



U.S. Department of Energy
Office of River Protection

P.O. Box 450, MSIN H6-60
Richland, Washington 99352

0068616

06-ED-015

FEB 16 2006

Ms. Jane Hedges, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Blvd.
Richland, Washington 99352

RECEIVED
FEB 22 2006
EDMC

Dear Ms. Hedges:

SUBMITTAL OF CALENDAR YEAR 2005 LAND DISPOSAL RESTRICTIONS
ASSESSMENT OF 242-S AND 242-T EVAPORATORS IN SUPPORT OF HANFORD
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER MILESTONE M-26-010

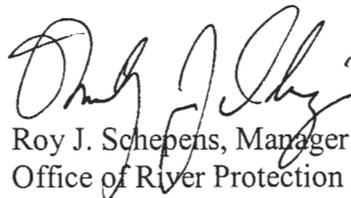
Reference: Calendar Year 2004 Hanford Mixed Waste Land Disposal Restrictions Report
(DOE/RL-2005-23, Revision 0), dated April 27, 2005.

This letter transmits the Land Disposal Restrictions Assessment Report for the 242-S and 242-T Evaporators (attached). The commitment to assess these evaporators is documented in Table 3-4 of the Reference. With the submittal of this report, the U.S. Department of Energy, Office of River Protection has completed the assessment of all mixed waste and potential mixed waste areas scheduled in the Reference.

This assessment was discussed in advance with your staff.

If you have any questions, please contact me, or your staff may contact Woody Russell, Environmental Division, (509) 373-5227.

Sincerely,


Roy J. Schepens, Manager
Office of River Protection

ED:RWR

Attachment

cc: See page 2

Ms. Jane Hedges
06-ED-015

-2-

FEB 16 2006

cc w/attach:

M. N. Jarayasi, CH2M HILL

J. J. Lyon, Ecology

E. Van Mason, Ecology

A. G. Miskho, FHI

G. L. Sinton, RL

Administrative Record

CH2M Correspondence Control

Environmental Portal, LMSI

Attachment
06-ED-015

Calendar Year 2005 Land Disposal Restrictions Assessment:
242-S and 242-T Evaporators

Conducted November 2005

Calendar Year 2005 Land Disposal Restrictions Assessment:

242-S and 242-T Evaporators

Conducted November 2005

EXECUTIVE SUMMARY

The Land Disposal Restrictions Assessment Program, as applied to tank farm facilities, addresses requirements identified in a March 2000 Director's Final Determination from the State of Washington, Department of Ecology^[1]. The program assesses the status of mixed waste storage at tank farm facilities against federal and state requirements.

The CH2M HILL Hanford Group, Inc. calendar year 2005 commitment, as documented in Table 3.4 of DOE/RL-2004-07, "Calendar Year 2003 Hanford Site Mixed Waste Land Disposal Restrictions Report," was to assess potential mixed waste storage issues at the 242-S Evaporator and the 242-T Evaporator. The two evaporators are listed as Resource Conservation and Recovery Act past practice units subject to closure under Hanford Federal Facility Agreement and Consent Order Milestone M-45-00.

Although documentation reviewed contains information on potential mixed waste in the 242-S Evaporator, it is insufficient to determine the waste volumes or characteristics. Documentation available for the 242-T Evaporator is insufficient to determine volumes or characteristics of waste that may remain in the process vessels. Sufficient information is available to determine that the tanks in the 242-T-601 chemical facility do not contain chemical product and are not a mixed waste. As the 242-S and 242-T evaporators are Resource Conservation and Recovery Act past practice units, they are subject to closure pursuant to Hanford Federal Facility and Consent Order Milestone M-45-00. Complete characterization of waste volume and characteristics will be accomplished during the closure planning activity.

Where information regarding treatment, management, and disposal of the radioactive source, byproduct material and/or special nuclear components of mixed waste (as defined by the Atomic Energy Act of 1954, as amended) has been incorporated, it is not incorporated for the purpose of regulating the radiation hazards of such components under the authority of Chapter 70.105 RCW and its implementing regulations but is provided for information purposes only."

[1] State of Washington, Department of Ecology (Ecology), 2000, "Final Determination pursuant to the Hanford Federal Facility Agreement and Consent Order (HFFACO) regarding the U.S. Department of Energy's (DOE) compliance with Land Disposal Restriction (LDR) requirements of Washington State's Hazardous Waste Management Act and the Federal Resource Conservation and Recovery Act, DOE's annual LDR Report, and HFFACO Milestone M-26-01." Letter to R. French, DOE, Office of River Protection, and K. Klein, DOE, Richland Operations Office, from Ecology, March 29, 2000.

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LIST OF TERMS

ABBREVIATIONS AND ACRONYMS

CY	calendar year
CH2M HILL	CH2M HILL Hanford Group, Inc.
HFFACO	Hanford Federal Facility and Consent Order
LDR	Land Disposal Restrictions
PFP	Plutonium Finishing Plant
RCSTS	replacement cross site transfer system
RPP	Resource Conservation and Recovery Act past practice
SCI	Surveillance and Compliance Inspection

1.0 INTRODUCTION

The Land Disposal Restrictions (LDR) Assessment Program, as applied to tank farm facilities, addresses requirements identified in a March 2000 Director's Final Determination from Ecology^[2]. The program assesses the status of mixed waste storage at tank farm facilities against federal and state requirements.

The CH2M HILL Hanford Group, Inc. (CH2M HILL) calendar year (CY) 2005 assessment commitment, as documented in Table 3.4 of DOE/RL-2004-07, "Calendar Year 2003 Hanford Site Mixed Waste Land Disposal Restrictions Report," is to evaluate potential mixed waste storage at the 242-S Evaporator and the 242-T Evaporator. The two evaporators are listed as Resource Conservation and Recovery Act past practice (RPP) units subject to closure under Hanford Federal Facility and Consent Order (HFFACO) Milestone M-45-00.

This assessment addresses the implementation of LDR requirements and the potential for unknown or unidentified dangerous or mixed waste at the 242-S Evaporator and the 242-T Evaporator.

2.0 ASSESSMENT PLAN AND METHODOLOGY

This assessment of the RPP units 242-S Evaporator and 242-T Evaporator consisted of:

- Review of a facility Surveillance and Compliance Inspection (SCI) report documenting a field walk-through in July 2004, conducted by CH2M HILL environmental staff. Due to the condition of the 242-T Evaporator buildings and associated entry requirements, the field walk-through was limited to the exterior of the facility. The walk-through of the 242-S Evaporator did not include an entry into the "backside". The backside, which contains the process equipment, was viewed through lead glass inspection windows.
- Review of a walk-through of the 242-S Evaporator was performed by environmental staff in November 2005. The walk-through of the 242-S Evaporator did not include an entry into the "backside". The backside, which contains the process equipment, was viewed through lead glass inspection windows.
- Review of historic documentation for each evaporator. Section 6 of this report lists the documents reviewed.
- Operator round sheets for CY 2005.

[2] State of Washington, Department of Ecology (Ecology), 2000, "Final Determination pursuant to the Hanford Federal Facility Agreement and Consent Order (HFFACO) regarding the U.S. Department of Energy's (DOE) compliance with Land Disposal Restriction (LDR) requirements of Washington State's Hazardous Waste Management Act and the federal Resource Conservation and Recovery Act, DOE's annual LDR Report, and HFFACO Milestone M-26-01." Letter to R. French, DOE, Office of River Protection, and K. Klein, DOE, Richland Operations Office, from Ecology, March 29, 2000.

3.0 GENERAL FACILITY INFORMATION

The evaporator facilities were initially used to concentrate chemical processing waste and to increase the available storage capacity of the single-shell tanks. This increased capacity was accomplished by increasing the concentration of the waste by evaporation of water. The evaporation process occurred at sub-atmospheric pressure using steam to heat the evaporation vessel to boil water from the waste. The water vapor was condensed and discharged to the ground through a crib. When the liquid was sufficiently concentrated it was returned to a designated effluent tank. Modifications occurred to both facilities to allow their use for other operations as discussed below. See Appendix A for diagrams of the facilities.

3.1 242-S Evaporator

The 242-S Evaporator facility is located north of the 241-S Tank Farm and west of the 241-ST Tank Farm. The 242-S Evaporator consists of a segmented building containing process, control, and personnel areas. The process section of the facility is approximately 23 meters (75 feet) long by 15 meters (50 feet) wide and 18 meters (60 feet) high. The process portions of the facility contain the condenser and evaporator rooms and a separate vault for the ion exchange column. The geometry of individual vessels within the facility is described below. The control room, lunch room, change room, and cold storage room are located in a one-story service building on the west side of the process rooms. The service building is approximately 14 meters (45 feet) square.

The mission of the 242-S Evaporator was to concentrate tank waste in the 241-S Tank Farm. Operation of the evaporator began in 1973 and continued until 1980. The facility was shut down in 1980 and placed in standby mode in 1981. A number of piping configuration changes were made to the evaporator in 1985 so that the ion exchange column and some of the process tanks could be used to reduce uranium content in the 216U1/U2 Crib groundwater. These changes allowed groundwater to be pumped to the facility (tanks) for processing through the ion exchange column, using existing pumps and process lines. Treated liquid was transferred to the tank farm. This activity was conducted during 1985. After the facility was placed in non-operational status engineered controls, such as disconnected or blanked pipelines, were used to isolate the facility from the tank farms. The facility currently contains controls for the tank waste transfer system and houses the control room for the replacement cross site transfer system (RCSTS). The facility also houses instrument air compressors for 241-SY Tank Farm and alarms for the 244-S double-contained receiver tank and the 241-SY/SX Tank Farms.

In its original configuration, the facility was connected by piping to Tank 241-S-102 (and later to Tank 241-SY-102), which was the feed and blending tank for the evaporator, and to Tank 241-S-103, which was the effluent tank for concentrated waste and other byproducts of the process. Tank 241-S-103 received the concentrated waste returned from the evaporation process and other facility effluents. Treated condensate was routed to the 216-S-25 Crib. The facility consists of a number of components for evaporation of the liquid from the feed/blending tank and return of the concentrated waste to Tank 241-S-103. The following is a listing of the major vessels within the facility:

- 242-S-C-A-1, 134,750 liters (35,600 gallons), a vapor/liquid separator approximately 12 meters (40 feet) high and 4.6 meters (15 feet) diameter.
- E-A-1, a reboiler approximately 4.6 meters (15 feet) high and 1 meter (3.5 feet) diameter.
- 242-S-E-C-1, a primary condenser approximately 5.5 meters (18 feet) long and 2 meters (7 feet) diameter.
- 242-S-E-C-2, an inter condenser approximately 2 meters (7 feet) long and 0.5 meter (1.5 feet) diameter.
- 242-S-E-C-3, an after condenser approximately 2.3 meters (7.5 feet) long and 25 centimeters (10 inches) diameter.
- 242-S-TK-C-100, 67,370 liter (17,800 gallon) condensate catch tank.
- 242-S-IX-D-1, 4,288 liter (1,133 gallon) ion exchange column approximately 1.2 meters (4 feet) diameter and 4.9 meters (16 feet) high.
- 242-S-TK-E-101, 15,897 liter (4,200 gallon) eluent tank.
- 242-S-TK-E-102, 379 liter (100 gallon) anti-foam tank.
- 242-S-TK-C-103, 1,893 liter (500 gallon) flow measurement tank.
- 242-S-TK-E-104, 2,347 liter (620 gallon) decontamination tank approximately 1.5 meters (5 feet) diameter and 1.5 meters (5 feet) high.
- 242-S-DU-C-1 de-entrainment tank.
- 242-S-TK-302-C, 177,895 liter (47,000 gallon) acid storage tank located above ground, outside the facility. This tank was originally an acid addition tank and was also later used as lag storage for the U1/U2 Crib groundwater before it was treated in the ion exchange column. This tank has been emptied and cleaned for use as a raw water storage and chemical addition tank for the RCSTS.
- Floor sump in the hot side of the facility, 3,785 liters (1,000 gallon) capacity, approximately 1.5 meters (5 feet) square and 1.8 meters (6 feet) deep.

