

**Management Assessment Plan and Report
Assessment #WSD-TP-EP-06-MA-37**

LDR Assessment of T Plant

A management assessment on the potential mixed waste (PMW) at T Plant was conducted between December, 2005 and September, 2006. PMW is a term used in the annual Hanford Site Mixed Waste Land Disposal Restrictions Report prepared pursuant to Tri-Party Agreement Milestone M-26-01. In general, PMW includes materials that have not been generated as mixed waste and waste that has not been actively managed as mixed waste. The materials included are those that reasonably could be expected to be generated as mixed waste at some future time. This report discusses the purpose, scope, and results of the assessment.

Assessment Plan

• **Purpose and Scope**

The purpose of the management assessment is to: (1) Assess whether PMW is being properly reported at T Plant, (2) Assess the information reported in the potential mixed waste table from the annual LDR report (looking at process cells in the T Plant canyon and the two Inactive Miscellaneous Underground Storage Tanks (IMUSTs)) to determine if it is still accurate, (3) prepare the data gap plan (Attachment 1), (4) fill in the Ecology approved checklist (Attachment 2), and (5) when necessary, include corrective action forms. Assessment of mixed waste is not within the scope of this management assessment based on the 2000 RL assessment of mixed waste at T Plant (See source document #5 below).

• **Assessment Personnel**

P. W. Martin, ECO, Lead Assessor; A.G. Miskho, Assessor

• **Assessment Schedule**

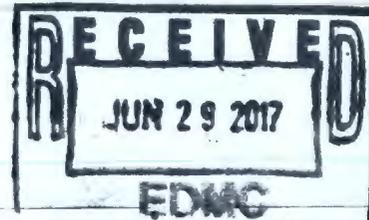
December 2005 through September 2006

• **Performance Objectives/Lines of Inquiry**

1. Is all PMW being reported in the LDR report, as defined by the LDR Report?
2. Are there any sampling results for the potential mixed waste related to waste designations?
3. What inventory records exist for the potential mixed waste?
4. Are the process cells in the T Plant canyon properly reported in the LDR Report?

Source Documents:

1. CY2005 Hanford Site Mixed Waste Land Disposal Restrictions Summary Report (DOE/RL-2006-23), Table 1-4 Potential Mixed Waste
2. T Plant Part B Permit Application, DOE/RL-95-36 Revision 1, dated September 2002, Chapter 11, Closure



Management Assessment Plan and Report
Assessment #WSD-TP-EP-06-MA-37

LDR Assessment of T Plant

3. Waste Information Data System, Site code 200-W-16 for T Plant IMUSTs
4. Letter, RL to FH, "Contract No. DE-AC06-96RL13200-Reassignment of Waste Information Data System (WIDS) Sites," 01-WMD-067, dated February 23, 2001, directing FH to accept management responsibility for WIDS Site: 200-W-16.
5. Letter RL to FH, "Contract No. DE-AC06-96RL13200-Resource Conservation and Recovery Act (RCRA) Assessment - A&E 00-ASS-072," 01-A&E-012, dated November 28, 2000, concerning previous LDR Storage assessment for T Plant Complex mixed waste storage.
6. T Plant Cell Investigation Phase II Report, HNF-EDC-02-13921, December 13, 2002
7. Record of Decision, 221-U Facility (Canyon Disposition Initiative) Hanford Site, Washington, dated October 3, 2005
8. Processing Hanford MLLW and TRU Waste that is either CH in Boxes/Large Containers or RH Waste in Various Packages Engineering Study, draft WMP-30632
9. Ecology compliance inspection from 2001 concerning IMUSTs
10. Canyon Process Cell Videos
11. "Sampling and Analysis Plan for Characterization of Cell 11-L of the 221-T Canyon Building", HNF-8620, Revision 2, April 2002.
12. Internal FH Letter, Ellefson to Barnes, "Data Assessment and Designation from Sampling and Analysis of the Tank in Cell 11L of the 221-T Building," dated October 9, 2002.
13. HNF-14741, Master Documented Safety Analysis (MDSA) for the Solid Waste Operations Complex (SWOC),
14. HNF-15280, Technical Safety Requirements (TSR) for the SWOC.

Performance Objectives:

The performance objectives/lines of inquiry were met through the assessment methodology.

- **Assessment Methodology**

The assessment methodology included discussions with T Plant personnel, a walk around the T Plant Complex, and a review of documentation relating to the T Plant PMW. Mixed waste management at T Plant was previously assessed by RL (DOE 2000 source document #5) and is not within the scope of this storage assessment.

