility:
6H

6. Waste stream:
Minor unidentified radioactive waste from the TSF area.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1983 Ending year 1983

9. Waste stream volume:
Amount 70.7000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility was listed as TSF: we attribute it to the Manufacturing, Assembly and Health Physics and Safety Building, located in the TSF area of TAN.
9. Gross mass equals 86.4 Kg.

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60			T .00007800000000	CI	1983	1983	N			
Cs-137			T .00277000000000	CI	1983	1983	N			
Sr-90			T .00277000000000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
N/A.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:
N/A.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 166

1. Preparer: Henry Peterson

2. Date prepared: 01/27/94

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 615
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
U-235 contaminated structures removed during refurbishment of fuel assembly area of TAN 615.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1972 Ending year 1973

9. Waste stream volume:
Amount 55.9000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Assembly and Maintenance Facility, located in the TSF area of TAN.

1. General physical form (see attached list)
Concrete, brick, and asphalt.
[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Details on physical form (particularly confinement related)
- mostly wallboard, metal, and wood.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Other*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
1. Likely dominated by gypsum wallboard.
4. Virtually all TAN waste shipments featured one or more plastic barriers.
5. BXW. "Other" is according to RWMIS. Additional description of "Other" may be present in shipping manifests. Also included in number 5 is BXW.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-234	Solid particulate.	Metal and oxide.	T .00568000000000	CI	1972	1972	N	-20%	+20%	
U-235	Solid particulate.	Metal and oxide.	T .00018000000000	CI	1972	1972	N	-20%	+20%	
U-238	Solid particulate.	Metal and oxide.	T .00000167000000	CI	1972	1972	N	-20%	+20%	
U-234	Solid particulate.	Metal and oxide.	T .01800000000000	CI	1973	1973	N	-20%	+20%	
U-235	Solid particulate.	Metal and oxide.	T .00057200000000	CI	1973	1973	N	-20%	+20%	
U-238	Solid particulate.	Metal and oxide.	T .00000531000000	CI	1973	1973	N	-20%	+20%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Personnel that were involved in the reconstruction and refurbishment of TAN 615 indicated that all of the contamination was alpha, which would be expected for an area where enriched U-235 was handled. For purposes of characterizing this waste stream, it was assumed that 95% of the alpha reading, that was taken by the health physicist when monitoring the waste from this job, was due to the alpha activity of U-234. The resulting quantities of U-234, U-235, and U-238 assigned to the waste disposed from the refurbishment of 615 is based on the methodology of determining the appropriate radionuclides involved in 93.4% enriched uranium as provided by the "Health Physics Manual of Good Practices for Uranium Facilities", Rich, 1988. EG&G-2530.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[X] other
Shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
Harold Rau, INEL, 10 Aug. 1993: remembered tearing out of fuel examination area, contaminated by GE programs. Robert Branson, INEL, 10 Aug. 1993: remembered contaminated areas on south end.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
N/A.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:
N/A.

7. Major unknowns in inventories of contaminants:
Breakdown of U radionuclides.

8. Key assumptions used to deal with the unknowns:
Described in Part D.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 187

1. Preparer: Henry Peterson

2. Date prepared: 08/31/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 616
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Waste generated in the cleanup of the Liquid Waste Treatment Plant and associated PM-2A Secondary Evaporator.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1978 Ending year 1982

9. Waste stream volume:
Amount 23.6000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. TAN 616 was the Liquid Waste Treatment Plant built in 1955, located in the TSF area of TAN. Evaporated salts were collected in 50 kgal Caustic and Sand Tanks 709 and 710 (TAN structures 1709 and 1710), respectively. In 1971 and 1972, tanks 709 and 710 were emptied into a secondary evaporator built from PM2A parts, and solidified by evaporation into two C-steel shipping tanks. These were subsequently buried at RWMC (in 1971 and 1972), but accounted for under TAN 607. In as much as our present interpretations of unidentified beta and gamma waste do not vary between TAN-607 and TAN-616, we choose to leave those entries there, thereby avoiding a data conflict with RWMIS. The evaporation operation was terminated in 1975. The wastes in Tanks 709 and 710 were then solidified in place, in diatomaceous earth and concrete, and shipped to RWMC in 1976. RWMIS, in agreement with the shipping manifests, again accounts for that product under TAN-607. In 1978, nine BXW of waste attributed by RWMIS to TAN-616 were shipped to RWMC. In 1982, four BXW of waste attributed by RWMIS to the PM2A-evaporator were shipped to RWMC. These two shipments constitute the waste stream reported here. They may correspond to Smith's (1983) mention of a FY80 effort to characterize the PM2A-area, resulting in the collection, boxing, and RWMC-burial of radioactive cement and paint.

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Unknown.	Unknown.	T .08280000000000	CI	1978	1978	N			
H-3	Unknown.	Unknown.	T .11000000000000	CI	1978	1978	N			
Sr-90	Unknown.	Unknown.	T .03680000000000	CI	1978	1978	N			
Tc-99	Unknown.	Unknown.	T .00000000575000	CI	1978	1978	N			
Co-60	Unknown.	Unknown.	T .00001000000000	CI	1982	1982	N			
Cs-137	Unknown.	Unknown.	T .00010000000000	CI	1982	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Donald L. Smith, "Final Report Decontamination and Decommissioning of TAN Radioactive Liquid Waste Evaporator System (PM-2A)", EGG-2236, March 1983. L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 167

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 620
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Minor radioactive waste from the IET Control and Equipment Building.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1983 Ending year 1983

9. Waste stream volume:
Amount 0.7900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Control and Equipment Building located in the IET area of TAN.

1. General physical form (see attached list)
Other scrap metals.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Unknown.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-58	Metal.	Unknown.	T .00150000000000	CI	1983	1983	N			
Co-60	Metal.	Unknown.	T .00600000000000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS contains no data for TAN 620.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 168

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 623
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Minor radioactive wastes from sewage pumphouse.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1974 Ending year 1983

9. Waste stream volume:
Amount 8.2000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Sewage Pumphouse, located in the TSF area of TAN.
6. 1974 shipment of 1mCi unidentified beta from TAN 623 is clearly different from the 1974 shipment of 1mCi unidentified beta from TAN 711 (same sewage area of TSF).

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Dry sewage.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Dry sewage.	Unknown.	T .00009600000000	CI	1974	1974	N			
Cs-137	Dry sewage.	Unknown.	T .00063000000000	CI	1974	1974	N			
Pu-241	Dry sewage.	Unknown.	T .00000002800000	CI	1974	1974	N			
Sr-90	Dry sewage.	Unknown.	T .00027000000000	CI	1974	1974	N			
Tc-99	Dry sewage.	Unknown.	T .00000000002000	CI	1974	1974	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
N/A.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Unidentified beta and MFP.

8. Key assumptions used to deal with the unknowns:
See isotopic interpretation basis in Part D.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 169

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 629
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Minor radioactive wastes from airplane hanger building during the LOFT and LOFT-cleanup eras.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1972 Ending year 1982

9. Waste stream volume:
Amount 22.4000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Warehouse Receiving Building, located in the LOFT area of TAN.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
21.

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.
5. "Other" is according to RWMIS. Additional description of "Other" may be present in shipping manifests.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Unknown.	Unknown.	T .00036000000000	CI	1972	1972	N			
H-3	Unknown.	Unknown.	T .00048000000000	CI	1972	1972	N			
Sr-90	Unknown.	Unknown.	T .00016000000000	CI	1972	1972	N			
Tc-99	Unknown.	Unknown.	T .00000000003000	CI	1972	1972	N			
Co-58	Unknown.	Unknown.	T .03150000000000	CI	1982	1982	N			
Co-60	Unknown.	Unknown.	T .10000000000000	CI	1982	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides; except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
N/A.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:
N/A.

7. Major unknowns in inventories of contaminants:
Includes ambiguous MFP.

8. Key assumptions used to deal with the unknowns:
Explained in Part D for MFP interpretation.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 170

1. Preparer: Henry Peterson

2. Date prepared: 08/11/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 630
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Minor unidentified LOFT-area wastes from TAN 630.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1979 Ending year 1983

9. Waste stream volume:
Amount 17.3000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Control and Equipment Building, located in the LOFT area of TAN.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
44.

2. Details on physical form(particularly confinement related)
Paper, rags, and plastic.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Bale.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
C-14	Surface contamination.	Unknown.	T .00000000039000	CI	1979	1979	N			
Co-60	Surface contamination.	Unknown.	T .00176000000000	CI	1979	1979	N			
Ni-59	Surface contamination.	Unknown.	T .00000704000000	CI	1979	1979	N			
Cs-137	Surface contamination.	Unknown.	T .00063400000000	CI	1979	1979	N			
H-3	Surface contamination.	Unknown.	T .00084500000000	CI	1979	1979	N			
Sr-90	Surface contamination.	Unknown.	T .00028200000000	CI	1979	1979	N			
Tc-99	Surface contamination.	Unknown.	T .00000000004000	CI	1979	1979	N			
C-14	Surface contamination.	Unknown.	T .00000000020000	CI	1980	1980	N			
Co-60	Surface contamination.	Unknown.	T .00092100000000	CI	1980	1980	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Surface contamination.	Unknown.	T .00000368000000	CI	1980	1980	N			
C-14	Surface contamination.	Unknown.	T .00000000326000	CI	1981	1981	N			
Co-60	Surface contamination.	Unknown.	T .01480000000000	CI	1981	1981	N			
Ni-59	Surface contamination.	Unknown.	T .00005920000000	CI	1981	1981	N			
Cs-137	Surface contamination.	Unknown.	T .00000013500000	CI	1981	1981	N			
H-3	Surface contamination.	Unknown.	T .00000018000000	CI	1981	1981	N			
Sr-90	Surface contamination.	Unknown.	T .00000006000000	CI	1981	1981	N			
C-14	Surface contamination.	Unknown.	T .00000000167000	CI	1982	1982	N			
Co-60	Surface contamination.	Unknown.	T .00758000000000	CI	1982	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Surface contamination.	Unknown.	T .00003030000000	CI	1982	1982	N			
Cs-137	Surface contamination.	Unknown.	T .00085000000000	CI	1982	1982	N			
H-3	Surface contamination.	Unknown.	T .00113000000000	CI	1982	1982	N			
Sr-90	Surface contamination.	Unknown.	T .00037800000000	CI	1982	1982	N			
Tc-99	Surface contamination.	Unknown.	T .00000000006000	CI	1982	1982	N			
Co-58	Surface contamination.	Unknown.	T .00100000000000	CI	1983	1983	N			
Co-60	Surface contamination.	Unknown.	T .00100000000000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EG&G-WM-9857. June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
N/A.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS data for TAN agrees with Plansky and Hoiland data for TAN, except in 1982, where Plansky and Hoiland added MFP waste. RWMIS does not include Plansky and Hoiland 1981-1983 data for LOFT.

7. Major unknowns in inventories of contaminants:
Wastes given as MAP and MFP.

8. Key assumptions used to deal with the unknowns:
Interpretation of MAP and MFP described in Part D.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 237

1. Preparer: Henry Peterson

2. Date prepared: 01/27/94

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 633
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Radiation Measurement Lab (RML)/Hot Cell Samples/Specimens of fuel assemblies from HTRE No. 1 IET #3, #4, and #6 tests.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1956 Ending year 1956

9. Waste stream volume:
Amount ______ Units Cubic meters.
Check box: [ ] annual or [ ] total over all years
Check box: [ ] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. This waste stream is hypothesized based on reports and interviews with personnel employed with the GE-ANP Program. Half of the yearly curie waste value is ascribed to this facility, and half is ascribed to the TAN Hot Shop (TAN-607).

1. General physical form (see attached list)

[X] other (specify)
2, 5, 21.

2. Details on physical form(particularly confinement related)
Pieces of slag formed by high temperature melting of VO2 and nichrome clad combining. (May have been contained within a welded SS can that was then placed in fiber or steel drum.)

3. Chemical form:
Oxides and eutectic slag.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[X] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Unknown.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
2,4, and 5. Interviews with some of the personnel that worked in the Hot Shop and RML (Harold Rau, R.G. Mitchell, R.R. Jones, R. Drexler, E.C. Adamson, and T.L. Murphy) indicated that smaller aluminum or stainless steel containers were used to put RML or Hot Cell samples into, before they were put into the fiber or steel drums that would be the disposal container. One individual indicated that the inner containers may have been welded shut, and yet another individual indicated that the inner containers had a screw type lid.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-02-0 Nickel	Solid.	Metal.	T 1095.0000000000	GM	1956	1956	N			
7440-47-3 Chromium	Solid.	Metal.	T 275.00000000000	GM	1956	1956	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cr-51	Particulate.	Oxide.	T 950.00000000000	CI	1956	1956	N			
Ni-63	Particulate.	Oxide.	T 3.5000000000000	CI	1956	1956	N			
Sr-89	Particulate.	Oxide.	T 60.000000000000	CI	1956	1956	N			
Y-91	Particulate.	Oxide.	T 68.000000000000	CI	1956	1956	N			
Zr-95	Particulate.	Oxide.	T 70.000000000000	CI	1956	1956	N			
Nb-95	Particulate.	Oxide.	T 40.000000000000	CI	1956	1956	N			
Ru-103	Particulate.	Oxide.	T 44.000000000000	CI	1956	1956	N			
Ru-106	Particulate.	Oxide.	T 1.0000000000000	CI	1956	1956	N			
Cs-137	Particulate.	Oxide.	T .50000000000000	CI	1956	1956	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The HTRE-1 testing of IET #3, #4, and #6 was completed by the end of February 1957. Of the three tests, IET #3 and #4, which were completed during 1956, sustained most damage to the fuel, releasing 99.3% of the 704 gram total release of uranium assumed for the three tests. Since the fuel was nichrome (80% nickel and 20% chromium) clad, the ratio of grams of clad to the grams of fuel was calculated and activated for the length of time used to generate the fission product inventory, calculated by the RSAC-5 computer code, as programmed for the IET #4 operational history. The calculation resulted in 2738 grams of clad associated with 704 grams of fuel. Activation of the nichrome clad resulted in 17,307 curies of Cr-51, 0.257 curies of Ni-59, 30.3 curies of Ni-63 and 64,520 curies of Ni-65. The fission product inventory was calculated assuming the reactor operated at 10.64 MW for 194 hours. All activity values were decayed for 30 days to account for the time for decontamination of the contaminated parts of the reactor and packaging of the waste for shipment to the RWMC. From the 30-day decay list of radionuclides, the radionuclides chosen for listing above were 13 nuclides with the highest curie values. The curie content of uranium nuclides 234, 235, and 238 were calculated by the methodology as outlined in "Health Physics Manual of Good Practices for Uranium Facilities", Rich et al., 1988. (The complete analysis is documented in Peterson, 1994.)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ba-140	Particulate.	Oxide.	T 78.000000000000	CI	1956	1956	N			
La-140	Particulate.	Oxide.	T 90.000000000000	CI	1956	1956	N			
Ce-141	Particulate.	Oxide.	T 88.000000000000	CI	1956	1956	N			
Ce-144	Particulate.	Oxide.	T 18.000000000000	CI	1956	1956	N			
U-235	Particulate.	Oxide.	T .00071000000000	CI	1956	1956	N			
U-234	Particulate.	Oxide.	T .02240000000000	CI	1956	1956	N			
U-238	Particulate.	Oxide.	T .00000660000000	CI	1956	1956	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The HTRE-1 testing of IET #3, #4, and #6 was completed by the end of February 1957. Of the three tests, IET #3 and #4, which were completed during 1956, sustained most damage to the fuel, releasing 99.3% of the 704 gram total release of uranium assumed for the three tests. Since the fuel was nichrome (80% nickel and 20% chromium) clad, the ratio of grams of clad to the grams of fuel was calculated and activated for the length of time used to generate the fission product inventory, calculated by the RSAC-5 computer code, as programmed for the IET #4 operational history. The calculation resulted in 2738 grams of clad associated with 704 grams of fuel. Activation of the nichrome clad resulted in 17,307 curies of Cr-51, 0.257 curies of Ni-59, 30.3 curies of Ni-63 and 64,520 curies of Ni-65. The fission product inventory was calculated assuming the reactor operated at 10.64 MW for 194 hours. All activity values were decayed for 30 days to account for the time for decontamination of the contaminated parts of the reactor and packaging of the waste for shipment to the RWMC. From the 30-day decay list of radionuclides, the radionuclides chosen for listing above were 13 nuclides with the highest curie values. The curie content of uranium nuclides 234, 235, and 238 were calculated by the methodology as outlined in "Health Physics Manual of Good Practices for Uranium Facilities", Rich et al., 1988. (The complete analysis is documented in Peterson, 1994.)

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviews with J.D. Burtenshaw and G.J. Briscoe provided information concerning methods of decontamination of the jet engine, reactor exhaust plenum, a 76-inch exhaust duct, and the types of materials that would have been used, and the types of waste that would have been generated.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS contained no INEL data prior to 1960.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:
The curie amount for this waste stream is estimated to be on the order of 1500 curies for the year of 1956 (1/2 of the total assumed for the TAN area) and is assumed to be associated with a maximum of 1/2 of the 704 grams of U-235 that was assumed to be released for the three IET tests performed in HTRE-1. The fuel releases were deduced from "Heat Transfer Reactor Experiment No. 1", by G. Thornton, et al., General Electric, Direct-Air-Cycle Aircraft Nuclear Propulsion Program, APEX-904, February 28, 1962. The fission product inventory was based on the modeled HTRE-1, IET #4, reactor operation as described in "Idaho National Engineering Laboratory Historical Dose Evaluation", DOE/ID-12119, August 1991, and was calculated with the RSAC-5 computer code described by "The Radiological Safety Analysis Computer Program (RSAC-5) User's Manual", by D.R. Wenzel, WINCO-1123, October, 1993.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 238

1. Preparer: Henry Peterson

2. Date prepared: 01/27/94

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 633
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Metallurgical samples/specimens from HTRE-2 insert tests.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1957 Ending year 1961

9. Waste stream volume:
Amount ________ Units Cubic meters.
Check box: [ ] annual or [ ] total over all years
Check box: [ ] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. Since there are no waste manifests available for review for the period prior to 1960, this waste stream is hypothesized based on reports and interviews with personnel employed with the GE-ANP Program. Ninety percent of the yearly curie waste values are ascribed to the TAN Radiation Measurements Laboratory (RML)/Hot Cells (TAN-633) and 10% is ascribed to the TAN Hot Shop (TAN-607) in waste stream TAN-607-2.

1. General physical form (see attached list)

[X] other (specify)
2, 5, 10.

2. Details on physical form(particularly confinement related)
Metallurgical samples/specimens resulting from RML/Hot Cell examinations. May have been replaced in aluminum or stainless steel cans, before being placed in drums for disposal.

3. Chemical form:
Metal, irradiated BeO-VO2 ceramic tubes or parts of tubes.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[X] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Unknown.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
2,4, and 5. Interviews with some of the personnel that worked in the Hot Shop and RML (Harold Rau, R.G. Mitchell, R.R. Jones, R. Drexler, E.C. Adamson, and T.L. Murphy) indicated that smaller aluminum or stainless steel containers were used to put RML or Hot Cell samples into, before they were put into fiber or steel drums that would be the disposal container. One individual indicated that the inner containers may have been welded shut, and yet another individual indicated that the inner containers had a screw type lid.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity *	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-41-7 Beryllium	Solid.	Oxide.	Unknown.	GM	1957	1961	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-234	Particulate.	Oxide.	T .00300000000000	CI	1957	1957	N			
U-238	Particulate.	Oxide.	T .00000089000000	CI	1957	1957	N			
Sr-90	Particulate.	Oxide.	T 1.4000000000000	CI	1958	1958	N			
Zr-95	Particulate.	Oxide.	T 180.00000000000	CI	1958	1958	N			
Ru-103	Particulate.	Oxide.	T 117.00000000000	CI	1958	1958	N			
Cs-136	Particulate.	Oxide.	T .27000000000000	CI	1958	1958	N			
Ba-140	Particulate.	Oxide.	T 216.00000000000	CI	1958	1958	N			
Ce-141	Particulate.	Oxide.	T 230.00000000000	CI	1958	1958	N			
Ce-144	Particulate.	Oxide.	T 45.000000000000	CI	1958	1958	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Particulate.	Oxide.	T .00009600000000	CI	1958	1958	N			
Sr-89	Particulate.	Oxide.	T 144.00000000000	CI	1959	1959	N			
Y-91	Particulate.	Oxide.	T 162.00000000000	CI	1959	1959	N			
Nb-95	Particulate.	Oxide.	T 95.000000000000	CI	1959	1959	N			
Rh-103m	Particulate.	Oxide.	T 95.000000000000	CI	1959	1959	N			
U-235	Particulate.	Oxide.	T .00009600000000	CI	1957	1957	N			
Sr-89	Particulate.	Oxide.	T 153.00000000000	CI	1958	1958	N			
Y-91	Particulate.	Oxide.	T 171.00000000000	CI	1958	1958	N			
Nb-95	Particulate.	Oxide.	T 99.000000000000	CI	1958	1958	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Rh-103m	Particulate.	Oxide.	T 99.000000000000	CI	1958	1958	N			
Cs-137	Particulate.	Oxide.	T 1.5000000000000	CI	1958	1958	N			
La-140	Particulate.	Oxide.	T 252.00000000000	CI	1958	1958	N			
Pr-143	Particulate.	Oxide.	T 230.00000000000	CI	1958	1958	N			
U-234	Particulate.	Oxide.	T .00300000000000	CI	1958	1958	N			
U-238	Particulate.	Oxide.	T .00000089000000	CI	1958	1958	N			
Sr-90	Particulate.	Oxide.	T 1.3000000000000	CI	1959	1959	N			
Zr-95	Particulate.	Oxide.	T 171.00000000000	CI	1959	1959	N			
Ru-103	Particulate.	Oxide.	T 113.00000000000	CI	1959	1959	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-136	Particulate.	Oxide.	T .30000000000000	CI	1959	1959	N			
Cs-137	Particulate.	Oxide.	T 1.4000000000000	CI	1959	1959	N			
Ba-140	Particulate.	Oxide.	T 207.00000000000	CI	1959	1959	N			
La-140	Particulate.	Oxide.	T 243.00000000000	CI	1959	1959	N			
Ce-141	Particulate.	Oxide.	T 221.00000000000	CI	1959	1959	N			
Pr-143	Particulate.	Oxide.	T 225.00000000000	CI	1959	1959	N			
Ce-144	Particulate.	Oxide.	T 45.000000000000	CI	1959	1959	N			
U-234	Particulate.	Oxide.	T .00300000000000	CI	1959	1959	N			
U-235	Particulate.	Oxide.	T .00009600000000	CI	1959	1959	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-238	Particulate.	Oxide.	T .00000089000000	CI	1959	1959	N			
Sr-89	Particulate.	Oxide.	T 131.00000000000	CI	1960	1960	N			
Sr-90	Particulate.	Oxide.	T 1.2000000000000	CI	1960	1960	N			
Y-91	Particulate.	Oxide.	T 144.00000000000	CI	1960	1960	N			
Zr-95	Particulate.	Oxide.	T 153.00000000000	CI	1960	1960	N			
Nb-95	Particulate.	Oxide.	T 86.000000000000	CI	1960	1960	N			
Ru-103	Particulate.	Oxide.	T 99.000000000000	CI	1960	1960	N			
Rh-103m	Particulate.	Oxide.	T 86.000000000000	CI	1960	1960	N			
Cs-136	Particulate.	Oxide.	T .23000000000000	CI	1960	1960	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Particulate.	Oxide.	T 1.3000000000000	CI	1960	1960	N			
Ba-140	Particulate.	Oxide.	T 185.00000000000	CI	1960	1960	N			
La-140	Particulate.	Oxide.	T 216.00000000000	CI	1960	1960	N			
Ce-141	Particulate.	Oxide.	T 198.00000000000	CI	1960	1960	N			
Pr-143	Particulate.	Oxide.	T 198.00000000000	CI	1960	1960	N			
Ce-144	Particulate.	Oxide.	T 36.000000000000	CI	1960	1960	N			
U-234	Particulate.	Oxide.	T .00300000000000	CI	1960	1960	N			
U-235	Particulate.	Oxide.	T .00009600000000	CI	1960	1960	N			
U-238	Particulate.	Oxide.	T .00000089000000	CI	1960	1960	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-89	Particulate.	Oxide.	T 165.00000000000	CI	1961	1961	N			
Sr-90	Particulate.	Oxide.	T 1.3000000000000	CI	1961	1961	N			
Y-91	Particulate.	Oxide.	T 182.00000000000	CI	1961	1961	N			
Zr-95	Particulate.	Oxide.	T 198.00000000000	CI	1961	1961	N			
Nb-95	Particulate.	Oxide.	T 104.00000000000	CI	1961	1961	N			
Ru-103	Particulate.	Oxide.	T 119.00000000000	CI	1961	1961	N			
Rh-103m	Particulate.	Oxide.	T 104.00000000000	CI	1961	1961	N			
Cs-136	Particulate.	Oxide.	T .33000000000000	CI	1961	1961	N			
Cs-137	Particulate.	Oxide.	T 1.5000000000000	CI	1961	1961	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ba-140	Particulate.	Oxide.	T 231.00000000000	CI	1961	1961	N			
La-140	Particulate.	Oxide.	T 264.00000000000	CI	1961	1961	N			
Ce-141	Particulate.	Oxide.	T 240.00000000000	CI	1961	1961	N			
Pr-143	Particulate.	Oxide.	T 240.00000000000	CI	1961	1961	N			
Ce-144	Particulate.	Oxide.	T 50.000000000000	CI	1961	1961	N			
U-234	Particulate.	Oxide.	T .00300000000000	CI	1961	1961	N			
U-235	Particulate.	Oxide.	T .00009600000000	CI	1961	1961	N			
U-238	Particulate.	Oxide.	T .00000089000000	CI	1961	1961	N			
Sr-89	Particulate.	Oxide.	T 153.00000000000	CI	1957	1957	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	*Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Particulate.	Oxide.	T 1.4000000000000	CI	1957	1957	N			
Y-91	Particulate.	Oxide.	T 171.00000000000	CI	1957	1957	N			
Zr-95	Particulate.	Oxide.	T 180.00000000000	CI	1957	1957	N			
Nb-95	Particulate.	Oxide.	T 99.000000000000	CI	1957	1957	N			
Ru-103	Particulate.	Oxide.	T 117.00000000000	CI	1957	1957	N			
Rh-103m	Particulate.	Oxide.	T 99.000000000000	CI	1957	1957	N			
Cs-136	Particulate.	Oxide.	T .27000000000000	CI	1957	1957	N			
Cs-137	Particulate.	Oxide.	T 1.5000000000000	CI	1957	1957	N			
Ba-140	Particulate.	Oxide.	T 216.00000000000	CI	1957	1957	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
La-140	Particulate.	Oxide.	T 252.00000000000	CI	1957	1957	N			
Ce-141	Particulate.	Oxide.	T 230.00000000000	CI	1957	1957	N			
Pr-143	Particulate.	Oxide.	T 230.00000000000	CI	1957	1957	N			
Ce-144	Particulate.	Oxide.	T 45.000000000000	CI	1957	1957	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

Additional information or explanations (indicate pertinent contaminant)

The HTRE-2 testing of the IET inserts was completed by the end of February 1961. During the tests of these inserts, the high temperatures experienced in the insert ceramic fuels caused fission products, U02, and BeO to migrate and boil off the fuel tubes. This material contaminated parts of the reactor, the jet engines, and the 76-inch duct. Before further testing could continue, these materials had to be removed from these components and discarded. Based on the summary of the tests, documented in "Idaho National Engineering Laboratory Historical Dose Evaluation", DOE/ID-12119, August 1991, about 260 grams of 93.4% enriched U-235 was released during this test period, or about 52 grams per year during the five-year period. The fission product inventory was calculated using the RSAC-5 computer program, described by "The Radiological Safety Analysis Computer Program (RSAC-5) User's Manual", by D.R. Wenzel, WINCO-1123, October, 1993, assuming that the insert generated 7.4% of the reactor power of 14 MW for a period of 100 hours. All activity values were decayed for 30 days, to account for the time for decontamination of the contaminated parts of the reactor and packaging of the waste for shipment to the RWMC. From the 30-day decay list of radionuclides, the radionuclides chosen for the listing above were the 13 nuclides with the highest curie values, with the sum total normalized to the total yearly curie total for this waste stream. The curie content of uranium nuclides 234, 235, and 238 were calculated by the methodology as outlined in "Health Physics Manual of Good Practices for Uranium Facilities", Rich et al., 1988. (The complete analysis is documented in Peterson, 1994.)