3.2 242-T Evaporator

The 242-T Evaporator facility is located in the 200 West Area, northeast of and adjacent to the 241-TX Tank Farm. The facility was built as a prototype in the early 1950s to remove liquids and reclaim space in existing waste storage tanks, and later to process Plutonium Finishing Plant (PFP) waste. The evaporator was modified several times. It was used to process liquid into concentrated solids (crystallization), as well as to remove liquids and concentrate the waste.

The mission of the 242-T Evaporator was to concentrate tank waste in the 241-T Tank Farm. The evaporator was first operated as a batch unit from 1952 until its first shutdown in 1955. The plant was not used again until 1965, when the first modifications were made and the plant was run as a continuous evaporation process until 1972. In 1973 modifications were made to allow the facility to neutralize and concentrate waste from PFP. This role continued until 1980. In April 1981, a shutdown/standby plan was written. A final waste transfer out of the facility was made in 1982.

The facility is housed in a rectangular concrete building with a divided process area (radiological area, or "hot"), a control area (non-radiological, or "cold"), and a stand alone chemical storage tank building. The process area has 0.6 meter (2 feet) of concrete

shielding and is approximately 13 meters (43 feet) long, 12.8 meters (42 feet) wide, with 6.7 meter (22 feet) tall walls, and a 12.7 centimeter (5 inch) thick cover block (flat) roof, reinforced with external steel trusses. The process area roof cover blocks have been foamed over. The processing area consists of a feed cell, evaporator cell, and a condensate cell that are separated by one foot thick concrete walls. One corner of the condensate cell holds the sample gallery and the decontamination sink.

The attached single story control area contained a now defunct lunch room, wash room, and lavatory, a change room, a control room, instrument air dryers, and an anti-foam tank and pump.

242-T-601, a small chemical storage building next to the evaporator, has seven tanks (both inside and outside the building) that were used to store make-up chemicals for the evaporation process.

The following vessels are located with the 242-T Facility:

- 242-T-101, 41,635 liter (11,000 gallon) evaporator vessel
- 242-T-102, 15,987 liter (4,200 gallon) feed tank
- 242-T-103, 178 liter (47 gallon) preheater
- 242-T-104, 178 liter (47 gallon) preheater
- 242-T-105, 568 liter (150 gallon) cyclone separator
- 242-T-106, packed scrubber
- 242-T-107, condenser
- 242-T-108, 16,276 liter (4,300 gallon) condenser catch tank
- 242-T-109, 16,276 liter (4,300 gallon) condenser catch tank
- 242-T-110, 360 liter (95 gallon) cyclone catch tank
- 242-T-123, compressor receiver tank
- 242-T-112, anti-foam tank

The following chemical make-up tanks are located in or near the 242-T-601 building:

- 242-T-601-TK-1, 5,000 liter (1,322 gallon) sodium ferrocyanide tank
- 242-T-601-TK-2, 24,000 liter (6,345 gallon) acid tank
- 242-T-601-TK-3, 1,200 liter (317 gallon) nickel sulfate tank
- 242-T-601-TK-4, 209 liter (55 gallon) nickel sulfate tank
- 242-T-601-TK-5, 12,810 liter (3,384 gallon) caustic tank
- 242-T-601-TK-6, 2,230 liter (588 gallon) caustic tank
- 242-T-601-TK-7, 5,000 liter (1,322 gallon) unlabeled chemical tank

4.0 ASSESSMENT RESULTS

4.1 Potential Mixed Waste Evaluation of the 242-S Evaporator

The 242-S Evaporator contains residual waste materials in several of its vessels. The following process vessels were drained and flushed following the facility shutdown in 1981 and may contain small amounts of liquid from that activity: E-C-1 primary condenser, E-C-2 inter condenser, E-A-1 reboiler, E-C-3 after condenser, TK-C-103 flow measurement tank, and DU-C-1 de-entrainment unit. The following is the last known status of the other vessels within the 242-S Evaporator Facility:

- C-A-1 vapor/liquid separator. The vapor/liquid separator contains a residual liquid of about 7.6 to 10.1 centimeters (3 to 4 inches) remaining in the bottom of the vessel. It is not known what this liquid is, but it is likely undrained liquid from the flushing operation.
- TK-C-100 condensate catch tank. The condensate catch tank was last used during the U1/U2 groundwater treatment campaign in 1985. It was not re-used after that. The tank contains approximately 30,000 to 34,000 liters (8,000 to 9,000 gallons) (approximately 2.5 to 3 meters [8 to 10 feet] depth) of residual waste. The amount of sludge in this waste is unknown. Since the resin in the ion exchange column was organic, the tank likely also contains some organic materials. The concentration of organic material is unknown. No sample data is available to determine the constituents of the waste material and only limited process history information is available for 242-S.
- IX-D-1 ion exchange column. The column originally contained a zeolite ion exchange medium. To support the U1/U2 groundwater treatment campaign in 1985, an organic ion exchange resin, most likely a polystyrene type, was added to the ion exchange column. After the U1/U2 treatment the resin was regenerated with sodium hydroxide and the column was filled with water to cover the resin. Radioactive material in the column is expected to be similar to that contained in the condensate catch tank.
- TK-E-01 eluent tank. The eluent tank originally contained sodium nitrate for regeneration of the ion exchange column, and was later used in the U1/U2 treatment campaign to contain sodium hydroxide for regeneration of the ion exchange column. The tank is currently empty.
- TK-E-102 anti-foam tank. The anti-foam tank was used in the U1/U2 treatment campaign. It contains a residual amount of white powder and is labeled as "Sodium Bicarbonate." The tank was sampled in 1997 and the analysis confirmed that the tank contained sodium bicarbonate.
- TK-E-104 decontamination tank. It is believed to contain a minimal heel of yellow-tinted water.
- TK-302-C. This tank was originally an acid addition tank for injection of dilute nitric acid in the process stream, and was more recently used during the groundwater treatment campaign as lag storage for the 216-U1/U2 groundwater. This tank has been emptied and cleaned for use as a raw water storage and chemical addition tank for the RCSTS.

- Pump Room Floor sump. This sump contains an undetermined amount of floor drainage from the hot side of the facility.

Gap analysis: Although the reviewed documentation contains information on potential wastes that may be present within the 242-S Evaporator, the information is insufficient to determine the volume or characteristics of remaining waste. As a RPP unit, the 242-S Evaporator is subject to the requirements of HFFACO Milestone M-45-00, "Complete Closure of All Single-Shell Tank Farms." Full characterization of the remaining potential mixed waste will be accomplished as part of the closure.

4.2 Potential Mixed Waste Evaluation of the 242-T Evaporator

The radiological and chemical materials contained in the 242-T Evaporator are unknown, although RPP-13329, *Tank Farm Facility Hazard Categorization*, indicates that radiation readings were obtained in CY 2000 and that this reading would indicate approximately 200 gallons of waste remains in the evaporator. The facility suffered a breakdown in the evaporator and was abandoned. The shutdown report tasks, if completed, were never documented. Shutdown tasks identified lines to be flushed, lines to be blanked to isolate the facility from other process facilities or to isolate specific equipment to minimize chances of unplanned operation, and replacement of filter(s) to allow for atmospheric breathing. Process vessels are not maintained. The building roof inspection occurs once every five years. In the early 1970s, the ground under the floor of the 242-T Evaporator washed out, and side-wall and floor cracks developed. The cracks and foundation voids were back-filled with grout.

Gap analysis: Waste material may still remain in the sump, as the shutdown plan to pump the sump back to the feed tank may not have been implemented. Other process vessels such as the evaporator, condenser, and catch tanks may contain waste material of unknown concentrations and volumes. The radiation level from the side-wall of the evaporator is 1 R/hr at 2.4 meters (8 feet). Available data is insufficient to characterize waste volumes or characteristics. As a RPP unit, the 242-T Evaporator is subject to the requirements of HFFACO Milestone M-45-00, "Complete Closure of All Single-Shell Tank Farms." Full characterization of the remaining potential mixed waste will be accomplished as part of the closure.

The seven chemical storage tanks associated with the 242-T-601 facility were inspected in 1997. Six of the tanks were found to be empty and a seventh (242-T-601-TK-3) contained a small liquid heel that was sampled and found to have a neutral pH. It was concluded that this liquid was water. All tanks in 242-T-601 are considered to be benign (i.e., do not present an environmental release hazard).

4.3 Walk-Through Inspections

Due to access restrictions, physical inspection of the facilities was limited to the outside of the 242-T Evaporator and to the general access areas of the 242-S Evaporator. As with previous LDR assessments, a review of completed SCIs and recent walk-throughs have been used. Checklists used to conduct the SCIs were revised in 2004 to more effectively support the LDR assessment process, and mirror the "Interim Status Compliance Checklist" developed by the U.S. Department of Energy, Office of River Protection for its LDR assessments.

5.0 Documents Reviewed

- HNF-2503, Authorization Basis Status Report (Miscellaneous TWRS Facilities, Tanks, and Components), Revision 0, April 1998.
- SD-HS-SAR-009, 242-T Evaporator Facility Shutdown/Standby to Condition V Safety Analysis Report, February 1983.
- RPP-13329, Tank Farm Facility Hazard Categorization, Revision 3, March 2004.
- HNF-4508, Hazard Evaluation for 242-T Evaporator Facility, Revision 0, June 1999.
- SD-WM-SSP-002, 242-S Facility Shutdown/Standby Plan, Revision 0, September 1988.
- RPP-6599, Hazard Evaluation for 242-S Evaporator "Hot Side", Revision 0, September 2000.
- RPP-SCI-04-001, 242-S, 242-T, 272-S, and 244-TX.
- TF-OR-ST3-DW, "242-S, 244-S, S, and SX Farm Daily/Weekly Rounds," for the months of January, March, June, and October 2005.
- TF-OR-ST4-DW, "242-T, 244-TX, T, TX, TY and U Farm Daily/Weekly Rounds," for the months of January, March, June, and October 2005.

