**Department of Energy**
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

19-PFD-0034
REISSUE

JUL 30 2019

Ms. Alexandra K. Smith, Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Ms. Smith:

REISSUE - CONCLUSION OF COMMENT RESOLUTION ACTIVITIES FOR THE CALENDAR YEAR 2014 HANFORD SITE MIXED WASTE LAND DISPOSAL RESTRICTIONS (LDR) FULL REPORT, DOE/RL-2015-08, REVISION 0

The purpose of this reissue is to provide the updated compact disc that includes the correct Redlined Calendar Year 2014 Hanford Site Mixed Waste Land Disposal Restrictions Full Report, DOE/RL-2015-08, Revision 0.

In accordance with Section 9.2.1 of the Hanford Federal Facility Agreement and Consent Order, the U.S. Department of Energy, Richland Operations Office, and the Washington State Department of Ecology (Ecology) have concluded comment resolution activities for the Calendar Year 2014 Hanford Site Mixed Waste Land Disposal Restrictions Full Report, DOE/RL-2015-08, Revision 0. In lieu of reissuing the 2014 report, the Parties agree the changes documented in the attached review comment record and supporting documents sufficiently resolve Ecology's comments for the 2014 Full LDR Report as noted therein.

If you have any questions, please contact me, or your staff may contact Mark French, of my staff, on (509) 373-9863.

Sincerely,

William F. Hamel, Assistant Manager
for the River and Plateau

PFD:MSF

Attachments: See page 2

Attachments:
1. Redlined Calendar Year 2014 Hanford Site Mixed Waste Land Disposal Restrictions Full Report, DOE/RL-2015-08, Revision 0
2. Supplement to Address Ecology Comments
3. Redlined Review Comment Record
4. Calendar Year 2014 Hanford Site Mixed Waste Land Disposal Restrictions Full Report, DOE/RL-2015-08, Revision 0

cc w/attachs:
J. Atwood, YN
S. G. Austin, CHPRC
J. Bell, NPT
O. L. Bostic, BNI
S. L. Brasher, MSA
R. Buck, Wanapum
L. Contreras, YN
S. W. Davis, MSA
D. R. Einan, EPA
M. D. Ellefson, PNNL
K. A. Elsethagen, Ecology
L. D. Habel, CHPRC
M. N. Jaraysi, CHRPC
M. Johnson, CTUIR
J. A. Joyner, WRPS
S. Leckband, HAB
J. A. Lerch, CHPRC
T. M. McDermott, PNSO
N. M. Menard, Ecology
M. E. Mills, MSA
K. Niles, ODOE
C. P. Noonan, MSA
J. B. Price, Ecology
S. N. Schleif, Ecology
E. Soto, Ecology
L. R. Strickling, MSA
W. E. Toebe, CHPRC
M. B. Wilson, MSA
Administrative Record (M-026-01Y, M-026-01)
Environmental Portal

# PRIMARY DOCUMENT STATEMENT

## CALENDAR YEAR 2014 HANFORD SITE MIXED WASTE LAND DISPOSAL RESTRICTIONS FULL REPORT

Approval of the U.S. Department of Energy's annual land disposal restriction report as a *Hanford Federal Facility Agreement and Consent Order* primary document shall be by written approval of U.S. Department of Energy and Washington State Department of Ecology Interagency Management Integration Team representatives.

This document has been prepared, submitted, revised, and approved as a primary document in response to the requirements of the *Hanford Federal Facility Agreement and Consent Order* milestone series M-026-01 and related *Resource Conservation and Recovery Act of 1976* land disposal restrictions and *Hanford Federal Facility Agreement and Consent Order* requirements. As such, this document serves as a binding and enforceable document under the *Hanford Federal Facility Agreement and Consent Order*.

Approved and issued this _____ day of _____ 2015.

___*See Original Document*_____
W. F. Hamel, Assistant Manager
for the River and Plateau
U.S. Department of Energy,
Richland Operations Office

____*See Original Document*_____
A. K. Smith, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology

___*See Original Document*_____
B. A. Harkins, Assistant Manager
for the Tank Farms Project
U.S. Department of Energy,
Office of River Protection

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## CONTENTS

## APPENDICES



## FIGURES



## TABLES

## ACRONYMS

| | |
|---|---|
| BDAT | best demonstrated available technology |
| BNI | Bechtel National, Inc. |
| CERCLA | *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* |
| CFR | Code of Federal Regulations |
| CH | contact handled |
| CHPRC | CH2M HILL Plateau Remediation Company |
| CWC | Central Waste Complex |
| CS&I | Closure Services & Infrastructure |
| CY | calendar year |
| D&D | decontamination and decommissioning |
| DOE | U.S. Department of Energy |
| DOE-ORP | U.S. Department of Energy, Office of River Protection |
| DOE-RL | U.S. Department of Energy, Richland Operations Office |
| DST | double-shell tank |
| EA | Environmental Assessment |
| Ecology | State of Washington, Department of Ecology |
| EIS | environmental impact statement |
| EPA | U.S. Environmental Protection Agency |
| ERDF | Environmental Restoration Disposal Facility |
| ETF | 200 Area Effluent Treatment Facility |
| FD | final determination |
| FFCA | *Federal Facilities Compliance Act of 1992* |
| FFTF | Fast Flux Test Facility |
| FY | fiscal year |
| HEPA | high-efficiency particulate air (filter) |
| HLW | high-level waste |
| HSTF | Hexone Storage and Treatment Facility |
| HWTU | Hazardous Waste Treatment Unit |
| IDF | Integrated Disposal Facility |
| ILAW | immobilized low-activity waste |
| IMUST | inactive miscellaneous underground storage tank |
| INL | Idaho National Laboratory |
| ISS | interim safe storage |
| LAW | low-activity waste |
| LDR | land disposal restrictions |
| LERF | Liquid Effluent Retention Facility |
| LLBG | Low-level Burial Ground |

| | |
|---|---|
| LSDS | location-specific data sheet |
| MLLW | mixed low-level waste |
| N/A | not applicable |
| NPL | National Priority List |
| O/C | organic/carbonaceous |
| OU | operable unit |
| P2/WMin | Pollution Prevention/Waste Minimization |
| PCB | polychlorinated biphenyl |
| PFP | Plutonium Finishing Plant |
| pH | negative logarithm of the hydrogen-ion concentration |
| PMP | project management plan |
| PMM | Project Manager Meeting |
| PMW | potential mixed waste |
| PMWT | potential mixed waste table |
| ppm | part per million |
| PNNL | Pacific Northwest National Laboratory |
| PUREX | plutonium-uranium extraction (process) |
| RCRA | *Resource Conservation and Recovery Act of 1976* |
| REC | radiochemical engineering cell |
| REDOX | reduction-oxidation (process) |
| RH | remote handled |
| RI/FS | remedial investigation/feasibility study |
| RLWS | Radioactive Liquid Waste System |
| RMERC | Specified LDR Technology in 40 CFR 268.42 for Retorting or Roasting Mercury |
| ROD | record of decision |
| RPP | River Protection Project |
| S&M | surveillance and maintenance |
| SCW | special-case waste |
| SNM | special nuclear material |
| SRS | Savannah River Site |
| SST | single-shell tank |
| STP | site treatment plan |
| SWIFT | Solid Waste Integrated Forecast Technical (Report) |
| TBD | to be determined |
| TGDS | Treatability Group Data Sheet |
| TOC | Tank Farm Operating Contract |
| TPA | *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) |
| TRU | transuranic (waste) |
| TRUM | transuranic mixed (waste) |

| | |
|---|---|
| TRUSAF | 224-T Transuranic Waste Storage and Assay Facility |
| TSCA | *Toxic Substances Control Act of 1976* |
| TSD | treatment, storage, and/or disposal |
| UHC | underlying hazardous constituent |
| WAC | *Washington Administrative Code* |
| WCH | Washington Closure Hanford, LLC |
| WESF | Waste Encapsulation and Storage Facility |
| WIPP | Waste Isolation Pilot Plant |
| WMA | Waste Management Area |
| WMU | Waste Management Unit |
| WRAP | Waste Receiving and Processing Facility |
| WRPS | Washington River Protection Solutions, LLC |
| WSCF | Waste Sampling and Characterization Facility |
| WSRd | waste specification record |
| WTP | Waste Treatment Plant |

## METRIC CONVERSION CHART

| Into metric units | | | Out of metric units | | |
|---|---|---|---|---|---|
| If you know | Multiply by | To get | If you know | Multiply by | To get |
| **Length** | | | **Length** | | |
| inches | 25.40 | millimeters | millimeters | 0.03937 | inches |
| inches | 2.54 | centimeters | centimeters | 0.393701 | inches |
| feet | 0.3048 | meters | meters | 3.28084 | feet |
| yards | 0.9144 | meters | meters | 1.0936 | yards |
| miles (statute) | 1.60934 | kilometers | kilometers | 0.62137 | miles (statute) |
| **Area** | | | **Area** | | |
| square inches | 6.4516 | square centimeters | square centimeters | 0.155 | square inches |
| square feet | 0.09290304 | square meters | square meters | 10.7639 | square feet |
| square yards | 0.8361274 | square meters | square meters | 1.19599 | square yards |
| square miles | 2.59 | square kilometers | square kilometers | 0.386102 | square miles |
| acres | 0.404687 | hectares | hectares | 2.47104 | acres |
| **Mass (weight)** | | | **Mass (weight)** | | |
| ounces (avoir) | 28.34952 | grams | grams | 0.035274 | ounces (avoir) |
| pounds | 0.45359237 | kilograms | kilograms | 2.204623 | pounds (avoir) |
| tons (short) | 0.9071847 | tons (metric) | tons (metric) | 1.1023 | tons (short) |
| **Volume** | | | **Volume** | | |
| ounces (U.S., liquid) | 29.57353 | milliliters | milliliters | 0.033814 | ounces (U.S., liquid) |
| quarts (U.S., liquid) | 0.9463529 | liters | liters | 1.0567 | quarts (U.S., liquid) |
| gallons (U.S., liquid) | 3.7854 | liters | liters | 0.26417 | gallons (U.S., liquid) |
| cubic feet | 0.02831685 | cubic meters | cubic meters | 35.3147 | cubic feet |
| cubic yards | 0.7645549 | cubic meters | cubic meters | 1.308 | cubic yards |
| **Temperature** | | | **Temperature** | | |
| Fahrenheit | subtract 32 then multiply by 5/9ths | Celsius | Celsius | multiply by 9/5ths, then add 32 | Fahrenheit |
| **Energy** | | | **Energy** | | |
| kilowatt hour | 3,412 | British thermal unit | British thermal unit | 0.000293 | kilowatt hour |
| kilowatt | 0.94782 | British thermal unit per second | British thermal unit per second | 1.055 | kilowatt |
| **Force/Pressure** | | | **Force/Pressure** | | |
| pounds (force) per square inch | 6.894757 | kilopascals | kilopascals | 0.14504 | pounds per square inch |

06/2001

Source: *Engineering Unit Conversions*, M. R. Lindeburg, PE, Third Ed., 1993, Professional Publications, Inc., Belmont, California.

# 1.0 INTRODUCTION

This document has been prepared in accordance with *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement [TPA]) (Ecology et al. 1989) Milestone M-026-01Y. The document presents the status of Hanford Site land disposal restricted mixed waste, other mixed waste, and other waste that the U.S. Department of Energy (DOE); State of Washington, Department of Ecology (Ecology); and U.S. Environmental Protection Agency (EPA) have agreed to be within the scope of this report. The reporting period for this document is from January 1, 2014, to December 31, 2014.

This report adheres to the requirements found in the 1990 Requirements for Hanford Land Disposal Restrictions Plan (LDR Plan), Federal Facility Compliance Act of 1992, the 2000 LDR Final Determination, and the 2002 Resolution of Dispute. These documents detail the requirements of the LDR Report. The purpose of this report is to:

- Document all known and potential mixed waste at Hanford.
- Document all known characterization information and treatment technologies.
- When characterization and treatment has not been established, plans and schedules to accomplish characterization and treatment will be established and included in the LDR Report.
- Document storage assessments of all known and potential mixed waste at Hanford to ensure safe storage.
- Annually update all information to include changes in waste characterization, treatment technologies, plans, schedules, and storage assessments.

Sections 2.0 through 6.0 present information concerning the storage and minimization of mixed waste and the potential sources for the generation of additional mixed waste. Sections 7.0 through 15.0 present information pertaining to the characterization and treatment of these wastes. Appendix A lists the land disposal restrictions (LDR) reporting requirements and explains where the requirements are addressed in this report. Appendix B contains the treatability group data sheets (TGDSs) and location-specific data sheets (LSDSs) for stored and forecasted mixed waste. Appendix C contains the Potential Mixed Waste Tables (PMWTs).

## 1.1 SOURCES AND ORGANIZATION OF WASTE STORAGE DATA

This report presents information on waste streams that are reported either as a matter of law or as a result of discussions among DOE, Ecology, and EPA. The LDR reporting requirements are documented in Appendix A. Waste streams reported as a matter of law include mixed waste in storage subject to the storage prohibition of Title 40 *Code of Federal Regulations* (CFR) Part 268.50, "Prohibitions on Storage of Restricted Wastes." *Washington Administrative Code* (WAC) 173-303-140, "Land Disposal Restrictions," incorporates the federal rule by reference. EPA guidance (*Guidance on the Land Disposal Restrictions' Effects on Storage and Disposal of Commercial Mixed Waste* [EPA 1990]) indicates which mixed waste is subject to the storage prohibition. Other mixed waste streams are being reported under the Tri-Party Agreement Milestone M-026-01 as a result of the 2002 Resolution of Dispute Pertaining to Hanford Federal Facility Agreement and Consent Order Calendar Year 2000. Examples of these other mixed waste streams include mixed waste that meets LDR treatment standards and mixed waste being

managed under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) on-site provisions being treated at the Environmental Restoration Disposal Facility (ERDF).

Mixed waste is not subject to the storage prohibition until generated and managed in a 90-day accumulation area or a treatment, storage, and/or disposal (TSD) unit. Although mixed waste managed in a 90-day accumulation area is not considered stored, the EPA has indicated that the storage prohibition clock begins when mixed waste is managed in the 90-day accumulation area. Where a TSD unit is managing wastes generated pursuant to a CERCLA decision document and that unit is not on-site with respect to the scope of the CERCLA action, then the unit must also be subject to a CERCLA off-site determination of acceptability in addition to authorization to treat, store or dispose according to the Hanford Facility RCRA Permit.

Mixed waste is reported here as projected waste when the waste meets either of the following criteria:

- The waste has not been generated and therefore is not subject to the storage prohibition.
- The waste is managed in either a satellite accumulation area, a 90-day accumulation area, or is CERCLA mixed waste destined for treatment at ERDF.

This storage report provides aggregate waste stream data based on a set of waste treatability groups. Many locations of mixed waste can exist within a treatability group and these locations are detailed on LSDSs for the sources of waste. More information concerning treatability groups can be found in Sections 7.0 through 15.0. Per agreement with Ecology on February 6, 2003, mixed waste generated and sent directly to disposal does not need to be reported in the LDR report ("M-026 LDR Report Project Manager Meeting Minutes," [Ecology et al., 2003]). If any storage of the mixed waste occurs, or is forecasted to occur, the mixed waste must be reported.

Other materials and items currently on the Hanford Site that might be designated as mixed waste in the future are described in Section 2.3 and are identified as potential mixed waste (PMW). TGDS describe the characteristics that the location-specific waste sources share (Appendix B, Figure B-1). The data sheets also provide total waste volume data from the associated LSDSs for both the currently stored inventory and the waste projected to be generated. The LSDSs describe how, where, and volume of waste stored and present information concerning disposition of the waste.

Appendix B provides LSDSs for each waste stream, sorted by treatability group. Each LSDS was completed by staff knowledgeable of the waste stream. Mixed waste currently in satellite accumulation areas or in 90-day accumulation areas is not considered current stored inventory, but is included as forecasted waste generation. The content and format of waste stream data sheets and the process for collecting waste storage data are discussed in the following paragraphs.

Table 1-1 lists the names of the treatability groups used in this report and the major sources of waste in each group.

A new treatability group was established and added as PMW in calendar year (CY) 2012, "Waste Treatment Plant (WTP) Lab Complex." The WTP Lab has forecasted the generation of waste in 2018 from methods development for equipment calibration. The treatability group "Purgewater" was deleted from the report for CY 2011 as it was closed and not used in 2011. No treatability groups were deleted from the report for CY 2014. Detail on treatability groups is found in Table 1-1, Table 2-1, and Table 2-2, and also in the TGDS in Appendix B.

Other materials, items, etc., currently on the Hanford Site that might be designated as mixed waste in the future, are described in Section 2.3, listed in Appendix C, and are referred to as PMW.

Table 1-1. Treatability Groups. (3 sheets)

| Treatability Group Name | Major Waste Sources |
|---|---|
| 221-T Containment Building | Waste resulting primarily from 221-T Building canyon activities. |
| 221-T Tank System | Waste resulting from decontamination activities at the 221-T and 2706-T Buildings; some additional waste from other Hanford Site locations. |
| 222-S Laboratory Complex | Waste resulting from operations at the 222-S Laboratory Complex and other Hanford Site activities. |
| 222-S T8 Tunnel | Waste piping removed from aqueous waste service formerly used to transfer waste from the laboratory to the waste tank system. |
| 241-CX Tank System | Residual tank waste resulting from reduction-oxidation (REDOX), plutonium-uranium extraction (PUREX), and Semiworks processes. |
| 324 Building REC Waste | High-activity radioactive waste containing toxic heavy metals generated during research and development activities since the mid-1960's and the processing of high-level vault waste. |
| 325 HWTU | Laboratory waste generated by research and analytical activities conducted by the Pacific Northwest National Laboratory (PNNL). This waste stream was managed in satellite and 90-day accumulation areas and subsequently transferred to the 325 Hazardous Waste Treatment Unit (HWTU) for storage and/or treatment. Waste is or was generated by active, ongoing projects at PNNL. |
| 400 WMU | Mixed waste generated from the deactivation of the Fast Flux Test Facility (FFTF). |
| B Plant Cell 4 | Drums of Waste Encapsulation and Storage Facility (WESF) hot cell maintenance waste placed in storage from 1988 to 1997. |
| B Plant Containment Building | Process jumpers and equipment from B Plant Complex processes stored on the canyon deck and in process cells. |

Table 1-1. Treatability Groups. (3 sheets)

| Treatability Group Name | Major Waste Sources |
|---|---|
| Cesium and Strontium Capsules | CsCl salt and $SrF_2$ salt reclaimed from double-shell tank (DST) and single-shell tank (SST) systems mixed waste. |
| DST Waste | Widely varying waste from chemical separations processes (e.g., PUREX, Plutonium Finishing Plant [PFP], and cesium and strontium separations) and related support facilities operating from 1970 to date. |
| ERDF—Treatment | Spent resins and contaminated waste from CERCLA remediation and D4 debris requiring treatment before disposal at ERDF. |
| HSTF | Residual heel content remaining from REDOX process. |
| LERF/ETF Liquid Waste | Liquid waste sent from various Hanford Site processes to the Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (ETF) for treatment. |
| LERF/ETF Solid Waste | Dried powder waste and operational waste generated as a result of operating LERF/ETF. |
| MLLW-01 - LDR Compliant Waste | Inorganic salt waste, excavated soil, and contaminated equipment that currently meets disposal criteria and regulatory requirements for disposal; however, some of this waste may still require radiological stabilization. |
| MLLW-02 - Inorganic Non-Debris | Inorganic particulates, absorbed liquids and sludge, paint waste, salt waste, and aqueous laboratory packs from various locations. |
| MLLW-03 - Organic Non-Debris | General organic solids and laboratory packs from various locations. |
| MLLW-04 - Hazardous Debris | Paper, plastic, rubber, wood, rags and to a lesser extent metals, concrete, and asbestos debris from various locations. |
| MLLW-05 - Radioactive Lead Solids | Elemental lead and lead shielding from various locations. |
| MLLW-06 - Mercury Wastes | Various forms of mercury (elemental and amalgamated) from various locations. |
| MLLW-07 - RH and Large Container | Remote Handled (RH) and oversized contact handled (CH) mixed low-level waste (MLLW) generated from various locations. |
| MLLW-08 - Unique Waste | Waste stream consists of unique waste that requires special processing not typically employed for the other MLLW waste streams. |
| MLLW-09 - Radioactive Batteries | Spent, radioactively contaminated, batteries from various locations, not treated at ERDF. |
| MLLW-10 - Reactive Metals | Reactive metal waste from various locations. |

Table 1-1. Treatability Groups. (3 sheets)

| Treatability Group Name | Major Waste Sources |
|---|---|
| PUREX Plant | Chromium-contaminated debris from E-Cell floor currently stored in F-Cell of the PUREX Containment Building. |
| PUREX Storage Tunnels[1] | Equipment and waste containing mercury, lead, silver, cadmium, chromium, barium, and mineral oil from PUREX and other processes. |
| SST Waste | Widely varying waste from chemical separations processes and related support facilities operating between 1944 and 1980. |
| TRUM-CH Large Container | CH transuranic mixed (TRUM) waste in large boxes from various sources. |
| TRUM-CH Small Container | CH TRUM waste includes a variety of waste from various locations packed into smaller containers using standard processing techniques. |
| TRUM-RH | RH TRUM waste originates from various locations and has a contact dose rate of >200mrem/hr. |
| WTP Lab Complex | Waste generated from analytical methods development in the WTP radiological laboratory. Forecasted to start in 2018. |

[1]This treatability group includes both TRUM and non-mixed transuranic (TRU) waste. TRUM and non-mixed TRU exist in the same storage unit and can be difficult to distinguish when the waste has been in storage for quite some time.

Table 1-2 is a comprehensive list of waste streams that were included in any previous LDR report, but are not included in this report, along with the reason the waste stream is no longer reported.

Table 1-2. Streams No Longer Applicable to Report. (3 sheets)

| Treatability Group Name | Waste Source | Reason |
|---|---|---|
| 183-H Solar Evaporation Basins Waste | Containerized solids retrieved from 183-H Solar Evaporations Basins, generated from 300 Area fuel fabrication waste from 1973 to 1985. | Unit is in post-closure care. Process waste inventory is now disposed of at ERDF. |
| PNNL-305B | Waste generated from PNNL laboratory and facility operations. | PNNL mixed waste storage/treatment has been consolidated into the 325 HWTUs. 305-B was clean closed in 2007. |

Table 1-2. Streams No Longer Applicable to Report. (3 sheets)

| Treatability Group Name | Waste Source | Reason |
|---|---|---|
| 4843 Sodium Storage Facility Waste | Waste sodium from FFTF operations. | This waste was sent to Tennessee for treatment in 2010/2011 and the debris with treatment residues have been returned and disposed in Trenches 31/34. |
| Hexone Waste | Hexone that had been planned for use in the 202-S solvent extraction process. | Hexone has been incinerated off-site at Diversified Scientific Services, Inc., Kingston, Tennessee. (Small amounts of waste continue to be generated from surveillance and maintenance (S&M) of the emptied tanks that were used to store the hexone. The remaining heels in the two tanks are reported in the Hexone Storage and Treatability Facility [HSTF] treatability group.) |
| PUREX Facility Ammonia Scrubber Waste | Waste generated from sorption of gaseous ammonia from fuel processing operations at the PUREX Plant. | Waste no longer generated. Inventory in DST System. |
| PUREX Facility Process Condensate | Condensed vapors from PUREX Plant operations. | Waste no longer generated. Inventory in DST System. |
| PUREX Plant Aging Waste | First extraction-column fission products from the PUREX Plant. | Waste no longer generated. Inventory in DST System. |
| T-Dragoff | T Plant Complex | Waste was dispositioned and disposed. |
| 222-S RH MLLW | 222-S Laboratory Complex | Treatability group was combined with the MLLW-07 treatability group. |
| 241-Z | PFP | Treatability group was combined with the DST Waste treatability group. The waste is no longer generated and the 241-Z Tank System has been closed. |
| HO-64-4275 | Various Hanford Site locations. | Treatability group was combined with the DST Waste treatability group. |

Table 1-2. Streams No Longer Applicable to Report. (3 sheets)

| Treatability Group Name | Waste Source | Reason |
|---|---|---|
| K Basin Sludge | 100 Area K Basins | Treatability group was combined with the TRUM-polychlorinated biphenyl (PCB) treatability group. The waste was subsequently removed from the report because the waste did not designate as mixed waste. |
| T Plant EC-1 Condenser | 242-A Evaporator | Shipped off-site for recycling in CY 2002. |
| ERDF – Direct Disposal | Hanford Site remediation waste | No storage of mixed waste occurred for this treatability group. |
| 618-4 Depleted Uranium/Oil Drums | 618-4 Burial Ground | Waste has been treated off-site. |
| TRUM-PCBs | Various Hanford Site locations. | Waste in this treatability group has been rolled into the other three TRUM treatability groups based on the M-091 settlement agreement. |
| Purgewater | Purgewater generated from pump and treat operations, well drilling, groundwater sampling, and well maintenance across the Hanford Site. | This waste stream was closed and not used in 2011. |
| 200-UP-1 | 200-UP-1 groundwater produced as a result of groundwater remediation under the 200-UP-1 Interim Record of Decision (ROD). | 200-UP-1 OU contaminated groundwater is extracted and treated in the 200-West Area Pump-and-Treat Facility, then reinjected back to the aquifer through injection wells. |
| TX/TY Treatability Test Wells | 200-ZP-1 groundwater, produced as part of a treatability test. | Waste streams are now covered under the latest 200-ZP-1 OU ROD and therefore are not being generated independently. |
| PFP – Lab Chemicals/Reagents, LDR Compliant | PFP laboratory decontamination and decommissioning (D&D) | Lab Chemicals/Reagents, LDR Compliant, cleanout was completed before demolition activities commenced and therefore are no longer being generated. |

Table 1-2. Streams No Longer Applicable to Report. (3 sheets)

| Treatability Group Name | Waste Source | Reason |
|---|---|---|
| LLBG Unique Waste | Beryllium, F027 contaminated waste and waste with unique processing concerns which had been placed in disposal at the Low-Level Burial Grounds (LLBG). | There are no longer plans to generate and store this waste within the LLBG. |

The following waste streams have been added since the 2009 LDR report (DOE/RL-2010-27, *Calendar Year 2009 Hanford Site Mixed Waste Land Disposal Restrictions Full Report*). The waste streams, with their appropriate treatability group are:

- DST – 204-AR Catch Tank
- ERDF-Treatment – Hazardous Debris to ERDF, from Closure Services & Infrastructure (CS&I)
- ERDF Treatment – Hazardous Debris to ERDF, from Tank Farms
- MLLW-02 – LLBG
- MLLW-03 – CWC
- MLLW-04 – FFTF-440 Pad
- MLLW-07 – Waste Receiving and Processing Facility (WRAP)

## 1.2 STORAGE REPORT DATA COLLECTION PROCESS

A central database (the LDR Report database) was used for managing data contained in Appendix B. Data were collected for all stored and projected mixed waste and input into the database. Volumes reported as stored inventory at specific locations automatically were summed and presented as the storage information for the associated treatability group inventory. An analogous automatic summation was performed for projected waste generation rates. Appendix B contains the TGDS, along with the following information:

- A description of the data fields in the data sheets
- Figure B-1 to explain the relationship among the types of data sheets
- Table B-1 as an index to locate individual data sheets.

## 1.3 SCHEDULE AND MECHANICS OF LAND DISPOSAL RESTRICTIONS REPORT UPDATE

Each annual LDR Report is issued with a unique document number. Each full report supersedes the previous full report, and each summary report supersedes the previous summary report. Proposed TPA milestones or proposed changes to TPA milestones are identified and processed using existing processes contained in the TPA Action Plan, Section 12.0, and not as part of the annual LDR report review and approval process. Modifications to the TPA milestones listed in the LDR report are incorporated in the next year's report. Commitments other than TPA milestones can be proposed in the LDR Report when required. The decision to choose a particular pathway is made jointly by DOE and Ecology project managers responsible for the work scope in question. Modification to TPA milestones listed in the LDR report is incorporated in the next annual LDR report and are not issued as errata sheets. As described in Attachment 3 of the March 14, 2002, *Resolution of Dispute Pertaining to Hanford Federal Facility Agreement and Consent Order Calendar Year 2000 Hanford Site Mixed Waste Land Disposal Restrictions Report*, workshops were held during 2002 to improve the LDR Report process. These results have been incorporated into the LDR Report. Additional workshops were held in subsequent years resulting in Tri-Party Agreement change request M-026-06-01, which established the content and format of LDR Summary Reports following a pilot activity in CY 2005. The Summary Reports are to be issued every year for four years, with the fifth year being a Full Report. This report is the second Full Report since change request M-026-06-01 and meets TPA Milestone M-026-01Y.

The following summarizes the information updated in each annual report, as documented in Appendix A:

- Updated mixed waste storage inventories and projected generation rates to reflect current plans and schedules.
- Revised waste stream characterization information to reflect current knowledge.
- Updated compliance status of the TSD units to reflect completion of pending storage method compliance assessments and permitting activities.
- Report on completed LDR storage method compliance assessments and summarized resulting findings and observations.
- Re-evaluation of the adequacy of the capacity of current TSD units for storing LDR mixed waste.
- Addition of new milestones and revision of existing milestones as applicable.
- Report on changes in the management and TSD of mixed waste required by changes in federal policy or regulations as applied to the DOE complex.
- Funding/budget guidance impacts on operating plans and schedules.
- Addition of mixed waste streams and projected mixed waste that will be generated in the five-year span for the LDR report, and adding PMW as waste is identified.

- Removing mixed waste and PMW from the LDR report that has been disposed or otherwise dispositioned (e.g., recycled). (Refer to Table 1-2 and Appendix C, Table C-3.)

## 1.4 ASSUMPTIONS

This section lists key assumptions used to prepare this report.

- For tank waste (DST Waste and SST Waste treatability groups), the pretreatment methods to be developed include acceptable technology to separate the tank waste into low-activity waste (LAW) and high-level waste (HLW) streams so the bulk of chemical waste is in the LAW stream and the bulk of radionuclides are in the HLW stream.

- Pretreated tank waste will be transferred to LAW and HLW vitrification facilities.

- For tank waste, it is assumed that the glass waste forms either comply with LDR requirements or a treatability variance will be in place for both the LAW and HLW fractions and a delisting petition will be in place for the vitrified HLW fraction.

- SST Waste from the SST System continues to be transferred to the DST System and mixed with DST Waste as part of the stabilization and retrieval programs for the SST System. Supernatant from the DST System will be used to mobilize the SST waste.

- Process condensate from the 242-A Evaporator and hazardous wastewater from other sources, including liquid effluents from tank waste pretreatment and vitrification, will continue to be treated at ETF.

- The work scope contained in the LDR report is based on expected funding and is contingent on Congressional budget actions. If funding is reduced or reprioritized, the ability to conduct and complete work scope is affected. To address these changes, changes to Tri-Party Agreement milestones are made using Section 12.0 of the Tri-Party Agreement Action Plan, and are not part of the review and approval of the annual LDR report update.

## 1.5 SUMMARY OF PROPOSED CHANGES TO COMMITMENTS IN THE LAND DISPOSAL RESTRICTIONS REPORT

This section contains any commitment changes that are proposed by DOE in the annual update and agreed on by Ecology during the primary document review and comment process.

The decision to issue a full LDR report every five years with summary reports each year during the intervening years was agreed to in TPA Change Request M-026-06-01. The change will remain in effect unless revised per the TPA process..

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# 2.0 SUMMARY STORAGE DATA

The forecast generation rates represent the current best estimates of projected waste generation for each LDR treatment group, or the quantity of mixed waste added to the TSD units. These estimates are developed by the generating projects/facilities or programs based on an evaluation of operating schedules, past operational history, and projections of future waste-generating activities. The generation projections could be higher or lower than the actual generation values because of changes in process technologies and practices, waste treatment, production schedules, waste minimization activities, or uncertainties associated with the project estimates.

## 2.1 SUMMARY INVENTORY OF WASTE TREATMENT GROUPS AND FORECAST GENERATION RATES

The volume of mixed waste currently in storage and the volume projected to be generated and subsequently stored at Hanford during the next five calendar years are presented in Table 2-1. Mixed waste managed only in Hanford Site generator locations (satellite accumulation areas and 90-day accumulation areas) and then sent directly off-site for treatment are not reported. These data are summarized from the LSDSs and also are reported in the treatability group data sheets in Appendix B. Table 2-2 presents an overall summary of the storage, characterization, treatment, and disposal activities for the treatability groups. Table 2-2 is a collection of information from the following three tables: Table 2-1, Table 13-1, and Table 14-1. Data on waste volumes in these tables are taken from Appendix B and rounded to two significant figures. Stored waste volumes are reported either by the actual waste volume or by the waste container volume. The treatability group breakout of retrievably stored waste is described in the project management plan (PMP) required by Tri-Party Agreement Milestone M-091-03. Retrievably Stored Waste, both MLLW and TRUM, not yet retrieved is included in the above listed tables.

The WTP is a new TSD Group being constructed to treat DST Waste and SST Waste. The WTP Project Management schedule projects that mixed waste will be generated at the WTP starting in 2018 of the five-year forecasting window for this report.

## 2.2 INVENTORY STORAGE METHOD AND LOCATION

Storage methods are identified in Section 2.1 of the LSDSs. Options include: container (pad), container (covered), container (retrievably buried), tank, DST, SST, or other (explain). The category “Other (explain)” includes all waste not stored in containers, DSTs or SSTs (e.g., PUREX Storage Tunnels). The LSDS storage location does not include waste in accumulation areas.

## 2.3 POTENTIAL MIXED WASTE

The PMWT (Appendix C) 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. The materials included in the PMWT (equipment, piping, etc.) are those that currently are not being used and do not have a clear path for reuse or recycling. The waste that has not been actively managed as mixed waste is, in many cases, at *Resource Conservation and Recovery Act of 1976* (RCRA)-CERCLA past-practice units (R-CPP) or CERCLA past-practice (CPP) units under the Tri-Party

Agreement. Past-practice waste is a waste that was disposed of (intentionally or unintentionally) before the first effective date of applicable designation regulations in Washington State, typically August 19, 1987 for mixed waste. Classification of waste management units (WMUs) as past-practice units is described in Section 3.0 of the Tri-Party Agreement Action Plan. When cleanup actions occur in the operable unit (OU) for these past-practice units, mixed waste could, or is expected to be, generated. The PMWT also includes a similar category of materials currently in standby for a potential future use. The table was developed for the following reasons:

- To acknowledge that materials might become mixed waste at a future date.
- To begin identifying data gaps (e.g., whether the material would be designated as mixed waste) and facilitate discussions to establish a path forward toward disposition for those materials eventually identified as mixed waste.

As a result of discussions with Ecology and EPA, the following categories of materials have not been included in the PMWT:

- Generated mixed waste. This mixed waste is included in treatability group and LSDSs in Appendix B of this LDR report.
- Contaminated soil sites, cribs, ponds, ditches, trenches, etc., considered engineered disposal units. (However, the materials would be included in an LDR report LSDS [Appendix B] when management or disposition activities associated with those units are expected to result in the generation of mixed waste requiring treatment in the next five years.)
- The building structures themselves, including contaminated walls, floors, floor sweepings, dust, etc. Building equipment, such as ventilation system components and building utilities that would be considered part of the structure, also is not included.
- Equipment and chemicals being used.

The PMWT includes information on the assessments performed or scheduled to meet the DOE storage method compliance assessment requirement of the LDR storage report. Section 3.0 provides more information concerning assessments.

The PMWT also includes known and proposed schedule information. This information can include the following, as applicable:

- Proposed dates for storage method compliance assessments
- OUs that encompass the facility or unit
- Existing documentation and milestones or schedules that indicate plans that will address the PMW

- Date to complete data gap plan
- Start date for major Tri-Party Agreement negotiations such as facility transition or deactivation.

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$) [2] | Generation Projection 2016 ($m^3$) [2] | Generation Projection 2017 ($m^3$) [2] | Generation Projection 2018 ($m^3$) [2] | Generation Projection 2019 ($m^3$) [2] |
|---|---|---|---|---|---|---|---|
| 221-T Containment Building | Equipment (e.g., jumpers, tanks, centrifuges, etc.), other debris (e.g., pieces of concrete, etc.), and non-debris (e.g., sandblasting grit) generated during canyon deck and/or process cell cleanout, or from treatment and/or decontamination activities. | 58.000 | 0 | 0 | 0 | 0 | 0 |
| 221-T Tank System | Liquid mixed waste with settled solids/sludge (waste also contains PCBs at *Toxic Substances Control Act of 1976* [TSCA] regulated concentrations). | 1.700 | 0 | 0 | 0 | 0 | 0 |
| 222-S Laboratory Complex | This waste stream consists of many different inorganic and organic solids and liquids that are RCRA regulated or have been contaminated with inorganic and organic regulated dangerous waste constituents, including PCBs. This waste stream also includes hazardous debris. | 7.140 | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 |
| 222-S T8 Tunnel | This waste stream is comprised of debris that has come into contact with waste from the 219-S Waste Handling Facility tank system waste. The debris is designated as RH MLLW as a result of this contact. | 0.200 | 0 | 0 | 0 | 0 | 0 |
| 241-CX Tank System[3] | Residual tank waste resulting from REDOX, PUREX, and Semiworks processes. | 6.390 | 0 | 0 | 0 | 0 | 0 |
| 324 Bldg. REC Waste | Radioactive waste containing regulated quantities of toxic heavy metals. Mixed waste residue may be generated from the future radiochemical engineering cells (RECs) decontamination and deactivation activities and disposed as CERCLA waste in accordance with M-094-00. | 5.000 | 0 | 0 | 0 | 0 | 0 |
| 325 HWTU | This waste stream consists of many different inorganic and organic solids and liquids that are contaminated with inorganic and organic regulated dangerous waste constituents, including PCBs. This waste stream also includes hazardous debris. Waste Specification Records (WSRds) in this waste stream include PNNL-930-05 and PNNL-931-04. | 19.107 | 9.100 | 9.100 | 9.100 | 9.100 | 9.100 |
| 400 Area WMU | Mixed waste generated from Hanford activities, primarily from the deactivation of FFTF. | 1.900 | 0 | 0 | 0 | 0 | 0 |

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$) [2] | Generation Projection 2016 ($m^3$) [2] | Generation Projection 2017 ($m^3$) [2] | Generation Projection 2018 ($m^3$) [2] | Generation Projection 2019 ($m^3$) [2] |
|---|---|---|---|---|---|---|---|
| B Plant Cell 4 | Cell 4 waste resulted from WESF hot cell maintenance waste (i.e., manipulator boots, light bulbs, high-efficiency particulate air [HEPA] filters, misc. debris). This waste is stored in accordance with interim status technical standards pending completion of RCRA closure. No additional waste will be stored in this location B Plant has been retired from active operation and in is in surveillance and maintenance mode pending final disposition which will be addressed using CERCLA remedial action that is coordinated with RCRA closure. | 1.400 | 0 | 0 | 0 | 0 | 0 |
| B Plant Containment Building | Stream consists of failed equipment (e.g., process jumpers, pumps, etc.) used in the 221-B canyon. Contaminated debris/equipment derived from the processing of "F" listed wastes for the recovery of strontium and cesium. Also contains elemental lead used for counterbalances and shielding. This waste is stored in accordance with interim status technical standards pending completion of closure. No additional waste will be stored at this location. | 294,000 kg[3] | 0 | 0 | 0 | 0 | 0 |
| Cesium and Strontium Capsules | Cesium and strontium were reclaimed from Tank Farm waste as a product, separated and purified at B Plant, and converted to dry salt for storage at WESF. The cesium and strontium capsules were declared waste in 1997 and a Part A permit application was subsequently submitted to Ecology. The subject waste consists of 1,335 cesium capsules and 601 strontium capsules. The capsules are stored in pool cells at WESF. | 2.000 | 0 | 0 | 0 | 0 | 0 |
| DST Waste | Basic aqueous solution that may contain suspended material and/or settled solids (sludge and salt cake). Waste streams are treated with sodium hydroxide and sodium nitrite to minimize tank corrosion and to address compatibility issues. Waste has been stored in the DST System from 1971 to the present. | 101,000.000 | 33.000 | 33.000 | 33.000 | 33.000 | 33.000 |
| ERDF—Treatment | This waste stream reflects mixed waste that requires treatment before disposal at ERDF. The waste is stored at the OU/ facility, and is transferred to ERDF where the waste is treated and disposed. | 50.000 | 150.500 | 137.500 | 102.000 | 102.000 | 102.000 |
| HSTF | Residual heel content remaining from REDOX Process. | 2.100 | 0 | 0 | 0 | 0 | 0 |

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$) [2] | Generation Projection 2016 ($m^3$) [2] | Generation Projection 2017 ($m^3$) [2] | Generation Projection 2018 ($m^3$) [2] | Generation Projection 2019 ($m^3$) [2] |
|---|---|---|---|---|---|---|---|
| LERF/ETF Liquid Waste | CERCLA and RCRA aqueous wastewaters are sent to the LERF/ETF for treatment and disposal. | 38,770.137 | 7,332.659 | 5,742.494 | 4,228.329 | 4,228.329 | 4,228.329 |
| LERF/ETF Solid Waste | CERCLA and RCRA wastewaters are sent to the LERF/ETF for treatment and disposal. Both dried powder and operational solid waste are generated and stored at 2025E prior to shipment to on-site disposal facility or to an off-site facility if treatment is required. | 38.600 | 88.000 | 147.000 | 150.000 | 150.000 | 150.00 |
| MLLW-01 – LDR Compliant Waste | This waste consist of MLLW meeting the disposal requirements for Hanford's Mixed Waste Disposal Units (ref: LLBG 218W5, T31, & T34). The waste either meets RCRA, and applicable State, LDRs as-generated, or the waste has been treated to meet the LDRs. Additionally, the waste meets unit specific disposal requirements (e.g., 90 percent full, minimum of 50 psi unconfined compressive strength, etc.). The applicable WSRds include 930 and 931. This waste can consist of: soils, immobilized waste, stabilized/solidified waste, thermal treatment residues, etc. | 0.416 | 0 | 0 | 0 | 0 | 0 |
| MLLW-02 - Inorganic Non-Debris | This treatability group is for non-debris waste that are subject to either a non-thermal treatment standard (specified technology), or a concentration-based treatment standard based on the performance of best demonstrated available technology (BDAT) for meeting the applicable LDR treatment standards (concentration-based standards). The applicable WSRds for this treatability group are: 420, 421, 422, 425, 426, 428, 506, 507, 521, 523, 524, 525, 900, 901, 902, and 904. This waste consists of many different inorganic solids (e.g., particulates, absorbed liquids, sludges, resins, soils) and labpacks that are contaminated with regulated metals and other inorganics. This waste treatability group does not include hazardous debris other than incidental debris material commingled with the non-debris. | 0.208 | 0.420 | 0.420 | 0.420 | 0.420 | 0.420 |

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$) [2] | Generation Projection 2016 ($m^3$) [2] | Generation Projection 2017 ($m^3$) [2] | Generation Projection 2018 ($m^3$) [2] | Generation Projection 2019 ($m^3$) [2] |
|---|---|---|---|---|---|---|---|
| MLLW-03 - Organic Non-Debris | This treatability group is for non-debris waste that contains hazardous constituents that either requires thermal treatment (specified technology) or is subject to concentration-based treatment standards. Stabilization of the thermal treatment residue also might be required. The primary applicable WSRds for this treatability group are: 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 427, 429, 430, 431, 432, 500, 501, 502, 503, 504, 505, 520, 522, 700, 701, 720, 721, 920, 921, 922, and 923. This waste stream consists of many different inorganic and organic solids (e.g., particulates, absorbed liquids, sludge, resins, soils) and labpacks that are contaminated with organic regulated dangerous waste constituents. This waste stream may also include dangerous waste containing PCBs that require thermal destruction. This waste stream does not include hazardous debris other than incidental debris material commingled with the non-debris. | 0.322 | 0.420 | 0.420 | 0.420 | 0.420 | 0.420 |
| MLLW-04 - Hazardous Debris | This treatability group is for waste that meets the definition of hazardous debris as defined in 40 CFR 268.2. The physical characteristics include paper, plastic, wood, rubber, rags, and lesser quantities of metallic and inorganic waste components. The primary WSRds that comprise this treatability group are: DBR, 627, and 647. This waste may include organic/ carbonaceous (O/C) waste constituents in excess of 10 percent as defined in WAC 173-303-040 (e.g., plastic, paper, wood, rubber, etc.). | 17.540 | 66.260 | 66.260 | 66.260 | 66.260 | 66.260 |
| MLLW-05 – Radioactive Lead Solids | This treatability group is for waste that meets the definition of radioactive lead solids subcategory as described in 40 CFR 268.40. The physical makeup consists of many different forms of radioactive lead solids including bricks, sheets, shot-filled blankets, lead-lined debris items where the lead comprises more than 50 percent of the waste matrix. The primary WSRds that comprise this treatability group are EPB and 800. The waste is generated by many on-site generating organizations. | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$) [2] | Generation Projection 2016 ($m^3$) [2] | Generation Projection 2017 ($m^3$) [2] | Generation Projection 2018 ($m^3$) [2] | Generation Projection 2019 ($m^3$) [2] |
|---|---|---|---|---|---|---|---|
| MLLW-06 – Mercury Wastes | This treatability group is for waste that contains various forms of mercury requiring special waste treatments. The form can consist of elemental liquid mercury, partially amalgamated mercury, mercury spill cleanups, high-mercury subcategory waste, and some debris waste items packaged in with the mercury waste. The primary WSRds that comprise this treatability group are EHG, HHG, and 810. The waste is generated by many on-site generating organizations. | 0 | 0 | 0 | 0 | 0 | 0 |
| MLLW-07 - RH and Large Container | This treatability group consists of the following waste types: (1) Large containers of MLLW (large containers for MLLW are defined as greater than 10 $m^3$ in size), (2) RH MLLW packages (RH-MLLW is defined as waste packages that have an external surface dose rate of greater than 200 mR/hr on contact), and (3) RH-MLLW that is shielded down to contact handling levels for safe handling and storage (shielding can be internal, external, and/or integral to the waste container). The primary WSRds that comprise this treatability group are DBL, HRW, 450, 550, and 650. The waste is generated by many on-site generating organizations. | 69.783 | 0 | 0 | 0 | 0 | 0 |
| MLLW-08 - Unique Waste | This treatability group is for waste that has very special waste processing for which no permitted treatment capability exists in the United States or the capability exists but the capacity is very limited/restricted. Currently, this treatability group contains one drum designated with the P015 listed waste code (beryllium powder), and MLLW that requires thermal treatment due to containing TSCA PCBs (e.g., transformer fluids/oils, sludge with PCB, aqueous waste with PCBs, etc.). The primary WSRds that comprise this treatability group are BER, TSC, 300, 400, 505, and 84A. The waste is generated by many on-site generating organizations. | 0.040 | 0 | 0 | 0 | 0 | 0 |
| MLLW-09 -Radioactive Batteries | This treatability group is for waste that is, or contains, radioactively contaminated batteries that have specific treatment requirements specified in 40 CFR 268.40 (i.e., D006 cadmium batteries, D008 lead-acid batteries, D009 mercury batteries, and D011 silver batteries). The primary WSRds that comprise this treatability group are BAT, 802, and 830). The waste is generated by many on-site generating organizations. | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$) [2] | Generation Projection 2016 ($m^3$) [2] | Generation Projection 2017 ($m^3$) [2] | Generation Projection 2018 ($m^3$) [2] | Generation Projection 2019 ($m^3$) [2] |
|---|---|---|---|---|---|---|---|
| MLLW-10 - Reactive Metals | This treatability group is for waste that is water reactive (waste codes D003) including sodium metal, cyanides/sulfides, NAK, lithium, etc. The primary WSRds that comprise this treatability group are ENA, 820, and 822. The waste is generated by many on-site generating organizations. | 0 | 0 | 0 | 0 | 0 | 0 |
| PUREX Plant | Concrete rubble contaminated with trace chromium as a corrosion product. No additional waste will be stored at this location as the PUREX Plant is under long-term S&M. | 1.000 | 0 | 0 | 0 | 0 | 0 |
| PUREX Storage Tunnels | Varies from very large equipment vessels with lead counterweights to very fine mixed waste powder in canisters. Waste receipt into the TSD unit began in 1960. The TSD unit waste inventory list is contained in the Hanford Facility RCRA Permit, Attachment 28, Chapter 3.0, Waste Analysis Plan. Waste is expected to contain a combination of TRU and TRUM. | 2,800.000 | 0 | 0 | 0 | 0 | 0 |
| SST Waste[4] | Basic aqueous slurry with layers of saltcake and/or sludge. Sludge is defined as solids (i.e., hydrous metal oxides) precipitated from the neutralization of acid waste. Saltcake is defined as the various salts formed from the evaporation of water. | 109,000.000[4] | 0 | 0 | 0 | 0 | 0 |
| TRUM-CH Large Container | TRUM waste is from various generating activities around the Hanford Site. The waste contains metals including steel shielding, plastic/polyurethane, wood, paper/cardboard, glass, filters, soil, miscellaneous/unknown/other, rags, lead and lead shielding, plexiglas, styrofoam, asbestos, rubber, glass, sorbents/kitty litter, cement, and concrete. Package size includes any CH TRUM waste that is not in a small container (as described in "TRUM-CH Small Container"). | 6,571.332 | 0 | 0 | 0 | 0 | 0 |

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$) [2] | Generation Projection 2016 ($m^3$) [2] | Generation Projection 2017 ($m^3$) [2] | Generation Projection 2018 ($m^3$) [2] | Generation Projection 2019 ($m^3$) [2] |
|---|---|---|---|---|---|---|---|
| TRUM- CH Small Container | The waste came from various facilities on and off the Hanford Site. The waste contains plastic/polyurethane, rubber, iron-based metal, soil, paper, cardboard, lead, rags, cement, stainless steel, wood, styrofoam, glass, absorbent/kitty litter, filters, lead shielding, carbon steel, fiberglass, brick/firebrick, plastic liner, shielding, concrete, animal waste, paints, ceramics, sludges, asbestos, aluminum, diatomaceous earth, resins, copper metal, lead, water, floor sweepings, batteries, leather, liquid, teflon, cork, cotton, light bulbs, urethane, and wax. Waste packages in this treatability group include containers that are 55 gallon drums or smaller containers even if overpacked in 85 gallon drums, and newly generated "Waste Isolation Pilot Plant" (WIPP) standard waste boxes. Drums in 10 drum overpacks are also counted as small containers based on the drum as the container, not the ten drum overpack. Note that some TRUM-CH small containers will be found to be TRUM-RH and need to be re-allocated to the TRUM-RH treatability group. | 4,508.646 | 61.300 | 51.300 | 1.300 | 1.300 | 1.300 |
| TRUM-RH | The waste consists of inner container, iron-based metals, lead, soil, lead shielding, and steel shielding. Waste is from the clean-out of hot cells from research/development laboratories and demolition activities. The relative waste quantity is small, because the waste matrix contains a large percentage of lead and steel shielding materials. TRUM is considered RH if the waste container has a contact dose rate >200 mrem/hr. In addition, in order to provide an estimate of what might be RH, TRUM will be reported as RH if the package is known to contain lead, concrete, or steel shielding. | 492.881 | 1.300 | 1.300 | 1.300 | 1.300 | 1.300 |
| WTP Lab Complex | Waste generated from methods development for equipment calibration. | 0 | 0 | 0 | 0 | 53.800 | 53.800 |

[1]WSRd indicates waste treatment and/or disposal pathway.
[2]The stored volume reported contains uncertainty as to the actual volume (Calendar Year 2004 Land Disposal Restrictions Report Comment Responses [Klein 2005]).
[3]Quantity estimated at 294,000 kg. A more detailed determination of waste volume would require extensive item identification and specific drawing information. At this time, obtaining this information is cost and schedule prohibitive.
[4]As a whole, the SST wastes are managed as RH HLW. However, the tank systems contain potential TRU mixed waste, pending a waste determination.

Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| 221-T Containment Building | 58.000 | 0 | Completed | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 221-T Tank System | 1.700 | 0 | Will be done pursuant to the approved closure plan in coordinationwith T Plant Complex Canyon disposition. | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 222-S Laboratory Complex | 7.140 | 50.000 | Ongoing | , Commercial - Stabilization, Commercial - Macroencapsulation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 222-S T8 Tunnel | 0.200 | 0 | Will be done in conjunction with 222-S Laboratory building disposition. | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 241-CX Tank System[2] | 6.390 | 0 | Characterization will be performed on waste in tank 72 on a schedule determined with 200-IS-1. | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |

Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| 324 Building REC Waste | 5.000 | 0 | Completed | As necessary, ERDF stabilization or marcroencapsulation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 325 HWTU | 19.107 | 45.500 | Ongoing | HWTU, Commercial - Stabilization, Commercial - Thermal | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 400 Area WMU | 1.900 | 0 | Completed | Deactivation via reaction with water or water vapor | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| B Plant Cell 4 | 1.400 | 0 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. M-085-00 to be determined (TBD) | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| B Plant Containment Building | 294,000 kg [3] | 0 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. M-085-00 TBD | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Cesium and Strontium Capsules | 2.000 | 0 | Completed | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |

Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| DST Waste | 101,009.105 | 165.000 | Ongoing | WTP vitrification | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| ERDF—Treatment | 50.000 | 594.000 | Ongoing | ERDF treatment | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| HSTF | 2.100 | 0 | Completed | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| LERF/ETF Liquid Waste | 38,770.137 | 25,760.140 | Ongoing | ETF | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| LERF/ETF Solid Waste | 38.600 | 685.000 | Ongoing | ERDF treatment expected to be needed for some solid wastes | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-01 – LDR Compliant Waste | 0.416 | 0 | Completed | No treatment required | No treatment required |

Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| MLLW-02 - Inorganic Non-Debris | 0.208 | 2.100 | M-091-42[2] | Stabilization/neutralizatiom | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-03 - Organic Non-Debris | 0.322 | 2.100 | M-091-42[2] | Thermal | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-04 - Hazardous Debris | 17.540 | 16.300 | M-091-42[2] | Macroencapsulation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-05 – Radioactive Lead Solids | 0 | 0 | M-091-42[2] | MACRO | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-06 – Mercury Wastes | 0 | 0 | M-091-42[2] | Amalgamation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-07 - RH and Large Container | 69.783 | 0 | M-091-43[2] | M-091-43 | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |

Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| MLLW-08 - Unique Waste | 0.040 | 0 | M-091-42[2] | To be evaluated in a container by container basis | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-09 – Radioactive Batteries | 0 | 0 | M-091-42[2] | Macroencapsulation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-10 - Reactive Metals | 0 | 0 | M-091-42[2] | Deactivation with selected stablization | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| PUREX Plant | 1.000 | 0 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. M-085-00 TBD | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| PUREX Storage Tunnel | 2,800.000 | 0 | To be determined in conjunction with the PUREX Plant per Tri-Party Agreement Action Plan, Section 8.0. M-085-00 TBD | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| SST Waste | 109,000.000 | 0 | Ongoing | WTP vitrification | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |

Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| TRUM-CH Large Container | 6,571.332 | 0 | M-091-44[2] | M-091-01 and/or off-site | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| TRUM-CH Small Container | 4,508.646 | 116.500 | M-091-46[2] | M-091-01 and/or off-site | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| TRUM-RH | 492.881 | 6.500 | M-091-44[2] | M-091-01 | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| WTP Lab Complex | 0 | 107.600 | Waste will be designated at the time of generation | Treatment options still being assessed. Reference Appendix B | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |

[1] The stored volume reported contains uncertainty as to the actual volume (Klein 2005)
[2] Characterization and Treatment will be performed in accordance with applicable M-091 milestones. See the M-091 milestones to determine what portion of the total volume requires treatment under those milestones.
[3]Quantity estimated at 294,000 kg. A more detailed determination of waste volume would require extensive item identification and specific drawing information. At this time, obtaining this information is cost and schedule prohibitive.

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# 3.0 COMPLIANCE ASSESSMENTS OF MIXED WASTE AND POTENTIAL MIXED WASTE STORAGE AREAS

The DOE conducts/oversees storage method compliance assessments of mixed waste storage areas and other areas that could, in the future, be the source of generation of other mixed waste. DOE storage method compliance assessments include reviewing other independent assessments and inspections and self-assessments. In addition, daily, weekly, monthly, quarterly, and annual assessments and inspections are conducted at Hanford Site mixed waste storage areas in accordance with DOE requirements, and applicable State and Federal standards. LDR storage method compliance assessments provide an additional level of review to address circumstances associated with mixed waste and PMW.

## 3.1 ASSESSMENT SCHEDULES

In CY 2011, DOE-RL contractors reviewed the current status of the mixed waste storage areas identified in Table 3-1. The contractors, in conjunction with DOE and Ecology, determined that further assessment of 224-B, 242-B/BL, and 270-W would result in little significant findings ("Waste Storage Assessment of 224-B, 242-B/BL, 270-W, and IMUSTs Not Associated with a Building," [Singleton 2011]).

However, Ecology determined that inactive miscellaneous underground storage tank (IMUST) storage method compliance assessments shall remain on the assessment list because of their complex storage conditions and, they are listed on Table 3-2 for further assessment. No additional DOE-RL storage method compliance assessments are currently scheduled. Any additional DOE-RL storage method compliance assessments will be negotiated with Ecology in LDR Project Manager Meetings (PMMs) and documented in related meeting minutes.

Table 3-1. Summary of the U.S. Department of Energy, Richland Operations Office Assessment Results.

| Assessment Location | LDR PMM[1] | Assessment Start Dates | Findings and Observations |
|---|---|---|---|
| | | | |
| 224-B | September 23, 2010 | December 2006 | Further assessment determined to be unnecessary. (Singleton 2011) |
| 242-B/BL | September 23, 2010 | March 2007 | Further assessment determined to be unnecessary. (Singleton 2011) |
| 270-W | September 23, 2010 | June 2007 | Further assessment determined to be unnecessary. (Singleton 2011) |

[1]Assessments are documented in the TPA Administrative Record as attachments to the PMM Minutes. The date is the PMM at which Ecology accepted the completed assessment.

Table 3-2 lists the locations where DOE-RL plans to complete previously initiated storage method compliance assessments in CYs 2015 through 2016. DOE-RL does not have any new storage method compliance assessments scheduled.

Table 3-2. U.S. Department of Energy, Richland Operations Office Assessments for Calendar Years 2015 through 2016.

| Facility/Location | Start Date | |
|---|---|---|
| IMUSTs not associated with a building | June 2006 | None planned |

In CY 2014, the DOE Office of River Protection (DOE-ORP) conducted no storage method compliance assessments, and no LDR storage method compliance assessments have been identified as required. Table 3-3 shows that no new LDR storage method compliance assessment activities are identified for DOE-ORP in CYs 2015 through 2016.

Table 3-3. U.S. Department of Energy, Office of River Protection Assessments for Calendar Year 2014 through 2016.

| Facility/Location | Start Date |
|---|---|
| No DOE-ORP storage method compliance assessments were conducted in CY 2014 and none are planned for CY 2015-2016, as none are required. | Not Applicable (N/A) |

# 4.0 POTENTIAL STORAGE ISSUES

This section discusses issues pertaining to storage of mixed waste.

## 4.1 STORAGE CAPACITY

Storage capacity is addressed in Section 2.4 of the LSDSs (Appendix B) and is summarized in the following sections.

### 4.1.1 Washington Closure Hanford, LLC (WCH)

WCH does not have any issues pertaining to storage capacity within the five-year forecast period and beyond.

### 4.1.2 Washington River Protection Solutions, LLC (WRPS)

Every three years, in accordance with Tri-Party Agreement Milestone M-062-40, an evaluation is performed describing the disposition of all tank waste managed by DOE-ORP, including the retrieval of all tanks not addressed by the Consent Decree in Washington vs. DOE, Case No. 08-5085-FVS. A computer simulation of site operations (incoming waste projections and outgoing waste) is performed, which results in projections of tank fill schedules, tank transfers, evaporator operations, tank retrieval, and aging waste tank use. During this evaluation, the parties to the Tri-Party Agreement (Ecology, EPA, and DOE) determine whether new tanks need to be built. If waste is not transferred out of the DSTs (e.g., for further treatment at the WTP), the ability of the DSTs to receive additional SST waste could be impacted as early as 2022. In addition to the DST and the SST waste treatability groups, WRPS also manages the 222-S Laboratory Complex container storage areas and a long-term storage location. Based on projections to date, no additional storage capacity is anticipated for 222-S Laboratory Complex-derived wastes.

The DST system is designed to receive and safely store liquid wastes from the SST system and, to a lesser extent, wastes from other Hanford Site facilities. The wastes received typically come from other storage locations and, as such, are not documented as newly generated waste in the context of this document. Similarly, wastes returned to the DST system from the 242-A Evaporator are not considered newly generated. Process condensate from the 242-A Evaporator is directed to LERF/ETF and is documented on the 242-A Evaporator location specific data sheet under the LERF/ETF treatability group.

### 4.1.3 CH2M HILL Plateau Remediation Company (CHPRC)

CHPRC manages the long-term storage locations of mixed waste in the 200 Areas, except for the DST System, SST System, 242-A Evaporator, and the 222-S Laboratory Complex managed by WRPS, and the ERDF managed by WCH. CHPRC long-term storage areas include mixed waste at the T Plant Complex, B Plant Complex, the PUREX Storage Tunnels, the PUREX Plant, the CWC, WRAP, the 241-CX Tank System, and HSTF. B Plant and PUREX are in surveillance and maintenance mode pending final disposition, which will be addressed using CERCLA remedial action coordinated with RCRA closure.

CHPRC maintains a system for forecasting the amount of radioactive waste, including mixed waste, to be generated well into the future for management at CWC. This system is known as the Solid Waste Integrated Forecast Technical (SWIFT) Report. Input to this system is maintained in a database updated periodically by all waste generating units. Significant changes to the input must be reported. These changes are evaluated for impact on the storage facilities as required.

Based on the projections to date, information on active CHPRC-managed TSD units in this report indicates that no requirements for additional storage capacity exist within the five-year forecast period and beyond.

### 4.1.4 Pacific Northwest National Laboratory

In 2014, PNNL identified a need to increase its storage and treatment capacity at the 325 HWTUs. The added capacity is needed to facilitate storage and LDR-compliant treatment capability for mixed waste at the 325 HWTUs. A Class 3 (major) modification was submitted and is presently in review at Ecology. A temporary authorization was issued by Ecology to allow specified activities to proceed during 2014. Completion of the modification is expected during 2015. PNNL does not expect to require any further storage capacity expansions within the five-year forecast period or beyond.

## 4.2 ISSUES AND THEIR RESOLUTION

No storage issues were identified for CY 2014 reporting. Storage capacity issues identified and resolved in the future will be reported in the year following their resolution.

## 4.3 PLANNED VARIANCES OR EXEMPTIONS FOR STORAGE

Requests for variances and other exemptions related to storage are addressed in Section 2.10 of the LSDSs (Appendix B). One site-specific LDR Variance Request was granted by Ecology in 2009 per WAC 173-303-140(2)(a) (“Approval of Site-Specific Land Disposal Restrictions (LDR) Variance Request,” [Hedges 2009]). This variance allows the DOE to encapsulate radioactive barium waste rather than conduct treatment to the LDR D005 barium standard prior to disposal in the Hanford Site LLBGs.

On February 22, 2010, Ecology notified DOE of approval of the site-specific LDR Variance Request for beryllium powder, designated as P015 waste. The approved treatment method requires the waste to be stabilized at Perma-Fix Northwest, in accordance with their Permit, and returned to the Hanford Site for disposal at the mixed waste disposal unit.

On January 28, 2015, DOE-RL submitted to Ecology the request for a site-specific treatability variance from applicable LDR treatment standards for specific waste items at WESF. This variance will ensure the action to grout wastes in place in two of the WESF hot cells does not create future waste that does not satisfy LDR treatment standards.

Additional site-specific LDR variance requests may be made in the future. Variance requests are being contemplated for waste in the MLLW-07, MLLW-08, and the HSTF Treatability Groups.

## 4.4 KEY STORAGE ASSUMPTIONS

Key assumptions related to storage, inventory, and generation information are addressed in Section 2.12 of the LSDSs (Appendix B).

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# 5.0 WASTE RELEASES FROM STORAGE UNITS

Known waste releases from mixed waste storage units into the environment are herein reported, whether or not the release was cleaned up. The only reported waste releases from storage to the environment have occurred from the SST System. Table 5-1 lists the tank farm designations and locations of the SST and the number of tanks in each farm. No releases have been documented during this reporting period (CY 2014).

Table 5-1. Single-Shell Tank System.[1]

| 200 East Area | | 200 West Area | |
|---|---|---|---|
| **Farm** | **Number of Tanks** | **Farm** | **Number of Tanks** |
| A | 6 | S | 12 |
| AX | 4 | SX | 15 |
| B | 16 | T | 16 |
| BX | 12 | TX | 18 |
| BY | 12 | TY | 6 |
| C | 16 | U | 16 |

[1] The capacity of the tanks ranges from 210 $m^3$ to 3,800 $m^3$.

These SST systems received waste between 1944 and 1980. The waste was generated by the processing of spent nuclear fuel to recover plutonium, uranium, and neptunium and by various fission product recovery campaigns that resulted in waste comprised of radioactive and chemically hazardous constituents. Only water (used to cool the waste, for retrieval operations, and for maintenance activities under controlled conditions) has been added to the SSTs since 1980. All SST System Waste Management Areas (WMA) have been assessed, and in many cases have been reassessed to develop waste release inventory estimates for chemicals and radionuclides released to the vadose zone.

The SST WMA waste release assessment estimates show new assessments that some of the released volumes are likely less than originally reported; others could be greater. HNF-EP-0182, *Waste Tank Summary Report for the Month Ending November 30, 2014*, Revision 323, reports the most recent assessment of leaked volumes. Furthermore, the SST WMA assessments indicate that there are fewer tanks that lost integrity (assumed leakers) than previously identified. More of the waste released to the environment was determined to be due to ancillary equipment failures (e.g., pipelines, diversion boxes, and tank overfill) than what was previously reported.

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# 6.0 HANFORD SITE MIXED WASTE MINIMIZATION PROGRAM DESCRIPTION

The *Hanford Site Pollution Prevention and Waste Minimization Program Plan* (HNF-46952) provides guidance for Hanford Site contractors to prevent pollution from entering the environment, to conserve resources and energy, and to reduce the quantity and toxicity of hazardous, radioactive, mixed, and sanitary waste from all Hanford Site operations and cleanup activities. The program plan reflects the national and local waste minimization and pollution prevention goals and policies. The plan represents an ongoing effort to ensure Pollution Prevention/Waste Minimization (P2/WMin) is part of the Hanford Site operating philosophy and is included in contractor environmental management systems. In accordance with these policies, a hierarchical approach to environmental management has been adopted and is applied to all waste generating activities. Waste minimization through source reduction is the first priority in the Program Plan, followed by environmentally safe recycling. Treatment, which includes some segregation, to reduce the quantity, toxicity, and mobility of waste is considered only when source reduction or recycling/reuse is not possible or practical. The final option is environmentally safe disposal.

The program plan provides guidance to contractor generator groups for developing and maintaining documentation of P2/WMin program activities intended to demonstrate generator compliance with DOE requirements as well as applicable regulations.

The program plan includes the following required elements:

- Incorporation of P2/WMin into environmental management systems
- Establishing P2/WMin goals
- Performance measures
- P2/WMin methods
- Incorporation of P2/WMin into the work process
- Waste minimization assessments and evaluations
- Sustainable design
- Pollution prevention awareness programs
- Purchase of environmentally preferable products and services
- Pollution prevention outreach and public involvement
- Pollution prevention tracking systems
- Pollution prevention reporting.

The Hanford Site contractors implement these techniques individually in accordance with their internal waste minimization program. For further information for each waste, refer to LSDSs (Appendix B).

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# 7.0 CHARACTERIZATION AND TREATMENT PLAN INTRODUCTION

Sections 7.0 through 15.0 of the LDR report discuss characterization, treatment and disposal actions, and plans for managing mixed waste on the Hanford Site. This chapter briefly describes the development process for the treatment plan contained in this report and identifies other documents that can be consulted for additional information concerning the Hanford Site and expected waste treatment activities.

## 7.1 SITE TREATMENT PLAN ACTIVITIES

The overall information needs and relationships for the report are shown in Figure 7-1. Initial activities include identifying waste streams and available and needed characterization data associated with the streams, and defining the regulatory treatment requirements. The treatment requirements define the treatment categories and technologies needed for each waste type. The physical, chemical, and radiological characteristics of the waste determine the treatability group in which the waste is included. Hanford Site dangerous waste management units and available commercial processes for treating the mixed waste also are identified along with their capabilities. Knowing the processes for the treatment capabilities and the treatment requirements for each treatability group, the treatability group can be assigned to either existing treatment capacity or to future processes. For the existing and future processes, Hanford Site cost, schedule, and integration planning will be consistent with the *Hanford Federal Facility Agreement and Constant Order (Tri-Party Agreement), Legal Agreement, Part FIVE, Article XLVIII Cost, Schedule, Scope Integration, Planning and Reporting* (specifically paragraphs 148 & 149).

## 7.2 RELATIONSHIP TO OTHER MAJOR U.S. DEPARTMENT OF ENERGY AND HANFORD SITE ACTIVITIES AND DOCUMENTS

The characterization and treatment plan contained in this report is influenced by numerous Hanford Site activities. Some of the activities are identified in the following documents. Additional details can be obtained from the referenced documents concerning additional information on waste stream characterization and evaluation of alternatives, and identify the likely effects of managing the mixed waste on the Hanford Site. These documents include the following:

- *Hanford Federal Facility Agreement and Consent Order* (Ecology et al. 2007). This report is submitted pursuant to TPA Milestone M-026-01Y. The Tri-Party Agreement also contains many treatment and characterization milestones.

- *Final Environmental Impact Statement Disposal of Hanford Defense High-Level Transuranic and Tank Wastes* (DOE/EIS-0113). This 1987 environmental impact statement (EIS) discussed mixed waste treatment and disposal options for the Hanford Site.

- *Tank Waste Remediation System, Hanford Site, Richland, Washington, Final Environmental Impact Statement* (DOE/EIS-0189). This EIS and its associated ROD provide details on the alternative treatments for HLW.

- *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE/EIS-0200-F). This EIS and its associated RODs provide the overall evaluation of treatment and disposal alternatives for all the DOE sites.

- *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington* (DOE/EIS-0391). This EIS and its associated ROD include environmental impact analyses of disposal of Hanford's waste and other DOE site's low-level waste and MLLW. DOE/EIS-0391 supersedes and updates DOE/EIS-0189 and the *Final Hanford Site Solid (Radioactive and Hazardous) Waste Program Environmental Impact Statement* (DOE/EIS-0286).

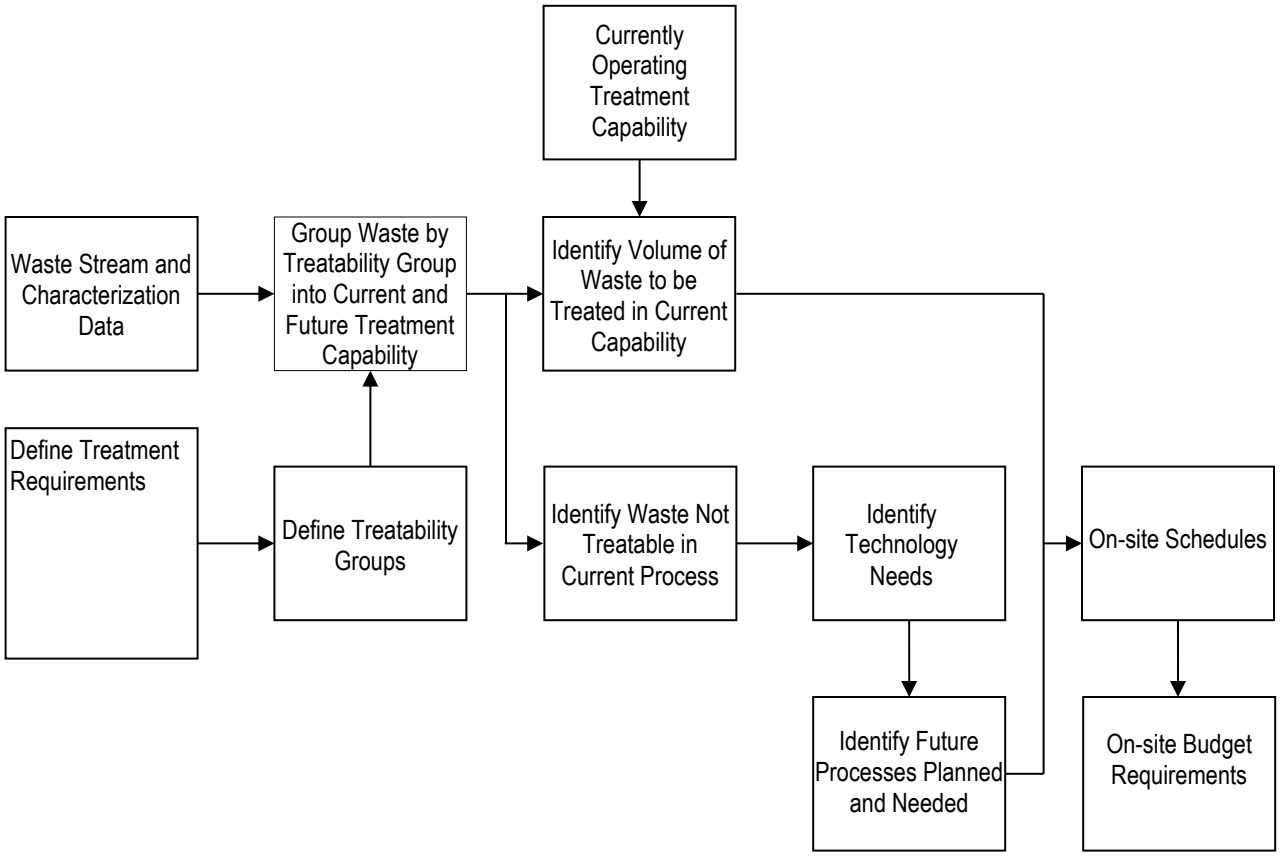
- *Solid Waste Integrated Forecast Technical (SWIFT) Report* (HNF-EP-0918). This report provides the waste generation volume forecast.

- *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement, Hanford Site, Richland, Washington* (DOE/EIS-0222-F). This EIS and its associated RODs evaluate the potential environmental impacts associated with implementing a comprehensive land-use plan for at least the next 50 years. DOE issued an Amended ROD (73 FR 55824, 2008, "Amended Record of Decision for the Hanford Comprehensive Land-Use Plan Environmental Impact Statement") clarifying land use policies and procedures, maintaining current land use designations for waste management activities.

- *Final Environmental Assessment for Relocation and Storage of Isotopic Heat Sources, Hanford Site, Richland, Washington* (DOE/EA-1211). This Environmental Assessment (EA) evaluates the environmental impacts associated with the proposal for relocation and storage of the isotopic heat sources at the DOE Hanford Site in Richland, Washington.

- *Final Environmental Assessment Inert/Demolition Waste Landfill (Pit 9), Hanford Site, Richland, Washington* (DOE/EA-0983). This EA evaluates the environmental impacts associated with the proposal to utilize an existing alluvial gravel pit, Pit 9, as an inert/demolition waste landfill.

Figure 7-1. Outline of Activities to Complete Treatment Plan.



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# 8.0 WASTE STREAMS AND TREATABILITY GROUPS

Each waste treatability group is or will be assigned to a specific treatment process. These assignments are based on the treatment and/or characterization requirements of the treatability group and the treatment process capability. For a discussion on the organization of treatability groups, refer to Appendix B. Figures 8-1, 8-2, and 8-3 summarize the layout of the treatability groups and identify where each group is expected to be treated. The upper levels of the chart show the waste type (e.g., MLLW) and whether or not the treatment capacity exists. The information is presented first for existing processes, then for planned processes, and finally for treatability groups for which further characterization is required to determine the treatment process or for which a treatment technology has not been selected.

The figures also indicate the characterization needs for the waste. Waste to be treated under existing processes typically is characterized sufficiently to designate the waste and to ensure that the waste is categorized correctly and safely stored. Any further characterization of this waste that must be done is planned as part of the treatment preparation. Waste to be treated under planned processes and processes not yet defined is characterized sufficiently to know the designation and is safely stored. Treatment is not planned for waste requiring processes not yet defined; however, additional characterization might occur as part of the design and development of the proposed treatment units.

The schedule and means for reporting waste characterization data are outlined in Section 9.6 of the Tri-Party Agreement Action Plan. This section states that DOE will make available to Ecology and EPA all relevant electronic data and databases.

Figure 8-1. Correlation Between Mixed Low-Level Wastes and Treatment Facilities.

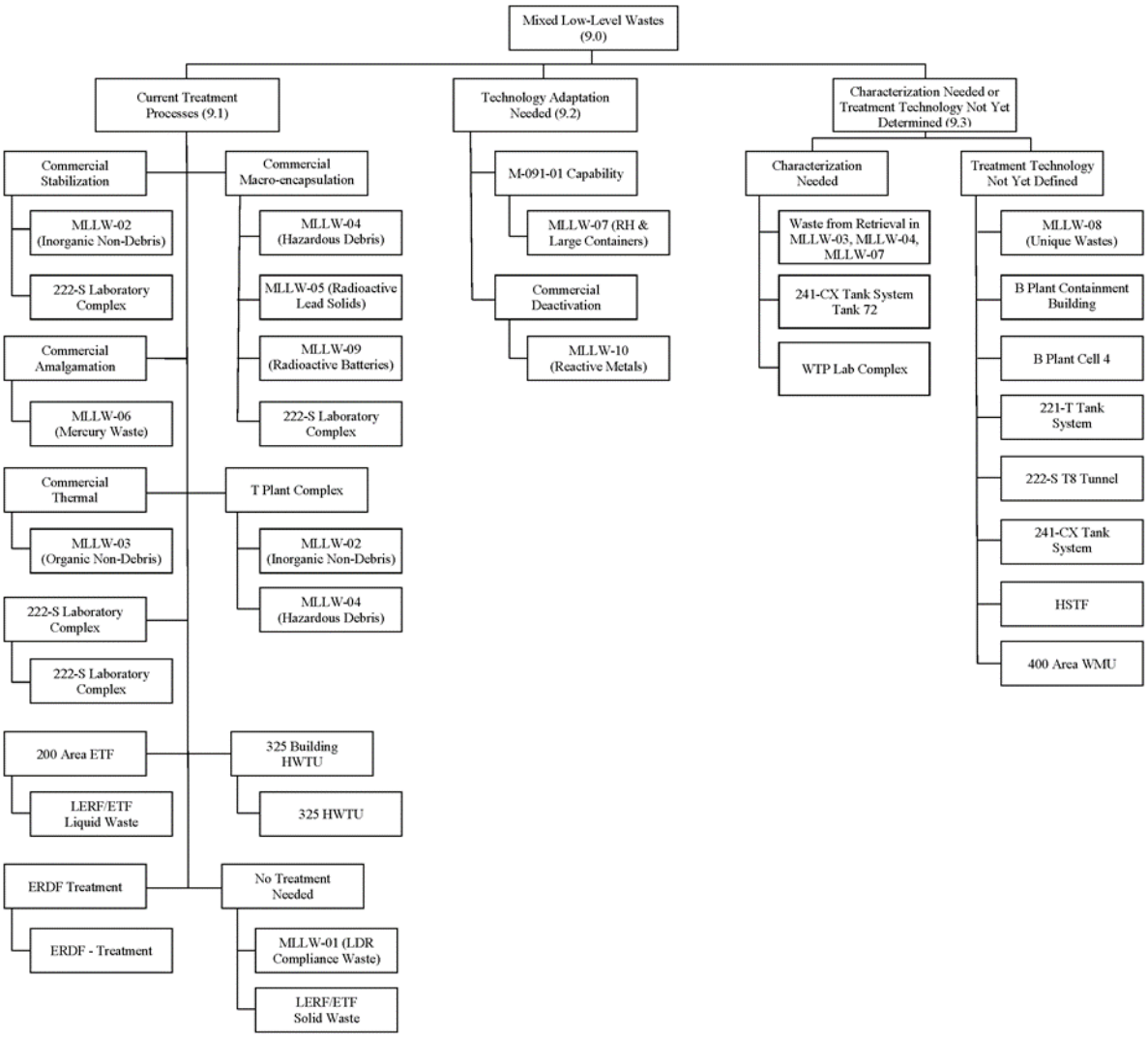


Figure 8-2. Correlation Between Transuranic Wastes and Treatment Facilities.

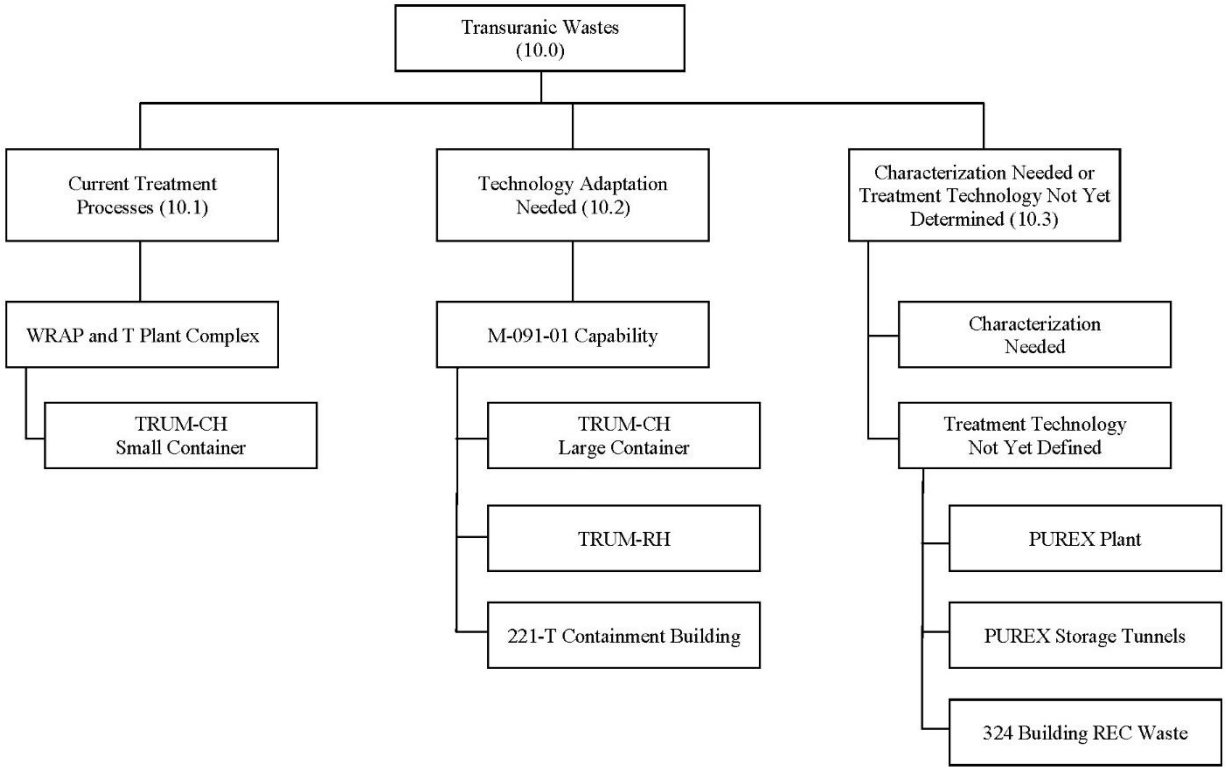
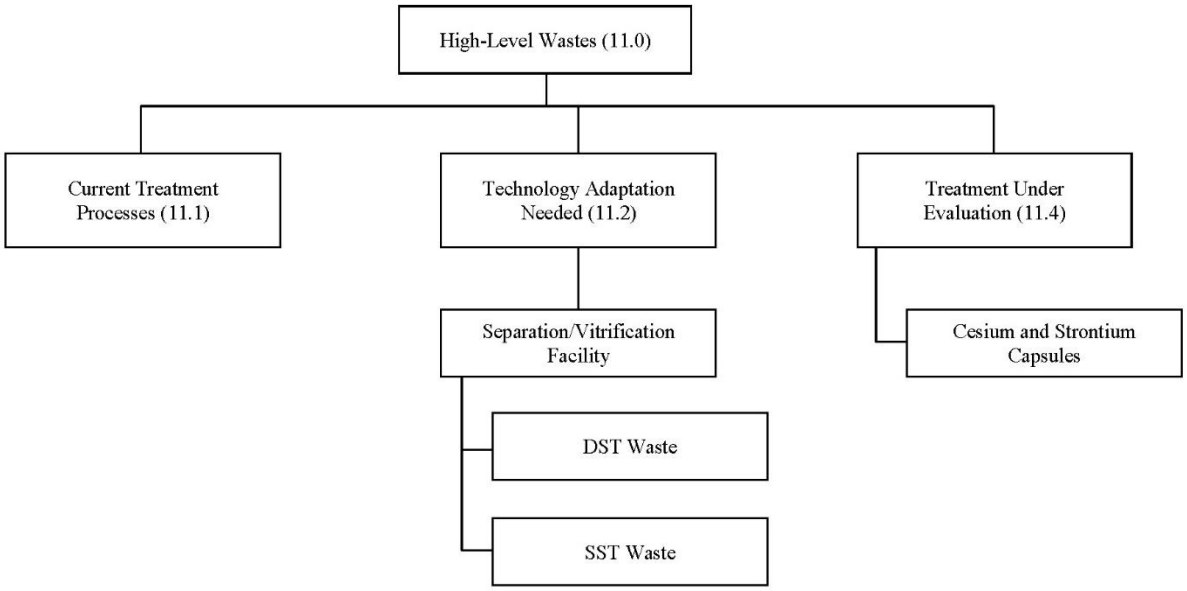



Figure 8-3. Correlation Between High-Level Wastes and Treatment Facilities.



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# 9.0 MIXED LOW-LEVEL WASTE STREAMS

Disposition maps shown in Figures 9-1 and 9-2 present an overview of the planned treatment and disposal of MLLW streams. Figure 9-1 shows the major waste treatability groups and the associated treatment processes (Section 9.1) with existing capabilities. Figure 9-2 shows a flowsheet for the treatability groups contained in the adaptation-needed category (Section 9.2). Because the treatment plan for the remaining MLLW treatability groups is not well developed, a flowsheet for these groups is not included. As noted in Figure 9-1, some treatability groups (MLLW-02, -04) could be treated under more than one process. These treatability groups also are shown in multiple locations in Figure 8-1.

Figure 9-1. Disposition Map for Mixed Low-Level Waste Current Treatment Processes.

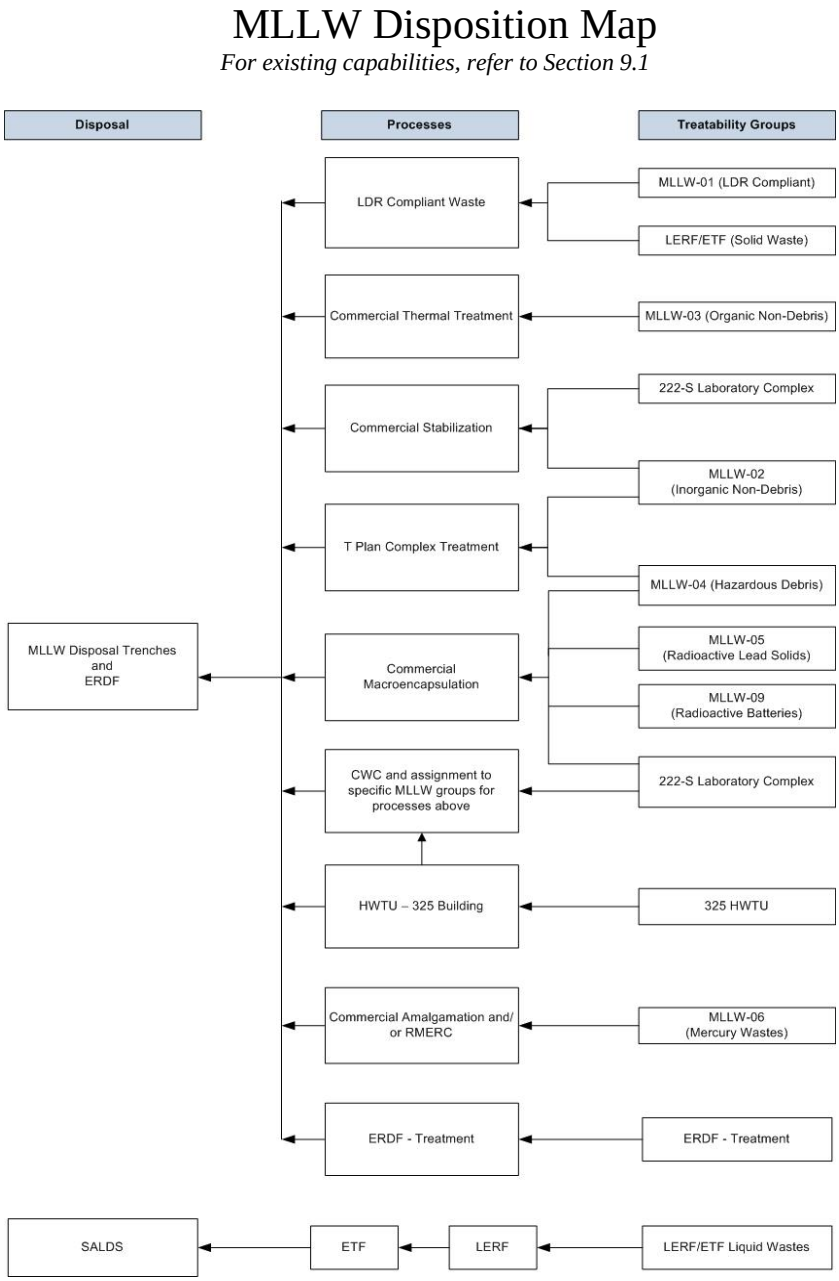
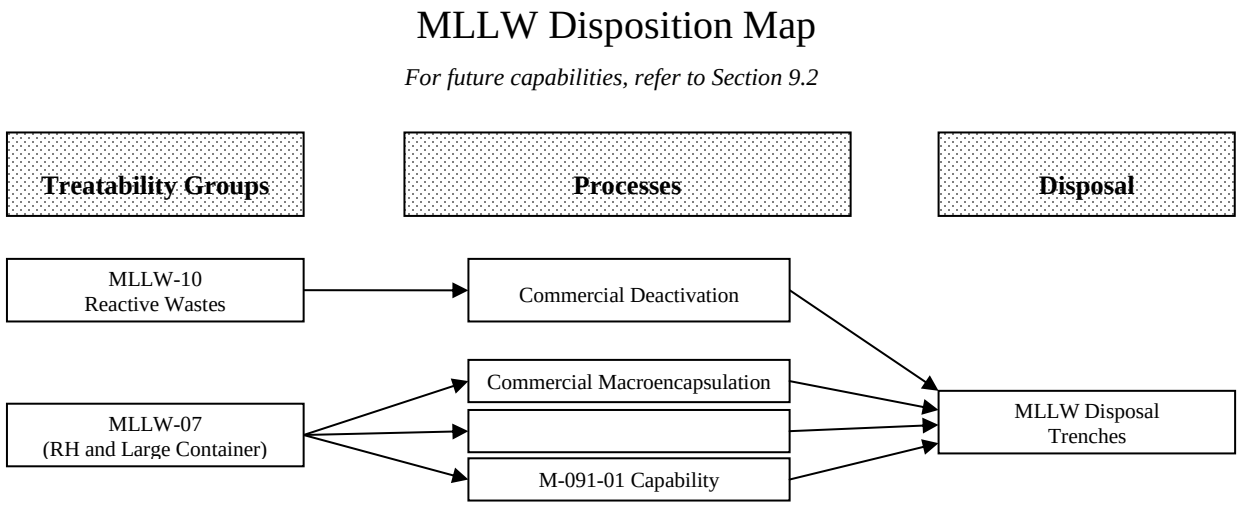


Figure 9-2. Disposition Map for Treatability Groups Needing Facilities Adapted to Allow Waste Treatment.




## 9.1 MIXED WASTE STREAMS FOR WHICH TREATMENT TECHNOLOGY EXISTS

This section generally describes each treatment process and provides information concerning the processes identified in Figure 9-1. This section also provides information on which waste treatability groups will be treated by each process, including the volume of waste treated during the past year and the anticipated volume of waste to be treated in CYs 2015 through 2019.

Tables in this section describe treatment processes related to M-091 milestones. Waste streams addressed in the M-091 milestones include: MLLW-02, MLLW-03, MLLW-04, MLLW-05, MLLW-06, MLLW-07, MLLW-08, MLLW-09, and MLLW-10.

Sufficient capacity exists or will exist, to treat this volume of MLLW using the identified treatment process and alternatives: commercial stabilization, commercial thermal treatment, on-site treatment at T Plant Complex, etc. However, the exact distribution of treatment among these treatment processes has not been finalized. The inventories and treatment requirements identified in the LDR Report will be used as inputs for the distribution of treatment among these options.

Through the use of multiple commercial treatment contracts, DOE waste generators have the opportunity to participate in this nationwide privatization initiative for treating and disposing of legacy and newly generated MLLW. Contracts have been awarded to Perma-Fix Northwest, Materials and Energy Corporation located in Tennessee, Perma-Fix DSSI located in Tennessee, and EnergySolutions Clive Site located in Utah (EnergySolutions contract with CHPRC concluded in 2012). These contracts give the Hanford Site multiple options with unique capabilities for treating a wide range of MLLW streams.