Assessment Results

- **Executive Summary**

The T Plant will be operating for quite some time. Closure of T Plant is currently planned for 2028. Disposition of potential mixed waste matrices in the cells will need to occur at some point prior to closure of the T Plant canyon. Uncertainty exists as to what PMW will need to be removed from the cells in order to close the T Plant canyon. The decision as to what PMW will be removed prior to closure of the T Plant canyon needs to be made.

**Management Assessment Plan and Report
Assessment #WSD-TP-EP-06-MA-37**

LDR Assessment of T Plant

Disposition of the IMUSTs will occur as part of the 200-IS-1 operable unit under the Tri-Party Agreement M-15 milestones. The T Plant complex PMW is properly reported in the LDR report. In 2001, Ecology inspected the T Plant IMUSTS along with the other Hanford IMUSTs, and had no findings. If the decision is made to remove PMW and actively manage the matrices, characterization will be needed to dispose of the PMW.

• **Assessment Findings and Observations**

No findings or observations resulted from the management assessment. No changes to the LDR report information is necessary. See additional discussion in the attached Data Gap Plan.

• **Assessment Approval**

Management Assessment by:

Paul W. Martin
P. W. Martin, ECO Assessment Lead

7/8/08
Date

Anthony D. Miskho
A. G. Miskho, Assessor, LDR Report
Coordinator

7/7/08
Date

**Management Assessment Plan and Report
Assessment #WSD-TP-EP-06-MA-37**

LDR Assessment of T Plant

ATTACHMENT 1 - DATA GAP PLAN

This section fulfills the requirements of a Data Gap Plan, pursuant to the TPA under Milestone M-26-01¹. Accordingly, a data gap plan must contain the following:

- What you know and what you don't know
- What you need to know
- Why the level of unknowns is acceptable or not acceptable from a safety basis for the interim until action is planned or that more information is needed to make this determination.

The above Data Gap Plan elements need to be addressed for the PMW matrices identified by the LDR storage assessment². The T Plant LDR storage assessment identified the following PMW matrices:

Potential Mixed Waste Matrices
T Plant Canyon process cells
T Plant IMUSTs

What you know and what you don't know

The information presented in this section was obtained from the LDR storage assessment. No additional project evaluation information is presented.

T Plant Canyon process cells

The T Plant Cell Investigation Phase II Report, HNF-EDC-02-13921, December 13, 2002, contains the most comprehensive information about the cell inventory. For most of the cells, the inventory is generally known. The inventory of a few cells are not known where the cover blocks could not be pulled by the crane. In the last few years when T Plant personnel cleaned out certain cells, the materials were removed from the cells and actively managed as a waste. The only sampling performed on the process cell PMW was cell 11-L. The sampling results identified most waste designation concerns, but problems with the data package led to a conclusion that additional characterization was required. For any PMW removed from the cells, characterization is anticipated to be needed.

¹ Letter, Alan E. Hopko, RL, to E. K. Thompson, FH, "Contract No. DE-AC06-96RL13200 – Annual Land Disposal Restriction (LDR) Report Requirements and Notification to Conduct Assessments," 02-WMD-213, #0202987, dated June 25, 2002.

² Letter, Sally A. Sieracki, RL, to E. K. Thompson, FH, "Contract No. DE-AC06-96RL13200 – Resource Conservation and Recovery Act (RCRA) Assessment – A&E-SEC-02-009," 02-PMO-0003, #0203878, dated August 19, 2002.

Management Assessment Plan and Report
Assessment #WSD-TP-EP-06-MA-37

LDR Assessment of T Plant

Some of the process cell PMW could be categorized from a radiological perspective as transuranic. The CDI ROD for the U Plant canyon concluded the transuranic matrix had to be removed and prepared for shipment off-site. It is possible that T Plant process cell PMW might also have to be removed in order to close the T Plant canyon. Plans are being developed for constructing Solid Waste Processing Modules (SWPMs) to support the M-91 milestone series in the Tri-Party Agreement. The draft engineering study (source document #8) contains the following assumptions:

- The SWPMs will be designed for ease of disassembly and placement on or in the canyon cells for closure with T Plant. Some size reduction capability of the SWPMs may be required to allow access to the cells so that cell contents could be dispositioned prior to closure of T Plant.
- Cleanout of a minimum of two cells will be required to support SWPM installation. Additional cells may need to be cleaned out prior to SWPM construction to support facility closure.

