
**Federal Facilities
Compliance Agreement/
Compliance Order
Inventory Report**

EG&G Rocky Flats, Inc.

Permitting and Compliance Division

February 1990

Final Report

**DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE**

FEDERAL FACILITIES COMPLIANCE AGREEMENT

INVENTORY REPORT ADDENDUM

PURPOSE AND SCOPE

The Inventory Report Addendum contains additional information required by the EPA as stated in the December 18, 1989, EPA to DOE letter issuing conditional approval of the Inventory Report. The Inventory Report approval is contingent on the additional information which is provided in this report. In accordance with Section VIII.D. of the Federal Facilities Compliance Agreement (FFCA), this report is due to the EPA Region VIII on February 16, 1990.

The amended Inventory Report addresses the general comments of the conditional approval letter for the Inventory Report. Each waste form includes a complete assessment of specific storage requirements of hazardous waste prohibited from land disposal, as stated in 40 CFR 268.50. This information is found in the "Compliance Status" section for each waste form. Also, each waste form now includes the Sources of Information used by the Rocky Flats Plant (RFP) to determine whether or not releases of hazardous waste or constituents have occurred. This information can be found in the "Releases of Hazardous Waste/Constituents" section for each waste form.

Section Three of the Inventory Report provides additional information addressing the specific comments of EPA's conditional approval letter. This information includes a brief explanation on Real Time Radiography (RTR), and how this process can distinguish lead metal from other metals in waste drums. Also included in this section is a description of all data used to report releases of hazardous waste/constituents for pondcrete, releases to the storage pads on which pondcrete is located, and the immediate surrounding area affected. Finally, this section includes a clarification in the mixed waste streams reported in both storage and inventory reports and any new information which would

storage and inventory reports and any new information which would indicate the possibility of new mixed waste streams being generated in the future (Ref. letter from EG&G to DOE, #90-RF-0020).

The inventory information in this report is based on the mixed waste storage on October 29, 1989, for Transuranic Mixed Waste and September 30, 1989, for Low-Level Mixed Waste. The estimated time to fill the available storage for Low-level Mixed Waste is not based on the available storage capacity divided by the generation rate due to the various waste types competing for the same available storage. The estimated time to fill available storage for Transuranic Mixed Waste is based on a total capacity of 1601 cubic yards, not the individual waste types. 688.6 cubic yards were available for storage of Transuranics Mixed Waste as of October 29, 1989.

Additional information provided in this report is in "bold type" for easy identification.

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1.0 TRANSURANIC MIXED WASTE

1.1 LEAD/TRU MIXED WASTE

EPA Waste Code(s) - D008

History of Waste Generation/Waste Management Prior to Storage

Lead waste is most often generated in the form of discarded shielding, usually in sheets and bricks. Lead waste is generated throughout the Rocky Flats Plant (RFP) whenever shielding is necessary for personnel protection against radiation. Lead is used extensively in the Perimeter Security Zone (PSZ) where plutonium processing is performed. Lead waste is inappropriate for reuse because of the presence of radiological contaminants. Lead waste is considered a mixed waste because elemental lead fails the EP toxicity test. TRU/mixed waste forms of lead are usually a result of direct contact with glovebox atmosphere's. TRU/mixed lead waste is packaged in 55 gallon DOT Type 7A drums. The drums are lined with one rigid polyethylene liner, one fiberboard liner, and one bag liner. After assay, the drums are transferred to interim status storage areas. This waste is identified by Item Description Code 321. Item Description Code 321 is also produced as a low-level mixed waste. This waste has been transported to Idaho National Engineering Laboratory in the past for storage.

Source of Hazardous Constituents

The lead waste has not been sampled, however, process knowledge allows for characterization of this waste form. Lead Waste (IDC 321) from non-specific sources is believed to have only lead as a hazardous constituent. In numerous test of elemental lead, EP toxicity values exceed those listed in Table I, 40 CFR 261.24. It is assumed that IDC 321 would also exceed EP toxicity limits for lead.

Timeframe for Placement into Storage - 1988 to present

Radioactivity Type - Transuranic

Physical Form - Solid

Quantity of Waste - 4.1 Cubic Yards (15 drums)

Storage Location/Containers - 55 gallon drums

Unit 59 - 11 drums

Unit 63 - 4 drums

Areas Permitted for Storage

<u>RCRA Unit</u>	<u>Location</u>	<u>Capacity, Cubic Yards</u>
11	Bldg. 776, Room 134	149
19	Bldg. 374, Room 3813	138
20	Bldg. 664	587
59	Bldg. 569	412
63	Bldg. 371, Room 3420	182
69	Bldg. 776, Room 154	116
73	Bldg. 774, Room 241	17

Compliance Status

Storage is being performed in accordance with the RFP Part A permit applications and interim status regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

The Rocky Flats Plant (RFP) has not made a determination on TRU mixed lead waste (IDC 321) being Land Disposal Restricted (LDR). Specific LDR standards for RCRA characteristic metals have not been determined, however, based on the process knowledge available, this waste form is expected to exceed forthcoming LDR limits for RCRA characteristic metals.

Storage of IDC 321 as LDR is being assessed by the RFP pursuant to 40 CFR 268.50. This waste form is being accumulated, as necessary, until an LDR determination is made, (LDR determination to be made by March 16, 1990) and disposal at the Waste Isolation Pilot Plant (WIPP) can be provided.

Disposal at the WIPP is contingent upon the following:

- 1) LDR determination for this waste form.
- 2) Treatment to immobilize lead and create a less leachable waste form to meet future LDR standards for RCRA characteristic metals.
- 3) The WIPP site opening, 4) an interim status storage facility located to accept RFP TRU mixed wastes until the WIPP site opens.

Releases of Hazardous Waste/Constituents

No releases from containers of this transuranic mixed waste have been observed/detected.

Sources of Information

- 1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- 2) "104(E) Second Update" - DOE to EPA report dated December 15, 1989.
- 3) Safety Review Group - Unplanned events computer database for FY1989. Hard files for data prior to FY1989.
- 4) Shift Superintendent's daily log.

Generation Rate - 0.05 cubic yards/month based on generation from 12/88 to 6/89.

Estimate of Available Storage Capacity

1601 cubic yards total for all transuranic mixed wastes. Of this total, 688.6 cubic yards are available.

Estimated Time to Fill Available Storage Capacity

Currently, the generation rate for transuranic mixed waste (total) is approximately 70 cubic yards per month. The generation rate by waste type is not currently available. When 1491 cubic yards of transuranic mixed waste is reached (projected in June 1990), RFP is planning on limiting operations that produce transuranic mixed waste. It is

projected that the generation rate will be 50 cubic yards/month in June after operations are limited. The generation of transuranic mixed waste thereafter is projected at 20 cubic yards/month.

1.2 Leaded Gloves/TRU Mixed

EPA Waste Code(s) - D008

History of Waste Generation/Waste Management Prior to Storage

Leaded gloves are used extensively throughout the RFP. All plutonium buildings within the Perimeter Security Zone (PSZ) use gloveboxes for controlling the environment of plutonium. Plutonium processes require operators to work with different process operations within gloveboxes. The gloves which are lead-lined help reduce exposure to personnel from plutonium. Different thicknesses of lead within the gloves are also used at various locations throughout the PSZ. Gloves are routinely inspected for rips, tears, contamination and excessive wear. The gloves which no longer pass inspection have been replaced with new gloves. The old gloves are discarded as waste. Another program is currently under evaluation to change gloves on a more frequent basis, depending on the atmosphere they are exposed to. This program, if implemented, will create a larger generation of waste leaded gloves than in the past. Data on future generation of waste leaded gloves has not been established.

Leaded waste gloves are packaged into 55 gallon DOT Type A drums. The drums are lined with one rigid polyethylene liner and one bag liner. The drums are assayed and moved to interim status storage areas. This waste is identified by Item Description Code (IDC) 339. IDC 339 is also produced as a low level mixed waste. This waste is stored as a mixed waste because of the lead content within the gloves. Leaded gloves have been shipped to Idaho National Engineering Laboratory for storage in the past.

Source of Hazardous Constituents

Current waste lead-lined gloves are characterized by process knowledge. The hazardous constituent of concern is lead. Two samples of 30 mil glovebox type gloves (new) were sampled for EP toxicity. Both samples

were below the EP toxicity levels for lead (Lab Number M85-2833). The levels of lead in used gloves will not be determined until sampling and analysis has been completed.

Timeframe for Placement into Storage - 1988 to present

Radioactivity Type - Transuranic

Physical Form - Solid

Quantity of Waste - 13.4 cubic yards (49 drums)

Storage Location/Containers - 55 gallon drums

Unit 20 - 34 drums
Unit 59 - 6 drums
Unit 63 - 9 drums

Areas Permitted for Storage

<u>RCRA Unit</u>	<u>Location</u>	<u>Capacity, Cubic Yards</u>
11	Bldg. 776, Room 134	149
19	Bldg. 374, Room 3813	138
20	Bldg. 664	587
59	Bldg. 569	412
63	Bldg. 371, Room 3420	182
69	Bldg. 776, Room 154	116
73	Bldg. 774, Room 241	17

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Applications and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made an LDR determination on leaded gloves (IDC 339), currently being stored as TRU mixed waste. Specific LDR standards for RCRA characteristic metals have not been established. Until an LDR

determination is made for this waste form, the RFP will continue to store this waste as LDR.

Storage of IDC 339 as LDR is being assessed by the RFP pursuant to 40 CFR 268.50. Leaded gloves are accumulated, as necessary, until an LDR determination is made, (LDR determination to be made by March 16, 1990) and disposal at the Waste Isolation Pilot Plant (WIPP) can be provided. Disposal of leaded gloves at the WIPP is contingent upon the following

- 1) LDR determination based on complete process knowledge and analytical data.
- 2) TCLP analysis to determine the amounts of leachable lead.
- 3) The WIPP site opening.
- 4) An interim storage facility located to accept RFP TRU mixed wastes until the WIPP site opens.

Releases of Hazardous Waste/Constituents

No releases from containers of this transuranic mixed waste have been observed/detected.

Sources of Information

- 1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- 2) "104(E) Second Update" - DOE to EPA report dated December 15, 1989.
- 3) Safety Review Group - Unplanned events computer database for FY1989. Hard files for data prior to FY1989.
- 4) Shift Superintendent's daily log.

Generation Rate - 0.8 cubic yards/month based on generation from 6/88 to 6/89.

Estimate of Available Storage Capacity

1601 cubic yards total for all transuranic mixed wastes. Of this total, 688.6 cubic yards are available.

Estimated Time to Fill Available Storage Capacity

Currently, the generation rate for transuranic mixed waste (total) is approximately 70 cubic yards per month. The generation rate by waste type is not currently available. When 1491 cubic yards of transuranic mixed waste is reached (projected in June 1990), RFP is planning on limiting operations that produce transuranic mixed waste. It is projected that the generation rate will be 50 cubic yards/month in June after operations are limited. The generation of transuranic mixed waste thereafter is projected at 20 cubic yards/month.

1.3 Leaded Gloves/Acid Contaminated-TRU Mixed Waste

EPA Waste Code(s) - D008

History of Waste Generation/Waste Management Prior to Storage

Acid-contaminated leaded gloves are generated mainly in Recovery Operations at the RFP. The gloves exhibit the same properties and characteristics as leaded gloves (IDC 339) used throughout RFP. The recovery processes in Buildings 371 and 771 use several acids. The leaded glovebox gloves are therefore exposed to these acids and acid-contaminated. Prior to storage in 1987, acid-contaminated gloves were washed to remove the acids. The gloves would then become IDC 339, and at that time meet the criteria for certification and shipping. Storage began in 1987 when it was determined that the method and facility for washing/rinsing gloves was not adequate and the operation was discontinued. Acid-contaminated gloves are currently packaged into 55 gallon DOT Type 7A drums. The drums are lined with a polyethylene rigid liner and a bag liner. These gloves are being stored as mixed wastes due to the corrosivity of the acids on the gloves and the lead content. This waste is identified by IDC 341.