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[X] other
Waste manifests.

2. Details concerning source (names, report no., dates, etc.)
Interviews with some of the personnel that worked in the Hot Shop and RML (Harold Rau, R.G. Mitchell, R.R. Jones, R. Drexler, E.C. Adamson, and T.L. Murphy) and personnel that were responsible for waste disposal (G.J. Briscoe, J.H. Lofthouse, and R.B. O'Brien) were consulted. The reports used were: a) "Heat Transfer Reactor Experiment No. 2", by P.N. Flagella, May 25, 1962, APEX-905, and b) "Idaho National Engineering Laboratory Historical Dose Evaluation", DOE/ID-12119, August 1991.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS contains no data prior to 1960.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:
There are no TAN waste manifests available for review and no data in the RWMIS for 1957-1959. The major TAN waste stream curie disposal values were estimated based on work completed during this time frame, and compared against similar work performed in 1960 and 1961. Therefore, 2000 curies was estimated for each year for 1957 and 1958. In 1959, 1915 curies was reported as waste to the RWMC (USAEC, 1960); in 1960, 1710 curies was reported for TAN (USAEC, 1961), and the total curie value summed from the waste shipping manifests for 1961 was 2110 curies. Testing of the HTRE-2 IET tests was responsible for the release of a maximum of 265 grams of U-235, which was assumed to be disposed of at the rate of 52 grams per year over the five year period. Of the total curie and U-235 values, 90% was ascribed to the RML/Hot Cells TAN-633-2 waste stream and 10% was ascribed to the Hot Shop operation waste stream TAN-607-2.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 239

1. Preparer: Henry Peterson

2. Date prepared: 02/07/94

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 633
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Metallurgical samples/specimens examined and discarded from RML/Hot Cells resulting from SL-1 accident of Jan. 3, 1961.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1963 Ending year 1963

9. Waste stream volume:
Amount 85.0000 Units Cubic meters.
Check box: [X] annual or [ ] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)

[X] other (specify)
2, 4, 5, 10.

2. Details on physical form(particularly confinement related)
Samples/specimens examined in the RML/Hot Cell were placed in a screw-top or seal welded aluminum or stainless steel can, before being placed in fiber or steel drum for disposal.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[X] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cr-51	Solid.	Metal.	T 50.000000000000	CI	1963	1963	N			
Mn-54	Solid.	Metal.	T 230.00000000000	CI	1963	1963	N			
Fe-55	Solid.	Metal.	T 2040.0000000000	CI	1963	1963	N			
Fe-59	Solid.	Metal.	T 6.0000000000000	CI	1963	1963	N			
Co-58	Solid.	Metal.	T 50.000000000000	CI	1963	1963	N			
Co-60	Solid.	Metal.	T 600.00000000000	CI	1963	1963	N			
Ni-63	Solid.	Metal.	T 52.000000000000	CI	1963	1963	N			
Nb-94	Solid.	Metal.	T .00100000000000	CI	1963	1963	N			
Nb-95	Solid.	Metal.	T .00600000000000	CI	1963	1963	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
In the process of creating metallurgical samples, loose contamination is routinely removed. Therefore, this waste stream is characterized nearly exclusively by the activation products that are created in the structural materials, by the neutron flux to which they were subjected, and contains insignificant amounts of fission products that are included in the companion waste stream, TAN-607-3.

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[X] other
Radioactive waste shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
Interviews with Dr. J.F. Kunze, R.B. O'Brien, and G.J. Briscoe provided information on the extensive number of samples that were examined in the RML/Hot Cells and how they were disposed. "The Final Report of SL-1 Recovery Operation", May 1961 through July 1962, General Electric, July 27, 1962, IDO-19311, also provides information concerning the types of metallurgical samples that were examined.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Type of stainless steel or metal irradiated and the time of irradiation.

8. Key assumptions used to deal with the unknowns:
Stainless steel type 304 was assumed for activation.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 240

1. Preparer: Henry Peterson

2. Date prepared: 02/07/94

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 633
(building number - use code from attached list)

5. Number of waste stream from this facility:
4H

6. Waste stream:
Metallurgical samples/specimens from examination of the Ml-1, PM-2A, and the 2 SNAPTRAN systems.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1964 Ending year 1966

9. Waste stream volume:
Amount 162.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
6. This waste stream originated at the TAN-RML/Hot Cells (TAN-633) and covers a period of three years: 1964, 1965, and 1966. Originally, this waste stream was to be subdivided into several smaller units, but the documentation is not specific enough to allow this subdivision. Therefore, this waste stream covers two minor projects, and two major projects, that were accomplished at the TAN facilities: the two minor projects involved the two SNAPTRAN tests that were conducted in April 1964 and January 1966. The two major projects involved the ML-1 and PM-2A reactor vessel examinations. The final report for the ML-1 examination was published in June 1966, and the report for the PM-2A examination was published in March 1967. Since these projects cannot presently be divided, they are all included in the same waste stream. A review of the waste shipping manifests provides data to illustrate the magnitude of this stream compared to the other major waste for TAN.

TAN HOT SHOP AND RML/HOT CELL WASTE FOR 1964,1965, AND 1966
(From review of the shipping manifests)

	Total Tan Area		Hot Shop		RML/Hot Cells	
Year	Curies	Vol.(M3)	Curies	Vol.(M3)	Curies	Vol.(M3)
1964	3624	412	0.86	23.2	1019	28.9
RWMIS	3864	457	----	----	----	----
1965	1454	400	8.27	160.9	1421	43.6
RWMIS	1364	405	----	----	----	----
1966	4852	851	3.62	70.6	4842	89.3
RWMIS	3842	862	----	----	----	----

1. General physical form (see attached list)

[X] other (specify)
2, 3, 4, 5, 10, 17, 15, 21, 22, 23, 51.

2. Details on physical form(particularly confinement related)
See 7 below.

3. Chemical form:
Mostly metal.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Metal liner.

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
1, 2, and 4. During the three-year period covered by this waste stream, the TAN RML/Hot Cell processed 17 ICPP Waste Calciner Facility (WCF) and Hot Cell filters, which are to be considered to have accumulated radioactive material in a highly dispersible, particulate form. These filters were packaged in a plastic lined plywood box for shipment to the RWMC. The other major physical form included in this waste stream is solid pieces of stainless steel, assumed for purposes of activation to be type 304, the most commonly used type of stainless steel for experiment and structural purposes. If the pieces of stainless steel were small enough to be placed in fiber or steel barrels, that is how they were contained for shipment to the RWMC. If the pieces were too large to fit in these fiber or steel barrels, and were relatively contamination free (of removable contamination), the articles were wrapped in plastic and placed generally in plywood boxes for shipment to the RWMC. Also, during this three-year period, 414.09 grams of U-235 (assumed to be 93% enriched, the enrichment consistent with this period of time), 1 gram of plutonium (assumed to be Pu-239), and 2360 grams of depleted uranium (U-238) were authorized, by the AEC, for disposal in the RWMC. This accountable material was generally canned in stainless or aluminum cans and sealed, before being placed in fiber or steel barrels/drums for disposal.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
11135-81-2 Sodium Potassium	Liquid.	Elemental.	T 360.00000000000	GM	1966	1966	N	180	360	
15625-89-5 Trimethylolpropane-Triester	Liquid.		T 440.00000000000	GL	1966	1966	N	220	440	Drums may not have been full.
7440-47-3 Chromium	Solid.	Metal.	Unknown.	GM	1966	1966	N			
7440-02-0 Nickel	Solid.	Metal.	Unknown.	GM	1966	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Hazardous material disposed of during this three-year period consisted of a maximum of 360 grams of NaK, 8 55-gallon drums of an organic liquid, trimethylolpropane triester, used in the testing of the PM-2A, and an unknown amount of nichrome (80% nickel and 20% chromium) clad and structural material from the GE-ANP testing of the HTRE reactors. The NaK is reported on the shipping manifest to be sealed within stainless steel tubes. The nichrome has at least a 5 year decay and will consist primarily of Ni-59 and Ni-63, with essentially all of the gamma field being contributed by the Ni-59 and small amounts of impurities in the material. An estimated amount of 3010 curies is attributed to the nichrome components, based on the addition of the curie values ascribed to the HTRE components.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid particulate.	Unknown.	T 304.00000000000	CI	1964	1964	N			
Sr-90	Solid particulate.	Unknown.	T 304.00000000000	CI	1964	1964	N			
Pu-238	Solid particulate.	Unknown.	T 3.0000000000000	CI	1964	1964	N			
C-14	Solid.	Metal.	T .30000000000000	CI	1964	1964	N			
Cr-51	Solid.	Metal.	T .72000000000000	CI	1964	1964	N			
Mn-54	Solid.	Metal.	T 215.00000000000	CI	1964	1964	N			
Fe-55	Solid.	Metal.	T 2460.0000000000	CI	1964	1964	N			
Fe-59	Solid.	Metal.	T .53000000000000	CI	1964	1964	N			
Co-58	Solid.	Metal.	T 12.000000000000	CI	1964	1964	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

* Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Metal.	T 770.00000000000	CI	1964	1964	N			
Ni-59	Solid.	Metal.	T .43000000000000	CI	1964	1964	N			
Ni-63	Solid.	Metal.	T 72.000000000000	CI	1964	1964	N			
Nb-94	Solid.	Metal.	T .00230000000000	CI	1964	1964	N			
Sr-90	Solid particulate.	Unknown.	T 45.000000000000	CI	1965	1965	N			
Cs-137	Solid particulate.	Unknown.	T 45.000000000000	CI	1965	1965	N			
Pu-238	Solid particulate.	Unknown.	T .50000000000000	CI	1965	1965	N			
C-14	Solid.	Metal.	T .12000000000000	CI	1965	1965	N			
Cr-51	Solid.	Metal.	T .28000000000000	CI	1965	1965	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Mn-54	Solid.	Metal.	T 83.000000000000	CI	1965	1965	N			
Fe-55	Solid.	Metal.	T 960.00000000000	CI	1965	1965	N			
Fe-59	Solid.	Metal.	T .21000000000000	CI	1965	1965	N			
Co-58	Solid.	Metal.	T 4.5000000000000	CI	1965	1965	N			
Co-60	Solid.	Metal.	T 300.00000000000	CI	1965	1965	N			
Ni-59	Solid.	Metal.	T .17000000000000	CI	1965	1965	N			
Ni-63	Solid.	Metal.	T 28.000000000000	CI	1965	1965	N			
Nb-94	Solid.	Metal.	T .00090000000000	CI	1965	1965	N			
U-234	Solid.	Metal.	T .01600000000000	CI	1965	1965	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid.	Metal.	T .00052000000000	CI	1965	1965	N			
U-238	Solid.	Metal.	T .00000490000000	CI	1965	1965	N			
Sr-90	Solid particulate.	Unknown.	T 65.000000000000	CI	1966	1966	N			
Cs-137	Solid particulate.	Unknown.	T 65.000000000000	CI	1966	1966	N			
Pu-238	Solid particulate.	Unknown.	T .70000000000000	CI	1966	1966	N			
C-14	Solid.	Metal.	T .15000000000000	CI	1966	1966	N			
Cr-51	Solid.	Metal.	T .36000000000000	CI	1966	1966	N			
Mn-54	Solid.	Metal.	T 110.00000000000	CI	1966	1966	N			
Fe-55	Solid.	Metal.	T 1240.0000000000	CI	1966	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Fe-59	Solid.	Metal.	T .27000000000000	CI	1966	1966	N			
Co-58	Solid.	Metal.	T 5.8000000000000	CI	1966	1966	N			
Co-60	Solid.	Metal.	T 390.00000000000	CI	1966	1966	N			
Ni-59	Solid.	Metal.	T 3010.0000000000	CI	1966	1966	N			
Ni-63	Solid.	Metal.	T 18.000000000000	CI	1966	1966	N			
Nb-94	Solid.	Metal.	T .00120000000000	CI	1966	1966	N			
U-234	Solid.	Metal.	T .00990000000000	CI	1966	1966	N			
U-235	Solid.	Metal.	T .00031000000000	CI	1966	1966	N			
U-238	Solid.	Metal.	T .00079000000000	CI	1966	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
See last page of Part D.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Unknown.	Unknown.	T .06000000000000	CI	1966	1966	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

See last page of Part D.

Additional information or explanations (indicate pertinent contaminant)

A review of the 1964 radioactive waste shipping manifests shows that 8 ICPP WCF filters and Hot Cell Filters were discarded, and contributed 304 curies to this waste stream for 1964. The remaining 3530 curies was assumed to be activation products associated with 304 stainless steel components. Since irradiation times and decay times are not known, "high burnup" irradiation conditions have been used, and a decay period of 1 year, is assumed for calculation of the radionuclide distribution. The radionuclide distribution in the 304 SS was calculated by the methodology described in "Characteristics of Potential Repository Wastes", U.S. DOE Office of Civilian Radioactive Waste Management, July 1992, DOE/RW-0184-R1. No U-235 was sent to the RWMC during 1964.

A review of the 1965 radioactive waste shipping manifests shows that 2 ICPP WCF filters and 1 Hot Cell Filter were discarded, and contributed 45 curies to this waste stream for 1964. Other waste manifests with significant curie values listed such items being discarded as EBR II control rod pieces, non-accountable trash from the GE experiment, ERT poison sections, and other 304 SS components. Therefore, the remaining irradiation times and decay times are not known, "high burnup" irradiation conditions have been used, and a decay period of 1 year, is assumed for calculation of the radionuclide distribution. The radionuclide distribution in the 304 SS was calculated by the methodology described in "Characteristics of Potential Repository Wastes", U.S. DOE Office of Civilian Radioactive Waste Management, July 1992, DOE/RW-0184-R1. During 1965, 258.6 grams of U-235 was authorized by the AEC for disposal and sent to the RWMC. Since 93% enrichment is typical for this time period, this discarded U-235 was assumed to be 93% enriched, and the associated uranium radionuclides were calculated by the methodology of pages 2-7, "Health Physics Manual of Good Practices for Uranium Facilities", B.L. Rich, Chairman, U.S. Doe, June 1988, EGG-2530.

A review of the 1966 radioactive waste shipping manifests shows that 5 ICPP WCF filters and 1 Hot Cell Filter were discarded, and contributed 65 curies to this waste stream for 1964. Other waste manifests with significant curie values listed such items being discarded as WAPD 49 experiment clad, HTRE control rod tips, and ML-1 components, which were either SS 304 or 321 ("Final Disassembly and examination of the ML-1 Reactor Core", by T.L. Murphy, et al., June 1966, IDO-17190). The ML-1 components alone accounted for 320 curies. There were also many HTRE components (fuel element liners, fuel element nose and tail pieces, a core structure, a core filler piece, and control rods) that accounted for 3010 curies. Irradiation times and a decay period of 1 year is assumed for calculation of the radionuclide distribution. The radionuclide distribution in 304 SS was calculated by the methodology described in "Characteristics of Potential Repository Wastes", U.S. DOE office of Civilian Radioactive Waste Management, July 1992, DOE/RW-0184-R1. During 1966, 155.49 grams of U-235, 2360 grams of depleted uranium (U-238), and 1 gram of plutonium were authorized by the AEC for disposal, and sent to the RWMC. Since 93% enrichment is typical for this time period, this discarded U-235 was assumed to be 93% enriched, and the associated uranium radionuclides were calculated by the methodology of pages 2-7, "Health Physics Manual of Good Practices for Uranium Facilities", B.L. Rich, Chairman, U.S. DOE, June 1988, EGG-2530.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[X] other
Radioactive waste shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
Interviews with G.J. Briscoe, R.B. O'Brien, and D.R. Mousseau provide details on the types of sources and methods of packaging the waste. A.N. Tschaeche provided the radionuclide distribution for the ICPP WCF off-gas filters. The reports "PM-2A Reactor Vessel Test Program Final Report", by D.R. Mousseau and J.C. Purden, March 1967, IN-1061, and "Final Disassembly and Examination of the ML-1 Reactor Core", by T.L. Murphy, et al., June 1966, IDO-17190, gave details on the source terms and the types of operations that were conducted in the TAN Hot Shop and TAN RML/Hot Cells.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS gave a higher curie value for 1964, and lower curie values for 1965 and 1966, than summed from the shipping manifests.

7. Major unknowns in inventories of contaminants:
The composition, irradiation time, and decay time for the stainless steel component activation.

8. Key assumptions used to deal with the unknowns:
Type 304 stainless steel with "high burnup" irradiation and 1 year decay was used for radionuclide distribution.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 171

1. Preparer: Henry Peterson

2. Date prepared: 08/12/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 633
(building number - use code from attached list)

5. Number of waste stream from this facility:
5H

6. Waste stream:
Hot cells abutting TAN 607, with remote handling equipment for examining radioactive contaminated material.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1963 Ending year 1970

9. Waste stream volume:
Amount 521.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Hot Cell Annex, located in the TSF area of TAN.

1. General physical form (see attached list)
Other scrap metals.
[X] other (specify)
1, 2, 4, 5, 6, 7, 9, 16, 17, 21, 23, 42, 44, 45.

2. Details on physical form(particularly confinement related)
To first approximation, all radioactivity is on the surface.

3. Chemical form:
1000 to 10000 individual items, generally in an oxidized state.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.
5. LF, BLM, BXC, I, and "Other". "Other" is according to RWMIS.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
C-14	Numerous physical forms in 35 different shipments.	Unknown.	T .00026000000000	CI	1967	1967	N			
Co-60	Numerous physical forms in 35 different shipments.	Unknown.	T 1250.0000000000	CI	1967	1967	N			
Ni-59	Numerous physical forms in 35 different shipments.	Unknown.	T 75.500000000000	CI	1967	1967	N			
Cs-137	Numerous physical forms in 35 different shipments.	Unknown.	T 283.00000000000	CI	1967	1967	N			
I-129	Numerous physical forms in 35 different shipments.	Unknown.	T .00000000007000	CI	1967	1967	N			
Sr-90	Numerous physical forms in 35 different shipments.	Unknown.	T 165.00000000000	CI	1967	1967	N			
Tc-99	Numerous physical forms in 35 different shipments.	Unknown.	T .00001480000000	CI	1967	1967	N			
U-235	Numerous physical forms in 35 different shipments.	Unknown.	T .00008450000000	CI	1967	1967	N			
C-14	Numerous physical forms in 19 different shipments.	Unknown.	T .00062300000000	CI	1968	1968	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Numerous physical forms in 19 different shipments.	Unknown.	T 3020.0000000000	CI	1968	1968	N			
Ni-59	Numerous physical forms in 19 different shipments.	Unknown.	T 205.00000000000	CI	1968	1968	N			
Cs-137	Numerous physical forms in 19 different shipments.	Unknown.	T 773.00000000000	CI	1968	1968	N			
I-129	Numerous physical forms in 19 different shipments.	Unknown.	T .00000000019000	CI	1968	1968	N			
Sr-90	Numerous physical forms in 19 different shipments.	Unknown.	T 451.00000000000	CI	1968	1968	N			
Tc-99	Numerous physical forms in 19 different shipments.	Unknown.	T .00004030000000	CI	1968	1968	N			
U-235	Numerous physical forms in 19 different shipments.	Unknown.	T .00067000000000	CI	1968	1968	N			
C-14	Numerous physical forms in 23 different shipments.	Unknown.	T .00083600000000	CI	1969	1969	N			
Co-60	Numerous physical forms in 23 different shipments.	Unknown.	T 4015.0000000000	CI	1969	1969	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Numerous physical forms in 23 different shipments.	Unknown.	T 229.00000000000	CI	1969	1969	N			
Cs-137	Numerous physical forms in 23 different shipments.	Unknown.	T 855.00000000000	CI	1969	1969	N			
I-129	Numerous physical forms in 23 different shipments.	Unknown.	T .00000000021000	CI	1969	1969	N			
Sr-90	Numerous physical forms in 23 different shipments.	Unknown.	T 499.00000000000	CI	1969	1969	N			
Tc-99	Numerous physical forms in 23 different shipments.	Unknown.	T .00004450000000	CI	1969	1969	N			
U-235	Numerous physical forms in 23 different shipments.	Unknown.	T .00013100000000	CI	1969	1969	N			
U-238	Numerous physical forms in 23 different shipments.	Unknown.	T .00000199000000	CI	1969	1969	N			
C-14	Numerous physical forms in 7 different shipments.	Unknown.	T .00003190000000	CI	1970	1970	N			
Co-60	Numerous physical forms in 7 different shipments.	Unknown.	T 177.00000000000	CI	1970	1970	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Numerous physical forms in 7 different shipments.	Unknown.	T 32.000000000000	CI	1970	1970	N			
Cs-137	Numerous physical forms in 7 different shipments.	Unknown.	T 126.00000000000	CI	1970	1970	N			
I-129	Numerous physical forms in 7 different shipments.	Unknown.	T .00000000003000	CI	1970	1970	N			
Sr-90	Numerous physical forms in 7 different shipments.	Unknown.	T 73.400000000000	CI	1970	1970	N			
Tc-99	Numerous physical forms in 7 different shipments.	Unknown.	T .00000655000000	CI	1970	1970	N			
U-235	Numerous physical forms in 7 different shipments.	Unknown.	T .00004280000000	CI	1970	1970	N			
U-238	Numerous physical forms in 7 different shipments.	Unknown.	T .00000033300000	CI	1970	1970	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION   HDT - 172

1. Preparer: Henry Peterson

2. Date prepared: 08/09/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 636
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Minor radioactive waste from Carpenter and Paint Shop.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1976 Ending year 1976

9. Waste stream volume:
Amount 24.4000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is presently called the Carpenter and Paint Shop, located in the TSF area of TAN.
9. Gross weight equals 5.4 Mg. Total Ci disposed equals 4.0E-3.

1. General physical form (see attached list)

[X] other (specify)
10.

2. Details on physical form(particularly confinement related)
Lightly contaminated scrap metal and wood, that had accumulated at the carpenter shop.

3. Chemical form:
Metal and wood.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.
5. "Other" is according to RWMIS. Additional description of "Other" may be present in shipping manifests.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Unknown.	Unknown.	T .00144000000000	CI	1976	1976	N			
H-3	Unknown.	Unknown.	T .00192000000000	CI	1976	1976	N			
Sr-90	Unknown.	Unknown.	T .00064000000000	CI	1976	1976	N			
Tc-99	Unknown.	Unknown.	T .00000000010000	CI	1976	1976	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping manifests.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:
N/A.

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:
N/A.

7. Major unknowns in inventories of contaminants:
Composition of MFP.

8. Key assumptions used to deal with the unknowns:
Interpretation of MFP given in Part D.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 173

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 640
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Rags, plastic and one Ra-Be neutron source from the WRRTF Test Building.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1973 Ending year 1974

9. Waste stream volume:
Amount 7.9600 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Assembly and Test Building, located in the WRRTF area of TAN.

1. General physical form (see attached list)
Radiation sources.
[X] other (specify)
21.

2. Details on physical form(particularly confinement related)
Ra-Be neutron source; rags and plastic.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.
5. "Other" is included in RWMIS. Additional description of "Other" may be present in shipping manifests.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-41-7 Beryllium	Solid.	Metal.	Unknown.	GM	1973	1974				

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid (particulate).	Oxide.	T .00000054000000	CI	1973	1973	N	-20%	+20%	
U-238	Solid (particulate).	Oxide.	T .00000000500000	CI	1973	1973	N	-20%	+20%	
Ra-226	Encapsulated.	Unknown.	T 1.0000000000000	CI	1974	1974	N	-20%	+20%	
U-234	Solid (particulate).	Oxide.	T .00001700000000	CI	1973	1973	N	-20%	+20%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Shipping manifests.

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Nominal rating of 1 Ci on the Ra-226 source.