### 9.1.1 Commercial Stabilization

MLLW that does not have a significant organic content and is not debris waste is expected to be stabilized. The stabilization process will be conducted in RCRA permitted commercial facilities. Waste currently in storage has been characterized sufficiently for proper designation and storage on the Hanford Site. Before waste treatment, the TSD record information will be reviewed and corrected as necessary by qualified Waste Management Representatives based on available historical records and acceptable knowledge.

Stabilization is a treatment technology for non-debris waste that contains heavy metals or other specific hazardous components. Most non-debris waste will be solid, but stabilization could be used to neutralize and solidify some liquid wastes. Stabilization immobilizes the hazardous component(s) by fixation into low-solubility materials, and by encapsulation to reduce the potential for future releases. Usually, stabilization is accomplished by mixing the waste with Portland cement or pozzolanic materials at a preselected ratio, but stabilization also can include mixing with reducing agents or polymer materials. This treatment prepares the waste to meet land disposal requirements. Existing commercial treatment contracts neither include all of the waste types nor all of the forecasted volumes. Therefore, additional contracts are expected to be placed with commercial treatment contractors. Table 9-1 contains information on the commercial stabilization process, using Perma-Fix Northwest as a representative example for regulatory status information.

Table 9-1. Commercial Stabilization Process Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability group that the process is expected to treat | MLLW-02, Inorganic Non-Debris, 222-S Laboratory Complex |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (commercial stabilization, T Plant Complex.) |
| Perma-Fix regulatory status information: | |
| - Date of RCRA permit | 1999 |
| - Date treatment contract established | 1995 |
| - Date facility construction started | 1999 |
| - Date system testing started | 1999 |
| - Date operations begin | 1999 |
| - Current regulatory status | Permitted, some operations temporarily suspended. |

Table 9-1. Commercial Stabilization Process Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Budget status for continued operations | Funding has been requested in the Fiscal Year (FY) 2015 budget and currently is planned to be requested through FY 2019. |
| Planned completion of treatment using this process | The baseline plan anticipates that the majority of this treatability group will be processed using commercial facilities. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future. |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | The T Plant Complex has stabilization capability and could be used to supplement commercial capacity. |

### 9.1.2 Commercial Macroencapsulation

Macroencapsulation consists of applying a surface coating of polymeric organics or using a jacket of inert inorganic materials (e.g., cement) to substantially reduce surface exposure to potential leaching media. During CY 2014, waste was treated under commercial contracts near the Hanford Site. Existing contracts do not include all of the waste streams. Therefore, it is expected that some waste will be treated on the Hanford Site, or that additional commercial contracts will be competitively awarded as required. For macroencapsulation of hazardous debris under treatability group MLLW-04, pretreatment processes can include sorting, cutting, shearing, compaction, and super compaction. For MLLW-05, Radioactive Lead Solids, decontaminated lead can be recycled or reused. Lead waste can also be encapsulated by a cement jacket in accordance with the definition of MACRO in 40 CFR 268.42. For MLLW-09, Radioactive Batteries, the EPA promulgated a new treatment standard authorizing treatment in accordance with the debris macroencapsulation standards per 40 CFR 268.45. Ecology has also adopted this treatment standard. Table 9-2 contains information concerning the commercial macroencapsulation process.

Macroencapsulation currently is being used to treat hazardous debris containing O/C constituents that would otherwise require thermal treatment in accordance with the state-only LDR for O/C. The Hanford Site is allowed to treat, and will continue to treat, the MLLW-04 Hazardous debris using macroencapsulation in accordance with a site-wide 1,609 kilometer (1,000 mile) inapplicability certification for the Washington State O/C LDR per WAC 173-303-140(4)(d)(iii) (99-EAP-055, “Certification to Allow Land Disposal of Hanford Organic/Carbonaceous Mixed Waste” [Rasmussen]).

Other immobilization treatment technologies could be used to treat some of the Hanford Site MLLW debris.

Table 9-2. Commercial Macroencapsulation Process Summary.

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | MLLW-04 Hazardous Debris; MLLW-05, Radioactive Lead Solids; and MLLW-09, Radioactive Batteries, 222-S Laboratory Complex |
| Tri-Party Agreement milestones related to these treatability groups | M-091-42 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (e.g., commercial stabilization, commercial thermal treatment, on-site treatment at T Plant Complex, etc.). |
| Perma-Fix regulatory status information: | |
| - Date of RCRA permit | 1999 |
| - Date treatment contract established | 1995 |
| - Date facility construction started | 1999 |
| - Date system testing started | 1999 |
| - Date operations begin | 1999 |
| - Current regulatory status | Permitted |
| Budget status for continued operations | Funding has been requested in the FY 2015 budget and currently is planned to be requested through FY 2019. |
| Planned completion of treatment using this facility | The baseline plan anticipates that the majority of these treatability groups will be processed using commercial treatment. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of the Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future. |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | The T Plant Complex has macroencapsulation capability and could be used to supplement commercial facilities. Other commercial facilities also could be used in the future. |

### 9.1.3 Thermal Treatment of Organics

MLLW containing organic materials will be treated thermally. The material could be debris waste, other solid waste, or liquid waste. Waste currently is properly characterized and designated for storage on the Hanford Site. Before waste treatment, the existing TSD record information will be reviewed and corrected as necessary by qualified Waste Management Representatives based on available historical records and acceptable knowledge. The thermal

treatment process destroys organic materials by oxidation, combustion, and/or pyrolysis. Additional commercial processing contracts will be competitively awarded as needed. Table 9-3 contains information concerning the commercial thermal treatment process.

Table 9-3. Commercial Thermal Treatment Process Summary.

| Type of Information | Information |
|---|---|
| Treatability groups the process is expected to treat | MLLW-03, Organic Non-Debris |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (commercial thermal treatment). |
| Budget status for continued operations | Funding has been requested in the FY 2015 budget and currently is planned to be requested through the FY 2019 as necessary. |
| Planned completion of treatment using commercial facilities | The baseline plan anticipates that the majority of this treatability group will be processed with commercial contracts because other DOE thermal treatment capability is not available. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future. |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | None are currently identified. |

### 9.1.4 T Plant Complex

Commercial treatment of waste by stabilization and macroencapsulation to meet land disposal requirements could be supplemented or replaced by capabilities that exist, and could be developed within the T Plant Complex. The T Plant Complex canyon has been used to open, inspect, segregate, and repackage mixed waste. The 2706-T Building within the T Plant Complex is a decontamination area with the capability to open, sample, sort, treat, and repackage boxes and drums of CH mixed waste. Some of the waste will be inspected in the 2706-T Building prior to off-site shipment for treatment at commercial treatment facilities. Also at the 2706-T Building, some treated waste will be inspected after return shipment from the off-site commercial treatment facilities. Table 9-4 contains information on the T Plant Complex.

Table 9-4. T Plant Complex Treatment Activities Summary.

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | MLLW-02, Inorganic Non-Debris, and MLLW-04 Hazardous Debris |
| Tri-Party Agreement milestones related to these treatability groups | M-091-42 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Sufficient capacity exists. |
| Regulatory status information: | |
| - Date of RCRA permit application | T Plant Complex submitted in 2002 to Ecology (DOE/RL-95-36, *Hanford Facility Dangerous Waste Permit Application, T Plant Complex*) |
| - Date treatment contract established | N/A |
| - Date facility construction started | 1943 |
| - Date system testing started | N/A |
| - Date operations begin | Mixed waste operations under interim status standards, Part A Permit Application, began August 19, 1987. |
| - Current regulatory status | Operating under interim status to a current Part A Permit Application. |
| Budget status for continued operations | Funding has been requested in the FY 2015 budget and currently is planned to be requested through FY 2019 as necessary. |
| Planned completion of treatment using this facility | The baseline plan anticipates that the majority of this treatability group will be processed using commercial treatment; however, significant treatment activities have occurred and could occur at T Plant Complex. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of the Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future. |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | The primary treatment processes are expected to be the commercial treatment facilities described in Sections 9.1.1 and 9.1.2. |

### 9.1.5 Environmental Restoration Disposal Facility Treatment

Waste amenable for treatment through grouting or macroencapsulation is performed at ERDF. Specific information on the ERDF treatment activities is included in Table 9-5.

Table 9-5. Environmental Restoration Disposal Facility Treatment Activities Summary.

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | ERDF – Treatment |
| Tri-Party Agreement milestones related to this treatability group | None. Treated as generated in compliance with regulatory timeframe; no compliance agreement required. |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | N/A |
| Regulatory status information: | |
| - Date of RCRA permit application | N/A |
| - Date facility construction started | N/A |
| - Date operations begin | 1996 |
| - Current regulatory status | Facility is operating under a CERCLA ROD issued in 1995, as amended several times. |
| Budget status for continued operations | Funding is included as part of the River Corridor Closure Project through September 30, 2015. |
| Planned completion of treatment using this facility | 2035 |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | Commercial macroencapsulation or other commercial treatment methods could be used for some waste at significantly increased costs. |

### 9.1.6 200 Area Effluent Treatment Facility and Liquid Effluent Retention Facility Liquid Wastes

Numerous Hanford Site activities generate low-level aqueous waste. Radioactive effluents are generated primarily in the 200 Areas. The LERF consists of three RCRA-compliant surface impoundments for storing low-level aqueous waste. The LERF provides equalization of the flow and pH of the feed to the ETF. Each LERF basin has a capacity of 30 million L (7.8 million gal). A truck unloading station allows receipt of liquid effluents from other projects for transfer either to the LERF for storage or directly to the ETF for treatment.

Liquid effluents stored in LERF are treated in ETF to remove toxic metals, radionuclides, and ammonia, and to destroy organics. The ETF treatment process constitutes BDAT and includes pH adjustment, filtration, ultraviolet light/peroxide destruction of organics, reverse osmosis, degasification, and ion exchange. Storage tanks allow for hold-up of the treated effluent to verify that the waste has been treated to meet concentration levels in the permit before discharge. The treated effluent is discharged under WAC 173-216, "State Waste Discharge Permit Program," to a state-approved land disposal site north of the 200 West Area after being delisted (40 CFR 261, "Identification and Listing of Hazardous Waste," Appendix IX, Table 2). Table 9-6 contains information on ETF.

Table 9-6. 200 Area Effluent Treatment Facility Summary.

| Type of Information | Information |
|---|---|
| Treatability Groups that the process is expected to treat | LERF/ETF Liquid Waste |
| Tri-Party Agreement milestones related to this treatability group | M-026-07D, Evaluation of Tritium Treatment Technology to EPA and Ecology, March 31, 2019 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | 210,000 $m^3$ per year |
| Regulatory status information: | |
| - Date of RCRA permit | 1997 (final status) |
| - Date facility construction started | 1992 |
| - Date system testing started | 1994 |
| - Date operations begin | 1995 |
| - Current regulatory status | Operating under a final status RCRA permit. |
| Budget status for continued operations | Funded for minimum safe operations. |
| Planned completion of treatment using this facility | 2032 |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | None |

### 9.1.7 325 Hazardous Waste Treatment Units

The 325 HWTUs are a RCRA permitted TSD unit used to perform tank- and bench-scale treatment of mixed waste and to investigate other treatment technologies. The 325 HWTUs are located in the 325 Building in the 300 Area and are intended to treat small volumes of mixed waste to meet waste acceptance criteria for storage or disposal. Wastes that are not LDR compliant for disposal are treated at 325 HWTUs or shipped off-site for commercial treatment. Wastes that meet land disposal requirements are sent to the LLBG or ERDF. Table 9-7 contains information on the 325 HWTUs.

Table 9-7. 325 Hazardous Waste Treatment Units Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | 325 HWTU |
| Tri-Party Agreement milestones related to this treatability group | None. The 325 Building HWTU is a permitted RCRA TSD group. |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | 14 $m^3$/day |

Table 9-7. 325 Hazardous Waste Treatment Units Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Regulatory status information: | |
| - Date of RCRA permit (final status) | 1998 |
| - Date facility construction started | 1952 |
| - Date system testing started | 1991 |
| - Date operations begin | 1991 |
| - Current regulatory status | Final permit |
| Budget status for continued operations | Funding has been included in the current eight-year plan. |
| Planned completion of treatment using this facility | 2028 |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | Commercial treatment facilities could have capacity to treat some of the waste streams. |

### 9.1.8 222-S Laboratory Complex

The 222-S Laboratory Complex is a RCRA permitted TSD Group used to manage waste generated from 222-S Laboratory Complex operations and other Tank Operations Contractor wastes that cannot be sent off-site for treatment within the 90-day accumulation time frame. The storage locations reported in this treatability group include the three container storage units identified on the 222-S Laboratory Complex Part A Permit Application. The 222-S Laboratory Complex is located in the 200 West Area. Waste that is not LDR compliant for disposal is sent off-site for treatment. Waste that meets disposal requirements is sent to the LLBG. Table 9-8 contains information on the 222-S Laboratory Complex.

Table 9-8. 222-S Laboratory Complex Summary. (2 sheets)

| Type Of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | 222-S Laboratory Complex |
| Tri-Party Agreement milestones related to this treatability group | None |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | None at the 222-S Laboratory Complex. |
| Regulatory status information: | |
| - Date of RCRA permit application | August 2000, October 2000, March 2001 and September 2006 (DOE/RL-91-27, *Hanford Facility Permit Application, 222-S Dangerous and Mixed Waste Treatment, Storage, and Disposal Unit*) |
| - Date facility construction started | 1950 |
| - Date system testing started | 1951 |

Table 9-8. 222-S Laboratory Complex Summary. (2 sheets)

| Type Of Information | Information |
|---|---|
| - Date operations begin | 1951 |
| - Current regulatory status | Operating to interim status standards |
| Budget status for continued operations | Funding has been included in the current eight-year plan. |
| Planned completion of treatment of waste from this facility. | 2035 |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | Commercial treatment facilities will have capacity to treat the waste streams. |

### 9.1.9 Commercial Amalgamation and/or Retorting or Roasting to Recover Mercury (RMERC)

MLLW-06 Mercury waste requires amalgamation as the BDAT treatment. Mercury can be present as a small-percentage waste component, but also can be present in high concentrations. Commercial capabilities are available when the wastes are generated. Table 9-9 contains information on commercial amalgamation.

Table 9-9. Commercial Amalgamation Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability group that the process is expected to treat | MLLW-06, Elemental Mercury |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Technology needed for facility | Commercial amalgamation (also might require RMERC technology) |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Treatment capacity to support the Hanford Site needs is expected to be <10 $m^3$ per year. The current inventory is zero. |
| Regulatory status information: | |
| - Design reports | N/A |
| - Submittal of permit application | N/A |
| - Date design and construction contract to be awarded | N/A |
| - Date facility construction begins | N/A |
| - Date operations begin | 2005 |
| - Current regulatory status | N/A |
| Budget status for design, construction, and operations | Baseline budgets assume commercial treatment will continue. |

Table 9-9. Commercial Amalgamation Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Estimated date of completion of treatment with the assumption of available funding. | N/A |
| Alternatives for treatment of this waste | Alternatives are under evaluation. |

### 9.1.10 Waste That Currently Meets Disposal Requirements

Some mixed wastes do not require treatment to meet LDR requirements prior to disposal. Based on an agreement with Ecology on February 6, 2003, waste that is directly disposed is excluded from the LDR report. The largest volume of mixed waste that meets disposal requirements is generated by the environmental restoration activities conducted under CERCLA that is transferred directly to ERDF for disposal. The MLLW-01, LDR Compliant, and LERF/ETF Solid Waste treatability groups include wastes that do not require treatment to meet LDR standards prior to disposal. Most of these wastes will be disposed in the LLBG or ERDF, depending on waste acceptance criteria. While MLLW-01, LDR Compliant Waste does not require treatment, it is stored at the CWC. Most of the MLLW-01 waste stream will be disposed of in the LLBG and ERDF. However, a fraction of the waste in the MLLW-01 treatability group does not meet DOE requirements for direct disposal, and will be processed to meet disposal requirements (e.g., filling of voids). LERF/ETF solid waste is stored at ETF and wastes not meeting all disposal requirements are stored until processed to meet disposal requirements. Section 9.5 summarizes the information for the ERDF and LLBG capabilities.

## 9.2 MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS BUT NEEDS ADAPTATION

As discussed in the following sections, processing is required for the RH waste and large container waste currently on the Hanford Site and waste expected to be generated in the future.

### 9.2.1 M-091-01 Capability

Current capabilities do not provide for the disposition of certain RH MLLW and certain large-container CH MLLW. Alternative approaches are currently planned for evaluation based on the Tri-Party Agreement Milestone M-091-01. Progress towards evaluating and/or establishing the capability has been reported under the PMP required by M-091-03. Table 9-10 contains information on the M-091-01 Capability for MLLW.

Table 9-10. Summary of the M-091-01 Capability.

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | MLLW-07, RH and Large Container |
| Tri-Party Agreement milestones related to this treatability group | M-091-43 and M-091-01 |
| Technology needed | Technology needs for processing this waste are planned for evaluation. |

Table 9-10. Summary of the M-091-01 Capability.

| Type of Information | Information |
|---|---|
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Will be developed under M-091 series. |
| Regulatory status information: | |
| - Design reports | To be complete per TPA Milestone M-091-01A and -01B |
| - Submittal of RCRA permit application | To be determined during design, as applicable. |
| - Date operations begin | N/A |
| - Current regulatory status | N/A |
| Budget status for design, construction, and operations | Funding will be requested to support the M-091 milestones resulting from the current negotiations. |
| Alternatives for treating this waste | Under evaluation |

### 9.2.2 Commercial Reactive Metal Deactivation

Waste in the MLLW-10 treatability group, Reactive Metals, requires deactivation prior to land disposal. Currently, there is no MLLW-10 waste in storage and none planned to be generated in the next five years. Table 9-11 contains information on commercial reactive metal deactivation.

Table 9-11. Commercial Reactive Metal Deactivation Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability group that the process is expected to treat | MLLW-10, Reactive Metals |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Technology needed for facility | Commercial deactivation |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | N/A |
| Treatment capacity | N/A |
| Regulatory status information: | |
| - Design reports | N/A |
| - Submittal of permit application | N/A |
| - Date design and construction contract to be awarded | N/A |
| - Date facility construction begins | N/A |
| - Date operations begin | 2005 |
| - Current regulatory status | N/A |
| Budget status for design, construction, and operations | N/A |
| Estimated date of completion of treatment with the assumption of available funding | N/A |

Table 9-11. Commercial Reactive Metal Deactivation Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Alternatives for treatment of this waste | Not anticipated |

## 9.3 MIXED WASTE TREATABILITY GROUPS REQUIRING FURTHER CHARACTERIZATION, OR FOR WHICH TECHNOLOGY DOES NOT EXIST OR A TECHNOLOGY ASSESSMENT HAS NOT BEEN DONE

Treatment planning for these waste treatability groups are incomplete and evaluations continue based on available treatment technologies.

### 9.3.1 Treatability Groups for which Further Characterization is Needed

Waste in the MLLW-03, MLLW-04, and MLLW-07 treatability groups from retrieval operations at the Hanford Site may contain non-conforming waste items once the treatment facility opens the packages for receipt inspections and/or treatment. The non-conforming waste items are characterized and disposed accordingly.

Secondary solid wastes will be generated by WTP as the result of laboratory commissioning activities scheduled to occur during the forecast period of this report. The waste will be transferred to the Tank Farm Operating Contractor (TOC) who will coordinate volume reduction and/or treatment. The TOC will transport treated WTP wastes to a permitted facility for final disposal.

The current baseline of waste requiring additional characterization is characterized in sequence with and near planned treatment and disposal dates. The close coordination of waste characterization schedules with planned treatment and disposal dates has the following benefits:

- Coordination avoids long lag times between characterization and treatment and disposal, minimizing the potential need to re-characterize waste as acceptance, treatment, and disposal criteria evolve.

- Coordination allows for closer matching of characterization efforts with budget constraints.

For other treatability groups, tank waste in the 241-CX Tank System requires characterization. Tank 72, one of the three tanks in this treatability group will be characterized to determine its disposition path.

### 9.3.2 Treatability Groups for Which Treatment Technology Has Not Been Selected

Some waste streams in storage have not had technology assessments assigning treatability groups for existing treatment processes. When the technology assessments for the waste in this category are completed, many of the waste streams can be treated in one of the existing processes. Waste treatability groups for which treatment technologies have not been selected include the following:

- MLLW-08, Unique Waste
- B Plant Cell 4

- B Plant Containment Building
- 241-CX Tank System
- HSTF
- 221-T Tank System

More than one land disposal restriction treatability variance is planned for waste in this category. Wastes in the MLLW-08 Unique Waste and the HSTF treatability groups are expected to be candidates for a treatability variance. The quantity of waste within the MLLW-08 treatability group is relatively small. If a treatability variance is granted by Ecology for the waste, the treatment technology will be in accordance with the approved variance treatment and disposition.

The wastes included in the B Plant Cell 4 and B Plant Containment Building are stored in accordance with interim status technical standards pending completion of closure. No additional waste will be stored in this location. B Plant has been retired from active operation and is in surveillance and maintenance mode pending final disposition which will be addressed using CERCLA remedial action that is coordinated with RCRA closure.

Waste in both the 241-CX Tank System and the HSTF treatability groups will be addressed as part of the closure actions documented in the closure plans prepared for the TSD units.

Information concerning the 221-T Tank System Waste is included in Table 9-12.

Table 9-12. Information for the 221-T Tank System Waste for Which Treatment Technology Assessments Have Not Been Completed.

| Type of Information | Facility Information |
|---|---|
| Treatability group included in this category | 221-T Tank System |
| Tri-Party Agreement milestones related to this treatability group | None |
| Technology needed for facility | None |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Characterization status information: | |
| - Characterization needed defined | Treatment path forward unknown until the characterization activities are performed. This waste might change radioactivity categories from low-level mixed waste to TRUM through evaporation. |
| - Characterization milestones | N/A |
| Treatment status information: | |
| - Treatability testing | N/A |
| - Feasibility analysis and reports | N/A |
| - Bench- and pilot-scale testing reports | N/A |

Table 9-12. Information for the 221-T Tank System Waste for Which Treatment Technology Assessments Have Not Been Completed.

| Type of Information | Facility Information |
|---|---|
| - Research, development, and demonstration projects | N/A |
| - Design reports | N/A |
| - Permitting milestones | T Plant Complex submitted in 2002 to Ecology. |
| - Treatment milestones | None, residues to be handled with canyon disposition, in accordance with letter 01-RCA-192, "Request to Formalize 221-T Tank System Closure Agreement," (Hebdon, 2001). |
| Budget status for testing, development, design, construction, and operations | Priorities within the next five-year window do not include working on this waste group. |
| Estimated completion date for treatment of treatability group with the assumption of available funding | In accordance with approved closure plan. |

## 9.4 RADIONUCLIDE SEPARATION PLANS

For MLLW, the only process that involves extensive separations is aqueous waste treatment at ETF. No separation activities are planned for any other MLLW treatability group.

## 9.5 MIXED WASTE DISPOSAL

MLLW is disposed of in the LLBG mixed waste trenches, ERDF, and Trench 94 of LLBG for defueled naval reactor compartments. The mixed waste trenches and ERDF are discussed in this section. Trench 94 is not included in the scope of this report. Disposal facilities to be used for the disposal of immobilized low-activity waste (ILAW) from the vitrification of HLW are discussed in Section 11.6.

The MLLW shipped for treatment at the EnergySolutions Clive Utah site was also disposed at that site. This is a condition of their permits and license. The EnergySolutions Clive Utah contract with CHPRC concluded in 2012.

### 9.5.1 Low-Level Burial Ground Mixed Waste Trenches

The LLBG mixed waste trenches (218-W-5, Trenches 31 and 34) have been constructed to provide disposal capabilities for a portion of the Hanford Site RCRA mixed waste. Each disposal trench has a capacity of about 24,000 $m^3$ air volume. The LLBG mixed waste trenches are RCRA compliant. The estimated volumes contained in this report show that Trenches 31 and 34 will not be filled during the next five-year period.

### 9.5.2 Environmental Restoration Disposal Facility

ERDF is a landfill authorized under CERCLA that meets the substantive requirements of RCRA. The landfill is used primarily for disposal of environmental restoration waste generated from cleanup activities. ERDF is designed to receive and dispose of low-level radioactive waste or mixed waste generated through remediation and D4 activities on the Hanford Site. Disposal

cells 1 through 4 have been filled since the landfill opened in 1996, and are temporarily capped. Cells 5 through 10 are currently being filled.

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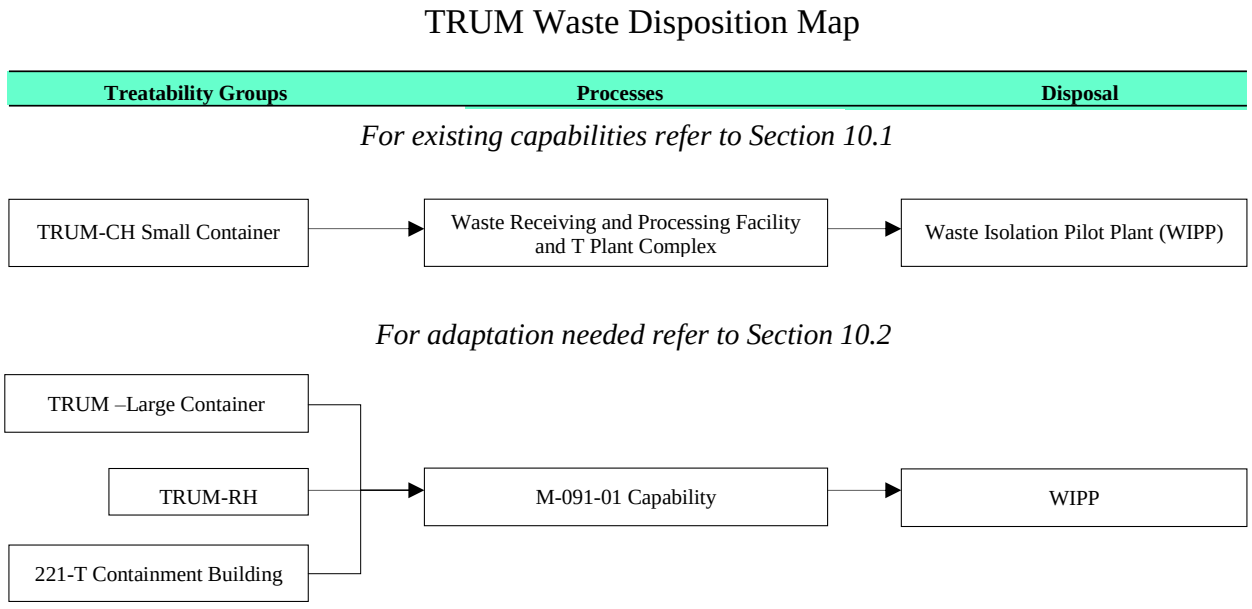
# 10.0 TRANSURANIC MIXED WASTE STREAMS

On the Hanford Site, small container CH TRUM waste is repackaged through the Hanford Site TRU Program. Functions in support of repackaging are conducted predominantly at WRAP and T Plant. Large container TRUM waste and RH TRUM waste are stored mostly within the CWC until such time as repackaging capabilities become available. The disposition map in Figure 10-1 shows an overview of the anticipated processing of TRUM waste treatability groups. This figure shows the major waste treatability groups and the planned process for each group.

Figure 10-1. Site Disposition Map for TRUM Treatability Groups.




## 10.1 TRANSURANIC MIXED WASTE STREAMS FOR WHICH PROCESSING TECHNOLOGY EXISTS

The primary purpose of WRAP and T Plant is to repackage and support certification of small container CH TRUM waste to meet WIPP waste acceptance criteria for disposal. WRAP and T Plant provide capabilities to receive waste, confirm contents of drummed and standard waste boxes, repackage waste, and support certification of waste. WRAP and T Plant currently only process CH TRUM waste in drums or standard waste boxes. Table 10-1 provides information concerning WRAP and T Plant.

Table 10-1. Information Concerning Processes at the Waste Receiving and Processing Facility and T Plant Complex.

| Type of Information | Facility-Specific information |
|---|---|
| Treatability group that the process is expected to treat | TRUM-CH Small Container |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Projected volume of TRUM to be processed between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Permitted capacity is 13 $m^3$/day. |
| Regulatory status information for WRAP: | For T Plant regulatory status, see Table 9-4. |
| - Date of RCRA permit application | June 1999 and settlement agreement in 2002 |
| - Date treatment contract established | N/A |
| - Date facility construction started | Groundbreaking April 1994 |
| - Date system testing started | Acceptance test procedures initiated on February 13, 1996. |
| - Date for commencement of operations | 1997 |
| - Current regulatory status | Operating under interim status standards pursuant to Permit Condition I.A. |
| Budget status for continued operations | Funding has been requested in the FY 2015 budget and currently is planned to be requested through FY 2019. |
| Planned completion of treatment using this process | 2032 |
| Alternative processes that could be used in place of this process or to supplement capacity for this process. | Processes are available at several other DOE locations: Idaho National Laboratory (INL), Savannah River Site (SRS), Los Alamos, and offsite commercially. In addition, repackaging and characterization capabilities have been developed that can be deployed at sites, using temporary rather than permanent installation. |

## 10.2 TRANSURANIC MIXED WASTE TREATABILITY GROUPS FOR WHICH CHARACTERIZATION AND PROCESSING TECHNOLOGIES NEED ADAPTATION

The requirements of M-091-01 are to provide for the processing of RH TRUM and oversize containers of TRUM waste. In addition, based on the latest approved PMP for M-091, a needed capability is anticipated to provide for processing of unique TRUM waste streams such as waste in underground alpha caissons and to address load out of RH shipments. Alternative approaches are currently planned for evaluation based on TPA Milestone M-091-01. Progress toward evaluating and/or establishing the capability has been reported under the PMP required by M-091-03. Table 10-2 provides information for the M-091-01 capability.

Table 10-2. Information for the M-091-01 Capability.

| Type of Information | Information |
|---|---|
| Treatability group that the process is expected to treat | TRUM-CH Large Container; TRUM-RH; 221-T Containment Building |
| Tri-Party Agreement milestones related to these treatability groups | M-091-44 and M-091-01 |
| Technology needed for facility | Remote handling and large container processing technologies |
| Projected volume of TRUM to be processed between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | To be determined by design reports. |
| Regulatory status information: | |
| - Design reports | To be complete per TPA M-091-01A and -01B. |
| - Submittal of permit application | To be determined during design, as applicable. |
| - Date for commencement of operations | To be determined. |
| - Current regulatory status | Not yet permitted; alternatives are under review in accordance with M-091 plans and schedules. |
| Budget status for design, construction, and operations | Funding will be requested to support the M-091 milestones. |
| Estimated date of processing completion of treatability groups with the assumption of available funding. | See M-091-44T. |
| Alternatives for processing of this waste. | Processes are available at another DOE locations: INL and offsite commercially. |

## 10.3 TRANSURANIC MIXED WASTE TREATABILITY GROUPS WITH PROCESSING TECHNOLOGY NOT SELECTED

This section covers treatability groups that do not have a processing method. Before a processing method can be specified for these media, additional technology assessments need to be performed and/or further characterization might need to occur. Once a processing method is specified and before waste treatment, the existing TSD record information will be reviewed and characterization corrections will be made as necessary based on existing acceptable knowledge. Process planning for the following treatability groups continues:

- PUREX Plant
- PUREX Storage Tunnel
- 324 Building REC Waste.

The waste associated with these treatability groups needs to be characterized to meet WIPP waste acceptance criteria. RH equipment and techniques are needed to support characterization for most of the waste.

Waste transfers to certain on-site TSD units are performed in accordance with HNF-EP-0063, *Hanford Site Solid Waste Acceptance Criteria*. This document specifies waste characterization criteria necessary to support proper interim storage and future processing, storage, and/or disposal requirements for TRUM waste.

### 10.3.1 PUREX Storage Tunnels

The PUREX Storage Tunnels are a RCRA-regulated TSD Group and are subject to Hanford Facility RCRA permit conditions. Waste in the PUREX Storage Tunnels treatability group is being stored at a final status miscellaneous unit. Under the Hanford Facility RCRA Permit, closure of the PUREX Storage Tunnels must be coordinated with the final closure plan for the PUREX facility which is under S&M provisions of Section 8.0 of the Tri-Party Agreement. Therefore, PUREX Storage Tunnels waste disposition will be coordinated with PUREX Plant waste discussed in Section 10.3.2.

### 10.3.2 PUREX Plant

Ongoing S&M activities for the PUREX Plant treatability group are conducted in accordance with the approved S&M plan and associated TPA commitments until DOE Headquarters decides to initiate the disposition phase or actions required by the lead regulatory agency pursuant to the terms of the Tri-Party Agreement Action Plan, Sections 8.1 or 8.3.3. The waste included in the PUREX Plant treatability group is stored in accordance with interim status standards pursuant to Permit Condition I.A.. Therefore, certification/treatment or disposal of the waste is not planned in the near term.

### 10.3.3 324 Building Radiochemical Engineering Cell Waste

DOE-RL is working with Ecology to modify the closure plan (DOE/RL-96-73, *324 Building Radiochemical Engineering Cells, High-Level Vault, Low-Level Vault, and Associated Area Closure Plan*) and existing TPA milestones to perform closure of the mixed waste units in parallel with disposition/demolition of the 324 Building.

## 10.4 DISPOSAL OF TRANSURANIC MIXED WASTE

As noted in Figure 10-1, the current plan is to ship TRUM waste to WIPP. Waste being disposed of at WIPP must meet WIPP waste acceptance requirements. Waste is shipped to WIPP in appropriate containers and special packages.

## 10.5 RADIONUCLIDE SEPARATION PLANS

No plans exist for radionuclide separation as a processing step for TRUM waste because radionuclide separation is not required for these treatability groups to meet WIPP disposal criteria.

# 11.0 HIGH-LEVEL WASTE STREAMS

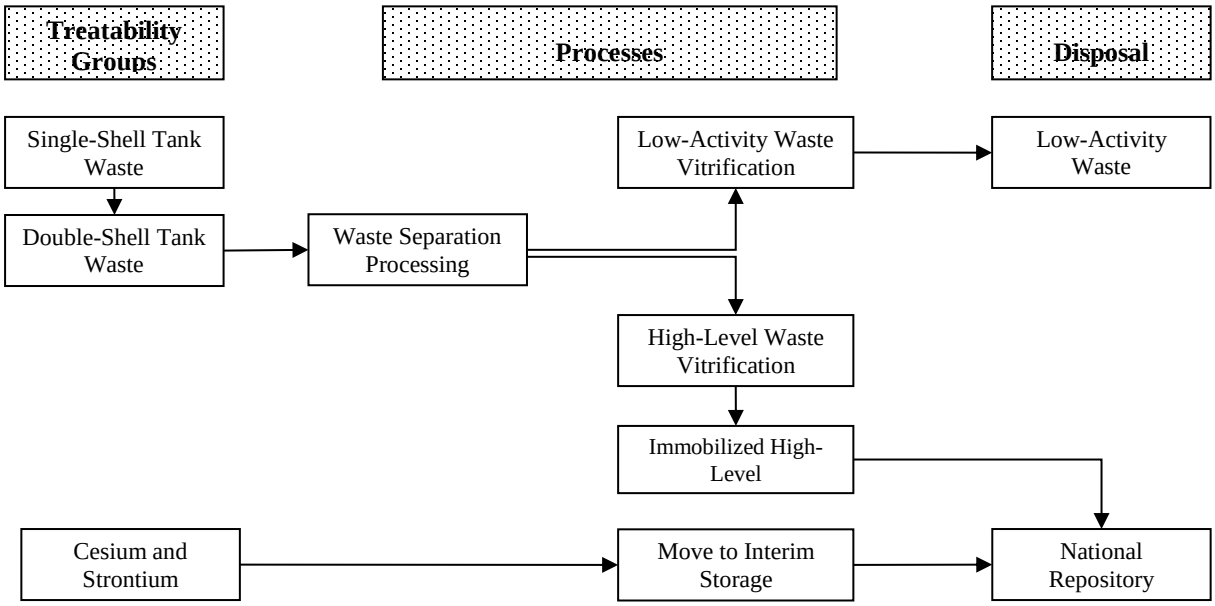
Figure 11-1 shows an overview of the anticipated treatment of HLW treatability groups. The basic process will be for the SST System waste to be moved to the DST System as space becomes available. The waste will be moved from the DSTs to a waste pretreatment or separation unit where most of the high-activity material will be removed and sent to the high-level vitrification unit. The larger volume of remaining LAW will be sent to a separate low-activity vitrification unit. The vitrification processes will convert the waste into a stable glass-like material for interim storage and eventual disposal. Note that the contents of some SSTs may classify as TRUM waste. If so, these wastes would be expected to follow a different treatment path.

It has been determined per the *Framework Agreement for Management of Polychlorinated Biphenyls (PCBs) in Hanford Tank Waste* (Ecology 2000), dated August 31, 2000, that some DSTs contain PCB remediation waste. The risk-based disposal approval process addresses the disposal of PCB remediation waste through the WTP where PCBs have been addressed as a constituent of concern. Figure 11-1 shows the HLW treatability groups and the planned treatment process.

Figure 11-1. High-Level Waste Disposition Map.

HLW Disposition Map

*For adaptation needed, refer to Section 11.2.*



## 11.1 EXISTING TREATMENT PROCESSES

No HLW LDR treatment processes currently are available for treating the Hanford Site waste. The Hanford Site does have HLW evaporators used for many years to concentrate HLW in the tanks and to make tank space available for new or transferred waste. The 242-A Evaporator operation is not LDR treatment; however, operations result in sending a portion of the tank waste (condensate) to LDR treatment at LERF/ETF.

## 11.2 WASTE STREAMS FOR WHICH TREATMENT TECHNOLOGY IS NEEDED

The LDR-specified treatment technology for HLW is vitrification (HLW vitrification). Planning for vitrification processes for the Hanford Site is ongoing and is a high priority. Details of the contract for completion of the design and construction of the treatment units for the HLW are available on the Internet[1]. Additional details of the planning for HLW management also are available on the Internet[1]. Table 11-1 summarizes the key information.

Table 11-1. Information for High-Level Waste Vitrification. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | DST Waste; SST Waste |
| Tri-Party Agreement milestones related to these treatability groups | M-092-00, M-090-00, and M-062-00 |
| Technology needed for facility | Vitrification technology has been used at both SRS and West Valley, but needs some modifications to be applicable to Hanford Site waste. |
| Projected volume of HLW to be treated between CY 2015 through the end of CY 2019 | Processing of mixed waste will be in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | 4.2 MT/Day |
| Regulatory status information: | |
| - Submittal of RCRA permit application | WTP: Final status obtained September 2002.<br>DST System: Revised Part B Permit Application March 29, 2004. |
| - Date design and construction contract established | 2000 |
| - Date facility construction began | 2002 |
| - Date complete hot commissioning | 2018 |
| - Current regulatory status | DST: Operating to interim status standards<br>SST: Operating to interim status standards<br>WTP: Construction under final status |
| Budget status for design, construction, and operations | Funding is available for FY 2015 to continue design and construction. Funding for FY 2016 and beyond is contingent on Congressional budgets and actions. |

[1] *Bechtel National, Inc., Design, Construction, and Commissioning of the Hanford Tank Waste Treatment and Immobilization Plant*, Contract No. DE-AC27-01RV14136 (DOE-ORP 2001).

Table 11-1. Information for High-Level Waste Vitrification. (2 sheets)

| Type of Information | Information |
|---|---|
| Estimated treatment completion date of treatability group with the assumption of available funding. | *Complete Pretreatment Processing and Vitrification of Hanford HLW and LAW Tank Wastes*, Tri-Party Agreement Milestone M-062-00 due December 31, 2047. |
| Alternatives for treatment of this waste. | None |

## 11.3 RADIONUCLIDE SEPARATION

The tank waste will be sent to the WTP where the waste will be separated into HLW and LAW fractions and treated to meet LDR standards.

## 11.4 STORAGE OF HIGH-LEVEL WASTE

Initial canisters of vitrified HLW are anticipated to be placed in an Interim HLW Storage facility, pending final disposal. The facility will have the capability of adding modules and will be built as needed. The maximum need will be determined at a later date as it depends on the vitrification rate and ability to ship waste from the Hanford Site to a national repository.

## 11.5 SHIPMENT OF HIGH-LEVEL WASTE TO A NATIONAL REPOSITORY

A national repository is expected to be prepared for the HLW and for the spent nuclear fuel accumulating at commercial nuclear power plants. Shipment dates are uncertain at this time, but will become more specific when the site is licensed and the national repository constructed and prepared to receive the HLW. These activities are beyond the scope of this report.

## 11.6 DISPOSAL OF THE MIXED LOW-ACTIVITY WASTE ON-SITE

Vitrified mixed ILAW from the WTP will be disposed on-site at the Integrated Disposal Facility (IDF). The IDF has been constructed under the Hanford Facility RCRA Permit (WA7890008967) and will accept ILAW when WTP generates the waste.

## 11.7 CESIUM/STRONTIUM CAPSULES

WESF stores the cesium and strontium capsules in pool cells. A statement of mission needs has been prepared to support removal of the capsules to a new dry storage facility; however, a decision on the final disposition of the capsules has not been made. The viability of direct disposal of the capsules in a national repository is being assessed in order to meet Milestone M-092-05.

The cesium/strontium capsules have not been classified as HLW, as the radiological waste determination has not been performed yet. The capsules have been managed in a manner appropriate to the risk they pose to human health and the environment, like HLW, and have been reported under the HLW treatability group historically in this report. The continued reporting of the cesium/strontium capsules in the HLW treatability group section is for the sake of continuity and should not be construed that a determination identified the capsules as HLW. When the

radiological determination and final disposal decisions are made, the cesium and strontium capsules will be reported in future revisions of this report under the correct treatability group, in accordance with that determination.

# 12.0 TREATMENT OF POTENTIAL MIXED WASTE

PMW is identified in Appendix C of this report. Some of the materials as managed in the future could result in the generation of mixed waste, which would be assigned to an existing or new treatability group. If the material is assigned to an existing treatability group, treatment can be considered along with that of the other location-specific waste streams within that treatability group. Other PMW may require new or modified treatment processes. Treatment plans for these waste streams will be defined further when the streams are determined to be mixed waste. Other materials will be determined not to be mixed waste and will be handled accordingly.

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# 13.0 SUMMARY OF CHARACTERIZATION INFORMATION

As part of generation of any waste, a generating unit must take steps necessary to confirm the proper management of this waste. This includes identifying proper radioactive classification, understanding the physical matrix, properly designating the waste, and, where applicable, identifying the appropriate underlying hazardous constituents. Types of information that can be used to characterize waste can include data from analysis of the waste and knowledge of the materials and/or processes used to generate the waste. The information must be sufficient to quantify constituents of regulatory concern and to determine waste characteristics, and to determine whether unit-specific waste acceptance criteria or requirements are satisfied.

This section discusses and summarizes the waste treatability groups and the planned characterization activities for the waste. Waste must be sufficiently characterized so the waste can be stored and managed properly. In addition, waste must be sufficiently characterized before treatment to ensure that the proper treatment processes are applied and that the resultant treated waste meets LDR standards. Table 13-1 summarizes the planned characterization activities for each of the treatability groups. Additional detail can be found on the individual LSDSs (Appendix B). The planned characterization schedule information from Table 13-1 is reproduced in Table 2-2.

Table 13-1. Summary of Characterization Information for Each Treatability Group. (4 sheets)

| Treatability Group Name | Report Section | Additional Characterization Activities | Planned Characterization Schedule | Related Tri-Party Agreement Milestone |
|---|---|---|---|---|
| 221-T Containment Building | 10.2 | Completed[1] | Completed | None |
| 221-T Tank System | 9.3.2 | Additional characterization might be required to support waste treatment. | Will be done in conjunction with T Plant Complex Canyon disposition. | None |
| 222-S Laboratory Complex | 9.1.8 | Characterization performed as generated. | Ongoing | None |
| 222-S T8 Tunnel | 9.3.2 | As required to support cleanout of 222-S. | Will be done in conjunction with 222-S Laboratory building disposition. | None |
| 241-CX Tank System | 9.3.2 | Additional characterization will be performed as necessary, to support 200-IS-1 OU remedial decisions. | Characterization will be performed on waste in Tank 72 on a schedule determined with 200-IS-1 | Major Milestone M-015-00 |

Table 13-1. Summary of Characterization Information for Each Treatability Group. (4 sheets)

| Treatability Group Name | Report Section | Additional Characterization Activities | Planned Characterization Schedule | Related Tri-Party Agreement Milestone |
|---|---|---|---|---|
| 324 Building REC Waste | 10.3.3 | No further characterization planned for transfer to ERDF. | Completed | M-089-00 |
| 325 HWTU | 9.1.7 | Characterization performed as generated. | Ongoing | None |
| 400 Area WMU | 9.3.2 | Completed.[1] | Completed | M-092-09 |
| B Plant Cell 4 | 9.3.2 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. | To be determined in conjunction with B Plant based on RCRA Permit Closure Plan. | M-085-00 |
| B Plant Containment Building | 9.3.2 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. | To be determined in conjunction with B Plant per Tri-Party Agreement Action Plan, Section 8.0. | M-085-00 |
| Cesium and Strontium Capsules | 11.4 | None | Completed | M-092-05 |
| DST Waste | 11.2 | Additional information could be required, per TPA milestone. | Ongoing | M-042-00, M-062, M-090 |
| ERDF – Treatment | 9.1.5 | Characterized as generated. Treatment and disposal are performed under CERCLA decision documents and treatment plans. | Ongoing | None |
| HSTF | 9.3.2 | Additional characterization will be performed, as necessary, to support removal of the tanks as part of 200-IS-1 OU activities | Ongoing | Major Milestone M-015-00 |
| LERF/ETF Liquid Waste | 9.1.6 | Characterization performed as generated. | Ongoing | M-026-07 |
| LERF/ETF Solid Waste | 9.1.10 | Characterization performed as generated. | Not required | None |
| MLLW-01 – LDR Compliant Waste | 9.1.10 | No further characterization is planned. | Completed | None |
| MLLW-02 – Inorganic Non-Debris | 9.1.1 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |

Table 13-1. Summary of Characterization Information for Each Treatability Group. (4 sheets)

| Treatability Group Name | Report Section | Additional Characterization Activities | Planned Characterization Schedule | Related Tri-Party Agreement Milestone |
|---|---|---|---|---|
| MLLW-03 – Organic Non-Debris | 9.1.3 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-04 – Hazardous Debris | 9.1.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-05 – Radioactive Lead Solids | 9.1.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-06 – Mercury Wastes | 9.1.9 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-07 – RH and Large Container | 9.2.1 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-43[3] | M-091-43[3] |
| MLLW-08 – Unique Waste | 9.3.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-09 – Radioactive Batteries | 9.1.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-10 – Reactive Metals | 9.2.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| PUREX Plant | 10.3.2 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. | To be determined via Tri-Party Agreement Action Plan, Section 8.0. | M-085-00 |
| PUREX Storage Tunnels | 10.3.1 | To be determined in conjunction with PUREX Plant based on RCRA Permit Closure Plan. | To be determined in conjunction with the PUREX Plant per the Tri-Party Agreement Action Plan, Section 8.0. | M-085-00 |
| SST Waste | 11.2 | Further information may be required, per TPA milestone. | Ongoing | M-045, M-062, M-090 |
| TRUM-CH Large Container | 10.2 | As necessary to meet WIPP waste acceptance criteria. | M-091-44[3] | M-091-44[3] |
| TRUM-CH Small Container | 10.1 | As necessary to meet WIPP waste acceptance criteria. | M-091-46[3] | M-091-46[3] |

Table 13-1. Summary of Characterization Information for Each Treatability Group. (4 sheets)

| Treatability Group Name | Report Section | Additional Characterization Activities | Planned Characterization Schedule | Related Tri-Party Agreement Milestone |
|---|---|---|---|---|
| TRUM-RH | 10.2 | As necessary to meet WIPP waste acceptance criteria. | M-091-44[3] | M-091-44[3] |
| WTP Lab Complex | 9.3.1 | Not yet determined | Not yet determined | Not yet determined |

[1] Characterization information is contained in the Hanford Facility Operating Record unit-specific file for the TSD unit and is available upon request.
[2] Newly generated waste in these categories is fully characterized as generated. For waste in inventory before 1995, existing TSD record information will be reviewed and a graded approach to characterization will be made as necessary based on existing acceptable knowledge.
[3] Characterization is anticipated to be performed as necessary to meet M-091 milestones.