Source of Hazardous Constituents

Characterization of this waste is based on process knowledge. Lead is the hazardous constituent present in the gloves. Acids used in various processes are also present. Nitric acid is used in Recovery Operations. Sulfuric acid, hydrofluoric acid and aluminum Nitrate are also used. The presence of these chemicals on leaded gloves could cause deterioration to the outer layers of the gloves. The effects of nitric acid on lead could generate a lead nitrate buildup. Lead nitrate is an oxidizer and unstable in contact with organics. The corrosivity of acid contaminated gloves needs to be neutralized by washing/rinsing the gloves. IDC 341 would then be changed to IDC 339 and would meet the RFP criteria for waste certification. However, the lead constituent would remain and

analysis by EP toxicity methods would need to be performed to determine if the leaded gloves exceed the maximum concentration levels for EP toxicity.

Timeframe for Placement into Storage - 1987 to present

Radioactivity Type - Transuranic

Physical Form - Solid

Quantity of Waste - 23.3 cubic yards (85 drums)

Storage Location/Containers - 55 gallon drums

Unit 59 - 9 drums

Unit 63 - 76 drums

Areas Permitted for Storage

<u>RCRA Unit</u>	<u>Location</u>	<u>Capacity, Cubic Yards</u>
11	Bldg. 776, Room 134	149
19	Bldg. 374, Room 3813	138
20	Bldg. 664	587
59	Bldg. 569	412
63	Bldg. 371, Room 3420	182
69	Bldg. 776, Room 154	116
73	Bldg. 774, Room 241	17

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Applications and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made an LDR determination on acid-contaminated leaded gloves currently being stored as TRU mixed waste. Specific LDR standards for RCRA characteristic metals have not been established. Until an LDR

determination is made for this waste form, the RFP will continue to store acid-contaminated leaded gloves as TRU mixed wastes and LDR wastes.

Storage of IDC 341 as LDR is being assessed by the RFP pursuant to 40 CFR 268.50. Acid-contaminated leaded gloves are accumulated, as necessary, until an LDR determination is made (LDR determination to be made by March 16, 1990), and disposal at the Waste Isolation Pilot Plant (WIPP) can be provided. Disposal of this waste form at the WIPP is contingent upon the following:

- 1) Glove rinsing, to remove excess acid and eliminate the possibility of the gloves deteriorating from the acid.
- 2) TCLP analysis to determine leachable amounts of lead.
- 3) An LDR determination for this waste form based on process knowledge and analytical data, when such data becomes available.
- 4) The WIPP site opening.
- 5) An interim storage facility located to accept RFP TRU mixed wastes until the WIPP site opens.

Releases of Hazardous Waste/Constituents

No releases from containers of this transuranic mixed waste have been observed/detected.

Sources of Information

- 1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- 2) "104(E) Second Update" - DOE to EPA report dated December 15, 1989.
- 3) Safety Review Group - Unplanned events computer database for FY1989. Hard files for data prior to FY1989.
- 4) Shift Superintendent's daily log.

Generation Rate - 1.3 cubic yards/month based on the FY1989 generation (October 1988 - September 1989).

Estimate of Available Storage Capacity

1601 cubic yards total for all transuranic mixed wastes. Of this total, 688.6 cubic yards are available.

Estimated Time to Fill Available Storage Capacity

Currently, the generation rate for transuranic mixed waste (total) is approximately 70 cubic yards per month. The generation rate by waste type is not currently available. When 1491 cubic yards of transuranic mixed waste is reached (projected in June 1990), RFP is planning on limiting operations that produce transuranic mixed waste. It is projected that the generation rate will be 50 cubic yards/month in June, after operations are limited. The generation of transuranic mixed waste thereafter is projected a 20 cubic yards/month.

1.4 Heavy Metal (Non-SS) TRU/Mixed

EPA Waste Code(s) - D008

History of Waste Generation/Waste Management Prior to Storage

Heavy (non-SS) metal waste is generated at various locations through the RFP. Heavy scrap metal is defined at RFP as the metal elements above Cu (copper) on the periodic chart. This waste is identified by Item Description Code 320. In 1987, Item Description Code 321 was created specifically for lead. Prior to this, lead waste was not segregated from IDC 320. This waste is currently being stored as a mixed waste until it can be determined that no lead exists within wastes currently being stored as IDC 320. Typically, scrap metals consist of crucibles, funnels, rods and fixturing from several processes, and production operations. Tantalum, tungsten and platinum are examples of scrap metals generated at RFP. IDC 320 is also produced as a low-level mixed waste.

This waste form has been shipped to Idaho National Engineering Laboratory for storage in the past. Heavy metal is packaged in 55 gallon DOT Type 7A drums, it is then assayed and moved to interim status storage areas.

Sources of Hazardous Constituents

Information of hazardous constituents in scrap heavy metal is based on process knowledge. The only hazardous constituent of concern in this waste form is lead. The maximum amount of lead possible in IDC 320 is 49000 ppm (Ref: Table IL dated 05/23/89 from J. K. Paynter, #WCP02-31). Until positive identification that the presence of lead in IDC 320 is below EP toxicity maximum level, the waste will be stored as a mixed waste. Real Time-Radiography (RTR) of drums with Item Description Code 320 may be used to determine if lead is present in waste drums.

Timeframe for Placement into Storage - 1981 to present

Radioactivity Type - Transuranic

Physical Form - Solid

Quantity of Waste - 6.9 cubic yards (25 drums)

Storage Location/Containers - 55 gallon drums

Unit 20 - 9 drums
Unit 59 - 10 drums
Unit 63 - 6 drums

Areas Permitted for Storage

<u>RCRA Unit</u>	<u>Location</u>	<u>Capacity, Cubic Yards</u>
11	Bldg. 776, Room 134	149
19	Bldg. 374, Room 3813	138
20	Bldg. 664	587
59	Bldg. 569	412
63	Bldg. 371, Room 3420	182
69	Bldg. 776, Room 154	116
73	Bldg. 774, Room 241	17

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Applications and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on Heavy Metal (non-special source) being Land Disposal Restricted (LDR). The waste form needs to be examined for the presence of lead. LDR standards for RCRA characteristic metals have not been established. Until a determination is made for lead in this waste form RFP will continue to store heavy metal as TRU mixed waste and LDR waste.

Storage of IDC 320 is being assessed by the RFP pursuant to 40 CFR 268.50. Heavy metal is accumulated, as necessary, until an LDR determination is made (LDR determination to be made by March 16, 1990), and disposal at the Waste Isolation Pilot Plant (WIPP) can be provided. Disposal at the WIPP is contingent upon the following:

- 1) AN LDR determination made as to the presence of lead in the waste form.
- 2) The WIPP site opening.
- 3) An interim storage facility located to accept RFP TRU mixed wastes until the WIPP site opens.

Releases of Hazardous Waste/Constituents

No releases from containers of this transuranic mixed waste have been observed/detected.

Sources of Information

- 1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- 2) "104(E) Second Update" - DOE to EPA report dated December 15, 1989.
- 3) Safety Review Group - Unplanned events computer database for FY1989. Hard files for data prior to FY1989.
- 4) Shift Superintendent's daily log.

Generation Rate - 0.2 cubic yards/month based on generation from 6/88 to 6/89.

Estimate of Available Storage Capacity

1601 cubic yards total for all transuranic mixed wastes. Of this total, 688.6 cubic yards are available.

Estimated Time to Fill Available Storage Capacity

Currently, the generation rate for transuranic mixed waste (total) is approximately 70 cubic yards per month. The generation rate by waste type is not currently available. When 1491 cubic yards of transuranic mixed waste is reached (projected in June 1990), RFP is planning on limiting operations that produce transuranic mixed waste. It is

projected that the generation rate will be 50 cubic yards/month in June, after operations are limited. The generation of transuranic mixed waste thereafter is projected a 20 cubic yards/month.

1.5 Ground Glass/TRU Mixed

EPA Waste Code(s) - D008, D009

History of Waste Generation/Waste Management Prior to Storage

Ground glass waste at RFP is currently made up almost exclusively of crushed fluorescent lamps. Fluorescent lamps are used throughout the RFP. Uranium processing buildings outside the Perimeter Security Zone (PSZ) and plutonium processing buildings within the PSZ generating ground glass as a waste, are radiologically contaminated. The quantity of mercury in fluorescent lamps is identified as a RCRA waste (D009); therefore, ground glass is currently being stored as a mixed waste. This waste is identified by Item Description Code 855; however, revision of this IDC code has been initiated. The purpose is to include leaded glass in the waste form, and to assign an Economic Discard Limit to the IDC number. The new IDC number suggested would be IDC 444 - Ground Glass, from fluorescent lamps and leaded glass. Ground glass is accumulated in 55 gallon drums, DOT Type 7A drums. The drums are lined with one rigid polyethylene liner, a fiberboard liner, and polyethylene bag liner. The drums are assayed and moved to permitted storage areas.

Source of Hazardous Constituents

Ground glass waste is characterized by process knowledge and utilizing waste analysis when available. The hazardous constituent for ground glass is mercury. Lab analysis (Lab Report E87-4234) of fluorescent lamps for EP toxic test for mercury indicate concentration levels of mercury above the maximum concentration limit listed in Table I, 40 CFR 261.24. Lead would also be a listed hazardous constituent if the IDC change from 855 to 444 is implemented since leaded glass analysis using the EP toxicity test also failed (Lab Report E86-3777).

Timeframe for Placement into Storage - June 1989 to present

Radioactivity Type - Transuranic

Physical Form - Solid

Quantity of Waste - .3 cubic yards (1 drum)

Storage Location/Containers - 55 gallon drums

Unit 59 - 1 drum

Areas Permitted for Storage

<u>RCRA Unit</u>	<u>Location</u>	<u>Capacity, Cubic Yards</u>
11	Bldg. 776, Room 134	149
19	Bldg. 374, Room 3813	138
20	Bldg. 664	587
59	Bldg. 569	412
63	Bldg. 371, Room 3420	182
69	Bldg. 776, Room 154	116
73	Bldg. 774, Room 241	17

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Applications and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on ground glass being Land Disposal Restricted (LDR). Current levels of mercury in this waste form are sufficient to require the waste to be designated as RCRA characteristic. Specific LDR standards for RCRA characteristic metals have not been established. The RFP will continue to store ground glass as TRU mixed waste and LDR waste until an LDR determination is made.

Storage of this waste form as LDR is being assessed by the RFP pursuant to 40 CFR 268.50. Ground glass is accumulated, as necessary, until an LDR determination is made (LDR determination to be made by March 16, 1990), and disposal at the Waste Isolation Pilot Plant (WIPP) can be provided. Disposal of ground glass is contingent upon the following:

- 1) TCLP analysis to determine mercury levels,

- 2) Treatment, if necessary, to stabilize mercury depending on TCLP analytical results.
- 3) An LDR determination based on process knowledge and analytical data.
- 4) The WIPP site opening.
- 5) An interim storage facility located to accept RFP TRU mixed waste until the WIPP site opens.

Releases of Hazardous Waste/Constituents

No releases from containers of this transuranic mixed waste have been observed/detected.

Sources of Information

- 1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- 2) "104(E) Second Update" - DOE to EPA report dated December 15, 1989.
- 3) Safety Review Group - Unplanned events computer database for FY1989. Hard files for data prior to FY1989.
- 4) Shift Superintendent's daily log.