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 174

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 641
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Minor radioactive wastes attributed to WRRTF Control Building.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1976 Ending year 1976

9. Waste stream volume:
Amount 15.9000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Control and Equipment Building, located in the WRRTF area of TAN.

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Unknown.	Unknown.	T .00036000000000	CI	1976	1976	N			
H-3	Unknown.	Unknown.	T .00048000000000	CI	1976	1976	N			
Sr-90	Unknown.	Unknown.	T .00016000000000	CI	1976	1976	N			
Tc-99	Unknown.	Unknown.	T .00000000003000	CI	1976	1976	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Nominal amount of 1 mCi MFP.

8. Key assumptions used to deal with the unknowns:
Part D describes interpretation of MFP.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 175

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 645
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Minor radioactive from Semiscale Control Building.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1978 Ending year 1978

9. Waste stream volume:
Amount 5.4400 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is presently called the Control and Administration Building, located in the WRRTF area of TAN.

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

* Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Unknown.	Unknown.	T .10800000000000	CI	1978	1978	N			
H-3	Unknown.	Unknown.	T .14400000000000	CI	1978	1978	N			
I-129	Unknown.	Unknown.	Unknown.	CI	1978	1978	N			
Sr-90	Unknown.	Unknown.	T .04800000000000	CI	1978	1978	N			
Tc-99	Unknown.	Unknown.	T .00000000750000	CI	1978	1978	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:
Part D describes interpretation of MFP.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 176

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 647
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Low level radioactive component of Split Table Reactor from RPSSA Contaminated Storage Building.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1976 Ending year 1983

9. Waste stream volume:
Amount 24.6000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is presently called the Contaminated Storage Building, located in the TSF area of TAN.

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Activated or surface contaminated stainless steel.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
5. BLM and "Other". "Other" according RWMIS. Additional description of "Other" may be present in shipping manifests.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Unknown.	Unknown.	T .00019200000000	CI	1976	1976	N			
Cs-137	Unknown.	Unknown.	T .00126000000000	CI	1976	1976	N			
Sr-90	Unknown.	Unknown.	T .00054000000000	CI	1976	1976	N			
Tc-99	Unknown.	Unknown.	T .00000000003000	CI	1976	1976	N			
Co-60	Unknown.	Unknown.	T .00001000000000	CI	1982	1982	N			
Cs-137	Unknown.	Unknown.	T .00010000000000	CI	1982	1982	N			
C-14	Unknown.	Unknown.	T .00000000003000	CI	1983	1983	N			
Co-60	Unknown.	Unknown.	T .00014400000000	CI	1983	1983	N			
Ni-59	Unknown.	Unknown.	T .00000057600000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Unknown.	Unknown.	T .00005180000000	CI	1983	1983	N			
Sr-90	Unknown.	Unknown.	T .00002300000000	CI	1983	1983	N			
Tc-99	Unknown.	Unknown.	Unknown.	CI	1983	1983	N			
U-235	Unknown.	Unknown.	T .00000079000000	CI	1983	1983	N			
U-238	Unknown.	Unknown.	T .00011800000000	CI	1983	1983	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[X] other
Shipping manifests.

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Chemical state.

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 177

1. Preparer: Henry Peterson

2. Date prepared: 08/11/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 650
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Minor radioactive waste from the LOFT Containment and Service Building.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1982 Ending year 1982

9. Waste stream volume:
Amount 0.7900 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Control and Equipment Building, located in the LOFT area of TAN.

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Unknown.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
C-14	Unknown.	Unknown.	T .00000000140000	CI	1982	1982	N			
Co-60	Unknown.	Unknown.	T .00640000000000	CI	1982	1982	N			
Ni-59	Unknown.	Unknown.	T .00002550000000	CI	1982	1982	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[ ] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 104-5.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS contains no data for TAN 650.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 178

1. Preparer: Henry Peterson

2. Date prepared: 07/23/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: 711
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Minor radioactive wastes from the TAN Sewage Treatment Plant.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1974 Ending year 1974

9. Waste stream volume:
Amount 4.1600 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Facility is the Sewage Treatment Plant, located in the TSF area of TAN.
6. 1974 shipment of 1 mCi unidentified beta from TAN-623 is clearly different from the 1974 shipment of 1 mCi unidentified beta from TAN-711 (same TSF sewage area).

1. General physical form (see attached list)
Unknown.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Unknown.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Unknown.	Unknown.	T .00009600000000	CI	1974	1974	N			
Cs-137	Unknown.	Unknown.	T .00063000000000	CI	1974	1974	N			
Pu-241	Unknown.	Unknown.	T .00000002800000	CI	1974	1974	N			
Sr-90	Unknown.	Unknown.	T .00027000000000	CI	1974	1974	N			
Tc-99	Unknown.	Unknown.	T .00000000002000	CI	1974	1974	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Nominal 1 mCi unidentified beta.

8. Key assumptions used to deal with the unknowns:
Part D describes interpretation of unidentified beta.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 181

1. Preparer: Henry Peterson

2. Date prepared: 08/13/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: ANP
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Waste from the Low Power Test Facility.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1967 Ending year 1976

9. Waste stream volume:
Amount 57.2000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. RWMIS labels this stream as LPT (Low Power Test Facility), which was part of the ANP program.

1. General physical form (see attached list)
Plastics.
[X] other (specify)
21.

2. Details on physical form (particularly confinement related)
Listed as plastic and scrap.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.
5. "Other", 68 BXC and 5. "Other" is according to RWMIS. Additional description of "Other" may be present in shipping manifests.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
C-14	Unknown.	Unknown.	T .00000000031000	CI	1967	1967	N			
Co-60	Unknown.	Unknown.	T .00140000000000	CI	1967	1967	N			
Ni-59	Unknown.	Unknown.	T .00000560000000	CI	1967	1967	N			
Cs-137	Unknown.	Unknown.	T .00093600000000	CI	1967	1967	N			
H-3	Unknown.	Unknown.	T .00125000000000	CI	1967	1967	N			
Sr-90	Unknown.	Unknown.	T .00041600000000	CI	1967	1967	N			
Tc-99	Unknown.	Unknown.	T .00000000007000	CI	1967	1967	N			
Co-60	Unknown.	Unknown.	T .00009600000000	CI	1972	1972	N			
Cs-137	Unknown.	Unknown.	T .00063000000000	CI	1972	1972	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-241	Unknown.	Unknown.	T .00000002800000	CI	1972	1972	N			
Sr-90	Unknown.	Unknown.	T .00027000000000	CI	1972	1972	N			
Tc-99	Unknown.	Unknown.	T .00000000002000	CI	1972	1972	N			
Cs-137	Unknown.	Unknown.	T .39600000000000	CI	1976	1976	N			
H-3	Unknown.	Unknown.	T .52800000000000	CI	1976	1976	N			
Sr-90	Unknown.	Unknown.	T .17600000000000	CI	1976	1976	N			
Tc-99	Unknown.	Unknown.	T .00000002750000	CI	1976	1976	N			
U-235	Unknown.	Unknown.	T .00001900000000	CI	1976	1976	N	-20%	+20%	
U-238	Unknown.	Unknown.	T .00000033000000	CI	1976	1976	N	-20%	+20%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Composition of MAP, MFP and unidentified beta.

8. Key assumptions used to deal with the unknowns:
Part D describes interpretations of MAP, MFP and unidentified beta.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 183

1. Preparer: Henry Peterson

2. Date prepared: 08/10/93

3. Generator: TAN
(area or contractor - use code from attached list)

4. Particular facility: UNK
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Unknown.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1966 Ending year 1970

9. Waste stream volume:
Amount 17.6000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Listed facility was the Guardhouse TAN-601, located in the TSF area of TAN.

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[X] other (specify)
1, 2, 10, 13, 15, 42, 44.

2. Details on physical form(particularly confinement related)
Includes 6 pieces of ETR Shim stock, 3 Pu-coated discs, miscellaneous Pu waste and 5 cc of undefined liquid.

3. Chemical form:
Mostly metal, some undefined liquid.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:
None.

7. Comments (specify number of pertinent question):
4. Virtually all TAN waste shipments featured one or more plastic barriers.
5. "Other" is included in RWMIS. Additional description of "Other" may be present in shipping manifests.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
C-14	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00000000605000	CI	1966	1966	N			
Co-60	Mix of surface/volume contam., unknown proportion.	Unknown.	T .02750000000000	CI	1966	1966	N			
Ni-59	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00011000000000	CI	1966	1966	N			
Cs-137	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00990000000000	CI	1966	1966	N			
H-3	Mix of surface/volume contam., unknown proportion.	Unknown.	T .01320000000000	CI	1966	1966	N			
I-129	Mix of surface/volume contam., unknown proportion.	Unknown.	Unknown.	CI	1966	1966	N			
Sr-90	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00440000000000	CI	1966	1966	N			
Tc-99	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00000000069000	CI	1966	1966	N			
C-14	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00000011000000	CI	1969	1969	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Mix of surface/volume contam., unknown proportion.	Unknown.	T .50000000000000	CI	1969	1969	N			
Ni-59	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00200000000000	CI	1969	1969	N			
Cs-137	Mix of surface/volume contam., unknown proportion.	Unknown.	T .07700000000000	CI	1969	1969	N			
H-3	Mix of surface/volume contam., unknown proportion.	Unknown.	T .10300000000000	CI	1969	1969	N			
I-129	Mix of surface/volume contam., unknown proportion.	Unknown.	Unknown.	CI	1969	1969	N			
Sr-90	Mix of surface/volume contam., unknown proportion.	Unknown.	T .03420000000000	CI	1969	1969	N			
Tc-99	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00000000535000	CI	1969	1969	N			
Pu-239	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00600000000000	CI	1969	1969	N	-20%	+20%	
U-238	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00466000000000	CI	1969	1969	N	-20%	+20%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Mix of surface/volume contam., unknown proportion.	Unknown.	T .36000000000000	CI	1970	1970	N			
H-3	Mix of surface/volume contam., unknown proportion.	Unknown.	T .48000000000000	CI	1970	1970	N			
I-129	Mix of surface/volume contam., unknown proportion.	Unknown.	Unknown.	CI	1970	1970	N			
Sr-90	Mix of surface/volume contam., unknown proportion.	Unknown.	T .16000000000000	CI	1970	1970	N			
Tc-99	Mix of surface/volume contam., unknown proportion.	Unknown.	T .00000002500000	CI	1970	1970	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Curies of unidentified beta and gamma as well as MAP and MFP were interpreted into isotopic proportions in the following manner: base proportions were taken as those from a TAN questionnaire (Plansky and Hoiland, 1992) plus current INEL practices; proportions for additive nuclides were taken for Class C candidate nuclides, except those which could be discounted on a scientific basis, according to 5 year averages of TRA/NRF waste shipments to RWMC.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
L.E. Plansky and S.A. Hoiland, "Analysis of the Low-Level Waste Radionuclide Inventory for the Radioactive Waste Management Complex Performance Assessment", EGG-WM-9857, June 1992, Revision 1, pp. 126-134.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
Assignment of most radioactivity to MAP and MFP, arbitrarily split between the two.

8. Key assumptions used to deal with the unknowns:
Part D explains the assumed interpretation of MAP and MFP.

Test Reactor Area

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 189

1. Preparer: Nieschmidt, Ernest

2. Date prepared: 07/23/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Resins.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1952 Ending year 1982

9. Waste stream volume:
Amount 586.0000 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. Also 670 and 642.

1. General physical form (see attached list)
Resin.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Granular.

3. Chemical form:

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A .24080000000000	CI	1952	1952	N			See comment below.
C-14	Resin.	Unknown.	A 2.0710000000000	CI	1952	1952	N			See comment below.
Fe-55	Resin.	Unknown.	A 96.310000000000	CI	1952	1952	N			See comment below.
Ni-59	Resin.	Unknown.	A 1.3480000000000	CI	1952	1952	N			See comment below.
Ni-63	Resin.	Unknown.	A 134.80000000000	CI	1952	1952	N			See comment below.
Co-60	Resin.	Unknown.	A 327.40000000000	CI	1952	1952	N			See comment below.
Sr-90	Resin.	Unknown.	A 134.80000000000	CI	1952	1952	N			See comment below.
Tc-99	Resin.	Unknown.	A .00722300000000	CI	1952	1952	N			See comment below.
I-129	Resin.	Unknown.	A .00002986000000	CI	1952	1952	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 149.30000000000	CI	1952	1952	N			See comment below.
Ce-144	Resin.	Unknown.	A 3.7080000000000	CI	1952	1952	N			See comment below.
Eu-154	Resin.	Unknown.	A 3.5150000000000	CI	1952	1952	N			See comment below.
Eu-155	Resin.	Unknown.	A 1.4930000000000	CI	1952	1952	N			See comment below.
U-234	Resin.	Unknown.	A .00202200000000	CI	1952	1952	N			See comment below.
U-235	Resin.	Unknown.	A .00004430000000	CI	1952	1952	N			See comment below.
U-236	Resin.	Unknown.	A .00081860000000	CI	1952	1952	N			See comment below.
Np-237	Resin.	Unknown.	A .00125200000000	CI	1952	1952	N			See comment below.
Pu-238	Resin.	Unknown.	A .08668000000000	CI	1952	1952	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .02215000000000	CI	1952	1952	N			See comment below.
Pu-240	Resin.	Unknown.	A .01348000000000	CI	1952	1952	N			See comment below.
Pu-241	Resin.	Unknown.	A 7.2230000000000	CI	1952	1952	N			See comment below.
Am-241	Resin.	Unknown.	A 1.9260000000000	CI	1952	1952	N			See comment below.
Cm-242	Resin.	Unknown.	A .13480000000000	CI	1952	1952	N			See comment below.
Cm-244	Resin.	Unknown.	A .06260000000000	CI	1952	1952	N			See comment below.
H-3	Resin.	Unknown.	A .24080000000000	CI	1953	1953	N			See comment below.
C-14	Resin.	Unknown.	A 2.0710000000000	CI	1953	1953	N			See comment below.
Fe-55	Resin.	Unknown.	A 96.310000000000	CI	1953	1953	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 1.3480000000000	CI	1953	1953	N			See comment below.
Ni-63	Resin.	Unknown.	A 134.80000000000	CI	1953	1953	N			See comment below.
Co-60	Resin.	Unknown.	A 327.40000000000	CI	1953	1953	N			See comment below.
Sr-90	Resin.	Unknown.	A 134.80000000000	CI	1953	1953	N			See comment below.
Tc-99	Resin.	Unknown.	A .00722300000000	CI	1953	1953	N			See comment below.
I-129	Resin.	Unknown.	A .00002986000000	CI	1953	1953	N			See comment below.
Cs-137	Resin.	Unknown.	A 149.30000000000	CI	1953	1953	N			See comment below.
Ce-144	Resin.	Unknown.	A 3.7080000000000	CI	1953	1953	N			See comment below.
Eu-154	Resin.	Unknown.	A 3.5150000000000	CI	1953	1953	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 1.4930000000000	CI	1953	1953	N			See comment below.
U-234	Resin.	Unknown.	A .00202200000000	CI	1953	1953	N			See comment below.
U-235	Resin.	Unknown.	A .00004430000000	CI	1953	1953	N			See comment below.
U-236	Resin.	Unknown.	A .00081860000000	CI	1953	1953	N			See comment below.
Np-237	Resin.	Unknown.	A .00125200000000	CI	1953	1953	N			See comment below.
Pu-238	Resin.	Unknown.	A .08668000000000	CI	1953	1953	N			See comment below.
Pu-239	Resin.	Unknown.	A .02215000000000	CI	1953	1953	N			See comment below.
Pu-240	Resin.	Unknown.	A .01348000000000	CI	1953	1953	N			See comment below.
Pu-241	Resin.	Unknown.	A 7.2230000000000	CI	1953	1953	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 1.9260000000000	CI	1953	1953	N			See comment below.
Cm-242	Resin.	Unknown.	A .13480000000000	CI	1953	1953	N			See comment below.
Cm-244	Resin.	Unknown.	A .06260000000000	CI	1953	1953	N			See comment below.
H-3	Resin.	Unknown.	A .24080000000000	CI	1954	1954	N			See comment below.
C-14	Resin.	Unknown.	A 2.0710000000000	CI	1954	1954	N			See comment below.
Fe-55	Resin.	Unknown.	A 96.310000000000	CI	1954	1954	N			See comment below.
Ni-59	Resin.	Unknown.	A 1.3480000000000	CI	1954	1954	N			See comment below.
Ni-63	Resin.	Unknown.	A 134.80000000000	CI	1954	1954	N			See comment below.
Co-60	Resin.	Unknown.	A 327.40000000000	CI	1954	1954	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 134.80000000000	CI	1954	1954	N			See comment below.
Tc-99	Resin.	Unknown.	A .00722300000000	CI	1954	1954	N			See comment below.
I-129	Resin.	Unknown.	A .00002986000000	CI	1954	1954	N			See comment below.
Cs-137	Resin.	Unknown.	A 149.30000000000	CI	1954	1954	N			See comment below.
Ce-144	Resin.	Unknown.	A 3.7080000000000	CI	1954	1954	N			See comment below.
Eu-154	Resin.	Unknown.	A 3.5150000000000	CI	1954	1954	N			See comment below.
Eu-155	Resin.	Unknown.	A 1.4930000000000	CI	1954	1954	N			See comment below.
U-234	Resin.	Unknown.	A .00202200000000	CI	1954	1954	N			See comment below.
U-235	Resin.	Unknown.	A .00004430000000	CI	1954	1954	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .00081860000000	CI	1954	1954	N			See comment below.
Np-237	Resin.	Unknown.	A .00125200000000	CI	1954	1954	N			See comment below.
Pu-238	Resin.	Unknown.	A .08668000000000	CI	1954	1954	N			See comment below.
Pu-239	Resin.	Unknown.	A .02215000000000	CI	1954	1954	N			See comment below.
Pu-240	Resin.	Unknown.	A .01348000000000	CI	1954	1954	N			See comment below.
Pu-241	Resin.	Unknown.	A 7.2230000000000	CI	1954	1954	N			See comment below.
Am-241	Resin.	Unknown.	A 1.9260000000000	CI	1954	1954	N			See comment below.
Cm-242	Resin.	Unknown.	A .13480000000000	CI	1954	1954	N			See comment below.
Cm-244	Resin.	Unknown.	A .06260000000000	CI	1954	1954	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A .24080000000000	CI	1955	1955	N			See comment below.
C-14	Resin.	Unknown.	A 2.0710000000000	CI	1955	1955	N			See comment below.
Fe-55	Resin.	Unknown.	A 96.310000000000	CI	1955	1955	N			See comment below.
Ni-59	Resin.	Unknown.	A 1.3480000000000	CI	1955	1955	N			See comment below.
Ni-63	Resin.	Unknown.	A 134.80000000000	CI	1955	1955	N			See comment below.
Co-60	Resin.	Unknown.	A 327.40000000000	CI	1955	1955	N			See comment below.
Sr-90	Resin.	Unknown.	A 134.80000000000	CI	1955	1955	N			See comment below.
Tc-99	Resin.	Unknown.	A .00722300000000	CI	1955	1955	N			See comment below.
I-129	Resin.	Unknown.	A .00002986000000	CI	1955	1955	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 149.30000000000	CI	1955	1955	N			See comment below.
Ce-144	Resin.	Unknown.	A 3.7080000000000	CI	1955	1955	N			See comment below.
Eu-154	Resin.	Unknown.	A 3.5150000000000	CI	1955	1955	N			See comment below.
Eu-155	Resin.	Unknown.	A 1.4930000000000	CI	1955	1955	N			See comment below.
U-234	Resin.	Unknown.	A .00202200000000	CI	1955	1955	N			See comment below.
U-235	Resin.	Unknown.	A .00004430000000	CI	1955	1955	N			See comment below.
U-236	Resin.	Unknown.	A .00081860000000	CI	1955	1955	N			See comment below.
Np-237	Resin.	Unknown.	A .00125200000000	CI	1955	1955	N			See comment below.
Pu-238	Resin.	Unknown.	A .08668000000000	CI	1955	1955	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .02215000000000	CI	1955	1955	N			See comment below.
Pu-240	Resin.	Unknown.	A .01348000000000	CI	1955	1955	N			See comment below.
Pu-241	Resin.	Unknown.	A 7.2230000000000	CI	1955	1955	N			See comment below.
Am-241	Resin.	Unknown.	A 1.9260000000000	CI	1955	1955	N			See comment below.
Cm-242	Resin.	Unknown.	A .13480000000000	CI	1955	1955	N			See comment below.
Cm-244	Resin.	Unknown.	A .06260000000000	CI	1955	1955	N			See comment below.
H-3	Resin.	Unknown.	A .24080000000000	CI	1956	1956	N			See comment below.
C-14	Resin.	Unknown.	A 2.0710000000000	CI	1956	1956	N			See comment below.
Fe-55	Resin.	Unknown.	A 96.310000000000	CI	1956	1956	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 1.3480000000000	CI	1956	1956	N			See comment below.
Ni-63	Resin.	Unknown.	A 134.80000000000	CI	1956	1956	N			See comment below.
Co-60	Resin.	Unknown.	A 327.40000000000	CI	1956	1956	N			See comment below.
Sr-90	Resin.	Unknown.	A 134.80000000000	CI	1956	1956	N			See comment below.
Tc-99	Resin.	Unknown.	A .00722300000000	CI	1956	1956	N			See comment below.
I-129	Resin.	Unknown.	A .00002986000000	CI	1956	1956	N			See comment below.
Cs-137	Resin.	Unknown.	A 149.30000000000	CI	1956	1956	N			See comment below.
Ce-144	Resin.	Unknown.	A 3.7080000000000	CI	1956	1956	N			See comment below.
Eu-154	Resin.	Unknown.	A 3.5150000000000	CI	1956	1956	N			See comment below.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 1.4930000000000	CI	1956	1956	N			See comment below.
U-234	Resin.	Unknown.	A .00202200000000	CI	1956	1956	N			See comment below.
U-235	Resin.	Unknown.	A .00004430000000	CI	1956	1956	N			See comment below.
U-236	Resin.	Unknown.	A .00081860000000	CI	1956	1956	N			See comment below.
Np-237	Resin.	Unknown.	A .00125200000000	CI	1956	1956	N			See comment below.
Pu-238	Resin.	Unknown.	A .08668000000000	CI	1956	1956	N			See comment below.
Pu-239	Resin.	Unknown.	A .02215000000000	CI	1956	1956	N			See comment below.
Pu-240	Resin.	Unknown.	A .01348000000000	CI	1956	1956	N			See comment below.
Pu-241	Resin.	Unknown.	A 7.2230000000000	CI	1956	1956	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 1.9260000000000	CI	1956	1956	N			See comment below.
Cm-242	Resin.	Unknown.	A .13480000000000	CI	1956	1956	N			See comment below.
Cm-244	Resin.	Unknown.	A .06260000000000	CI	1956	1956	N			See comment below.
H-3	Resin.	Unknown.	A .24080000000000	CI	1957	1957	N			See comment below.
C-14	Resin.	Unknown.	A 2.0710000000000	CI	1957	1957	N			See comment below.
Fe-55	Resin.	Unknown.	A 96.310000000000	CI	1957	1957	N			See comment below.
Ni-59	Resin.	Unknown.	A 1.3480000000000	CI	1957	1957	N			See comment below.
Ni-63	Resin.	Unknown.	A 134.80000000000	CI	1957	1957	N			See comment below.
Co-60	Resin.	Unknown.	A 327.40000000000	CI	1957	1957	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 134.80000000000	CI	1957	1957	N			See comment below.
Tc-99	Resin.	Unknown.	A .00722300000000	CI	1957	1957	N			See comment below.
I-129	Resin.	Unknown.	A .00002986000000	CI	1957	1957	N			See comment below.
Cs-137	Resin.	Unknown.	A 149.30000000000	CI	1957	1957	N			See comment below.
Ce-144	Resin.	Unknown.	A 3.7080000000000	CI	1957	1957	N			See comment below.
Eu-154	Resin.	Unknown.	A 3.5150000000000	CI	1957	1957	N			See comment below.
Eu-155	Resin.	Unknown.	A 1.4930000000000	CI	1957	1957	N			See comment below.
U-234	Resin.	Unknown.	A .00202200000000	CI	1957	1957	N			See comment below.
U-235	Resin.	Unknown.	A .00004430000000	CI	1957	1957	N			See comment below.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .00081860000000	CI	1957	1957	N			See comment below.
Np-237	Resin.	Unknown.	A .00125200000000	CI	1957	1957	N			See comment below.
Pu-238	Resin.	Unknown.	A .08668000000000	CI	1957	1957	N			See comment below.
Pu-239	Resin.	Unknown.	A .02215000000000	CI	1957	1957	N			See comment below.
Pu-240	Resin.	Unknown.	A .01348000000000	CI	1957	1957	N			See comment below.
Pu-241	Resin.	Unknown.	A 7.2230000000000	CI	1957	1957	N			See comment below.
Am-241	Resin.	Unknown.	A 1.9260000000000	CI	1957	1957	N			See comment below.
Cm-242	Resin.	Unknown.	A .13480000000000	CI	1957	1957	N			See comment below.
Cm-244	Resin.	Unknown.	A .06260000000000	CI	1957	1957	N			See comment below.