# 14.0 SUMMARY OF TREATMENT INFORMATION

This section summarizes the waste treatability groups and the volume of waste that will be treated. Table 14-1 contains information on treatment. The treatability groups are in alphabetical order. Certain information from Table 14-1 is reproduced in Table 2-2.

Table 14-2 provides a detailed list of the CERCLA documents supporting treatment schedules. Approved CERCLA documents, including RODs and Remedial Design Report/Remedial Action Work Plans, is presented first, followed by the TPA milestones for completion of CERCLA documentation in the future.

Table 14-1. Summary of Treatment Information for Each Treatability Group. (3 sheets)

| Treatability Group Name | Report Section | Treatment Process | Volume Currently Stored ($m^3$) | Projected Generation Volume 2015 Through 2019 ($m^3$) | Planned Treatment Period | Documents Supporting Schedule[1] |
|---|---|---|---|---|---|---|
| 221-T Containment Building | 10.2 | Not yet determined | 58.000 | 0 | 2035[2] | None |
| 221-T Tank System | 9.3.2 | Not yet determined | 1.7000 | 0 | 2035[2] | None |
| 222-S Laboratory Complex | 9.1.8 | Commercial Stabilization, Commercial Thermal | 7.140 | 50.000 | 2042[2]. | None |
| 222-S T8 Tunnel | 9.3.2 | Not yet determined | 0.200 | 0 | 2047[2] | None |
| 241-CX Tank System[3] | 9.3.2 | Not yet determined | 6.390 | 0 | To be determined through development of 200-IS-1 documentation. | M-015-00 |
| 324 Building REC Waste | 10.3.3 | As necessary, ERDF stabilization or macroencapsulation | 5.000 | 0 | In accordance with schedules established under M-089 milestone. | M-089-00 |
| 325 HWTU | 9.1.7 | HWTU, Commercial-Stabilization, Commercial-Thermal | 19.107 | 45.500 | Through 2028.[2] | M-016-00B |
| 400 Area WMU | 9.3.2 | Deactivation and conversion to sodium hydroxide | 1.900 | 0 | Treatment is planned to begin after 2018[1] | M-092-09 |
| B Plant Cell 4 | 9.3.2 | Not yet determined | 1.400 | 0 | In accordance with Tri-Party Agreement Action Plan, Section 8.0 | M-085-00 |
| B Plant Containment Building | 9.3.2 | Not yet determined | 294,000 kilograms | 0 | In accordance with Tri-Party Agreement Action Plan, Section 8.0 | M-085-00 |
| Cesium and Strontium Capsules | 11.4 | Not yet determined | 2.000 | 0 | Treatment options are still being assessed. | M-092-05 |
| DST Waste | 11.2 | WTP vitrification | 101,009.105 | 165.000 | 2018-2047 | M-042-00, M-062, M-090 |

Table 14-1. Summary of Treatment Information for Each Treatability Group. (3 sheets)

| Treatability Group Name | Report Section | Treatment Process | Volume Currently Stored ($m^3$) | Projected Generation Volume 2015 Through 2019 ($m^3$) | Planned Treatment Period | Documents Supporting Schedule[1] |
|---|---|---|---|---|---|---|
| ERDF – Treatment | 9.1.5 | ERDF treatment | 50.000 | 594.000 | Through 2035.[2] | Treatment and disposal are performed under a CERCLA decision document and treatment plans. See Table 14.2 for listing of approved CERCLA documents and TPA milestones for future documents. |
| HSTF | 9.3.2 | Not yet determined | 2.100 | 0 | To be determined through development of 200-IS-1 documentation. | M-015-00 |
| LERF/ETF Liquid Waste | 9.1.6 | ETF | 38,770.137 | 25,760.140 | Through 2032[2] | M-026-07B,C<br>Hanford Facility RCRA Permit, Revision 8C, Permit Number WA7890008967, Operating Unit 3 |
| LERF/ETF Solid Waste | 9.1.10 | ERDF treatment expected to be needed for some solid waste | 38.600 | 685.000 | To be determined | Hanford Facility RCRA Permit, Revision 8C, Permit Number WA7890008967, Operating Unit 3 |
| MLLW-01 – LDR-Compliant Waste | 9.1.10 & 9.1.6 | No treatment required | 0.416 | 0 | N/A | None |
| MLLW-02 – Inorganic Non-Debris | 9.1.1<br>9.1.4 | Stabilization/ Neutralization | 0.208 | 2.100 | M-091-42[4] | M-091-42 |
| MLLW-03 – Organic Non-Debris | 9.1.3 | Thermal | 0.322 | 2.100 | M-091-42 | M-091-42 |
| MLLW-04 Hazardous Debris | 9.1.2 | Macroencapsulation | 17.540 | 16.300 | M-091-42 | M-091-42 |
| MLLW-05 – Radioactive Lead Solids | 9.1.2 | Macroencapsulation | 0 | 0 | M-091-42[4] | M-091-42 |
| MLLW-06 – Mercury Waste | 9.1.9 | Amalgamation | 0 | 0 | M-091-42[4] | M-091-42 |

Table 14-1. Summary of Treatment Information for Each Treatability Group. (3 sheets)

| Treatability Group Name | Report Section | Treatment Process | Volume Currently Stored ($m^3$) | Projected Generation Volume 2015 Through 2019 ($m^3$) | Planned Treatment Period | Documents Supporting Schedule[1] |
|---|---|---|---|---|---|---|
| MLLW-07 – RH and Large Container | 9.2.1 | Additional M-091-01 capabilities and/or commercial treatment | 69.783 | 0 | M-091-43[4] | M-091-43 |
| MLLW-08 – Unique Waste | 9.3.2 | To be evaluated on a container by container basis | 0.040 | 0 | M-091-42[4] | M-091-42 |
| MLLW-09 – Radioactive Batteries | 9.1.2 | Macroencapsulation | 0 | 0 | M-091-42[4] | M-091-42 |
| MLLW-10 – Reactive Metals | 9.2.2 | Deactivation with selected stablization | 0 | 0 | M-091-42[4] | M-091-42 |
| PUREX Plant | 10.3.2 | Not yet determined | 1.000 | 0 | In accordance with Tri-Party Agreement Action Plan, Section 8.0 | M-085-00 |
| PUREX Storage Tunnels | 10.3.1 | Not yet determined | 2,800.000 | 0 | Coordinated with PUREX Plant waste. | M-085-00 |
| SST Waste | 11.2 | WTP vitrification | 109,000.000 | 0 | 2018-2047 | M-062-00 and M-090-00 |
| TRUM-CH Large Container | 10.2 | Additional M-091-01 capabilities and/or commercial treatment | 6,571.332 | 0 | M-091-44[4] | M-091-44 |
| TRUM-CH Small Container | 10.1 | WRAP Facility and/or T-Plant Complex and/or off-site | 4,508.646 | 116.500 | M-091-46[4] | M-091-46 |
| TRUM-RH | 10.2 | Additional M-091-01 capabilities and/or commercial treatment | 492.881 | 6.500 | M-091-44[4] | M-091-44 |
| WTP Lab Complex | 9.3.1 | To be determined[5] | 0 | 107.600 | TBD | TBD |

[1]Some wastes within treatability groups are also subject to the WAC 173-303-140 one-year clock for storage.
[2] Dates are anticipated to change based on changes to the DOE forecasted funding profile.
[3] The stored volume reported contains uncertainty as to the actual volume (Klein 2005).
[4] Treatment is anticipated to be performed as necessary to meet M-091 milestones. See the M-091 milestones to determine what portion of the total volume requires treatment under those milestones.
[5] Waste volume reduction, repackaging, treatment, and disposal to be performed by others as directed by DOE-ORP.

Table 14-2. CERCLA Documents Supporting Treatment Schedules (3 sheets)

| APPROVED CERCLA DOCUMENTATION | | |
|---|---|---|
| DOE/RL-2014-13-ADD1, *Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils*, U.S. Department of Energy, Richland Operation Office, Richland, Washington (this is the request for data review for the final ROD). | | |
| DOE/RL-2001-47, *Remedial Design Report/Remedial Action Work Plan for the 300 Area*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. | | |
| DOE/RL-2004-77, *Removal Action Work Plan for 300 Area Facilities*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. | | |
| EPA, 2013, *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington, and U.S. Department of Energy, Richland Operations Office, Richland, Washington. | | |
| EPA, 2002, *U.S. Department of Energy Environmental Restoration Disposal Facility, Hanford Site – 200 Area, Benton County, Washington, Amended Record of Decision, Decision Summary and Responsiveness Summary*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. | | |
| EPA, 1997, *U.S. Department of Energy Environmental Restoration Disposal Facility, Hanford Site – 200 Area, Benton County, Washington, Amended Record of Decision, Decision Summary and Responsiveness Summary*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. | | |
| EPA, 2008, *Record of Decision, Hanford 200 Area, 200-ZP-1 Superfund Site, Benton, County Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. | | |
| DOE/RL-2008-78, *200 West Area 200-ZP-1 Pump-and-Treat Remedial Design/Remedial Action Work Plan*, U.S. Department of Energy, Richland Operations Office, Richland Washington. | | |
| EPA, 2011, *Record of Decision, Hanford 200 Area, Superfund Site, 200-CW-5 and 200-PW-1, 200-PW-3 and 200-PW-6 Operable Units*, U.S. Environmental Protection Agency. | | |
| **TPA MILESTONES FOR CERCLA DECISION DOCUMENTATION** | | |
| **Milestone** | **Title** | **Due Date** |
| M-015-00 | Complete The RI/FS (or RFI/CMS) Process For All Non-Tank Farm OUs | 12/31/2016 |
| M-015-110A | Submit RCRA FI/CMS & RI/FS Work Plan for 200-DV-1 OU | 03/31/2015 |
| M-015-110B | Submit CMS & FS & Proposed Plan/CA Decision for 200-DV-1 OU | 09/30/2015 |
| M-015-112 | Submit Draft B 200-IS-1 RFI/CMS/RI/FS Work Plan to Ecology with Schedule Dates | 02/28/2014 |
| M-015-113 | Submit Draft B 200-SW-2 RFI/CMS/RI/FS Work Plan to Ecology Including Schedule | 03/31/2015 |

Table 14-2. CERCLA Documents Supporting Treatment Schedules (3 sheets)

| TPA MILESTONES FOR CERCLA DECISION DOCUMENTATION | | |
|---|---|---|
| **Milestone** | **Title** | **Due Date** |
| M-015-21A | Submit 200-BP-5 and 200-PO-1 OU FS Report & PP(s) to Ecology | 06/30/2015 |
| M-015-38B | Submit Rev'd FS Report & Rev'd PP for CW-1, CW-3 & OA-1 to EPA | 10/30/2015 |
| M-015-78 | Complete 2 yrs of GW and Aquifer Tube Sampling at 100-BC Expanded Monitoring Network | 02/28/2016 |
| M-015-79 | Submit CERCLA Remedial Investigation/Feasibility Study Report & Proposed Plan for 100-BC-1/2/5 | 12/15/2016 |
| M-015-91B | Submit FS Report & Proposed Plan for the 200-BC-1/ 200 -WA-1 OU | 12/31/2015 |
| M-015-92A | Submit RCRA FI/CMS & RI/FS Work Plan for 200-EA-1 OU to Ecology | 06/30/2015 |
| M-015-92B | Submit CMS & FS Reports & Proposed CA Decision/PP for 200-EA-1 & 200-IS-1 | 12/31/2016 |
| M-015-93B | Submit RCRA FI/CMS & RI/FS Report & Proposed CA Decision/PP for 200-SW-2 | 12/31/2016 |
| M-016-00 | Comp. Remedial Actions for All Non-Tank Farm & Non-Canyon Op OUs | 09/30/2024 |
| M-016-00A | Complete All Response Actions For 100 Areas Except GW in M-016-00 and 100 K Addressed in M-016-00C | 03/31/2017 |
| M-016-00B | Complete All Interim 300 Area Remedial Actions | 09/30/2018 |
| M-016-00C | Complete All Response Actions In The 100K Area | 12/31/2020 |
| M-016-110-T02 | Take Actions Such That Hexavalent Cr Meets Drinking Water Stds | 12/31/2020 |
| M-016-110-T03 | Take Actions To Contain Sr-90 GW Plume at 100-NR-2 OU | 12/31/2016 |
| M-016-110-T04 | Implement Remedial Actions in All 100A RODS For GW OUs | 12/31/2016 |
| M-016-110-T05 | Implement Sys To Meet Drinking Water Stds. For U at 300-FF-5 OU | 12/31/2015 |
| M-016-119-T01 | Operational Sys in Place To Contain GW Plumes in 200 NPL Area | 12/31/2020 |
| M-016-125 | Submit RD/RA Work Plan to EPA for 200-CW-5 & 200-PW-1/3/6 per ROD | 09/30/2015 |
| M-016-143 | Complete The Interim Response Actions For The 100K Area Phase 2 | 12/31/2015 |
| M-016-149 | Complete Interim Response Action for 36 100-IU-2/6 Waste Sites | 03/31/2015 |

Table 14-2. CERCLA Documents Supporting Treatment Schedules (3 sheets)

| TPA MILESTONES FOR CERCLA DECISION DOCUMENTATION | | |
|---|---|---|
| **Milestone** | **Title** | **Due Date** |
| M-016-159 | Complete Interim Response Action for 25 100D/H Area Waste Sites | 03/31/2015 |
| M-016-161 | Complete Interim Response Action for 29 100D/H Area Waste Sites & Decommission 147-D | 03/31/2016 |
| M-016-164 | Complete 100-N Interim Response Actions & Close 100-N Ancillary Facilities Area of Contamination | 03/31/2017 |
| M-016-173 | Select K Basin Sludge Treat. & Pkging Technology propose new MS's | 03/31/2015 |
| M-016-175 | Begin Sludge Removal from 105-KW Fuel Storage Basin | 09/30/2014 |
| M-016-176 | Complete sludge removal from 105-KW Fuel Storage Basin | 12/31/2015 |
| M-016-178 | Initiate Deactivation of 105-KW Fuel Storage Basin | 12/31/2015 |
| M-016-181 | Complete Deactivation, Demolition & Removal of 105-KW FSB | 09/30/2019 |
| M-016-186 | Initiate Soil Remediation Under 105-KW Fuel Storage Basin | 12/31/2019 |
| M-016-190 | Complete Installation of Wells for U-Plant Area Pump & Treat Per 200-UP-1 RD/RA WP | 09/30/2015 |
| M-016-191 | Complete Acceptance/Operation Test Procedures and Initiate Operations of U Plant Area Pump & Treat | 03/30/2016 |
| M-016-192 | Submit I-129 Technology Evaluation Plan Draft A to EPA Per 200-UP-1 RD/RA WP | 06/17/2016 |
| M-016-193 | Investigate SE Chromium Plume, Install Wells, Eval. GW Monitoring Data & Install Monitoring Wells | 09/30/2017 |
| M-016-200A | Complete U Plan Canyon (221 U Facility) Demolition | 09/30/2017 |
| M-016-200B | Complete U Plant Facility (221 U Facility) Barrier Construction | 09/30/2021 |
| M-016-69 | Complete All Interim 300 Area Remedial Actions | 09/30/2015 |

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# 15.0 TRI-PARTY AGREEMENT INFORMATION

The Tri-Party Agreement is a legal document covering Hanford Site environmental compliance and cleanup activities. The Tri-Party Agreement Action Plan implements the agreements among Ecology, DOE (both DOE-RL and DOE-ORP), and EPA.

## 15.1 DOCUMENTATION AND RECORDS

The Tri-Party Agreement Action Plan, Section 9.0, "Documentation and Records," defines the documents to be generated under the Action Plan, the classification and listing of primary and secondary documents, and the record systems to be implemented to preserve and access the documentation. The Action Plan, Section 12, "Changes to the Agreement," establishes a process for the parties to propose and implement changes to: elements of the Agreement; the Action Plan and Appendices; and supporting plans (specifically, the annual update of the LDR report).

## 15.2 LAND DISPOSAL RESTRICTIONS RELATED TRI-PARTY AGREEMENT MILESTONES

Table 15-1 identifies the current (as of December 31, 2014), active TPA milestone requirements through 2052. Pending TPA change control actions are not included.

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-015-00 | Complete The RI/FS (or RFI/CMS) Process For All Non-Tank Farm OUs | 12/31/2016 |
| M-015-110A | Submit RCRA FI/CMS & RI/FS Work Plan for 200-DV-1 OU | 03/31/2015 |
| M-015-110B | Submit CMS & FS & Proposed Plan/CA Decision for 200-DV-1 OU | 09/30/2015 |
| M-015-112 | Submit Draft B 200-IS-1 RFI/CMS/RI/FS Work Plan to Ecology with Schedule Dates | 02/28/2014 |
| M-015-113 | Submit Draft B 200-SW-2 RFI/CMS/RI/FS Work Plan to Ecology Including Schedule | 03/31/2015 |
| M-015-21A | Submit 200-BP-5 and 200-PO-1 OU FS Report & PP(s) to Ecology | 06/30/2015 |
| M-015-38B | Submit Rev'd FS Report & Rev'd PP for CW-1, CW-3 & OA-1 to EPA | 10/30/2015 |
| M-015-78 | Complete 2 Yrs of GW and Aquifer Tube Sampling at 100-BC Expanded Monitoring Network | 02/28/2016 |
| M-015-79 | Submit CERCLA Remedial Investigation/Feasibility Study Report & Proposed Plan for 100-BC-1/2/5 | 12/15/2016 |
| M-015-91B | Submit FS Report & Proposed Plan for the 200-BC-1/ 200 -WA-1 OU | 12/31/2015 |
| M-015-92A | Submit RCRA FI/CMS & RI/FS Work Plan for 200-EA-1 OU to Ecology | 06/30/2015 |
| M-015-92B | Submit CMS & FS Reports & Proposed CA Decision/PP for 200-EA-1 & 200-IS-1 | 12/31/2016 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-015-93B | Submit RCRA FI/CMS & RI/FS Report & Proposed CA Decision/PP for 200-SW-2 | 12/31/2016 |
| M-016-00 | Comp. Remedial Actions For All Non-Tank Farm & Non-Canyon Op OUs | 09/30/2024 |
| M-016-00A | Complete All Response Actions For 100 Areas Except GW in M-016-00 and 100 K Addressed in M-016-00C | 03/31/2017 |
| M-016-00B | Complete All Interim 300 Area Remedial Actions | 09/30/2018 |
| M-016-00C | Complete All Response Actions In The 100K Area | 12/31/2020 |
| M-016-110-T02 | Take Actions Such That Hexavalent Cr Meets Drinking Water Stds | 12/31/2020 |
| M-016-110-T03 | Take Actions To Contain Sr-90 GW Plume at 100-NR-2 OU | 12/31/2016 |
| M-016-110-T04 | Implement Remedial Actions in All 100A RODS For GW OUs | 12/31/2016 |
| M-016-110-T05 | Implement Sys To Meet Drinking Water Stds. For U at 300-FF-5 OU | 12/31/2015 |
| M-016-119-T01 | Operational Sys in Place To Contain GW Plumes in 200 NPL Area | 12/31/2020 |
| M-016-125 | Submit RD/RA Work Plan to EPA for 200-CW-5 & 200-PW-1/3/6 per ROD | 09/30/2015 |
| M-016-143 | Complete The Interim Response Actions For The 100K Area Phase 2 | 12/31/2015 |
| M-016-149 | Complete Interim Response Action for 36 100-IU-2/6 Waste Sites | 03/31/2016 |
| M-016-159 | Complete Interim Response Action for 25 100D/H Area Waste Sites | 03/31/2015 |
| M-016-161 | Complete Interim Response Action for 29 100D/H Area Waste Sites & Decommission 147-D | 03/31/2016 |
| M-016-164 | Complete 100-N Interim Response Actions & Close 100-N Ancillary Facilities Area of Contamination | 03/31/2017 |
| M-016-173 | Select K Basin Sludge Treat. & Pkging Technology propose new MS's | 03/31/2015 |
| M-016-175 | Begin Sludge Removal from 105-KW Fuel Storage Basin | 09/30/2014 |
| M-016-176 | Complete sludge removal from 105-KW Fuel Storage Basin | 12/31/2015 |
| M-016-178 | Initiate Deactivation of 105-KW Fuel Storage Basin | 12/31/2015 |
| M-016-181 | Complete Deactivation, Demolition & Removal of 105-KW FSB | 09/30/2019 |
| M-016-186 | Initiate Soil Remediation Under 105-KW Fuel Storage Basin | 12/31/2019 |
| M-016-190 | Complete Installation of Wells for U-Plant Area Pump & Treat Per 200-UP-1 RD/RA WP | 09/30/2015 |
| M-016-191 | Complete Acceptance/Operation Test Procedures and Initiate Operations of U Plant Area Pump & Treat | 03/30/2016 |
| M-016-192 | Submit I-129 Technology Evaluation Plan Draft A to EPA Per 200-UP-1 RD/RA WP | 06/17/2016 |
| M-016-193 | Investigate SE Chromium Plume, Install Wells, Eval. GW Monitoring Data & Install Monitoring Wells | 09/30/2017 |
| M-016-200A | Complete U Plan Canyon (221 U Facility) Demolition | 09/30/2017 |
| M-016-200B | Complete U Plant Facility (221 U Facility) Barrier Construction | 09/30/2021 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-016-69 | Complete All Interim 300 Area Remedial Actions | 09/30/2015 |
| M-024-00O | Complete Well Installations with RCRA/CERCLA Requirements | TBD |
| M-024-58H | Initiate Discussions of Well Commitments | 06/01/2015 |
| M-024-58I | Initiate Discussions of Well Commitments | 06/01/2016 |
| M-024-58J | Initiate Discussions of Well Commitments | 06/01/2017 |
| M-024-58K | Initiate Discussions of Well Commitments | 06/01/2018 |
| M-024-66 | Complete Construction of All Wells Listed for CY 2015 and Before as Identified in M-24-12-01 | 12/31/2015 |
| M-024-66-T01 | Conclude Discussions of Well Commitments | 08/01/2015 |
| M-024-67 | Complete Construction of All Wells Listed for CY 2016 and Before as Identified in M-24-13-01 | 12/31/2016 |
| M-024-67-T01 | Conclude Discussions of Well Commitments | 08/01/2016 |
| M-024-68 | Comp Const of All Wells Listed for CY17 and Before Identified in Att 1 of TPA Chg Pkg M-024-14-01 | 12/31/2017 |
| M-026-01AA | Submit Hanford Land Disposal Restrictions Summary Report | 04/30/2017 |
| M-026-01AB | Submit Hanford Land Disposal Restrictions Summary Report | 04/30/2018 |
| M-026-01AC | Submit Hanford Land Disposal Restrictions Summary Report | 04/30/2019 |
| M-026-01Y | Submit Full Hanford Land Disposal Restrictions Report | 04/30/2015 |
| M-026-01Z | Submit Hanford Land Disposal Restrictions Summary Report | 04/30/2016 |
| M-026-07D | Evaluation of Tritium Treatment Technology to EPA & Ecology | 03/31/2019 |
| M-035-00 | Complete Data Management Enhancements | TBD |
| M-035-09J | Conduct Biennial Assessments Of Information And Data Access Needs | 03/31/2016 |
| M-036-01E | Submit to EPA & Ecology Lifecycle Scope, Schedule & Cost Report | 01/31/2015 |
| M-036-01F | Submit to EPA & Ecology Lifecycle Scope, Schedule & Cost Report | 01/31/2016 |
| M-036-01G | Submit to EPA & Ecology Lifecycle Scope, Schedule & Cost Report | 01/31/2017 |
| M-036-01H | Submit to EPA & Ecology Lifecycle Scope, Schedule & Cost Report | 01/31/2018 |
| M-037-10 | Complete Closure for 7 Specified TSD Units | 09/30/2020 |
| M-037-11 | Complete Closure Requirements for 216-B-3 & 216-S-10 | 09/30/2016 |
| M-042-00A | Complete the Closure of All DST Tank Farms | 09/30/2052 |
| M-045-00 | Complete Closure Of All SST Farms | 01/31/2043 |
| M-045-13 | Interim Completion Of Tank S-112 SST Waste Retrieval And Closure | TBD |
| M-045-13E | Complete Negotiations for Interim Milestones for Closure of S-112 | TBD |
| M-045-15 | Completion Of Tank A-103 SST Waste Retrieval | 09/30/2022 |
| M-045-15A | Submit A Retrieval Data Report Pursuant to Agreement Appendix I | 09/30/2022 |
| M-045-15D | Exception to Waste Retrieval Criteria Pursuant to Agreement Appendix H | 09/30/2022 |
| M-045-56 | Complete Implementation Of Agreed-To Interim Measures | TBD |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-045-56K | Ecology And DOE Agree, At A Minimum, To Meet Yearly (By July) | 07/31/2015 |
| M-045-56L | Ecology And DOE Agree, At A Minimum, To Meet Yearly (By July) | 07/31/2016 |
| M-045-59 | Control Surface Water Infiltration Pathways As Needed | TBD |
| M-045-61 | Submit Draft A Phase 2 RCRA Facility Investigation secondary document Report for WMA C | 12/31/2014 |
| M-045-61A | Submit to Ecology a Primary Doc. Phase 2 CMS, and Rev. 0 Update to the RFI Report for WMA C | 12/31/2016 |
| M-045-62 | Submit Phase 2 Corrective Measures Implementation Work Plan For WMA C | 06/30/2015 |
| M-045-70 | Complete Waste Retrieval from all Remaining Single Shell Tanks | 12/31/2040 |
| M-045-82 | Submit Complete. Permit Modification Request for Tiers 1,2,3 | 09/30/2015 |
| M-045-83 | Complete the Closure of WMA C | 06/30/2019 |
| M-045-84 | Complete Negotiations of HFFACO Interim Milestones for Closure of 2nd SST WMA | 01/31/2017 |
| M-045-85 | Complete Negotiations of HFFACO Interim Milestones for Closure of Remaining WMAs | 01/31/2022 |
| M-045-86 | Submit Retrieval Data Report to Ecology for 19 Tanks Retrieved Under Consent Decree | TBD |
| M-045-86A | Submit Retrieval Data Report to Ecology for C-101 | TBD |
| M-045-86B | Submit Retrieval Data Report to Ecology for C-102 | TBD |
| M-045-86D | Submit Retrieval Data Report to Ecology for C-105 | TBD |
| M-045-86E | Submit Retrieval Data Report to Ecology for C-107 | TBD |
| M-045-86H | Submit Retrieval Data Report to Ecology for C-110 | 01/30/2015 |
| M-045-86I | Submit Retrieval Data Report to Ecology for C-111 | TBD |
| M-045-86J | Submit Retrieval Data Report to Ecology for C-112 | TBD |
| M-045-86K | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86L | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86M | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86N | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86O | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86P | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86Q | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86R | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86S | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-91B-T01 | Provide Ecology report on the Concrete Core from Tank A-106 or alternate tank | 01/31/2015 |
| M-045-91E1 | Provide SST Farms Dome Deflection Surveys Every Two Years | 09/30/2015 |
| M-045-91E2 | Provide SST Farms Dome Deflection Surveys Every Two Years | 09/30/2017 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-045-91F | Provide Summary Conclusions Report on Leak Integrity | 06/30/2015 |
| M-045-91F-T02 | Provide Report of Liner Failures for SSTs | 03/31/2015 |
| M-045-91F-T04 | Provide Report on 100-Series SSTs as having Leaked in RPP-32681 | 12/26/2014 |
| M-045-91G | Provide Summary Conclusions Report of AOR for SSTs | 07/28/2015 |
| M-045-91G-T04 | Provide AOR Final Doc. for SSTs on 55,000 Gallon Tanks | 01/30/2015 |
| M-045-91H | Submit Change Package (if necessary) to est. Additional Milestones | 07/31/2015 |
| M-045-91I | Provide IQRPE Certification of SSTs Structural Integrity | 09/30/2018 |
| M-045-92 | Complete Installation of four Additional Interim Barriers | 10/31/2017 |
| M-045-92N | Construct Barriers 1 and 2 in 241-SX Farm | 10/31/2015 |
| M-045-92O | Submit Barrier 3 Design/Monitoring Plan | 06/30/2015 |
| M-045-92P | Barrier 3 Construction Complete | 10/31/2016 |
| M-045-92Q | Submit Barrier 4 Design/Monitoring Plan | 06/30/2016 |
| M-045-92R | Barrier 4 Construction Complete | 10/31/2017 |
| M-047-00 | Completion of Work for Management of Secondary Waste from the WTP | 12/31/2022 |
| M-047-07 | CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to ECY | 03/31/2016 |
| M-062-00 | Complete Pretreatment Processing and Vitrification Of HLW & LAW Tank Wastes | 12/31/2047 |
| M-062-01AD | Submit Semi-Annual Project Compliance Report | 01/31/2015 |
| M-062-01AE | Submit Semi-Annual Project Compliance Report | 07/31/2015 |
| M-062-01AF | Submit Semi-Annual Project Compliance Report | 01/31/2016 |
| M-062-01AG | Submit Semi-Annual Project Compliance Report | 07/31/2016 |
| M-062-01AH | Submit Semi-Annual Project Compliance Report | 01/31/2017 |
| M-062-01AI | Submit Semi-Annual Project Compliance Report | 07/31/2017 |
| M-062-21 | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2023 |
| M-062-21A | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2024 |
| M-062-21B | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2025 |
| M-062-21C | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2026 |
| M-062-21D | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2027 |
| M-062-21E | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2028 |
| M-062-31-T01 | Comp. Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment | 04/30/2016 |
| M-062-32-T01 | Start Const. of Supp Vit Facility and/or WTP Enhancements | 04/30/2018 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-062-33-T01 | Comp. Const of Supp Treatment Vit Facility &/or WTP Enhancements | 04/30/2021 |
| M-062-34-T01 | Comp. Hot Commissioning of Supp Treat. Vit Fac. &/or WTP Enhance | 12/30/2022 |
| M-062-40 | Submit System Plan to Ecy/Select Minimum 3 Scenario's | TBD |
| M-062-40E | Select a Minimum of Three Scenario's | 10/31/2016 |
| M-062-40F | Submit System Plan | 10/31/2017 |
| M-062-45 | Comp. Neg's 6-Mo After Last Issuance of System Plan | TBD |
| M-062-45-A | Comp. Neg's 6-Mo After Last Issuance of System Plan | 04/30/2021 |
| M-062-45-B | Comp. Neg's 6-Mo After Last Issuance of System Plan | 04/30/2027 |
| M-062-45-T01 | Comp. Neg's 6-Mo After Last Issuance of System Plan | 04/30/2015 |
| M-062-45-XX | Comp. Neg's to Resolve Future Disputes M-062-45 Para 4&5 | 12/31/2021 |
| M-062-45-ZZ | Negotiate a one time supplemental treatment selection | 04/30/2015 |
| M-062-45-ZZ-A | Convert M-062-31-T01 Thru M-062-34-T01 to Interim Milestones | 04/30/2015 |
| M-083-00A | Complete PFP Facility Transition And Selected Disposition Activities | 09/30/2016 |
| M-083-24-T01 | Submit Rev. 0 of PFP Complex S & M Plan to Ecology | 06/30/2016 |
| M-083-44 | Complete Transition of 234-5Z&ZA/243-Z/291-Z & 291-Z-1 Facilities to Support PFP Decommissioning | 09/30/2015 |
| M-085-00 | Complete Response Actions for Specified Canyon Fac. & Waste Sites | TBD |
| M-085-01 | Submit a Change Package to Establish Date for Major Milestone M-085-00 | 09/30/2022 |
| M-085-02 | Submit Chg. Pkg. to Establish Schedule for Submittal of RI/FS WPs for Canyons & RAWPs for 224B & T | 09/30/2015 |
| M-089-00 | Closure Of Mixed Waste Units In 324 Bldg REC B&D Cells and High & Low Level Vaults | TBD |
| M-089-06 | Submit Permit Modification to Incorporate Approved 324 Closure Plan & Establish Schedule | 06/30/2016 |
| M-090-00 | Acquire/Modify Facilities For Storage of First Two Years of IHLW from WTP Operations | 12/31/2019 |
| M-090-13 | CD-1 for Interim Hanford Storage Project and CR for CD-2 to ECY | 03/31/2016 |
| M-091-00 | Complete Treatment to LDR Standards for all RCRA MLLW & TRUM Waste | TBD |
| M-091-01 | Complete Facilities for Retrieval, Storage, & Treatment/Processing of RCRA TRUM Waste | TBD |
| M-091-01A | Comp. Conceptual Design for RH TRUM & TRUM Facs & Change Pkg | 09/30/2016 |
| M-091-01B | Comp. Definitive Design for RH TRUM & TRUM Facilities & Change Pkg | 09/30/2018 |
| M-091-03 | Submit Revision of TRUM Waste & MLLW PMP To Ecology | TBD |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-091-03I | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2015 |
| M-091-03J | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2016 |
| M-091-03K | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2017 |
| M-091-03L | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2018 |
| M-091-03M | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2019 |
| M-091-03N | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2020 |
| M-091-03O | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2021 |
| M-091-03P | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2022 |
| M-091-40 | Complete Retrieval & Designation of CH RSW in Burial Grounds 218-W-4B, W-3A & E-12B | 09/30/2016 |
| M-091-40L | Submit Quarterly Burial Ground Vent/Substrate Sampling Results | TBD |
| M-091-40L-044 | Submit Jul-Sep 4th Qrtr FY14 Burial Ground Sample Results | 12/15/2014 |
| M-091-40L-045 | Submit Oct-Dec 1st Qrtr FY15 Burial Ground Sample Results | 03/15/2015 |
| M-091-40L-046 | Submit Jan-Mar 2nd Qrtr FY15 Burial Ground Sample Results | 06/15/2015 |
| M-091-40L-047 | Submit Apr-Jun 3rd Qrtr FY15 Burial Ground Sample Results | 09/15/2015 |
| M-091-40L-048 | Submit Jul-Sep 4th Qrtr FY15 Burial Ground Sample Results | 12/15/2015 |
| M-091-40L-049 | Submit Oct-Dec 1st Qrtr FY16 Burial Ground Sample Results | 03/15/2016 |
| M-091-40L-050 | Submit Jan-Mar 2nd Qrtr FY16 Burial Ground Sample Results | 06/15/2016 |
| M-091-40L-051 | Submit Apr-Jun 3rd Qrtr FY16 Burial Ground Sample Results | 09/15/2016 |
| M-091-40L-052 | Submit Jul-Sep 4th Qrtr FY16 Burial Ground Sample Results | 12/15/2016 |
| M-091-40L-053 | Submit Oct-Dec 1st Qrtr FY17 Burial Ground Sample Results | 03/15/2017 |
| M-091-40L-054 | Submit Jan-Mar 2nd Qrtr FY17 Burial Ground Sample Results | 06/15/2017 |
| M-091-40L-055 | Submit Apr-Jun 3rd Qrtr FY17 Burial Ground Sample Results | 09/15/2017 |
| M-091-40L-056 | Submit Jul-Sep 4th Qrtr FY17 Burial Ground Sample Results | 12/15/2017 |
| M-091-40L-057 | Submit Oct-Dec 1st Qrtr FY18 Burial Ground Sample Results | 03/15/2018 |
| M-091-40L-058 | Submit Jan-Mar 2rd Qrtr FY18 Burial Ground Sample Results | 06/15/2018 |
| M-091-40L-059 | Submit Apr-Jun 3rd Qrtr FY18 Burial Ground Sample Results | 09/15/2018 |
| M-091-40L-060 | Submit Jul-Sep 4th Qrtr FY18 Burial Ground Sample Results | 12/15/2018 |
| M-091-40U-T01 | Retrieve a minimum of 250 cubic meters of CH RSW in FY 2012 | 09/30/2012 |
| M-091-40V-T01 | Retrieve a minimum of 250 cubic meters of CH RSW in FY 2013 | 09/30/2013 |
| M-091-40W-T01 | Retrieve a minimum of 250 cubic meters of CH RSW in FY 2014 | 09/30/2014 |
| M-091-40X | Retrieve a total of 1,250 cubic meters of CH RSW in Fiscal Year 2015 | 09/30/2015 |
| M-091-41 | Complete Retrieval & Designation of RH RSW | 12/31/2018 |
| M-091-41A | Complete Retrieval Of Non-Caisson RH RSW | 09/30/2016 |
| M-091-42 | Comp. Treatment of small container CH MLLW to meet LDR Standards | 09/30/2017 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-091-43 | Comp. Treatment Lgr Container CH MLLW & RH MLLW to LDR Standards | 09/30/2017 |
| M-091-44 | Comp. Treatment Lrg Container CH TRUM & RH TRUM Waste | 12/31/2030 |
| M-091-44S | Certify 300 cubic meters Lrg Container CH TRUM &/or RH TRUM Waste | 09/30/2018 |
| M-091-44T | Submit Change Pkg to Complete Disposition of CH TRUM & RH TRUM | 09/30/2018 |
| M-091-44Z-005 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2014 |
| M-091-44Z-006 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2015 |
| M-091-44Z-007 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2016 |
| M-091-44Z-008 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2017 |
| M-091-44Z-009 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2018 |
| M-091-44Z-010 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2019 |
| M-091-46 | Comp. Certification of small Container CH TRUM Waste | 09/30/2017 |
| M-091-46B-T01 | Certify 300 Cubic Meters Of Small Container CH TRUM Waste | 09/30/2012 |
| M-091-46C-T02 | Certify 125 Cubic Meters of Small Container CH TRUM Waste | 09/30/2013 |
| M-091-46D-T03 | Certify 125 Cubic Meters of Small Container CH TRUM Waste | 09/30/2014 |
| M-091-46E | Certify 250 cubic meters of small container CH TRUM waste | 09/30/2015 |
| M-091-46F | Certify 250 cubic meters of small container CH TRUM waste | 09/30/2016 |
| M-091-46H | Complete Offsite Shipment of All Small Container CH TRUM Waste | 09/30/2018 |
| M-092-00 | Acquire Facilities For Cs/Sr, Na & SCW | 09/30/2018 |
| M-092-05 | Determine Disposition Path and Establish Cs/Sr Interim Milestones | 06/30/2017 |
| M-092-09 | Establish Milestones and/or Target Dates For Sodium Facilities | 09/30/2018 |
| M-093-00 | Complete Final Disposition of All 100 Area Surplus Production Reactor Buildings | TBD |
| M-093-27 | Complete 105-KE &105-KW Reactor ISS in Accordance with Removal Action Work Plan | 12/31/2019 |
| M-093-28 | Submit Change Package for Proposed Interim Milestones for 105-KE/KW Reactor Interim Safe Storage | 12/31/2015 |
| M-094-00 | Complete Disposition Of All 300 Area Surplus Facilities Including 324 Building | 09/30/2018 |
| M-094-10 | Complete Disposition of 300 Area Surplus Facilities Excluding 324 Building | 09/30/2015 |

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# APPENDIX A

# LAND DISPOSAL RESTRICTIONS REPORTING REQUIREMENTS

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# APPENDIX A

## LAND DISPOSAL RESTRICTIONS REPORTING REQUIREMENTS

The LDR reporting requirements and requirements of the Final Determination (Ecology, EPA 2000) are presented in Table A-1. Table A-1 is a crosswalk linking the requirements for this document to the location in the document where these requirements are addressed. Some of the items identified in the table were one-time requirements from the Final Determination that have been met already. For those items, the table indicates how the one-time requirements were closed out.

Additional LDR reporting requirements are established through monthly Tri-Party Agreement PMMs.