Generation Rate - 0.03 cubic yards/month based on Calendar Year 1989 generation through October 1989.

Estimate of Available Storage Capacity

1601 cubic yards total for all transuranic mixed wastes. Of this total, 688.6 cubic yards are available.

Estimated Time to Fill Available Storage Capacity

Currently, the generation rate for transuranic mixed waste (total) is approximately 70 cubic yards per month. The generation rate by waste type is not currently available. When 1491 cubic yards of transuranic mixed waste is reached (projected in June 1990), RFP is planning on

limiting operations that produce transuranic mixed waste. It is projected that the generation rate will be 50 cubic yards/month in June, after operations are limited. The generation of transuranic mixed waste thereafter is projected a.20 cubic yards/month.

1.6 Particulate-Sludge Waste/TRU Mixed

EPA Waste Code(s) - F001, F002, F003, D008

History of Waste Generation/Waste Management Prior to Storage

Generation of these types of transuranic mixed waste are most often from plutonium recovery operations. The particulate and sludge wastes of concern in this report will be identified by Item Description Codes 292, 299 and 420. The particulate and sludge wastes identified in the storage report were IDCs 430 and 431 (Unleached Resin and Leached Resin). Item Description Codes 292 and 299 were mixed with cement and shipped to Idaho National Engineering Laboratory (INEL) in the past. IDC 420 has also been shipped to INEL for storage in the past; however, the particulates present in this waste form exceed Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WIPP), consequently, treatment for immobilization is required.

The wastes currently being stored are uncemented. These wastes are packaged in 55 gallon DOT Type 7A drums with multiple bag liners and typically packaged in smaller containers within the drum. After assay, the wastes are moved to an interim status storage area. One drum of sludge (IDC 292) was returned to RFP from INEL in support of an INEL waste examination program. The older drum was originally packaged by adding cement in alternating layers with wet sludge.

The wastes identified above (IDCs 292, 299 and 420) require further treatment to be considered for any future disposal. The final waste form is identified by Item Description Code 806. The cementation process used in the past is undergoing RCRA closure, consequently, no treatment for these waste forms is being performed at this time. IDCs 292, 299 and 420 are being stored as mixed wastes.

Sources of Hazardous Constituents

Item Description Code 806 was characterized for manifesting purposes in 1987. The constituents listed were: 1,1,1-trichloroethane, carbon tetrachloride, 1,1,2-trichloro-1,2,2-trifluoroethane, methylene chloride, xylene butyl alcohol, methyl alcohol and lead. This characterization does not indicate which input IDCs contain the constituents. Table C-2 of the RFP Part B Permit Application indicates the metal contaminants within IDC 420. No lab analysis of these wastes have been conducted for RCRA constituents.

Timeframe for Placement into Storage - 1988 to present

Radioactivity Type - Transuranic

Physical Form - Solid

Quantity of Waste - 22 cubic yards (80 drums)

Storage Location/Containers - 55 gallon drums

Unit 59 - 4 drums
Unit 63 - 76 drums

Areas Permitted for Storage

<u>RCRA Unit</u>	<u>Location</u>	<u>Capacity, Cubic Yards</u>
11	Bldg. 776, Room 134	149
19	Bldg. 374, Room 3813	138
20	Bldg. 664	587
59	Bldg. 569	412
63	Bldg. 371, Room 3420	182
69	Bldg. 776, Room 154	116
73	Bldg. 774, Room 241	17

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Applications and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on this waste form being Land Disposal Restricted (LDR). Further characterization of this waste form is necessary to determine the presence of spent solvents and lead. Until further characterization, this waste form will continue to be stored as TRU mixed waste and LDR waste.

Storage of particulate-sludge waste, as LDR, is being assessed by the RFP pursuant to 40 CFR 268.50. This waste form is accumulated, as necessary, until proper disposal at the Waste Isolation Pilot Plant (WIPP) can be provided. Disposal of this waste form at the WIPP is contingent upon the following:

- 1) TCLP analysis to determine levels of spent solvents and lead.
- 2) Treatment, if necessary, to meet the Waste Isolation Pilot Plant-Waste Acceptance Criteria (WIPP-WAC), and treatment standards for LDR waste as specified in 40 CFR 268.41, 268.42, and 268.43.
- 3) The WIPP site opening.
- 4) An interim storage facility located to accept RFP TRU mixed wastes until the WIPP site opens.

Releases of Hazardous Waste/Constituents

No releases from containers of this transuranic mixed waste have been observed/detected.

Sources of Information

- 1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- 2) "104(E) Second Update" - DOE to EPA Report dated December 15, 1989.

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- 3) Safety Review Group - Unplanned events computer database for FY1989.
Hard files for data prior to FY1989.
 - 4) Shift Superintendent's daily log.

Generation Rate - 1.6 cubic yards/month based on Calendar Year 1989.

Estimate of Available Storage Capacity

1601 cubic yards total for all transuranic mixed wastes. Of this total, 688.6 cubic yards are available.

Estimated Time to Fill Available Storage Capacity

Currently, the generation rate for transuranic mixed waste (total) is approximately 70 cubic yards per month. The generation rate by waste type is not currently available. When 1491 cubic yards of transuranic mixed waste is reached (projected in June 1990), RFP is planning on limiting operations that produce transuranic mixed waste. It is projected that the generation rate will be 50 cubic yards/month in June, after operations are limited. The generation of transuranic mixed waste thereafter is projected a 20 cubic yards/month.

1.7 Firebrick - Pulverized or Fines/TRU Mixed

EPA Waste Code(s) - D008

History of Waste Generation/Waste Management Prior to Storage

Pulverized firebrick and firebrick fines has been generated for Plutonium Recovery Operations. Firebrick from the incinerator in Building 771 is replaced periodically to recover plutonium from the firebrick. The process of pulverizing the firebrick is to achieve a particulate form of the firebrick so it can be processed for recovery. The pulverized firebrick is assayed to determine if the amount of plutonium is above or below the Economical Discard Limit (EDL) value. If the plutonium concentration is above the EDL, it is processed through recovery operations, if the plutonium is below the EDL, it is designated as waste. The pulverized firebrick as a waste is identified by Item Description Code 378. It is packaged into 55 gallon DOT Type 7A drums, lined with a rigid polyethylene liner and a polyethylene bag liner.

The waste is assayed and transferred to interim status storage areas. This waste form is currently being stored as a mixed waste.

Source of Hazardous Constituents

IDC 378, Pulverized Firebrick, is characterized by process knowledge. This waste form does not meet the waste acceptance criteria for certification due to the particulates in the waste form. Ultimately, this waste form is processed into IDC 806, however, the cementation process which produces IDC 806 is currently undergoing RCRA closure. No cementation is currently being performed on pulverized firebrick.

Table C-2 of the RFP Part B Permit Application lists metal as the hazardous constituent of pulverized firebrick. Lab analysis has not been performed on IDC 378.

Timeframe for Placement into Storage - 1988 to present

Radioactivity Type - Solid

Physical Form - Solid

Quantity of Waste - 0.8 Cubic Yards (3 drums)

Storage Location/Containers - 55 gallon drums

Unit 63 - 3 drums

Areas Permitted for Storage

<u>RCRA Unit</u>	<u>Location</u>	<u>Capacity, Cubic Yards</u>
11	Bldg. 776, Room 134	149
19	Bldg. 374, Room 3813	138
20	Bldg. 664	587
59	Bldg. 569	412
63	Bldg. 371, Room 3420	182
69	Bldg. 776, Room 154	116
73	Bldg. 774, Room 241	17

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on pulverized firebrick being Land Disposal Restricted (LDR). The suspected presence of lead in this waste form requires this waste to be stored as TRU mixed waste and LDR waste. Specific LDR standards for RCRA characteristic metals have not been established.

Storage of pulverized firebrick, as LDR, is being assessed by the RFP pursuant to 40 CFR 268.50. Firebrick has been accumulated, as necessary, until proper disposal at the Waste Isolation Pilot Plant (WIPP) can be

provided. Disposal of this waste form at the WIPP is contingent upon the following:

- 1) TCLP analysis for RCRA characteristic metals.
- 2) Treatment, if necessary, to meet the Waste Isolation Pilot Plant-Waste Acceptance Criteria (WIPP-WAC), and to provide immobilization of lead to meet future LDR requirements, based on TCLP analytical results.
- 3) The WIPP site opening.
- 4) An interim storage facility located to accept RFP TRU mixed wastes until the WIPP opens.

Releases of Hazardous Waste/Constituents

No releases from containers of this transuranic mixed waste have been observed/detected.

Sources of Information

- 1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- 2) "104(E) Second Update" - DOE to EPA Report dated December 15, 1989.
- 3) Safety Review Group - Unplanned events computer database for FY1989. Hard files for data prior to FY1989.
- 4) Shift Superintendent's daily log.

Generation Rate - No generation from 12/88 to 10/89

Estimate of Available Storage Capacity

1601 cubic yards total for all transuranic mixed wastes. Of this total, 688.6 cubic yards are available.

Estimated Time to Fill Available Storage Capacity

Currently, the generation rate for transuranic mixed waste (total) is approximately 70 cubic yards per month. The generation rate by waste

type is not currently available. When 1491 cubic yards of transuranic mixed waste is reached (projected in June 1990), RFP is planning on limiting operations that produce transuranic mixed waste. It is projected that the generation rate will be 50 cubic yards/month in June, after operations are limited. The generation of transuranic mixed waste thereafter is projected at 20 cubic yards/month.

2.0 LOW-LEVEL MIXED WASTES

2.1 Pondcrete/LLW Mixed

EPA Waste CODE(S) - D006, F001, F002, F003, F005, F007, D009

History of Waste Generation/Waste Management Prior to Storage

Pondcrete was generated as a result of cleanout of sediment from several solar evaporation ponds. The usage of the ponds was discontinued in 1986 and the wastewaters are currently sent to the Liquid Waste Treatment Facility in Building 374. The collection of waters previously sent to the evaporation ponds indicate multiple waste streams from several buildings at the RFP. The contributing wastes may be contaminated with a variety of hazardous constituents and radiological contaminants. The evaporation ponds are currently being closed as mixed waste units under RCRA. Pond water on top of pond sediments and sludge is pumped to Building 374 for treatment. Pond sediment and sludge is slurried and pumped to Building 788. There it is sent to a clarifier and the supernatant is returned to the pond. The settled sludge solids are pumped to a unit where they are mixed with Portland cement. The resulting material, pondcrete, is placed in 2X4X7 plywood boxes, allowed to solidify and prepared for offsite shipment. Pondcrete containers are transferred to interim status storage areas after packaging. This waste is identified by Item Description Code 805.

Originally, pondcrete was packaged in triwall boxes. Many containers of pondcrete did not solidify properly, resulting in a backlog of pondcrete (approximately 3,200 cubic yards) that must be reprocessed into an acceptable waste form for offsite shipment. Before arrangements for offsite disposal with the Nevada Test Site were finalized, a backlog of approximately 10,900 cubic yards of pondcrete had been generated. With shipments now underway, this inventory has been reduced to approximately 9,700 cubic yards as of September 1989.

Source of Hazardous Constituents

Pondcrete has been sampled and analyzed several times for numerous hazardous constituents which include volatile and semi-volatile organic compounds, metals, radioactivity, EP toxicity, corrosivity and reactivity (cyanide and sulfide). While the source of the hazardous constituents has not been determined, trace amounts of volatiles and semi-volatiles are present. TCLP analysis of volatile and semi-volatile compounds listed as land disposal restricted solvents F001-F005 (40CFR268.41, Table CCWE) indicate three constituents above the detection levels. In each case, this occurred in only one out of three results. The three compounds above detection are: 1,1,1-trichloroethane, tetrachloroethane and toluene. Their concentrations are 8, 5 and 60 PPB respectively, which are well below regulatory limits (40CFR268.41). Acetone and methylene chloride were also detected in the same leachate, but were also detected in similar levels in the sample blank. In addition, the sample leachates were analyzed for the halogenated organics listed in 40CFR268, Appendix III, which are limited to a concentration of 1000 mg/l in 40CFR268.32. None of the halogenated organics were detected at levels above the detection limit for the analysis (RFW #8808-187).