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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1958	1958	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1958	1958	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1958	1958	N			See comment below.
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1958	1958	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1958	1958	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1958	1958	N			See comment below.
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1958	1958	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1958	1958	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1958	1958	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1958	1958	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1958	1958	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1958	1958	N			See comment below.
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1958	1958	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1958	1958	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1958	1958	N			See comment below.
U-236	Resin.	Unknown.	A .01571000000000	CI	1958	1958	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1958	1958	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1958	1958	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1958	1958	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1958	1958	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1958	1958	N			See comment below.
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1958	1958	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1958	1958	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1958	1958	N			See comment below.
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1959	1959	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1959	1959	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1959	1959	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1959	1959	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1959	1959	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1959	1959	N			See comment below.
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1959	1959	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1959	1959	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1959	1959	N			See comment below.
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1959	1959	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1959	1959	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1959	1959	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1959	1959	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1959	1959	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1959	1959	N			See comment below.
U-236	Resin.	Unknown.	A .01571000000000	CI	1959	1959	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1959	1959	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1959	1959	N			See comment below.
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1959	1959	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1959	1959	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1959	1959	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1959	1959	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1959	1959	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1959	1959	N			See comment below.
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1960	1960	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1960	1960	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1960	1960	N			See comment below.
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1960	1960	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1960	1960	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1960	1960	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1960	1960	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1960	1960	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1960	1960	N			See comment below.
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1960	1960	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1960	1960	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1960	1960	N			See comment below.
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1960	1960	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1960	1960	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1960	1960	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .01571000000000	CI	1960	1960	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1960	1960	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1960	1960	N			See comment below.
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1960	1960	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1960	1960	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1960	1960	N			See comment below.
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1960	1960	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1960	1960	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1960	1960	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1961	1961	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1961	1961	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1961	1961	N			See comment below.
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1961	1961	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1961	1961	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1961	1961	N			See comment below.
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1961	1961	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1961	1961	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1961	1961	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1961	1961	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1961	1961	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1961	1961	N			See comment below.
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1961	1961	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1961	1961	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1961	1961	N			See comment below.
U-236	Resin.	Unknown.	A .01571000000000	CI	1961	1961	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1961	1961	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1961	1961	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1961	1961	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1961	1961	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1961	1961	N			See comment below.
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1961	1961	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1961	1961	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1961	1961	N			See comment below.
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1962	1962	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1962	1962	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1962	1962	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1962	1962	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1962	1962	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1962	1962	N			See comment below.
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1962	1962	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1962	1962	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1962	1962	N			See comment below.
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1962	1962	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1962	1962	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1962	1962	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1962	1962	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1962	1962	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1962	1962	N			See comment below.
U-236	Resin.	Unknown.	A .01571000000000	CI	1962	1962	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1962	1962	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1962	1962	N			See comment below.
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1962	1962	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1962	1962	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1962	1962	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1962	1962	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1962	1962	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1962	1962	N			See comment below.
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1963	1963	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1963	1963	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1963	1963	N			See comment below.
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1963	1963	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1963	1963	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1963	1963	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1963	1963	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1963	1963	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1963	1963	N			See comment below.
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1963	1963	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1963	1963	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1963	1963	N			See comment below.
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1963	1963	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1963	1963	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1963	1963	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .01571000000000	CI	1963	1963	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1963	1963	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1963	1963	N			See comment below.
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1963	1963	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1963	1963	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1963	1963	N			See comment below.
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1963	1963	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1963	1963	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1963	1963	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1964	1964	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1964	1964	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1964	1964	N			See comment below.
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1964	1964	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1964	1964	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1964	1964	N			See comment below.
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1964	1964	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1964	1964	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1964	1964	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1964	1964	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1964	1964	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1964	1964	N			See comment below.
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1964	1964	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1964	1964	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1964	1964	N			See comment below.
U-236	Resin.	Unknown.	A .01571000000000	CI	1964	1964	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1964	1964	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1964	1964	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

* Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1964	1964	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1964	1964	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1964	1964	N			See comment below.
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1964	1964	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1964	1964	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1964	1964	N			See comment below.
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1965	1965	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1965	1965	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1965	1965	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1965	1965	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1965	1965	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1965	1965	N			See comment below.
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1965	1965	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1965	1965	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1965	1965	N			See comment below.
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1965	1965	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1965	1965	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1965	1965	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1965	1965	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1965	1965	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1965	1965	N			See comment below.
U-236	Resin.	Unknown.	A .01571000000000	CI	1965	1965	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1965	1965	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1965	1965	N			See comment below.
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1965	1965	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1965	1965	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1965	1965	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1965	1965	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1965	1965	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1965	1965	N			See comment below.
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1966	1966	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1966	1966	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1966	1966	N			See comment below.
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1966	1966	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1966	1966	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1966	1966	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1966	1966	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1966	1966	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1966	1966	N			See comment below.
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1966	1966	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1966	1966	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1966	1966	N			See comment below.
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1966	1966	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1966	1966	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1966	1966	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .01571000000000	CI	1966	1966	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1966	1966	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1966	1966	N			See comment below.
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1966	1966	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1966	1966	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1966	1966	N			See comment below.
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1966	1966	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1966	1966	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1966	1966	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1967	1967	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1967	1967	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1967	1967	N			See comment below.
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1967	1967	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1967	1967	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1967	1967	N			See comment below.
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1967	1967	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1967	1967	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1967	1967	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1967	1967	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1967	1967	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1967	1967	N			See comment below.
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1967	1967	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1967	1967	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1967	1967	N			See comment below.
U-236	Resin.	Unknown.	A .01571000000000	CI	1967	1967	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1967	1967	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1967	1967	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1967	1967	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1967	1967	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1967	1967	N			See comment below.
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1967	1967	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1967	1967	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1967	1967	N			See comment below.
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1968	1968	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1968	1968	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1968	1968	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1968	1968	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1968	1968	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1968	1968	N			See comment below.
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1968	1968	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1968	1968	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1968	1968	N			See comment below.
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1968	1968	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1968	1968	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1968	1968	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1968	1968	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1968	1968	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1968	1968	N			See comment below.
U-236	Resin.	Unknown.	A .01571000000000	CI	1968	1968	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1968	1968	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1968	1968	N			See comment below.
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1968	1968	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1968	1968	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1968	1968	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1968	1968	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1968	1968	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1968	1968	N			See comment below.
H-3	Resin.	Unknown.	A 4.6200000000000	CI	1969	1969	N			See comment below.
C-14	Resin.	Unknown.	A 39.730000000000	CI	1969	1969	N			See comment below.
Fe-55	Resin.	Unknown.	A 1848.0000000000	CI	1969	1969	N			See comment below.
Ni-59	Resin.	Unknown.	A 25.870000000000	CI	1969	1969	N			See comment below.
Ni-63	Resin.	Unknown.	A 2587.0000000000	CI	1969	1969	N			See comment below.
Co-60	Resin.	Unknown.	A 6283.0000000000	CI	1969	1969	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 2587.0000000000	CI	1969	1969	N			See comment below.
Tc-99	Resin.	Unknown.	A .13860000000000	CI	1969	1969	N			See comment below.
I-129	Resin.	Unknown.	A .00057280000000	CI	1969	1969	N			See comment below.
Cs-137	Resin.	Unknown.	A 2864.0000000000	CI	1969	1969	N			See comment below.
Ce-144	Resin.	Unknown.	A 71.150000000000	CI	1969	1969	N			See comment below.
Eu-154	Resin.	Unknown.	A 67.450000000000	CI	1969	1969	N			See comment below.
Eu-155	Resin.	Unknown.	A 28.640000000000	CI	1969	1969	N			See comment below.
U-234	Resin.	Unknown.	A .03881000000000	CI	1969	1969	N			See comment below.
U-235	Resin.	Unknown.	A .00085010000000	CI	1969	1969	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .01571000000000	CI	1969	1969	N			See comment below.
Np-237	Resin.	Unknown.	A .02402000000000	CI	1969	1969	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.6630000000000	CI	1969	1969	N			See comment below.
Pu-239	Resin.	Unknown.	A .42510000000000	CI	1969	1969	N			See comment below.
Pu-240	Resin.	Unknown.	A .25870000000000	CI	1969	1969	N			See comment below.
Pu-241	Resin.	Unknown.	A 138.60000000000	CI	1969	1969	N			See comment below.
Am-241	Resin.	Unknown.	A 36.960000000000	CI	1969	1969	N			See comment below.
Cm-242	Resin.	Unknown.	A 2.5870000000000	CI	1969	1969	N			See comment below.
Cm-244	Resin.	Unknown.	A 1.2010000000000	CI	1969	1969	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A 8.1570000000000	CI	1970	1970	N			See comment below.
C-14	Resin.	Unknown.	A 70.150000000000	CI	1970	1970	N			See comment below.
Fe-55	Resin.	Unknown.	A 3263.0000000000	CI	1970	1970	N			See comment below.
Ni-59	Resin.	Unknown.	A 45.680000000000	CI	1970	1970	N			See comment below.
Ni-63	Resin.	Unknown.	A 4568.0000000000	CI	1970	1970	N			See comment below.
Co-60	Resin.	Unknown.	A 11090.000000000	CI	1970	1970	N			See comment below.
Sr-90	Resin.	Unknown.	A 4568.0000000000	CI	1970	1970	N			See comment below.
Tc-99	Resin.	Unknown.	A .24470000000000	CI	1970	1970	N			See comment below.
I-129	Resin.	Unknown.	A .00101160000000	CI	1970	1970	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 5058.0000000000	CI	1970	1970	N			See comment below.
Ce-144	Resin.	Unknown.	A 125.60000000000	CI	1970	1970	N			See comment below.
Eu-154	Resin.	Unknown.	A 119.10000000000	CI	1970	1970	N			See comment below.
Eu-155	Resin.	Unknown.	A 50.580000000000	CI	1970	1970	N			See comment below.
U-234	Resin.	Unknown.	A .06852000000000	CI	1970	1970	N			See comment below.
U-235	Resin.	Unknown.	A .00150100000000	CI	1970	1970	N			See comment below.
U-236	Resin.	Unknown.	A .02774000000000	CI	1970	1970	N			See comment below.
Np-237	Resin.	Unknown.	A .04242000000000	CI	1970	1970	N			See comment below.
Pu-238	Resin.	Unknown.	A 2.9370000000000	CI	1970	1970	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .75050000000000	CI	1970	1970	N			See comment below.
Pu-240	Resin.	Unknown.	A .45680000000000	CI	1970	1970	N			See comment below.
Pu-241	Resin.	Unknown.	A 244.70000000000	CI	1970	1970	N			See comment below.
Am-241	Resin.	Unknown.	A 65.260000000000	CI	1970	1970	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.5680000000000	CI	1970	1970	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.1210000000000	CI	1970	1970	N			See comment below.
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1971	1971	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1971	1971	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1971	1971	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1971	1971	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1971	1971	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1971	1971	N			See comment below.
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1971	1971	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1971	1971	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1971	1971	N			See comment below.
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1971	1971	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1971	1971	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1971	1971	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1971	1971	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1971	1971	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1971	1971	N			See comment below.
U-236	Resin.	Unknown.	A .02949000000000	CI	1971	1971	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1971	1971	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1971	1971	N			See comment below.
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1971	1971	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1971	1971	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1971	1971	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1971	1971	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1971	1971	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1971	1971	N			See comment below.
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1972	1972	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1972	1972	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1972	1972	N			See comment below.
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1972	1972	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1972	1972	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1972	1972	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1972	1972	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1972	1972	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1972	1972	N			See comment below.
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1972	1972	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1972	1972	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1972	1972	N			See comment below.
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1972	1972	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1972	1972	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1972	1972	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .02949000000000	CI	1972	1972	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1972	1972	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1972	1972	N			See comment below.
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1972	1972	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1972	1972	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1972	1972	N			See comment below.
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1972	1972	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1972	1972	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1972	1972	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1973	1973	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1973	1973	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1973	1973	N			See comment below.
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1973	1973	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1973	1973	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1973	1973	N			See comment below.
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1973	1973	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1973	1973	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1973	1973	N			See comment below.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1973	1973	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1973	1973	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1973	1973	N			See comment below.
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1973	1973	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1973	1973	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1973	1973	N			See comment below.
U-236	Resin.	Unknown.	A .02949000000000	CI	1973	1973	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1973	1973	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1973	1973	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1973	1973	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1973	1973	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1973	1973	N			See comment below.
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1973	1973	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1973	1973	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1973	1973	N			See comment below.
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1974	1974	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1974	1974	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1974	1974	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1974	1974	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1974	1974	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1974	1974	N			See comment below.
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1974	1974	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1974	1974	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1974	1974	N			See comment below.
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1974	1974	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1974	1974	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1974	1974	N			See comment below.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1974	1974	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1974	1974	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1974	1974	N			See comment below.
U-236	Resin.	Unknown.	A .02949000000000	CI	1974	1974	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1974	1974	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1974	1974	N			See comment below.
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1974	1974	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1974	1974	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1974	1974	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1974	1974	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1974	1974	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1974	1974	N			See comment below.
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1975	1975	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1975	1975	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1975	1975	N			See comment below.
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1975	1975	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1975	1975	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1975	1975	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1975	1975	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1975	1975	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1975	1975	N			See comment below.
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1975	1975	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1975	1975	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1975	1975	N			See comment below.
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1975	1975	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1975	1975	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1975	1975	N			See comment below.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .02949000000000	CI	1975	1975	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1975	1975	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1975	1975	N			See comment below.
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1975	1975	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1975	1975	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1975	1975	N			See comment below.
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1975	1975	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1975	1975	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1975	1975	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1976	1976	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1976	1976	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1976	1976	N			See comment below.
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1976	1976	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1976	1976	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1976	1976	N			See comment below.
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1976	1976	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1976	1976	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1976	1976	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1976	1976	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1976	1976	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1976	1976	N			See comment below.
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1976	1976	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1976	1976	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1976	1976	N			See comment below.
U-236	Resin.	Unknown.	A .02949000000000	CI	1976	1976	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1976	1976	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1976	1976	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1976	1976	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1976	1976	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1976	1976	N			See comment below.
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1976	1976	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1976	1976	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1976	1976	N			See comment below.
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1977	1977	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1977	1977	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1977	1977	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1977	1977	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1977	1977	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1977	1977	N			See comment below.
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1977	1977	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1977	1977	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1977	1977	N			See comment below.
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1977	1977	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1977	1977	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1977	1977	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1977	1977	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1977	1977	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1977	1977	N			See comment below.
U-236	Resin.	Unknown.	A .02949000000000	CI	1977	1977	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1977	1977	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1977	1977	N			See comment below.
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1977	1977	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1977	1977	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1977	1977	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1977	1977	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1977	1977	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1977	1977	N			See comment below.
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1978	1978	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1978	1978	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1978	1978	N			See comment below.
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1978	1978	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1978	1978	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1978	1978	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1978	1978	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1978	1978	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1978	1978	N			See comment below.
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1978	1978	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1978	1978	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1978	1978	N			See comment below.
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1978	1978	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1978	1978	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1978	1978	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .02949000000000	CI	1978	1978	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1978	1978	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1978	1978	N			See comment below.
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1978	1978	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1978	1978	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1978	1978	N			See comment below.
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1978	1978	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1978	1978	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1978	1978	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1979	1979	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1979	1979	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1979	1979	N			See comment below.
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1979	1979	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1979	1979	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1979	1979	N			See comment below.
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1979	1979	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1979	1979	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1979	1979	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1979	1979	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1979	1979	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1979	1979	N			See comment below.
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1979	1979	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1979	1979	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1979	1979	N			See comment below.
U-236	Resin.	Unknown.	A .02949000000000	CI	1979	1979	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1979	1979	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1979	1979	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1979	1979	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1979	1979	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1979	1979	N			See comment below.
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1979	1979	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1979	1979	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1979	1979	N			See comment below.
H-3	Resin.	Unknown.	A 8.6720000000000	CI	1980	1980	N			See comment below.
C-14	Resin.	Unknown.	A 74.580000000000	CI	1980	1980	N			See comment below.
Fe-55	Resin.	Unknown.	A 3469.0000000000	CI	1980	1980	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Resin.	Unknown.	A 48.560000000000	CI	1980	1980	N			See comment below.
Ni-63	Resin.	Unknown.	A 4856.0000000000	CI	1980	1980	N			See comment below.
Co-60	Resin.	Unknown.	A 11790.000000000	CI	1980	1980	N			See comment below.
Sr-90	Resin.	Unknown.	A 4856.0000000000	CI	1980	1980	N			See comment below.
Tc-99	Resin.	Unknown.	A .26020000000000	CI	1980	1980	N			See comment below.
I-129	Resin.	Unknown.	A .00107540000000	CI	1980	1980	N			See comment below.
Cs-137	Resin.	Unknown.	A 5377.0000000000	CI	1980	1980	N			See comment below.
Ce-144	Resin.	Unknown.	A 133.60000000000	CI	1980	1980	N			See comment below.
Eu-154	Resin.	Unknown.	A 126.60000000000	CI	1980	1980	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Resin.	Unknown.	A 53.770000000000	CI	1980	1980	N			See comment below.
U-234	Resin.	Unknown.	A .07285000000000	CI	1980	1980	N			See comment below.
U-235	Resin.	Unknown.	A .00159600000000	CI	1980	1980	N			See comment below.
U-236	Resin.	Unknown.	A .02949000000000	CI	1980	1980	N			See comment below.
Np-237	Resin.	Unknown.	A .04510000000000	CI	1980	1980	N			See comment below.
Pu-238	Resin.	Unknown.	A 3.1220000000000	CI	1980	1980	N			See comment below.
Pu-239	Resin.	Unknown.	A .79780000000000	CI	1980	1980	N			See comment below.
Pu-240	Resin.	Unknown.	A .48560000000000	CI	1980	1980	N			See comment below.
Pu-241	Resin.	Unknown.	A 260.20000000000	CI	1980	1980	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Resin.	Unknown.	A 69.380000000000	CI	1980	1980	N			See comment below.
Cm-242	Resin.	Unknown.	A 4.8560000000000	CI	1980	1980	N			See comment below.
Cm-244	Resin.	Unknown.	A 2.2550000000000	CI	1980	1980	N			See comment below.
H-3	Resin.	Unknown.	A 3.5470000000000	CI	1981	1981	N			See comment below.
C-14	Resin.	Unknown.	A 30.510000000000	CI	1981	1981	N			See comment below.
Fe-55	Resin.	Unknown.	A 1419.0000000000	CI	1981	1981	N			See comment below.
Ni-59	Resin.	Unknown.	A 19.870000000000	CI	1981	1981	N			See comment below.
Ni-63	Resin.	Unknown.	A 1987.0000000000	CI	1981	1981	N			See comment below.
Co-60	Resin.	Unknown.	A 4824.0000000000	CI	1981	1981	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Resin.	Unknown.	A 1987.0000000000	CI	1981	1981	N			See comment below.
Tc-99	Resin.	Unknown.	A .10640000000000	CI	1981	1981	N			See comment below.
I-129	Resin.	Unknown.	A .00043980000000	CI	1981	1981	N			See comment below.
Cs-137	Resin.	Unknown.	A 2199.0000000000	CI	1981	1981	N			See comment below.
Ce-144	Resin.	Unknown.	A 54.630000000000	CI	1981	1981	N			See comment below.
Eu-154	Resin.	Unknown.	A 51.790000000000	CI	1981	1981	N			See comment below.
Eu-155	Resin.	Unknown.	A 21.990000000000	CI	1981	1981	N			See comment below.
U-234	Resin.	Unknown.	A .02980000000000	CI	1981	1981	N			See comment below.
U-235	Resin.	Unknown.	A .00065720000000	CI	1981	1981	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Basis for uncertainty - estimate of precision of measurement technique.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Resin.	Unknown.	A .01206000000000	CI	1981	1981	N			See comment below.
Np-237	Resin.	Unknown.	A .01845000000000	CI	1981	1981	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.2770000000000	CI	1981	1981	N			See comment below.
Pu-239	Resin.	Unknown.	A .32640000000000	CI	1981	1981	N			See comment below.
Pu-240	Resin.	Unknown.	A .19870000000000	CI	1981	1981	N			See comment below.
Pu-241	Resin.	Unknown.	A 106.40000000000	CI	1981	1981	N			See comment below.
Am-241	Resin.	Unknown.	A 28.380000000000	CI	1981	1981	N			See comment below.
Cm-242	Resin.	Unknown.	A 1.9870000000000	CI	1981	1981	N			See comment below.
Cm-244	Resin.	Unknown.	A .92230000000000	CI	1981	1981	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Resin.	Unknown.	A 3.5470000000000	CI	1982	1982	N			See comment below.
C-14	Resin.	Unknown.	A 30.510000000000	CI	1982	1982	N			See comment below.
Fe-55	Resin.	Unknown.	A 1419.0000000000	CI	1982	1982	N			See comment below.
Ni-59	Resin.	Unknown.	A 19.870000000000	CI	1982	1982	N			See comment below.
Ni-63	Resin.	Unknown.	A 1987.0000000000	CI	1982	1982	N			See comment below.
Co-60	Resin.	Unknown.	A 4824.0000000000	CI	1982	1982	N			See comment below.
Sr-90	Resin.	Unknown.	A 1987.0000000000	CI	1982	1982	N			See comment below.
Tc-99	Resin.	Unknown.	A .10640000000000	CI	1982	1982	N			See comment below.
I-129	Resin.	Unknown.	A .00043980000000	CI	1982	1982	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Resin.	Unknown.	A 2199.0000000000	CI	1982	1982	N			See comment below.
Ce-144	Resin.	Unknown.	A 54.630000000000	CI	1982	1982	N			See comment below.
Eu-154	Resin.	Unknown.	A 51.790000000000	CI	1982	1982	N			See comment below.
Eu-155	Resin.	Unknown.	A 21.990000000000	CI	1982	1982	N			See comment below.
U-234	Resin.	Unknown.	A .02980000000000	CI	1982	1982	N			See comment below.
U-235	Resin.	Unknown.	A .00065270000000	CI	1982	1982	N			See comment below.
U-236	Resin.	Unknown.	A .01206000000000	CI	1982	1982	N			See comment below.
Np-237	Resin.	Unknown.	A .01845000000000	CI	1982	1982	N			See comment below.
Pu-238	Resin.	Unknown.	A 1.2770000000000	CI	1982	1982	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Resin.	Unknown.	A .32640000000000	CI	1982	1982	N			See comment below.
Pu-240	Resin.	Unknown.	A .19870000000000	CI	1982	1982	N			See comment below.
Pu-241	Resin.	Unknown.	A 106.40000000000	CI	1982	1982	N			See comment below.
Am-241	Resin.	Unknown.	A 28.380000000000	CI	1982	1982	N			See comment below.
Cm-242	Resin.	Unknown.	A 1.9870000000000	CI	1982	1982	N			See comment below.
Cm-244	Resin.	Unknown.	A .92230000000000	CI	1982	1982	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - estimate of precision of measurement technique.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[X] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Extrapolation from RWMIS for 1952-1961.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
Method of measurement.