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 1 | 1.a (1990)<br>IV.3.A.1, pg 16 (FD)<br>IV.3.A.1.a, pg 16 (FD)<br>IV.3.A.1, pg 17 (FD)<br>IV.3.A.3, pg 18 (FD)<br>IV.3.B.a, pg 19 (FD)<br>23 items (Ltr) | Identification of mixed waste | Treatability Group Data Sheet (TGDS) 1.1 and 1.2, as well as Location Specific Data Sheets (LSDS) 1.1 – 1.3. LDR mixed waste is presented by a combination of treatment path forward and storage location on the two types of waste stream data sheets. In addition, the PMW Table (Appendix C) presents PMW that have the potential to be reported in the data sheets in future years, but currently are reported in a format that resulted from discussions with Ecology and EPA. |
| 2 | 1.a (1990)<br>IV.3.A.1, pg 16 (FD)<br>IV.3.A.1.a, pg 16 (FD)<br>IV.3.B.a, pg 19 (FD) | Description of mixed waste | Identification and description are included as part of Items 3 through 11 of this table.<br>TGDS 1.2 and portions of 3.0, as well as LSDS 1.3.1 and other portions of 1.0. |
| 3 | 1.a (1990)<br>IV.3.A.1.b, pg 16 (FD) | RCRA hazardous waste code(s) and state-only waste designations | TGDS 3.3.2. |
| 4 | IV.3.A.1.c, pg 16 (FD) | Applicable LDR treatment standard(s) and underlying hazardous constituents | TGDS 3.3.2. |
| 5 | 1.a (1990)<br>IV.3.A.1, pg 16 (FD)<br>IV.3.A.1.a, pg 16 (FD)<br>IV.3.A.1.c, pg 16 (FD) | Process information necessary for waste identification and LDR determinations | LSDS 1.3 and 2.12, applicable profiles referenced in LSDS 1.2. |
| 6 | 1.a (1990)<br>IV.3.A.1.c, pg 16 (FD) | History of how the waste was generated | LSDS 1.3 and 2.12. |
| 7 | 1.a (1990)<br>IV.3.A.1.c, pg 16 (FD) | Source of the hazardous constituents | LSDS 1.3. |
| 8 | 1.a (1990)<br>IV.3.A.1.c, pg 16 (FD) | How the waste was managed before storage | LSDS 2.1.1. |
| 9 | 1.a (1990)<br>IV.3.A.1.c, pg 16 (FD) | General timeframe determination that serves to categorize when the waste was placed in storage | LSDS 2.1.2 and portions of 1.3. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 10 | 1.a (1990)<br>IV.3.A.1.d, pg 16 (FD) | Radioactivity type | TGDS 3.1.1 and 3.1.2. |
| 11 | 1.a (1990)<br>IV.3.A.1.e, pg 16 (FD) | Physical form of the waste | TGDS 3.2.1 and 3.3.2. |
| 12 | 1.b (1990)<br>IV.3.A.1.f, pg 16 (FD) | Quantity of waste | TGDS 2.1, as well as LSDS 2.3. |
| 13 | 1.c (1990)<br>IV.3.A.1.g, pg 16 (FD)<br>IV.3.A.1, pg 17 (FD) | Physical location | LSDS 2.1 and 2.2 |
| 14 | 1.c (1990)<br>IV.3.A.1.g, pg 16 (FD) | Method of storage | LSDS 2.1 and 2.2. |
| 15 | 1.c (1990)<br>IV.3.A.1.g, pg 16 (FD) | List of areas permitted for storage | LSDS 2.5. |
| 16 | 1.d (1990)<br>IV.3.A.1.h, pg 16 (FD)<br>IV.3.A.2, pg 17 (FD)<br>IV.3.A.2, pg 17 (FD)<br>IV.3.A.2, pg 17 (FD) | DOE assessment of the compliance status | LSDS 2.7, PMW Table (Appendix C), and Chapter 3.0. |
| 17 | IV.3.A.2, pg 17 (FD) | Notification of which DOE organization is responsible for assessment within 60 days of final determination issuance | Timely notification was provided by letter (“Submittal of Sixty-Day Notifications Required by Final Determination” [French 2000]) and attachment. Item complete. |
| 18 | IV.3.A.2, pg 17 (FD) | Procedure used for storage method compliance assessments must meet minimum regulatory requirements (WAC 173-303 and 40 CFR 265) | Timely notification was provided by letter (French 2000) and attachment. Item complete. |
| 19 | IV.3.A.2, pg 17 (FD) | Opportunity for Ecology review and comment must be provided while developing storage method compliance assessment schedules and procedures | Timely notification was provided by letter (French 2000) and attachment. Item complete. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 20 | 1.e (1990)<br>IV.3.A.1.i, pg 17 (FD) | Identification of any releases of hazardous waste or hazardous constituents to the environment from these storage units | LSDS 2.9, as well as in Chapter 5.0. |
| 21 | 1.f (1990)<br>IV.3.A.1.j, pg 17 (FD) | Generation rates | TGDS 2.2, as well as LSDS 2.6, Table 2-1 and Table 2-2 contain estimates for the next 5 years. |
| 22 | 1.f (1990)<br>IV.3.A.1.j, pg 17 (FD) | Estimate of the storage capacity | LSDS 2.4 and Section 4.1. |
| 23 | 1.f (1990)<br>IV.3.A.1.j, pg 17 (FD) | When storage capacity will be reached | LSDS 2.4 and Section 4.1. |
| 24 | 1.f (1990)<br>IV.3.A.1.j, pg 17 (FD) | Identification of the bases and assumptions used in making the estimate | LSDS 2.4 2.12, and Chapter 4.0 text when applicable. |
| 25 | 1.g (1990)<br>IV.3.A.1.k, pg 17 (FD) | Plans to submit requests for variances, case-by-case extensions of the LDR requirements, or other exemptions | TGDS 4.8 and 5.0, and LSDS 2.10, and Section 4.3. |
| 26 | 2 (1990)<br>IV.3.A.1.k, pg 17 (FD) | Provide for the submittal of requests for case-by-case extensions, variances, and other exemptions of the LDR requirements in accordance with Section 3004 of RCRA | TGDS 4.8 and 5.0, and LSDS 2.10, and Section 4.3. |
| 27 | 3 (1990)<br>IV.3.A.3.a, pg 19 (FD)<br>IV.3.A.3.a, pg 19 (FD) | Plan and schedule to characterize all waste | LSDS 2.11, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 28 | IV.3.A.3, pg 19 (FD) | Reporting of waste characterization plan must delineate steps necessary to confirm which streams are subject to LDR | LSDS 2.11, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 29 | 3 (1990)<br>IV.3.A.3, pg 19 (FD) | Report characterization results to EPA and Ecology | Chapter 8.0. |
| 30 | 3 (1990) | Steps necessary to confirm which waste and which waste streams are subject to the LDR | TGDS 3.3.6. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 31 | 4.a (1990) | Treatment and disposal technologies | TGDS 3.3.2 and 5.0, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 32 | 4.a (1990) | Treatment capacity | TGDS 4.3, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 33 | 4.b (1990) | Commercial treatment technologies | Chapter 9.0. |
| 34 | 4.b (1990) | Capacity currently available | Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 35 | 4.c (1990) | DOE treatment technologies | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 36 | 4.c (1990) | Extent of capacity currently available | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 37 | 4.d (1990) | Whether any new commercial or DOE treatment capacity is scheduled to be available | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 38 | 4.d (1990) | When such new capacity will be available | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 39 | 4.e (1990) | Alternate technologies which are in development and which may be used to manage these LDR wastes | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 40 | 4.e (1990) | Assessment of when such alternate technologies may become available | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 41 | 4.f (1990) | Basis and assumptions used | TGDS 4.9 and Chapter 9.0, Chapter 10.0, and Chapter 11.0. |
| 42 | 4.f (1990) | Foreseeable contingencies | Chapter 9.0, Chapter 10.0, and Chapter 11.0. |
| 43 | 5 (1990)<br>IV.3.A.3, pg 18 (FD) | Milestones and schedules for the development and implementation of treatment technologies | TGDS 4.4, 4.5, and 4.6, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 44 | 5 (1990)<br>IV.3.A.3, pg 18 (FD)<br>IV.3.A.3.a, pg 18 (FD) | All applicable milestones and associated schedules for developing and implementing treatment or management technologies | TGDS 4.4, 4.5, and 4.6, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 45 | IV.3.A.3.a, pg 18 (FD) | Schedules for submitting applicable permit applications, initiating construction, conducting systems testing, commencing operations, and processing backlogged and currently generated waste, for those waste types for which treatment technologies exist | TGDS 4.4, 4.5, and 4.6, Chapter 9.0, Chapter 10.0, Chapter 11.0, and Chapter 15.0. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 46 | IV.3.A.3.b, pg 18 (FD) | Schedules for identifying and developing treatment technologies for those waste types for which **no** treatment technologies currently exist, to include identification of funding requirements for the identification and development of such technologies, submitting treatability study exemptions, and submitting research and development permit applications | TGDS 4.4, 4.5, and 4.6, Chapter 9.0, Chapter 10.0, Chapter 11.0, and Chapter 15.0. |
| 47 | IV.3.A.3.c, pg 18 (FD) | Requirements for all cases where DOE proposes radionuclide separation of mixed waste or materials derived from mixed waste | Section 9.4, Section 10.5, and Section 11.3. |
| 48 | 6 (1990) | Provide that DOE may treat LDR waste in accordance with applicable law in advance of approved milestone dates | Activities always can be completed in advance of the milestone date, and are whenever possible. |
| 49 | IV.3.A.3, pg 18 (FD) | Propose milestones and associated schedules for known waste not covered by the report to be incorporated and established in accordance with the Tri-Party Agreement Action Plan (Section 12) | TGDS 4.6, Section 1.3, Chapter 9.0, Chapter 10.0, Chapter 11.0, and Chapter 15.0. |
| 50 | 7 (1990) | Identified methods for minimizing the generation of LDR waste | LSDS 3.2 and Chapter 6. |
| 51 | 7 (1990) | Process changes that can be made to reduce or eliminate LDR waste | LSDS 3.2 and Chapter 6. |
| 52 | 7 (1990) | Methods to minimize the volume of regulated and restricted waste through segregation and avoidance of commingling | LSDS 3.2, 3.3.3, and Chapter 6. |
| 53 | 7 (1990) | Substitution of less toxic materials for materials currently used at the Hanford Site | LSDS 3.2, 3.3.3, and Chapter 6. |
| 54 | 7 (1990) | Schedule for implementing waste minimization procedures | LSDS 3.3.2 and 3.3.3. |
| 55 | 7 (1990) | Projections for reducing newly generated waste | LSDS 3.3.2. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 56 | 7 (1990) | Basis for developing projections | LSDS 3.3.3. |
| 57 | 7 (1990) | Assumptions used in developing the projections | LSDS 3.3.3 (LSDS) and Chapter 6.0. |
| 58 | 7 (1990) | Annually revise and submit as part of the annual report that portion of the storage report associated with Item 1 of this table, to conform with the generation projections contained in the Waste Minimization Plan | The LDR report is revised annually, including the waste minimization content. |
| 59 | 7 (1990) | As part of the annual report, DOE shall submit an amendment to the Waste Minimization Plan | Chapter 6.0. |
| 60 | 7 (1990) | Annually, DOE shall revise and submit that portion of the Storage Report associated with Item 1 (and the "1990" reference) of this table, to conform with generation projections contained in the update to the Waste Minimization Plan | LSDS 3.1, 3.2, 3.3, and Chapter 6. |
| 61 | IV.3.A.3, pg 18 (FD)<br>IV.3.A.3, pg 18-19 (FD) | The Annual LDR Report must include a waste characterization plan and associated schedules based on the waste identified in accordance with the final determination. | Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 62 | 8 (1990) | Describe how information, plans, and schedules contained in the LDR Plan will be updated as part of the annual report | Section 1.3 |
| 63 | 8 (1990) | Describe how and when the LDR Plan will be revised and reissued | Section 1.3. |
| 64 | IV.3.B.c, pg 19 (FD) | Each waste stream has an associated statement by DOE documenting whether sufficient work has been performed for continued compliance | Not applicable, based on Pollution Control Hearings Board stipulations. |
| 65 | IV.3.B.d, pg 19 (FD) | The Annual LDR Report will serve as a vehicle to propose schedules for newly discovered or to be generated mixed waste not yet covered by the report or the Tri-Party Agreement | Newly identified waste has been and continues to be added to the report each year, subject to scope of the report and waste stream definition. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 66 | IV.3.B.e, pg 19 (FD) | Annual LDR report will serve as vehicle to propose modified TPA schedules as necessary to achieve compliance with LDR treatment requirements in a manner equivalent to STPs as required by FFCA | Section 1.3. |
| 67 | IV.3.A.3.a, pg 19 (FD) | Proposed plans and schedules to sufficiently characterize mixed waste, including an inventory of mixed waste not sufficiently characterized by sampling and analysis | LSDS 2.11, Chapter 9.0, Chapter 10.0, and Chapter 11.0. |
| 68 | IV.3.B.b, pg 19 (FD)<br>IV.3.B.f, pg 20 (FD) | LDR report will be published as a primary document and will propose new waste streams as necessary | Signature page states that this report is a primary document, Section 1.1, and Section 1.3. |
| 69 | IV.3.B.b, pg 19 (FD) | LDR report will support equivalency to FFCA STPs | M-026-01 Milestone description. While not identical to an STP, the LDR report is equivalent to an STP. |
| 70 | IV.3.B.c, pg 19 (FD) | LDR report will serve as unified site-wide document detailing requirements of LDR Requirements Document[2] | This table delineates how the LDR report meets these requirements; refer to all items in second column of this table marked with "(1990)." |
| 71 | IV.3.B.c, pg 19 (FD) | LDR report will report DOE actions planned and taken to achieve and maintain full compliance with LDR and associated Tri-Party Agreement requirements in effect as of LDR report submittal date | This table delineates how the LDR report meets these requirements, refers to all items in second column of this table. |
| 72 | IV.3.B.f, pg 20 (FD) | Inclusion of specific statement regarding the LDR report being a primary document, and regarding binding and enforceable nature of contents: "This document has been prepared, submitted, revised and approved as a primary document in response to the requirements of Tri-Party Agreement Milestone Series M-026-01 and related RCRA LDR and Tri-Party Agreement requirements. As such, this document serves as a binding and enforceable document under the Tri-Party Agreement." | The signature page states that this report is a primary document and includes the required language. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 73 | IV.3.B.f, pg 20 (FD) | Inclusion of specific statement regarding approval by DOE and Ecology: "Approval of DOE's annual LDR Report as a Tri-Party Agreement primary document shall be by written approval of DOE and Ecology IAMIT representatives." Signature blocks are to follow the above statement. | The signature page states that this report is a primary document, and includes signature blocks. |
| 74 | IV.3.C, pg 20 (FD) | The LDR report submitted in 2000 is an interim report documenting known information, and detailing actions planned to fully comply with the final determination. | Completed by issuing DOE/RL-2000-39, *Interim Report on Hanford Site Land Disposal Restrictions for Mixed Waste*, Volumes 1 through 3. |

FD = Final determination.

[1]Item number supplied for the convenience of the reader.
[2]The notation "(1990)" refers to the four-page "Requirements for the Hanford LDR Plan" (LDR Requirements Document) signed by EPA and Ecology in 1990. The notation "(FD)" refers to the "Director's Final Determination" issued by Ecology on March 29, 2000. The notation "(Ltr)" refers to the January 25, 2000 clarification letter from Ecology delineating the wastes required to be reported. Additional modifications to requirements have been made in the Resolution of Dispute dated March 14th, 2002 and during the monthly Tri-Party Agreement Project Managers Meeting for M-026-01.
[3]The text in this column is a brief summary of the requirement(s).
[4]The information in this column refers to the location of the information within this annual LDR report; for information presented on the data sheets of Appendix B, "(TGDS)" refers to the treatability group data sheet, and "(LSDS)" refers to the location –specific data sheet. A brief description of how the two types of data sheets are related can be found in Section 1.2 (see also Figure B-1 of Appendix B).

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# APPENDIX B

# WASTE STORAGE REPORT DATA SHEETS

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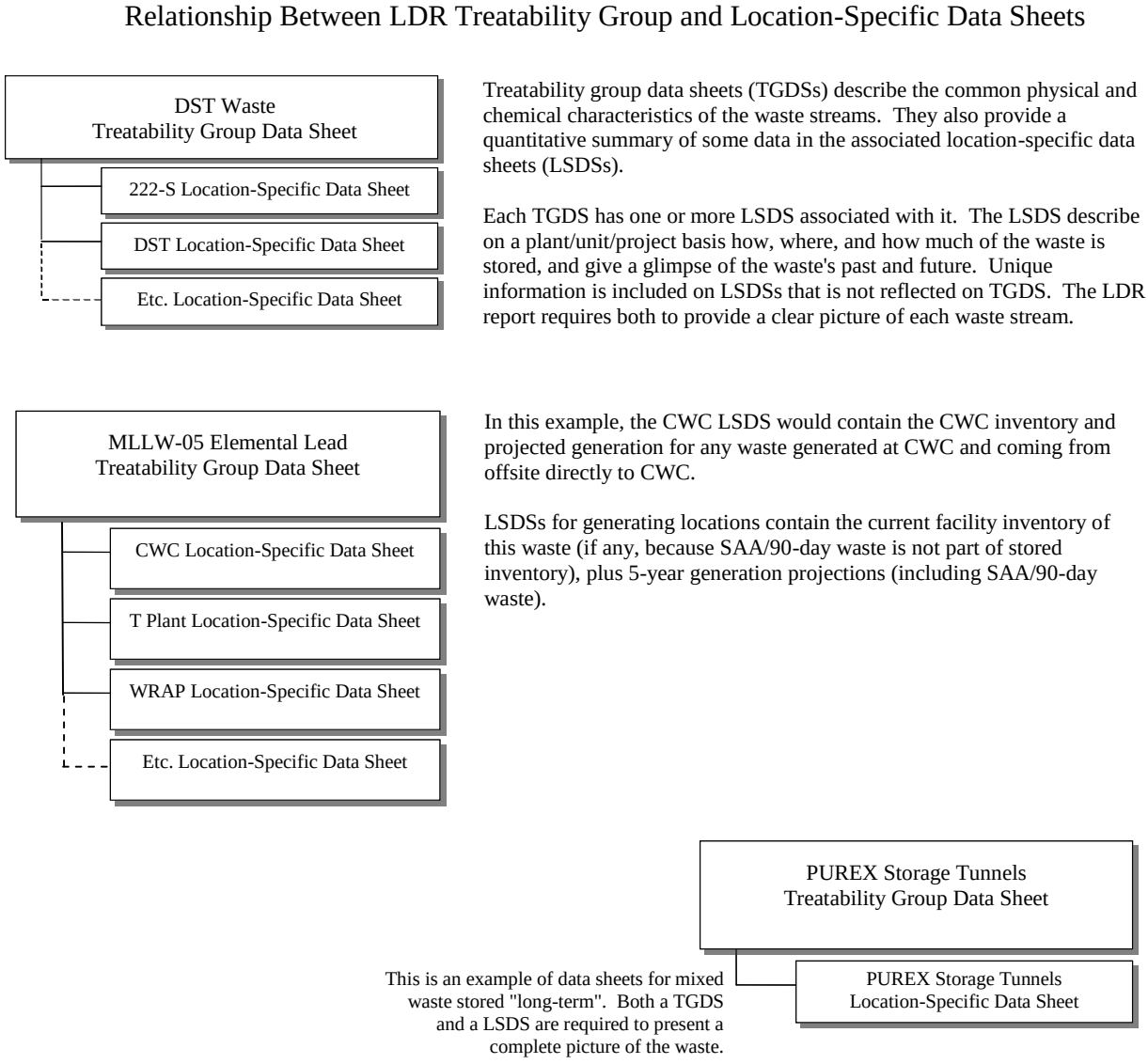
# APPENDIX B

# WASTE STORAGE REPORT DATA SHEETS

Figure B-1. Example Relationship Between Location-Specific and Treatability Group Data Sheets.



Each treatability group data sheet is followed by one or more LSDSs that fall within that treatability group. Refer to Figure B-1 of this document for details of how the two types of sheets relate to each other. Refer to Table B-1 of this document for the index of data sheets.

**GENERAL INSTRUCTIONS FOR ALL DATA SHEETS:**

The basis for LDR reporting in this document is CY 2014, unless stated otherwise.

## B1.0 TREATABILITY GROUP DATA SHEET DATA FIELD DESCRIPTIONS

The following items are numbered to correspond to the numbers on the treatability group data sheets (i.e., the numbers refer to the data field locations in the data sheets).

**1.0 Waste Stream Identification**

**1.1 Treatability group name:** Supplies a short, descriptive name for the waste within the treatability group.

**1.2 Description of waste (list WSRd [waste specification record] numbers for this waste stream, as applicable):** Provides an overall description of the waste streams reported under the treatability group. WSRd numbers indicate a waste treatment and/or disposal pathway, and are used principally for waste stored at the CWC or received from off-site. Note that the grouping of waste into a treatability group can be based on any of the following: proposed treatment technology, storage location, or waste source. If there is no WSRd applicable to the treatability group, a description must still be provided.

**2.0 Waste Stream Inventory and Generation**

**2.1 Current total inventory for this waste stream (stored waste only, not accumulation areas). Total volume (cubic meters):** Automatically summed from stored inventory reported in individual LSDSs contributing to the treatability group data sheet.

**2.2 Estimated generation projection by calendar year:** Listed by year, and $m^3$ and/or kg: Also automatically summed from individual LSDSs contributing to the treatability group data sheet.

**3.0 Waste Stream Characterization**

**3.1 Radiological characteristics**

**3.1.1 Mixed waste type**. Lists three options, one of which must be selected. The choice indicates radiological classification (either high-level, transuranic, or low-level). If more than one selection applies to the treatability group data sheet, select the most appropriate one and enter explanatory comments in Section 3.1.3.

**3.1.2 Handling (as package contents would need to be handled during treatment)**. Lists two options, one of which must be selected. The choice differentiates between contact-

and remote-handled waste types. The choice made reflects the waste as if no longer packaged for storage, but instead as if it were unpackaged and handled for treatment. If more than one selection applies to the treatability group data sheet, select the most appropriate one and enter explanatory comments in Section 3.1.3.

**3.1.3 Comments on radiological characteristics (e.g., more specific information on content, treatment concerns caused by radiation, confidence level):** Provides space for explanatory information on radiological characteristics of the waste that cannot be supplied in the multiple-choice format used in previous sections of this data sheet. (Refer to explanations above for previous sections of the treatability group data sheet.)

**3.2 Physical form**

**3.2.1 Physical form of the waste.** Lists five options, one or more of which must be selected. The choice indicates the physical form (either solid, liquid, semi-solid, debris, or other). If the "Other" choice is selected or if there are any comments on the physical form, enter explanatory comments in Section 3.2.2.

**3.2.2 Comments on physical form:** Indicate any comments on the physical form of the waste within the treatability group data sheet. If there are no comments, enter "None."

**3.3 Regulated constituents and wastewater/non-wastewater category**

**3.3.1 Wastewater/non-wastewater under RCRA**. Lists three options, one of which must be selected. The choice indicates whether, under federal LDR requirements defined in 40 CFR 268.2, the waste stream is considered wastewater, non-wastewater, or is of an unknown type. If the unknown type is selected include a plan and schedule for refining the waste's characterization to specify the LDR treatability group. For state-only dangerous waste select unknown.

**3.3.2 Regulated constituent table including treatment requirements and UHCs, if applicable**. Provides the following information in a table. Note that underlying hazardous constituent (UHC) information is included in this table. Footnotes provide further explanation for the table, as applicable:

- The EPA or state-only "EPA/State numbers" indicate the listed or characteristic waste numbers such as D001, F005, etc. Note that not all waste numbers listed in the table for waste reported on any particular treatability group data sheet will be applicable to all subcategories of waste in the treatability group (nor, therefore, will all waste numbers apply to each LSDS contributing to a particular treatability group). Note also that for waste for which more than one subcategory applies, the waste number appears in this table once for each of the applicable LDR subcategories.

- The "Waste description" indicates the characteristics of the waste or constituents of concern (e.g., "ignitable" or "methyl ethyl ketone").

- The "LDR subcategory" indicates any applicable subcategory of the assigned waste number (e.g., "corrosive characteristic waste" or "radioactive high level waste" for D002). The LDR subcategory applies only to D001 through D011. Some data sheets could show the constituent of concern in this field for F-coded waste. Note that if more than one subcategory applies, the waste number appears in this table once for each of the applicable LDR subcategories.

- "Concentration (typical or range)" of the constituent, if known, is included in the table as a range or a single value. In some cases, the concentration might not be known; in that case, this field is labeled "TBD" or explained with a footnote to the table or elsewhere in the data sheet.

- "Basis" explains how the concentration information was determined (i.e., "process knowledge" and/or "analytical data").

- The final column, "LDR Treatment Concentration Standard or Technology Code," lists either the regulatory-required method for treating the waste, or the required final concentration, as obtained from the applicable regulations. Note that TRUM waste is a special case.

**3.3.3 List any waste numbers from Section 3.3.2 for which the waste stream already meets established LDR treatment standards**. Lists three options, one of which must be selected, that indicates the treatment status of the waste in the treatability group. When the "list" option is selected, the waste numbers from the Section 3.3.2 table must be entered meeting treatment standards.

**3.3.4 Does this waste stream contain PCBs?** Lists three options, one of which must be selected regarding PCB content. The basis for the choice made can be process knowledge or laboratory analysis.

**3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?** Implies applicability as determined by TSCA regulations. Only answer this question when Section 3.3.4 is answered as "yes."

**3.3.4.2 Indicate the PCB concentration range (ppm)**. Lists three options in a multiple choice format for reporting the appropriate PCB concentration range. Only answer this question when Section 3.3.4 is answered as "yes."

**3.3.5 What is the confidence level for the regulated constituents?** Lists three options, one of which must be selected. This assigns a subjective rating to the accuracy of the information presented on regulated constituents.

**3.3.6 Comments on regulated constituents and wastewater/non-wastewater category:** Provides space for explanatory information on regulated constituents and wastewater/non-wastewater category of the waste and confidence in the accuracy of the information that cannot otherwise be supplied in the format provided for the other sections of the treatability group data sheet.

**4.0 Waste Stream Treatment**

**4.1** **Is this waste stream currently being treated?** Lists two options, one of which must be selected. Details are provided only if treatment currently is under way. When no is selected, "N/A" will be entered.

**4.2** **Planned treatment**. Lists four options in a multiple-choice format. The appropriate box(es) is/are checked to indicate the status of existing plans for treating the waste to meet applicable regulations. When no treatment is required, skip to Section 5.0.

**4.3** **Planned treatment method, facility, and extent of treatment capacity available:** Describes details of planned treatment for on-site TSD units and off-site facilities, as well as details of how much of the required treatment capacity is available.

**4.4** **Treatment schedule information:** Provides space to include such information as start date of treatment, end date of treatment, and how much waste will be treated each year. Either treatment schedule information or other schedule-related information is provided, or if none exists as of the status reporting date for the treatability group, the current status of any active negotiations or applicable actions are described instead.

**4.5** **Applicable Tri-Party Agreement treatment milestone numbers (including permitting):** Provides table with Tri-Party Agreement milestone drop down menu to list appropriate existing milestone numbers related to treatment. "N/A" will be indicated when the table is empty. Milestones cited as commitments for treatment must be the specific milestone(s) that on completion will satisfy the LDR requirements for treatment.

**4.6** **Proposed new Tri-Party Agreement treatment milestones:** Provides space to list appropriate proposed new treatment milestones. If applicable, make reference to any active Tri-Party Agreement negotiations.

**4.7** **If treating or planning to treat on-site, was or will waste minimization be addressed in developing and/or selecting the treatment method?** If the corresponding box is selected in Section 4.2, three options for a multiple choice answer are provided to describe any waste minimization plans for the waste during treatment. **If yes, describe:** Self-explanatory. If the corresponding box in Section 4.2 is not checked, insert "N/A based on Section 4.2" in the comment field.

**4.8** **List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment already in place:** Space provided for supplying details of any existing or future treatability variances (40 CFR 268.44), equivalency petitions (40 CFR 268.42(b)), rulemaking petitions (WAC 173-303-910, 40 CFR 260.20), and case-by-case exemptions [WAC 173-303-140(6)]. If there are none, insert "None."

**4.9** **Key assumptions:** Provides space to list assumptions concerning treatment that cannot otherwise be supplied in the format provided. If there are no key assumptions, insert "None."

## 5.0 Waste Stream Disposal

**After treatment, how will the waste stream be disposed of (include locations, milestone numbers, variances required, etc., as applicable)?** Provides space to describe disposal methods, locations, variances required, technology, etc., as applicable.

## B2.0 LOCATION-SPECIFIC DATA SHEET DATA FIELD DESCRIPTIONS

The following items are numbered to correspond to their numbers on the LSDSs (i.e., the numbers refer to the data field locations in the data sheets). The numbers have no relation to their position in this document appendix. Note that the term "storage" is used throughout the LSDSs based upon the definition of WAC 173-303-040. "Accumulation" or management in a CERCLA area of contamination is not considered "storage."

### 1.0 Waste Stream Identification and Source

**1.1** **Unit/Plant Name:** Uniquely identifies the generating location of the waste.
**Waste Stream**: Supplies a short, descriptive name for the waste.
**Treatability group name**: Supplies the short, descriptive name for the waste treatability group to which the waste described in the particular LSDS is assigned.

**1.2** **Applicable profile number(s) for this waste stream:** Lists waste profile numbers applicable to the waste if any. Waste profile numbers are used principally for waste that is transferred to the CWC or that is received from off-site generators. If there are no waste profiles, indicate "None."

**1.3** **Waste stream source information**

**1.3.1** **General description of the waste (e.g., spill cleanup waste, discarded lab materials, maintenance waste):** Describes where the waste came from, the general matrix, and constituents.

**1.3.2** **History of how and where the waste was/is generated:** Describes how and where the waste was generated.

**1.3.3** **Source of the regulated constituents**. Describes where the regulated constituents came from.

**1.3.4** **Source of information (e.g., analytical data, process knowledge, document number, etc.)**. Information sources include analytical data, process knowledge, document number, etc.

**1.3.5** **Additional notes:** Includes any information that would be helpful in identifying the waste and its generation. If no additional notes apply, indicate "None."

### 2.0 Waste Stream Storage, Inventory, and Generation Information

If the waste stream reported is managed in satellite accumulation areas, 90-day accumulation areas, or CERCLA area of contamination, skip to Section 2.6. The comment field in Section 2.3 can be used if necessary.

**2.1** **Current storage method**. Lists seven options in multiple choice format to describe the type of storage used. No box is chosen if the waste reported on the data sheet is only managed in accumulation areas or a CERCLA area of contamination. Storage pursuant

to the Tri-Party Agreement must be addressed by checking the appropriate boxes. Note that as used here, "container (pad)" indicates drums or other containers such as boxes that are sitting on a concrete or other pad or area; "container (covered)" indicates drums or other containers such as boxes sitting under a roof or inside a building. Provide additional information about the storage location if other is checked (e.g., containment building).

**2.1.1 How was the waste managed prior to storage?** Describes routine and special management of the waste. Note: For waste in accumulation areas or CERCLA areas of contamination, the answer provided is "N/A."

**2.1.2 Timeframe when waste was placed into storage:** Supplies the date or dates the waste was placed in storage (waste storage history). Examples might be, "This waste has been generated and stored at this location from 1987 to the present" for waste continuously generated and stored, or "The waste currently in storage was generated in 1999" for waste no longer generated and stored. Note: For reporting of waste in accumulation areas or CERCLA areas of contamination, the answer provided is "N/A."

**2.2 Storage Inventory locations:** Lists the building and/or room number, as appropriate, with the number of storage containers/tanks for each storage location in a table format. Note: This section of this data sheet does not include satellite or 90-day accumulation areas. For reporting of waste in accumulation areas or CERCLA areas of contamination, the answer provided is "N/A" in both table cells.

**2.3 Current stored inventory for this stream**. Volume of waste (cubic meters) and reporting date in mm/dd/yyyy format of the volume is supplied. The default reporting date is December 31, 2014. In some cases, the date shown will be different if the volume is known only for another date. The volume information for each LSDS is summed to the reported volume for its associated treatability group data sheet. Note that for reporting of waste in accumulation areas or CERCLA areas of contamination, the answer provided here is "N/A" or zero. Accumulated waste or CERCLA areas of contamination volume is reported only in Section 2.6 of the LSDS as an estimated generation projection, as applicable. Note also that the volume will display three decimal points in the database. If necessary, comments on waste inventory can be entered in this section even if the waste is managed in a satellite accumulation area, 90-day accumulation area, or a CERCLA area of contamination. If there are no comments, enter "None."

**2.4 Is storage capacity at this location potentially an issue for this waste stream?** The two multiple choice options are "yes" and "no." **If "yes," what is the total estimated storage capacity?** Self-explanatory. Do not answer this question when no is selected, "N/A" will be displayed. **When is this capacity expected to be reached?** Self-explanatory. Do not answer this question when no is selected, "N/A" will be displayed. **Bases and assumptions used:** Lists any bases and assumptions used in estimating storage capacity limitations. Note: For waste reported in accumulation areas or CERCLA areas of contamination, the answer provided here is "N/A."

**2.5 Planned storage areas for this waste:** Five types of storage areas are provided in a multiple-choice format. More than one choice could apply. If the waste was in its

current location as of 12/31/04, or will remain in its current location for a finite period of time, the "current location" box in addition to any other known planned storage location indicates where the waste is intended to be stored. Note: For waste reported in accumulation areas or CERCLA areas of contamination, an answer can be provided here but is not required.

**2.6 Estimated generation projection by calendar year (includes waste in satellite accumulation areas, 90-day accumulation areas, or CERCLA areas of contamination):** Lists the estimated volume ($m^3$) or mass (kg) of the mixed waste or matrices projected to be generated as mixed waste in the next 5 years. When a volume is entered, the mass can be left blank. Waste volumes in satellite accumulation areas, 90-day accumulation area, or CERCLA areas of contamination at the end of the calendar year are reported in a LSDS for the first year's forecast. Note that the volume will display three decimal points.

**2.7 DOE Storage Method Compliance Assessment information:** Three options are provided in a multiple choice format. In some cases, more than one option is appropriate. The chosen option shows whether the assessment either has been or will be completed, and references the appropriate assessment end date or planned assessment date; or, it explains why neither of the other two options is an appropriate answer. For accumulation areas, CERCLA areas of contamination, or waste that has not been generated, check the "other" box and insert "N/A" for the explanation. When selecting "assessment has been completed," the assessment document number and the assessment date (e.g., transmittal letter date) must be entered into the table. The assessment schedule can be found in Section 3.2 of the report.

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:** Provides table with Tri-Party Agreement milestone drop down menu with associated due dates. Lists any applicable Tri-Party Agreement milestone(s) for storage. "N/A" indicates that this question is not applicable (i.e., waste is only in accumulation areas or there are no milestones). For TSD units, identifying the M-020 milestone or other permitting related milestone is appropriate. Milestones cited as commitments must be the specific milestone(s) that on completion will satisfy the LDR requirements.

**2.9 Has there ever been any non-permitted, unauthorized release of this waste stream from this storage unit to the environment?** Lists two options, one of which must be selected – "yes" and "no" – to report known spills, such as those reported in accordance with WAC 173-303-145, and -360 and the tank waste release status reports. Note: For waste reported in accumulation areas, select "No." **If yes, summarize releases and quantities and provide date:** Provide information or reference the Section of the LDR report that discusses the releases.

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?** Lists two options, one of which must be selected, "yes" and "no." **If yes, explain:** If "yes" is chosen, an explanation is provided. (Variances and/or exemptions associated with waste treatment are addressed in treatability group data sheets, Section 4.8.)

## 2.11 Characterization:

**2.11.1 Is further characterization needed about the waste prior to acceptance for storage?** Three options, one of which must be selected: "yes," "no," and "unknown at this time." Answer the question as whether further information is needed about the waste before acceptance for storage. Use the explanation area of question 2.12 if additional space is necessary.

Answer yes if characterization is required for any parameter or aspect (e.g., LDR information, waste designation information, packaging information, radionuclide information). If the answer is "yes," an explanation is required. The explanation either will reference to the milestone table or make reference to an agreement to obtain the information, reference active negotiations addressing the commitment, include a commitment to obtain the information, or the text will describe why a commitment is not necessary. The following are examples of characterization information needs that do not require a commitment:

- Radioactive characterization issues
- Characterization required as normal process when a cradle to grave process is being implemented (e.g., waste being sent to 200 Area Liquids)
- Unit-specific waste acceptance data not required for LDR waste characterization (e.g., total suspended solids for sending waste to the 200 Area Liquids, or Real-Time radiography).

Answer the question "no," if the mixed waste is in a satellite accumulation area or 90-day accumulation area and is ready to be placed into storage, or if the waste is already is storage.

Answer the question "unknown at this time," if characterization requirements for storage cannot be determined at this time. An explanation in the comment field is necessary. The explanation needs to identify what step(s) needs to be completed before the question can be answered.

If the answer is yes and Tri-Party Agreement milestones exist that address characterization, provide Tri-Party Agreement milestone number(s) in the table provided. If no milestones are selected from the drop down menu provided in the database, "N/A" will be automatically inserted. Milestones cited as commitments for characterization must be the specific milestone(s) that on completion will satisfy the LDR requirements for characterization.

**2.11.2 Is further characterization needed about the waste prior to acceptance for treatment?** Three options, one of which must be selected, are provided: "yes," "no," and "unknown at this time." Answer the question as whether further information is needed about the waste before acceptance for treatment. Use the explanation area of question 2.12 if additional space is necessary. Treatment is defined as any activity

meeting the definition of treatment in WAC 173-303-040 (broader than LDR treatment) which states:

> *"Treatment" means the physical, chemical, or biological processing of dangerous waste to make such wastes nondangerous or less dangerous, safer for transport, amenable for energy or material resource recovery, amenable for storage, or reduced in volume, with the exception of compacting, repackaging, and sorting as allowed under WAC 173-303-400(2) and 173-303-600(3).*

Answer the question "yes" if any information is needed for any parameter or aspect to allow treatment of the mixed waste. If the answer is yes, an explanation is required in the comment field. The explanation will reference to the milestone table, make reference to an agreement to obtain the information, reference active negotiations addressing the commitment, include a commitment to obtain the information, or the text will describe why a commitment is not necessary. Refer to the example circumstances in Section 2.11.1 for situations where a commitment is not required.

Answer the question "no" if the mixed waste is ready for treatment or if no treatment is required.

Answer the question "unknown at this time" if uncertainty exists about whether treatment is required for the mixed waste. An explanation in the comment field is necessary. The explanation needs to identify what step(s) needs to be completed before the question can be answered

If the answer is yes and Tri-Party Agreement milestones exist that address characterization, provide the Tri-Party Agreement milestone number(s) in the table provided. If no milestones are selected from the drop down menu provided in the database, "N/A" will be automatically inserted. Milestones cited as commitments for characterization must be the specific milestone(s) that on completion will satisfy the LDR requirements for characterization.

**2.11.3 Is further characterization needed about the waste prior to acceptance for disposal?** Three options, one of which must be selected, are provided: "yes," "no," and "unknown at this time." Answer the question as whether further information is needed about the waste before acceptance for disposal. Use the explanation area of question 2.12 if additional space is necessary.

Answer the question "yes" if any LDR treatment standard for the mixed waste is a concentration based standard that requires sampling and analysis to confirm that the treatment standard has been met after treatment. In addition, answer "yes" if information about other parameters (e.g., voids) needs to be obtained. If the answer is yes, an explanation is required in the comment field. The explanation will reference to the milestone table, make reference to an agreement to obtain the information, reference active negotiations addressing the commitment, include a commitment to obtain the information, or the text will describe why a commitment is not necessary. Refer to the

example circumstances in Section 2.11.1 for situations where a commitment is not required.

Answer the question "no" if all the LDR treatment standards for the mixed waste are a performance based treatment standard (e.g., a specified technology, debris rule macroencapsulation) or if the waste is TRUM destined for WIPP.

Answer the question "unknown at this time" if uncertainty exists about disposal location waste acceptance requirements. An explanation in the comment field is necessary. The explanation needs to identify what step(s) needs to be completed before the question can be answered

If the answer is yes and Tri-Party Agreement milestones exist that address characterization, provide the Tri-Party Agreement milestone number(s) in the table provided. If no milestones are selected from the drop down menu provided in the database, "N/A" will be automatically inserted. Milestones cited as commitments for characterization must be the specific milestone(s) that on completion will satisfy the LDR requirements for characterization.

**2.12 Other key assumptions related to storage, inventory, and generation information:** Explains anything about this waste that will provide greater understanding and clarification, or that cannot otherwise be supplied in the format provided. Also identifies assumptions that, if incorrect, would affect information in the data sheet or elsewhere in the report.

**3.0 Waste Minimization**

**3.1 Has a waste minimization assessment been completed for this stream?** Lists two options, one of which must be selected, "yes" and "no." **If yes, provide date assessment conducted:** If "yes" is chosen, provide date the assessment was conducted. **If yes, provide document number or other identification:** Provides the document number or other identification of the assessment and/or results. The information provided is sufficient for a reader to find the document. **If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate N/A:** If "no" is chosen, provide a future date assessment is planned to be completed. "N/A" is used only if the waste is no longer generated or if yes was selected. Note that if the waste is not generated at this location (i.e., if the location is for storage only), then this space can be used to explain that fact.

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials):** Space is provided for the explanation.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** How much waste has the facility avoided generating this past year as part of the waste minimization program?

**3.3.2 Projected future waste volume reductions:** Lists the next 5 years in volume ($m^3$) or mass (kg). The database will automatically add the individual years' entries to supply the LSDS total.

**3.3.3 Bases and assumptions used in above estimates:** Provide the bases and assumptions used to answer Sections 3.3.1 and 3.3.2 of the LSDS, if any estimates or schedules were provided. Note that any other explanation that will provide greater understanding and clarification about waste minimization activities for this waste can also be provided, in addition to the bases and assumptions required to support Sections 3.3.1 and 3.3.2 of the LSDS.

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Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **Physical Location** | **Waste Stream** | **Contractor** |
| 221-T Containment Building | | | CHPRC |
| | T Plant Complex | 221-T Containment Building | CHPRC |
| 221-T Tank System | | | CHPRC |
| | T Plant Complex | RCRA Tank System | CHPRC |
| 222-S Laboratory Complex | | | WRPS |
| | 222-S | Containerized mixed waste | WRPS |
| | Tank Farm Facilities | Mixed waste from 616 | WRPS |
| 222-S T8 Tunnel | | | WRPS |
| | 222-S Laboratory Complex | T8 Tunnel RH-MLLW | WRPS |
| 241-CX Tank System | | | CHPRC |
| | 241-CX Tank System | CX Tank System | CHPRC |
| 324 Building REC Waste | | | WCH |
| | 324 Building | Radiochemical Engineering Cells | WCH |
| 325 HWTU | | | PNNL |
| | 325 HWTU | 325 HWTU | PNNL |
| 400 Area WMU | | | CHPRC |
| | 400 Area WMU | Mixed Waste | CHPRC |
| B Plant Cell 4 | | | CHPRC |
| | B Plant Complex | Cell 4 | CHPRC |
| B Plant Containment Building | | | CHPRC |
| | B Plant Complex | Containment Building Storage | CHPRC |
| Cesium and Strontium Capsules | | | CHPRC |
| | WESF | Cs and Sr Capsules | CHPRC |
| DST Waste | | | WRPS |
| | 222-S Laboratory Complex/219-S Waste Handling Facility | Bulk Aqueous Liquids | WRPS |
| | DST System | DST System | WRPS |
| | 204-AR Catch Tank | Aqueous Mixed Waste | WRPS |

Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **Physical Location** | **Waste Stream** | **Contractor** |
| ERDF—Treatment | | | WCH |
| | CERCLA Waste | CERCLA Waste | WCH |
| | CS&I | Hazardous Debris to ERDF | MSA |
| | PFP | D&D Hazardous Debris to ERDF | CHPRC |
| | Tank Farms | Hazardous Debris to ERDF | WRPS |
| | Waste Sampling and Characterization Facility (WSCF) | Laboratory Hazardous Waste | MSA |
| HSTF | | | CHPRC |
| | HSTF | HSTF 276-S-141/142 | CHPRC |
| LERF/ETF Liquid Waste | | | CHPRC |
| | 242-A Evaporator | Evaporator Process Condensate | WRPS |
| | LERF | Wastewater | CHPRC |
| | LLBG/Mixed Waste Trench | TR34 and TR31 Leachate | CHPRC |
| | PFP | Aqueous Waste | CHPRC |
| | T Plant Complex/2706-T Tank System | 2706-T Tank System | CHPRC |
| LERF/ETF Solid Waste | | | CHPRC |
| | ETF | Powder Drums | CHPRC |
| | LERF/ETF | Operations and Maintenance Waste | CHPRC |
| MLLW-01 – LDR Compliant Waste | | | CHPRC |
| | CS&I | Miscellaneous Non-Routine Streams | MSA |
| | CWC | LDR Compliant | CHPRC |
| | T Plant Complex | LDR Compliant | CHPRC |
| | WRAP | LDR Compliant | CHPRC |

Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **Physical Location** | **Waste Stream** | **Contractor** |
| MLLW-02 - Inorganic Non-Debris | | | CHPRC |
| | CWC | Inorganic Non-Debris Solids And Labpacks | CHPRC |
| | T Plant Complex | Inorganic Non-Debris | CHPRC |
| | WRAP | Inorganic Non-Debris Solids and Labpacks | CHPRC |
| | LLBG | Inorganic Non-Debris | CHPRC |
| MLLW-03 - Organic Non-Debris | | | CHPRC |
| | LLBG | MLLW Retrieval Organic Non-Debris | CHPRC |
| | T Plant Complex | Organic Non-Debris | CHPRC |
| | WRAP | Organic Non-Debris | CHPRC |
| | CWC | Organic Non-Debris | CHPRC |
| MLLW-04 - Hazardous Debris | | | CHPRC |
| | CWC | Hazardous Debris | CHPRC |
| | LLBG | MLLW Retrieval Debris | CHPRC |
| | T Plant Complex | Hazardous Debris | CHPRC |
| | WRAP | Hazardous Debris | CHPRC |
| | FFTF-440 Pad | Hazardous Debris | CHPRC |
| MLLW-05 – Radioactive Lead Solids | | | CHPRC |
| | CWC | Elemental Lead | CHPRC |
| | T Plant Complex | Elemental Lead | CHPRC |
| | WRAP | Radioactive Lead Solids | CHPRC |
| MLLW-06 – Mercury Wastes | | | CHPRC |
| | CWC | Elemental Mercury | CHPRC |
| | WRAP | Elemental Mercury | CHPRC |

Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **Physical Location** | **Waste Stream** | **Contractor** |
| MLLW-07 - RH and Large Container | | | CHPRC |
| | 325 HWTU | MLLW-07 RH | PNNL |
| | CWC | MLLW-07 | CHPRC |
| | LLBG | MLLW-07 | CHPRC |
| | T Plant Complex | RH and Large Container | CHPRC |
| | WRPS Tank Closure | RH and Large Container | WRPS |
| | WRAP | MLLW-07 | CHPRC |
| MLLW-08 - Unique Waste | | | CHPRC |
| | CWC | Unique Waste | CHPRC |
| | T Plant Complex | Mixed Waste Requiring Special Processing | CHPRC |
| | WRAP | Unique Waste | CHPRC |
| MLLW-09 – Radioactive Batteries | | | CHPRC |
| | CWC | Pb & Cd Batteries | CHPRC |
| | T Plant Complex | Radioactive Batteries | CHPRC |
| | WRAP | Misc. Heavy Metal Batteries | CHPRC |
| MLLW-10 - Reactive Metals | | | CHPRC |
| | CWC | Alkali Metals | CHPRC |
| | T Plant | Reactive Metals | CHPRC |
| PUREX Plant | | | CHPRC |
| | PUREX Plant | PUREX Containment Building | CHPRC |
| PUREX Storage Tunnels | | | CHPRC |
| | PUREX Storage Tunnels | Tunnels 1 and 2 | CHPRC |
| SST Waste | | | WRPS |
| | SST System | SST System | WRPS |

Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **Physical Location** | **Waste Stream** | **Contractor** |
| TRUM – CH Large Container | | | CHPRC |
| | CWC | TRUM Boxes | CHPRC |
| | LLBG | TRUM Retrieval Boxes | CHPRC |
| | T Plant Complex | TRUM Box | CHPRC |
| | WRAP | TRUM Large Container | CHPRC |
| TRUM – CH Small Container | | | CHPRC |
| | 325 HWTU | TRUM-CH | PNNL |
| | CWC | CH TRUM | CHPRC |
| | LLBG | TRUM-CH Retrieval | CHPRC |
| | PFP | TRUM Debris[1] | CHPRC |
| | T Plant Complex | TRUM-CH | CHPRC |
| | WRAP | TRUM-CH | CHPRC |
| TRUM - RH | | | CHPRC |
| | 325 HWTU | TRUM-RH | PNNL |
| | CWC | RH TRUM | CHPRC |
| | LLBG | RH TRUM | CHPRC |
| | T Plant Complex | TRUM-RH | CHPRC |
| | WRAP | TRUM-RH | CHPRC |
| WTP Lab Complex | | | BNI |
| | WTP Lab | WTP Lab Spent Ion Exchange Resin | BNI |
| | WTP Lab | WTP Lab Spent Chemicals/Reagents | BNI |
| | WTP Lab | WTP Lab Miscellaneous Compactable Debris | BNI |
| | WTP Lab | WTP Lab RLD | BNI |

[1] PFP TRUM Legacy holdup waste and TRUM-RH waste were combined into TRUM debris; PFP TRUM Legacy Holdup waste location has been removed from the table.

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# APPENDIX C

# POTENTIAL MIXED WASTE

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# APPENDIX C

# POTENTIAL MIXED WASTE

The origin and definition of PMW is discussed in Section 2.3. The content of each column is defined here.