The volume in the tanks for the 221-T Tank System are estimated each year and reported in the LDR report. The volume of waste in other vessels is not measured or estimated. Since vessels are stationary pieces of equipment in canyon process cells, references 6 and 16 of the LDR Storage Assessment/Data Gap Plan identify the locations. There is no estimate of the volume remaining in the ancillary equipment/piping. Historically, transfers were made via steam motivation where steam was used as the force used to move liquids.

Waste transfers occurred from 2706-T to 221-T. No integrity assessment was performed on the lines. They are inactive lines. There is no liquid dangerous waste routing out of 2706-T or 221-T at this time. Integrity assessments were not performed on the transfer lines between SST and T Plant. The lines are inactive.

Components in the T Plant cells considered vessels/containers/equipment identified as a dangerous waste management unit (TSD unit) are included on the Part A form. Other vessels/containers/equipment are considered past practice.

No integrity assessments have been performed on the vessels/containers or the tanks and drain system in 221-T.

As of April 2002, Cell 11-L in 221-T had approximately 500 gallons in the oval tank with a pH of 13+. The estimate was very rough. No new estimates exist for this volume.

The PWR pool/evaporation continues as anticipated. All fuel has been removed from the pool as of September 2004.

No waste has been added to the 221-T Tank System.

Management Assessment Plan and Report
Assessment #WSD-TP-EP-06-MA-37

LDR Assessment of T Plant

No additional information is known at this time on this subject on the potential for PMW material to be possibly held up in piping systems (e.g., low points), inside or outside of the cells or on the current conditions or integrity of the tanks in the cells, including tank 5-7 and 5-9 or a path forward to obtain this information in a timely manner.

T Plant IMUSTs

WIDS summarizes the information known about the two IMUSTs. General processing information is known, however detailed information on the constituents is not known. Characterization is anticipated to be required if the 200-IS-1 operable unit decides to remove, treat, and dispose of the IMUSTs.

What you need to know

The information for this item contains the information needed to approach the Tri-Party Agreement lead regulatory agency project manager (Ecology in this case) in order to have discussions on the PMW matrices.

T Plant Canyon process cells

In order to leave the PMW in a process cell and close the canyon, the best planning basis is the approach taken in the CDI ROD. In the CDI ROD, if a PMW is a low level waste (LLW) it can be left in place. If the PMW is a LLW and would also designate as a mixed waste, it can be left in place if an LDR compliant approach (such as a treatability variance) can be established for the PMW. For the PMW in the process cells, information would have to be gathered in order to get to these endpoints.

T Plant IMUSTs

Characterization needs of the IMUSTs would be determined as part of the 200-IS-1 Operable Unit. Characterization might be needed in order to establish the remedial action or to disposition the IMUSTs if the decision is to remove them from the ground.

Why the level of unknowns is acceptable or not acceptable from a safety basis for the interim until action is planned or that more information is needed to make this determination.

The level of unknowns regarding the PMW matrices will not result in any concerns regarding the safe management of the matrices. Sufficient information exists so that there are no likely concerns about ignitable, reactive, or incompatible matrix properties. The T Plant Canyon process cells and the underground IMUSTs provide adequate protection for the PMW. The project's scheduled activities will be discussed with the TPA lead regulatory agency project manager after the Data Gap Plan is entered into the TPA Administrative Record.

**Management Assessment Plan and Report
Assessment #WSD-TP-EP-06-MA-37**

LDR Assessment of T Plant

Attachment 2 – Checklist
T Plant Complex LDR Storage Assessment Checklist

Task	Date
Conduct kick-off meeting with project and contractor management assessment team	September 27, 2005
Offer pre-meeting to Ecology	October 18, 2005
Conduct Ecology Pre-meeting if requested by Ecology	December 8, 2005
Perform walk through of project facilities/locations to identify mixed waste/potential mixed waste	August 7, 2006
Review records and perform follow-up actions. Use last approved annual LDR report for comparison	August 7, 2006 through August 29, 2006
Draft LDR Storage Assessment Report/Data Gap Plan for project review	August 30, 2006
Incorporate project comments	September 7, 2006
Share draft report with Ecology for comment	September 19, 2006
Incorporate Ecology comments	July 7, 2008
Finalize report	July 24, 2008 T Plant PMM

Note: The finalized report will be presented at a Tri-Party Agreement Project Manager's meeting for entering the report into the Administrative Record.