1,1,1-trichloroethane and tetrachloroethane are used for degreasing, acetone and toluene for cleaning, and methylene chloride for paint removal. The levels of these and all other land disposal restricted volatiles and semi-volatiles in pondcrete are below the levels specified in 40CFR268.32 and .41, Appendix III and Table CCWE.

Cyanide analyses were performed on six different samples. Total cyanide results range from 7.14 - 12.1 ppm, while cyanide amenable to chlorination results range from 4.05 to 9.90 ppm.

No TCLP analyses have been run on pondcrete for metals, but the analytical data available from EP toxicity tests for pondcrete indicate the LDR standards will not be met for at least one metal. Cadmium levels exceeded the EP toxic limit of 1.0 mg/l (ppm) on 8 of 26 samples.

The range of the eight exceeded levels is 1.5 mg/l to 42 mg/l (Lab #E88-2124). TCLP analyses would be expected to generate higher concentrations of cadmium since it is considered a more rigorous leach test than the EP toxicity test. Also, the CCWE level for cadmium, 0.066 ppm, is significantly lower than the EP toxicity limit of 1 ppm.

Timeframe for Placement into Storage - 1986 to present

Radioactivity Type - Low Level

Physical Form - Solid

Quantity of Waste - 9692.9 Yd³ (13,214 triwalls and 272 metal boxes)

Storage Location/Containers - Triwall Boxes, 4X2X7 Plywood Boxes, 4X4X7 Metal Waste Boxes

Unit 15 - 4479 Triwall Boxes, 106 Metal Boxes
Unit 21 - 371 Triwall Boxes
Unit 25 - 8364 Triwall Boxes, 166 Metal Boxes

Areas Permitted for Storage (permit not received - currently under Interim Status)

Unit 15 (904 Pad)
Unit 21 (Building 788)
Unit 25 (750 Pad)

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on Pondcrete being Land Disposal Restricted (LDR). TCLP analysis for metals has not been performed for Pondcrete. However cadmium levels for F006 non-wastewaters are expected

to be above LDR standards specified in 40 CFR 268.41 Table CCWE. Until analysis is complete for metals, Pondcrete will continue to be stored as LDR waste.

Storage of Pondcrete, as LDR, is being assessed by the RFP pursuant to 40 CFR 268.50. Pondcrete has been accumulated, as necessary, until reprocessing of unacceptable Pondcrete can be completed, and shipped for disposal. The Nevada Test Site (NTS) is currently accepting pondcrete shipments from RFP. This is the only low level mixed waste form permitted for disposal at the NTS. Based on previous TCLP analysis and process knowledge, LDR regulations for Pondcrete will not go into effect until May 08, 1990. Shipments to the NTS will continue until LDR regulations for mixed wastes are in effect.

Continued disposal of Pondcrete after May 08, 1990, is contingent upon the following:

- (1) TCLP analysis for metals to determine levels present in Pondcrete, specifically, cadmium.
- (2) Treatment, if necessary, to immobilize any metals above treatment standards specified in 40 CFR 268.41.

Release of Hazardous Waste/Constituents

Several spills and leaks of pondcrete have occurred on the storage pads. In all cases, the spills have been cleaned up and leaking containers over-packed into metal waste containers for reprocessing. No releases to the ground soil have occurred; however, nitrates have been detected by lab analysis in puddle water collected from the storage pads (Ref: Monthly updates to CDH - RF Numbers 89-RF-3360, 89-RF-2996, 89-RF-2583, 89-RF-2196, 89-RF-1513, 88-RF-3727 and 88-RF-3418).

Sources of Information

- (1) Weekly inspections of the 750 and 904 Pads. Log books are available for these storage areas.

- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review Group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.
- (5) Monthly updates from RFP to CDH - Pondcrete & Saltcrete status.

Generation Rate

283 cubic yards/month based on accelerated schedule to process and remove all pondcrete by September 1991 (this is an average and does not reflect winter months when production is reduced due to the weather).

Estimate of Available Storage Capacity

Unit 15 - 5380.5 Cubic Yards
Unit 25 - 7698.9 Cubic Yards

Estimated Time to Fill Available Storage - Not applicable based on acceleration schedule for removal of all pondcrete by September 1991.

An effort has been initiated by the RFP to accelerate shipping of pondcrete beyond the scheduled stated above. The proposal is to ship all pondcrete from the RFP to the Nevada Test Site (NTS) by April 30, 1990.

If successful, all pondcrete would be removed from current interim status storage areas.

2.2 Saltcrete/LLW Mixed

EPA Waste Code(s) - F001, F002, F003, F005, F007, D009

History of Waste Generation/Waste Management Prior to Storage

Saltcrete is generated by solidifying the concentrate from an evaporation process at the Liquid Waste Treatment Facility in Building 374. Wastewater treatment in Building 374 is processed by evaporation, flocculation/precipitation and sludge dewatering and drying. Settled sludge from the flocculation/precipitation process go to the sludge dewatering/drying, while the overflow from this process goes to the evaporator. The residue or concentrated salt solution from the evaporator is mixed with cement to form saltcrete. Some of the waste streams, which prior to 1986 went to the solar evaporation ponds, are now being sent to the Building 374 for treatment. The processes generating these wastewaters include laboratory activities, electroplating operations using cyanides, metal manufacturing using cleaning/degreasing solvents, and acid and caustic cleaning/rinsing solutions.

Saltcrete storage began in 1986. Packaging prior to March 1989, was accomplished by placing the saltcrete in plastic lined triwall boxes. Saltcrete is now packaged in lined 2X4X7 plywood boxes and stored as a mixed waste awaiting approval for shipment to the Nevada Test Site disposal facility. Currently, 2204.1 cubic yards of saltcrete are being stored at RFP awaiting final disposition. This waste is identified by Item Description Code 804.

Source of Hazardous Constituents

Samples and lab analyses of saltcrete indicate the presence of several listed hazardous constituents which include: 1,1,1-trichloroethane, tetrachloroethane, acetone, methyl isobutyl ketone, methylene chloride, 2-butanol, toluene, bis-(2-ethylhexyl) phthalate, 4-chloro-3-methyl phenyl, and spent cyanide plating bath solutions.

Waste analysis of saltcrete (Analytical Report E88-2487) include analyses of volatiles, semi-volatiles, EP toxicity, reactivity, corrosivity and cyanide. Analytical results of volatiles and semi-volatiles indicated a total concentration of about 9 ppm, which is well under the 1,000 ppm limit for HOCs (40CFR268.32). EP toxicity results indicate all metals to be below the detection limit with the exception of one sample where a concentration of lead was right at the detection limit (0.5 ppm). Analysis of cyanides (total & amenable) range from 12.6-18.5 ppm respectively.

TCLP analysis was performed for organic compounds listed as F001 - F005 solvents regulated by LDR (40CFR268.41) Table I CCWE). The TCLP results indicate no constituents for F001 - F005 spent solvents (Table I CCWE, 40CFR268.41) were detected at limits above the LDR levels (Envirodyne Engineers Report of Analysis, Number 3222-00360). TCLP has not been run on saltcrete for metals at this time; however, EP toxicity results indicate CCWE limits for F006 non-wastewater concentrations may be met.

Timeframe for Placement into Storage - 1986 to present

Radioactivity Type - Low Level

Physical Form - Solid

Quantity of Waste - 2204.1 Cubic Yards (2373 Triwalls, 215 Half-Boxes, 53 Metal Boxes)

Storage Location/Containers - Triwall Boxes, 4X2X7 Plywood Boxes, 4X4X7 Metal Waste Containers

Unit 15 (904 Pad) - 1645 Triwall, 22 Metal Boxes
Unit 25 (750 Pad) - 728 Triwall, 31 Metal Boxes, 215 Half Boxes

Areas Permitted for Storage (permit not received - currently under Interim Status)

Unit 15 (904 Pad)
Unit 25 (750 Pad)

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on Saltcrete being Land Disposal Restricted (LDR). Based on limited analytical data (Lab report E88-2487), and process knowledge, levels for spent solvents, and F006 non-wastewaters may be within standards specified in 40 CFR 268.41. TCLP analysis for metals is expected by May 01, 1990 for Saltcrete. Storage of Saltcrete as LDR will continue until analytical data is available on metals.

Storage of Saltcrete as LDR, is being assessed by RFP pursuant to 40 CFR 268.50. Saltcrete is accumulated, as necessary, until proper disposal can be provided at the NTS. Disposal of saltcrete at the NTS is contingent upon the following:

- (1) TCLP analysis on metals to determine levels of F006 non-wastewaters.
- (2) Treatment, if necessary, depending on TCLP results.
- (3) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste Acceptance Criteria (NTS-WAC) for their approval and waste acceptance (this process has been initiated for Saltcrete).

Release of Hazardous Waste/Constituents

Several spills and leaks of saltcrete have occurred on the storage pads. In all cases, the spills have been cleaned up, and leaking containers overpacked and sent back to Building 374 for reprocessing. No releases to the ground soil have occurred. Nitrates have been detected by lab analysis from puddle water collected from the storage pads (Ref: Monthly updates to CDH - RF Numbers 89-RF-3360, 89-RF-2996, 89-RF-2583, 89-RF-2196, 89-RF-1513, 88-RF-3727 and 88-RF-3418).

Sources of Information

- (1) Weekly inspections of the 750 and 904 storage pads. Log books are available for these storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review Group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.
- (5) Monthly Updates from RFP to CDH - Pondcrete and Saltcrete.

Generation Rate

23.3 cubic yards/month based on an FY1989 generation (October 1988 - September 1989).

Estimate of Available Storage Capacity

Unit 15 - 5380.5 Cubic Yards
Unit 25 - 7698.9 Cubic Yards

Estimated Time to Fill Available Storage - 561 months

Assumptions: 1) The above storage capacities are available.

- 2) Interim status is retained for the above storage units.
- 3) Pondcrete will not impact available storage of Units 15 and 25 (based on accelerated schedule to remove all pondcrete by 1991).

2.3 Beryllium Dust/LLW Mixed

EPA Waste Code(s) - P015

History of Waste Generation/Waste Management Prior to Storage

Beryllium waste is generated in several forms at the RFP, mostly from the manufacturing processes in which machining of beryllium parts is performed. Wastes from these processes do not exhibit any of the four characteristics of hazardous waste regulated under RCRA. Also, these wastes are not among the lists of wastes from specific and non-specific sources (K and F Series), nor do they qualify as P and/or U Series listed wastes since they have been through the manufacturing process. The one exception to the information above is the research and development process in Building 865. As part of the metal forming process, beryllium dust or powder is placed into a form and subjected to high temperature and pressure, forming a beryllium casting. The beryllium dust which is not used in the metal forming process is discarded and does meet the definition as a P Series listed waste.

The forming process generates small quantities of beryllium waste. Currently, these drums are being stored for future disposition, and generation is estimated at less than one drum annually. The radiological contaminant in this waste form is uranium, making beryllium dust a low-level mixed waste. This waste form is identified by Item Description Code 870. IDC 870 is packaged in 55 gallon DOT Type 7A drums. The drums are lined with two polyethylene bags. The drums are then assayed and shipped to interim status storage areas.