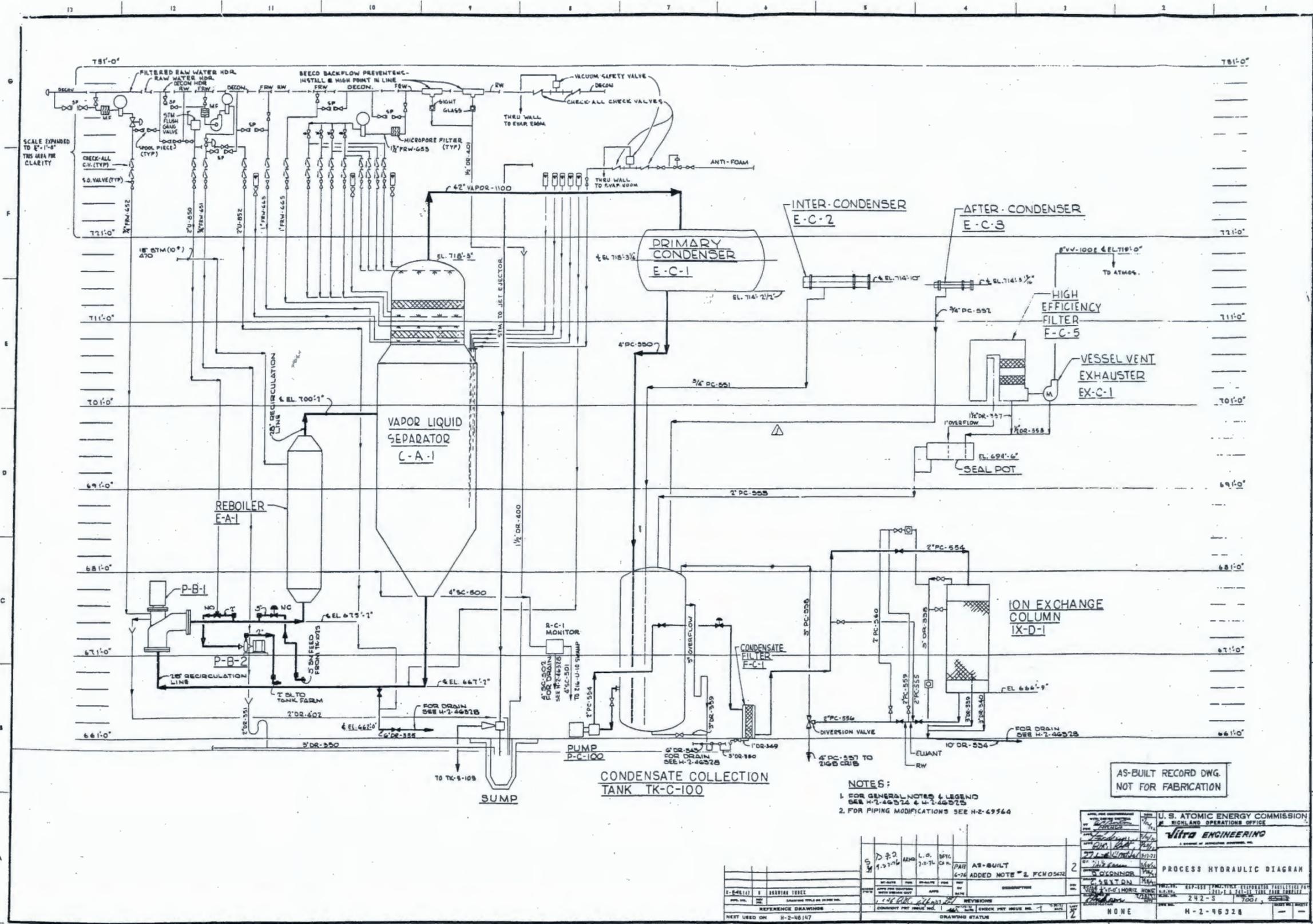
APPENDIX A

**DIAGRAMS FOR
242-S EVAPORATOR AND 242-T EVAPORATOR**

LIST OF DIAGRAMS

Process Diagram for 242-S Evaporator.....A-3
Elevation Views for 242-S Evaporator.....A-4
Plan View for 242-S Evaporator.....A-5
Plan View for 242-T Evaporator.....A-6
Process Diagram for 242-T Evaporator.....A-7

Process Diagram for
242-S Evaporator

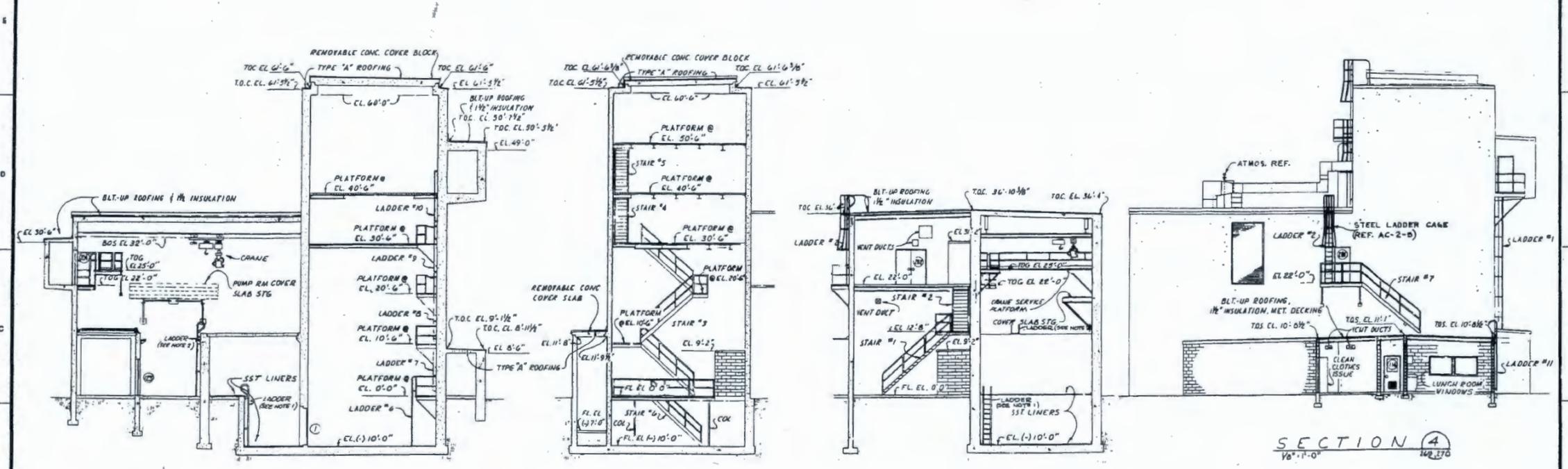
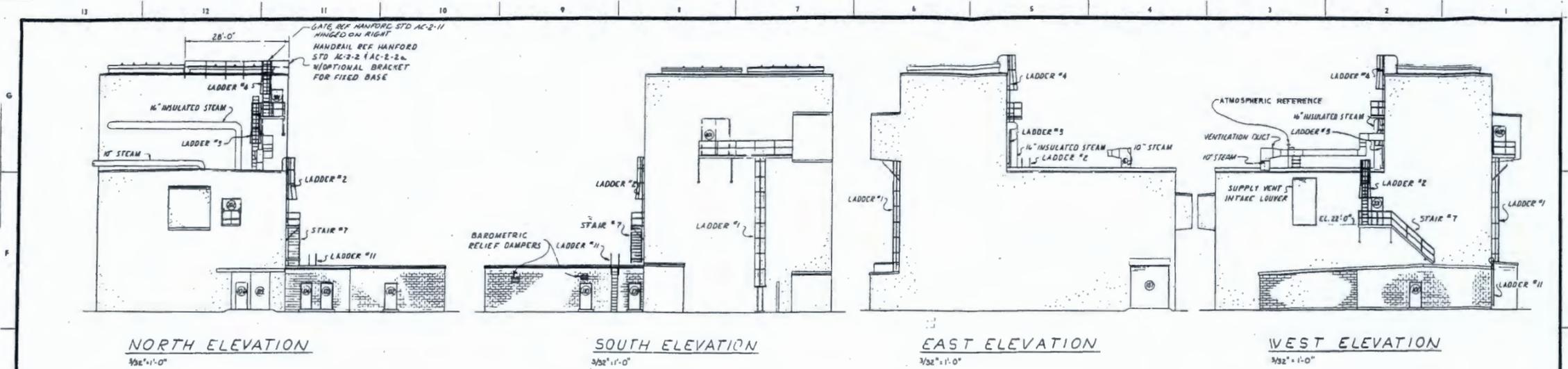


NOTES:
1. FOR GENERAL NOTES & LEGEND SEE H-2-46578 & H-2-46579
2. FOR PIPING MODIFICATIONS SEE H-2-49564

AS-BUILT RECORD DWG.
NOT FOR FABRICATION

U. S. ATOMIC ENERGY COMMISSION HIGHLAND OPERATIONS OFFICE																											
VITRO ENGINEERING A DIVISION OF BENTON & BOWLES, INC.																											
PROCESS HYDRAULIC DIAGRAM																											
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Elevation Views for
242-S Evaporator



LADDER NOTES:
 1. LADDER TO BE PER HPS AC-2-4C TYPE II THK WELD LEGS TO PUMP RM FLOOR. USE 3/8" EXP ANCHOR FOR THE LADDER SUPPORTS TO CONCRETE WALL IN TWO (2) LOCATIONS, EQ SPCD.
 2. LADDER TO BE PER HPS AC-2-4C TYPE II. BOLT LEGS TO FLOOR WITH 3/8" EXP ANCHORS AND IN TWO LOCATIONS ON WALL, EQ SPCD.

NOTE: DATUM EL 0'-0" = EL 671'-0"