Table C-1. Potential Mixed Waste Table Explanation. (2 sheets)

| Column | Column Title | Content Definition |
|---|---|---|
| A | Company, project | Self-explanatory. |
| B | Common name or description | Self-explanatory. |
| C | Facility number | Self-explanatory. |
| D | Solid waste with potential for mixed waste not integral to the building or structure (no use) | "Stuff" (e.g., equipment, materials) that is not currently in use and for which no future use is currently known, but for which the final disposition has not yet been determined. The "stuff" is not currently considered mixed waste and may or may not currently be contaminated, but includes items with the potential for becoming mixed waste, depending on future decisions regarding the ultimate use and disposition. "Stuff" integral to the building, e.g., walls, piping, ducting, is not to be included. "None" in this column indicates the project/facility contains no "stuff" known to be in this category. |
| E | Materials with potential to become solid waste and subsequently mixed waste (in standby, possible use) | "Stuff" (e.g., equipment, materials) that is currently in "standby" and may at some point, if it becomes waste, designate as mixed waste. Provide details for standby equipment/material that has a clear use or path for reuse/recycling, but may at some point, if/when it becomes waste, designate as mixed waste. A future use must be documented for material to be included in column E of the PMW Table. Documentation of the future use of items in column E shall be available upon request. **Columns D and E encompass <u>contents</u> of buildings and structures only. Floor sweepings, dust, etc., are not included. The structures themselves, including contaminated walls, floors, piping, ducting, etc., are not included. Equipment and chemicals that are in use are not included.** |
| F | DOE assessment of storage methods | Indicate when the DOE storage method compliance assessment for the purpose of meeting LDR report requirements is scheduled. Provide an alternative explanation if required (e.g., the assessment completion date, key facility in S&M phase, further DOE LDR storage method compliance assessment not needed). |

Table C-1. Potential Mixed Waste Table Explanation. (2 sheets)

| Column | Column Title | Content Definition |
|---|---|---|
| G | Schedule information | Include schedule information relative to materials detailed in these columns. Include references to pertinent documents (closure plans, RODs) and identify any applicable OUs or other Tri-Party Agreement drivers for remediation. Provide a date for completing the data gap plan, if applicable. Also, for major negotiations related to the path forward for the PMW, such as the start of facility transition or deactivation, provide a date for starting the negotiations with the regulators. |
| H | Integrating factors | Include factors that should be considered when determining when negotiations should occur. These include factors such as relative threat to human health and the environment of no action, ties to other activities such as OU remediation, ties of action to facility missions, etc. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CH2M Hill Plateau Remediation Company (CHPRC), D&D Project 100-K | 100-K Area | 105-KE and 105-KW | 105-KE: Old electrical equipment.<br><br>105-KW: None | 105-KE: Oil drained from equipment,<br><br>105-KW: Underwater lead | Completed 4th quarter CY 2007. | Data gap Plan: Completed 2nd quarter CY 2005<br>Starting TPA negotiations: N/A (completed)<br><br>The 105-KE basin structure has been D&D'd and disposed at ERDF. During 2011 portions of the 105-KE Reactor Building were demolished and disposed at ERDF (e.g., electrical equipment room, outer ROD room, miscellaneous storage room, supply fan room, metal storage room, control room, and administrative support rooms) in preparation for transition to interim safe storage (ISS) configuration. ISS activities will continue for this facility.<br><br>105-KW: Anticipated to be dispositioned by the end of FY 2018. | None |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project 100-K | 100-KE and KW Reactor Facilities | 115-KE<br>115-KW | Miscellaneous contaminated material in the facility is being managed as part of S&M activities. | None | DOE assessment: Completed 6/15/2004. Assessment excludes reactor. | Waste will be generated as part of the ISS activities.<br>Data gap plan: Completed June 15, 2004 Starting TPA negotiations: Completed as a part of River Corridor negotiations.<br>Tri-Party Agreement Milestone M-093-22, Complete 105- KE and 105-KW Reactor ISS, is anticipated in FY 2018. Core sampling of the 105-KE reactor has been completed. | The reactor is a key facility under Section 8.0 of the Tri-Party Agreement. |
| CHPRC, PFP Closure Project | 216-Z-9 Crib Soil Removal Glovebox (inactive) | 216Z-9A, B & C | Soil Removal Glovebox and mining equipment. Air compressor (potential for regulated oil). Residual contamination within glovebox (potential for mixed wastes during cleanout). Note: Glovebox probably will function as containment when conducting facility cleanout/transition activities. | None | DOE assessment: Completed 3rd quarter CY 2001. | To be dispositioned as CERCLA non-time critical removal action or in coordination with 200-PW-1 ROD.<br><br>Data gap plan: N/A Starting TPA negotiations: N/A (completed) | None |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, PFP Closure Project | Plutonium Finishing Plant | 234-5Z | Tanks, piping, lead, control, and processing equipment, including the Remote Mechanical A/ Remote Mechanical C (RMA/RMC) lines.<br>Note: Gloveboxes to be maintained and used for containment when conducting facility cleanout/transition activities. | Residues and low-grade special nuclear material (SNM) solids. | DOE assessment: Completed 3rd quarter CY 2001. | To be dispositioned as CERCLA non-time critical removal action.<br><br>M-083-44, Complete Transition of the 234-5Z (Plutonium Conversion Facility) and ZA (Plutonium Conversion Support Facility), 243-Z Low Level Waste Treatment Facility, 291-Z Exhaust Building, and 291-Z-1 Exhaust Stack to support PFP Decommissioning, due September 30, 2015.<br><br>Data gap plan: N/A<br>Starting TPA negotiations: N/A (completed). | None |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, PFP Closure Project | Plutonium Reclamation Facility | 236-Z | Pu nitrate reclamation tanks, piping, and control equipment. Miscellaneous treatment tanks, piping, and control equipment. Containment gloveboxes (reclamation and miscellaneous treatment). Chem. prep tanks, piping, and control equipment. Residual contamination within inactive process equipment and gloveboxes (potential for mixed waste during cleanout). Potential for liquids within inactive tanks, vessels, and piping. Miscellaneous tools and maintenance equipment located within canyon cell. Note: Gloveboxes to be maintained and used for containment when conducting facility cleanout/transition activities. | None. | DOE assessment: Completed 3rd quarter CY 2001. | To be dispositioned as CERCLA non-time critical removal action.<br><br>TPA milestone M-083-00A, Complete PFP Facility Transition and Selected Disposition Activities (due date: September 30, 2016).<br><br>Data gap plan: N/A Starting TPA negotiations: N/A (completed). | None |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, PFP Closure Project | PFP Settling Tank | 241-Z-361 | Tank containing waste from past practices and piping. | None. | DOE assessment: Completed 2nd quarter CY 2009. | To be dispositioned as CERCLA remedial action in accordance with schedule to be developed in the 200-PW-1/3/6 and 200-CW-5 Remedial Design/Remedial Action Work Plan (TPA Milestone M-016-125, due September 30, 2015). Data gap plan: 2nd quarter CY 2009 completed. Starting TPA negotiations: N/A. Characterization completed ("Tank Characterization Report for 241-Z-361, FH 0107145, December 20, 2001). | RCRA/CERCLA integration is provided in the PFP Below Grade EE/CA.<br><br>200-PW-1/3/6 and 200-CW-5 OU. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, PFP Closure Project | Waste Treatment Facility (inactive) | 242-Z | Miscellaneous process tanks, first floor and mezzanine level. Process piping. Containment gloveboxes. Potential for liquids within tanks, vessels, and piping. Residual contamination within gloveboxes, tanks, and piping (potential for mixed waste during cleanout). | None. | No assessments. DOE assessment: N/A. | To be dispositioned as CERCLA non-time critical removal action.<br><br>TPA milestone M-083-00A, Complete PFP Facility Transition and Selected Disposition Activities (due date: September 30, 2016).<br>Data gap plan: N/A<br>Starting TPA negotiations: N/A (completed). | None. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project, S&M | Inactive miscellaneous underground storage tanks (IMUSTs) not associated with a building | 216-BC-201, 216-BY-201, 216-TY-201, 241-B-361, 241-U-361, 241-T-361 | Tank system heels in each IMUST, piping, equipment, and components. | None. | DOE assessment: Initiated 2nd quarter CY 2006 (see Table 2-1). | Data gap plan: 4th quarter CY 2013Starting TPA negotiations: Negotiations are not needed. | The IMUSTs will be dispositioned with their respective cribs. Further information regarding the remediation strategy can be found in the following OU documentation.<br><br>216-BC-201: 200-BC-1<br>216-BY-201: 200-TW-1<br>216-TY-201: 200-IS-1<br>241-B-361: 200-TW-2<br>241-U-361: 200-UW-1<br>241-T-361: 200-TW-2 |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D, and Infrastructure Project, S&M | 224-T | 224-T | D1: Potential for liquid in vessels. The presence or absence of mixed waste in the 224-T cells is not documented and the potential for waste was identified in the Silver List. D2: There is a glovebox/ hood with vessels in the glovebox/ hood, but mixed waste is not expected to be found in these items. | None. | DOE assessment: Completed 1st quarter CY 2002. | D1 and D2: Data gap plan: Completed 4th quarter CY 2002 Starting TPA negotiations: Negotiations are not needed. | The potential for mixed waste presence in the cells is a former Silver List issue that has not been closed out.<br><br>Facility decommissioning is being planned.<br><br>An Action Memorandum was completed in June 2005 (DOE/RL-2004-68, *Action Memorandum for the Non-Time-Critical Removal Action for the 224-T Plutonium Concentration Facility*). |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project, S&M | 231-Z | 231-Z | Potential for liquid in vessels | None | DOE assessment: Initiated Completed 2nd quarter CY 2009. | Data gap plan: 2nd quarter CY 2009. Starting TPA negotiations: Negotiations are not needed. | The potential for mixed waste to be present is a former Silver List issue that has not been closed out. Media that might designate as mixed waste, if present, are expected to be contained in stainless steel vessels. |
| CHPRC, D&D, Project, S&M | 242-B/BL | 242-B/BL | None. | Although no specific matrix can be identified at this time, a possibility exists that matrices could be found which would qualify as PMW. | DOE assessment: N/A Singleton 2011). | Data gap plan: N/A (Singleton 2011) Starting TPA negotiations: Negotiations are not needed | None. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D, Project, S&M | B Plant | 207-BA, 211-B, 212-B, 217-B, 221-B, 221-BB, 221-BF, 221-BG, 271-B, 276-B, 291-BA, 291-B, 291-BB, 291-BD, 291-BF, 291-BG, 292-B, 2711-B, 2715-B, 270-E-1 (IMUST) | S&M Plan, DOE/RL-99-24 identifies the hazardous material remaining in the facility. Tank heels relate to TSD tank system and 270-E-1. | S&M Plan, DOE/RL-99-24, identifies the hazardous material remaining in the facility. | DOE assessment: N/A. | See Columns D & E: As described in the S&M Plan, DOE/RL-99-24. Data gap plan: N/A Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 8.0. M-085-00, TBD. | B Plant is in the S&M phase of the facility decommissioning process, as described in Chapter 8.0 of the Tri-Party Agreement. Final disposition of the IMUST and B Plant will be scheduled such that the activities are performed concurrently. See stored/forecasted portion of the report for details regarding waste stored in Cell 4 and in the containment building. |
| CHPRC, D&D Project, S&M | 224-B Building | 224-B | Chemicals associated with operations at the 224-B Building may exist as residual deposition in tanks. PMW remains in the 224-B process cells and vessels. | None. | DOE assessment: (Singleton 2011). Initiated 4th quarter CY 2006 (see Table 2-1). | Data gap plan: review on the status of mixed waste storage areas 1st quarter CY 2011. (Singleton 2011). Starting TPA negotiations: Negotiations are not needed. | Facility decommissioning is being addressed in DOE/RL-2004-36, *Action Memorandum for the Non-Time Critical Removal Action for the 224-B Plutonium Concentration Facility*. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D, Project, S&M | PUREX | 202-A, 203-A, 204-A, 206-A, 211-A, 212-A, 213-A, 214-A/B/C/D, 215-A, 216-A, 225-EC, 271-AB, 276-A, 281-A, 291-A, 291-AB/AC/ AD/AE/AG/ AH/AJ/AK., 291-A-1, 292-AA/AB, 293-A, A93-AA, 294-A, 295-A, 295-AA/AB/ AC/AD/AE, 296-A-1, 296-A-2, 296-A-3, 296-A-5A/5B, 296-A-6/7/8/9/ 10/14/ 24, 2711-A-1. 2712-A, 2714-A/U, 217-A, 252-AC/AB, 216-A-5 (IMUST) | S&M Plan, DOE/RL-98-35, *Surveillance and Maintenance Plan for the Plutonium-Uranium Extraction (PUREX) Facility*, identifies the hazardous material remaining in the facility. Tank heels relate to TSD tank system and 216-A-5. | S&M Plan, DOE/RL-98-35, identifies the hazardous material remaining in the facility. | DOE assessment: N/A. | Data gap plan: N/A. Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 8.0 | PUREX is in the S&M phase of the facility decommissioning process described in Chapter 8.0 of the Tri-Party Agreement. Final disposition of the IMUST at PUREX will be scheduled such that the activities are performed concurrently. See the stored/ forecasted portion of the report for TSD waste storage at PUREX. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project, S&M | REDOX | 202-S, 291-S, 292-S, 293-S, 2718-S, 211-S, 2711-S, 2715-S, 2904-SA, 2710-S, 2706-S | S&M Plan, DOE/RL-98-19, *Surveillance and Maintenance Plan for the 202-S Reduction Oxidation (REDOX) Facility*, identifies the hazardous material remaining in the facility. | S&M Plan, DOE/RL-98-19, identifies the hazardous material remaining in the facility. | DOE assessment: N/A. | Data gap plan: N/A Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 8.0 | REDOX is in the S&M phase of the facility decommissioning process described in Chapter 8.0 of the Tri-Party Agreement. |
| CHPRC, D&D Project, S&M | U Plant | 221-U, 276-U, 291-U, 292-U, 241-WR-001, 241-WR-002, 241-WR-003, 241-WR-004, 241-WR-005, 241-WR-006, 241-WR-007, 241-WR-008, 241-WR-009 | S&M Plan, DOE/RL-98-20, *Surveillance and Maintenance Plan for the 221-U Facility (U Plant)*, identifies the hazardous material remaining in the facility. | Remedial Design/ Removal Action Work Plan (RD/RAWP) for the 221-U Facility, DOE/RL-2006-21, *Remedial Design/ Remedial Action Work Plan for the 221-U Facility*, addresses the hazardous materials in the facility. | DOE assessment: N/A. | Data gap plan: N/A Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 80 | The U Plant facility is being dispositioned under RD/RAWP 2006-21 approved in February 2009. The equipment on deck was consolidated in the cells and U Plant was grouted up to the deck level. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project, S&M | UO3 Facility | 270-W and slab foundations. | PMW in the underground tank. | Although no specific matrix can be identified at this time, a possibility exists that matrices could be found which would qualify as PMW. | DOE assessment: N/A (Singleton 2011). | Data gap plan: N/A (Singleton 2011).<br><br>Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 8.0. | All of the above ground structures have been dispositioned under RAWP (DOE/RL-2004-83, *U Plant Ancillary facilities Removal Action Work Plan, Phase II*). |
| CHPRC, Waste and Fuels Management Project | T Plant Canyon, RR Tunnel, Head-end | 221-T | Process cells containing an inventory of PMW include inaccessible cells, process cells proposed to be cleaned, and process cells with potentially no proposed future uses. Inaccessible cells include: 20R, 20L, and 16L. Proposed cells to be cleaned include (subject to change): 19R, 18R, 10R, and 7R. Cells with potentially no proposed future uses include (subject to change): 19L, 18L, 17L, 14L, 12R, 12L, 9R, 8L, 6R, 4R, 4L, and 3R. Examples of inventory are jumpers, tanks, pumps, pump racks, centrifuges, fuel racks, fuel canisters, and agitators. | Items having the potential for reuse include cover blocks, lead shielding (including portable lead walls), hand tools and tool boxes, metal ramp, chokers and slings, hoists, railroad ties, portable fences, cutters (e.g., jaws), portable pumps and hoses, impact wrenches, spill pallets, HEPA vacuums, HEPA filter and duct work, torch cart and welding cart, work bench, portable exhauster, aqueous make-up tanks, drum crusher, plasma arc cutter. | DOE assessment: 3rd quarter CY 2005. | Cells with no proposed future use will be addressed when final decommissioning of the canyon takes place.<br>Data gap plan: 3rd quarter CY 2007.<br>DOE-RL responded to Ecology comments in October 2007.<br>Starting TPA negotiations: Completed. These activities have been discussed with Ecology during the T Plant Complex Dangerous Waste Permit Application Part A and Part B negotiations. | Milestone M-091-01 and RCRA permitting schedule.<br><br>Schedules for processing and operational activities on the canyon floor will impact the schedule for disposition of this PMW. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, Waste and Fuels Management Project | T Plant Canyon Cell 11-L | 221-T | Tank in Cell 11-L. The Cell 11-L tank contains approximately 500 gallons of a green liquid and saltcake mixture that will be designated as F001-F005, D002, D006, D007, D008, and D010 when removed from the tank. | None. | DOE assessment: 3rd quarter CY 2005. | Cell 11-L will be dispositioned along with the other R-CPPprocess cells in the T Plant canyon. Data gap plan: Cell 11-L was readdressed with Ecology during the LDR storage method compliance assessment/ data gap plan process documented in the July 24, 2008 T Plant TPA project managers meeting minutes. Starting TPA negotiations: Completed. These activities have been discussed with Ecology during the T Plant Complex Dangerous Waste Permit Application Part A and Part B negotiations. | Any commitment date will be dependent on the outcome of the Canyon Disposition Initiative.<br><br>Milestone M-091-01 and RCRA permitting<br><br>Schedules for processing and operational activities on the canyon floor will impact the schedule for disposition of this PMW. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, Waste and Fuels Management Project | T Plant Complex IMUSTs | 292-TK-1 and 292-TK-2 | 292-TK-1 and 292-TK-2 consist of two stainless steel 55-gallon drums encased in concrete. These units contained a mixture of irradiated fuel and nitric acid. The solutions in the tanks were then neutralized with molar equivalents of sodium hydroxide. | None. | DOE assessment: 3rd quarter CY 2005. | This Waste Information Data System site will be addressed as part of the CERCLA remediation activity. Data gap plan: See the July 24, 2008 T Plant TPA project managers meeting minutes. Starting TPA negotiations: Negotiations are not anticipated | Tanks are part of 200-IS-1 CERCLA remediation process. |
| CHPRC, Waste and Fuels Management Project | GAC Vapor Extraction System | None. | None. | Unsalvaged components of vapor extraction system | DOE assessment: N/A. | Data gap plan: N/A. Data for starting TPA negotiation: Negotiations are not anticipated. | None |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| Battelle Memorial Institute, Pacific Northwest National Laboratory | Radiochemical Processing Laboratory | 325 | Tank system formerly used for product materials subsequently used as feedstock for research projects. Tanks have been drained and flushed, but remain in place. | Hot cells, hoods, and gloveboxes used for radioactive materials and waste analysis and research (reused as needed for new or expanded research activities)<br><br>Contaminated equipment and materials stored for potential reuse. | DOE assessment: Completed 4th quarter CY 2001. | Data gap plan: Completed 4th quarter CY 2002.<br>Starting TPA negotiations: N/A (no data gaps identified) | Part of an active facility; no special hazards known. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| Mission Support Alliance, LLC (MSA), Public Works | 100-B Reactor Facilities | 105-B | Miscellaneous contained/controlled hazardous/contaminated material remains in the facility. | None. | DOE assessment: Completed June 15, 2004. Assessment excludes reactor. | Data gap plan: Completed June 15, 2004. Starting TPA negotiations: Approval of Tri-Party Agreement Change Request M-093-01-02 completed Tri-Party Agreement Milestone M-093-14, Initiate Negotiations for the Remaining Surplus Reactor Disposition Schedules. The B Reactor became a National Historic Landmark in September 2008 and became part of the Manhattan Project National Historic Park in December 2014. Planning for preservation is ongoing. | The reactor is a key facility under Section 8.0 of the Tri-Party Agreement. |
| Washington River Protection Solutions, LLC (WRPS), Tank Farms | 702-A Ventilation Building | 241-A-702 | Seal pot that received liquids from the HEPA pre-heater. | None. | DOE Assessment: Completed 4th Quarter 2004. | Data gap plan: None. When the building is deactivated, characterization of the seal pot heel will be completed as necessary. Starting TPA negotiations: N/A. | None. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| WRPS, Tank Farms | Double-Shell Tank Farms | 241-AN, AW, AP, AY, AZ, SY | Contaminated unusable equipment, e.g., ductwork, exhausters, piping, etc. | None. | DOE Assessments: Completed 4th Quarter 2004. | Data gap plan: The equipment will be handled in accordance with waste management procedure as it is removed. Starting TPA negotiations: N/A. Equipment will be taken care of on a continuous basis. | Tank Retrieval and Closure, Permit Conditions. |
| WRPS, Tank Farms | Single-Shell Tank Farms | 241-A, AX, B, BX, BY, C, T, TX, TY, S, SX, U, 244-AR, 244-CR | Contaminated unusable equipment, e.g., ductwork, exhausters, piping, ion exchange columns, etc. | None. | DOE Assessments: Completed 4th Quarter 2004. | Data gap plan: The equipment will be handled in accordance with waste management procedures as it is removed. Starting TPA negotiations: N/A Equipment will be taken care of on a continuous basis. | Tank Retrieval and Closure, Permit Conditions. |
| WRPS, Tank Farms | Evaporators | 242-S, T | Liquids/solids in process tanks and contaminated equipment, piping, and debris. | None. | DOE Assessment: Completed 4th Quarter 2005. | Data gap plan: Deferred until facility enters D&D due to industrial and radiological safety concerns with entering the portions of the facility necessary to gather meaningful data. Starting TPA negotiations: N/A. | None. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| WRPS, Tank Farms | IMUSTs not associated with a building | 200-W-7 (243-S-TK-1), 231-W-151, 240-S-302, 241-A-302B 241-B-301B, 241-B-302B, 241-BX-302A, 241-BX-302B, 241-BX-302C, 241-C-301C 241-ER-311A 241-S-302A and B, 241-SX-302, 241-T-301, 241-TX-302A and B, 241-TX-302BR, 241-TX-302X, 241-TY-302A and B, 241-Z-8, 242-T-135, 241-TA-R1, 244-BXR (Vault), 244-TXR (Vault), 244-UR (Vault) | Tank system heels and contaminated equipment associated with each IMUST | None. | DOE assessment, 3rd Quarter 2001. | Data gap plan: Deferred until closure of specific WMA. | SST Retrieval, SST Permit Conditions, Tank/WMA Closure Requirements. |
| WRPS, Tank Farms | Miscellaneous Building | 241-A-431, 241-C-801, 241-SX-401, 241-SX-402 | Liquids/solids in piping and debris. | None. | DOE Assessments completed: 2nd Quarter 2004, 3rd Quarter 2002, 1st Quarter 2001. | Data gap plan: Deferred until closure of specific WMA. | SST Retrieval, WTP Construction, Permit Conditions. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| WRPS, Tank Farms | Reusable Contaminated Equipment | Various. | None. | Reusable contaminated equipment associated with tank farms activities. | DOE Assessment: Not applicable. | Data gap Plan: Not applicable<br><br>Starting TPA negotiations: N/A | None. |
| Bechtel National, Inc. (BNI), Waste Treatment Plant (WTP) | LAB | N/A | Hotcell prefilters. | None. | | The WTP Lab has forecasted the generation of waste in 2018 from methods development for equipment calibration. | |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| BNI, Hanford Tank WTP | LAB | N/A | Spent chemical/reagents (liquid lab pack). Eichrom resin columns (hotcell resins, mixed non-debris waste (organic waste stream that will require organic stabilization or thermal treatment). Rad lab miscellaneous compactable debris (lab glassware and other lab consumables, personal protective equipment, rags, and other compactable debris.) Miscellaneous hotcell compactable debris including sample bottles, ASX carriers, Isolok needles and parts, etc.<br>Miscellaneous non-compactable hotcell debris. | None. | TBD | TBD | TBD |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| Waste Neutralization Facility (340-Vault Tanks) | 340 | 2013 | 340 Vault tank heels and clean out residues and associated equipment (valves, piping, pumps, light fixtures). | The 340 Building was shipped on February 16, 2014, for disposal at ERDF. |
| Radiochemical Processing Laboratory | 325 | 2013 | Equipment containing approximately 5 tons of lead in numerous contaminated shipping containers, sample carriers, lead bricks, and other lead items. | This equipment was identified as waste and was disposed of in compliance with WAC 173-303 requirements. |
| 100 Area Waste/Material Transport Container | 100 Area Reactor Facilities (Primarily N and K Area) | 2011 | Containers which were being stored for future shipment of waste to be treated, disposed, or recycled. | Waste/material containers have been dispositioned to ERDF due to facilities D&D. |
| U Plant | 221-U | 2010 | Tank D-10 (TK-10) in Cell 30. | Tank was removed as part of the CERCLA remediation in 2011 and placed in storage at CWC. The tank is now tracked in the CWC TRUM-RH location. |
| Rail Car Staging Area | 212-R Rail Spur and PUREX Rail Cut | 2010 | Rail car and rail car components. | Rail cars were declared waste and disposed in ERDF, with the exception of four railcars which were sent to the B Reactor museum as "reusable equipment," not waste, as they are being used as displays. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| PFP Facilities | 234-5Z | 2010 | Radioactive Acid Digestion Test Unit Gloveboxes (potential for residual contamination during cleanout). | RADTU glovebox cleanout completed. |
| PFP Facilities | 2736-Z | 2010 | Residues and low grade SNM solids. | Residues and SNM solids removed. |
| U Plant | 211-UA | 2009 | The 211-UA structure was demolished. | A partial deletion from the PMWT. The 211-UA structure was demolished under RAWP DOE/RL-2004-83. |
| $UO_3$ Facility | 224-U, 203-UX, 211-U, 224-UA | 2009 | The above ground structures at the $UO_3$ Facility were demolished. | A partial deletion from the PMWT. The aboveground structures were demolished under RAWP DOE/RL-2004-83; only the underground tank, 270-W, and slab foundations remain. |
| 100-K Area | 105 KE and 105 KW | 2009 | Leak blankets. Neutron detectors with boron tri-fluoride tubes.[1] | A partial deletion from the PMWT. The lead was sent to ERDF for disposal. The neutron detectors were shipped to CWC as TRUM. |
| 200 North Area | 212-N, 212-P, 212-R | 2009 | 212-R contained a burial box with some radiologically-contaminated equipment. 212-P used to store PCBs. | The buildings and the burial box have been demolished and the waste was sent to ERDF. |
| 100-K Area | 105-KE | 2008 | Chemicals in storage cabinets, and lead used as shielding for Ion Exchange Columns and piping.[1] | A partial deletion from the PMWT. Chemicals were redispositioned for use at 105-KW or disposed of as appropriate. Lead was reused or dispositioned as waste. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| 231-Z | 231-Z | 2008 | Chemicals in gloveboxes.[1] | Activities to remove chemicals from gloveboxes were completed in 2008. |
| U-Plant | 2716-U, 2714-U | 2007 | Section 7.0 of the S&M plan, DOE/RL-98-20, indicated that 2714-U contained eleven 55-gal drums, but is not specific on the type of hazardous materials. | A partial deletion from the PMWT. 2716-U and 2714-U, among others, were dispositioned under a CERCLA action memorandum calling for demolition of the structures. |
| Mixed Waste Storage and Treatment Tanks | 241Z | 2007 | Heels, associated piping, line flushing, and sludge cleanout of Tank D-6. Tank D-6 deactivated in 1972 because of failure. Waste transferred from tank and tank/piping isolated.[1] | The 241-Z tank system has been clean closed, tank D-6 heels were removed, the piping was removed, and the floor was cleaned. The end point criteria requirements were addressed. |
| 200 Area North | 212-N | 2007 | 14 wooden boxes in the transfer bay of suspected TRUM nuclear fuel fabrication equipment from the 308 Building.[1] | A partial deletion from the PMWT. The boxes were transferred to the CWC. |
| 327 Building | 327 | 2005 | Lead bricks. | The building deactivation and demolition was completed in 2010. The lead bricks are included in the forecasted waste volume to be treated at ERDF. |
| 333 Building | 333 | 2005 | Miscellaneous equipment, piping, and ductwork. | The building was deactivated and demolished in CY 2006. Equipment, piping, and ductwork disposed at ERDF. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| 100-K Area | 105-KW | 2005 | Lead in the back of a utility truck.[1] | The lead in the truck was removed from the vehicle and sent to the ERDF facility for disposal |
| 3711 Building | 3711[2] | 2004 | Lead cask, pipe, pipe joints, and metal railing contaminated with lead. | Matrices were disposed of in 2005. |
| 2711-E | 2711-E | 2004 | Radiator from crane-suspect lead solder. | Matrices were disposed of in 2005. |
| $U0_3$ | 203-U, 2715-UA, 272-U | 2004 | Any matrices described in the $UO_3$ S&M Plan, DOE/RL-98-22, *Surveillance and Maintenance Plan for the Uranium Trioxide ($UO_3$) Facility*. | 203-U, 2715-UA, and 272-U have been demolished as part of the CERCLA Removal Action. |
| U Plant | 2716-U, 275-UR | 2004 | Any matrices described in the U Plant S&M Plan, DOE/RL-98-20. | 2714-U and 275-UR have been demolished as part of the CERCLA Removal Action. |
| Heavy Equipment Staging Area | 4734D | 2004 | Heavy equipment components. | Equipment is no longer cleaned at this location. |
| PFP Facilities | 232-Z, 236-Z, and portions of 234-5Z. | 2003 | Incinerator and leaching gloveboxes. Inactive process tanks, piping, and control equipment. Reclamation tanks, piping, and control equipment. Miscellaneous tools.[1] | Materials have been dispositioned, did not meet the definition of PMW, or are forecasted to be generated as mixed waste. |
| 340 Facility Complex | 340-A, 340-B, and 300 RLWS | 2003 | Tanks, process piping, ancillary equipment, and related equipment. | Facilities did not contain mixed waste or PMW. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| 100 Areas Facilities | Many | 2003 | Miscellaneous contaminated material. | Facilities did not contain mixed waste or PMW |
| 100-N Lead Storage Area | 1714-N[2] | 2002 | Lead sheeting and bricks, lead lined containers, and a lead lined survey booth. | Matrix is now included in the LSDS for CERCLA lead under the ERDF – Treatment treatability group. |
| 242-A Evaporator | 242-A | 2002 | Ion exchange column(s) | The ion exchange column(s) were disposed on-site. |
| 314 | 314[2] | 2002 | Large equipment previously used in the facility. | LDR storage method compliance assessment concluded facility contained no mixed waste or PMW. |
| 3708 | 3708[2] | 2002 | Solid obsolete laboratory equipment. | LDR storage method compliance assessment concluded facility contained no mixed waste or PMW. |
| Heavy Equipment Staging Area | 2711E | 2001 | Miscellaneous equipment. | No material left at this location, as it was shipped off-site for reuse. |
| Rad. Storage Area | 3711[2] | 2001 | Lead bricks. | Shipped September 26, 2001 to Duratek Inc. in Memphis, TN for decontamination/lead casting |
| Waste Storage Building | 2724WB | 2001 | Radiators (from motor vehicles). | Shipped September 26, 2001 to Duratek Inc. in Memphis, TN for decontamination/metal melt |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| Plutonium Finishing Plant | 234-5Z | 2001 | E1: Laboratory Reagents<br>E2: Archive Laboratory Samples<br>E3: PR cans that have lead liners.<br>E4: Low-grade SNM solutions not run through the precipitation process, but with potential to become solid waste (e.g. the direct discard process).[1] | E1: These chemicals are in use within the laboratory.<br>E2: Samples are archived in accordance with sample exclusion.<br>E3 and E4: Material is now included on LSDSs.<br>Note: Only the contents noted were removed from Table C-2. Table C-2 still contains other potential waste in this location. |
| Mixed Waste Treatment and Storage Tanks | 241-Z | 2001 | Tank D-9, Treatment chemicals. | Tank D9 is in use to mix treatment chemicals. Treatment chemicals are in use in transferring waste from the PFP to DSTs. Note: Only the contents noted were removed from Table C-2 of this document. Table C-2 still contains other potential waste in this location. |
| Waste Handling Facility | 219-S | 2001 | Tank 103 and heel content. | Combined with existing LSDS for the 219-S Waste Handling Facility. |
| 300-RRLWS | RRLWS | 2001 | Retired radioactive liquid waste sewer piping and ancillary structures might designate as mixed waste. | Below-ground structure: Does not meet reporting criteria for PMWT. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| 2706-T Conex Box | Conex box CC2W0136 and CC2W137 | 2001 | Various decontamination equipment, spill pallets, shipping coolers, carts, hoses, storage cabinets, and sampling equipment. | These conex boxes were opened and the contents visually verified and photographs taken. The photographs clearly demonstrate that the equipment is readily accessible. The equipment will be used in the future as part of the 2706-T Complex operations (e.g., decontamination, sampling, etc.). The photographs are maintained in the T Plant Complex operating record. |
| 224-T (Includes Transuranic Waste Storage and Assay Facility [TRUSAF]) | 224-T | 2001 | Liquid in the sumps and the deep cell. Two cardboard boxes in the cells.[1] | Determined to not have a hazardous component, and therefore not a mixed waste. Note: Only the contents noted were removed from Table C-2. Table C-2 of this document still contains other potential waste in this location. |
| C855 (CAT) Substation | 252U | 2001 | Transformer. | The transformer has been designated and found not to have a dangerous component. Therefore, it is not mixed waste. |
| 324 | 324 | 2001 | Shielded glovebox. PMW residue. Former Silver List Item 11.8. | Glovebox was included in the 4th quarter CY 2002 LDR storage method compliance assessment and determined to contain only floor sweeps. |
| 200 ETF | 2025E | 2001 | Thin film dryer rotor. | Rotor was rebuilt for reuse at the 200 ETF. |
| 100 K Basins | 105-KW | 2001 | Lead bricks, sheets. | The lead has been declared CERCLA waste. A LSDS was created. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| Environmental Sciences Laboratory | 3720[2] | 2001 | Laboratory equipment, hoods, and gloveboxes used for radioactive materials and waste analysis and research (reused as needed for new or expanded research activities). | On-site inspection revealed that contaminated equipment is in use. Hoods and gloveboxes listed are part of the structure of the building. |
| 100 C Reactor Facility | 105-C, 118-C-4 | 2001 | Reactor core and equipment remaining in the facility. | Reactor core was part of the structure of the building. Mixed waste is removed during the reactor ISS. |
| 100 D/DR Reactor Facility | 105-D, 105-DR, 117-DR[2], 190-DR[2] | 2001 | Reactor core and equipment remaining in the facility. | Reactor core was part of the structure of the building. Mixed waste is removed during the reactor ISS. |
| 100 F Reactor Facility | 105-F | 2001 | Reactor core and equipment remaining in the facility. | Reactor core was part of the structure of the building. Mixed waste is removed during the reactor ISS. |
| 100 H Reactor Facility | 105-H, 1720-HA[2], 1713-H | 2001 | Reactor core and equipment remaining in the facility. | Reactor core is part of the structure of the building. Mixed waste was removed during the reactor ISS. |
| 100-N Reactor Facilities | See Table 1, S&M Plan for the 100-N Deactivated Facilities, DOE/RL-98-64, *Surveillance and Maintenance Plan for the 100-N Area Deactivated Facilities* | 2001 | Some remaining hazardous materials consisting of activated materials and fission products contained within the reactor block. (Further details are provided in DOE/RL-98-64). | Reactor core is part of the structure of the building. Mixed waste was removed during the reactor decommissioning. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| REDOX | 276-S-141/142 | 2001 | Tanks and heel content. | A treatability group was developed to account for the 276-S-141/142 tanks (see Appendix B). |
| Semi Works | 241-CX-70, 241-CX-71, 241-CX-72, 276-C | 2001 | Tanks and heel content. | A treatability group was developed to account for the 241-CX tanks (see Appendix B). |

[1]Additional PMW is identified in Table C-2 for this location.
[2]Facility has been demolished subsequent to this entry.

**PRIMARY DOCUMENT STATEMENT**

**CALENDAR YEAR 2014 HANFORD SITE MIXED WASTE LAND DISPOSAL RESTRICTIONS FULL REPORT**

Approval of the U.S. Department of Energy's annual land disposal restriction report as a *Hanford Federal Facility Agreement and Consent Order* primary document shall be by written approval of U.S. Department of Energy and Washington State Department of Ecology Interagency Management Integration Team representatives.

This document has been prepared, submitted, revised, and approved as a primary document in response to the requirements of the *Hanford Federal Facility Agreement and Consent Order* milestone series M-026-01 and related *Resource Conservation and Recovery Act of 1976* land disposal restrictions and *Hanford Federal Facility Agreement and Consent Order* requirements. As such, this document serves as a binding and enforceable document under the *Hanford Federal Facility Agreement and Consent Order*.

Approved and issued this _____ day of _____ 2015.

*See Original Document*

W. F. Hamel~~R. J. Corey~~, Assistant Manager
for the River and Plateau
U.S. Department of Energy,
Richland Operations Office

*See Original Document*

A. K. Smith~~J. Hedges~~, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology

*See Original Document*

B. A. Harkins~~T. W. Fletcher~~, Assistant Manager
for the Tank Farms Project
U.S. Department of Energy,
Office of River Protection

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**CONTENTS**

## APPENDICES



## FIGURES



## TABLES

## ACRONYMS

| | |
|---|---|
| BDAT | best demonstrated available technology |
| BNI | Bechtel National, Inc. |
| CERCLA | *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* |
| CFR | Code of Federal Regulations |
| CH | contact handled |
| CHPRC | CH2M HILL Plateau Remediation Company |
| CWC | Central Waste Complex |
| CS&I | Closure Services & Infrastructure |
| CY | calendar year |
| D&D | decontamination and decommissioning |
| DOE | U.S. Department of Energy |
| DOE-ORP | U.S. Department of Energy, Office of River Protection |
| DOE-RL | U.S. Department of Energy, Richland Operations Office |
| DST | double-shell tank |
| EA | Environmental Assessment |
| Ecology | State of Washington, Department of Ecology |
| EIS | environmental impact statement |
| EPA | U.S. Environmental Protection Agency |
| ERDF | Environmental Restoration Disposal Facility |
| ETF | 200 Area Effluent Treatment Facility |
| FD | final determination |
| FFCA | *Federal Facilities Compliance Act of 1992* |
| FFTF | Fast Flux Test Facility |
| FY | fiscal year |
| HEPA | high-efficiency particulate air (filter) |
| HLW | high-level waste |
| HSTF | Hexone Storage and Treatment Facility |
| HWTU | Hazardous Waste Treatment Unit |
| IDF | Integrated Disposal Facility |
| ILAW | immobilized low-activity waste |
| IMUST | inactive miscellaneous underground storage tank |
| INL | Idaho National Laboratory |
| ISS | interim safe storage |
| LAW | low-activity waste |
| LDR | land disposal restrictions |
| LERF | Liquid Effluent Retention Facility |
| LLBG | Low-level Burial Ground |

| | |
|---|---|
| LSDS | location-specific data sheet |
| MLLW | mixed low-level waste |
| N/A | not applicable |
| NPL | National Priority List |
| O/C | organic/carbonaceous |
| OU | operable unit |
| P2/WMin | Pollution Prevention/Waste Minimization |
| PCB | polychlorinated biphenyl |
| PFP | Plutonium Finishing Plant |
| pH | negative logarithm of the hydrogen-ion concentration |
| PMP | project management plan |
| PMM | Project Manager Meeting |
| PMW | potential mixed waste |
| PMWT | potential mixed waste table |
| ppm | part per million |
| PNNL | Pacific Northwest National Laboratory |
| PUREX | plutonium-uranium extraction (process) |
| RCRA | *Resource Conservation and Recovery Act of 1976* |
| REC | radiochemical engineering cell |
| REDOX | reduction-oxidation (process) |
| RH | remote handled |
| RI/FS | remedial investigation/feasibility study |
| RLWS | Radioactive Liquid Waste System |
| RMERC | Specified LDR Technology in 40 CFR 268.42 for Retorting or Roasting Mercury |
| ROD | record of decision |
| RPP | River Protection Project |
| S&M | surveillance and maintenance |
| SCW | special-case waste |
| SNM | special nuclear material |
| SRS | Savannah River Site |
| SST | single-shell tank |
| STP | site treatment plan |
| SWIFT | Solid Waste Integrated Forecast Technical (Report) |
| TBD | to be determined |
| TGDS | Treatability Group Data Sheet |
| TOC | Tank Farm Operating Contract |
| TPA | *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) |
| TRU | transuranic (waste) |
| TRUM | transuranic mixed (waste) |

| | |
|---|---|
| TRUSAF | 224-T Transuranic Waste Storage and Assay Facility |
| TSCA | *Toxic Substances Control Act of 1976* |
| TSD | treatment, storage, and/or disposal |
| UHC | underlying hazardous constituent |
| WAC | *Washington Administrative Code* |
| WCH | Washington Closure Hanford, LLC |
| WESF | Waste Encapsulation and Storage Facility |
| WIPP | Waste Isolation Pilot Plant |
| WMA | Waste Management Area |
| WMU | Waste Management Unit |
| WRAP | Waste Receiving and Processing Facility |
| WRPS | Washington River Protection Solutions, LLC |
| WSCF | Waste Sampling and Characterization Facility |
| WSRd | waste specification record |
| WTP | Waste Treatment Plant |

## METRIC CONVERSION CHART

| Into metric units | | | Out of metric units | | |
|---|---|---|---|---|---|
| If you know | Multiply by | To get | If you know | Multiply by | To get |
| **Length** | | | **Length** | | |
| inches | 25.40 | millimeters | millimeters | 0.03937 | inches |
| inches | 2.54 | centimeters | centimeters | 0.393701 | inches |
| feet | 0.3048 | meters | meters | 3.28084 | feet |
| yards | 0.9144 | meters | meters | 1.0936 | yards |
| miles (statute) | 1.60934 | kilometers | kilometers | 0.62137 | miles (statute) |
| **Area** | | | **Area** | | |
| square inches | 6.4516 | square centimeters | square centimeters | 0.155 | square inches |
| square feet | 0.09290304 | square meters | square meters | 10.7639 | square feet |
| square yards | 0.8361274 | square meters | square meters | 1.19599 | square yards |
| square miles | 2.59 | square kilometers | square kilometers | 0.386102 | square miles |
| acres | 0.404687 | hectares | hectares | 2.47104 | acres |
| **Mass (weight)** | | | **Mass (weight)** | | |
| ounces (avoir) | 28.34952 | grams | grams | 0.035274 | ounces (avoir) |
| pounds | 0.45359237 | kilograms | kilograms | 2.204623 | pounds (avoir) |
| tons (short) | 0.9071847 | tons (metric) | tons (metric) | 1.1023 | tons (short) |
| **Volume** | | | **Volume** | | |
| ounces (U.S., liquid) | 29.57353 | milliliters | milliliters | 0.033814 | ounces (U.S., liquid) |
| quarts (U.S., liquid) | 0.9463529 | liters | liters | 1.0567 | quarts (U.S., liquid) |
| gallons (U.S., liquid) | 3.7854 | liters | liters | 0.26417 | gallons (U.S., liquid) |
| cubic feet | 0.02831685 | cubic meters | cubic meters | 35.3147 | cubic feet |
| cubic yards | 0.7645549 | cubic meters | cubic meters | 1.308 | cubic yards |
| **Temperature** | | | **Temperature** | | |
| Fahrenheit | subtract 32 then multiply by 5/9ths | Celsius | Celsius | multiply by 9/5ths, then add 32 | Fahrenheit |
| **Energy** | | | **Energy** | | |
| kilowatt hour | 3,412 | British thermal unit | British thermal unit | 0.000293 | kilowatt hour |
| kilowatt | 0.94782 | British thermal unit per second | British thermal unit per second | 1.055 | kilowatt |
| **Force/Pressure** | | | **Force/Pressure** | | |
| pounds (force) per square inch | 6.894757 | kilopascals | kilopascals | 0.14504 | pounds per square inch |

06/2001

Source: *Engineering Unit Conversions*, M. R. Lindeburg, PE, Third Ed., 1993, Professional Publications, Inc., Belmont, California.

# 1.0 INTRODUCTION

This document has been prepared in accordance with *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement [TPA]) (Ecology et al. 1989) Milestone M-026-01Y. The document presents the status of Hanford Site land disposal restricted mixed waste, other mixed waste, and other waste that the U.S. Department of Energy (DOE); State of Washington, Department of Ecology (Ecology); and U.S. Environmental Protection Agency (EPA) have agreed to be within the scope of this report. The reporting period for this document is from January 1, 2014, to December 31, 2014.

This report adheres to the requirements found in the 1990 Requirements for Hanford Land Disposal Restrictions Plan (LDR Plan), Federal Facility Compliance Act of 1992, the 2000 LDR Final Determination, and the 2002 Resolution of Dispute. These documents detail the requirements of the LDR Report. The purpose of this report is to:

- Document all known and potential mixed waste at Hanford.
- Document all known characterization information and treatment technologies.
- When characterization and treatment has not been established, plans and schedules to accomplish characterization and treatment will be established and included in the LDR Report.
- Document storage assessments of all known and potential mixed waste at Hanford to ensure safe storage.
- Annually update all information to include changes in waste characterization, treatment technologies, plans, schedules, and storage assessments.

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Sections 2.0 through 6.0 present information concerning the storage and minimization of mixed waste and the potential sources for the generation of additional mixed waste. Sections 7.0 through 15.0 present information pertaining to the characterization and treatment of these wastes. Appendix A lists the land disposal restrictions (LDR) reporting requirements and explains where the requirements are addressed in this report. Appendix B contains the treatability group data sheets (TGDSs) and location-specific data sheets (LSDSs) for stored and forecasted mixed waste. Appendix C contains the Potential Mixed Waste Tables (PMWTs).

## 1.1 SOURCES AND ORGANIZATION OF WASTE STORAGE DATA

This report presents information on waste streams that are reported either as a matter of law or as a result of discussions among DOE, Ecology, and EPA. The LDR reporting requirements are documented in Appendix A. Waste streams reported as a matter of law include mixed waste in storage subject to the storage prohibition of Title 40 *Code of Federal Regulations* (CFR) Part 268.50, "Prohibitions on Storage of Restricted Wastes." *Washington Administrative Code* (WAC) 173-303-140, "Land Disposal Restrictions," incorporates the federal rule by reference. EPA guidance (*Guidance on the Land Disposal Restrictions' Effects on Storage and Disposal of Commercial Mixed Waste* [EPA 1990]) indicates which mixed waste is subject to the storage prohibition. Other mixed waste streams are being reported under the Tri-Party Agreement Milestone M-026-01 as a result of the 2002 Resolution of Dispute Pertaining to Hanford Federal Facility Agreement and Consent Order Calendar Year 2000.~~discussions held among DOE, Ecology, and EPA.~~ Examples of these other mixed waste streams include mixed waste that

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meets LDR treatment standards and mixed waste being managed under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) on-site provisions being treated at the Environmental Restoration Disposal Facility (ERDF).

Mixed waste is not subject to the storage prohibition until generated and managed in a 90-day accumulation area or a treatment, storage, and/or disposal (TSD) ~~unit., or the waste is managed at a Hanford Site location managing mixed waste pursuant to the CERCLA off-site rule (40 CFR 300.440, "Procedures for Planning and Implementing Off-site Response Actions"). Although~~unit. Although mixed waste managed in a 90-day accumulation area is not considered stored, the EPA has indicated that the storage prohibition clock begins when mixed waste is managed in the 90-day accumulation area. Where a TSD unit is managing wastes generated pursuant to a CERCLA decision document and that unit is not on-site with respect to the scope of the CERCLA action, then the unit must also be subject to a CERCLA off-site determination of acceptability in addition to authorization to treat, store or dispose according to the Hanford Facility RCRA Permit.

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Mixed waste is reported here as projected waste when the waste meets either of the following criteria:

- The waste has not been generated and therefore is not subject to the storage prohibition.
- The waste is managed in either a satellite accumulation area, a 90-day accumulation area, or is CERCLA mixed waste destined for treatment at ERDF.

This storage report provides aggregate waste stream data based on a set of waste treatability groups. Many locations of mixed waste can exist within a treatability group and these locations are detailed on LSDSs for the sources of waste. More information concerning treatability groups can be found in Sections 7.0 through 15.0. Per agreement with Ecology on February 6, 2003, mixed waste generated and sent directly to disposal does not need to be reported in the LDR report ("M-026 LDR Report Project Manager Meeting Minutes," [Ecology et al., 2003]). If any storage of the mixed waste occurs, or is forecasted to occur, the mixed waste must be reported.

Other materials and items currently on the Hanford Site that might be designated as mixed waste in the future are described in Section 2.3 and are identified as potential mixed waste (PMW). TGDS~~reatability group data sheets~~ describe the characteristics that the location-specific waste sources share (Appendix B, Figure B-1). The data sheets also provide total waste volume data from the associated LSDSs for both the currently stored inventory and the waste projected to be generated. The LSDSs describe how, where, and volume of waste stored and present information concerning disposition of the waste.

Appendix B provides LSDSs for each waste stream, sorted by treatability group. Each LSDS was completed by staff knowledgeable of the waste stream. Mixed waste currently in satellite accumulation areas or in 90-day accumulation areas is not considered current stored inventory, but is included as forecasted waste generation. The content and format of waste stream data sheets and the process for collecting waste storage data are discussed in the following paragraphs.