8. Key assumptions used to deal with the unknowns:
On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 160

1. Preparer: Amaro, C.

2. Date prepared: 08/23/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
3H

6. Waste stream:
Irradiated end boxes.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1965

9. Waste stream volume:
Amount 20.9627 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
4. Also 642.

PART B - WASTE STREAM CHARACTERISTICS TRA-603-3H HDT - 160

1. General physical form (see attached list)
Irradiated end boxes.
[ ] other (specify)

2. Details on physical form(particularly confinement related)

3. Chemical form:
Aluminum alloy end boxes.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Solid.	Al alloy.	T 158.40000000000	CI	1961	1961	N			See continuation page.
C-14	Solid.	Al alloy.	T 21.250000000000	CI	1961	1961	N			See continuation page.
Fe-55	Solid.	Al alloy.	T 3671.0000000000	CI	1961	1961	N			See continuation page.
Ni-59	Solid.	Al alloy.	T 1.1010000000000	CI	1961	1961	N			See continuation page.
Ni-63	Solid.	Al alloy.	T 618.20000000000	CI	1961	1961	N			See continuation page.
Co-60	Solid.	Al alloy.	T 1294.0000000000	CI	1961	1961	N			See continuation page.
Sr-90	Solid.	Al alloy.	T 1.7770000000000	CI	1961	1961	N			See continuation page.
Tc-99	Solid.	Al alloy.	T .34780000000000	CI	1961	1961	N			See continuation page.
I-129	Solid.	Al alloy.	T .00009045000000	CI	1961	1961	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid.	Al alloy.	T 386.40000000000	CI	1961	1961	N			See continuation page.
Ce-144	Solid.	Al alloy.	T 9.0800000000000	CI	1961	1961	N			See continuation page.
Eu-154	Solid.	Al alloy.	T .00560300000000	CI	1961	1961	N			See continuation page.
Eu-155	Solid.	Al alloy.	T 18.160000000000	CI	1961	1961	N			See continuation page.
U-234	Solid.	Al alloy.	T .00405700000000	CI	1961	1961	N			See continuation page.
U-235	Solid.	Al alloy.	T .00008694000000	CI	1961	1961	N			See continuation page.
U-236	Solid.	Al alloy.	T .00154600000000	CI	1961	1961	N			See continuation page.
Np-237	Solid.	Al alloy.	T .00251200000000	CI	1961	1961	N			See continuation page.
Pu-238	Solid.	Al alloy.	T .10430000000000	CI	1961	1961	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Solid.	Al alloy.	T .10430000000000	CI	1961	1961	N			See continuation page.
Pu-240	Solid.	Al alloy.	T .01101000000000	CI	1961	1961	N			See continuation page.
Pu-241	Solid.	Al alloy.	T 11.400000000000	CI	1961	1961	N			See continuation page.
Am-241	Solid.	Al alloy.	T .05216000000000	CI	1961	1961	N			See continuation page.
Cm-242	Solid.	Al alloy.	T .05216000000000	CI	1961	1961	N			See continuation page.
Cm-244	Solid.	Al alloy.	T .04830000000000	CI	1961	1961	N			See continuation page.
H-3	Solid.	Al alloy.	T 627.30000000000	CI	1962	1962	N			See continuation page.
C-14	Solid.	Al alloy.	T 84.150000000000	CI	1962	1962	N			See continuation page.
Fe-55	Solid.	Al alloy.	T 14530.000000000	CI	1962	1962	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?*	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Solid.	Al alloy.	T 4.3600000000000	CI	1962	1962	N			See continuation page.
Ni-63	Solid.	Al alloy.	T 2448.0000000000	CI	1962	1962	N			See continuation page.
Co-60	Solid.	Al alloy.	T 5125.0000000000	CI	1962	1962	N			See continuation page.
Sr-90	Solid.	Al alloy.	T 7.0380000000000	CI	1962	1962	N			See continuation page.
Tc-99	Solid.	Al alloy.	T 1.3770000000000	CI	1962	1962	N			See continuation page.
I-129	Solid.	Al alloy.	T .00035802000000	CI	1962	1962	N			See continuation page.
Cs-137	Solid.	Al alloy.	T 1530.0000000000	CI	1962	1962	N			See continuation page.
Ce-144	Solid.	Al alloy.	T 35.950000000000	CI	1962	1962	N			See continuation page.
Eu-154	Solid.	Al alloy.	T .02218000000000	CI	1962	1962	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Solid.	Al alloy.	T 71.910000000000	CI	1962	1962	N			See continuation page.
U-234	Solid.	Al alloy.	T .01606000000000	CI	1962	1962	N			See continuation page.
U-235	Solid.	Al alloy.	T .00034420000000	CI	1962	1962	N			See continuation page.
U-236	Solid.	Al alloy.	T .00612000000000	CI	1962	1962	N			See continuation page.
Np-237	Solid.	Al alloy.	T .00994500000000	CI	1962	1962	N			See continuation page.
Pu-238	Solid.	Al alloy.	T .41310000000000	CI	1962	1962	N			See continuation page.
Pu-239	Solid.	Al alloy.	T .41310000000000	CI	1962	1962	N			See continuation page.
Pu-240	Solid.	Al alloy.	T .04360000000000	CI	1962	1962	N			See continuation page.
Pu-241	Solid.	Al alloy.	T 45.130000000000	CI	1962	1962	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Solid.	Al alloy.	T .20650000000000	CI	1962	1962	N			See continuation page.
Cm-242	Solid.	Al alloy.	T .20650000000000	CI	1962	1962	N			See continuation page.
Cm-244	Solid.	Al alloy.	T .19120000000000	CI	1962	1962	N			See continuation page.
H-3	Solid.	Al alloy.	T 9.8400000000000	CI	1965	1965	N			See continuation page.
C-14	Solid.	Al alloy.	T 1.3200000000000	CI	1965	1965	N			See continuation page.
Fe-55	Solid.	Al alloy.	T 228.00000000000	CI	1965	1965	N			See continuation page.
Ni-59	Solid.	Al alloy.	T .06840000000000	CI	1965	1965	N			See continuation page.
Ni-63	Solid.	Al alloy.	T 38.400000000000	CI	1965	1965	N			See continuation page.
Co-60	Solid.	Al alloy.	T 80.400000000000	CI	1965	1965	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	Al alloy.	T .11040000000000	CI	1965	1965	N			See continuation page.
Tc-99	Solid.	Al alloy.	T .02160000000000	CI	1965	1965	N			See continuation page.
I-129	Solid.	Al alloy.	T .00000561600000	CI	1965	1965	N			See continuation page.
Cs-137	Solid.	Al alloy.	T 24.000000000000	CI	1965	1965	N			See continuation page.
Ce-144	Solid.	Al alloy.	T .56400000000000	CI	1965	1965	N			See continuation page.
Eu-154	Solid.	Al alloy.	T .00034800000000	CI	1965	1965	N			See continuation page.
Eu-155	Solid.	Al alloy.	T 1.1280000000000	CI	1965	1965	N			See continuation page.
U-234	Solid.	Al alloy.	T .00025200000000	CI	1965	1965	N			See continuation page.
U-235	Solid.	Al alloy.	T .00000540000000	CI	1965	1965	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Solid.	Al alloy.	T .00009600000000	CI	1965	1965	N			See continuation page.
Np-237	Solid.	Al alloy.	T .00015600000000	CI	1965	1965	N			See continuation page.
Pu-238	Solid.	Al alloy.	T .00648000000000	CI	1965	1965	N			See continuation page.
Pu-239	Solid.	Al alloy.	T .00648000000000	CI	1965	1965	N			See continuation page.
Pu-240	Solid.	Al alloy.	T .00068400000000	CI	1965	1965	N			See continuation page.
Pu-241	Solid.	Al alloy.	T .70800000000000	CI	1965	1965	N			See continuation page.
Am-241	Solid.	Al alloy.	T .00324000000000	CI	1965	1965	N			See continuation page.
Cm-242	Solid.	Al alloy.	T .00324000000000	CI	1965	1965	N			See continuation page.
Cm-244	Solid.	Al alloy.	T .00300000000000	CI	1965	1965	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewee wishes to remain anonymous.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
MAP and MFP were major unknowns.

8. Key assumptions used to deal with the unknowns:
MAP and MFP were broken down into radionuclides; MFP is according to the fission products and their half lives while MAP is the cross sections and their half lives. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

Continuation of Part D Column or Question Number or Title Uncertainty basis.

A Geiger-Mueller counter was probably used to measure this item. Therefore, the true uncertainty is not known.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 151

1. Preparer: Amaro, C.

2. Date prepared: 08/23/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
4H

6. Waste stream:
Core and loop components.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1970

9. Waste stream volume:
Amount 609.4706 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. 642 also.

1. General physical form (see attached list)
Other core, reactor vessel, loop component
[ ] other (specify)

2. Details on physical form (particularly confinement related)
Solids, such as loop piping, stainless steel and Al pieces, equipment leads, end pile tubes, or end boxes from fuel elements.

3. Chemical form:
Metallic (stainless steel and Al).

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other", which cannot be defined by the preparer.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Solid.	Metallic.	T .17240000000000	CI	1961	1961	N			See continuation page.
C-14	Solid.	Metallic.	T .02312000000000	CI	1961	1961	N			See continuation page.
Fe-55	Solid.	Metallic.	T 3.9940000000000	CI	1961	1961	N			See continuation page.
Ni-59	Solid.	Metallic.	T .00119800000000	CI	1961	1961	N			See continuation page.
Ni-63	Solid.	Metallic.	T .67260000000000	CI	1961	1961	N			See continuation page.
Co-60	Solid.	Metallic.	T 1.4080000000000	CI	1961	1961	N			See continuation page.
Sr-90	Solid.	Metallic.	T .00193400000000	CI	1961	1961	N			See continuation page.
Tc-99	Solid.	Metallic.	T .00037830000000	CI	1961	1961	N			See continuation page.
I-129	Solid.	Metallic.	T .00000009837000	CI	1961	1961	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid.	Metallic.	T .42040000000000	CI	1961	1961	N			See continuation page.
Ce-144	Solid.	Metallic.	T .00987900000000	CI	1961	1961	N			See continuation page.
Eu-154	Solid.	Metallic.	T .00000609500000	CI	1961	1961	N			See continuation page.
Eu-155	Solid.	Metallic.	T .01976000000000	CI	1961	1961	N			See continuation page.
U-234	Solid.	Metallic.	T .00000441400000	CI	1961	1961	N			See continuation page.
U-235	Solid.	Metallic.	T .00000009460000	CI	1961	1961	N			See continuation page.
U-236	Solid.	Metallic.	T .00000168100000	CI	1961	1961	N			See continuation page.
Np-237	Solid.	Metallic.	T .00000273200000	CI	1961	1961	N			See continuation page.
Pu-238	Solid.	Metallic.	T .00011350000000	CI	1961	1961	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Solid.	Metallic.	T .00011350000000	CI	1961	1961	N			See continuation page.
Pu-240	Solid.	Metallic.	T .00001198000000	CI	1961	1961	N			See continuation page.
Pu-241	Solid.	Metallic.	T .01240000000000	CI	1961	1961	N			See continuation page.
Am-241	Solid.	Metallic.	T .00005675000000	CI	1961	1961	N			See continuation page.
Cm-242	Solid.	Metallic.	T .00005675000000	CI	1961	1961	N			See continuation page.
Cm-244	Solid.	Metallic.	T .00005255000000	CI	1961	1961	N			See continuation page.
H-3	Solid.	Metallic.	T 492.00000000000	CI	1963	1963	N			See continuation page.
C-14	Solid.	Metallic.	T 66.000000000000	CI	1963	1963	N			See continuation page.
Fe-55	Solid.	Metallic.	T 11400.000000000	CI	1963	1963	N			See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Solid.	Metallic.	T 3.4200000000000	CI	1963	1963	N			See continuation page.
Ni-63	Solid.	Metallic.	T 1920.0000000000	CI	1963	1963	N			See continuation page.
Co-60	Solid.	Metallic.	T 4020.0000000000	CI	1963	1963	N			See continuation page.
Sr-90	Solid.	Metallic.	T 5.5200000000000	CI	1963	1963	N			See continuation page.
Tc-99	Solid.	Metallic.	T 1.0800000000000	CI	1963	1963	N			See continuation page.
I-129	Solid.	Metallic.	T .00028080000000	CI	1963	1963	N			See continuation page.
Cs-137	Solid.	Metallic.	T 1200.0000000000	CI	1963	1963	N			See continuation page.
Ce-144	Solid.	Metallic.	T 28.200000000000	CI	1963	1963	N			See continuation page.
Eu-154	Solid.	Metallic.	T .01740000000000	CI	1963	1963	N			See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Solid.	Metallic.	T 56.400000000000	CI	1963	1963	N			See continuation page.
U-234	Solid.	Metallic.	T .01260000000000	CI	1963	1963	N			See continuation page.
U-235	Solid.	Metallic.	T .00027000000000	CI	1963	1963	N			See continuation page.
U-236	Solid.	Metallic.	T .00480000000000	CI	1963	1963	N			See continuation page.
Np-237	Solid.	Metallic.	T .00780000000000	CI	1963	1963	N			See continuation page.
Pu-238	Solid.	Metallic.	T .32400000000000	CI	1963	1963	N			See continuation page.
Pu-239	Solid.	Metallic.	T .32400000000000	CI	1963	1963	N			See continuation page.
Pu-240	Solid.	Metallic.	T .03420000000000	CI	1963	1963	N			See continuation page.
Pu-241	Solid.	Metallic.	T 35.400000000000	CI	1963	1963	N			See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Solid.	Metallic.	T .16200000000000	CI	1963	1963	N			See continuation page.
Cm-242	Solid.	Metallic.	T .16200000000000	CI	1963	1963	N			See continuation page.
Cm-244	Solid.	Metallic.	T .15000000000000	CI	1963	1963	N			See continuation page.
H-3	Solid.	Metallic.	T 574.20000000000	CI	1964	1964	N			See continuation page.
C-14	Solid.	Metallic.	T 77.030000000000	CI	1964	1964	N			See continuation page.
Fe-55	Solid.	Metallic.	T 13310.000000000	CI	1964	1964	N			See continuation page.
Ni-59	Solid.	Metallic.	T 3.9920000000000	CI	1964	1964	N			See continuation page.
Ni-63	Solid.	Metallic.	T 2241.0000000000	CI	1964	1964	N			See continuation page.
Co-60	Solid.	Metallic.	T 4692.0000000000	CI	1964	1964	N			See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	Metallic.	T 6.4430000000000	CI	1964	1964	N			See continuation page.
Tc-99	Solid.	Metallic.	T 1.2610000000000	CI	1964	1964	N			See continuation page.
I-129	Solid.	Metallic.	T .00032769000000	CI	1964	1964	N			See continuation page.
Cs-137	Solid.	Metallic.	T 1401.0000000000	CI	1964	1964	N			See continuation page.
Ce-144	Solid.	Metallic.	T 32.910000000000	CI	1964	1964	N			See continuation page.
Eu-154	Solid.	Metallic.	T .02031000000000	CI	1964	1964	N			See continuation page.
Eu-155	Solid.	Metallic.	T 65.830000000000	CI	1964	1964	N			See continuation page.
U-234	Solid.	Metallic.	T .01471000000000	CI	1964	1964	N			See continuation page.
U-235	Solid.	Metallic.	T .00031510000000	CI	1964	1964	N			See continuation page.

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U-236	Solid.	Metallic.	T .00560200000000	CI	1964	1964	N			See continuation page.
Np-237	Solid.	Metallic.	T .00910400000000	CI	1964	1964	N			See continuation page.
Pu-238	Solid.	Metallic.	T .37820000000000	CI	1964	1964	N			See continuation page.
Pu-239	Solid.	Metallic.	T .37820000000000	CI	1964	1964	N			See continuation page.
Pu-240	Solid.	Metallic.	T .03992000000000	CI	1964	1964	N			See continuation page.
Pu-241	Solid.	Metallic.	T 41.320000000000	CI	1964	1964	N			See continuation page.
Am-241	Solid.	Metallic.	T .18910000000000	CI	1964	1964	N			See continuation page.
Cm-242	Solid.	Metallic.	T .18910000000000	CI	1964	1964	N			See continuation page.
Cm-244	Solid.	Metallic.	T .17510000000000	CI	1964	1964	N			See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Metallic.	T 19000.000000000	CI	1964	1964	N	-20%	+20%	See comment below.
H-3	Solid.	Metallic.	T 16300.000000000	CI	1965	1965	N			See continuation page.
C-14	Solid.	Metallic.	T 2186.0000000000	CI	1965	1965	N			See continuation page.
Fe-55	Solid.	Metallic.	T 377600.00000000	CI	1965	1965	N			See continuation page.
Ni-59	Solid.	Metallic.	T 113.30000000000	CI	1965	1965	N			See continuation page.
Ni-63	Solid.	Metallic.	T 63600.000000000	CI	1965	1965	N			See continuation page.
Co-60	Solid.	Metallic.	T 133200.00000000	CI	1965	1965	N			See continuation page.
Sr-90	Solid.	Metallic.	T 182.80000000000	CI	1965	1965	N			See continuation page.
Tc-99	Solid.	Metallic.	T 35.770000000000	CI	1965	1965	N			See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
I-129	Solid.	Metallic.	T .00929700000000	CI	1965	1965	N			See continuation page.
Cs-137	Solid.	Metallic.	T 39750.000000000	CI	1965	1965	N			See continuation page.
Ce-144	Solid.	Metallic.	T 934.10000000000	CI	1965	1965	N			See continuation page.
Eu-154	Solid.	Metallic.	T .57640000000000	CI	1965	1965	N			See continuation page.
Eu-155	Solid.	Metallic.	T 1868.0000000000	CI	1965	1965	N			See continuation page.
U-234	Solid.	Metallic.	T .41740000000000	CI	1965	1965	N			See continuation page.
U-235	Solid.	Metallic.	T .00894400000000	CI	1965	1965	N			See continuation page.
U-236	Solid.	Metallic.	T .15900000000000	CI	1965	1965	N			See continuation page.
Np-237	Solid.	Metallic.	T .25840000000000	CI	1965	1965	N			See continuation page.

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Pu-238	Solid.	Metallic.	T 10.730000000000	CI	1965	1965	N			See continuation page.
Pu-239	Solid.	Metallic.	T 10.730000000000	CI	1965	1965	N			See continuation page.
Pu-240	Solid.	Metallic.	T 1.1330000000000	CI	1965	1965	N			See continuation page.
Pu-241	Solid.	Metallic.	T 1173.0000000000	CI	1965	1965	N			See continuation page.
Am-241	Solid.	Metallic.	T 5.3660000000000	CI	1965	1965	N			See continuation page.
Cm-242	Solid.	Metallic.	T 5.3660000000000	CI	1965	1965	N			See continuation page.
Cm-244	Solid.	Metallic.	T 4.9690000000000	CI	1965	1965	N			See continuation page.
H-3	Solid.	Metallic.	T 377.80000000000	CI	1966	1966	N			See continuation page.
C-14	Solid.	Metallic.	T 50.680000000000	CI	1966	1966	N			See continuation page.

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Fe-55	Solid.	Metallic.	T 8753.0000000000	CI	1966	1966	N			See continuation page.
Ni-59	Solid.	Metallic.	T 2.6260000000000	CI	1966	1966	N			See continuation page.
Ni-63	Solid.	Metallic.	T 1474.0000000000	CI	1966	1966	N			See continuation page.
Co-60	Solid.	Metallic.	T 3087.0000000000	CI	1966	1966	N			See continuation page.
Sr-90	Solid.	Metallic.	T 4.2380000000000	CI	1966	1966	N			See continuation page.
Tc-99	Solid.	Metallic.	T .82930000000000	CI	1966	1966	N			See continuation page.
I-129	Solid.	Metallic.	T .00021564000000	CI	1966	1966	N			See continuation page.
Cs-137	Solid.	Metallic.	T 921.40000000000	CI	1966	1966	N			See continuation page.
Ce-144	Solid.	Metallic.	T 21.650000000000	CI	1966	1966	N			See continuation page.

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Eu-154	Solid.	Metallic.	T .01336000000000	CI	1966	1966	N			See continuation page.
Eu-155	Solid.	Metallic.	T 43.310000000000	CI	1966	1966	N			See continuation page.
U-234	Solid.	Metallic.	T .00967500000000	CI	1966	1966	N			See continuation page.
U-235	Solid.	Metallic.	T .00020730000000	CI	1966	1966	N			See continuation page.
U-236	Solid.	Metallic.	T .00368600000000	CI	1966	1966	N			See continuation page.
Np-237	Solid.	Metallic.	T .00598900000000	CI	1966	1966	N			See continuation page.
Pu-238	Solid.	Metallic.	T .24880000000000	CI	1966	1966	N			See continuation page.
Pu-239	Solid.	Metallic.	T .24880000000000	CI	1966	1966	N			See continuation page.
Pu-240	Solid.	Metallic.	T .02626000000000	CI	1966	1966	N			See continuation page.

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Pu-241	Solid.	Metallic.	T 27.180000000000	CI	1966	1966	N			See continuation page.
Am-241	Solid.	Metallic.	T .12440000000000	CI	1966	1966	N			See continuation page.
Cm-242	Solid.	Metallic.	T .12440000000000	CI	1966	1966	N			See continuation page.
Cm-244	Solid.	Metallic.	T .11520000000000	CI	1966	1966	N			See continuation page.
H-3	Solid.	Metallic.	T .00159200000000	CI	1968	1968	N			See continuation page.
C-14	Solid.	Metallic.	T .00021360000000	CI	1968	1968	N			See continuation page.
Fe-55	Solid.	Metallic.	T .03690000000000	CI	1968	1968	N			See continuation page.
Ni-59	Solid.	Metallic.	T .00001107000000	CI	1968	1968	N			See continuation page.
Ni-63	Solid.	Metallic.	T .00621400000000	CI	1968	1968	N			See continuation page.

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Co-60	Solid.	Metallic.	T .01301000000000	CI	1968	1968	N			See continuation page.
Sr-90	Solid.	Metallic.	T .00001787000000	CI	1968	1968	N			See continuation page.
Tc-99	Solid.	Metallic.	T .00000349600000	CI	1968	1968	N			See continuation page.
I-129	Solid.	Metallic.	T .00000000091000	CI	1968	1968	N			See continuation page.
Cs-137	Solid.	Metallic.	T .00388400000000	CI	1968	1968	N			See continuation page.
Ce-144	Solid.	Metallic.	T .00009127000000	CI	1968	1968	N			See continuation page.
Eu-154	Solid.	Metallic.	T .00000005630000	CI	1968	1968	N			See continuation page.
Eu-155	Solid.	Metallic.	T .00018250000000	CI	1968	1968	N			See continuation page.
U-234	Solid.	Metallic.	T .00000004080000	CI	1968	1968	N			See continuation page.

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U-235	Solid.	Metallic.	T .00000000090000	CI	1968	1968	N			See continuation page.
U-236	Solid.	Metallic.	T .00000001550000	CI	1968	1968	N			See continuation page.
Np-237	Solid.	Metallic.	T .00000002520000	CI	1968	1968	N			See continuation page.
Pu-238	Solid.	Metallic.	T .00000104900000	CI	1968	1968	N			See continuation page.
Pu-239	Solid.	Metallic.	T .00000104900000	CI	1968	1968	N			See continuation page.
Pu-240	Solid.	Metallic.	T .00000011070000	CI	1968	1968	N			See continuation page.
Pu-241	Solid.	Metallic.	T .00011460000000	CI	1968	1968	N			See continuation page.
Am-241	Solid.	Metallic.	T .00000052430000	CI	1968	1968	N			See continuation page.
Cm-242	Solid.	Metallic.	T .00000052430000	CI	1968	1968	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cm-244	Solid.	Metallic.	T .00000048550000	CI	1968	1968	N			See continuation page.
H-3	Solid.	Metallic.	T 4166.0000000000	CI	1969	1969	N			See continuation page.
C-14	Solid.	Metallic.	T 558.90000000000	CI	1969	1969	N			See continuation page.
Fe-55	Solid.	Metallic.	T 96530.000000000	CI	1969	1969	N			See continuation page.
Ni-59	Solid.	Metallic.	T 28.960000000000	CI	1969	1969	N			See continuation page.
Ni-63	Solid.	Metallic.	T 16260.000000000	CI	1969	1969	N			See continuation page.
Co-60	Solid.	Metallic.	T 34040.000000000	CI	1969	1969	N			See continuation page.
Sr-90	Solid.	Metallic.	T 46.740000000000	CI	1969	1969	N			See continuation page.
Tc-99	Solid.	Metallic.	T 9.1450000000000	CI	1969	1969	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
I-129	Solid.	Metallic.	T .00237780000000	CI	1969	1969	N			See continuation page.
Cs-137	Solid.	Metallic.	T 10160.000000000	CI	1969	1969	N			See continuation page.
Ce-144	Solid.	Metallic.	T 238.80000000000	CI	1969	1969	N			See continuation page.
Eu-154	Solid.	Metallic.	T .14730000000000	CI	1969	1969	N			See continuation page.
Eu-155	Solid.	Metallic.	T 477.60000000000	CI	1969	1969	N			See continuation page.
U-234	Solid.	Metallic.	T .10670000000000	CI	1969	1969	N			See continuation page.
U-235	Solid.	Metallic.	T .00228600000000	CI	1969	1969	N			See continuation page.
U-236	Solid.	Metallic.	T .04064000000000	CI	1969	1969	N			See continuation page.
Np-237	Solid.	Metallic.	T .06605000000000	CI	1969	1969	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-238	Solid.	Metallic.	T 2.7430000000000	CI	1969	1969	N			See continuation page.
Pu-239	Solid.	Metallic.	T 2.7430000000000	CI	1969	1969	N			See continuation page.
Pu-240	Solid.	Metallic.	T .28960000000000	CI	1969	1969	N			See continuation page.
Pu-241	Solid.	Metallic.	T 299.70000000000	CI	1969	1969	N			See continuation page.
Am-241	Solid.	Metallic.	T 1.3720000000000	CI	1969	1969	N			See continuation page.
Cm-242	Solid.	Metallic.	T 1.3720000000000	CI	1969	1969	N			See continuation page.
Cm-244	Solid.	Metallic.	T 1.2700000000000	CI	1969	1969	N			See continuation page.
H-3	Solid.	Metallic.	T 5.2740000000000	CI	1970	1970	N			See continuation page.
C-14	Solid.	Metallic.	T .70750000000000	CI	1970	1970	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations. (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Fe-55	Solid.	Metallic.	T 122.20000000000	CI	1970	1970	N			See continuation page.
Ni-59	Solid.	Metallic.	T .03666000000000	CI	1970	1970	N			See continuation page.
Ni-63	Solid.	Metallic.	T 20.580000000000	CI	1970	1970	N			See continuation page.
Co-60	Solid.	Metallic.	T 43.090000000000	CI	1970	1970	N			See continuation page.
Sr-90	Solid.	Metallic.	T .05917000000000	CI	1970	1970	N			See continuation page.
Tc-99	Solid.	Metallic.	T .01158000000000	CI	1970	1970	N			See continuation page.
I-129	Solid.	Metallic.	T .00000300960000	CI	1970	1970	N			See continuation page.
Cs-137	Solid.	Metallic.	T 12.860000000000	CI	1970	1970	N			See continuation page.
Ce-144	Solid.	Metallic.	T .30230000000000	CI	1970	1970	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-154	Solid.	Metallic.	T .00018650000000	CI	1970	1970	N			See continuation page.
Eu-155	Solid.	Metallic.	T .60460000000000	CI	1970	1970	N			See continuation page.
U-234	Solid.	Metallic.	T .00013510000000	CI	1970	1970	N			See continuation page.
U-235	Solid.	Metallic.	T .00000289400000	CI	1970	1970	N			See continuation page.
U-236	Solid.	Metallic.	T .00005145000000	CI	1970	1970	N			See continuation page.
Np-237	Solid.	Metallic.	T .00008361000000	CI	1970	1970	N			See continuation page.
Pu-238	Solid.	Metallic.	T .00347300000000	CI	1970	1970	N			See continuation page.
Pu-239	Solid.	Metallic.	T .00347300000000	CI	1970	1970	N			See continuation page.
Pu-240	Solid.	Metallic.	T .00036660000000	CI	1970	1970	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-241	Solid.	Metallic.	T .37950000000000	CI	1970	1970	N			See continuation page.
Am-241	Solid.	Metallic.	T .00173700000000	CI	1970	1970	N			See continuation page.
Cm-242	Solid.	Metallic.	T .00173700000000	CI	1970	1970	N			See continuation page.
Cm-244	Solid.	Metallic.	T .00160800000000	CI	1970	1970	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewees wish to remain anonymous.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
MAP and MFP were assigned equal values major unknowns.

8. Key assumptions used to deal with the unknowns:
MAP was broken down into radionuclides according to their cross sections and their half lives. MFP was broken down into radionuclides according to the fission products and their half lives. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

Continuation of Part D Column or Question Number or Title Uncertainty basis.

A Geiger-Mueller counter was probably used to measure this item. Therefore, the true uncertainty is not known.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 152

1. Preparer: Amaro, C.

2. Date prepared: 08/24/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
5H

6. Waste stream:
Uranium in metal.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1971 Ending year 1980

9. Waste stream volume:
Amount 7.4390 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Also 614, 661, 666, 604, 626, and 654.

1. General physical form (see attached list)

[X] other (specify)
Uranium in metal.

2. Details on physical form(particularly confinement related)
Some of the uranium is depleted while some is normal uranium. Some is even a UAl alloy.