LEGEND
 BLT-UP ----- BUILT-UP
 T.O.C. ----- TOP OF CONCRETE
 B.S. ----- BOTTOM OF STEEL
 T.D.S. ----- TOP OF STEEL

NO.	DATE	BY	CHKD	APP'D	DESCRIPTION
1	11/27/03	AS-BUILT
2
3
4
5

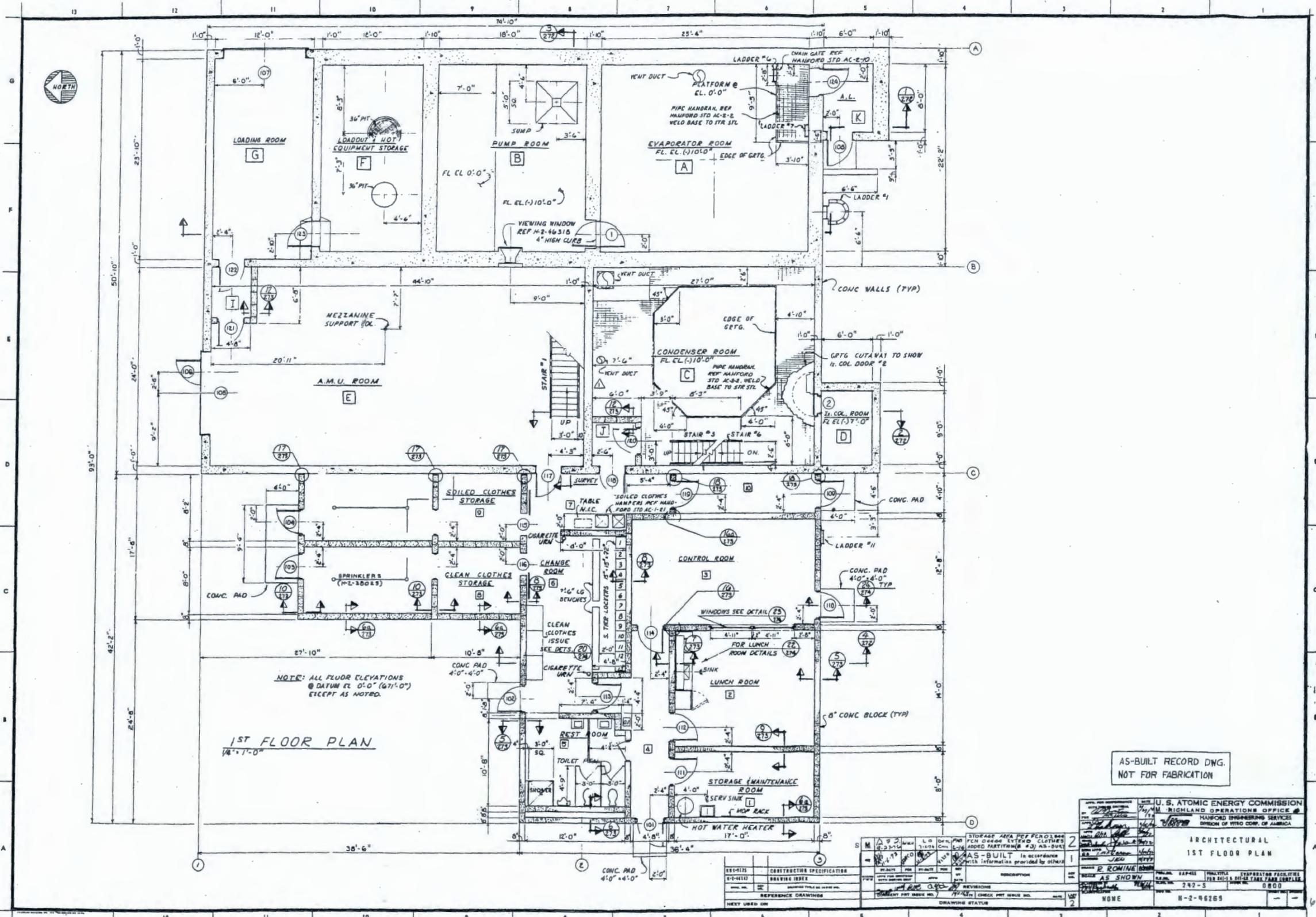
AC-2-5	HANDRAIL
AC-2-2	HANDRAIL
AC-2-2a	HANDRAIL
B-4111	DRAWING INDE
REF-11	CONSTRUCTION SPECIFICATION
REF-12	CONSTRUCTION SPECIFICATION
REF-13	CONSTRUCTION SPECIFICATION
REF-14	CONSTRUCTION SPECIFICATION
REF-15	CONSTRUCTION SPECIFICATION
REF-16	CONSTRUCTION SPECIFICATION
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REF-18	CONSTRUCTION SPECIFICATION
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RICHLAND OPERATIONS OFFICE	...
HANFORD ENGINEERING SERVICES	...
DIVISION OF VIBRO CORP. OF AMERICA	...
ARCHITECTURAL	...
ELEVATIONS & SECTIONS	...
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SCALE: AS SHOWN	...
PROJECT: 242-S	...
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AS-BUILT RECORD DWG.
NOT FOR FABRICATION