Table 1-1 lists the names of the treatability groups used in this report and the major sources of waste in each group.

A new treatability group was established and added as PMW in calendar year (CY) 2012, "Waste Treatment Plant (WTP) Lab Complex." The WTP Lab has forecasted the generation of waste in 2018 from methods development for equipment calibration. The treatability group "Purgewater" was deleted from the report for CY 2011 as it was closed and not used in 2011. No treatability groups were deleted from the report for CY 2014. Detail on treatability groups is found in Table 1-1, Table 2-1, and Table 2-2, and also in the TGDS~~treatability group data sheets~~ in Appendix B.

Other materials, items, etc., currently on the Hanford Site that might be designated as mixed waste in the future, are described in Section 2.3, listed in Appendix C, and are referred to as PMW.

Table 1-1. Treatability Groups. (3 sheets)

| Treatability Group Name | Major Waste Sources |
|---|---|
| 221-T Containment Building | Waste resulting primarily from 221-T Building canyon activities. |
| 221-T Tank System | Waste resulting from decontamination activities at the 221-T and 2706-T Buildings; some additional waste from other Hanford Site locations. |
| 222-S Laboratory Complex | Waste resulting from operations at the 222-S Laboratory Complex and other Hanford Site activities. |
| 222-S T8 Tunnel | Waste piping removed from aqueous waste service formerly used to transfer waste from the laboratory to the waste tank system. |
| 241-CX Tank System | Residual tank waste resulting from reduction-oxidation (REDOX), plutonium-uranium extraction (PUREX), and Semiworks processes. |
| 324 Building REC Waste | High-activity radioactive waste containing toxic heavy metals generated during research and development activities since the mid-1960's and the processing of high-level vault waste. |
| 325 HWTU | Laboratory waste generated by research and analytical activities conducted by the Pacific Northwest National Laboratory (PNNL). This waste stream was managed in satellite and 90-day accumulation areas and subsequently transferred to the 325 Hazardous Waste Treatment Unit (HWTU) for storage and/or treatment. Waste is or was generated by active, ongoing projects at PNNL. |
| 400 WMU | Mixed waste generated from the deactivation of the Fast Flux Test Facility (FFTF). |

Table 1-1. Treatability Groups. (3 sheets)

| Treatability Group Name | Major Waste Sources |
|---|---|
| B Plant Cell 4 | Drums of Waste Encapsulation and Storage Facility (WESF) hot cell maintenance waste placed in storage from 1988 to 1997. |
| B Plant Containment Building | Process jumpers and equipment from B Plant Complex processes stored on the canyon deck and in process cells. |
| Cesium and Strontium Capsules | CsCl salt and $SrF_2$ salt reclaimed from double-shell tank (DST) and single-shell tank (SST) systems mixed waste. |
| DST Waste | Widely varying waste from chemical separations processes (e.g., PUREX, Plutonium Finishing Plant [PFP], and cesium and strontium separations) and related support facilities operating from 1970 to date. |
| ERDF—Treatment | Spent resins and contaminated waste from CERCLA remediation and D4 debris requiring treatment before disposal at ERDF. |
| HSTF | Residual heel content remaining from REDOX process. |
| LERF/ETF Liquid Waste | Liquid waste sent from various Hanford Site processes to the Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (ETF) for treatment. |
| LERF/ETF Solid Waste | Dried powder waste and operational waste generated as a result of operating LERF/ETF. |
| MLLW-01 - LDR Compliant Waste | Inorganic salt waste, excavated soil, and contaminated equipment that currently meets disposal criteria and regulatory requirements for disposal; however, some of this waste may still require radiological stabilization. |
| MLLW-02 - Inorganic Non-Debris | Inorganic particulates, absorbed liquids and sludge, paint waste, salt waste, and aqueous laboratory packs from various locations. |
| MLLW-03 - Organic Non-Debris | General organic solids and laboratory packs from various locations. |
| MLLW-04 - Hazardous Debris | Paper, plastic, rubber, wood, rags and to a lesser extent metals, concrete, and asbestos debris from various locations. |
| MLLW-05 - Radioactive Lead Solids | Elemental lead and lead shielding from various locations. |
| MLLW-06 - Mercury Wastes | Various forms of mercury (elemental and amalgamated) from various locations. |
| MLLW-07 - RH and Large Container | Remote Handled (RH) and oversized contact handled (CH) mixed low-level waste (MLLW) generated from various locations. |

Table 1-1. Treatability Groups. (3 sheets)

| Treatability Group Name | Major Waste Sources |
|---|---|
| MLLW-08 - Unique Waste | Waste stream consists of unique waste that requires special processing not typically employed for the other MLLW waste streams. |
| MLLW-09 - Radioactive Batteries | Spent, radioactively contaminated, batteries from various locations, not treated at ERDF. |
| MLLW-10 - Reactive Metals | Reactive metal waste from various locations. |
| PUREX Plant | Chromium-contaminated debris from E-Cell floor currently stored in F-Cell of the PUREX Containment Building. |
| PUREX Storage Tunnels[1] | Equipment and waste containing mercury, lead, silver, cadmium, chromium, barium, and mineral oil from PUREX and other processes. |
| SST Waste | Widely varying waste from chemical separations processes and related support facilities operating between 1944 and 1980. |
| TRUM-CH Large Container | CH transuranic mixed (TRUM) waste in large boxes from various sources. |
| TRUM-CH Small Container | CH TRUM waste includes a variety of waste from various locations packed into smaller containers using standard processing techniques. |
| TRUM-RH | RH TRUM waste originates from various locations and has a contact dose rate of >200mrem/hr. |
| WTP Lab Complex | Waste generated from analytical methods development in the WTP radiological laboratory. Forecasted to start in 2018. |

[1]This treatability group includes both TRUM and non-mixed transuranic (TRU) waste. TRUM and non-mixed TRU exist in the same storage unit and can be difficult to distinguish when the waste has been in storage for quite some time.

Table 1-2 is a comprehensive list of waste streams that were included in any previous LDR report, but are not included in this report, along with the reason the waste stream is no longer reported.

Table 1-2. Streams No Longer Applicable to Report. (3 sheets)

| Treatability Group Name | Waste Source | Reason |
|---|---|---|
| 183-H Solar Evaporation Basins Waste | Containerized solids retrieved from 183-H Solar Evaporations Basins, generated from 300 Area fuel fabrication waste from 1973 to 1985. | Unit is in post-closure care. Process waste inventory is now disposed of at ERDF. |

Table 1-2. Streams No Longer Applicable to Report. (3 sheets)

| Treatability Group Name | Waste Source | Reason |
|---|---|---|
| PNNL-305B | Waste generated from PNNL laboratory and facility operations. | PNNL mixed waste storage/treatment has been consolidated into the 325 HWTUs. 305-B was clean closed in 2007. |
| 4843 Sodium Storage Facility Waste | Waste sodium from FFTF operations. | ~~Significant amounts of alkali metal waste are no longer generated. This inventory is stored at the Central Waste Complex (CWC) and reported as part of that inventory.~~ This waste was sent to Tennessee for treatment in 2010/2011 and the debris with treatment residues have been returned and disposed in Trenches 31/34. |
| Hexone Waste | Hexone that had been planned for use in the 202-S solvent extraction process. | Hexone has been incinerated off-site at Diversified Scientific Services, Inc., Kingston, Tennessee. (Small amounts of waste continue to be generated from surveillance and maintenance (S&M) of the emptied tanks that were used to store the hexone. The remaining heels in the two tanks are reported in the Hexone Storage and Treatability Facility [HSTF] treatability group.) |
| PUREX Facility Ammonia Scrubber Waste | Waste generated from sorption of gaseous ammonia from fuel processing operations at the PUREX Plant. | Waste no longer generated. Inventory in DST System. |
| PUREX Facility Process Condensate | Condensed vapors from PUREX Plant operations. | Waste no longer generated. Inventory in DST System. |
| PUREX Plant Aging Waste | First extraction-column fission products from the PUREX Plant. | Waste no longer generated. Inventory in DST System. |
| T-Dragoff | T Plant Complex | Waste was dispositioned and disposed. |

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Table 1-2. Streams No Longer Applicable to Report. (3 sheets)

| Treatability Group Name | Waste Source | Reason |
|---|---|---|
| 222-S RH MLLW | 222-S Laboratory Complex | Treatability group was combined with the MLLW-07 treatability group. |
| 241-Z | PFP | Treatability group was combined with the DST Waste treatability group. The waste is no longer generated and the 241-Z Tank System has been closed. |
| HO-64-4275 | Various Hanford Site locations. | Treatability group was combined with the DST Waste treatability group. |
| K Basin Sludge | 100 Area K Basins | Treatability group was combined with the TRUM-polychlorinated biphenyl (PCB) treatability group. The waste was subsequently removed from the report because the waste did not designate as mixed waste. |
| T Plant EC-1 Condenser | 242-A Evaporator | Shipped off-site for recycling in CY 2002. |
| ERDF – Direct Disposal | Hanford Site remediation waste | No storage of mixed waste occurred for this treatability group. |
| 618-4 Depleted Uranium/Oil Drums | 618-4 Burial Ground | Waste has been treated off-site. |
| TRUM-PCBs | Various Hanford Site locations. | Waste in this treatability group has been rolled into the other three TRUM treatability groups based on the M-091 settlement agreement. |
| Purgewater | Purgewater generated from pump and treat operations, well drilling, groundwater sampling, and well maintenance across the Hanford Site. | This waste stream was closed and not used in 2011. |

Table 1-2. Streams No Longer Applicable to Report. (3 sheets)

| Treatability Group Name | Waste Source | Reason |
|---|---|---|
| 200-UP-1 | 200-UP-1 groundwater produced as a result of groundwater remediation under the 200-UP-1 Interim Record of Decision (ROD). | 200-UP-1 OU contaminated groundwater is extracted and treated in the 200-West Area Pump-and-Treat Facility, then reinjected back to the aquifer through injection wells. |
| TX/TY Treatability Test Wells | 200-ZP-1 groundwater, produced as part of a treatability test. | Waste streams are now covered under the latest 200-ZP-1 OU ROD and therefore are not being generated independently. |
| PFP – Lab Chemicals/Reagents, LDR Compliant | PFP laboratory decontamination and decommissioning (D&D) | Lab Chemicals/Reagents, LDR Compliant, cleanout was completed before demolition activities commenced and therefore are no longer being generated. |
| LLBG Unique Waste | Beryllium, F027 contaminated waste and waste with unique processing concerns which had been placed in disposal at the Low-Level Burial Grounds (LLBG). | There are no longer plans to generate and store this waste within the LLBG. |

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The following waste streams have been added since the 2009 LDR report (DOE/RL-2010-27, *Calendar Year 2009 Hanford Site Mixed Waste Land Disposal Restrictions Full Report*). The waste streams, with their appropriate treatability group are:

- DST – 204-AR Catch Tank
- ERDF-Treatment – Hazardous Debris to ERDF, from Closure Services & Infrastructure (CS&I)
- ERDF Treatment – Hazardous Debris to ERDF, from Tank Farms
- MLLW-02 – LLBG
- MLLW-03 – CWC
- MLLW-04 – FFTF-440 Pad
- MLLW-07 – Waste Receiving and Processing Facility (WRAP)

## 1.2 STORAGE REPORT DATA COLLECTION PROCESS

A central database (the LDR Report database) was used for managing data contained in Appendix B. Data were collected for all stored and projected mixed waste and input into the database. Volumes reported as stored inventory at specific locations automatically were summed and presented as the storage information for the associated treatability group inventory. An analogous automatic summation was performed for projected waste generation rates. Appendix B contains the TGDS~~treatability group data sheets~~, along with the following information:

- A description of the data fields in the data sheets
- Figure B-1 to explain the relationship among the types of data sheets
- Table B-1 as an index to locate individual data sheets.

## 1.3 SCHEDULE AND MECHANICS OF LAND DISPOSAL RESTRICTIONS REPORT UPDATE

~~Each annual update is issued as a complete replacement with a new document number that supersedes the previous year's LDR Report. Proposed TPA milestones or proposed changes to TPA milestones are identified and processed using existing processes contained in the TPA Action Plan, Section 12.0, and not as part of the annual LDR report review and approval process. Commitments other than TPA milestones however, can be proposed in the LDR Report when required. Modification of commitments in the report are made by: using an LDR Report change form for within-year changes; by agreement through TPA lead regulatory agency project manager meetings; by agreement through LDR TPA project manager meetings; or by DOE in the annual update agreed on by Ecology during the primary document review and comment process. Changes to commitments proposed by DOE as part of the primary document process are summarized in Section 1.5.~~

Each annual LDR Report is issued with a unique document number. Each full report supersedes the previous full report, and each summary report supersedes the previous summary report. Proposed TPA milestones or proposed changes to TPA milestones are identified and processed using existing processes contained in the TPA Action Plan, Section 12.0, and not as part of the annual LDR report review and approval process. Modifications to the TPA milestones listed in the LDR report are incorporated in the next year's report. Commitments other than TPA milestones can be proposed in the LDR Report when required~~. Changes made to the LDR Report after DOE submits the document to Ecology can be incorporated by either updating the document and publishing the updated report or documenting changes through use of errata sheets. A third option is to incorporate changes in the next annual LDR report.~~ The decision to choose a particular pathway is made jointly by DOE and Ecology project managers responsible for the work scope in question. Modification to TPA milestones listed in the LDR report is incorporated in the next annual LDR report and are not issued as errata sheets. As described in Attachment 3 of the March 14, 2002, *Resolution of Dispute Pertaining to Hanford Federal Facility Agreement and Consent Order Calendar Year 2000 Hanford Site Mixed Waste Land Disposal Restrictions Report*, workshops were held during 2002 to improve the LDR Report process. These results have been incorporated into the LDR Report. Additional workshops were held in subsequent years resulting in Tri-Party Agreement change request M-026-06-01, which established the content and format of LDR Summary Reports following a pilot activity in CY

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2005. The Summary Reports are to be issued every year for four years, with the fifth year being a Full Report. This report is the second Full Report since change request M-026-06-01 and meets TPA Milestone M-026-01Y.

The following summarizes the information updated in each annual report, as documented in Appendix A:~~The annual report revisions consist of the following:~~

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- Updated mixed waste storage inventories and projected generation rates to reflect current plans and schedules.
- Revised waste stream characterization information to reflect current knowledge.
- Updated compliance status of the TSD units to reflect completion of pending storage method compliance assessments and permitting activities.
- Report on completed LDR storage method compliance assessments and summarized resulting findings and observations.
- Re-evaluation of the adequacy of the capacity of current TSD units for storing LDR mixed waste.
- Addition of new milestones and revision of existing milestones as applicable.
- Report on changes in the management and TSD of mixed waste required by changes in federal policy or regulations as applied to the DOE complex.
- Funding/budget guidance impacts on operating plans and schedules.
- Addition of mixed waste streams and projected mixed waste that will be generated in the five-year span for the LDR report, and adding PMW as waste is identified.
- Removing mixed waste and PMW from the LDR report that has been disposed or otherwise dispositioned (e.g., recycled). (Refer to Table 1-2 and Appendix C, Table C-3.)

Commented [MM8]: #53- Global change to "storage method compliance assessment", as applicable.

## 1.4 ASSUMPTIONS

This section lists key assumptions used to prepare this report.

- For tank waste (DST Waste and SST Waste treatability groups), the pretreatment methods to be developed include acceptable technology to separate the tank waste into low-activity waste (LAW) and high-level waste (HLW) streams so the bulk of chemical waste is in the LAW stream and the bulk of radionuclides are in the HLW stream.
- Pretreated tank waste will be transferred to LAW and HLW vitrification facilities.
- For tank waste, it is assumed that the glass waste forms either comply with LDR requirements or a treatability variance will be in place for both the LAW and HLW fractions and a delisting petition will be in place for the vitrified HLW fraction.

- SST Waste from the SST System continues to be transferred to the DST System and mixed with DST Waste as part of the stabilization and retrieval programs for the SST System. Supernatant from the DST System will be used to mobilize the SST waste.

- Process condensate from the 242-A Evaporator and hazardous wastewater from other sources, including liquid effluents from tank waste pretreatment and vitrification, will continue to be treated at ETF.

- The work scope contained in the LDR report is based on expected funding and is contingent on Congressional budget actions. If funding is reduced or reprioritized, the ability to conduct and complete work scope is affected. To address these changes, changes to Tri-Party Agreement milestones are made using Section 12.0 of the Tri-Party Agreement Action Plan, and are not part of the review and approval of the annual LDR report update.

## 1.5 SUMMARY OF PROPOSED CHANGES TO COMMITMENTS IN THE LAND DISPOSAL RESTRICTIONS REPORT

~~LDR report commitments can be changed through the processes described in Section 1.3.~~ This section contains any commitment changes that are proposed by DOE in the annual update and agreed on by Ecology during the primary document review and comment process.

~~Ecology and DOE Richland Operations Office (DOE-RL) initiated M-091-45 negotiations on September 8, 2009, to reach an agreement on adjustments in work scope and milestones consistent with the shift of resources to the River Corridor and other higher priority Hanford Site cleanup tasks. The Parties agreed that it was prudent to expand the scope of the negotiations to encompass all of the M-091 series milestones and to simplify the M-091 language, both in response to public comments that the milestones were difficult to read and understand.~~

~~In September 2009, a Tri-Party Agreement milestone change request (M-091-09-01) modifying the M-091 series of milestones, was signed and approved by DOE and the regulators, with a due date to be established pursuant to milestones M-091-01A and M-091-01B. This M-091 change request provided a comprehensive, easily understood series of milestones to measure progress on the safe and stable processing and shipping of Hanford Site wastes. The change also included establishing enforceable milestones for the shipment of TRUM waste from the Hanford Site.~~

The decision to issue a full LDR report every five years with summary reports each year during the intervening years was agreed to in~~(~~ TPA Change Request M-026-06-01~~.) has proven to be an efficient and cost effective change.~~ The change will remain in effect unless revised per the ~~process above~~TPA process.

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# 2.0 SUMMARY STORAGE DATA

The forecast generation rates represent the current best estimates of projected waste generation for each LDR treatment group, or the quantity of mixed waste added to the TSD units. These estimates are developed by the generating projects/facilities or programs based on an evaluation of operating schedules, past operational history, and projections of future waste-generating activities. The generation projections could be higher or lower than the actual generation values because of changes in process technologies and practices, waste treatment, production schedules, waste minimization activities, or uncertainties associated with the project estimates.

## 2.1 SUMMARY INVENTORY OF WASTE TREATMENT GROUPS AND FORECAST GENERATION RATES

The volume of mixed waste currently in storage and the volume projected to be generated and subsequently stored at Hanford during the next five calendar years are presented in Table 2-1. Mixed waste managed only in Hanford Site generator locations (satellite accumulation areas and 90-day accumulation areas) and then sent directly off-site for treatment are not reported. These data are summarized from the LSDSs and also are reported in the treatability group data sheets in Appendix B. Table 2-2 presents an overall summary of the storage, characterization, treatment, and disposal activities for the treatability groups. Table 2-2 is a collection of information from the following three tables: Table 2-1, Table 13-1, and Table 14-1. Data on waste volumes in these tables are taken from Appendix B and rounded to two significant figures. Stored waste volumes are reported either by the actual waste volume or by the waste container volume. The treatability group breakout of retrievably stored waste is described in the project management plan (PMP) required by Tri-Party Agreement Milestone M-091-03. Retrievably Stored Waste, both MLLW and TRUM, not yet retrieved is included in the above listed tables.

The WTP is a new TSD Group~~unit~~ being constructed to treat DST Waste and SST Waste. The WTP Project Management schedule projects that mixed waste will be generated at the WTP starting in 2018 of the five-year forecasting window for this report.

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## 2.2 INVENTORY STORAGE METHOD AND LOCATION

Storage methods are identified in Section 2.1 of the LSDSs. Options include: container (pad), container (covered), container (retrievably buried), tank, DST, SST, or other (explain). The category "Other (explain)" includes all waste not stored in containers, DSTs or SSTs (e.g., PUREX Storage Tunnels). The LSDS storage location does not include waste in accumulation areas.

## 2.3 POTENTIAL MIXED WASTE

The PMWT (Appendix C) 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. The materials included in the PMWT (equipment, piping, etc.) are those that currently are not being used and do not have a clear path for reuse or recycling. The waste that has not been actively managed as mixed waste is, in many cases, at *Resource Conservation and Recovery Act of 1976* (RCRA)-CERCLA past-practice units (R-–CPP) or CERCLA past-practice (CPP) units under the Tri-

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Party Agreement. Past-practice waste is a waste that was disposed of (intentionally or unintentionally) ~~abandoned~~ before the first effective ~~LDR~~ date of applicable designation regulations in Washington State, typically August 19, 1987 for mixed waste. Classification of waste management units (WMUs) as past-practice units is described in Section 3.0 of the Tri-Party Agreement Action Plan. When cleanup actions occur in the operable unit (OU) for these past-practice units, mixed waste could, or is expected to be, generated. The PMWT also includes a similar category of materials currently in standby for a potential future use. The table was developed for the following reasons:

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- To acknowledge that materials might become mixed waste at a future date.
- To begin identifying data gaps (e.g., whether the material would be designated as mixed waste) and facilitate discussions to establish a path forward toward disposition for those materials eventually identified as mixed waste.

As a result of discussions with Ecology and EPA, the following categories of materials have not been included in the PMWT:

- Generated mixed waste. This mixed waste is included in treatability group and LSDSs in Appendix B of this LDR report.
- Contaminated soil sites, cribs, ponds, ditches, trenches, etc., considered engineered disposal units. (However, the materials would be included in an LDR report LSDS [Appendix B] when management or disposition activities associated with those units are expected to result in the generation of mixed waste requiring treatment in the next five years.)
- The building structures themselves, including contaminated walls, floors, floor sweepings, dust, etc. Building equipment, such as ventilation system components and building utilities that would be considered part of the structure, also is not included.
- Equipment and chemicals being used.

The PMWT includes information on the assessments performed or scheduled to meet the DOE storage method compliance assessment requirement of the LDR storage report. Section 3.0 provides more information concerning assessments.

The PMWT also includes known and proposed schedule information. This information can include the following, as applicable:

- Proposed dates for storage method compliance assessments
- OUs that encompass the facility or unit
- Existing documentation and milestones or schedules that indicate plans that will address the PMW

- Date to complete data gap plan
- Start date for major Tri-Party Agreement negotiations such as facility transition or deactivation.

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$)[2] | Generation Projection 2016 ($m^3$)[2] | Generation Projection 2017 ($m^3$)[2] | Generation Projection 2018 ($m^3$)[2] | Generation Projection 2019 ($m^3$)[2] |
|---|---|---|---|---|---|---|---|
| 221-T Containment Building | Equipment (e.g., jumpers, tanks, centrifuges, etc.), other debris (e.g., pieces of concrete, etc.), and non-debris (e.g., sandblasting grit) generated during canyon deck and/or process cell cleanout, or from treatment and/or decontamination activities. | 58.000 | 0 | 0 | 0 | 0 | 0 |
| 221-T Tank System | Liquid mixed waste with settled solids/sludge (waste also contains PCBs at *Toxic Substances Control Act of 1976* [TSCA] regulated concentrations). | 1.700 | 0 | 0 | 0 | 0 | 0 |
| 222-S Laboratory Complex | This waste stream consists of many different inorganic and organic solids and liquids that are RCRA regulated or have been contaminated with inorganic and organic regulated dangerous waste constituents, including PCBs. This waste stream also includes hazardous debris. | 7.140 | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 |
| 222-S T8 Tunnel | This waste stream is comprised of debris that has come into contact with waste from the 219-S Waste Handling Facility tank system waste. The debris is designated as RH MLLW as a result of this contact. | 0.200 | 0 | 0 | 0 | 0 | 0 |
| 241-CX Tank System[3] | Residual tank waste resulting from REDOX, PUREX, and Semiworks processes. | 6.390 | 0 | 0 | 0 | 0 | 0 |
| 324 Bldg. REC Waste | Radioactive waste containing regulated quantities of toxic heavy metals. Mixed waste residue may be generated from the future radiochemical engineering cells (RECs) decontamination and deactivation activities and disposed as CERCLA waste in accordance with M-094-00. | 5.000 | 0 | 0 | 0 | 0 | 0 |
| 325 HWTU | This waste stream consists of many different inorganic and organic solids and liquids that are contaminated with inorganic and organic regulated dangerous waste constituents, including PCBs. This waste stream also includes hazardous debris. Waste Specification Records (WSRds) in this waste stream include PNNL-930-05 and PNNL-931-04. | 19.107 | 9.100 | 9.100 | 9.100 | 9.100 | 9.100 |
| 400 Area WMU | Mixed waste generated from Hanford activities, primarily from the deactivation of FFTF. | 1.900 | 0 | 0 | 0 | 0 | 0 |

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$)[2] | Generation Projection 2016 ($m^3$)[2] | Generation Projection 2017 ($m^3$)[2] | Generation Projection 2018 ($m^3$)[2] | Generation Projection 2019 ($m^3$)[2] |
|---|---|---|---|---|---|---|---|
| B Plant Cell 4 | Cell 4 ~~W~~waste resulted from WESF hot cell maintenance waste (i.e., manipulator boots, light bulbs, high-efficiency particulate air [HEPA] filters, misc. debris). This waste is stored in accordance with interim status technical standards pending completion of RCRA closure. No additional waste will be stored in this location B Plant has been retired from active operation and in is in surveillance and maintenance mode pending final disposition which will be addressed using CERCLA remedial action that is coordinated with RCRA closure.~~, including Cell 4, was placed in long-term S&M in 1998. No additional waste will be stored in this location as B Plant is under long-term S&M.~~** | 1.400 | 0 | 0 | 0 | 0 | 0 |
| B Plant Containment Building | Stream consists of failed equipment (e.g., process jumpers, pumps, etc.) used in the 221-B canyon. Contaminated debris/equipment derived from the processing of "F" listed wastes for the recovery of strontium and cesium. Also contains elemental lead used for counterbalances and shielding. This waste ~~was placed in long-term S&M in accordance with Section 8.0 of the Tri-Party Agreement in 1999~~is stored in accordance with interim status technical standards pending completion of closure. No additional waste will be stored at this location. ~~The B Plant is under long-term S&M.~~** | 294,000 $kg^3$ | 0 | 0 | 0 | 0 | 0 |
| Cesium and Strontium Capsules | Cesium and strontium were reclaimed from Tank Farm waste as a product, separated and purified at B Plant, and converted to dry salt for storage at WESF. The cesium and strontium capsules were declared waste in 1997 and a Part A permit application was subsequently submitted to Ecology. The subject waste consists of 1,335 cesium capsules and 601 strontium capsules. The capsules are stored in pool cells at WESF. | 2.000 | 0 | 0 | 0 | 0 | 0 |
| DST Waste | Basic aqueous solution that may contain suspended material and/or settled solids (sludge and salt cake). Waste streams are treated with sodium hydroxide and sodium nitrite to minimize tank corrosion and to address compatibility issues. Waste has been stored in the DST System from 1971 to the present. | 101,0009.010 05 | 33.000 | 33.000 | 33.000 | 33.000 | 33.000 |

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Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$)[2] | Generation Projection 2016 ($m^3$)[2] | Generation Projection 2017 ($m^3$)[2] | Generation Projection 2018 ($m^3$)[2] | Generation Projection 2019 ($m^3$)[2] |
|---|---|---|---|---|---|---|---|
| ERDF—Treatment | This waste stream reflects mixed waste that requires treatment before disposal at ERDF. The waste is stored at the OU/ facility, and is transferred to ERDF where the waste is treated and disposed. | 50.000 | 150.500 | 137.500 | 102.000 | 102.000 | 102.000 |
| HSTF | Residual heel content remaining from REDOX Process. | 2.100 | 0 | 0 | 0 | 0 | 0 |
| LERF/ETF Liquid Waste | CERCLA and RCRA aqueous wastewaters are sent to the LERF/ETF for treatment and disposal. | 38,770.137 | 7,332.659 | 5,742.494 | 4,228.329 | 4,228.329 | 4,228.329 |
| LERF/ETF Solid Waste | CERCLA and RCRA wastewaters are sent to the LERF/ETF for treatment and disposal. Both dried powder and operational solid waste are generated and stored at 2025E prior to shipment to on-site disposal facility or to an off-site facility if treatment is required. | 38.600 | 88.000 | 147.000 | 150.000 | 150.000 | 150.00 |
| MLLW-01 – LDR Compliant Waste | This waste consist of MLLW meeting the disposal requirements for Hanford's Mixed Waste Disposal Units (ref: LLBG 218W5, T31, & T34). The waste either meets RCRA, and applicable State, LDRs as-generated, or the waste has been treated to meet the LDRs. Additionally, the waste meets unit specific disposal requirements (e.g., 90 percent full, minimum of 50 psi unconfined compressive strength, etc.). The applicable WSRds include 930 and 931. This waste can consist of: soils, immobilized waste, stabilized/solidified waste, thermal treatment residues, etc. | 0.416 | 0 | 0 | 0 | 0 | 0 |
| MLLW-02 - Inorganic Non-Debris | This treatability group is for non-debris waste that are subject to either a non-thermal treatment standard (specified technology), or a concentration-based treatment standard based on the performance of ~~contains hazardous constituents that either require non-thermal treatment (specified technology) or non-thermal treatment is the~~ best demonstrated available technology (BDAT) for meeting the applicable LDR treatment standards (concentration-based standards). The applicable WSRds for this treatability group are: 420, 421, 422, 425, 426, 428, 506, 507, 521, 523, 524, 525, 900, 901, 902, and 904. This waste consists of many different inorganic solids (e.g., particulates, absorbed liquids, sludges, resins, soils) and labpacks that are contaminated with regulated metals and other inorganics. This waste treatability group does not include hazardous debris other than incidental debris material commingled with the non-debris. | 0.208 | 0.420 | 0.420 | 0.420 | 0.420 | 0.420 |

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Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$)[2] | Generation Projection 2016 ($m^3$)[2] | Generation Projection 2017 ($m^3$)[2] | Generation Projection 2018 ($m^3$)[2] | Generation Projection 2019 ($m^3$)[2] |
|---|---|---|---|---|---|---|---|
| MLLW-03 - Organic Non-Debris | This treatability group is for non-debris waste that contains hazardous constituents that either requires thermal treatment (specified technology) or is subject to concentration-based treatment standards. ~~thermal treatment is BDAT for meeting the applicable LDR treatment standards (concentration-based standards).~~ Stabilization of the thermal treatment residue also might be required. The primary applicable WSRds for this treatability group are: 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 427, 429, 430, 431, 432, 500, 501, 502, 503, 504, 505, 520, 522, 700, 701, 720, 721, 920, 921, 922, and 923. This waste stream consists of many different inorganic and organic solids (e.g., particulates, absorbed liquids, sludge, resins, soils) and labpacks that are contaminated with organic regulated dangerous waste constituents. This waste stream may also include dangerous waste containing PCBs that require~~d~~ thermal destruction. This waste stream does not include hazardous debris other than incidental debris material commingled with the non-debris. | 0.322 | 0.420 | 0.420 | 0.420 | 0.420 | 0.420 |
| MLLW-04 - Hazardous Debris | This treatability group is for waste that meets the definition of hazardous debris as defined in 40 CFR 268.2. The physical characteristics include paper, plastic, wood, rubber, rags, and lesser quantities of metallic and inorganic waste components. The primary WSRds that comprise this treatability group are: DBR, 627, and 647. This waste may include organic/ carbonaceous (O/C) waste constituents in excess of 10 percent as defined in WAC 173-303-040 (e.g., plastic, paper, wood, rubber, etc.). | 17.540 | 66.260 | 66.260 | 66.260 | 66.260 | 66.260 |
| MLLW-05 – Radioactive Lead Solids | This treatability group is for waste that meets the definition of radioactive lead solids subcategory as described in 40 CFR 268.40. The physical makeup consists of many different forms of radioactive lead solids including bricks, sheets, shot-filled blankets, lead-lined debris items where the lead comprises more than 50 percent of the waste matrix. The primary WSRds that comprise this treatability group are EPB and 800. The waste is generated by many on-site generating organizations. | 0 | 0 | 0 | 0 | 0 | 0 |

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Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$) [2] | Generation Projection 2016 ($m^3$) [2] | Generation Projection 2017 ($m^3$) [2] | Generation Projection 2018 ($m^3$) [2] | Generation Projection 2019 ($m^3$) [2] |
|---|---|---|---|---|---|---|---|
| MLLW-06 – Mercury Wastes | This treatability group is for waste that contains various forms of mercury requiring special waste treatments. The form can consist of elemental liquid mercury, partially amalgamated mercury, mercury spill cleanups, high-mercury subcategory waste, and some debris waste items packaged in with the mercury waste. The primary WSRds that comprise this treatability group are EHG, HHG, and 810. The waste is generated by many on-site generating organizations. | 0 | 0 | 0 | 0 | 0 | 0 |
| MLLW-07 - RH and Large Container | This treatability group consists of the following waste types: (1) Large containers of MLLW (large containers for MLLW are defined as greater than 10 $m^3$ in size), (2) RH MLLW packages (RH-MLLW is defined as waste packages that have an external surface dose rate of greater than 200 mR/hr on contact), and (3) RH-MLLW that is shielded down to contact handling levels for safe handling and storage (shielding can be internal, external, and/or integral to the waste container). The primary WSRds that comprise this treatability group are DBL, HRW, 450, 550, and 650. The waste is generated by many on-site generating organizations. | 69.783 | 0 | 0 | 0 | 0 | 0 |
| MLLW-08 - Unique Waste | This treatability group is for waste that has very special waste processing for which no permitted treatment capability exists in the United States or the capability exists but the capacity is very limited/restricted. Currently, this treatability group contains one drum designated with the P015 listed waste code (beryllium powder), and MLLW that requires thermal treatment due to containing TSCA PCBs (e.g., transformer fluids/oils, sludge with PCB, aqueous waste with PCBs, etc.). The primary WSRds that comprise this treatability group are BER, TSC, 300, 400, 505, and 84A. The waste is generated by many on-site generating organizations. | 0.040 | 0 | 0 | 0 | 0 | 0 |
| MLLW-09 -Radioactive Batteries | This treatability group is for waste that is, or contains, radioactively contaminated batteries that have specific treatment requirements specified in 40 CFR 268.40 (i.e., D006 cadmium batteries, D008 lead-acid batteries, D009 mercury batteries, and D011 silver batteries). The primary WSRds that comprise this treatability group are BAT, 802, and 830). The waste is generated by many on-site generating organizations. | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$)[2] | Generation Projection 2016 ($m^3$)[2] | Generation Projection 2017 ($m^3$)[2] | Generation Projection 2018 ($m^3$)[2] | Generation Projection 2019 ($m^3$)[2] |
|---|---|---|---|---|---|---|---|
| MLLW-10 - Reactive Metals | This treatability group is for waste that is water reactive (waste codes D003) including sodium metal, cyanides/sulfides, NAK, lithium, etc. The primary WSRds that comprise this treatability group are ENA, 820, and 822. The waste is generated by many on-site generating organizations. | 0 | 0 | 0 | 0 | 0 | 0 |
| PUREX Plant | Concrete rubble contaminated with trace chromium as a corrosion product. No additional waste will be stored at this location as the PUREX Plant is under long-term S&M. | 1.000 | 0 | 0 | 0 | 0 | 0 |
| PUREX Storage Tunnels | Varies from very large equipment vessels with lead counterweights to very fine mixed waste powder in canisters. Waste receipt into the TSD unit began in 1960. The TSD unit waste inventory list is contained in the Hanford Facility RCRA Permit, Attachment 28, Chapter 3.0, Waste Analysis Plan. Waste is expected to contain a combination of TRU and TRUM. | 2,800.000 | 0 | 0 | 0 | 0 | 0 |
| SST Waste[4] | Basic aqueous slurry with layers of saltcake and/or sludge. Sludge is defined as solids (i.e., hydrous metal oxides) precipitated from the neutralization of acid waste. Saltcake is defined as the various salts formed from the evaporation of water. | 109,000.000[4] | 0 | 0 | 0 | 0 | 0 |
| TRUM-CH Large Container | TRUM waste is from various generating activities around the Hanford Site. The waste contains metals including steel shielding, plastic/polyurethane, wood, paper/cardboard, glass, filters, soil, miscellaneous/unknown/other, rags, lead and lead shielding, plexiglas, styrofoam, asbestos, rubber, glass, sorbents/kitty litter, cement, and concrete. Package size includes any CH TRUM waste that is not in a small container (as described in "TRUM-CH Small Container"). | 6,571.332 | 0 | 0 | 0 | 0 | 0 |

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections. (7 sheets)

| Treatability Group Name | Description[1] | Current Inventory ($m^3$)[2] | Generation Projection 2015 ($m^3$)[2] | Generation Projection 2016 ($m^3$)[2] | Generation Projection 2017 ($m^3$)[2] | Generation Projection 2018 ($m^3$)[2] | Generation Projection 2019 ($m^3$)[2] |
|---|---|---|---|---|---|---|---|
| TRUM- CH Small Container | The waste came from various facilities on and off the Hanford Site. The waste contains plastic/polyurethane, rubber, iron-based metal, soil, paper, cardboard, lead, rags, cement, stainless steel, wood, styrofoam, glass, absorbent/kitty litter, filters, lead shielding, carbon steel, fiberglass, brick/firebrick, plastic liner, shielding, concrete, animal waste, paints, ceramics, sludges, asbestos, aluminum, diatomaceous earth, resins, copper metal, lead, water, floor sweepings, batteries, leather, liquid, teflon, cork, cotton, light bulbs, urethane, and wax. Waste packages in this treatability group include containers that are 55 gallon drums or smaller containers even if overpacked in 85 gallon drums, and newly generated "Waste Isolation Pilot Plant" (WIPP) standard waste boxes. Drums in 10 drum overpacks are also counted as small containers based on the drum as the container, not the ten drum overpack. Note that some TRUM-CH small containers will be found to be TRUM-RH and need to be re-allocated to the TRUM-RH treatability group. | 4,508.646 | 61.300 | 51.300 | 1.300 | 1.300 | 1.300 |
| TRUM-RH | The waste consists of inner container, iron-based metals, lead, soil, lead shielding, and steel shielding. Waste is from the clean-out of hot cells from research/development laboratories and demolition activities. The relative waste quantity is small, because the waste matrix contains a large percentage of lead and steel shielding materials. TRUM is considered RH if the waste container has a contact dose rate >200 mrem/hr. In addition, in order to provide an estimate of what might be RH, TRUM will be reported as RH if the package is known to contain lead, concrete, or steel shielding. | 492.881 | 1.300 | 1.300 | 1.300 | 1.300 | 1.300 |
| WTP Lab Complex | Waste generated from methods development for equipment calibration. | 0 | 0 | 0 | 0 | 53.800 | 53.800 |

[1]WSRd indicates waste treatment and/or disposal pathway.
[2]The stored volume reported contains uncertainty as to the actual volume (Calendar Year 2004 Land Disposal Restrictions Report Comment Responses [Klein 2005]).
[3]Quantity estimated at 294,000 kg. A more detailed determination of waste volume would require extensive item identification and specific drawing information. At this time, obtaining this information is cost and schedule prohibitive.
[4]As a whole, the SST wastes are managed as RH HLW. However, the tank systems contain potential TRU mixed waste, pending a waste determination.

Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| 221-T Containment Building | 58.000 | 0 | Completed | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 221-T Tank System | 1.700 | 0 | Will be done pursuant to the approved closure plan in coordination ~~in conjunction~~ with T Plant Complex Canyon disposition. | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 222-S Laboratory Complex | 7.140 | 50.000 | Ongoing | ~~222-S Laboratory Complex~~, Commercial - Stabilization, ~~Commercial - Thermal~~ Commercial - Macroencapsulation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 222-S T8 Tunnel | 0.200 | 0 | Will be done in conjunction with 222-S Laboratory building disposition. | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 241-CX Tank System[2] | 6.390 | 0 | Characterization will be performed on waste in tank 72 on a schedule determined with 200-IS-1. | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |





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**Commented [MM20]:** For consistency with Tables 9-1 and 9-2.

Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| 324 Building REC Waste | 5.000 | 0 | Completed | As necessary, ERDF stabilization or marcroencapsulation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 325 HWTU | 19.107 | 45.500 | Ongoing | HWTU, Commercial - Stabilization, Commercial - Thermal | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| 400 Area WMU | 1.900 | 0 | Completed | Deactivation via reaction with water or water va~~o~~por ~~and conversion to sodium hydroxide~~ | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| B Plant Cell 4 | 1.400 | 0 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. M-085-00 to be determined (TBD) | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| B Plant Containment Building | 294,000 kg [3] | 0 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. M-085-00 TBD | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |





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Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| Cesium and Strontium Capsules | 2.000 | 0 | Completed | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| DST Waste | 101,009.105 | 165.000 | Ongoing | WTP vitrification | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| ERDF—Treatment | 50.000 | 594.000 | Ongoing | ERDF treatment | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| HSTF | 2.100 | 0 | Completed | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| LERF/ETF Liquid Waste | 38,770.137 | 25,760.140 | Ongoing | ETF | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| LERF/ETF Solid Waste | 38.600 | 685.000 | Ongoing~~Not required~~ | ERDF treatment expected to be needed for some solid wastes | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |

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Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| MLLW-01 – LDR Compliant Waste | 0.416 | 0 | Completed | No treatment required | No treatment required |
| MLLW-02 - Inorganic Non-Debris | 0.208 | 2.100 | M-091-42[2] | Stabilization/neutralizatiom | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-03 - Organic Non-Debris | 0.322 | 2.100 | M-091-42[2] | Thermal | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-04 - Hazardous Debris | 17.540 | 16.300 | M-091-42[2] | Macroencapsulation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-05 – Radioactive Lead Solids | 0 | 0 | M-091-42[2] | MACRO~~acroencapsulation~~ | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-06 – Mercury Wastes | 0 | 0 | M-091-42[2] | Amalgamation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-07 - RH and Large Container | 69.783 | 0 | M-091-43[2] | M-091-43 | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |

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Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| MLLW-08 - Unique Waste | 0.040 | 0 | M-091-42[2] | To be evaluated in a container by container basis | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-09 – Radioactive Batteries | 0 | 0 | M-091-42[2] | Macroencapsulation | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| MLLW-10 - Reactive Metals | 0 | 0 | M-091-42[2] | Deactivation with selected stablization | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| PUREX Plant | 1.000 | 0 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. M-085-00 TBD | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| PUREX Storage Tunnel | 2,800.000 | 0 | To be determined in conjunction with the PUREX Plant per Tri-Party Agreement Action Plan, Section 8.0. M-085-00 TBD | Not yet determined | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| SST Waste | 109,000.000 | 0 | Ongoing | WTP vitrification | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |

Table 2-2. Treatability Group Summary of Storage, Characterization, and Treatment Activities. (7 sheets)

| Treatability Group Name | Current Inventory ($m^3$)[1] | Projected Generation Volume 2015 through 2019 ($m^3$) | Planned Characterization Schedule | Treatment Process | Projected Volume to be Treated 2015 through 2019 ($m^3$) |
|---|---|---|---|---|---|
| TRUM-CH Large Container | 6,571.332 | 0 | M-091-44[2] | M-091-01 and/or off-site | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| TRUM-CH Small Container | 4,508.646 | 116.500 | M-091-46[2] | ~~WRAP and/or T Plant Complex~~M-091-01 and/or off-site | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| TRUM-RH | 492.881 | 6.500 | M-091-44[2] | M-091-01 | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| WTP Lab Complex | 0 | 107.600 | Waste will be designated at the time of generation ~~Not yet determined~~ | Treatment options still being assessed. Reference Appendix B ~~Not yet determined~~ | Processing of mixed waste will be performed in accordance with Tri-Party Agreement milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |

[1] The stored volume reported contains uncertainty as to the actual volume (Klein 2005)
[2] Characterization and Treatment will be performed in accordance with applicable M-091 milestones. See the M-091 milestones to determine what portion of the total volume requires treatment under those milestones.
[3]Quantity estimated at 294,000 kg. A more detailed determination of waste volume would require extensive item identification and specific drawing information. At this time, obtaining this information is cost and schedule prohibitive.

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# 3.0 COMPLIANCE ASSESSMENTS OF MIXED WASTE AND POTENTIAL MIXED WASTE STORAGE AREAS

The DOE conducts/oversees storage method compliance assessments of mixed waste storage areas and other areas that could, in the future, be the source of generation of other mixed waste. DOE storage method compliance assessments include reviewing other independent assessments and inspections and ~~contractor~~ self-assessments. In addition, daily, weekly, monthly, quarterly, and annual ~~contractor~~ assessments and inspections are conducted at Hanford Site mixed waste storage areas in accordance with ~~company policies,~~ DOE requirements, and applicable State and Federal standards~~, permit conditions, and other LDR storage obligations.~~ LDR storage method compliance assessments provide an additional level of review to address circumstances associated with mixed waste and PMW.

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## ~~3.1 INTRODUCTION~~

~~No indicators requiring global actions for LDR reporting were identified in the activities associated with assessments in CY 2014.~~

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## ~~3.2~~3.1 ASSESSMENT SCHEDULES

In CY 2011, DOE-RL contractors reviewed the current status of the mixed waste storage areas identified in Table 3-1. The contractors, in conjunction with DOE and Ecology, determined that further assessment of 224-B, 242-B/BL, and 270-W would result in little significant findings ("Waste Storage Assessment of 224-B, 242-B/BL, 270-W, and IMUSTs Not Associated with a Building," [Singleton 2011]).

However, Ecology determined that inactive miscellaneous underground storage tank (IMUST) storage method compliance assessments shall remain on the assessment list because of their complex storage conditions and, ~~therefore,~~ they are listed on Table 3-2 for further assessment. No additional DOE-RL storage method compliance assessments are currently scheduled. Any additional DOE-RL storage method compliance assessments will be negotiated with Ecology in LDR Project Manager Meetings (PMMs) and documented in related meeting minutes.

Table 3-1. Summary of the U.S. Department of Energy, Richland Operations Office Assessment Results.

| Assessment Location | LDR PMM[1] | Assessment Start Dates | Findings and Observations |
|---|---|---|---|
| ~~IMUSTs not associated with a building~~ | ~~September 23, 2010~~ | ~~June 2006~~ | ~~Continue the assessments.~~ |
| 224-B | September 23, 2010 | December 2006 | Further assessment determined to be unnecessary. (Singleton 2011) |
| 242-B/BL | September 23, 2010 | March 2007 | Further assessment determined to be unnecessary. (Singleton 2011) |
| 270-W | September 23, 2010 | June 2007 | Further assessment determined to be unnecessary. (Singleton 2011) |

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[1]Assessments are documented in the TPA Administrative Record as attachments to the PMM Minutes. The date is the PMM at which Ecology accepted the completed assessment.