3. Chemical form:

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXW and "Other", which cannot be defined by the preparer.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid.	Depleted U.	A .00002140000000	CI	1971	1971	N	-20%	+20%	See continuation page.
U-238	Solid.	Depleted U.	A .00032970000000	CI	1971	1971	N	-20%	+20%	See continuation page.
U-235	Solid.	U in Al.	A .00000303000000	CI	1971	1971	N	-20%	+20%	See continuation page.
U-238	Solid.	U in Al.	A .00006613000000	CI	1971	1971	N	-20%	+20%	See continuation page.
U-235	Solid.	Depleted U.	A .00003343000000	CI	1973	1973	N	-20%	+20%	See continuation page.
U-238	Solid.	Depleted U.	A .00565400000000	CI	1973	1973	N	-20%	+20%	See continuation page.
U-235	Solid.	Depleted U.	A .00028780000000	CI	1975	1975	N	-20%	+20%	See continuation page.
U-238	Solid.	Depleted U.	A .00228700000000	CI	1975	1975	N	-20%	+20%	See continuation page.
U-232	Solid.	Metal.	A 8.3600000000000	CI	1975	1975	N	-20%	+20%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-233	Solid.	Metal.	A .00947000000000	CI	1976	1976	N	-20%	+20%	See continuation page.
U-235	Solid.	Depleted and normal U metal.	A .00007871000000	CI	1977	1977	N	-20%	+20%	See continuation page.
U-238	Solid.	Depleted and normal U metal.	A .00326300000000	CI	1977	1977	N	-20%	+20%	See continuation page.
Am-241	Solid.	Depleted and normal U metal.	A .00000032400000	CI	1977	1977	N	-20%	+20%	See continuation page.
U-238	Solid.	Depleted U metal with Np.	A .00000003360000	CI	1980	1980	N	-20%	+20%	See continuation page.
Np-237	Solid.	Depleted U metal with Np.	A .00000705000000	CI	1980	1980	N	-20%	+20%	See continuation page.
U-235	Solid.	UO2.	A .00005156000000	CI	1980	1980	N	-20%	+20%	See continuation page.
U-238	Solid.	UO2.	A .00018730000000	CI	1980	1980	N	-20%	+20%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewee wishes to remain anonymous.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

Continuation of Part D Column or Question Number or Title Uncertainty basis.

In 1970, a germanium detector was being used by the Radiation Measurements Lab (RML) at TRA. Although the preparer cannot prove a sample was brought to the RML to count, based on the radionuclides identified by RWMIS, the preparer believes that samples were brought to the RML to be analyzed. A 20% error was assigned because of counting uncertainties. Errors are typically 5-10%. A 20% error was chosen because it should be 2 times the standard error.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 146

1. Preparer: Amaro, C.

2. Date prepared: 08/28/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
6H

6. Waste stream:
Sludge.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1981

9. Waste stream volume:
Amount 78.4726 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Also 624, 642, and 670.
6. The waste form is sludge, however, interviewees think this is an erroneous physical identification. Preparer was unable to find correct waste stream identification. Radionuclide identification is correct.

1. General physical form (see attached list)
Sludge.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Sludge is part water and part dirt.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
4. A plastic liner was probably used even though various waste containers were used.
5. BXW, O, and I. "Other" and I are unknown.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Sludge.	Ionic.	T .24540000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .03292000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T 5.6860000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Ni-59	Sludge.	Ionic.	T .00170600000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .95760000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T 2.0050000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Sr-90	Sludge.	Ionic.	T .00275300000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00053870000000	CI	1961	1961	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000014004000	CI	1961	1961	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Sludge.	Ionic.	T .59850000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .01407000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000867900000	CI	1961	1961	N	-50%	+50%	See continuation page.
Eu-155	Sludge.	Ionic.	T .02813000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000628500000	CI	1961	1961	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .00000013470000	CI	1961	1961	N	-50%	+50%	See continuation page.
U-236	Sludge.	Ionic.	T .00000239400000	CI	1961	1961	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000389000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00016160000000	CI	1961	1961	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Sludge.	Ionic.	T .00016160000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00001706000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .01766000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Am-241	Sludge.	Ionic.	T .00008080000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00008080000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00007482000000	CI	1961	1961	N	-50%	+50%	See continuation page.
H-3	Sludge.	Ionic.	T .00008200000000	CI	1963	1963	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .00001100000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T .00190000000000	CI	1963	1963	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Sludge.	Ionic.	T .00000057000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .00032000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T .00067000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Sr-90	Sludge.	Ionic.	T .00000092000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00000018000000	CI	1963	1963	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000000005000	CI	1963	1963	N	-50%	+50%	See continuation page.
Cs-137	Sludge.	Ionic.	T .00020000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .00000470000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000000290000	CI	1963	1963	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Sludge.	Ionic.	T .00000940000000	CI	1963	1963	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000000210000	CI	1963	1963	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .00000000010000	CI	1963	1963	N	-50%	+50%	See continuation page.
U-236	Sludge.	Ionic.	T .00000000080000	CI	1963	1963	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000000130000	CI	1963	1963	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00000005400000	CI	1963	1963	N	-50%	+50%	See continuation page.
Pu-239	Sludge.	Ionic.	T .00000005400000	CI	1963	1963	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00000000570000	CI	1963	1963	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .00000590000000	CI	1963	1963	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Sludge.	Ionic.	T .00000002700000	CI	1963	1963	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00000002700000	CI	1963	1963	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00000002500000	CI	1963	1963	N	-50%	+50%	See continuation page.
H-3	Sludge.	Ionic.	T .04085000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .00548000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T .94650000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Ni-59	Sludge.	Ionic.	T .00028400000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .15940000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T .33380000000000	CI	1964	1964	N	-50%	+50%	See continuation page.

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If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Sludge.	Ionic.	T .00045830000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00008967000000	CI	1964	1964	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000002331000	CI	1964	1964	N	-50%	+50%	See continuation page.
Cs-137	Sludge.	Ionic.	T .09963000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .00234100000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000144500000	CI	1964	1964	N	-50%	+50%	See continuation page.
Eu-155	Sludge.	Ionic.	T .00468300000000	CI	1964	1964	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000104600000	CI	1964	1964	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .00000002240000	CI	1964	1964	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Sludge.	Ionic.	T .00000039850000	CI	1964	1964	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000064760000	CI	1964	1964	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00002690000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Pu-239	Sludge.	Ionic.	T .00002690000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00000284000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .00293900000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Am-241	Sludge.	Ionic.	T .00001345000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00001345000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00001245000000	CI	1964	1964	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Sludge.	Ionic.	T .00016400000000	CI	1967	1967	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .00002200000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T .00380000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Ni-59	Sludge.	Ionic.	T .00000114000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .00064000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T .00134000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Sr-90	Sludge.	Ionic.	T .00000184000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00000036000000	CI	1967	1967	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000000009000	CI	1967	1967	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Sludge.	Ionic.	T .00040000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .00000940000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000000580000	CI	1967	1967	N	-50%	+50%	See continuation page.
Eu-155	Sludge.	Ionic.	T .00001880000000	CI	1967	1967	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000000420000	CI	1967	1967	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .00000000010000	CI	1967	1967	N	-50%	+50%	See continuation page.
U-236	Sludge.	Ionic.	T .00000000160000	CI	1967	1967	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000000260000	CI	1967	1967	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00000010800000	CI	1967	1967	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Sludge.	Ionic.	T .00000010800000	CI	1967	1967	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00000001140000	CI	1967	1967	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .00001180000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Am-241	Sludge.	Ionic.	T .00000005400000	CI	1967	1967	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00000005400000	CI	1967	1967	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00000005000000	CI	1967	1967	N	-50%	+50%	See continuation page.
H-3	Sludge.	Ionic.	T .00233500000000	CI	1970	1970	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .00031330000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T .05411000000000	CI	1970	1970	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Sludge.	Ionic.	T .00001623000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .00911400000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T .01908000000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Sr-90	Sludge.	Ionic.	T .00002620000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00000512700000	CI	1970	1970	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000000133000	CI	1970	1970	N	-50%	+50%	See continuation page.
Cs-137	Sludge.	Ionic.	T .00569600000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .00013390000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000008260000	CI	1970	1970	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Sludge.	Ionic.	T .00026770000000	CI	1970	1970	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000005980000	CI	1970	1970	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .00000000130000	CI	1970	1970	N	-50%	+50%	See continuation page.
U-236	Sludge.	Ionic.	T .00000002280000	CI	1970	1970	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000003700000	CI	1970	1970	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00000153800000	CI	1970	1970	N	-50%	+50%	See continuation page.
Pu-239	Sludge.	Ionic.	T .00000153800000	CI	1970	1970	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00000016230000	CI	1970	1970	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .00016800000000	CI	1970	1970	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Sludge.	Ionic.	T .00000076900000	CI	1970	1970	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00000076900000	CI	1970	1970	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00000071200000	CI	1970	1970	N	-50%	+50%	See continuation page.
H-3	Sludge.	Ionic.	T .00098400000000	CI	1973	1973	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .00013200000000	CI	1973	1973	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T .02280000000000	CI	1973	1973	N	-50%	+50%	See continuation page.
Ni-59	Sludge.	Ionic.	T .00000684000000	CI	1973	1973	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .00384000000000	CI	1973	1973	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T .00804000000000	CI	1973	1973	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Sludge.	Ionic.	T .00001104000000	CI	1973	1973	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00000216000000	CI	1973	1973	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000000056000	CI	1973	1973	N	-50%	+50%	See continuation page.
Cs-137	Sludge.	Ionic.	T .00240000000000	CI	1973	1973	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .00005640000000	CI	1973	1973	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000003480000	CI	1973	1973	N	-50%	+50%	See continuation page.
Eu-155	Sludge.	Ionic.	T .00011280000000	CI	1973	1973	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000002520000	CI	1973	1973	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .00000000050000	CI	1973	1973	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Sludge.	Ionic.	T .00000000960000	CI	1973	1973	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000001560000	CI	1973	1973	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00000064800000	CI	1973	1973	N	-50%	+50%	See continuation page.
Pu-239	Sludge.	Ionic.	T .00000064800000	CI	1973	1973	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00000006840000	CI	1973	1973	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .00007080000000	CI	1973	1973	N	-50%	+50%	See continuation page.
Am-241	Sludge.	Ionic.	T .00000032400000	CI	1973	1973	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00000032400000	CI	1973	1973	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00000030000000	CI	1973	1973	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Sludge.	Ionic.	T .00012300000000	CI	1974	1974	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .00001650000000	CI	1974	1974	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T .00285000000000	CI	1974	1974	N	-50%	+50%	See continuation page.
Ni-59	Sludge.	Ionic.	T .00000085500000	CI	1974	1974	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .00048000000000	CI	1974	1974	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T .00100500000000	CI	1974	1974	N	-50%	+50%	See continuation page.
Sr-90	Sludge.	Ionic.	T .00000138000000	CI	1974	1974	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00000027000000	CI	1974	1974	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000000007000	CI	1974	1974	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Sludge.	Ionic.	T .00030000000000	CI	1974	1974	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .00000705000000	CI	1974	1974	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000000430000	CI	1974	1974	N	-50%	+50%	See continuation page.
Eu-155	Sludge.	Ionic.	T .00001410000000	CI	1974	1974	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000000310000	CI	1974	1974	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .00000000010000	CI	1974	1974	N	-50%	+50%	See continuation page.
U-236	Sludge.	Ionic.	T .00000000120000	CI	1974	1974	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000000190000	CI	1974	1974	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00000008100000	CI	1974	1974	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Sludge.	Ionic.	T .00000008100000	CI	1974	1974	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00000000850000	CI	1974	1974	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .00000885000000	CI	1974	1974	N	-50%	+50%	See continuation page.
Am-241	Sludge.	Ionic.	T .00000004050000	CI	1974	1974	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00000004050000	CI	1974	1974	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00000003750000	CI	1974	1974	N	-50%	+50%	See continuation page.
H-3	Sludge.	Ionic.	T .00002460000000	CI	1975	1975	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .00000330000000	CI	1975	1975	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T .00057000000000	CI	1975	1975	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Sludge.	Ionic.	T .00000017100000	CI	1975	1975	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .00009600000000	CI	1975	1975	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T .00020100000000	CI	1975	1975	N	-50%	+50%	See continuation page.
Sr-90	Sludge.	Ionic.	T .00000027600000	CI	1975	1975	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00000005400000	CI	1975	1975	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000000001000	CI	1975	1975	N	-50%	+50%	See continuation page.
Cs-137	Sludge.	Ionic.	T .00006000000000	CI	1975	1975	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .00000141000000	CI	1975	1975	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000000090000	CI	1975	1975	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Sludge.	Ionic.	T .00000282000000	CI	1975	1975	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000000060000	CI	1975	1975	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .00000000010000	CI	1975	1975	N	-50%	+50%	See continuation page.
U-236	Sludge.	Ionic.	T .00000000020000	CI	1975	1975	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000000040000	CI	1975	1975	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00000001620000	CI	1975	1975	N	-50%	+50%	See continuation page.
Pu-239	Sludge.	Ionic.	T .00000001620000	CI	1975	1975	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00000000170000	CI	1975	1975	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .00000177000000	CI	1975	1975	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Sludge.	Ionic.	T .00000000810000	CI	1975	1975	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00000000810000	CI	1975	1975	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00000000750000	CI	1975	1975	N	-50%	+50%	See continuation page.
H-3	Sludge.	Ionic.	T .00011070000000	CI	1976	1976	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .00001485000000	CI	1976	1976	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T .00256500000000	CI	1976	1976	N	-50%	+50%	See continuation page.
Ni-59	Sludge.	Ionic.	T .00000076950000	CI	1976	1976	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .00043200000000	CI	1976	1976	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T .00090450000000	CI	1976	1976	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Sludge.	Ionic.	T .00000124200000	CI	1976	1976	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00000024300000	CI	1976	1976	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000000006000	CI	1976	1976	N	-50%	+50%	See continuation page.
Cs-137	Sludge.	Ionic.	T .00027000000000	CI	1976	1976	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .00000634500000	CI	1976	1976	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000000390000	CI	1976	1976	N	-50%	+50%	See continuation page.
Eu-155	Sludge.	Ionic.	T .00001269000000	CI	1976	1976	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000000280000	CI	1976	1976	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .40150000000000	CI	1976	1976	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Sludge.	Ionic.	T .00000000110000	CI	1976	1976	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000000180000	CI	1976	1976	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00000007290000	CI	1976	1976	N	-50%	+50%	See continuation page.
Pu-239	Sludge.	Ionic.	T .00000007290000	CI	1976	1976	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00000000770000	CI	1976	1976	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .00000796500000	CI	1976	1976	N	-50%	+50%	See continuation page.
Am-241	Sludge.	Ionic.	T .00000003640000	CI	1976	1976	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00000003640000	CI	1976	1976	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00000003370000	CI	1976	1976	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Sludge.	Ionic.	T .00006888000000	CI	1981	1981	N	-50%	+50%	See continuation page.
C-14	Sludge.	Ionic.	T .00000924000000	CI	1981	1981	N	-50%	+50%	See continuation page.
Fe-55	Sludge.	Ionic.	T .00159600000000	CI	1981	1981	N	-50%	+50%	See continuation page.
Ni-59	Sludge.	Ionic.	T .00000047880000	CI	1981	1981	N	-50%	+50%	See continuation page.
Ni-63	Sludge.	Ionic.	T .00026880000000	CI	1981	1981	N	-50%	+50%	See continuation page.
Co-60	Sludge.	Ionic.	T .00056280000000	CI	1981	1981	N	-50%	+50%	See continuation page.
Sr-90	Sludge.	Ionic.	T .00000077280000	CI	1981	1981	N	-50%	+50%	See continuation page.
Tc-99	Sludge.	Ionic.	T .00000015120000	CI	1981	1981	N	-50%	+50%	See continuation page.
I-129	Sludge.	Ionic.	T .00000000004000	CI	1981	1981	N	-50%	+50%	See continuation page.

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Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Sludge.	Ionic.	T .00016800000000	CI	1981	1981	N	-50%	+50%	See continuation page.
Ce-144	Sludge.	Ionic.	T .00000394800000	CI	1981	1981	N	-50%	+50%	See continuation page.
Eu-154	Sludge.	Ionic.	T .00000000240000	CI	1981	1981	N	-50%	+50%	See continuation page.
Eu-155	Sludge.	Ionic.	T .00000789600000	CI	1981	1981	N	-50%	+50%	See continuation page.
U-234	Sludge.	Ionic.	T .00000000180000	CI	1981	1981	N	-50%	+50%	See continuation page.
U-235	Sludge.	Ionic.	T .00000000010000	CI	1981	1981	N	-50%	+50%	See continuation page.
U-236	Sludge.	Ionic.	T .00000000070000	CI	1981	1981	N	-50%	+50%	See continuation page.
Np-237	Sludge.	Ionic.	T .00000000110000	CI	1981	1981	N	-50%	+50%	See continuation page.
Pu-238	Sludge.	Ionic.	T .00000004540000	CI	1981	1981	N	-50%	+50%	See continuation page.

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Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Sludge.	Ionic.	T .00000004540000	CI	1981	1981	N	-50%	+50%	See continuation page.
Pu-240	Sludge.	Ionic.	T .00000000480000	CI	1981	1981	N	-50%	+50%	See continuation page.
Pu-241	Sludge.	Ionic.	T .00000495600000	CI	1981	1981	N	-50%	+50%	See continuation page.
Am-241	Sludge.	Ionic.	T .00000002270000	CI	1981	1981	N	-50%	+50%	See continuation page.
Cm-242	Sludge.	Ionic.	T .00000002270000	CI	1981	1981	N	-50%	+50%	See continuation page.
Cm-244	Sludge.	Ionic.	T .00000002100000	CI	1981	1981	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewees wish to remain anonymous.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
Radionuclides were lumped into MAP and MFP.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were chosen based on their cross sections and half lives. MFP radionuclides were chosen based on the fission products and their half lives.

Continuation of Part D Column or Question Number or Title Uncertainty basis.

Although the preparer cannot prove a sample was given to the Radiation Measurements Lab (RML) located at TRA, the preparer is fairly confident that samples were given to them to count. A sodium iodide (NaI) detector was probably used to analyze these samples. NaI detectors have wide peaks and although the total activity is accurate, individual radionuclide activities may be off, therefore a 50% error was assigned.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 153

1. Preparer: Amaro, C.

2. Date prepared: 08/25/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
7H

6. Waste stream:
Glass.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1968

9. Waste stream volume:
Amount 3.3400 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Glass.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
This stream is entirely glass bottles, pieces, etc.

3. Chemical form:
SiO_2.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Cardboard box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other", which cannot be identified by the preparer.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Glass.	SiO2.	T .04423000000000	CI	1960	1960	N			See continuation page.
C-14	Glass.	SiO2.	T .00593400000000	CI	1960	1960	N			See continuation page.
Fe-55	Glass.	SiO2.	T 1.0250000000000	CI	1960	1960	N			See continuation page.
Ni-59	Glass.	SiO2.	T .00030750000000	CI	1960	1960	N			See continuation page.
Ni-63	Glass.	SiO2.	T .17260000000000	CI	1960	1960	N			See continuation page.
Co-60	Glass.	SiO2.	T .36140000000000	CI	1960	1960	N			See continuation page.
Sr-90	Glass.	SiO2.	T .00049630000000	CI	1960	1960	N			See continuation page.
Tc-99	Glass.	SiO2.	T .00009710000000	CI	1960	1960	N			See continuation page.
I-129	Glass.	SiO2.	T .00000002525000	CI	1960	1960	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Glass.	SiO2.	T .10790000000000	CI	1960	1960	N			See continuation page.
Ce-144	Glass.	SiO2.	T .00253500000000	CI	1960	1960	N			See continuation page.
Eu-154	Glass.	SiO2.	T .00000156400000	CI	1960	1960	N			See continuation page.
Eu-155	Glass.	SiO2.	T .00507100000000	CI	1960	1960	N			See continuation page.
U-234	Glass.	SiO2.	T .00000113300000	CI	1960	1960	N			See continuation page.
U-235	Glass.	SiO2.	T .00000002430000	CI	1960	1960	N			See continuation page.
U-236	Glass.	SiO2.	T .00000043150000	CI	1960	1960	N			See continuation page.
Np-237	Glass.	SiO2.	T .00000070120000	CI	1960	1960	N			See continuation page.
Pu-238	Glass.	SiO2.	T .00002913000000	CI	1960	1960	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Glass.	SiO2.	T .00002913000000	CI	1960	1960	N			See continuation page.
Pu-240	Glass.	SiO2.	T .00000307500000	CI	1960	1960	N			See continuation page.
Pu-241	Glass.	SiO2.	T .00318300000000	CI	1960	1960	N			See continuation page.
Am-241	Glass.	SiO2.	T .00001456000000	CI	1960	1960	N			See continuation page.
Cm-242	Glass.	SiO2.	T .00001456000000	CI	1960	1960	N			See continuation page.
Cm-244	Glass.	SiO2.	T .00001349000000	CI	1960	1960	N			See continuation page.
H-3	Glass.	SiO2.	T 8.2010000000000	CI	1961	1961	N			See continuation page.
C-14	Glass.	SiO2.	T 1.1000000000000	CI	1961	1961	N			See continuation page.
Fe-55	Glass.	SiO2.	T 190.00000000000	CI	1961	1961	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Glass.	SiO2.	T .05700000000000	CI	1961	1961	N			See continuation page.
Ni-63	Glass.	SiO2.	T 3.2000000000000	CI	1961	1961	N			See continuation page.
Co-60	Glass.	SiO2.	T 67.000000000000	CI	1961	1961	N			See continuation page.
Sr-90	Glass.	SiO2.	T .09201000000000	CI	1961	1961	N			See continuation page.
Tc-99	Glass.	SiO2.	T .01800000000000	CI	1961	1961	N			See continuation page.
I-129	Glass.	SiO2.	T .00000468000000	CI	1961	1961	N			See continuation page.
Cs-137	Glass.	SiO2.	T 20.000000000000	CI	1961	1961	N			See continuation page.
Ce-144	Glass.	SiO2.	T .47000000000000	CI	1961	1961	N			See continuation page.
Eu-154	Glass.	SiO2.	T .00029000000000	CI	1961	1961	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Glass.	SiO2.	T .94010000000000	CI	1961	1961	N			See continuation page.
U-234	Glass.	SiO2.	T .00021000000000	CI	1961	1961	N			See continuation page.
U-235	Glass.	SiO2.	T .00000450000000	CI	1961	1961	N			See continuation page.
U-236	Glass.	SiO2.	T .00008001000000	CI	1961	1961	N			See continuation page.
Np-237	Glass.	SiO2.	T .00013000000000	CI	1961	1961	N			See continuation page.
Pu-238	Glass.	SiO2.	T .00540000000000	CI	1961	1961	N			See continuation page.
Pu-239	Glass.	SiO2.	T .00540000000000	CI	1961	1961	N			See continuation page.
Pu-240	Glass.	SiO2.	T .00057000000000	CI	1961	1961	N			See continuation page.
Pu-241	Glass.	SiO2.	T .59000000000000	CI	1961	1961	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Glass.	SiO2.	T .00270000000000	CI	1961	1961	N			See continuation page.
Cm-242	Glass.	SiO2.	T .00270000000000	CI	1961	1961	N			See continuation page.
Cm-244	Glass.	SiO2.	T .00250000000000	CI	1961	1961	N			See continuation page.
H-3	Glass.	SiO2.	T .01785000000000	CI	1966	1966	N			See continuation page.
C-14	Glass.	SiO2.	T .00239500000000	CI	1966	1966	N			See continuation page.
Fe-55	Glass.	SiO2.	T .41370000000000	CI	1966	1966	N			See continuation page.
Ni-59	Glass.	SiO2.	T .00012410000000	CI	1966	1966	N			See continuation page.
Ni-63	Glass.	SiO2.	T .06968000000000	CI	1966	1966	N			See continuation page.
Co-60	Glass.	SiO2.	T .14590000000000	CI	1966	1966	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Glass.	SiO2.	T .00020030000000	CI	1966	1966	N			See continuation page.
Tc-99	Glass.	SiO2.	T .00003919000000	CI	1966	1966	N			See continuation page.
I-129	Glass.	SiO2.	T .00000001019000	CI	1966	1966	N			See continuation page.
Cs-137	Glass.	SiO2.	T .04355000000000	CI	1966	1966	N			See continuation page.
Ce-144	Glass.	SiO2.	T .00102300000000	CI	1966	1966	N			See continuation page.
Eu-154	Glass.	SiO2.	T .00000063140000	CI	1966	1966	N			See continuation page.
Eu-155	Glass.	SiO2.	T .00204700000000	CI	1966	1966	N			See continuation page.
U-234	Glass.	SiO2.	T .00000045720000	CI	1966	1966	N			See continuation page.
U-235	Glass.	SiO2.	T .00000000980000	CI	1966	1966	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Glass.	SiO2.	T .00000017420000	CI	1966	1966	N			See continuation page.
Np-237	Glass.	SiO2.	T .00000028310000	CI	1966	1966	N			See continuation page.
Pu-238	Glass.	SiO2.	T .00001176000000	CI	1966	1966	N			See continuation page.
Pu-239	Glass.	SiO2.	T .00001176000000	CI	1966	1966	N			See continuation page.
Pu-240	Glass.	SiO2.	T .00000124100000	CI	1966	1966	N			See continuation page.
Pu-241	Glass.	SiO2.	T .00128500000000	CI	1966	1966	N			See continuation page.
Am-241	Glass.	SiO2.	T .00000587900000	CI	1966	1966	N			See continuation page.
Cm-242	Glass.	SiO2.	T .00000587900000	CI	1966	1966	N			See continuation page.
Cm-244	Glass.	SiO2.	T .00000544300000	CI	1966	1966	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Glass.	SiO2.	T .65660000000000	CI	1968	1968	N			See continuation page.
C-14	Glass.	SiO2.	T .08808000000000	CI	1968	1968	N			See continuation page.
Fe-55	Glass.	SiO2.	T 15.210000000000	CI	1968	1968	N			See continuation page.
Ni-59	Glass.	SiO2.	T .00456400000000	CI	1968	1968	N			See continuation page.
Ni-63	Glass.	SiO2.	T 2.5620000000000	CI	1968	1968	N			See continuation page.
Co-60	Glass.	SiO2.	T 5.3653000000000	CI	1968	1968	N			See continuation page.
Sr-90	Glass.	SiO2.	T .00736600000000	CI	1968	1968	N			See continuation page.
Tc-99	Glass.	SiO2.	T .00144100000000	CI	1968	1968	N			See continuation page.
I-129	Glass.	SiO2.	T .00000037476000	CI	1968	1968	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Glass.	SiO2.	T 1.6010000000000	CI	1968	1968	N			See continuation page.
Ce-144	Glass.	SiO2.	T .03763000000000	CI	1968	1968	N			See continuation page.
Eu-154	Glass.	SiO2.	T .00002322000000	CI	1968	1968	N			See continuation page.
Eu-155	Glass.	SiO2.	T .07527000000000	CI	1968	1968	N			See continuation page.
U-234	Glass.	SiO2.	T .00001681000000	CI	1968	1968	N			See continuation page.
U-235	Glass.	SiO2.	T .00000036030000	CI	1968	1968	N			See continuation page.
U-236	Glass.	SiO2.	T .00000640600000	CI	1968	1968	N			See continuation page.
Np-237	Glass.	SiO2.	T .00001041000000	CI	1968	1968	N			See continuation page.
Pu-238	Glass.	SiO2.	T .00043240000000	CI	1968	1968	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Glass.	SiO2.	T .00043240000000	CI	1968	1968	N			See continuation page.
Pu-240	Glass.	SiO2.	T .00004564000000	CI	1968	1968	N			See continuation page.
Pu-241	Glass.	SiO2.	T .04724000000000	CI	1968	1968	N			See continuation page.
Am-241	Glass.	SiO2.	T .00021620000000	CI	1968	1968	N			See continuation page.
Cm-242	Glass.	SiO2.	T .00021620000000	CI	1968	1968	N			See continuation page.
Cm-244	Glass.	SiO2.	T .00020020000000	CI	1968	1968	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewees wish to remain anonymous.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
MAP and MFP were unidentified.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were chosen based on their cross section and half lives. The MFP radionuclides were chosen based on fission products and their half lives. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

Continuation of Part D Column or Question Number or Title Uncertainty basis.