Plan View for 242-S

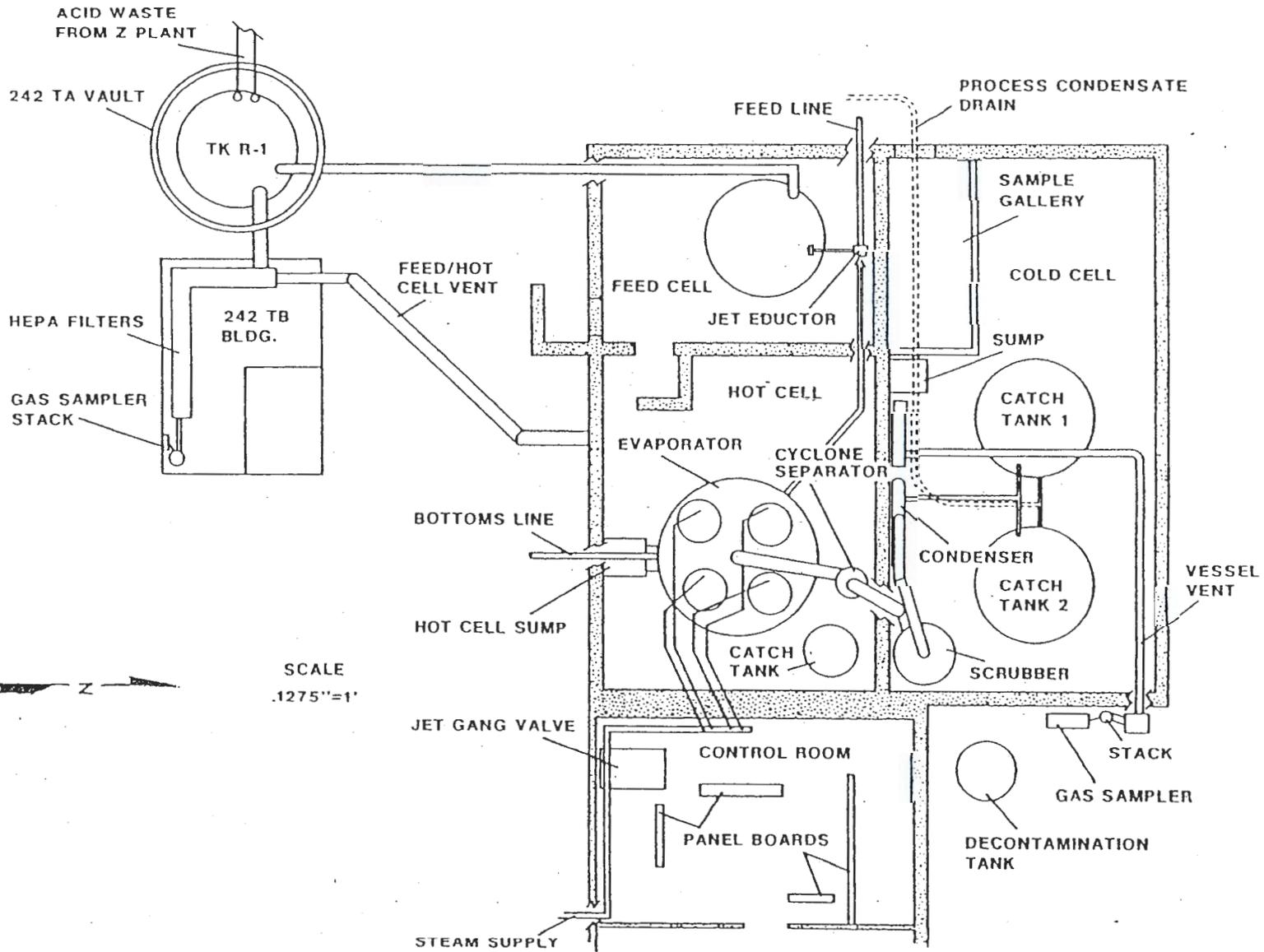
Evaporator



RHO-CD-1410

DIAGRAM I

242-T EVAPORATOR FACILITY



Process Diagram for 242-T Evaporator

FY 2006-POPD-S-0313

RHO-CD-1410

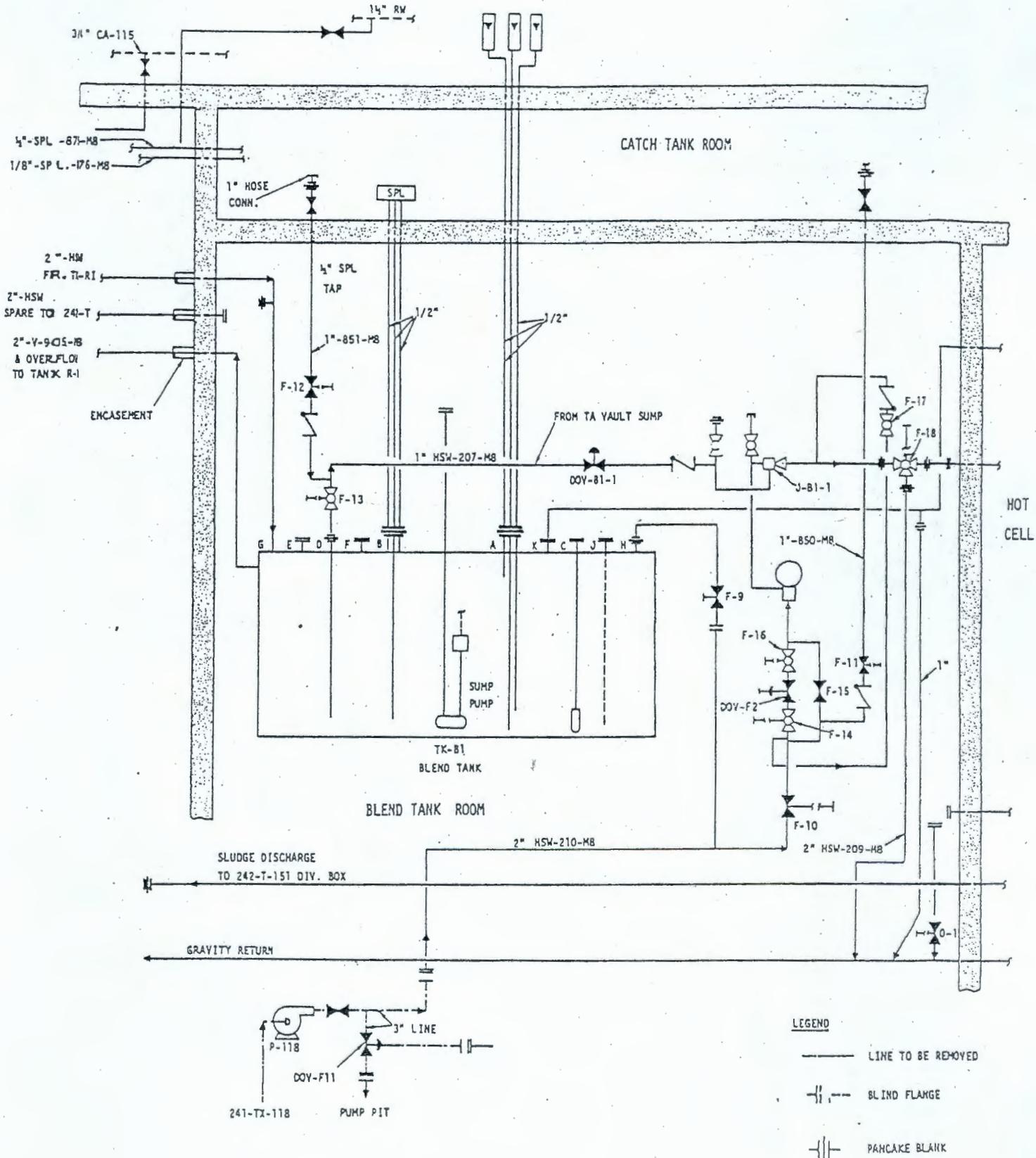


DIAGRAM II
242-T FEED CELL

Process Diagram for 242-T Evaporator

RHO-CD-1410

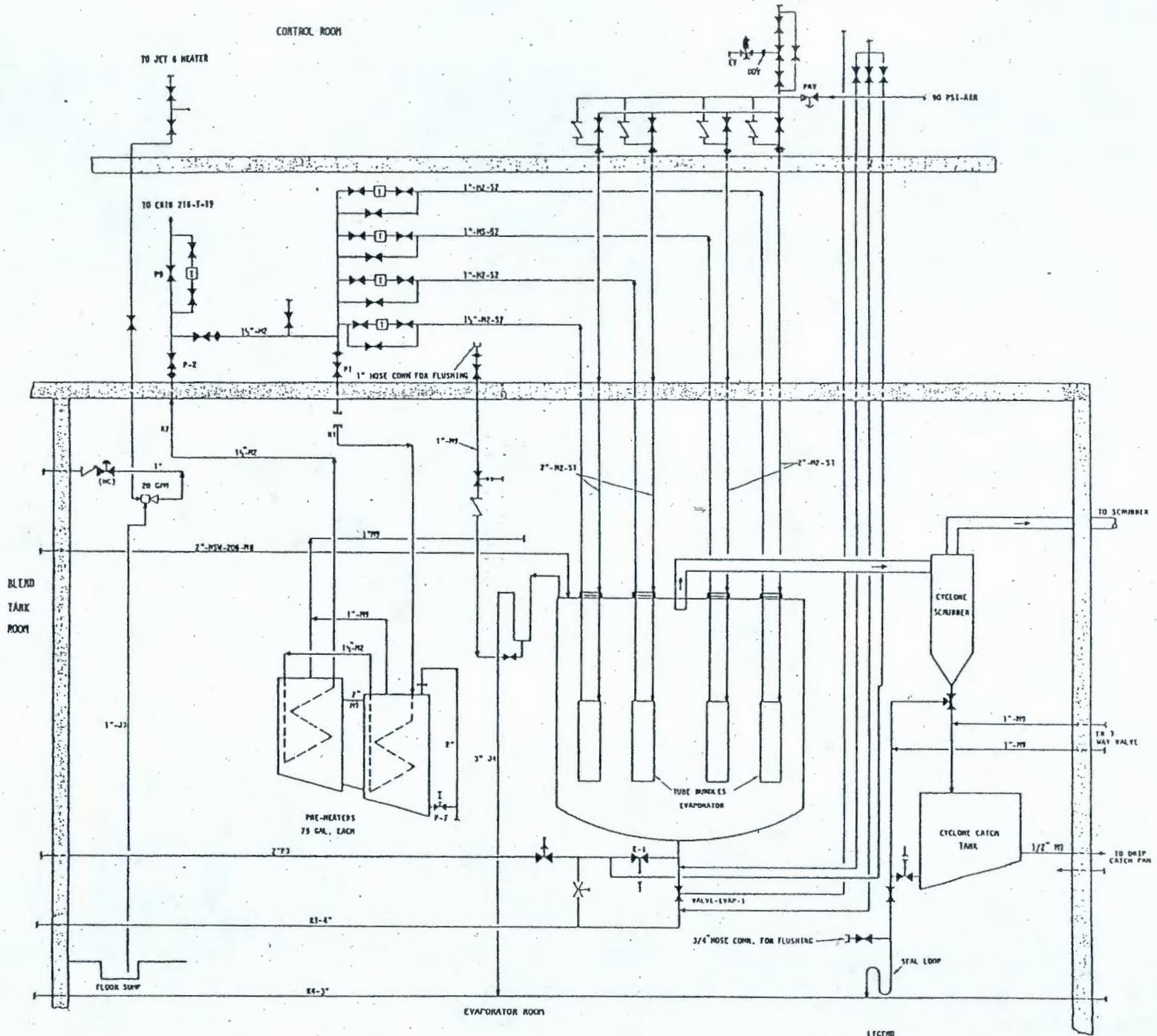
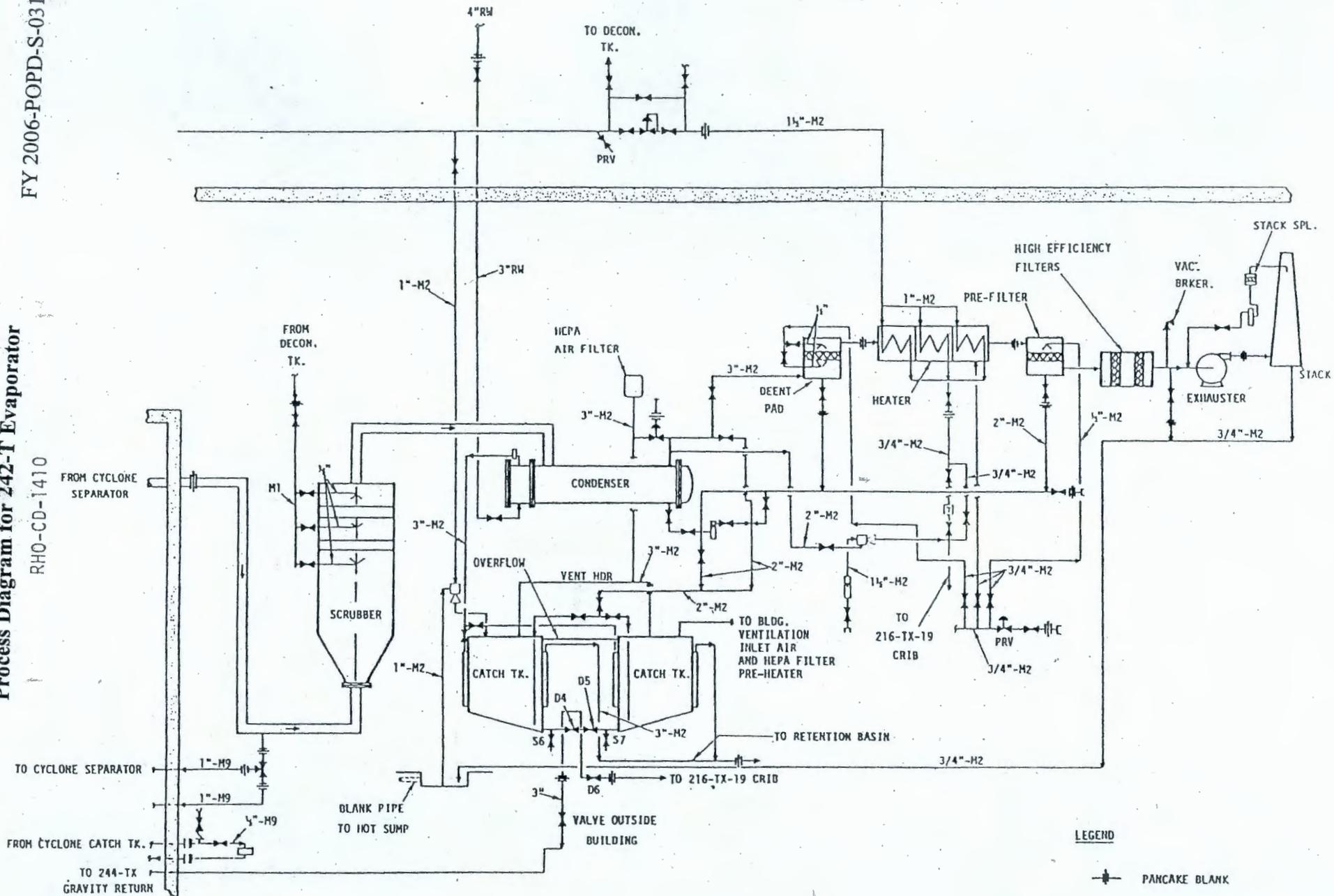


DIAGRAM III
242-T HOT CELL



LEGEND
 PANCAKE BLANK

DIAGRAM IV
242-T COLD CELL

CH2M-0503640

Attachment

WASTE STORAGE REQUIREMENTS CHECKLIST

Consisting of 19 pages, including coversheet

Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
FEDERAL LAND DISPOSAL RESTRICTIONS		
For each dangerous waste, is a determination made whether the waste has to be treated before it can be land disposed? Do <i>Washington Administrative Code (WAC) 173-303-140</i> , "Land Disposal Restrictions," standards apply? Does this determination include determining if the dangerous waste meets the treatment standards in Title 40 <i>Code of Federal Regulations (CFR) Part 268, Section 40</i> , "Applicability of Treatment Standards," Part 268, Section 45, "Treatment Standards for Hazardous Debris," or Part 268, Section 49, "Alternative Land Disposal Restrictions Treatment Standards for Contaminated Soil"? How does CH2M HILL Hanford Group, Inc. (CH2M HILL) verify that the treatment standards have been met prior to disposal?	NA	
For dangerous wastes that DO NOT meet the treatment standards, is a one-time written notice sent to the receiving treatment or storage facility for each initial shipment of waste, and a copy of this notice placed in the record file? Does the notice include the applicable information required by the Generator Paperwork Requirements Table in 40 CFR 268.7(a)(4) in the 40 CFR 268.7(a)(2) column?	NA	
For dangerous wastes that DO meet the treatment standards at the original point of generation, is a one-time written notice sent to the receiving treatment, storage, or disposal facility for each initial shipment of waste, and a copy of this notice placed in the record file? Does the notice include the applicable information required by the Generator Paperwork Requirements Table in 40 CFR 268.7(a)(4) in the 40 CFR 268.7(a)(3) column and a certification statement? Are new notices sent when the waste changes? How does CH2M HILL verify that the treatment standards have been met prior to disposal?	NA	

A-2

FY 2006-POPD-S-0313

- Y – This is a focus requirement and is addressed in the 2005 LDR Assessment.
- N – This is not a focus requirement, and is not intended to be addressed in the 2005 LDR Assessment.
- NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
For any dangerous wastes for which land disposal restrictions (LDR) exceptions exist, is a one-time written notice sent to the receiving land disposal facility for each initial shipment of waste, and a copy of this notice placed in the record file? Does the notice include the applicable information required by the Generator Paperwork Requirements Table in 40 CFR 268.7(a)(4) in the 40 CFR 268.7(a)(4) column?	NA	
If the waste or contaminated soil has been determined to be restricted based solely on knowledge of the waste, is all supporting data used to make this determination retained on-site per 40 CFR 268.7(a)(6)?	NA	
If the waste or contaminated soil has been determined to be restricted based on testing the waste (or extract), is all supporting analysis data used to make this determination retained on-site per 40 CFR 268.7(a)(6)?	NA	
Are notices, certifications, analytical data, and other documentation produced pursuant to 40 CFR 268.7, "Testing, Tracking, and Recordkeeping Requirements for Generators, Treaters, and Disposal Facilities," being retained in record files for at least 3 years (longer if extended by the regulatory agency) per 40 CFR 268.7(a)(8)? What programs, plans or procedures implement the generator record keeping requirements?	NA	
Are notices, certifications, analytical data, and other documentation produced pursuant to 40 CFR 268.7 being retained in record files for at least 3 years (longer if extended by the regulatory agency) per 40 CFR 268.7(a)(8)? What programs, plans or procedures implement the generator record keeping requirements?	NA	

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FY 2006-POPD-S-0313

Y – This is a focus requirement and is addressed in the 2005 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2005 LDR Assessment.