Source of Hazardous Constituents

Waste characterization of beryllium dust is accomplished by process knowledge. The waste consists of beryllium dust, items contaminated with beryllium dust and radiological contaminants. No other hazardous constituents are suspected of being present. In its present form, beryllium

dust does not meet the requirements for disposal. Radioactive waste disposal facilities require fine particulate waste to be immobilized to reduce the hazards associated with particulates. Additional treatment would be necessary to immobilize particulates before disposal would be considered. The applicable LDR standards scheduled to be effective May 8, 1990, have not been established for this waste form. The future standard will likely require the TCLP concentration for beryllium to be below a specific limit. Until the 1990 date, treatment by solidification would eliminate the fine particulate problem and allow for disposal at a mixed waste facility if such a facility were available.

Timeframe for Placement into Storage - February 1989 to Present

Radioactive Type - Low Level

Physical Form - Solid (dust/powder)

Quantity of Waste - 0.8 Cubic Yards (3 drums)

Storage Location/Containers - 55 Gallon Drums

Unit 13 (Bldg. 884) - 3 drums

Areas Permitted for Storage (permit not received - currently under Interim Status)

Unit 12 (Bldg. 776)

Unit 13 (Bldg. 884)

Compliance Status

Storage is being performed in accordance with the RFPs Part A Permit Application and interim status regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

This particular waste form is currently being stored as low level mixed waste. The only EPA waste code designated for beryllium dust is P015.

LDR standards for this waste form have not been established, however, specific standards for "P" series wastes are expected by May 8, 1990.

Storage of beryllium dust is being assessed by the RFP pursuant to 40 CFR 268.50. Since LDR standards for this "P" series waste have not been established, a LDR determination cannot be made, and the requirements of 40 CFR 268.50 cannot be accurately assessed. The RFP is assuming the future LDR standards will affect beryllium dust. Storage of this waste form is accumulated, as necessary, until treatment for disposal at the Nevada Test Site (NTS) can be provided. Disposal of beryllium dust at the NTS is contingent upon the following:

- (1) Treatment, to stabilize the fine particulates of this waste (beryllium dust in it's current form will not meet Waste Acceptance Criteria (NTS-WAC) because of the particulates).
- (2) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste Acceptance Criteria (NTS-WAC) for their approval and waste acceptance.
- (3) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Release of Hazardous Waste/Constituents - No releases from containers of this low-level mixed waste have been observed/detected.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - 0.08 cubic yards/month based on calendar year 1989 generation through October 1989.

Estimate of Available Storage Capacity

Unit 12 - 4.9 cubic yards
Unit 13 - None

Estimated Time to Fill Available Storage - 12 months

- Assumptions:
- 1) The above storage capacities are available.
 - 2) Interim Status is retained for the above storage units.
 - 3) No generation of low-level mixed waste other than mentioned in this report and the storage report.
 - 4) Future generation stored in Unit 12.
 - 5) Existing mixed waste inventory is not redistributed between storage areas.
-

2.4 Electrochemical Milling (ECM) Sludge/LLW Mixed

EPA Waste Code(s) - F006

History of Waste Generation/Waste Management Prior to Storage

Micro-shaping is the process of shaping metal and metal parts through mechanical techniques and/or electrochemical methods. The latter approach, referred to as electrochemical milling (ECM) was used for several years in Building 881 for micro-shaping various parts, including uranium. When the ECM processes were moved from Building 881 to Building 460, a small amount of sludge was generated from the cleanout of the ECM operation. The amount of sludge generated (2 cubic yards) is currently being stored as mixed waste because of the hazardous constituents assumed to be present. The ECM processes now in Building 460 do not shape uranium parts; therefore, the waste generated is no longer considered a mixed waste. This waste is not identified by its own Item Description Code. This waste is packaged in one 2X4X7 plywood box.

Source of Hazardous Constituents

Waste Characterization of ECM sludge is based on process knowledge. The sludge itself has not been sampled; however, the aqueous waste from the ECM process was analyzed as part of the Waste Stream Identification and Characterization effort in 1987. The analytical results provide some indication of the hazardous constituents which may be present in ECM sludge. The origin of this mixed waste form was in Building 881.

The ECM wastewater was analyzed for volatiles, but only acetone was observed at levels above the detection limit (37 ppb). Analysis for total HSL metals indicate arsenic and chromium are present but not at levels in the wastewater to be considered EP toxic. Analyses for reactive cyanide and sulfate indicate the presence of cyanides in the wastewater. Further characterization of the sludge is necessary to determine if this waste form is land disposal restricted (TCLP on

volatiles, semi-volatiles and metals). Total and amenable cyanide analysis also needs to be performed.

Radioactive Type - Low Level

Physical Form - Solid

Quantity of Waste - 2 cubic yards (1 - 2X4X7 Plywood Box)

Storage Location/Containers - 2X4X7 Plywood Box

Unit 15 (904 Pad) - 1 - 2X4X7 Plywood Box

Areas Permitted for Storage (permit not received currently under Interim Status)

Unit 15 (904 Pad)
Unit 19 (Bldg. 374)
Unit 20 (Bldg. 664)

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and interim status regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

The RFP has not made a determination of ECM sludge being Land Disposal Restricted (LDR). Waste characterization of ECM sludge indicates the presence of volatiles, metals, and cyanides.

Storage of ECM sludge is being assessed by the RFP pursuant to 40 CFR 268.50. ECM sludge has been accumulated, as necessary, until proper disposal can be provided at the Nevada Test Site (NTS). Disposal at the NTS is contingent upon the following:

- (1) TCLP analysis to determine concentration levels for volatiles, metals, and cyanides.

- (2) Treatment, if necessary, to meet the Waste Acceptance Criteria (NTS-WAC), and LDR standards specified in 40 CFR 268.41, 268.42, and 268.43.
- (3) RFP must submit the appropriate documentation and certification package to the NTS as required by the waste acceptance criteria (NTS-WAC) for their approval and waste acceptance.
- (4) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Releases of Hazardous Waste/Constituents

No releases from containers of this low-level mixed waste have been observed/detected.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - This mixed waste form is no longer being generated.

Estimate of Available Storage Capacity - Not applicable since mixed waste form is no longer generated.

Estimated Time to Fill Available Storage - Not applicable since mixed waste form is no longer generated.

2.5 Fluid Bed Incinerator (FBI) Ash/LLW Mixed

EPA Waste Code(s) - D007

History of Waste Generation/Waste Management Prior to Storage

The RFP operated a Fluid Bed Incinerator (FBI) in Building 776. The incinerator burns occurred from November 1979 through June, 1981. The incinerator was idle until 1985 when it was operated for a short time, the final test burns occurred in 1987 and 1988.

Building 776 accommodates a prototype FBI and a full-scale unit. The FBI ash of concern is that from the full-scale unit. The FBI'S use has been on a trial basis since its inception. The purpose of the incinerator was to dispose of LLW/mixed by incineration. The operations between November 1979 and June 1981 consisted of eight runs. Two of the burns consisted of compressor oils from refrigeration units and crank case oils. The other six burns were solids consisting of office trash and combustibles generated within plutonium buildings, but outside of glovebox lines. These wastes were potentially radiologically contaminated since generation occurred within radiation areas and buildings. The six solid waste burns ran for approximately 50 hours each at a feed rate of 150 pounds per hour. This accounted for burning approximately 22.5 tons of solid waste. The 1985 burns accounted for about 150 hours of operation, burning diesel fuel and solid wastes. The accumulation of ash from these burns is currently being stored as LLW/mixed due to the radioactivity levels inside the incinerator measuring above background. Currently, drums of FBI ash are being stored for future disposition. The incinerator is not operational at this time, and currently no specific plans identify future operations; therefore, it is assumed no further generation of FBI ash.

The waste is identified by Item Description Code 425. It is packaged in 55 gallon DOT Type 7A drums. The drums are lined with one rigid polyethylene liner and polyethylene bag liner.

Sources of Hazardous Constituents

Waste characterization of FBI ash is based on process knowledge. To date, no sampling or analysis has been performed on the ash. The hazardous constituents which may be present in FBI ash include: 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane used for degreasing, methylene chloride used for paint removal and acetone used for cleaning. Other solvent contamination may also be present in FBI ash. Heavy metal concentrations at levels above EP toxicity limits may also be expected. The incinerator's afterburner used a catalyst to promote a catalytic burn. This consisted of an alumina-chromic acid material, therefore chromium is expected to be a significant component. Lead and other materials from engine component wear could also be present from the burning of crank case oil. Consequently, D004 through D011 EP toxic metals could be present in FBI ash above current regulatory concentration level. F series solvents may also be applicable to FBI ash.

Due to the particulate nature of the ash, disposal would not be acceptable in its current waste form, as strictly low level waste. Immobilization of the ash would need to be performed before low level waste disposal would be considered.

Further characterization of FBI ash would be necessary to determine the applicable criteria for solvents (F001 - F005), and EP toxic metals (D004-D011).

Timeframe for Placement into Storage - March 1987 - December 1988.

Radioactive Type - Low Level

Physical Form - Solid (ash)

Quantity of Waste - 9.6 cubic yards (35 drums)

Storage Location/Containers - 55 Gallon Drums

Unit 11 (Bldg. 776) - 3 Drums
Unit 12 (Bldg. 776) - 32 Drums

Areas Permitted for Storage (Permit not received - currently operating under Interim Status)

<u>RCRA Unit</u>	<u>Location</u>
11	Bldg. 776
12	Bldg. 776
13	Bldg. 884
15	904 Cargo Containers
17	Bldg. 777
19	Bldg. 374
20	Bldg. 664
27	Bldg. 776

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and interim status regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on FBI ash being Land Disposal Restricted (LDR). Waste characterization of this waste indicates spent solvents may be present. Also, heavy metal concentrations may be present above current EP toxicity levels. Specific LDR standards for RCRA characteristic metals have not been established, however, concentration levels for metals are expected to exceed future LDR limits.

Storage of FBI ash is being assessed by the RFP pursuant to 40 CFR 268.50. FBI ash has been accumulated, as necessary, until proper disposal can be provided at the Nevada Test Site (NTS). Disposal at NTS is contingent upon the following:

- (1) TCLP analysis for spent solvents, and the RCRA characteristic metals.

- (2) Treatment, if necessary, to meet the Waste Acceptance Criteria (NTS-WAC), current LDR standards specified in 40 CFR 268.41, and future standards for RCRA characteristic metals.
- (3) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste Acceptance Criteria (NTS-WAC) for their approval and waste acceptance.
- (4) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Release of Hazardous Waste/Constituents - No releases from containers of this low-level mixed waste form have been detected/observed.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - This waste is not currently generated.

Estimate of Available Storage Capacity - Not applicable to waste not being generated.

Estimated Time to Fill Available Storage - Not applicable to waste not being generated.

2.6 Lead/LLW Mixed

EPA Waste Code(s) - D008

History of Waste Generation/Waste Management Prior to Storage

Lead waste is generated at numerous locations throughout the RFP, most often in the form of discarded shielding. Lead is considered inappropriate for reuse because it is radiologically contaminated. Lead shielding is usually in the form of sheets and bricks. Uranium and plutonium are the radiological contaminants most often present. Some lead waste is suspected to contain radiological contaminants due to the work areas from which it is generated (plutonium buildings inside the PSZ). Another reason for lead waste being designated as contaminated is that it has paint on its surface. Paint is typically used to cover radiologically contaminated surfaces. This waste form is considered a mixed waste because lead metal fails the EP toxicity test.

Currently, there are no offsite facilities taking this waste for disposal or treatment. Consequently, all lead waste generated is being stored onsite and will continue to accumulate. This waste is identified by Item Description Code 321. It is packaged in 55 gallon, DOT Type 7A drums. The drums are lined with two polyethylene bags and one fiberboard liner. The drums are assayed and shipped to interim status storage areas.