A Geiger-Mueller counter was probably used to measure this item. Therefore, a true uncertainty is not known.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 150

1. Preparer: Amaro, C.

2. Date prepared: 08/25/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
8H

6. Waste stream:
Radioactive sources.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1972

9. Waste stream volume:
Amount 1.8970 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Radiation sources.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Two sources were Ra-226.

3. Chemical form:
Metal.

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other", which cannot be defined by the preparer.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Solid.	Unknown.	T .08309000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
C-14	Solid.	Unknown.	T .01115000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Fe-55	Solid.	Unknown.	T 1.9250000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Ni-59	Solid.	Unknown.	T .00057760000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Ni-63	Solid.	Unknown.	T .32430000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Co-60	Solid.	Unknown.	T .67890000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Sr-90	Solid.	Unknown.	T .00093230000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Tc-99	Solid.	Unknown.	T .00018240000000	CI	1961	1961	N	-50%	+50%	See continuation page.
I-129	Solid.	Unknown.	T .00000004742000	CI	1961	1961	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid.	Unknown.	T .20270000000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Ce-144	Solid.	Unknown.	T .00476300000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Eu-154	Solid.	Unknown.	T .00000293900000	CI	1961	1961	N	-50%	+50%	See continuation page.
Eu-155	Solid.	Unknown.	T .00952500000000	CI	1961	1961	N	-50%	+50%	See continuation page.
U-234	Solid.	Unknown.	T .00000212800000	CI	1961	1961	N	-50%	+50%	See continuation page.
U-235	Solid.	Unknown.	T .00000004560000	CI	1961	1961	N	-50%	+50%	See continuation page.
U-236	Solid.	Unknown.	T .00000081070000	CI	1961	1961	N	-50%	+50%	See continuation page.
Np-237	Solid.	Unknown.	T .00000131700000	CI	1961	1961	N	-50%	+50%	See continuation page.
Pu-238	Solid.	Unknown.	T .00005472000000	CI	1961	1961	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Solid.	Unknown.	T .00005472000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Pu-240	Solid.	Unknown.	T .00000577600000	CI	1961	1961	N	-50%	+50%	See continuation page.
Pu-241	Solid.	Unknown.	T .00597900000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Am-241	Solid.	Unknown.	T .00002736000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Cm-242	Solid.	Unknown.	T .00002736000000	CI	1961	1961	N	-50%	+50%	See continuation page.
Cm-244	Solid.	Unknown.	T .00002533000000	CI	1961	1961	N	-50%	+50%	See continuation page.
H-3	Solid.	Unknown.	T .00806900000000	CI	1965	1965	N	-50%	+50%	See continuation page.
C-14	Solid.	Unknown.	T .00108200000000	CI	1965	1965	N	-50%	+50%	See continuation page.
Fe-55	Solid.	Unknown.	T .18700000000000	CI	1965	1965	N	-50%	+50%	See continuation page.

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Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samp les?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Solid.	Unknown.	T .00005609000000	CI	1965	1965	N	-50%	+50%	See continuation page.
Ni-63	Solid.	Unknown.	T .03149000000000	CI	1965	1965	N	-50%	+50%	See continuation page.
Co-60	Solid.	Unknown.	T .06593000000000	CI	1965	1965	N	-50%	+50%	See continuation page.
Sr-90	Solid.	Unknown.	T .00009053000000	CI	1965	1965	N	-50%	+50%	See continuation page.
Tc-99	Solid.	Unknown.	T .00001771000000	CI	1965	1965	N	-50%	+50%	See continuation page.
I-129	Solid.	Unknown.	T .00000000461000	CI	1965	1965	N	-50%	+50%	See continuation page.
Cs-137	Solid.	Unknown.	T .01968000000000	CI	1965	1965	N	-50%	+50%	See continuation page.
Ce-144	Solid.	Unknown.	T .00046250000000	CI	1965	1965	N	-50%	+50%	See continuation page.
Eu-154	Solid.	Unknown.	T .00000028540000	CI	1965	1965	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Solid.	Unknown.	T .00092500000000	CI	1965	1965	N	-50%	+50%	See continuation page.
U-234	Solid.	Unknown.	T .00000020660000	CI	1965	1965	N	-50%	+50%	See continuation page.
U-235	Solid.	Unknown.	T .00000000440000	CI	1965	1965	N	-50%	+50%	See continuation page.
U-236	Solid.	Unknown.	T .00000007870000	CI	1965	1965	N	-50%	+50%	See continuation page.
Np-237	Solid.	Unknown.	T .00000012790000	CI	1965	1965	N	-50%	+50%	See continuation page.
Pu-238	Solid.	Unknown.	T .00000531400000	CI	1965	1965	N	-50%	+50%	See continuation page.
Pu-239	Solid.	Unknown.	T .00000531400000	CI	1965	1965	N	-50%	+50%	See continuation page.
Pu-240	Solid.	Unknown.	T .00000056090000	CI	1965	1965	N	-50%	+50%	See continuation page.
Pu-241	Solid.	Unknown.	T .00058060000000	CI	1965	1965	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Solid.	Unknown.	T .00000265700000	CI	1965	1965	N	-50%	+50%	See continuation page.
Cm-242	Solid.	Unknown.	T .00000265700000	CI	1965	1965	N	-50%	+50%	See continuation page.
Cm-244	Solid.	Unknown.	T .00000246000000	CI	1965	1965	N	-50%	+50%	See continuation page.
Ra-226	Solid.	Ra-226.	T .00000000100000	CI	1965	1965	N	-20%	+20%	See comment below.
H-3	Solid.	Unknown.	T .00024120000000	CI	1972	1972	N	-50%	+50%	See continuation page.
C-14	Solid.	Unknown.	T .00003235000000	CI	1972	1972	N	-50%	+50%	See continuation page.
Fe-55	Solid.	Unknown.	T .00558800000000	CI	1972	1972	N	-50%	+50%	See continuation page.
Ni-59	Solid.	Unknown.	T .00000167600000	CI	1972	1972	N	-50%	+50%	See continuation page.
Ni-63	Solid.	Unknown.	T .00094110000000	CI	1972	1972	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Unknown.	T .00197100000000	CI	1972	1972	N	-50%	+50%	See continuation page.
Sr-90	Solid.	Unknown.	T .00000270600000	CI	1972	1972	N	-50%	+50%	See continuation page.
Tc-99	Solid.	Unknown.	T .00000052940000	CI	1972	1972	N	-50%	+50%	See continuation page.
I-129	Solid.	Unknown.	T .00000000014000	CI	1972	1972	N	-50%	+50%	See continuation page.
Cs-137	Solid.	Unknown.	T .00058820000000	CI	1972	1972	N	-50%	+50%	See continuation page.
Ce-144	Solid.	Unknown.	T .00001382000000	CI	1972	1972	N	-50%	+50%	See continuation page.
Eu-154	Solid.	Unknown.	T .00000000850000	CI	1972	1972	N	-50%	+50%	See continuation page.
Eu-155	Solid.	Unknown.	T .00002765000000	CI	1972	1972	N	-50%	+50%	See continuation page.
U-234	Solid.	Unknown.	T .00000000620000	CI	1972	1972	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid.	Unknown.	T .00000000010000	CI	1972	1972	N	-50%	+50%	See continuation page.
U-236	Solid.	Unknown.	T .00000000240000	CI	1972	1972	N	-50%	+50%	See continuation page.
Np-237	Solid.	Unknown.	T .00000000380000	CI	1972	1972	N	-50%	+50%	See continuation page.
Pu-238	Solid.	Unknown.	T .00000015880000	CI	1972	1972	N	-50%	+50%	See continuation page.
Pu-239	Solid.	Unknown.	T .00000015880000	CI	1972	1972	N	-50%	+50%	See continuation page.
Pu-240	Solid.	Unknown.	T .00000001680000	CI	1972	1972	N	-50%	+50%	See continuation page.
Pu-241	Solid.	Unknown.	T .00001735000000	CI	1972	1972	N	-50%	+50%	See continuation page.
Am-241	Solid.	Unknown.	T .00000007940000	CI	1972	1972	N	-50%	+50%	See continuation page.
Cm-242	Solid.	Unknown.	T .00000007940000	CI	1972	1972	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cm-244	Solid.	Unknown.	T .00000007350000	CI	1972	1972	N	-50%	+50%	See continuation page.
Ra-226	Solid.	Ra-226.	T 1.2500000000000	CI	1972	1972	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewees wish to remain anonymous.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
MAP and MFP were unidentified.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were based on their cross sections and half lives while MFP were chosen based on fissionable products and their half lives.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewees wish to remain anonymous.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
MAP and MFP were unidentified.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were based on their cross sections and half lives while MFP were chosen based on fissionable products and their half lives.

Continuation of Part D Column or Question Number or Title Uncertainty basis.

The total activity of the item is known, however MAP and MFP were assigned equal values. A sodium iodide detector was probably used by the Radiations Measurements Lab (RML) at TRA to analyze the sources. This instrument has broad peaks and therefore a radionuclide may be masked by a more dominant radionuclide. Also, the source strength is usually a well known quantity. The RML has been at TRA since the 50's. Various samples were routinely brought to the lab for analysis. The "N" in the "Samples? Y/N" column is there because the preparer cannot verify a sample was counted, but based on experience and an interview with a RML employee, is confident a sample was counted.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 157

1. Preparer: Amaro, C.

2. Date prepared: 08/25/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
9H

6. Waste stream:
Irradiated fuel.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1977

9. Waste stream volume:
Amount 88207.0000 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Also 632, 642, and 670.

1. General physical form (see attached list)
Irradiated fuel from experiments.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Expended fuel and ceramic fuel.

3. Chemical form:
UO2 and UALX.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:
Tritium is bound to metal, and therefore, unlikely to migrate into the environment.

7. Comments (specify number of pertinent question):
5. BXC and "Other".

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Solid.	UALX.	T .68000000000000	CI	1960	1960	N	-50%	+50%	See comment (a) below.
Sr-90	Solid.	UALX.	T 151.97000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Tc-99	Solid.	UALX.	T .02000000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Sb-125	Solid.	UALX.	T 8.9000000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
I-129	Solid.	UALX.	T .00003517100000	CI	1960	1960	N	-50%	+50%	See continuation page.
Cs-137	Solid.	UALX.	T 159.36000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Eu-152	Solid.	UALX.	T .00054646000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Eu-154	Solid.	UALX.	T 11.950000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Eu-155	Solid.	UALX.	T 7.5500000000000	CI	1960	1960	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

a. H-3, tritium, is bound to the metal and not likely to migrate to its surrounding environment.

b. The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

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U-234	Solid.	UALX.	T .00160320000000	CI	1960	1960	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00003582500000	CI	1960	1960	N	-50%	+50%	See continuation page.
U-236	Solid.	UALX.	T .00063968000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Np-237	Solid.	UALX.	T .00098391000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Pu-238	Solid.	UALX.	T 4.1200000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Pu-239	Solid.	UALX.	T .02000000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Pu-240	Solid.	UALX.	T .01000000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Pu-241	Solid.	UALX.	T 7.1400000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Am-241	Solid.	UALX.	T .01000000000000	CI	1960	1960	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

a. H-3, tritium, is bound to the metal and not likely to migrate to its surrounding environment.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-242	Solid.	UALX.	T .00010932000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Am-243	Solid.	UALX.	T .00139340000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Cm-242	Solid.	UALX.	T .07000000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
Cm-244	Solid.	UALX.	T .19000000000000	CI	1960	1960	N	-50%	+50%	See continuation page.
H-3	Solid.	UALX.	T 6.2500000000000	CI	1962	1962	N	-50%	+50%	See comment (a) below.
Sr-90	Solid.	UALX.	T 1402.2700000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Tc-99	Solid.	UALX.	T .18000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Sb-125	Solid.	UALX.	T 82.140000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
I-129	Solid.	UALX.	T .00032453000000	CI	1962	1962	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

a. H-3, tritium, is bound to the metal and not likely to migrate to its surrounding environment.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid.	UALX.	T 1470.5000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Eu-152	Solid.	UALX.	T .01000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Eu-154	Solid.	UALX.	T 110.23000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Eu-155	Solid.	UALX.	T 69.670000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
U-234	Solid.	UALX.	T .01000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00033056000000	CI	1962	1962	N	-50%	+50%	See continuation page.
U-236	Solid.	UALX.	T .01000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Np-237	Solid.	UALX.	T .01000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Pu-238	Solid.	UALX.	T 38.060000000000	CI	1962	1962	N	-50%	+50%	See continuation page.

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Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Solid.	UALX.	T .16000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Pu-240	Solid.	UALX.	T .10000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Pu-241	Solid.	UALX.	T 65.880000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Am-241	Solid.	UALX.	T .11000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Pu-242	Solid.	UALX.	T .00100870000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Am-243	Solid.	UALX.	T .01000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Cm-242	Solid.	UALX.	T .64000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
Cm-244	Solid.	UALX.	T 1.8000000000000	CI	1962	1962	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00001283900000	CI	1962	1962	N	-20%	+20%	See comment (b) below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
a. H-3, tritium, is bound to the metal and not likely to migrate to its surrounding environment.
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Solid.	UALX.	T 67.340000000000	CI	1963	1963	N	-50%	+50%	See comment (a) below.
Sr-90	Solid.	UALX.	T 15110.200000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Tc-99	Solid.	UALX.	T 1.9300000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Sb-125	Solid.	UALX.	T 885.13000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
I-129	Solid.	UALX.	T .00349700000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Cs-137	Solid.	UALX.	T 15845.430000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Eu-152	Solid.	UALX.	T .05000000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Eu-154	Solid.	UALX.	T 1187.7700000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Eu-155	Solid.	UALX.	T 750.76000000000	CI	1963	1963	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
a. H-3, tritium, is bound to the metal and not likely to migrate to its surrounding environment.
b. The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-234	Solid.	UALX.	T .16000000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00356200000000	CI	1963	1963	N	-50%	+50%	See continuation page.
U-236	Solid.	UALX.	T .06000000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Np-237	Solid.	UALX.	T .10000000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Pu-238	Solid.	UALX.	T 410.08000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Pu-239	Solid.	UALX.	T 1.7500000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Pu-240	Solid.	UALX.	T 1.0700000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Pu-241	Solid.	UALX.	T 709.88000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Am-241	Solid.	UALX.	T 1.2100000000000	CI	1963	1963	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Additional information or explanations (indicate pertinent contaminant)

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For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-242	Solid.	UALX.	T .01000000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Am-243	Solid.	UALX.	T .14000000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Cm-242	Solid.	UALX.	T 6.9300000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
Cm-244	Solid.	UALX.	T 19.360000000000	CI	1963	1963	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00029103000000	CI	1963	1963	N	-20%	+20%	See comment (b) below.
U-238	Solid.	UALX.	T .00003495900000	CI	1963	1963	N	-20%	+20%	See comment (b) below.
H-3	Solid.	UALX.	T .21000000000000	CI	1964	1964	N	-50%	+50%	See comment (a) below.
Sr-90	Solid.	UALX.	T 47.490000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Tc-99	Solid.	UALX.	T .01000000000000	CI	1964	1964	N	-50%	+50%	See continuation page.

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Additional information or explanations (indicate pertinent contaminant)
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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sb-125	Solid.	UALX.	T 2.7800000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
I-129	Solid.	UALX.	T .00001099100000	CI	1964	1964	N	-50%	+50%	See continuation page.
Cs-137	Solid.	UALX.	T 49.800000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Eu-152	Solid.	UALX.	T .00017076000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Eu-154	Solid.	UALX.	T 3.7300000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Eu-155	Solid.	UALX.	T 2.3600000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
U-234	Solid.	UALX.	T .00050100000000	CI	1964	1964	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00001119500000	CI	1964	1964	N	-50%	+50%	See continuation page.
U-236	Solid.	UALX.	T .00019990000000	CI	1964	1964	N	-50%	+50%	See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?*	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Np-237	Solid.	UALX.	T .00030747000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Pu-238	Solid.	UALX.	T 1.2900000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Pu-239	Solid.	UALX.	T .01000000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Pu-240	Solid.	UALX.	T .00336650000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Pu-241	Solid.	UALX.	T 2.2300000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Am-241	Solid.	UALX.	T .00378980000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Pu-242	Solid.	UALX.	T .00003416300000	CI	1964	1964	N	-50%	+50%	See continuation page.
Am-243	Solid.	UALX.	T .00043546000000	CI	1964	1964	N	-50%	+50%	See continuation page.
Cm-242	Solid.	UALX.	T .02000000000000	CI	1964	1964	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cm-244	Solid.	UALX.	T .06000000000000	CI	1964	1964	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00000605880000	CI	1964	1964	N	-20%	+20%	See comment (b) below.
H-3	Solid.	UALX.	T 6.6100000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Sr-90	Solid.	UALX.	T 1482.9100000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Tc-99	Solid.	UALX.	T .19000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Sb-125	Solid.	UALX.	T 86.870000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
I-129	Solid.	UALX.	T .00034320000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Cs-137	Solid.	UALX.	T 1555.0700000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Eu-152	Solid.	UALX.	T .01000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-154	Solid.	UALX.	T 116.57000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Eu-155	Solid.	UALX.	T 73.680000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
U-234	Solid.	UALX.	T .02000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00034957000000	CI	1966	1966	N	-50%	+50%	See continuation page.
U-236	Solid.	UALX.	T .01000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Np-237	Solid.	UALX.	T .01000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Pu-238	Solid.	UALX.	T 40.250000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Pu-239	Solid.	UALX.	T .17000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Pu-240	Solid.	UALX.	T .11000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-241	Solid.	UALX.	T 69.670000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Am-241	Solid.	UALX.	T .12000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Pu-242	Solid.	UALX.	T .00106670000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Am-243	Solid.	UALX.	T .01000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Cm-242	Solid.	UALX.	T .68000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
Cm-244	Solid.	UALX.	T 1.9000000000000	CI	1966	1966	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00001728000000	CI	1966	1966	N	-20%	+20%	See comment (b) below.
Th-232	Solid.	UALX.	T .02000000000000	CI	1966	1966	N	-20%	+20%	See comment (b) below.
H-3	Solid.	UALX.	T .25000000000000	CI	1967	1967	N	-50%	+50%	See comment (a) below.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	UALX.	T 56.950000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Tc-99	Solid.	UALX.	T .01000000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Sb-125	Solid.	UALX.	T 3.3400000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
I-129	Solid.	UALX.	T .00001317900000	CI	1967	1967	N	-50%	+50%	See continuation page.
Cs-137	Solid.	UALX.	T 59.720000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Eu-152	Solid.	UALX.	T .00020476000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Eu-154	Solid.	UALX.	T 4.4800000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Eu-155	Solid.	UALX.	T 2.8300000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
U-234	Solid.	UALX.	T .00060074000000	CI	1967	1967	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-235	Solid.	UALX.	T .00001342400000	CI	1967	1967	N	-50%	+50%	See continuation page.
U-236	Solid.	UALX.	T .00023970000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Np-237	Solid.	UALX.	T .00036868000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Pu-238	Solid.	UALX.	T 1.5500000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Pu-239	Solid.	UALX.	T .01000000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Pu-240	Solid.	UALX.	T .00403680000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Pu-241	Solid.	UALX.	T 2.6800000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Am-241	Solid.	UALX.	T .00454440000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Pu-242	Solid.	UALX.	T .00004096500000	CI	1967	1967	N	-50%	+50%	See continuation page.

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Am-243	Solid.	UALX.	T .00052215000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Cm-242	Solid.	UALX.	T .03000000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
Cm-244	Solid.	UALX.	T .07000000000000	CI	1967	1967	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00025500000000	CI	1967	1967	N	-20%	+20%	See comment (b) below.
U-238	Solid.	UALX.	T .00000199790000	CI	1967	1967	N	-20%	+20%	See comment (b) below.
H-3	Solid.	UALX.	T .01000000000000	CI	1970	1970	N	-50%	+50%	See comment (a) below.
Sr-90	Solid.	UALX.	T 1.2100000000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Tc-99	Solid.	UALX.	T .00015452000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Sb-125	Solid.	UALX.	T .07000000000000	CI	1970	1970	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
I-129	Solid.	UALX.	T .00000027980000	CI	1970	1970	N	-50%	+50%	See continuation page.
Cs-137	Solid.	UALX.	T 1.2700000000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Eu-152	Solid.	UALX.	T .00000434680000	CI	1970	1970	N	-50%	+50%	See continuation page.
Eu-154	Solid.	UALX.	T .10000000000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Eu-155	Solid.	UALX.	T .06000000000000	CI	1970	1970	N	-50%	+50%	See continuation page.
U-234	Solid.	UALX.	T .00001275200000	CI	1970	1970	N	-50%	+50%	See continuation page.
U-235	Solid.	UALX.	T .00000028500000	CI	1970	1970	N	-50%	+50%	See continuation page.
U-236	Solid.	UALX.	T .00000508840000	CI	1970	1970	N	-50%	+50%	See continuation page.
Np-237	Solid.	UALX.	T .00000782650000	CI	1970	1970	N	-50%	+50%	See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-238	Solid.	UALX.	T .03000000000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Pu-239	Solid.	UALX.	T .00013995000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Pu-240	Solid.	UALX.	T .00008569400000	CI	1970	1970	N	-50%	+50%	See continuation page.
Pu-241	Solid.	UALX.	T .06000000000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Am-241	Solid.	UALX.	T .00009646900000	CI	1970	1970	N	-50%	+50%	See continuation page.
Pu-242	Solid.	UALX.	T .00000086960000	CI	1970	1970	N	-50%	+50%	See continuation page.
Am-243	Solid.	UALX.	T .00001108400000	CI	1970	1970	N	-50%	+50%	See continuation page.
Cm-242	Solid.	UALX.	T .00055473000000	CI	1970	1970	N	-50%	+50%	See continuation page.
Cm-244	Solid.	UALX.	T .00154900000000	CI	1970	1970	N	-50%	+50%	See continuation page.

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Th-232	Solid.	UALX.	T .00011099000000	CI	1970	1970	N	-20%	+20%	See comment (b) below.
U-235	Solid.	UALX.	T .00000094160000	CI	1973	1973	N	-20%	+20%	See comment (b) below.
U-238	Solid.	UALX.	T .00066599000000	CI	1973	1973	N	-20%	+20%	See comment (b) below.
U-235	Solid.	UALX.	T .00025039000000	CI	1977	1977	N	-20%	+20%	See comment (b) below.
U-238	Solid.	UALX.	T .08000000000000	CI	1977	1977	N	-20%	+20%	See comment (b) below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

a. H-3, tritium, is bound to the metal and not likely to migrate to its surrounding environment.

b. The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error).

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewees wish to remain anonymous.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
MAP and MFP were not known.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were chosen based on their cross sections and half lives. MFP radionuclides were chosen based on the fission products and their half lives. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

Continuation of Part D Column or Question Number or Title Uncertainty basis.

Radionuclides are indicated as qualified on this page because burnup on fuel is well known. The preparer believes the total activity of the fuel is well known however, since MAP and MFP were sometimes lumped together, a 50% error was assigned. Also, some of the fuel may have been counted by a sodium detector used by the Radiation Measurements Laboratory at TRA.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 192

1. Preparer: Amaro, C.

2. Date prepared: 09/04/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
10H

6. Waste stream:
Asbestos.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[ ] LLW
[X] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1960

9. Waste stream volume:
Amount 1000.0000 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
9. Waste volume is an estimate because of a letter P.D. Randolph wrote to Bob Nitshke on December 17, 1992. In this letter, an interview with Bob O'Connor was conducted. Bob estimated that 3000 linear feet was sent to the RWMC. RWMIS did not have this amount. The preparer added this sum to the sum in RWMIS.

1. General physical form (see attached list)

[X] other (specify)
Asbestos.

2. Details on physical form(particularly confinement related)

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Asbestos was also dumped in a trench without any outer containment.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
1332-21-4 Asbestos	Asbestos.	Unknown.	A 1100000.0000000	GM	1960	1960	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[X] other
Letter.

2. Details concerning source (names, report no., dates, etc.)
Letter from P.D. Randolph to Bob Nitshke dated December 17, 1992.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
The volume is larger.