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Where a dangerous waste has been designated by the dangerous waste lists (WAC 173-303-080, "Dangerous Waste Lists") and the waste also exhibits a characteristic, has the generator determined the underlying hazardous constituents associated with the characteristic? (Note, this is not required where the listed waste treatment standard operates in lieu of the characteristic waste treatment standard, or for D001 nonwastewaters treated by CMBST, RORGS, OR POLYM of 40 CFR 268.42, "Treatment Standards Expressed as Specified Technologies," Table 1 per 40 CFR 268.9(a).)	NA	
Is hazardous debris being treated for each "contaminant subject to treatment" according to 40 CFR 268.45(b) using the technologies identified in Table 1 of 40 CFR 268.42? Is debris that is contaminated with two or more contaminants, subject to treatment, being treated for each contaminant using one or more treatment technologies identified in Table 1?	NA	
General Waste Analyses		
Are all solid wastes checked against the applicable designation procedures of WAC 173-303-070(3), "Designation Procedures," and has a determination been made whether the wastes are dangerous waste or extremely hazardous waste (EHW) per WAC 173-303-070(1)(a) and 40 CFR 265.170(1)(a)?	NA	
Are designation determinations based on test data, material or process knowledge, or a combination of these methods? Has designation been documented and can this information be provided? Is the documentation complete and adequate per WAC 173-303-070(3)(c)?	NA	
Are records of test results, waste analyses, or other determinations made to designate wastes being maintained from at least five years from the date the waste was last transferred for on-site or off-site treatment, storage or disposal per WAC 173-303-210(3), "Waste Designation Records"?	NA	

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FY 2006-POPD-S-0313

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N – This is not a focus requirement, and is not intended to be addressed in the 2005 LDR Assessment.

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Has the owner or operator obtained a detailed chemical, physical, and/or biological analysis of a dangerous waste, before he stores, treats, or disposes of it? Does this analysis contain the information necessary to manage the waste in accordance with the requirements of WAC 173-303, "Dangerous Waste Regulations"? (The required analyses may include or consist of existing published or documented data on the dangerous waste, or on waste generated from similar processes, or data obtained by testing, if necessary.)	NA	
Are analyses repeated as necessary to ensure they are accurate and current per WAC 173-303-300(1), (2), (3), and (4)? (Analyses must be repeated when the owner or operator has reason to believe that the process generating the waste has significantly changed.)	NA	
Does the owner or operator have a waste analysis plan? Is the plan followed? Is the plan kept at the facility? Does the waste analysis plan describe the procedures to use to comply with the waste analysis requirements of WAC 173-303-300(1), (2), (3), and (4)?	NA	
SECURITY		
Is there either a 24-hour surveillance system which continuously monitors and controls entry on the active portions of the site or a natural or artificial barrier which completely surrounds the active portions of the facility per 40 CFR 265.14(b) and WAC 173-303-310(2)(b) and (c)?	Y	
Does each entrance have a sign, legible at a distance of 25 feet, which reads: "Danger -- Unauthorized Personnel Keep Out", or words to similar effect per 40 CFR 265.14(c) and WAC 173-303-310(2)(a)?	Y	
GENERAL INSPECTION REQUIREMENTS		
Is the facility inspected for malfunctions and deterioration, operator error, and discharges which may cause releases of hazardous waste constituents to the environment, or a threat to human health and the environment per 40 CFR 265.15(a) and WAC 173-303-320(1)?	Y	

Y – This is a focus requirement and is addressed in the 2005 LDR Assessment.

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NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Is there a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices and operating equipment per 40 CFR 265.15(b)(1) and WAC 173-303-320(2)?	Y	
Does the inspection schedule identify the types of problems to look for per 40 CFR 265.15(b)(3) and WAC 173-303-320(2)(b)?	Y	
Does the inspection schedule identify the frequency of inspection for specific items per 40 CFR 265.15(b)(4) and WAC 173-303-320(2)(c)?	Y	
Are areas subject to spills, such as loading and unloading areas, inspected at least daily per 40 CFR 265.15(b)(4) and WAC 173-303-320(2)(c)?	Y	
Is a daily inspection log maintained at the facility per 40 CFR 265.15(b)(2) and WAC 173-303-320(2)(d)?	Y	
Are ALL daily inspection logs retained for at least five years per 40 CFR 265.15(d) and WAC 173-303-320(2)(d)?	Y	
Does the daily inspection log include the date and time of inspection per 40 CFR 265.15(d) and WAC 173-303-320(2)(d)?	Y	
Does the daily inspection log include the inspector's name per 40 CFR 265.15(d) and WAC 173-303-320(2)(d)?	Y	
Does the daily inspection log include the inspector's observations per 40 CFR 265.15(d) and WAC 173-303-320(2)(d)?	Y	
Does the daily inspection log include the date and nature of repairs or remedial actions per 40 CFR 265.15(d) and WAC 173-303-320(2)(d)?	Y	
Are repairs to dangerous waste storage areas made promptly when any deterioration or malfunction is discovered per 40 CFR 265.15(c) and WAC 173-303-320(3)?	Y	
Is reusable equipment being stored, surveyed, labeled, and packaged to prevent releases of hazardous waste constituents to the environment, or a threat to human health and the environment?	NA	
Are inspections conducted at a frequency to identify problems in time to correct them before they harm human health or the environment per 40 CFR 265.15(a) and WAC 173-303-320(1)?	Y	

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
PERSONNEL TRAINING		
Do site personnel successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in compliance with applicable requirements per 40 CFR 265.16(a)(1) and WAC 173-303-330(1), "Training Program"?	NA	
Have ALL facility personnel who handle dangerous waste in any manner participated in an initial training course related to their management of dangerous waste within six months of beginning employment per 40 CFR 265.16(b) and WAC 173-303-330(1)(c)(ii)?	NA	
Has each employee participated in an annual review of his or her training per 40 CFR 265.16(c) and WAC 173-303-330(1)(b)?	NA	
Was the initial training and annual review directed by a person trained in dangerous waste management per 40 CFR 265.16(a)(2)?	NA	
Are records of each current employee's training maintained at the site per 40 CFR 265.16(d)(4) and WAC 173-303-330(2), "Written Training Plan"?	NA	
Are records of former employee training maintained for at least three years after they leave per 40 CFR 265.16(e) and WAC 173-303-330(3), "Training Records"?	NA	
Are personnel assigned in dangerous waste management areas generally familiar with emergency equipment and systems, and emergency procedures including implementation of the site contingency plan per 40 CFR 265.16(a)(3) and WAC 173-303-330(1)(d)?	NA	
Are personnel assigned in dangerous waste management areas generally familiar with procedures for using, inspecting, repairing and replacing facility emergency and monitoring equipment per 40 CFR 265.16(a)(3) and WAC 173-303-330(1)(d)(i)?	NA	
Are personnel assigned in dangerous waste management areas generally familiar with key parameters for automatic waste feed cut-off systems per WAC 173-303-330(1)(d)(ii)?	NA	

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FY 2006-POPD-S-0313

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Are personnel assigned in dangerous waste management areas generally familiar with communications or alarm systems per 40 CFR 265.16(a)(3) and WAC 173-303-330(1)(d)(iii)?	NA	
Are personnel assigned in dangerous waste management areas generally familiar with response to fires or explosions per 40 CFR 265.16(a)(3) and WAC 173-303-330(1)(d)(iv)?	NA	
Are personnel assigned in dangerous waste management areas generally familiar with response to groundwater contamination incidents per 40 CFR 265.16(a)(3) and WAC 173-303-330(1)(d)(v)?	NA	
Are personnel assigned in dangerous waste management areas generally familiar with shutdown of operations per 40 CFR 265.16(a)(3) and WAC 173-303-330(1)(d)(vi)?	NA	
Are documents containing the following information maintained on site: job title, written job description, and name of employee for each position related to dangerous waste management per 40 CFR 265.16(d)(2) and WAC 173-303-330(2)(a)?	NA	
Are documents containing the following information maintained on site: written description of type and amount of training (including continual training) that will be given to person filling a position related to dangerous waste management per 40 CFR 265.16(d)(3) and WAC 173-303-330(2)(b)?	NA	
PREPAREDNESS AND PREVENTION*		*Topic is substantively addressed in periodic assessment of tank farm facilities.
Does the facility maintain any of the following equipment to ensure safety from fire, explosion or unplanned releases of waste: internal communications or alarm system? Is such equipment present and available for use? Is the equipment maintained properly and periodically tested per 40 CFR 265.32(a) and WAC 173-303-340(1)(a)?	NA	
Does the facility maintain any of the following equipment to ensure safety from fire, explosion or unplanned releases of waste: telephone or two-way radio to summon outside help? Is such equipment present and available for use? Is the equipment maintained properly and periodically tested per 40 CFR 265.32(b) and WAC 173-303-340(1)(b)?	NA	

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Does the facility maintain any of the following equipment to ensure safety from fire, explosion or unplanned releases of waste: fire extinguishers and other fire control equipment? Is such equipment present and available for use? Is the equipment maintained properly and periodically tested per 40 CFR 265.32(c) and WAC 173-303-340(1)(c)?	NA	
Does the facility maintain any of the following equipment to ensure safety from fire, explosion or unplanned releases of waste: water at adequate volume and pressure? Is the equipment maintained properly and periodically tested per 40 CFR 265.32(d) and WAC 173-303-340(1)(d)?	NA	
Is sufficient aisle space maintained for unobstructed movement of personnel, fire and other emergency or spill response equipment per 40 CFR 265.35, "Required Aisle Space," and WAC 173-303-340(3), "Aisle Space"?	NA	
Have arrangements been made, and documented, with applicable local and state emergency authorities (police; fire, hospitals, emergency response teams) to familiarize them with the Hanford site, dangerous waste handled there, and emergency procedures per 40 CFR 265.37, "Arrangements with Local Authorities," and WAC 173-303-340(4)(a), (b), (c), and (d)?	NA	
CONTINGENCY PLAN AND EMERGENCY* PROCEDURES		*Topic is substantively addressed in periodic assessment of tank farm facilities.
Is there a contingency plan maintained on site which is designed to minimize hazards to health or the environment from fires, explosions or unplanned releases of dangerous waste per 40 CFR 265.51(a), 40 CFR 265.53(a) and WAC 173-303-350(1), "Purpose," and (2), "Contingency Plan"?	NA	
Does the contingency plan provide that it must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment per 40 CFR 265.51(b) and WAC 173-303-350(1)?	NA	

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FY 2006-POPD-S-0313

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Does the contingency plan describe the actions personnel must take in response to fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility per 40 CFR 265.52(a) and WAC 173-303-350(3)(a)?	NA	
Does the contingency plan describe arrangements with local police, fire departments, hospitals and state and local emergency response teams per 40 CFR 265.53(c) and WAC 173-303-350(3)(b)?	NA	
At all times, is an emergency coordinator on the premises or on call per 40 CFR 265.55, "Emergency Coordinator," and WAC 173-303-360(1), "Emergency Coordinator"?	NA	
Does the contingency plan list ALL pieces of emergency equipment and their locations and capabilities per 40 CFR 265.52(e) and WAC 173-303-350(3)(e)?	NA	
Does the contingency plan include an evacuation plan per 40 CFR 265.52(f) and WAC 173-303-350(3)(f)?	NA	
Have copies of the contingency plan been sent to local police and fire departments, hospitals and state and local emergency response teams per 40 CFR 265.53(b) and WAC 173-303-350(4)(b)?	NA	
Has the contingency plan been reviewed and amended if the plan failed in an emergency per 40 CFR 265.54(b) and WAC 173-303-350(5)(b)?	NA	
Has the contingency plan been reviewed and amended if the facility(s) changed (in its design, construction, operation, maintenance, or other circumstances) in a way that materially increased the potential for fires, explosions, or releases of dangerous waste or dangerous waste constituents, or changed the response necessary in an emergency per 40 CFR 265.54(c) and WAC 173-303-350(5)(c)?	NA	
Has the contingency plan been reviewed and amended if the list of emergency coordinators changed per 40 CFR 265.54(d) and WAC 173-303-350(5)(d)?	NA	
Has the contingency plan been reviewed and amended if the list of emergency equipment changed per 40 CFR 265.54(e) and WAC 173-303-350(5)(e)?	NA	