Source of Hazardous Constituents

Although lead waste has not been sampled, lead metal has been sampled and analyzed for EP toxicity and in most cases, fails with the concentration levels exceeding the limit of 5 mg/l (40CFR261.24 Table I). By process knowledge of lead waste, it is assumed the concentration levels for lead waste would exceed the EP toxicity levels. The radiological contaminants present make lead waste inappropriate for direct reuse or recycling, thus making this a mixed waste.

Low level lead waste is generated in several buildings at RFP. LDR regulations applicable to lead waste are not yet in effect, and since lead is a hazardous constituent, it is not covered by LDR. However, criteria are scheduled to be in effect May 8, 1990 and concentration levels of lead set by LDR would have to be met in order for this waste to be land disposed. It is unlikely that lead waste will meet future LDR standards in its current form. A more stable, less leachable waste form would have to be implemented or radiological contaminants removed for reuse. Analysis for F001-F005, spent solvents, may also be appropriate to determine levels present, if any, in this waste form.

Timeframe for Placement into Storage - 1987 to present

Radioactivity Type - Low Level

Physical Form - Solid

Quantity of Waste - 30.4 cubic yards (111 drums)

Storage Location/Containers - 55 gallon drums

Unit 11 (Bldg. 776) - 43 drums
Unit 12 (Bldg. 776) - 46 drums
Unit 13 (Bldg. 884) - 6 drums
Unit 27 (Bldg. 776) - 16 drums

Areas Permitted for Storage (permit not received - currently under Interim Status)

<u>RCRA Unit</u>	<u>Location</u>
11	Bldg. 776
12	Bldg. 776
13	Bldg. 884
15	904 Cargo Container
17	Bldg. 777
19	Bldg. 374
20	Bldg. 664
27	Bldg. 776

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Applications and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

The Rocky flats Plant (RFP) has not made a determination on LLW mixed lead waste (IDC 321) being Land Disposal Restricted (LDR). Specific LDR standards for RCRA characteristic metals have not been determined. However, based on the process knowledge available, this waste form is expected to exceed forthcoming LDR limits for RCRA characteristic metals.

Storage of IDC 321 as LDR is being assessed by the RFP pursuant to 40 CFR 268.50. This waste form is being accumulated, as necessary, until a LDR determination is made (LDR determination to be made by March 16, 1990), and disposal at the Nevada Test Site (NTS) can be provided. Disposal at the NTS is contingent upon the following:

- (1) LDR determination for waste form.
- (2) Treatment to immobilize lead and create a less leachable waste form to meet future LDR standards for RCRA characteristic metals.
- (3) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste Acceptance Criteria (NTS-WAC) for their approval and waste acceptance.
- (4) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Releases of Hazardous Waste/Constituents - No releases from containers of this low-level mixed waste form have been observed/detected.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.

- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - 1.7 cubic yards/month based on FY1989 generation (Oct. 1988 through Sept. 1989).

Estimate of Available Storage Capacity

<u>RCRA Unit</u>	<u>Available Storage</u>
11	55.9 Cubic Yards
12	4.9 Cubic Yards
13	None
15	49.1 Cubic Yards
17	0.5 Cubic Yards
19	94.0 Cubic Yards
20	None
27	None

Estimated Time to Fill Available Storage Capacity - 10.4 months

- Assumptions:
- 1) The above storage capacities are available.
 - 2) Non-RCRA low-level waste stored in Unit 15 is not considered in regards to physical storage space available.
 - 3) Interim status is retained for the above storage units.
 - 4) No generation of low-level mixed waste other than this report, and the storage report.
 - 5) Future generation stored in Units 11, 12 and 17.
 - 6) Existing mixed waste inventory is not redistributed between storage areas.

2.7 Leaded Gloves/LLW Mixed

EPA Waste Code(s) - D008

History of Waste Generation/Waste Management Prior to Storage

Leaded glovebox gloves and leaded aprons are used extensively throughout the RFP. Lead-lined gloves and aprons are designed for radiological protection against penetrating radiation. Different thicknesses of gloves are used depending on the process, area of use, and the potential amounts of penetrating radiation associated with the operation. Leaded gloves are routinely inspected for rips, tears, excessive wear and contamination. Gloves are also routinely changed depending on excessive wear and the atmosphere the gloves are exposed to (acids, inert atmospheres, etc.). Leaded gloves which have been changed are packaged in 55 gallon DOT Type 7A drums. The drums are lined with a fiberboard liner and two polyethylene bags. This waste is identified by Item Description Code 339.

Source of Hazardous Constituents

Waste characterization of leaded gloves is based on process knowledge, utilizing waste analysis when available. The hazardous constituent of IDC 339 is lead. Lab analysis (Lab Number M85-2833) of a new leaded glove, using the EP toxicity test method, indicate lead levels to be within the maximum concentration limits for EP toxicity (40 CFR 261.24, Table I). The same tests have not been performed on discarded leaded gloves, so as a final waste, lead levels are not known. It is possible the used leaded gloves will not meet EP toxicity limits as do the new gloves. Sampling used gloves by EP toxicity tests is to be scheduled in early 1990. Until analysis is complete, IDC 339 will continue to be stored as a mixed waste.

Timeframe for Placement in Storage - April 1989 to present

Radioactivity Type - Low-level

Physical Form - Solid

Quantity of Waste - 0.8 cubic yards (3 drums)

Storage Locations/Containers - 55 gallon drums

Unit 12 - 1 drum
Unit 27 - 2 drums

Areas Permitted for Storage (permit not received - currently under Interim Status):

Unit 11 (Building 776)
Unit 12 (Building 776)
Unit 13 (Building 884)
Unit 15 (904 Cargo Containers)
Unit 17 (Building 777)
Unit 19 (Building 374)
Unit 20 (Building 664)
Unit 27 (Building 776)

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a LDR determination on leaded gloves (IDC 339), currently being stored as low level mixed waste. Specific LDR standards for RCRA characteristic metals have not been established. Until a LDR determination is made for this waste form, the RFP will continue to store this waste as LDR.

Storage of IDC 339 as LDR is being assessed by the RFP pursuant to 40 CFR 268.50. Leaded gloves are accumulated, as necessary, until a LDR determination is made (LDR determination to be made by March 16, 1990), and disposal at the Nevada Test Site (NTS) can be provided. Disposal of leaded gloves at the NTS is contingent upon the following:

- (1) LDR determination based on complete process knowledge and analytical data.
- (2) TCLP analysis to determine the amounts of leachable lead.
- (3) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste Acceptance Criteria (NTS-WAC) for their approval and waste acceptance.
- (4) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Releases of Hazardous Waste/Constituents - No releases from containers of this low-level mixed waste form have been observed/detected.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - 0.08 cubic yards/months based on Calendar Year 1989 generation through October 1989.

Estimate of Available Storage Capacity

Unit 11	55.9 Cubic Yards
Unit 12	4.9 Cubic Yards
Unit 13	None
Unit 15	49.1 Cubic Yards
Unit 17	0.5 Cubic Yards
Unit 19	94 Cubic Yards
Unit 20	None
Unit 27	None

Estimated Time to Fill Available Storage - 10.4 months

- Assumptions:
- 1) The above-storage capacities are available.
 - 2) Non-RCRA low-level waste stored at Unit 15 not considered in regards to physical storage space available.
 - 3) Interim status is retained for the above storage units.
 - 4) No generation of low-level mixed waste other than mentioned in this report and the storage report.
 - 5) Future generation stored in Units 11, 12 and 17.
 - 6) Existing waste inventory is not redistributed between storage areas.

2.8 Glovebox Parts with Lead/LLW Mixed

EPA Waste Code(s) - D008

History of Waste Generation/Waste Management Prior to Storage

Generation of waste glovebox parts with lead originates from decontamination and decommissioning activities, and from the Size Reduction Facility in Building 776. This waste is identified by Item Description Code 488. This IDC is reserved exclusively for gloveboxes with lead or glovebox parts with bonded lead shielding. Glovebox windows, up to 10% by weight, may also be included. Current generation of this waste is packaged in 55 gallon DOT Type 7A drums and transferred to interim status storage areas. There are only two drums in storage at this time. This waste is being stored as a mixed waste.

Source of Hazardous Constituents

This waste is characterized using process knowledge. The hazardous constituent for IDC 488 is lead. Lab analysis of the waste has not been done to determine concentration levels of lead present, however, the waste form itself contains approximately 25% lead.

Timeframe for Placement in Storage - April 1989 to present

Radioactivity Type - Low-level

Physical Form - Solid

Quantity of Waste - 0.5 cubic yards (2 drums)

Storage Locations/Containers - 55 gallon drums

Unit 12 - 1 drum
Unit 27 - 1 drum

Areas Permitted for Storage (permit not received - currently under Interim Status)

Unit 11 (Building 776)
Unit 12 (Building 776)
Unit 13 (Building 884)
Unit 15 (904 Cargo Containers)
Unit 17 (Building 777)
Unit 19 (Building 374)
Unit 20 (Building 664)
Unit 27 (Building 776)

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

The RFP has not made a determination on this waste form being Land Disposal Restricted (LDR). Waste characterization of this waste indicates lead as the only RCRA hazardous constituent present. Specific LDR standards for RCRA characteristic metals have not been established, however, process knowledge information suggests this waste form will be Land Disposal Restricted (LDR).

Storage of this waste form is being assessed by the RFP pursuant to 40 CFR 268.50. Glovebox parts with lead have been accumulated, as necessary, until proper disposal at the Nevada Test Site (NTS) can be provided. Disposal at the NTS is contingent upon the following:

- (1) TCLP analysis to determine concentration levels of lead in the waste form.
- (2) Treatment, if necessary, to stabilize lead in a less leachable waste form which will meet future LDR standards for RCRA metals.
- (3) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste Acceptance Criteria (NTS-WAC) for their approval and waste acceptance.

- (4) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Releases of Hazardous Waste/Constituents - No releases from containers of this low-level mixed waste form have been observed/detected.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - 0.05 cubic yards/months based on Calendar Year 1989 generation through October 1989.

Estimate of Available Storage Capacity

Unit 11	55.9 Cubic Yards
Unit 12	4.9 Cubic Yards
Unit 13	None
Unit 15	49.1 Cubic Yards
Unit 17	0.5 Cubic Yards
Unit 19	94 Cubic Yards
Unit 20	None
Unit 27	None

Estimated Time to Fill Available Storage - 10.4 months

- Assumptions:
- 1) The above-storage capacities are available.
 - 2) Non-RCRA low-level waste stored at Unit 15 not considered in regards to physical storage space available.
 - 3) Interim status is retained for the above storage units.
 - 4) No generation of low-level mixed waste other than mentioned in this report and the storage report.

- 5) Future generation stored in Units 11, 12 and 17.
- 6) Existing waste inventory is not redistributed between storage areas.

2.9 Heavy Metal (Non-SS) LLW/Mixed

EPA Waste Code(s) - D008

Generation of scrap heavy metal as low level waste can occur at several locations at the RFP. Processes using fixturing, tooling, crucibles, etc. made from tantalum, tungsten and platinum are replaced as dictated by the individual processes. The radiological contaminants include uranium and plutonium. Some heavy metal wastes are considered radiologically contaminated because of the areas they come out of, while other scrap metals come from uranium processes outside the Perimeter Security Zone (PSZ). This waste form is identified by Item Description Code 320, and as with the TRU/Mixed waste form of IDC 320, the low level waste form is being stored as a mixed waste.

In 1987, Item Description Code 321 was created specifically for lead waste. Prior to this, lead waste was not segregated from IDC 320.