7. Major unknowns in inventories of contaminants:

8. Key assumptions used to deal with the unknowns:
The volume of the asbestos waste stream is estimated to be 1000 cubic feet. Based on information (Marks Mechanical Engineering Handbook, 1951 and vendor piping catalogs) about the typical composition of the material at that time period, the composition was assumed to be 85% magnesia and hydrated magnesium carbonate, and 15% asbestos. The density is 15-17 lb/cubic foot. Thus, 1000 cubic feet x 16 lb/cubic foot x 0.15 x 454g/lb = 1.1E+06 g.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 148

1. Preparer: Amaro, C.

2. Date prepared: 08/28/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
11H

6. Waste stream:
Meat contaminated with botulinus.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[ ] LLW
[X] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1961 Ending year 1961

9. Waste stream volume:
Amount 0.0566 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Biological waste.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Meat contaminated with botulinus.

3. Chemical form:

4. Inner packaging: [X] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other", which cannot be defined.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None identified.

8. Key assumptions used to deal with the unknowns:

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 145

1. Preparer: Amaro, C.

2. Date prepared: 08/27/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
12H

6. Waste stream:
Vermiculite.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1962 Ending year 1973

9. Waste stream volume:
Amount 11.9040 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. Also 642.

1. General physical form (see attached list)
Vermiculite and other sorbents.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Vermiculite.

3. Chemical form:
SiO_2.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXC.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

* Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Vermiculite.	Unknown.	T .00006232000000	CI	1962	1962	N			See continuation page.
C-14	Vermiculite.	Unknown.	T .00000836000000	CI	1962	1962	N			See continuation page.
Fe-55	Vermiculite.	Unknown.	T .00144400000000	CI	1962	1962	N			See continuation page.
Ni-59	Vermiculite.	Unknown.	T .00000043300000	CI	1962	1962	N			See continuation page.
Ni-63	Vermiculite.	Unknown.	T .00024320000000	CI	1962	1962	N			See continuation page.
Co-60	Vermiculite.	Unknown.	T .00050900000000	CI	1962	1962	N			See continuation page.
Sr-90	Vermiculite.	Unknown.	T .00000069920000	CI	1962	1962	N			See continuation page.
Tc-99	Vermiculite.	Unknown.	T .00000013680000	CI	1962	1962	N			See continuation page.
I-129	Vermiculite.	Unknown.	T .00000000004000	CI	1962	1962	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Vermiculite.	Unknown.	T .00015200000000	CI	1962	1962	N			See continuation page.
Ce-144	Vermiculite.	Unknown.	T .00000357200000	CI	1962	1962	N			See continuation page.
Eu-154	Vermiculite.	Unknown.	T .00000000220000	CI	1962	1962	N			See continuation page.
Eu-155	Vermiculite.	Unknown.	T .00000714400000	CI	1962	1962	N			See continuation page.
U-234	Vermiculite.	Unknown.	T .00000000160000	CI	1962	1962	N			See continuation page.
U-235	Vermiculite.	Unknown.	T .00000000010000	CI	1962	1962	N			See continuation page.
U-236	Vermiculite.	Unknown.	T .00000000060000	CI	1962	1962	N			See continuation page.
Np-237	Vermiculite.	Unknown.	T .00000000100000	CI	1962	1962	N			See continuation page.
Pu-238	Vermiculite.	Unknown.	T .00000004100000	CI	1962	1962	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Vermiculite.	Unknown.	T .00000004100000	CI	1962	1962	N			See continuation page.
Pu-240	Vermiculite.	Unknown.	T .00000000430000	CI	1962	1962	N			See continuation page.
Pu-241	Vermiculite.	Unknown.	T .00000448400000	CI	1962	1962	N			See continuation page.
Am-241	Vermiculite.	Unknown.	T .00000002100000	CI	1962	1962	N			See continuation page.
Cm-242	Vermiculite.	Unknown.	T .00000002100000	CI	1962	1962	N			See continuation page.
Cm-244	Vermiculite.	Unknown.	T .00000001900000	CI	1962	1962	N			See continuation page.
H-3	Vermiculite.	Unknown.	T .00001093000000	CI	1973	1973	N			See continuation page.
C-14	Vermiculite.	Unknown.	T .00000146600000	CI	1973	1973	N			See continuation page.
Fe-55	Vermiculite.	Unknown.	T .00025320000000	CI	1973	1973	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Vermiculite.	Unknown.	T .00000007600000	CI	1973	1973	N			See continuation page.
Ni-63	Vermiculite.	Unknown.	T .00004264000000	CI	1973	1973	N			See continuation page.
Co-60	Vermiculite.	Unknown.	T .00008927000000	CI	1973	1973	N			See continuation page.
Sr-90	Vermiculite.	Unknown.	T .00000012260000	CI	1973	1973	N			See continuation page.
Tc-99	Vermiculite.	Unknown.	T .00000002400000	CI	1973	1973	N			See continuation page.
I-129	Vermiculite.	Unknown.	T .00000000001000	CI	1973	1973	N			See continuation page.
Cs-137	Vermiculite.	Unknown.	T .00002665000000	CI	1973	1973	N			See continuation page.
Ce-144	Vermiculite.	Unknown.	T .00000062620000	CI	1973	1973	N			See continuation page.
Eu-154	Vermiculite.	Unknown.	T .00000000040000	CI	1973	1973	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Vermiculite.	Unknown.	T .00000125200000	CI	1973	1973	N			See continuation page.
U-234	Vermiculite.	Unknown.	T .00000000030000	CI	1973	1973	N			See continuation page.
U-236	Vermiculite.	Unknown.	T .00000000010000	CI	1973	1973	N			See continuation page.
Np-237	Vermiculite.	Unknown.	T .00000000020000	CI	1973	1973	N			See continuation page.
Pu-238	Vermiculite.	Unknown.	T .00000000720000	CI	1973	1973	N			See continuation page.
Pu-239	Vermiculite.	Unknown.	T .00000000720000	CI	1973	1973	N			See continuation page.
Pu-240	Vermiculite.	Unknown.	T .00000000080000	CI	1973	1973	N			See continuation page.
Pu-241	Vermiculite.	Unknown.	T .00000078610000	CI	1973	1973	N			See continuation page.
Am-241	Vermiculite.	Unknown.	T .00000000360000	CI	1973	1973	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cm-242	Vermiculite.	Unknown.	T .00000000360000	CI	1973	1973	N			See continuation page.
Cm-244	Vermiculite.	Unknown.	T .00000000330000	CI	1973	1973	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
MAP and MFP were unknown.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were chosen based on their cross sections and half lives. MFP radionuclides were chosen based on the fissionable products and their half lives. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

Continuation of Part D Column or Question Number or Title Uncertainty basis.

A Geiger-Mueller counter was probably used to measure this item. Therefore, the true uncertainty is not known.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 147

1. Preparer: Amaro, C.

2. Date prepared: 08/26/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
13H

6. Waste stream:
Filters.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1960 Ending year 1973

9. Waste stream volume:
Amount 6.8090 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Other filters.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Filter from various operations. No specific type.

3. Chemical form:
Because the filter typed used is unknown, the chemical form is unknown.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. BXC, O, and BXW. "Other" cannot be defined by the preparer of this report.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Paper.	Unknown.	T .90280000000000	CI	1960	1960	N			See continuation page.
C-14	Paper.	Unknown.	T .12110000000000	CI	1960	1960	N			See continuation page.
Fe-55	Paper.	Unknown.	T 20.920000000000	CI	1960	1960	N			See continuation page.
Ni-59	Paper.	Unknown.	T .00627600000000	CI	1960	1960	N			See continuation page.
Ni-63	Paper.	Unknown.	T 3.5230000000000	CI	1960	1960	N			See continuation page.
Co-60	Paper.	Unknown.	T 7.3760000000000	CI	1960	1960	N			See continuation page.
Sr-90	Paper.	Unknown.	T .01013000000000	CI	1960	1960	N			See continuation page.
Tc-99	Paper.	Unknown.	T .00198200000000	CI	1960	1960	N			See continuation page.
I-129	Paper.	Unknown.	T .00000051525000	CI	1960	1960	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error). Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Paper.	Unknown.	T 2.2020000000000	CI	1960	1960	N			See continuation page.
Ce-144	Paper.	Unknown.	T .05175000000000	CI	1960	1960	N			See continuation page.
Eu-154	Paper.	Unknown.	T .00003193000000	CI	1960	1960	N			See continuation page.
Eu-155	Paper.	Unknown.	T .10350000000000	CI	1960	1960	N			See continuation page.
U-234	Paper.	Unknown.	T .00002312000000	CI	1960	1960	N			See continuation page.
U-235	Paper.	Unknown.	T .00000049540000	CI	1960	1960	N			See continuation page.
U-236	Paper.	Unknown.	T .00000880800000	CI	1960	1960	N			See continuation page.
Np-237	Paper.	Unknown.	T .00001431000000	CI	1960	1960	N			See continuation page.
Pu-238	Paper.	Unknown.	T .00059450000000	CI	1960	1960	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Paper.	Unknown.	T .00059450000000	CI	1960	1960	N			See continuation page.
Pu-240	Paper.	Unknown.	T .00006276000000	CI	1960	1960	N			See continuation page.
Pu-241	Paper.	Unknown.	T .06496000000000	CI	1960	1960	N			See continuation page.
Am-241	Paper.	Unknown.	T .00029730000000	CI	1960	1960	N			See continuation page.
Cm-242	Paper.	Unknown.	T .00029730000000	CI	1960	1960	N			See continuation page.
Cm-244	Paper.	Unknown.	T .00027520000000	CI	1960	1960	N			See continuation page.
H-3	Paper.	Unknown.	T 16.400000000000	CI	1961	1961	N			See continuation page.
C-14	Paper.	Unknown.	T 2.2000000000000	CI	1961	1961	N			See continuation page.
Fe-55	Paper.	Unknown.	T 380.00000000000	CI	1961	1961	N			See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Paper.	Unknown.	T .11400000000000	CI	1961	1961	N			See continuation page.
Ni-63	Paper.	Unknown.	T 64.000000000000	CI	1961	1961	N			See continuation page.
Co-60	Paper.	Unknown.	T 134.00000000000	CI	1961	1961	N			See continuation page.
Sr-90	Paper.	Unknown.	T .18400000000000	CI	1961	1961	N			See continuation page.
Tc-99	Paper.	Unknown.	T .03600000000000	CI	1961	1961	N			See continuation page.
I-129	Paper.	Unknown.	T .00000936000000	CI	1961	1961	N			See continuation page.
Cs-137	Paper.	Unknown.	T 40.000000000000	CI	1961	1961	N			See continuation page.
Ce-144	Paper.	Unknown.	T .94000000000000	CI	1961	1961	N			See continuation page.
Eu-154	Paper.	Unknown.	T .00058000000000	CI	1961	1961	N			See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Paper.	Unknown.	T 1.8800000000000	CI	1961	1961	N			See continuation page.
U-234	Paper.	Unknown.	T .00042000000000	CI	1961	1961	N			See continuation page.
U-235	Paper.	Unknown.	T .00000900000000	CI	1961	1961	N			See continuation page.
U-236	Paper.	Unknown.	T .00016000000000	CI	1961	1961	N			See continuation page.
Np-237	Paper.	Unknown.	T .00026000000000	CI	1961	1961	N			See continuation page.
Pu-238	Paper.	Unknown.	T .01080000000000	CI	1961	1961	N			See continuation page.
Pu-239	Paper.	Unknown.	T .01080000000000	CI	1961	1961	N			See continuation page.
Pu-240	Paper.	Unknown.	T .00114000000000	CI	1961	1961	N			See continuation page.
Pu-241	Paper.	Unknown.	T 1.1800000000000	CI	1961	1961	N			See continuation page.

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Am-241	Paper.	Unknown.	T .00540000000000	CI	1961	1961	N			See continuation page.
Cm-242	Paper.	Unknown.	T .00540000000000	CI	1961	1961	N			See continuation page.
Cm-244	Paper.	Unknown.	T .00500000000000	CI	1961	1961	N			See continuation page.
H-3	Paper.	Unknown.	T .27630000000000	CI	1962	1962	N			See continuation page.
C-14	Paper.	Unknown.	T .03707000000000	CI	1962	1962	N			See continuation page.
Fe-55	Paper.	Unknown.	T 6.4030000000000	CI	1962	1962	N			See continuation page.
Ni-59	Paper.	Unknown.	T .00192100000000	CI	1962	1962	N			See continuation page.
Ni-63	Paper.	Unknown.	T 1.0780000000000	CI	1962	1962	N			See continuation page.
Co-60	Paper.	Unknown.	T 2.2580000000000	CI	1962	1962	N			See continuation page.

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Sr-90	Paper.	Unknown.	T .00310000000000	CI	1962	1962	N			See continuation page.
Tc-99	Paper.	Unknown.	T .00060660000000	CI	1962	1962	N			See continuation page.
I-129	Paper.	Unknown.	T .00000015768000	CI	1962	1962	N			See continuation page.
Cs-137	Paper.	Unknown.	T .67400000000000	CI	1962	1962	N			See continuation page.
Ce-144	Paper.	Unknown.	T .01584000000000	CI	1962	1962	N			See continuation page.
Eu-154	Paper.	Unknown.	T .00000977300000	CI	1962	1962	N			See continuation page.
Eu-155	Paper.	Unknown.	T .03168000000000	CI	1962	1962	N			See continuation page.
U-234	Paper.	Unknown.	T .00000707700000	CI	1962	1962	N			See continuation page.
U-235	Paper.	Unknown.	T .00000015170000	CI	1962	1962	N			See continuation page.

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U-236	Paper.	Unknown.	T .00000269600000	CI	1962	1962	N			See continuation page.
Np-237	Paper.	Unknown.	T .00000438100000	CI	1962	1962	N			See continuation page.
Pu-238	Paper.	Unknown.	T .00018200000000	CI	1962	1962	N			See continuation page.
Pu-239	Paper.	Unknown.	T .00018200000000	CI	1962	1962	N			See continuation page.
Pu-240	Paper.	Unknown.	T .00001921000000	CI	1962	1962	N			See continuation page.
Pu-241	Paper.	Unknown.	T .01988000000000	CI	1962	1962	N			See continuation page.
Am-241	Paper.	Unknown.	T .00009099000000	CI	1962	1962	N			See continuation page.
Cm-242	Paper.	Unknown.	T .00009099000000	CI	1962	1962	N			See continuation page.
Cm-244	Paper.	Unknown.	T .00008425000000	CI	1962	1962	N			See continuation page.

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H-3	Paper.	Unknown.	T .00246000000000	CI	1971	1971	N			See continuation page.
C-14	Paper.	Unknown.	T .00033000000000	CI	1971	1971	N			See continuation page.
Fe-55	Paper.	Unknown.	T .05700000000000	CI	1971	1971	N			See continuation page.
Ni-59	Paper.	Unknown.	T .00001710000000	CI	1971	1971	N			See continuation page.
Ni-63	Paper.	Unknown.	T .00960000000000	CI	1971	1971	N			See continuation page.
Co-60	Paper.	Unknown.	T .02010000000000	CI	1971	1971	N			See continuation page.
Sr-90	Paper.	Unknown.	T .00002760000000	CI	1971	1971	N			See continuation page.
Tc-99	Paper.	Unknown.	T .00000540000000	CI	1971	1971	N			See continuation page.
I-129	Paper.	Unknown.	T .00000000140000	CI	1971	1971	N			See continuation page.

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Cs-137	Paper.	Unknown.	T .00600000000000	CI	1971	1971	N			See continuation page.
Ce-144	Paper.	Unknown.	T .00014100000000	CI	1971	1971	N			See continuation page.
Eu-154	Paper.	Unknown.	T .00000008700000	CI	1971	1971	N			See continuation page.
Eu-155	Paper.	Unknown.	T .00028200000000	CI	1971	1971	N			See continuation page.
U-234	Paper.	Unknown.	T .00000006300000	CI	1971	1971	N			See continuation page.
U-235	Paper.	Unknown.	T .00000000135000	CI	1971	1971	N			See continuation page.
U-236	Paper.	Unknown.	T .00000002400000	CI	1971	1971	N			See continuation page.
Np-237	Paper.	Unknown.	T .00000003900000	CI	1971	1971	N			See continuation page.
Pu-238	Paper.	Unknown.	T .00000162000000	CI	1971	1971	N			See continuation page.

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Pu-239	Paper.	Unknown.	T .00000162000000	CI	1971	1971	N			See continuation page.
Pu-240	Paper.	Unknown.	T .00000017100000	CI	1971	1971	N			See continuation page.
Pu-241	Paper.	Unknown.	T .00017700000000	CI	1971	1971	N			See continuation page.
Am-241	Paper.	Unknown.	T .00000081000000	CI	1971	1971	N			See continuation page.
Cm-242	Paper.	Unknown.	T .00000081000000	CI	1971	1971	N			See continuation page.
Cm-244	Paper.	Unknown.	T .00000075000000	CI	1971	1971	N			See continuation page.
U-235	Paper.	Unknown.	T .00004921900000	CI	1971	1971	N	-20%	+20%	See comment below.
U-238	Paper.	Unknown.	T 1.1600000000000	CI	1971	1971	N	-20%	+20%	See comment below.
Cr-51	Paper.	Unknown.	T .04000000000000	CI	1971	1971	N	-20%	+20%	See comment below.

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H-3	Paper.	Unknown.	T .04000000000000	CI	1971	1971	N	-20%	+20%	See comment below.
Mn-54	Paper.	Unknown.	T .01000000000000	CI	1971	1971	N	-20%	+20%	See comment below.
Zn-65	Paper.	Unknown.	T .12000000000000	CI	1971	1971	N	-20%	+20%	See comment below.
Co-60	Paper.	Unknown.	T .12000000000000	CI	1971	1971	N	-20%	+20%	See comment below.
H-3	Paper.	Unknown.	T .00017210000000	CI	1972	1972	N			See continuation page.
C-14	Paper.	Unknown.	T .00002309000000	CI	1972	1972	N			See continuation page.
Fe-55	Paper.	Unknown.	T .00398800000000	CI	1972	1972	N			See continuation page.
Ni-59	Paper.	Unknown.	T .00000119600000	CI	1972	1972	N			See continuation page.
Ni-63	Paper.	Unknown.	T .00067170000000	CI	1972	1972	N			See continuation page.

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Co-60	Paper.	Unknown.	T .00140600000000	CI	1972	1972	N			See continuation page.
Sr-90	Paper.	Unknown.	T .00000193100000	CI	1972	1972	N			See continuation page.
Tc-99	Paper.	Unknown.	T .00000037780000	CI	1972	1972	N			See continuation page.
I-129	Paper.	Unknown.	T .00000000010000	CI	1972	1972	N			See continuation page.
Cs-137	Paper.	Unknown.	T .00041980000000	CI	1972	1972	N			See continuation page.
Ce-144	Paper.	Unknown.	T .00000986500000	CI	1972	1972	N			See continuation page.
Eu-154	Paper.	Unknown.	T .00000000610000	CI	1972	1972	N			See continuation page.
Eu-155	Paper.	Unknown.	T .00001973000000	CI	1972	1972	N			See continuation page.
U-234	Paper.	Unknown.	T .00000000440000	CI	1972	1972	N			See continuation page.

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U-235	Paper.	Unknown.	T .00000000010000	CI	1972	1972	N			See continuation page.
U-236	Paper.	Unknown.	T .00000000170000	CI	1972	1972	N			See continuation page.
Np-237	Paper.	Unknown.	T .00000000270000	CI	1972	1972	N			See continuation page.
Pu-238	Paper.	Unknown.	T .00000011330000	CI	1972	1972	N			See continuation page.
Pu-239	Paper.	Unknown.	T .00000011330000	CI	1972	1972	N			See continuation page.
Pu-240	Paper.	Unknown.	T .00000001200000	CI	1972	1972	N			See continuation page.
Pu-241	Paper.	Unknown.	T .00001238000000	CI	1972	1972	N			See continuation page.
Am-241	Paper.	Unknown.	T .00000005670000	CI	1972	1972	N			See continuation page.
Cm-242	Paper.	Unknown.	T .00000005670000	CI	1972	1972	N			See continuation page.

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Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cm-244	Paper.	Unknown.	T .00000005250000	CI	1972	1972	N			See continuation page.
H-3	Paper.	Unknown.	T .00007420000000	CI	1973	1973	N			See continuation page.
C-14	Paper.	Unknown.	T .01793000000000	CI	1973	1973	N			See continuation page.
Fe-55	Paper.	Unknown.	T .98800000000000	CI	1973	1973	N			See continuation page.
Ni-59	Paper.	Unknown.	T .00000036100000	CI	1973	1973	N			See continuation page.
Ni-63	Paper.	Unknown.	T .00021200000000	CI	1973	1973	N			See continuation page.
Co-60	Paper.	Unknown.	T .06700000000000	CI	1973	1973	N			See continuation page.
Sr-90	Paper.	Unknown.	T .00000029770000	CI	1973	1973	N			See continuation page.
Tc-99	Paper.	Unknown.	T .00000012640000	CI	1973	1973	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error). Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
I-129	Paper.	Unknown.	T .00000000001000	CI	1973	1973	N			See continuation page.
Cs-137	Paper.	Unknown.	T .00000111700000	CI	1973	1973	N			See continuation page.
Ce-144	Paper.	Unknown.	T .00000009160000	CI	1973	1973	N			See continuation page.
Eu-154	Paper.	Unknown.	T .00000023200000	CI	1973	1973	N			See continuation page.
Eu-155	Paper.	Unknown.	T .00000013080000	CI	1973	1973	N			See continuation page.
U-234	Paper.	Unknown.	T .00000000800000	CI	1973	1973	N			See continuation page.
U-236	Paper.	Unknown.	T .00000000010000	CI	1973	1973	N			See continuation page.
Np-237	Paper.	Unknown.	T .00000011700000	CI	1973	1973	N			See continuation page.
Pu-238	Paper.	Unknown.	T .00000000090000	CI	1973	1973	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error). Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Paper.	Unknown.	T .00054700000000	CI	1973	1973	N			See continuation page.
Pu-240	Paper.	Unknown.	T .00001015000000	CI	1973	1973	N			See continuation page.
Pu-241	Paper.	Unknown.	T .48530000000000	CI	1973	1973	N			See continuation page.
Am-241	Paper.	Unknown.	T .00165300000000	CI	1973	1973	N			See continuation page.
Cm-242	Paper.	Unknown.	T .00001323000000	CI	1973	1973	N			See continuation page.
Cm-244	Paper.	Unknown.	T .00000100000000	CI	1973	1973	N			See continuation page.
Ce-141	Paper.	Unknown.	T 2.9500000000000	CI	1973	1973	N	-20%	+20%	See comment below.
Ru-103	Paper.	Unknown.	T 1.0100000000000	CI	1973	1973	N	-20%	+20%	See comment below.
Zr-95	Paper.	Unknown.	T 14.550000000000	CI	1973	1973	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error). Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Paper.	Unknown.	T .26000000000000	CI	1973	1973	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error). Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewees wish to remain anonymous.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
MAP and MFP were unidentified.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were chosen based on their cross sections and half lives. MFP radionuclides were chosen based on their fissionable products and their half lives. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

Continuation of Part D Column or Question Number or Title Uncertainty basis.

A Geiger-Mueller counter was probably used to measure this item. Therefore, the true uncertainty is not known.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 155

1. Preparer: Amaro, C.

2. Date prepared: 08/27/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 603
(building number - use code from attached list)

5. Number of waste stream from this facility:
14H

6. Waste stream:
Continuous air monitors (CAMs).

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1977 Ending year 1977

9. Waste stream volume:
Amount 4.5310 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)

[X] other (specify)
CAMs.

2. Details on physical form(particularly confinement related)
Continuous air monitors are used to monitor different radiation areas to detect contamination.

3. Chemical form:
Particulates on surface of equipment.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. This equipment was probably shipped with a plastic bag cover.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Particulate.	Particulate.	T .00008200000000	CI	1977	1977	N			See comment below.
C-14	Particulate.	Particulate.	T .00001100000000	CI	1977	1977	N			See comment below.
Fe-55	Particulate.	Particulate.	T .00190000000000	CI	1977	1977	N			See comment below.
Ni-59	Particulate.	Particulate.	T .00000057000000	CI	1977	1977	N			See comment below.
Ni-63	Particulate.	Particulate.	T .00032000000000	CI	1977	1977	N			See comment below.
Co-60	Particulate.	Particulate.	T .00067000000000	CI	1977	1977	N			See comment below.
Sr-90	Particulate.	Particulate.	T .00000092000000	CI	1977	1977	N			See comment below.
Tc-99	Particulate.	Particulate.	T .00000018000000	CI	1977	1977	N			See comment below.
I-129	Particulate.	Particulate.	T .00000000005000	CI	1977	1977	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

A smear of the equipment was probably analyzed by the Radiation Measurements Laboratory. From the smear, an activity was assigned to the CAMs. A computer code was probably used to determine this activity. Because a CAM cannot be analyzed, the activity is questionable.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

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Cs-137	Particulate.	Particulate.	T .00020000000000	CI	1977	1977	N			See comment below.
Ce-144	Particulate.	Particulate.	T .00000470000000	CI	1977	1977	N			See comment below.
Eu-154	Particulate.	Particulate.	T .00000000290000	CI	1977	1977	N			See comment below.
Eu-155	Particulate.	Particulate.	T .00000940000000	CI	1977	1977	N			See comment below.
U-234	Particulate.	Particulate.	T .00000000210000	CI	1977	1977	N			See comment below.
U-235	Particulate.	Particulate.	T .00000000010000	CI	1977	1977	N			See comment below.
U-236	Particulate.	Particulate.	T .00000000080000	CI	1977	1977	N			See comment below.
Np-237	Particulate.	Particulate.	T .00000000130000	CI	1977	1977	N			See comment below.
Pu-238	Particulate.	Particulate.	T .00000005400000	CI	1977	1977	N			See comment below.

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Pu-240	Particulate.	Particulate.	T .00000000570000	CI	1977	1977	N			See comment below.
Pu-241	Particulate.	Particulate.	T .00000590000000	CI	1977	1977	N			See comment below.
Am-241	Particulate.	Particulate.	T .00000002700000	CI	1977	1977	N			See comment below.
Cm-242	Particulate.	Particulate.	T .00000002700000	CI	1977	1977	N			See comment below.
Cm-244	Particulate.	Particulate.	T .00000002500000	CI	1977	1977	N			See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
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Additional information or explanations (indicate pertinent contaminant)
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1. Type of source of information:
(check box)

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[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
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[X] yes

6. If yes, explain why:
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