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FY 2006-POPD-S-0313

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Has the contingency plan been reviewed and amended if the applicable regulations have been revised per 40 CFR 265.54(a) and WAC 173-303-350(5)(a)?	NA	
If the contingency plan has been revised, describe when and how plan was reviewed and amended.	NA	
Has the facility had a dangerous waste emergency since the last assessment (i.e. spill, sudden release, leak, explosion, or ignition of any dangerous waste)?	NA	
In the event of an emergency, is the available and applicable information recorded per 40 CFR 265.56(j) and WAC 173-303-360(2)(k)?	NA	
In the event of an emergency, is the internal communications response action initiated per 40 CFR 265.56(a)(1) and WAC 173-303-360(2)(a)(i)?	NA	
In the event of an emergency, is the local agency alert response action initiated per 40 CFR 265.56(a)(2) and WAC 173-303-360(2)(a)(ii)?	NA	
In the event of a release, fire, or explosion, does the emergency coordinator immediately identify the character, exact source, amount, and area extent of any released materials per 40 CFR 265.56(b) and WAC 173-303-360(2)(b)?	NA	
In the event of a release, fire, or explosion, does the emergency coordinator assess possible hazards to human health and the environment per 40 CFR 265.56(c) and WAC 173-303-360(2)(c)?	NA	
In the event of a release, fire or explosion which could threaten human health or the environment outside the facility, does the emergency coordinator report his/her findings appropriately per 40 CFR 265.56(d) and WAC 173-303-360(2)(d)?	NA	
In the event of an emergency, does the emergency coordinator take all reasonable measures to ensure that fires, explosions, and releases do not occur, recur, or spread per 40 CFR 265.56(e) and WAC 173-303-360(2)(f)?	NA	

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FY 2006-PPD-S-0313

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
In the event that the facility stops operations in response to a fire, explosion, or release, does the emergency coordinator monitor for leaks, pressure buildup, gas generation, or ruptures wherever appropriate per 40 CFR 265.56(f) and WAC 173-303-360(2)(g)?	NA	
Immediately after an emergency, does the emergency coordinator provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water per 40 CFR 265.56(g) and WAC 173-303-360(2)(h)?	NA	
In the event of an emergency, is the U.S. Environmental Protection Agency (EPA) and/or the State of Washington, Department of Ecology (Ecology) notified that the facility is in compliance with the requirements before operations are resumed per 40 CFR 265.56(i) and WAC 173-303-360(2)(j)?	NA	
In the event of an emergency, is the EPA and/or Ecology notified in writing within 15 days per 40 CFR 265.56(j) and WAC 173-303-360(2)(k)?	NA	
OPERATING RECORD		
Is a written operating record maintained at the site per 40 CFR 265.73(a) and WAC 173-303-380(1), "Operating Record"?	Y	
Is a description and quantity of each hazardous waste received, the waste management methods, and the dates of waste management recorded in the operating record per 40 CFR 265.73(b)(1) and WAC 173-303-380(1)(a)?	Y	
Is the location of each dangerous waste within the facility and the quantity at each location recorded in the operating record per 40 CFR 265.73(b)(2) and WAC 173-303-380(1)(b)?	Y	
Are records and results of waste analyses recorded in the operating record per 40 CFR 265.73(b)(3) and WAC 173-303-380(1)(c)?	Y	
Are summary reports and details of all incidents that required the implementation of the contingency plan recorded in the operating record per 40 CFR 265.73(b)(4) and WAC 173-303-380(1)(d)?	Y	

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FY 2006-POPD-S-0313

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Are inspection reports recorded in the operating record per 40 CFR 265.73(b)(5) and WAC 173-303-380(1)(e)?	Y	
Is required monitoring, testing, or analytical data recorded in the operating record per 40 CFR 265.73(b)(6) and WAC 173-303-380(1)(f)?	Y	
Are LDR notices, certifications, and/or demonstrations (if applicable) recorded in the operating record per 40 CFR 265.73(b)(10) and (14) and WAC 173-303-380(1)(l)?	Y	
Is the operating record made available to representatives of the EPA and/or Ecology upon their request per 40 CFR 265.74(a) and WAC 173-303-380(3)(a)?	Y	
USE AND MANAGEMENT OF CONTAINERS*		*NA as 242-S facility inspection did not identify presence of containers in "backside" of 242-S evaporator. NA for 242-T evaporator due to industrial and radiological concerns with entering building.
Are the containers in good condition (not leaking, bulging, rusting, damaged, or dented) per 40 CFR 265.171, "Condition of Containers," and WAC 173-303-630(2), "Condition of Containers"?	NA	
Is the container storage area inspected weekly per 40 CFR 265.174, "Inspections," and WAC 173-303-630(6), "Inspections"?	NA	
Are results of weekly inspections for leaks and deterioration recorded per 40 CFR 265.15(d) and WAC 173-303-630(6)?	NA	
Does the inspection record for leaks and deterioration include the date and time of inspection per 40 CFR 265.15(d) and WAC 173-303-630(6)?	NA	
Does the inspection record for leaks and deterioration include the name of the inspector per 40 CFR 265.15(d) and WAC 173-303-630(6)?	NA	
Does the inspection record for leaks and deterioration include the observations made per 40 CFR 265.15(d) and WAC 173-303-630(6)?	NA	
Does the inspection record for leaks and deterioration include the nature of remedial actions per 40 CFR 265.15(d) and WAC 173-303-630(6)?	NA	
Are containers kept closed except when used per 40 CFR 265.173(a) and WAC 173-303-630(5)(a)?	NA	

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FY 2006-POPD-S-0313

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Is the container and/or its lining compatible with the waste per 40 CFR 265.171 and WAC 173-303-630(4), "Compatibility of Waste with Containers"?	NA	
Is the container handled and stored properly so as not to be ruptured or caused to leak per 40 CFR 265.173(b) and WAC 173-303-630(5)(b)?	NA	
If a container is found to be leaking, is a procedure in place to transfer the dangerous waste from the leaking container or transfer the leaking drum to a recovery drum per 40 CFR 265.56, "Emergency Procedures"?	NA	
Are the containers labeled to adequately identify the major risks associated with the contents? Are labels clearly readable and not obscured or otherwise removed per WAC 173-303-630(3), "Identification of Containers"?	NA	
Does the container storage area have a containment system capable of collecting and holding leaks and spills, plus if uncovered, capable of holding maximum precipitation per WAC 173-303-630(7)(a)?	NA	
Is the base of the containment system free of cracks or gaps and sufficiently impervious to leaks, spills, and rainfall per WAC 173-303-630(7)(a)(i)?	NA	
Is the base sloped to drain, or are the containers elevated or otherwise protected from accumulated liquids per WAC 173-303-630(7)(a)(i)?	NA	
Is the containment system designed for positive drainage control per WAC 173-303-630(7)(a)(ii)?	NA	
Does the containment system have sufficient capacity to contain 10% of the volume of all containers or the volume of the largest container, whichever is greater per WAC 173-303-630(7)(a)(iii)?	NA	
Is run-on into the containment system prevented per WAC 173-303-630(7)(b)?	NA	
If EHW is managed, is it protected from the elements by a building or protective covering per WAC 173-303-630(7)(d)?	NA	
Are containers holding ignitable or reactive wastes located at least 15 feet from the Hanford facility boundary per 40 CFR 265.176, "Special Requirements for Ignitable or Reactive Waste"?	NA	

Y – This is a focus requirement and is addressed in the 2005 LDR Assessment.

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Are containers holding ignitable or reactive wastes separated and protected from sources of ignition or reaction per 40 CFR 265.17(a)?	NA	
While ignitable and reactive waste are being handled, are smoking and open flames confined to specifically designated areas and are "No Smoking" signs conspicuously placed near the ignitable or reactive wastes per 40 CFR 265.17(a) and WAC 173-303-395(1)(a)?	NA	
Are incompatible wastes and/or materials placed in the same container per 40 CFR 265.177(a) and WAC 173-303-630(9)(a)?	NA	
Are wastes placed in unwashed containers that previously held incompatible wastes and/or materials per 40 CFR 265.177(b) and WAC 173-303-630(9)(b)?	NA	
Are containers that are stored nearby incompatible wastes or materials separated from the other wastes/materials by means of dike, berm, wall or other device per 40 CFR 265.177(c) and WAC 173-303-630(9)(c)?	NA	
Are the containers arranged such that a separation of thirty inches is maintained between the aisles of containers holding dangerous wastes? Are the rows of drums no more than two drums wide per WAC 173-303-630(5)(c)?	NA	
At least yearly the owner or operator must inspect those areas of his facility where ignitable or reactive waste are stored. The inspection must be performed in the presence of a professional who is familiar with the Uniform Fire Code or in the presence of the local, state or federal fire marshal. The inspection must include, date, time, name of inspector, observations, remedial actions taken per WAC 173-303-395(1)(d).	NA	
TANK SYSTEMS		
Is dangerous waste treated or stored in tanks per WAC 173-303-640(1)(a)?	Y	Based on historical process knowledge, it is likely that some amount of liquid remains from flushing various vessels [tanks] in the facilities.
Does the tank system have a secondary containment system per 40 CFR 265.193(a) and WAC 173-303-640(4)(a)(iv)?	Y	The building provides some level of secondary containment.