Currently, no facility is available to dispose of low-level mixed waste. The waste is packaged in 55 gallon DOT Type 7A drums, lined with a fiberboard liner and two poly bags. The waste is assayed and moved to interim status storage areas.

Source of Hazardous Constituents

This waste is characterized by process knowledge, the hazardous constituent of concern is lead. Further analysis would be necessary to determine the actual levels of lead, if any, are present in this waste form. Real-Time Radiography (RTR) of drums with Item Description Code 320 may be used to determine if lead waste is present in these waste drums.

Timeframe for Placement in Storage - April 1989 to present

Radioactivity Type - Low-level

Physical Form - Solid

Quantity of Waste - 1.6 cubic yards (6 drums)

Storage Locations/Containers - 55 gallon drums

Unit 11 - 1 drum
Unit 12 - 3 drums
Unit 27 - 2 drums

Areas Permitted for Storage (permit not received - currently under Interim Status)

Unit 11 (Building 776)
Unit 12 (Building 776)
Unit 13 (Building 884)
Unit 15 (904 Cargo Containers)
Unit 17 (Building 777)
Unit 19 (Building 374)
Unit 20 (Building 664)
Unit 27 (Building 776)

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on this waste form being Land Disposal Restricted (LDR). The waste form needs to be examined for the presence of lead. LDR standards for RCRA characteristic metals have not been established. Until a determination is made for lead in this waste form, RFP will continue to store this waste as low level mixed waste and LDR waste.

Storage of IDC 320 is being assessed by the RFP pursuant to 40 CFR 268.50. Heavy Metal is accumulated, as necessary, until a LDR determination is made, and disposal at the Nevada Test Site (NTS) can be provided. Disposal at the NTS is contingent upon the following:

- (1) A LDR determination made as to the presence of lead in the waste form.
- (2) RFP must submit the appropriate documentation and certification

package to the NTS as required by the Waste Acceptance Criteria (NTS-WAC) for their approval and waste acceptance.

- (3) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Releases of Hazardous Waste/Constituents - No releases from containers of this low-level mixed waste form have been detected.

Generation Rate - 0.6 cubic yards/months based on Calendar Year 1989 generation through October 1989.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Estimate of Available Storage Capacity

Unit 11	55.9 Cubic Yards
Unit 12	4.9 Cubic Yards
Unit 13	None
Unit 15	49.1 Cubic Yards
Unit 17	0.5 Cubic Yards
Unit 19	94 Cubic Yards
Unit 20	None
Unit 27	None

Estimated Time to Fill Available Storage - 10.4 months

- Assumptions:
- 1) The above-storage capacities are available.
 - 2) Non-RCRA low-level waste stored at Unit 15 not considered in regards to physical storage space available.

- 3) Interim status is retained for the above storage units.
- 4) No generation of low-level mixed waste other than mentioned in this report and the storage report.
- 5) Future generation stored in Units 11, 12 and 17.
- 6) Existing waste inventory is not redistributed between storage areas.

2.10 Ground Glass/LLW Mixed

EPA Waste Code(s) - D008, D009

History of Waste Generation/Waste Management Prior to Storage

This waste form consists mainly of fluorescent lamps which have been crushed. The waste lamps are generated throughout the RFP. Waste is generated as low level from uranium production buildings outside the PSZ, and plutonium production and processing buildings within the PSZ. The low level radiological contaminants are uranium and plutonium. The hazardous constituents from fluorescent bulbs is mercury.

Currently, this waste is identified by IDC 855, A proposal has been initiated to revise this IDC number to IDC 444. The reasons for changing the IDC number is to allow leaded glass to be incorporated into this waste form and to assign an Economic Discard Limit to the IDC number.

Spent fluorescent lamps are crushed and packaged in 55 gallon DOT Type 7A drums. The drums are lined with one fiberboard liner and two polyethylene bags. The drums are assayed and moved to interim status storage areas.

Source of Hazardous Constituents

The hazardous constituents of ground glass are based on process knowledge and waste analysis when available. Mercury levels in fluorescent lamps exceed maximum limits for EP toxicity. This is the only hazardous constituent listed in this waste form at this time. Lead would also be listed as a hazardous constituent if the IDC changes are implemented (Lab Report E87-4234, Fluorescent Lamp and E86-3777, Leaded Glass).

Timeframe for Placement in Storage - 6/39 to present

Radioactivity Type - Low-level

Physical Form - Solid

Quantity of Waste - 0.3 cubic yards (1 drum)

Storage Locations/Containers - 55 gallon drums

Unit 27 - 1 drum

Areas Permitted for Storage (permit not received - currently under Interim Status)

Unit 11 (Building 776)
Unit 12 (Building 776)
Unit 13 (Building 884)
Unit 15 (904 Cargo Containers)
Unit 17 (Building 777)
Unit 19 (Building 374)
Unit 20 (Building 664)
Unit 27 (Building 776)

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

Releases of Hazardous Waste/Constituents - No releases from containers of this low-level mixed waste form have been observed/detected.

RFP has not made a determination on ground glass being Land Disposal Restricted (LDR). Current levels of mercury in this waste form are sufficient to require the waste to be designated as RCRA characteristic. Specific LDR standards for RCRA characteristic metals have not been established. The RFP will continue to store ground glass as low level mixed waste, and LDR waste until a LDR determination is made.

Storage of this waste form as LDR is being assessed by the RFP pursuant to 40 CFR 268.50. Ground glass is accumulated, as necessary, until a LDR

determination is made (LDR determination to be made by March 16, 1990), and disposal at the Nevada Test Site (NTS) can be provided. Disposal of ground glass is contingent upon the following:

- (1) TCLP analysis to determine mercury levels.
- (2) Treatment, if necessary, to stabilize mercury depending on TCLP analytical results.
- (3) A LDR determination based on process knowledge and analytical data.
- (4) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste Acceptance Criteria (NTS-WAC) for their approval and waste acceptance.
- (5) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - 0.03 cubic yards/months based on Calendar Year 1989 generation through October 1989.

Estimate of Available Storage Capacity

Unit 11	55.9 Cubic Yards
Unit 12	4.9 Cubic Yards
Unit 13	None
Unit 15	49.1 Cubic Yards
Unit 17	0.5 Cubic Yards
Unit 19	94 Cubic Yards
Unit 20	None
Unit 27	None

Estimated Time to Fill Available Storage - 10.4 months

- Assumptions:
- 1) The above-storage capacities are available.
 - 2) Non-RCRA low-level waste stored at Unit 15 not considered in regards to physical storage space available.
 - 3) Interim status is retained for the above storage units.
 - 4) No generation of low-level mixed waste other than mentioned in this report and the storage report.
 - 5) Future generation stored in Units 11, 12 and 17.
 - 6) Existing waste inventory is not redistributed between storage areas.

2.11 Oil Dry/LLW Mixed

EPA Waste Code(s) - F001

History of Waste Generation/Waste Management Prior to Storage

Oil dry is any type of absorbent clay material. It is used extensively at RFP for various reasons which include spill cleanups, oil absorption, or absorption of any liquid as needed. Oil dry is identified by Item Description Code 375. Oil dry by itself is not hazardous by RCRA regulations. It becomes hazardous in contact with the liquids being absorbed. Production processes use oil dry within uranium and plutonium operations. Waste oil dry from these areas is radiologically contaminated. Waste oil dry is packaged in 55 gallon, DOT Type 7A drums. The drums are lined with two polyethylene bags. The drums are assayed and moved to interim status storage areas. Currently, only one drum (IDC 375) is being stored as a low-level mixed waste at RFP.

Source of Hazardous Constituents

Waste characterization of oil dry is based on process knowledge. 1,1,1-trichloroethane, carbon tetrachloride, and 1,1,2-trichloro-1,2,2-trifluoroethane are the suspected hazardous constituents of waste oil dry. No analysis of this waste has been conducted to date.

Timeframe for Placement in Storage - April 1989 to present

Radioactivity Type - Low-level

Physical Form - Solid

Quantity of Waste - 0.3 cubic yards (1 drum)

Storage Locations/Containers - 55 gallon drums

Unit 27 - 1 drum

Areas Permitted for Storage (permit not received - currently under Interim Status)

Unit 11 (Building 776)
Unit 12 (Building 776)
Unit 13 (Building 884)
Unit 15 (904 Cargo Containers)
Unit 17 (Building 777)
Unit 19 (Building 374)
Unit 20 (Building 664)
Unit 27 (Building 776)

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on oil dry being Land Disposal Restricted (LDR). Process knowledge characterization indicates spent solvents to be present in oil dry currently being stored as low level mixed waste.

Storage of oil dry is being assessed by the RFP pursuant to 40 CFR 268.50. Oil dry is accumulated, as necessary, until disposal at the Nevada Test Site (NTS) can be provided. Disposal at NTS is contingent upon the following:

- (1) TCLP analysis for spent solvents to determine concentration levels.
- (2) Treatment, if necessary, to meet the Waste Acceptance Criteria (NTS-WAC), and LDR standards specified in 40 CFR 268.41, Table CCWE for spent solvents.
- (3) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste Acceptance Criteria (NTS-WAS) for their approval and waste acceptance.
- (4) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Releases of Hazardous Waste/Constituents - No releases from containers of this low-level mixed waste form have been observed/detected.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - 0.03 cubic yards/months based on Calendar Year 1989 generation through October 1989.

Estimate of Available Storage Capacity

Unit 11	55.9 Cubic Yards
Unit 12	4.9 Cubic Yards
Unit 13	None
Unit 15	49.1 Cubic Yards
Unit 17	0.5 Cubic Yards
Unit 19	94 Cubic Yards
Unit 20	None
Unit 27	None

Estimated Time to Fill Available Storage - 10.4 months

- Assumptions:
- 1) The above-storage capacities are available.
 - 2) Non-RCRA low-level waste stored at Unit 15 not considered in regards to physical storage space available.
 - 3) Interim status is retained for the above storage areas.
 - 4) No generation of low-level mixed waste other than mentioned in this report and the storage report.
 - 5) Future generation stored in Units 11, 12 and 17.
 - 6) Existing waste inventory is not redistributed between storage areas.
-

2.12 Paints and Cyanides/LLW Mixed

EPA Waste Code(s) - D001, D003, D009

History of Waste Generation/Waste Management Prior to Storage

Generation of spent paints and cyanide solutions with radiological contaminants of uranium come from production and maintenance operations outside the Perimeter Security Zone (PSZ) and plutonium contaminants from maintenance inside the PSZ. Oil base paints and thinners have been used for various maintenance activities throughout plantsite. Cyanides have been used in production areas of Building 444. Currently, no facility is capable of receiving these wastes for disposal. Paint stored in Unit 10 (2 drums) exhibit RCRA characteristic D001, while 1 drum of cyanide exhibits RCRA characteristics D003 and D009. These wastes are packaged in 55 gallon DOT bung type drums. The drums are then moved to interim status storage areas.

Source of Hazardous Constituents

Characterization of paint and cyanide are based on lab analysis (Lab Numbers E87-4501, E88-2836 and 89ENV.00297). Flash points are not available on paint samples, however, the samples did ignite at room temperature. EPA #D001 was assigned to the paint waste drums for exhibiting the characteristic of ignitability. Cyanide samples indicate one of six drums to be treated as mixed waste due to uranium contamination and cyanide levels of 2800 mg/l.