Y – This is a focus requirement and is addressed in the 2005 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2005 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Is the secondary containment system constructed of materials compatible with the waste to be stored per 40 CFR 265.193(c)(1) and WAC 173-303-640(4)(c)(i)?	Y	
Does the secondary containment system have sufficient structural strength and thickness to prevent failure due to pressure gradients, climatic conditions and other factors per 40 CFR 265.193(c)(1) and WAC 173-303-640(4)(c)(i)?	Y	
Is the secondary containment system placed on a foundation or base capable of providing support per 40 CFR 265.193(c)(2) and WAC 173-303-640(4)(b)(ii)?	Y	
Is the secondary containment system provided with a leak-detection system that will detect failure to either the primary or secondary containment structure or release of hazardous waste within 24 hours or earliest practical time per 40 CFR 265.193(c)(3) and WAC 173-303-640(4)(b)(iii)?	Y	
Is the secondary containment system sloped to drain and remove liquids per 40 CFR 265.193(c)(4) and WAC 173-303-640(4)(b)(iv)?	N	
Does the secondary containment system include an external tank liner per 40 CFR 265.193(d)(1) and WAC 173-303-640(4)(d)?	N	
Is the liner designed or operated to contain 100% of the capacity of the largest tank per 40 CFR 265.193(e)(1)(i) and WAC 173-303-640(4)(d)(i)(A)?	N	
Is the liner designed or operated to prevent run-on or infiltration of precipitation into secondary containment per 40 CFR 265.193(e)(1)(ii) and WAC 173-303-640(4)(d)(i)(B)?	N	
Is the liner free of cracks or gaps per 40 CFR 265.193(e)(1)(iii) and WAC 173-303-640(4)(d)(i)(C)?	N	
Is the liner designed and installed to completely surround the tank and to cover all surrounding earth likely to come into contact with the waste if released from the tanks per 40 CFR 265.193(e)(1)(iv) and WAC 173-303-640(4)(d)(i)(D)?	N	
Does the secondary containment system include a vault per WAC 173-303-640(4)(d)?	N	

Y – This is a focus requirement and is addressed in the 2005 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2005 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Is the vault designed or operated to contain 100% of the capacity of the largest tank per 40 CFR 265.193(e)(2)(i) and WAC 173-303-640(4)(d)(ii)(A)?	N	
Is the vault designed or operated to prevent run-on or infiltration of precipitation into secondary containment per 40 CFR 265.193(e)(2)(ii) and WAC 173-303-640(4)(d)(ii)(B)?	N	
Is the vault constructed with chemical resistant water stops per 40 CFR 265.193(e)(2)(iii) and WAC 173-303-640(4)(d)(ii)(C)?	N	
Is the vault provided with an impermeable interior coating or lining that is compatible with the waste and will prevent migration of the waste into the concrete and 40 CFR 265.193(e)(2)(iv) and WAC 173-303-640(4)(d)(ii)(D)?	N	
Is the vault provided with a means to protect against the formation of the ignition of vapors within the vault per 40 CFR 265.193(e)(2)(v) and WAC 173-303-640(4)(d)(ii)(E)?	N	
Is the vault provided with an exterior moisture barrier or otherwise designed or operated to prevent the migration of moisture into the vault if the vault is subject to hydraulic pressure per 40 CFR 265.193(e)(2)(vi) and WAC 173-303-640(4)(d)(ii)(F)?	N	
Does the secondary containment system include a double-walled tank per WAC 173-303-640(4)(d)?	N	
Is the double-walled tank designed as an integral structure so that any release from the inner liner is contained by outer shell per 40 CFR 265.193(e)(3)(i) and WAC 173-303-640(4)(d)(iii)(A)?	N	
If the double-walled tank is constructed of metal, is it protected from both corrosion of the primary tank interior and the external surface of the outer shell per 40 CFR 265.193(e)(3)(iii) and WAC 173-303-640(4)(d)(iii)(B)?	N	
Is the double-walled tank provided with a leak detection system capable of detecting a release within 24 hours per 40 CFR 265.193(e)(3)(iii) and WAC 173-303-640(4)(d)(iii)(C)?	N	

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Y – This is a focus requirement and is addressed in the 2005 LDR Assessment.

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Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Does the secondary containment system include an equivalent device to external tank liners, vaults, or double-walled tanks, which is approved by EPA and/or Ecology per WAC 173-303-640(4)(d)?	N	
Has the owner or operator made a determination that the tank system is not leaking or is unfit for use? Does the owner or operator have on file at the facility a written assessment reviewed and certified by an Independent, Qualified, Registered, Professional Engineer (IQRPE) that attests to the tank system's integrity by 1/12/88 for tanks that do not meet the secondary containment requirements of WAC 173-303-640(4), "Containment and Detection of Releases," and that cannot be entered for inspection per 40 CFR 265.191(a) and WAC 173-303-640(2)(a)?	Y	Yes, based on historical information and visual inspection of accessible portions of facility. No IQRPE assessment.
Has the assessment determined that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste stored to ensure that it will not collapse, rupture or fail? Does the assessment consider the elements listed in WAC 173-303-640(2)(c)(i through v)?	N	
If the assessment reveals that the tank system is leaking or unfit for use was a proper response taken per 40 CFR 265.193(5)(i)(4) and WAC 173-303-640(7), "Response to Leaks or Spills and Disposition of Leaking or Unfit-For-Use Tank Systems"?	N	
Has the owner or operator developed a schedule for conducting integrity assessments over the life of the tank to ensure that the tank retains its structural integrity? Is the schedule based on the results of past integrity assessments, tank age, construction materials, waste characteristics, and other relevant factors per WAC 173-303-640(2)(e)?	N	
Is the tank system's ancillary equipment provided with full secondary containment (e.g. trench, jacketing, double-walled piping) per 40 CFR 265.193(3)(f) and WAC 173-303-640(4)(f)?	N	
Are dangerous wastes and treatment reagents that could cause the tank system to rupture, corrode, or fail prevented from being placed in the tank per 40 CFR 265.194(a) and WAC 173-303-640(5), "General Operating Requirements"?	Y	Lines that could be used to add waste or reagents are isolated or administratively controlled to prevent use.

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FY 2006-POPD-S-0313

Y – This is a focus requirement and is addressed in the 2005 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2005 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY 2005 Assessment	COMMENTS
Does the owner or operator use appropriate controls and practices to prevent spills and overflows from tanks and containment systems per WAC 173-303-640(5)(b)?	Y	Facility is used only as a monitoring and control station.
Are tank overfill prevention control equipment (e.g. level sensing devices, waste feed cutoffs, by-pass systems) inspected daily per 40 CFR 265.195(a)(1)?	N	
Are data gathered from monitoring equipment (e.g. pressure and temperature) inspected daily per 40 CFR 265.195(a)(3) and WAC 173-303-640(6)(b)(ii)?	N	
Are the above-ground portions of the tank inspected daily for corrosion or leaking per 40 CFR 265.195(a)(4) and WAC 173-303-640(6)(b)(i)?	N	
Are the construction materials of, and the area immediately surrounding, discharge confinement structures (e.g. dikes) inspected daily for erosion or leaking per 40 CFR 265.195(a)(4) and WAC 173-303-640(6)(b)(iii)?	N	
Are the results of inspections recorded in the operating record per 40 CFR 265.195(c) and WAC 173-303-640(6)(d)?	Y	
Does the owner or operator inspect cathodic protection systems to ensure that they are functioning properly (Initially within 6 months after installation, and annually thereafter) per WAC 173-303-640(6)(c)(i) and (ii)?	NA	
NOTIFICATIONS: Are releases to the environment reported to the department within 24 hours of detection for any releases which cannot be immediately contained and cleaned-up or those greater than reportable quantities established in 40 CFR 302, "Designation, Reportable Quantities, and Notification," per WAC 173-303-640(7)(d)?	Y	
CLOSURE and POST CLOSURE: Does the closure plan, closure activities, cost estimates for closure and financial responsibility for tank systems meet all the requirements specified in WAC 173-303-610, "Closure and Post-Closure," and WAC 173-303-620, "Financial Requirements," per WAC 173-303-640(8), "Closure and Post-Closure Care"?	N	

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FY 2006-PPPD-S-0313

Y – This is a focus requirement and is addressed in the 2005 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2005 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

QUALITY REVIEW CHECKLIST

Document No.: CH2M-0503640

Title: FY2006-POPD-S-0313, CALENDAR YEAR 2005 LAND DISPOSAL RESTRICTIONS ASSESSMENT: 242-S AND 242-T EVAPORATORS

SECTION 1 - CONTACT INFORMATION - Incoming Recipient or Author to Complete

	Name	Phone	e-mail Address
1. Author:	John Guberski	376-5084	John_D_Guberski@rl.gov
2. Technical Editor:			
3. Quality Reviewer:	Phil Miller	373-1920	Phillip_C_Phil_Miller@rl.gov

Professional Technical editing services were NOT used. NOTE: In lieu of a technical editor, the document must be reviewed for quality.

SECTION 2 - QUALITY REVIEW

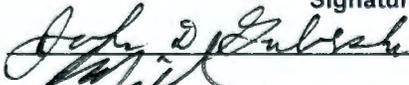
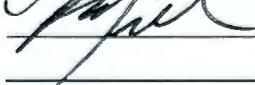
EDITING ELEMENT	Author	Tech Editor	Quality Reviewer
1.0 Document Format - refer to Editorial Standards for Engineering Documents, TFC-BSM-AD-STD-02 for guidance			
1.1 Typeface (usually Times New Roman, 11 point for text)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.2 Spacing between paragraphs in accordance with Standard TFC-BSM-AD-STD-02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.3 Justification (left justified)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.4 At least two headings at any level (e.g., 1.1, 1.2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.5 Cover and title page are generated using the Document Covers Wizard located in Microsoft Word under Templates, HNF Covers tab	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.6 Table of contents used if document is more than ten pages in length	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.7 Page numbers are correct and consistent throughout the document	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.8 Correct headers and footers are used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.0 Spelling, Punctuation, Grammar, and Language Use			
2.1 Spelling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Spell check run in Microsoft Word®	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Edit check for spelling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.2 Punctuation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.3 Grammar and syntax	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.4 Hyphenation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.5 Capitalization	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.6 Inconsistent or erroneous terminology corrected or queried	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.7 Voice is consistent (active should predominate)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.8 Language parallelism is used as appropriate in listings, enumerations, instructions, and other text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.9 Sentences	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Structured correctly (sentences complete, subjects and verbs agree, past and present tenses used appropriately, normal word order)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reasonable length (not overly long or run-on)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Do not begin or end with a preposition (e.g., at, by, from, in, to, with, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Consistent terminology (e.g., do not use unit, assembly, equipment, and component interchangeably)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

QUALITY REVIEW CHECKLIST (continued)

Document No.: CH2M-0503640

EDITING ELEMENT	Author	Tech Editor	Quality Reviewer
4.0 Numbers			
4.1 Numbers less than one preceded by a zero (0.6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.2 In the text, numbers zero through nine are expressed as words	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.3 In the text, numbers 10 and higher are expressed as numerals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.4 Numerals are used to express units of measurement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.5 Any numbered or lettered sequence is consistent in the kind of numbers or letters used (Roman or Arabic numerals, capitalization)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.0 List of Terms			
NA JDD 1/4/06			
5.1 Separated into three subsections, Terms, Abbreviations and Acronyms, and Units of Measure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.2 List of acronyms, abbreviations, and initialisms	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Contains all elements cited in text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does NOT contain extraneous elements	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.3 Spelled out first time used followed by the acronym/initialism in parentheses	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.0 Tables			
NA JDD 1/4/06			
6.1 Table captions and titles are present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.2 Table title format is consistent	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.3 Table format style is consistent	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4 Table caption and header row is repeated if table breaks to a new page. The caption is followed by sheet X of XX or X sheets.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7.0 Figures			
N/A			
7.1 Figure captions present	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.2 Figure title format is consistent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.3 Figure format style is consistent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.4 Turnover lines in figure captions and table titles are centered, inverted pyramid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.0 References			
N/A			
8.1 All references cited in the document are contained in the reference section	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.2 All entries in the reference list are specifically cited in document	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.3 Reference list entries are in alphabetical order	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.4 Reference list entries are complete and in the correct format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.0 Comments			

SECTION 3 - SIGN-OFF

	Signature	Date
1. Author		1/4/06
2. Tech Editor		1/4/06
3. Quality Reviewer	_____	_____