Timeframe for Placement in Storage - 1988 to present

Radioactivity Type - Low-level

Physical Form - Liquid

Quantity of Waste - 165 gallons (3 drums)

Storage Locations/Containers - 55 gallon drums

Unit 10 - 3 drums

Areas Permitted for Storage (permit not received - currently under Interim Status)

Unit 10 (561 Cargo Containers - see Compliance Section)
Unit 15 (904 Cargo Containers)
Unit 20 (Building 664)

Compliance Status

D003 was omitted by error from the last Part A submission by RFP. Other than this, the storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on paints and cyanides as being Land Disposal Restricted (LDR). The paint drums currently in storage exhibit RCRA characteristic of ignitability (D001), and one cyanide drum in storage exhibits RCRA characteristic of reactivity (D003). Also, the cyanide meets the definition of D009 waste from electroplating operations. The above waste characterization is based on previous lab analysis.

Storage of paints and cyanides are being assessed by the RFP pursuant to 40 CFR 268.50. These wastes have been accumulated, as necessary, until proper treatment for disposal at the Nevada Test Site (NTS) can be provided. Disposal at the NTS is contingent upon the following:

- (1) Treatment which needs to address RCRA characteristics for paint (D001), cyanide (D003), spent electroplating waste (D009), and the physical form of these wastes (liquid) to meet the Waste Acceptance Criteria (NTS-WAC).
- (2) Sample analysis after treatment to ensure LDR standards have been met.
- (3) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste acceptance Criteria

(NTS-WAC) for their approval and waste acceptance.

- (4) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Releases of Hazardous Waste/Constituents - No releases from containers of these low-level mixed waste forms have been observed/detected.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - 14 gallons/month based on Calendar Year 1988 generation.

Estimate of Available Storage Capacity

Unit 10 - 7755 Gallons
Unit 15 - 4800 Gallons
Unit 20 - None

Estimated Time to Fill Available Storage - 35 months

- Assumptions:
- 1) The above-storage capacities are available.
 - 2) No generation of low-level mixed waste other than mentioned in this report and the storage report.
 - 3) Future generation stored in Units 10.
 - 4) Existing waste inventory is not redistributed between storage areas.

2.13 Absorbed Organic Waste/LLW mixed

EPA Waste Code(s) - D001

History of Waste Generation/Waste Management Prior to Storage

Scintillation fluids or cocktails are routinely used in radiochemistry performed at the RFP. The absorbed organic waste was generated when spent scintillation cocktail was absorbed into hydrated calcium silicate in polyethylene bottles. The bottles were then placed in 55 gallon DOT Type 7A drums. The drums were assayed and moved to interim status storage areas. The absorbed organic waste is no longer being generated since the scintillation fluids currently being used are not regulated hazardous under RCRA. The waste currently in storage is being stored as a mixed waste. This waste is not identified by an Item Description Code.

Source of Hazardous Constituents

This waste is characterized using process knowledge and analytical data available. Process knowledge identifies xylene and 2-ethoxyethanol as the hazardous constituents of the scintillation fluids used.

The single sample analysis performed in 1987 provided a flash of less than 25°C (77°F), which does meet the RCRA definition for ignitability. The sample, also analyzed for radiochemistry, indicates radiological contaminants of uranium and plutonium.

Spent xylene and 2-ethoxyethanol fluids do not meet the criteria for F series wastes because of their percentages in the original scintillation mixtures. However, the flash point does meet the RCRA definition for ignitable as a liquid or solution. The current drums in storage are in a solid form, and the ignitability for this waste as a solid has not been determined. Until a determination can be made, this waste will be stored as a low-level mixed waste.

Timeframe for Placement in Storage - April 1988 to present

Radioactivity Type - Low-level

Physical Form - Solid

Quantity of Waste - 1.1 cubic yards (4 drums)

Storage Locations/Containers - 55 gallon drums

Unit 17 - 4 drums

Areas Permitted for Storage (permit not received - currently under Interim Status)

Unit 11 (Building 776)
Unit 12 (Building 776)
Unit 13 (Building 884)
Unit 15 (904 Cargo Containers)
Unit 17 (Building 777)
Unit 19 (Building 374)
Unit 20 (Building 664)
Unit 27 (Building 776)

Compliance Status

Storage is being performed in accordance with the RFP Part A Permit Application and Interim Status Regulations contained in 6 CCR 1007-3 (Colorado Hazardous Waste Regulations).

RFP has not made a determination on absorbed organic waste being Land Disposal Restricted (LDR). The drums currently being stored as low level mixed waste exhibit RCRA characteristic for ignitability (D001).

Storage of absorbed organic waste, as LDR, is being assessed by RFP pursuant to 40 CFR 268.50. This waste has been accumulated as necessary, until proper disposal at the Nevada Test Site (NTS) can be provided. disposal at the NTS is contingent upon the following:

- (1) A determination made on the ignitability of this waste from (D001) (RFP is anticipating this waste will no longer meet the RCRA definition of ignitability (D001) in it's current solid form).
- (2) RFP must also conclude the original mixtures of scintillation fluids do not meet the criteria for "F" series wastes, based on their percentages.
- (3) RFP must submit the appropriate documentation and certification package to the NTS as required by the Waste acceptance Criteria (NTS-WAC) for their approval and waste acceptance.
- (4) NTS must obtain the appropriate permit requirements to accept and dispose of this waste form.

Releases of Hazardous Waste/Constituents - No releases from containers of this low-level mixed waste form have been observed/detected.

Sources of Information

- (1) Weekly inspections performed at the interim status storage areas. Log books are available at the storage areas.
- (2) "104 (E) Second Update" - DOE to EPA report dated December 15, 1989.
- (3) Safety Review group - Unplanned events computer database for FY1989. Hardfiles for data prior to FY1989.
- (4) Shift Superintendent's daily log.

Generation Rate - This waste is no longer generated.

Estimate of Available Storage Capacity - Not applicable to waste not being generated.

Estimated Time to Fill Available Storage - Not applicable to waste not being generated.

3.0 SPECIFIC COMMENTS

3.1 Heavy Metal/TRU Mixed

RFP is planning to determine if lead waste is present in heavy metal waste (IDC 320) through the use of Real Time Radiography (RTR).

This is the process of performing radiography on the drums, and examining the film to determine if lead waste is present. Based on the metal present in this waste form, certain shapes are exclusive to certain metals. Lead waste is normally in brick or sheet form. The final verification of lead is its density. An object which cannot be identified strictly by its shape, can be identified by its density on the film. This process is performed by Non-Destructive Testing (NDT) Technicians. NDT Technicians are trained for qualification and certification per Procedure RFQ-RC1-A, in accordance with the National Qualifications and Certifications for NDT Technicians.

3.2 Pondcrete/LLW Mixed

The following clarifications are provided for Section 2.1 - Pondcrete/LLW Mixed. On both the 750 and 904 storage pads, grab samples are taken from the pad culverts and pad puddles whenever precipitation occurs. Grab samples have indicated that there has been material leakage from deteriorating pondcrete containers. Elevated levels of nitrates (greater than 10.0 mg/l), as well as occasional elevated gross alpha and gross beta (greater than 40 pCi/l and 50 pCi/l respectively) have been seen on the 904 pad in the past 12 months. The 750 pad normally has fewer instances of elevated levels of nitrates, gross alpha, and gross beta than does the 904 pad. RFP has initiated sampling for volatile organics in the accumulated precipitation water, but no comment on these sample results is available at this time.

The pad berms are not designed to contain significant precipitation events and it is probable that some runoff is leaving the pads. The runoff from the 750 pad flows to the B-Series holding ponds. In order

to minimize any adverse environmental impacts from the runoff, we are currently collecting accumulated precipitation for the 904 pad, pumping the precipitation into tanker trucks and transporting it to Building 374 for evaporation. Additionally, RFP is in the process of erecting waterproof fabric structures over the pondcrete and saltcrete in order to protect the pondcrete and saltcrete from weathering.

3.3 Lead/LLW Mixed

Rocky Flats Plant currently does not and is not planning to generate any waste streams subject to LDR rules other than those reported in the Storage and Inventory Reports. This comment was previously addressed (Ref. letter from DOE to EPA dated January 11, 1990, "FFCA Inventory Report Clarification").

APPENDIX A

UNIT 1 HAZARDOUS WASTE

Unit 1 is the main hazardous waste storage area at Rocky Flats Plant. It has a capacity of 39,160 gallons and 150 cubic yards. Currently, all storage at Unit 1 is considered hazardous waste regulated by RCRA. It is also considered to be non-radioactive based on process knowledge. These waste forms are generated from areas and/or buildings where their generation is assumed to be non-radioactive. Prior to storage, these wastes were shipped to facilities permitted for disposal of hazardous wastes. Shipments were based on threshold values to determine non-radioactive from radioactive. The Department of Energy (DOE) rescinded this value and shipments of hazardous wastes have since halted.

The general contractor at RFP has consulted and contracted Rodgers and Associates Engineering based in Salt Lake City, Utah, to perform a risk assessment and develop a methodology for determining values for non-radioactive waste. The concept used will be the Below Regulatory Concern (BRC) method developed and used by the Nuclear Regulatory Commission (NRC). Rodgers and Associates expects to have the first report to the RFP general contractor in January 1990. Until BRC levels for radioactive wastes are established, Unit 1 will continue to store hazardous waste regulated under RCRA and non-radioactive by process knowledge.

EPA COMMENTS ON LDR INVENTORY REPORT

General Comments

The FFCA, under Section VI.A.1.d. and VI.A.3., requires that DOE assess the compliance status of the storage methods pursuant to applicable State and Federal standards. In most cases, for each of the waste forms, DOE has made an evaluation relative to the interim status compliance requirements for the unit of concern. As discussed in the December 7, 1989 FFCA status meeting, DOE must include an evaluation of the LDR requirements compliance status. The section of the report which documents the length of time materials have been stored documents compliance status with conditions of 40 CFR 268.50(a). The Storage and Inventory Reports should also indicate that DOE is pursuing action which will ultimately address compliance with applicable Federal environmental requirements, in addition to the Colorado Hazardous Waste Act (CHWA) requirements.

The Inventory Report should list sources of information and/or techniques used to determine whether or not releases of hazardous waste/constituents have occurred.

Specific Comments

1.2 Heavy Metal(Non-SS) TRU/Mixed

Page 10, and other places in the report, indicate that Real Time Radiography (RTR) is able to determine whether lead is in a drum or not. A brief explanation of how RTR can distinguish from other metals in the drums, to strengthen the waste determination verification process, must be included in the report.

2.1 Pondcrete/LLW Mixed

Pages 24 and 25 state that there have been no releases from the 750 and 904 storage pads. Specifically, the report states, "Several spills and leaks of pondcrete have occurred on the storage pads." Nowhere does the report indicate there have been releases of materials off of the pads. However, EPA viewed the 904 facility (May 24, 1988) when visible releases were noted during the site visit. Also, EPA has been on-site, and observed the areas near the 750 pad where dips occur in the asphalt berm. These dips allow for precipitation accumulation in these low spots and overtopping of liquids, which have been in contact with the pondcrete and/or saltcrete containers.

These dips, or low spots in the berm are located directly above storm water drains. The report needs to clearly specify what data was used to ascertain that no releases related to these units have occurred. Information such as analytical results of hazardous wastes/constituents, frequency of analyses and analytical results of accumulated precipitation, and the manner in which material is stored which mitigates contact with the waste forms from precipitation and run-off water should be included in the report.

2.6 Lead/LLW Mixed

As required, the report estimates, for each waste stream, the time to fill available storage capacity. On page 41 of the Inventory Report, the estimate for this waste stream is contingent upon certain assumptions. Assumption number 4 is that no other low-level mixed waste is generated, other than the wastes identified in the storage and inventory reports. DOE must present all information, presently in possession, which indicates that other waste streams are planned to be generated, and would be subject to the LDR rules. DOE must present this information as a modification to the Inventory Report immediately. If such waste is generated at a later date due to process or production changes at the facility, then Treatment Report #2, required by Section VI.B.2. of the FFCA, shall be revised to include such waste.