Table 3-2 lists the locations where DOE-RL plans to complete previously initiated storage method compliance assessments in CYs 2015 through 2016. DOE-RL does not have any new storage method compliance assessments scheduled.

Table 3-2. U.S. Department of Energy, Richland Operations Office
Assessments for Calendar Years 2015 through 2016.

| Facility/Location | Start Date | |
|---|---|---|
| IMUSTs not associated with a building | June 2006 | ~~In progress~~None planned |

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In CY 2014, the DOE Office of River Protection (DOE-ORP) conducted no storage method compliance assessments, and no LDR storage method compliance assessments have been identified as required. ~~LDR assessments will be completed in the future when the need arises.~~ Table 3-3 shows that no new LDR storage method compliance assessment activities are identified for DOE-ORP in CYs 2015 through 2016.

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Table 3-3. U.S. Department of Energy, Office of River Protection
Assessments for Calendar Year 2014 through 2016.

| Facility/Location | Start Date |
|---|---|
| No DOE-ORP storage method compliance assessments were conducted in CY 2014 and none are planned for CY 2015-2016, as none are required. | Not Applicable (N/A) |

# 4.0 POTENTIAL STORAGE ISSUES

This section discusses issues pertaining to storage of mixed waste.

## 4.1 STORAGE CAPACITY

Storage capacity is addressed in Section 2.4 of the LSDSs (Appendix B) and is summarized in the following sections.

### 4.1.1 Washington Closure Hanford, LLC (WCH)

WCH does not have any issues pertaining to storage capacity within the five-year forecast period and beyond.

### 4.1.2 Washington River Protection Solutions, LLC (WRPS)

Every three years, in accordance with Tri-Party Agreement Milestone M-062-40, an evaluation is performed describing the disposition of all tank waste managed by DOE-ORP, including the retrieval of all tanks not addressed by the Consent Decree in Washington vs. DOE, Case No. 08-5085-FVS. A computer simulation of site operations (incoming waste projections and outgoing waste) is performed, which results in projections of tank fill schedules, tank transfers, evaporator operations, tank retrieval, and aging waste tank use. During this evaluation, the parties to the Tri-Party Agreement (Ecology, EPA, and DOE) determine whether new tanks need to be built. If waste is not transferred out of the DSTs (e.g., for further treatment at the WTP), the ability of the DSTs to receive additional SST waste could be impacted as early as 2022. In addition to the DST and the SST waste treatability groups, WRPS also manages the 222-S Laboratory Complex container storage areas and a long-term storage location. Based on projections to date, no additional storage capacity is anticipated for 222-S Laboratory Complex-derived wastes.

The DST system is designed to receive and safely store liquid wastes from the SST system and, to a lesser extent, wastes from other Hanford Site facilities. The wastes received typically come from other storage locations and, as such, are not documented as newly generated waste in the context of this document. Similarly, wastes returned to the DST system from the 242-A Evaporator are not considered newly generated. Process condensate from the 242-A Evaporator is directed to LERF/ETF and is documented on the 242-A Evaporator location specific data sheet under the LERF/ETF treatability group.

### 4.1.3 CH2M HILL Plateau Remediation Company (CHPRC)

CHPRC manages the long-term storage locations of mixed waste in the 200 Areas, except for the DST System, SST System, 242-A Evaporator, and the 222-S Laboratory Complex managed by WRPS, and the ERDF managed by WCH. CHPRC long-term storage areas include mixed waste at the T Plant Complex, B Plant Complex, the PUREX Storage Tunnels, the PUREX Plant, the CWC, WRAP, ~~the 600 Area Purgewater Storage and Treatment Facility,~~ the 241-CX Tank System, and HSTF. ~~The waste stored in the B Plant Complex and the PUREX Plant is with lead regulatory agency approval of the specific long-term S&M plans in accordance with Section 8.0 of the Tri-Party Agreement Action Plan.~~B Plant and PUREX are in surveillance and maintenance

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**Commented [MM32]:** This waste stream was closed in 2011. See Table 1-2.

mode pending final disposition, which will be addressed using CERCLA remedial action coordinated with RCRA closure. ~~The S&M plans do not allow for storage of any additional waste in these TSD units. Other TSD unit storage exists for units managed by the CHPRC, but these TSD units typically process and treat waste without the intent of long term storage.~~

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CHPRC maintains a system for forecasting the amount of radioactive waste, including mixed waste, to be generated well into the future for management at CWC. This system is known as the Solid Waste Integrated Forecast Technical (SWIFT) Report. Input to this system is maintained in a database updated periodically by all waste generating units. Significant changes to the input must be reported. These changes are evaluated for impact on the storage facilities as required.

Based on the projections to date, information on active CHPRC-managed TSD units in this report indicates that no requirements for additional storage capacity exist within the five-year forecast period and beyond.

#### 4.1.4 Pacific Northwest National Laboratory

In 2014, PNNL identified a need to increase its storage and treatment capacity at the 325 HWTUs. The added capacity is needed to facilitate storage and LDR-compliant treatment capability for mixed waste at the 325 HWTUs. A Class 3 (major) modification was submitted and is presently in review at Ecology. A temporary authorization was issued by Ecology to allow specified activities to proceed during 2014. Completion of the modification is expected during 2015. PNNL does not expect to require any further storage capacity expansions within the five-year forecast period or beyond.

### 4.2 ISSUES AND THEIR RESOLUTION

No storage issues were identified for CY 2014 reporting. Storage capacity issues identified and resolved in the future will be reported in the year following their resolution.

### 4.3 PLANNED VARIANCES OR EXEMPTIONS FOR STORAGE

Requests for variances and other exemptions related to storage are addressed in Section 2.10 of the LSDSs (Appendix B). One site-specific LDR Variance Request was granted by Ecology in 2009 per WAC 173-303-140(2)(a) (“Approval of Site-Specific Land Disposal Restrictions (LDR) Variance Request,” [Hedges 2009]). This variance allows the DOE to encapsulate radioactive barium waste rather than conduct treatment to the LDR D005 barium standard prior to disposal in the Hanford Site LLBGs.

On February 22, 2010, Ecology notified DOE of approval of the site-specific LDR Variance Request for beryllium powder, designated as P015 waste. The approved treatment method requires the waste to be stabilized at Perma-Fix Northwest, in accordance with their Permit, and returned to the Hanford Site for disposal at the mixed waste disposal unit.

On January 28, 2015, DOE-RL submitted to Ecology the request for a site-specific treatability variance from applicable LDR treatment standards for specific waste items at WESF. This

variance will ensure the action to grout wastes in place in two of the WESF hot cells does not create future waste that does not satisfy LDR treatment standards.

Additional site-specific LDR variance requests may be made in the future. Variance requests are being contemplated for waste in the MLLW-07, MLLW-08, and the HSTF Treatability Groups.

## 4.4 KEY STORAGE ASSUMPTIONS

Key assumptions related to storage, inventory, and generation information are addressed in Section 2.12 of the LSDSs (Appendix B).

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## 5.0 WASTE RELEASES FROM STORAGE UNITS

Known waste releases from mixed waste storage units into the environment are herein reported, whether or not the release was cleaned up. The only reported waste releases from storage to the environment have occurred from the SST System. Table 5-1 lists the tank farm designations and locations of the SST and the number of tanks in each farm. No releases have been documented during this reporting period (CY 2014).

Table 5-1. Single-Shell Tank System.[1]

| 200 East Area | | 200 West Area | |
|---|---|---|---|
| **Farm** | **Number of Tanks** | **Farm** | **Number of Tanks** |
| A | 6 | S | 12 |
| AX | 4 | SX | 15 |
| B | 16 | T | 16 |
| BX | 12 | TX | 18 |
| BY | 12 | TY | 6 |
| C | 16 | U | 16 |

[1] The capacity of the tanks ranges from 210 $m^3$ to 3,800 $m^3$.

These SST systems received waste between 1944 and 1980. The waste was generated by the processing of spent nuclear fuel to recover plutonium, uranium, and neptunium and by various fission product recovery campaigns that resulted in waste comprised of radioactive and chemically hazardous constituents. Only water (used to cool the waste, for retrieval operations, and for maintenance activities under controlled conditions) has been added to the SSTs since 1980. All SST System Waste Management Areas (WMA) have been assessed, and in many cases have been reassessed to develop waste release inventory estimates for chemicals and radionuclides released to the vadose zone.

The SST WMA waste release assessment estimates show new assessments that some of the released volumes are likely less than originally reported; others could be greater. HNF-EP-0182, *Waste Tank Summary Report for the Month Ending November 30, 2014*, Revision 323, reports the most recent assessment of leaked volumes. Furthermore, the SST WMA assessments indicate that there are fewer tanks that lost integrity (assumed leakers) than previously identified. More of the waste released to the environment was determined to be due to ancillary equipment failures (e.g., pipelines, diversion boxes, and tank overfill) than what was previously reported.

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# 6.0 HANFORD SITE MIXED WASTE MINIMIZATION PROGRAM DESCRIPTION

The *Hanford Site Pollution Prevention and Waste Minimization Program Plan* (HNF-46952) provides guidance for Hanford Site contractors to prevent pollution from entering the environment, to conserve resources and energy, and to reduce the quantity and toxicity of hazardous, radioactive, mixed, and sanitary waste from all Hanford Site operations and cleanup activities. The program plan reflects the national and local waste minimization and pollution prevention goals and policies. The plan represents an ongoing effort to ensure Pollution Prevention/Waste Minimization (P2/WMin) is part of the Hanford Site operating philosophy and is included in contractor environmental management systems. In accordance with these policies, a hierarchical approach to environmental management has been adopted and is applied to all waste generating activities. Waste minimization through source reduction is the first priority in the Program Plan, followed by environmentally safe recycling. Treatment, which includes some segregation, to reduce the quantity, toxicity, and mobility of waste is considered only when source reduction or recycling/reuse is not possible or practical. The final option is environmentally safe disposal.

The program plan provides guidance to contractor generator groups for developing and maintaining documentation of P2/WMin program activities intended to demonstrate generator compliance with DOE requirements as well as applicable regulations.

The program plan includes the following required elements:

- Incorporation of P2/WMin into environmental management systems
- Establishing P2/WMin goals
- Performance measures
- P2/WMin methods
- Incorporation of P2/WMin into the work process
- Waste minimization assessments and evaluations
- Sustainable design
- Pollution prevention awareness programs
- Purchase of environmentally preferable products and services
- Pollution prevention outreach and public involvement
- Pollution prevention tracking systems
- Pollution prevention reporting.

The Hanford Site contractors implement these techniques individually in accordance with their internal waste minimization program. For further information for each waste, refer to LSDSs (Appendix B).

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# 7.0 CHARACTERIZATION AND TREATMENT PLAN INTRODUCTION

Sections 7.0 through 15.0 of the LDR report discuss characterization, treatment and disposal actions, and plans for managing mixed waste on the Hanford Site. ~~Waste characterization and treatment activities on the Hanford Site continue to increase as waste management facilities are completed and funded to process and/or treat the waste.~~ This chapter briefly describes the development process for the treatment plan contained in this report and identifies other documents that can be consulted for additional information concerning the Hanford Site and expected waste treatment activities. ~~This report has been organized to be similar to the site treatment plans (STPs) prepared by other DOE sites governed by the *Federal Facilities Compliance Act of 1992* (FFCA) requirements.~~

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## 7.1 SITE TREATMENT PLAN ACTIVITIES

The overall information needs and relationships for the report are shown in Figure 7-1. Initial activities include identifying waste streams and available and needed characterization data associated with the streams, and defining the regulatory treatment requirements. The treatment requirements define the treatment categories and technologies needed for each waste type. The physical, chemical, and radiological characteristics of the waste determine the treatability group in which the waste is included. Hanford Site ~~TSD~~ dangerous waste management units and available commercial processes for treating the mixed waste also are identified along with their capabilities. Knowing the processes for the treatment capabilities and the treatment requirements for each treatability group, the treatability group can be assigned to either existing treatment capacity or to future processes. For the existing and future processes, Hanford Site cost, schedule, and integration planning will be consistent with the *Hanford Federal Facility Agreement and Constant Order (Tri-Party Agreement), Legal Agreement, Part FIVE, Article XLVIII Cost, Schedule, Scope Integration, Planning and Reporting* (specifically paragraphs 148 & 149). ~~schedules can be determined based on anticipated budgets and overall on-site needs. These schedules confirm the need for operations funding. For the future processes, the waste that requires further characterization determines the types of technology needs and, subsequently, the requirements and capabilities. The future processes will be scheduled and operated as budgets allow.~~

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## 7.2 RELATIONSHIP TO OTHER MAJOR U.S. DEPARTMENT OF ENERGY AND HANFORD SITE ACTIVITIES AND DOCUMENTS

The characterization and treatment plan contained in this report is influenced by numerous Hanford Site activities. Some of the activities are identified in the following documents. Additional details can be obtained from the referenced documents concerning additional information on waste stream characterization and evaluation of alternatives, and identify the likely effects of managing the mixed waste on the Hanford Site. These documents include the following:

- *Hanford Federal Facility Agreement and Consent Order* (Ecology et al. 2007). This report is submitted pursuant to TPA Milestone M-026-01Y. The Tri-Party Agreement also contains many treatment and characterization milestones.

- *Final Environmental Impact Statement Disposal of Hanford Defense High-Level Transuranic and Tank Wastes* (DOE/EIS-0113). This 1987 environmental impact statement (EIS) discussed mixed waste treatment and disposal options for the Hanford Site.

- *Tank Waste Remediation System, Hanford Site, Richland, Washington, Final Environmental Impact Statement* (DOE/EIS-0189). This EIS and its associated ROD provide details on the alternative treatments for HLW.

- *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE/EIS-0200-F). This EIS and its associated RODs provide the overall evaluation of treatment and disposal alternatives for all the DOE sites.

- *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington* (DOE/EIS-0391). This EIS and its associated ROD include environmental impact analyses of disposal of Hanford's waste and other DOE site's low-level waste and MLLW. DOE/EIS-0391 supersedes and updates DOE/EIS-0189 and the *Final Hanford Site Solid (Radioactive and Hazardous) Waste Program Environmental Impact Statement* (DOE/EIS-0286).

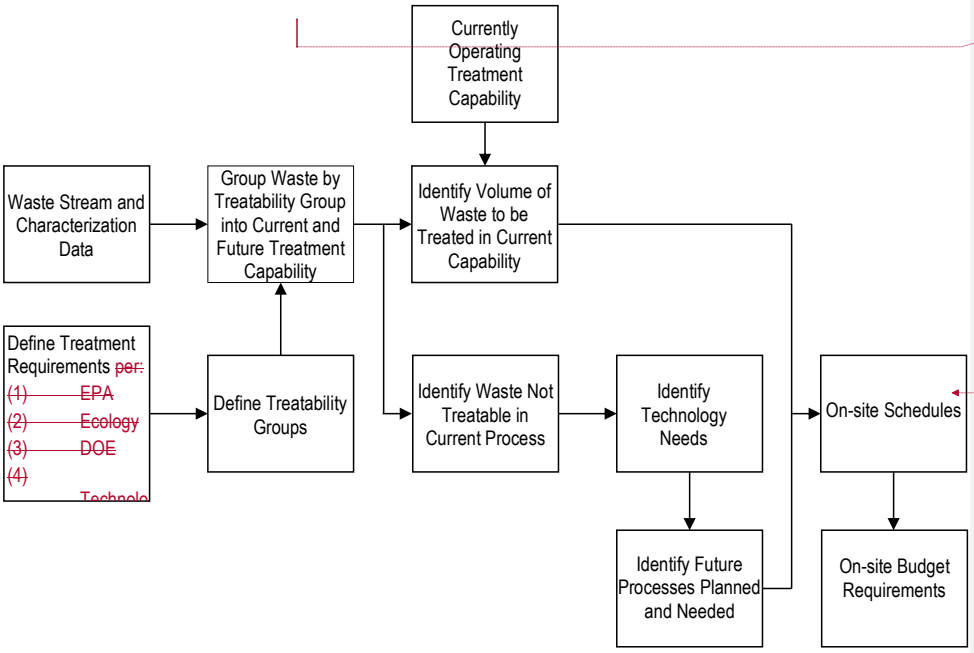
- *Solid Waste Integrated Forecast Technical (SWIFT) Report* (HNF-EP-0918). This report provides the waste generation volume forecast.

- *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement, Hanford Site, Richland, Washington* (DOE/EIS-0222-F). This EIS and its associated RODs evaluate the potential environmental impacts associated with implementing a comprehensive land-use plan for at least the next 50 years. DOE issued an Amended ROD (73 FR 55824, 2008, "Amended Record of Decision for the Hanford Comprehensive Land-Use Plan Environmental Impact Statement") clarifying land use policies and procedures, maintaining current land use designations for waste management activities.

- *Final Environmental Assessment for Relocation and Storage of Isotopic Heat Sources, Hanford Site, Richland, Washington* (DOE/EA-1211). This Environmental Assessment (EA) evaluates the environmental impacts associated with the proposal for relocation and storage of the isotopic heat sources at the DOE Hanford Site in Richland, Washington.

- *Final Environmental Assessment Inert/Demolition Waste Landfill (Pit 9), Hanford Site, Richland, Washington* (DOE/EA-0983). This EA evaluates the environmental impacts associated with the proposal to utilize an existing alluvial gravel pit, Pit 9, as an inert/demolition waste landfill.

Figure 7-1. Outline of Activities to Complete Treatment Plan.

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# 8.0 WASTE STREAMS AND TREATABILITY GROUPS

Each waste treatability group is or will be assigned to a specific treatment process. These assignments are based on the treatment and/or characterization requirements of the treatability group and the treatment process capability. For a discussion on the organization of treatability groups, refer to Appendix B. Figures 8-1, 8-2, and 8-3 summarize the layout of the treatability groups and identify where each group is expected to be treated. The upper levels of the chart show the waste type (e.g., MLLW) and whether or not the treatment capacity exists. The information is presented first for existing processes, then for planned processes, and finally for treatability groups for which further characterization is required to determine the treatment process or for which a treatment technology has not been selected.

The figures also indicate the characterization needs for the waste. Waste to be treated under existing processes typically is characterized sufficiently to designate the waste and to ensure that the waste is categorized correctly and safely stored. Any further characterization of this waste that must be done is planned as part of the treatment preparation. Waste to be treated under planned processes and processes not yet defined is characterized sufficiently to know the designation and is safely stored. Treatment is not planned for waste requiring processes not yet defined; however, additional characterization might occur as part of the design and development of the proposed treatment units.

The schedule and means for reporting waste characterization data are outlined in Section 9.6 of the Tri-Party Agreement Action Plan. This section states that DOE will make available to Ecology and EPA all relevant electronic data and databases.

Figure 8-1. Correlation Between Mixed Low-Level Wastes and Treatment Facilities.

**Commented [MM38]:** #73. Need to insert revised Figure for 2019 Report.

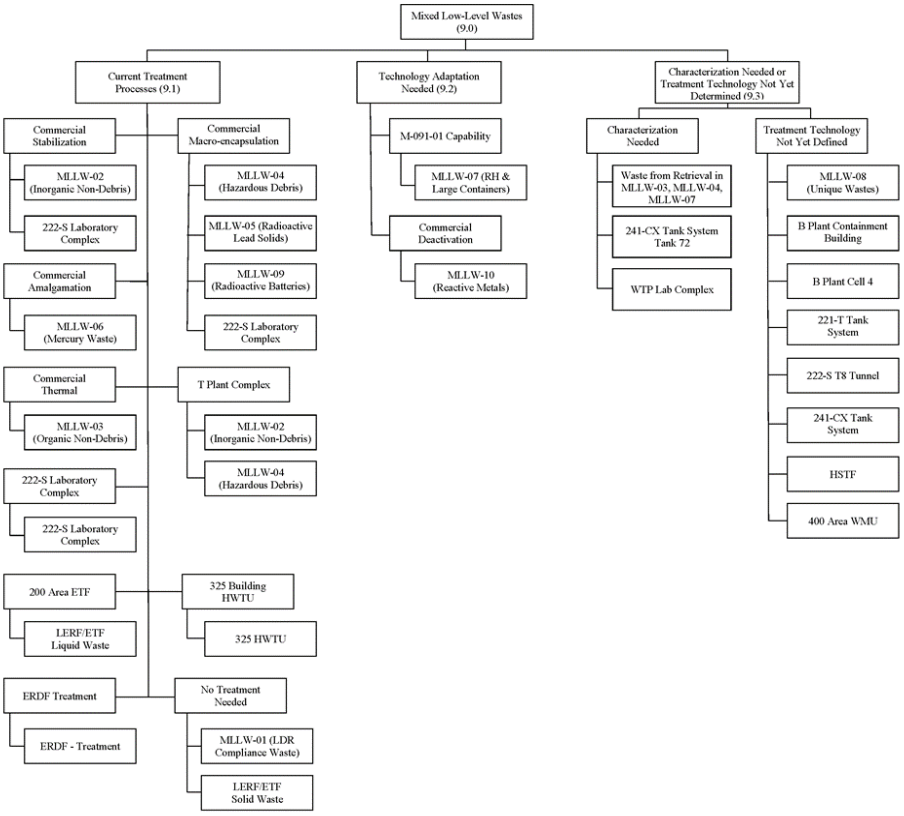

Figure 8-2. Correlation Between Transuranic Wastes and Treatment Facilities.

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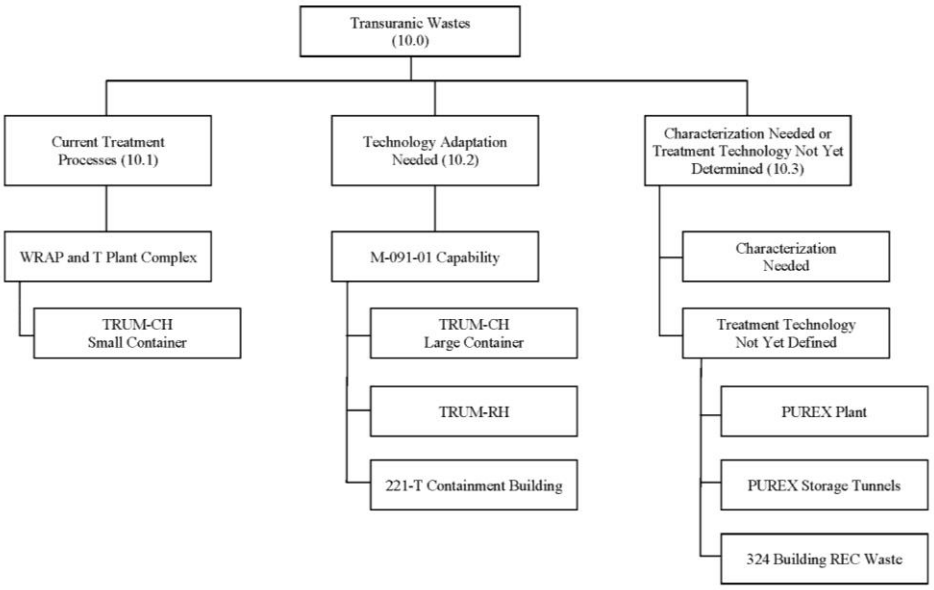
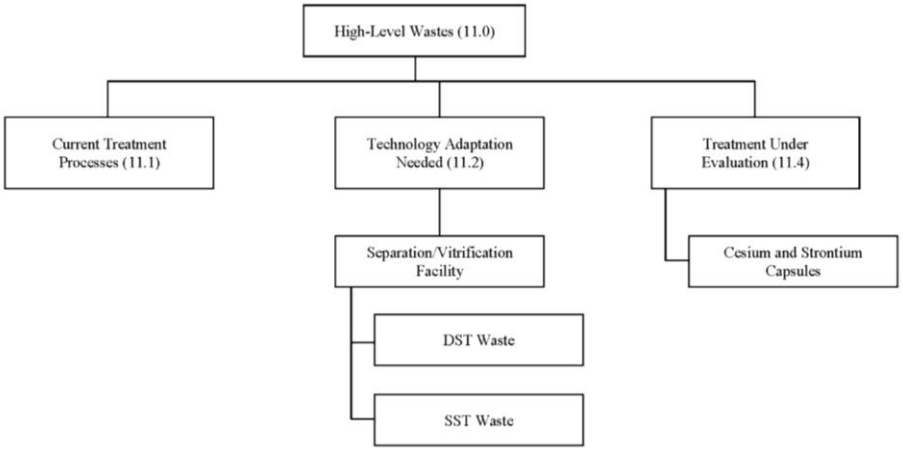



Figure 8-3. Correlation Between High-Level Wastes and Treatment Facilities.



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## 9.0 MIXED LOW-LEVEL WASTE STREAMS

Disposition maps shown in Figures 9-1 and 9-2 present an overview of the planned treatment and disposal of MLLW streams. Figure 9-1 shows the major waste treatability groups and the associated treatment processes (Section 9.1) with existing capabilities. Figure 9-2 shows a flowsheet for the treatability groups contained in the adaptation-needed category (Section 9.2). Because the treatment plan for the remaining MLLW treatability groups is not well developed, a flowsheet for these groups is not included. As noted in Figure 9-1, some treatability groups (MLLW-02, -04) could be treated under more than one process. These treatability groups also are shown in multiple locations in Figure 8-1.

Figure 9-1. Disposition Map for Mixed Low-Level Waste Current Treatment Processes.

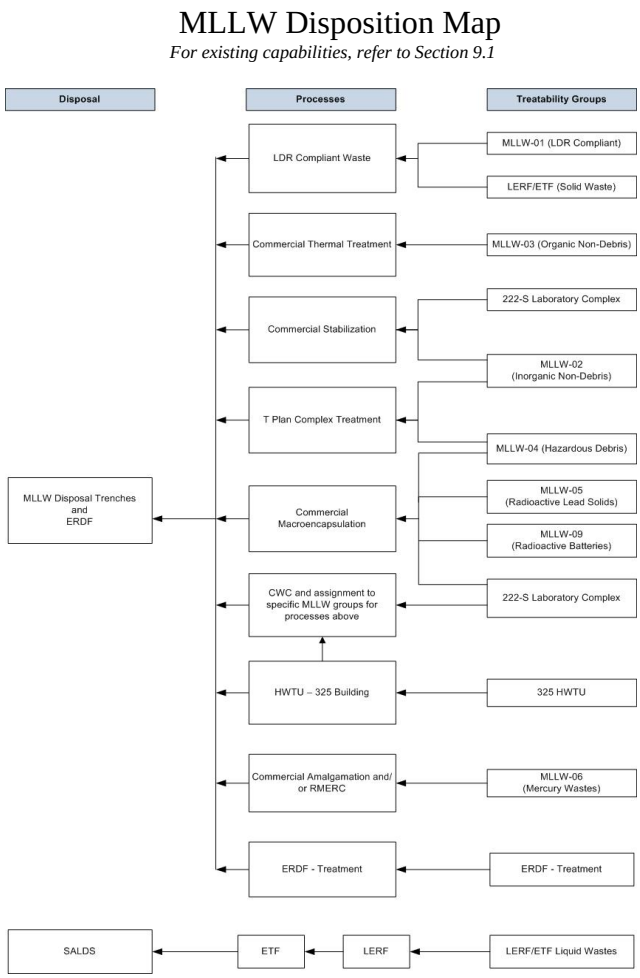

Figure 9-2. Disposition Map for Treatability Groups Needing Facilities Adapted to Allow Waste Treatment.

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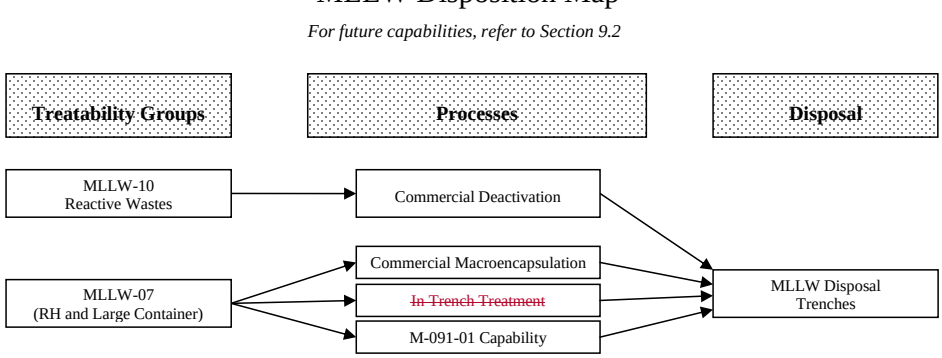


## 9.1 MIXED WASTE STREAMS FOR WHICH TREATMENT TECHNOLOGY EXISTS

This section generally describes each treatment process and provides information concerning the processes identified in Figure 9-1. This section also provides information on which waste treatability groups will be treated by each process, including the volume of waste treated during the past year and the anticipated volume of waste to be treated in CYs 2015 through 2019.

Tables in this section describe treatment processes related to M-091 milestones. Waste streams addressed in the M-091 milestones include: MLLW-02, MLLW-03, MLLW-04, MLLW-05, MLLW-06, MLLW-07, MLLW-08, MLLW-09, and MLLW-10.

~~The planning baseline indicates that s~~Sufficient capacity exists or will exist, to treat this volume of MLLW using the identified treatment process and alternatives: commercial stabilization, commercial thermal treatment, on-site treatment at T Plant Complex, ~~Broad Spectrum contracts,~~ etc. However, the exact distribution of treatment among these treatment processes has not been finalized. The inventories and treatment requirements identified in the LDR Report will be used as inputs for the distribution of treatment among these options.~~This allows the Hanford Site to optimize the use of funds (minimize unit costs), to react to changing conditions and capabilities of the treatment processes, and to use emerging national treatment contracts.~~

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Through the use of multiple commercial treatment contracts, DOE waste generators have the opportunity to participate in this nationwide privatization initiative for treating and disposing of legacy and newly generated MLLW. Contracts have been awarded to Perma-Fix Northwest, Materials and Energy Corporation located in Tennessee, Perma-Fix DSSI located in Tennessee, and EnergySolutions Clive Site located in Utah (EnergySolutions contract with CHPRC concluded in 2012). These contracts give the Hanford Site multiple options with unique capabilities for treating a wide range of MLLW streams.

### 9.1.1 Commercial Stabilization

MLLW that does not have a significant organic content and is not debris waste is expected to be stabilized. The stabilization process will be conducted in RCRA permitted commercial facilities. Waste currently in storage has been characterized sufficiently for proper designation and storage on the Hanford Site. Before waste treatment, the TSD record information will be reviewed and corrected as necessary by qualified Waste Management Representatives based on available historical records and acceptable knowledge.

Stabilization is a treatment technology for non-debris waste that contains heavy metals or other specific hazardous components. Most non-debris waste will be solid, but stabilization could be used to neutralize and solidify some liquid wastes. Stabilization immobilizes the hazardous component(s) by fixation into low-solubility materials, and by encapsulation to reduce the potential for future releases. Usually, stabilization is accomplished by mixing the waste with Portland cement or pozzolanic materials at a preselected ratio, but stabilization also can include mixing with reducing agents or polymer materials. This treatment prepares the waste to meet land disposal requirements. Existing commercial treatment contracts neither include all of the waste types nor all of the forecasted volumes. Therefore, additional contracts are expected to be placed with commercial treatment contractors. Table 9-1 contains information on the commercial stabilization process, using Perma-Fix Northwest as a representative example for regulatory status information.

Table 9-1. Commercial Stabilization Process Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability group that the process is expected to treat | MLLW-02, Inorganic Non-Debris, 222-S Laboratory Complex |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (commercial stabilization, T Plant Complex.) |
| Perma-Fix regulatory status information: | |
| - Date of RCRA permit | 1999 |
| - Date treatment contract established | 1995 |
| - Date facility construction started | 1999 |
| - Date system testing started | 1999 |
| - Date operations begin | 1999 |
| - Current regulatory status | Permitted, some operations temporarily suspended. |

Table 9-1. Commercial Stabilization Process Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Budget status for continued operations | Funding has been requested in the Fiscal Year (FY) 2015 budget and currently is planned to be requested through FY 2019. |
| Planned completion of treatment using this process | The baseline plan anticipates that the majority of this treatability group will be processed using commercial facilities. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future. |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | The T Plant Complex has stabilization capability and could be used to supplement commercial capacity. |

### 9.1.2 Commercial Macroencapsulation

Macroencapsulation consists of applying a surface coating of polymeric organics or using a jacket of inert inorganic materials (e.g., cement) to substantially reduce surface exposure to potential leaching media. During CY 2014, waste was treated under commercial contracts near the Hanford Site. Existing contracts do not include all of the waste streams. Therefore, it is expected that some waste will be treated on the Hanford Site, or that additional commercial contracts will be competitively awarded as required. For macroencapsulation of hazardous debris under treatability group MLLW-04, pretreatment processes can include sorting, cutting, shearing, compaction, and super compaction. For MLLW-05, Radioactive Lead Solids, decontaminated lead can be recycled or reused. Lead waste can also be encapsulated by a cement jacket in accordance with the definition of MACRO in 40 CFR 268.42. For MLLW-09, Radioactive Batteries, the EPA promulgated a new treatment standard authorizing treatment in accordance with the debris macroencapsulation standards per 40 CFR 268.45. Ecology has also adopted this treatment standard. Table 9-2 contains information concerning the commercial macroencapsulation process.

Macroencapsulation currently is being used to treat hazardous debris containing O/C constituents that would otherwise require thermal treatment in accordance with the state-only LDR for O/C. The Hanford Site is allowed to treat, and will continue to treat, the MLLW-04 Hazardous debris using macroencapsulation in accordance with a site-wide 1,609 kilometer (1,000 mile) inapplicability certification for the Washington State O/C LDR per WAC 173-303-140(4)(d)(iii) (99-EAP-055, "Certification to Allow Land Disposal of Hanford Organic/Carbonaceous Mixed Waste" [Rasmussen]).

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Other immobilization treatment technologies could be used to treat some of the Hanford Site MLLW debris.

Table 9-2. Commercial Macroencapsulation Process Summary.

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | MLLW-04 Hazardous Debris; MLLW-05, Radioactive Lead Solids; and MLLW-09, Radioactive Batteries, 222-S Laboratory Complex |
| Tri-Party Agreement milestones related to these treatability groups | M-091-42 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (e.g., commercial stabilization, commercial thermal treatment, on-site treatment at T Plant Complex, ~~Broad Spectrum contracts,~~ etc.). |
| Perma-Fix regulatory status information: | |
| - Date of RCRA permit | 1999 |
| - Date treatment contract established | 1995 |
| - Date facility construction started | 1999 |
| - Date system testing started | 1999 |
| - Date operations begin | 1999 |
| - Current regulatory status | Permitted |
| Budget status for continued operations | Funding has been requested in the FY 2015 budget and currently is planned to be requested through FY 2019. |
| Planned completion of treatment using this facility | The baseline plan anticipates that the majority of these treatability groups will be processed using commercial treatment. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of the Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future. |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | The T Plant Complex has macroencapsulation capability and could be used to supplement commercial facilities. Other commercial facilities also could be used in the future. |

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### 9.1.3 Thermal Treatment of Organics

MLLW containing organic materials will be treated thermally. The material could be debris waste, other solid waste, or liquid waste. Waste currently is properly characterized and designated for storage on the Hanford Site. Before waste treatment, the existing TSD record information will be reviewed and corrected as necessary by qualified Waste Management

Representatives based on available historical records and acceptable knowledge. The thermal treatment process destroys organic materials by oxidation, combustion, and/or pyrolysis. Additional commercial processing contracts will be competitively awarded as needed. Table 9-3 contains information concerning the commercial thermal treatment process.

Table 9-3. Commercial Thermal Treatment Process Summary.

| Type of Information | Information |
|---|---|
| Treatability groups the process is expected to treat | MLLW-03, Organic Non-Debris |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (commercial thermal treatment). |
| Budget status for continued operations | Funding has been requested in the FY 2015 budget and currently is planned to be requested through the FY 2019 as necessary. |
| Planned completion of treatment using commercial facilities | The baseline plan anticipates that the majority of this treatability group will be processed with commercial contracts because other DOE thermal treatment capability is not available. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future. |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | None are currently identified. |

### 9.1.4 T Plant Complex

Commercial treatment of waste by stabilization and macroencapsulation to meet land disposal requirements could be supplemented or replaced by capabilities that exist, and could be developed within the T Plant Complex. The T Plant Complex canyon has been used to open, inspect, segregate, and repackage mixed waste. The 2706-T Building within the T Plant Complex is a decontamination area with the capability to open, sample, sort, treat, and repackage boxes and drums of CH mixed waste. Some of the waste will be inspected in the 2706-T Building prior to off-site shipment for treatment at commercial treatment facilities. Also at the 2706-T Building, some treated waste will be inspected after return shipment from the off-site commercial treatment facilities. Table 9-4 contains information on the T Plant Complex.

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Table 9-4. T Plant Complex Treatment Activities Summary.

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | MLLW-02, Inorganic Non-Debris, and MLLW-04 Hazardous Debris |
| Tri-Party Agreement milestones related to these treatability groups | M-091-42 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Sufficient capacity exists. |
| Regulatory status information: | |
| - Date of RCRA permit application | T Plant Complex submitted in 2002 to Ecology (DOE/RL-95-36, *Hanford Facility Dangerous Waste Permit Application, T Plant Complex*) |
| - Date treatment contract established | N/A |
| - Date facility construction started | 1943 |
| - Date system testing started | N/A |
| - Date operations begin | Mixed waste operations under interim status standards, Part A Permit Application, began August 19, 1987. |
| - Current regulatory status | Operating under interim status to a current Part A Permit Application. |
| Budget status for continued operations | Funding has been requested in the FY 2015 budget and currently is planned to be requested through FY 2019 as necessary. |
| Planned completion of treatment using this facility | The baseline plan anticipates that the majority of this treatability group will be processed using commercial treatment; however, significant treatment activities have occurred and could occur at T Plant Complex. Stored inventories are expected to decrease with anticipated processing rates. Because waste generation is expected to continue through the life of the Hanford Site cleanup operations, continued treatment will be needed into the foreseeable future. |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | The primary treatment processes are expected to be the commercial treatment facilities described in Sections 9.1.1 and 9.1.2. |

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### 9.1.5 Environmental Restoration Disposal Facility Treatment

Waste amenable for treatment through grouting or macroencapsulation is performed at ERDF. Specific information on the ERDF treatment activities is included in Table 9-5.

Table 9-5. Environmental Restoration Disposal Facility Treatment Activities Summary.

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | ERDF – Treatment |
| Tri-Party Agreement milestones related to this treatability group | None. Treated as generated in compliance with regulatory timeframe; no compliance agreement required. |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | N/A |
| Regulatory status information: | |
| - Date of RCRA permit application | N/A |
| - Date facility construction started | N/A |
| - Date operations begin | 1996 |
| - Current regulatory status | Facility is operating under a CERCLA ROD issued in 1995, as amended several times. |
| Budget status for continued operations | Funding is included as part of the River Corridor Closure Project through September 30, 2015. |
| Planned completion of treatment using this facility | 2035 |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | Commercial macroencapsulation or other commercial treatment methods could be used for some waste at significantly increased costs. |

### 9.1.6 200 Area Effluent Treatment Facility and Liquid Effluent Retention Facility Liquid Wastes

Numerous Hanford Site activities generate low-level aqueous waste. Radioactive effluents are generated primarily in the 200 Areas. The LERF consists of three RCRA-compliant surface impoundments for storing low-level aqueous waste. The LERF provides equalization of the flow and pH of the feed to the ETF. Each LERF basin has a capacity of 30 million L (7.8 million gal). A truck unloading station allows receipt of liquid effluents from other projects for transfer either to the LERF for storage or directly to the ETF for treatment.

Liquid effluents stored in LERF are treated in ETF to remove toxic metals, radionuclides, and ammonia, and to destroy organics. The ETF treatment process constitutes BDAT and includes pH adjustment, filtration, ultraviolet light/peroxide destruction of organics, reverse osmosis, degasification, and ion exchange. Storage tanks allow for hold-up of the treated effluent to verify that the waste has been treated to meet concentration levels in the permit before discharge. The treated effluent is discharged under WAC 173-216, "State Waste Discharge Permit Program," to a state-approved land disposal site north of the 200 West Area after being delisted (40 CFR 261, "Identification and Listing of Hazardous Waste," Appendix IX, Table 2). Table 9-6 contains information on ETF.

Table 9-6. 200 Area Effluent Treatment Facility Summary.

| Type of Information | Information |
|---|---|
| Treatability Groups that the process is expected to treat | LERF/ETF Liquid Waste |
| Tri-Party Agreement milestones related to this treatability group | M-026-07D, Evaluation of Tritium Treatment Technology to EPA and Ecology, March 31, 2019 |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | 210,000 $m^3$ per year |
| Regulatory status information: | |
| - Date of RCRA permit | 1997 (final status) |
| - Date facility construction started | 1992 |
| - Date system testing started | 1994 |
| - Date operations begin | 1995 |
| - Current regulatory status | Operating under a final status RCRA permit. |
| Budget status for continued operations | Funded for minimum safe operations. |
| Planned completion of treatment using this facility | 2032 |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | None |

### 9.1.7 325 Hazardous Waste Treatment Units

The 325 HWTUs are a RCRA permitted TSD unit used to perform tank- and bench-scale treatment of mixed waste and to investigate other treatment technologies. The 325 HWTUs are located in the 325 Building in the 300 Area and are intended to treat small volumes of mixed waste to meet waste acceptance criteria for storage or disposal. Wastes that are not LDR compliant for disposal are treated at 325 HWTUs or shipped off-site for commercial treatment. Wastes that meet land disposal requirements are sent to the LLBG or ERDF. Table 9-7 contains information on the 325 HWTUs.

Table 9-7. 325 Hazardous Waste Treatment Units Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | 325 HWTU |
| Tri-Party Agreement milestones related to this treatability group | ~~M-016-00B~~None. The 325 Building HWTU is a permitted RCRA TSD group. |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | 14 $m^3$/day |

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Table 9-7. 325 Hazardous Waste Treatment Units Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Regulatory status information: | |
| - Date of RCRA permit (final status) | 1998 |
| - Date facility construction started | 1952 |
| - Date system testing started | 1991 |
| - Date operations begin | 1991 |
| - Current regulatory status | Final permit |
| Budget status for continued operations | Funding has been included in the current eight-year plan. |
| Planned completion of treatment using this facility | 2028 |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | Commercial treatment facilities could have capacity to treat some of the waste streams. |

### 9.1.8 222-S Laboratory Complex

The 222-S Laboratory Complex is a RCRA permitted TSD ~~unit~~ Group used to manage waste generated from 222-S Laboratory Complex operations and other Tank Operations Contractor wastes that cannot be sent off-site for treatment within the 90-day accumulation time frame. The storage locations reported in this treatability group include the three container storage units identified on the 222-S Laboratory Complex Part A Permit Application. The 222-S Laboratory Complex is located in the 200 West Area. Waste that is not LDR compliant for disposal is sent off-site for treatment. Waste that meets disposal requirements is sent to the LLBG. Table 9-8 contains information on the 222-S Laboratory Complex.

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Table 9-8. 222-S Laboratory Complex Summary. (2 sheets)

| Type Of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | 222-S Laboratory Complex |
| Tri-Party Agreement milestones related to this treatability group | None |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | None at the 222-S Laboratory Complex. |
| Regulatory status information: | |
| - Date of RCRA permit application | August 2000, October 2000, March 2001 and September 2006 (DOE/RL-91-27, *Hanford Facility Permit Application, 222-S Dangerous and Mixed Waste Treatment, Storage, and Disposal Unit*) |
| - Date facility construction started | 1950 |
| - Date system testing started | 1951 |

Table 9-8. 222-S Laboratory Complex Summary. (2 sheets)

| Type Of Information | Information |
|---|---|
| - Date operations begin | 1951 |
| - Current regulatory status | Operating to interim status standards |
| Budget status for continued operations | Funding has been included in the current eight-year plan. |
| Planned completion of treatment of waste from this facility. | 2035 |
| Alternative facilities that could be used in place of this facility or to supplement capacity for this facility | Commercial treatment facilities will have capacity to treat the waste streams. |

### 9.1.9 Commercial Amalgamation and/or Retorting or Roasting to Recover Mercury (RMERC)

MLLW-06 Mercury waste requires amalgamation as the BDAT treatment. Mercury can be present as a small-percentage waste component, but also can be present in high concentrations. ~~Mercury present in concentrations >260 mg/kg requires RMERC. The Hanford Site inventory of mercury-bearing waste is currently zero.~~ Commercial capabilities are available when the wastes are generated. Table 9-9 contains information on commercial amalgamation.

Commented [MM49]: #91

Table 9-9. Commercial Amalgamation Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability group that the process is expected to treat | MLLW-06, Elemental Mercury |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Technology needed for facility | Commercial amalgamation (also might require RMERC technology) |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Treatment capacity to support the Hanford Site needs is expected to be <10 $m^3$ per year. The current inventory is zero. |
| Regulatory status information: | |
| - Design reports | N/A |
| - Submittal of permit application | N/A |
| - Date design and construction contract to be awarded | N/A |
| - Date facility construction begins | N/A |
| - Date operations begin | 2005 |
| - Current regulatory status | N/A |
| Budget status for design, construction, and operations | Baseline budgets assume commercial treatment will continue. |

Table 9-9. Commercial Amalgamation Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Estimated date of completion of treatment with the assumption of available funding. | N/A |
| Alternatives for treatment of this waste | Alternatives are under evaluation. ~~An LDR treatability variance is planned for some waste in this treatability group.~~ |

Commented [MM50]: #92

### 9.1.10 Waste That Currently Meets Disposal Requirements

Some mixed wastes do not require treatment to meet LDR requirements prior to disposal. Based on an agreement with Ecology on February 6, 2003, waste that is directly disposed is excluded from the LDR report. The largest volume of mixed waste that meets disposal requirements is generated by the environmental restoration activities conducted under CERCLA that is transferred directly to ERDF for disposal. The MLLW-01, LDR Compliant, and LERF/ETF Solid Waste treatability groups include wastes that do not require treatment to meet LDR standards prior to disposal. Most of these wastes will be disposed in the LLBG or ERDF, depending on waste acceptance criteria. While MLLW-01, LDR Compliant Waste does not require treatment, it is stored at the CWC. Most of the MLLW-01 waste stream will be disposed of in the LLBG and ERDF. However, a fraction of the waste in the MLLW-01 treatability group does not meet DOE requirements for direct disposal, and will be processed to meet disposal requirements (e.g., filling of voids). LERF/ETF solid waste is stored at ETF and wastes not meeting all disposal requirements are stored until processed to meet disposal requirements. Section 9.5 summarizes the information for the ERDF and LLBG capabilities.

## 9.2 MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS BUT NEEDS ADAPTATION

As discussed in the following sections, processing is required for the RH waste and large container waste currently on the Hanford Site and waste expected to be generated in the future.

### 9.2.1 M-091-01 Capability

Current capabilities do not provide for the disposition of certain RH MLLW and certain large-container CH MLLW. Alternative approaches are currently planned for evaluation based on the Tri-Party Agreement Milestone M-091-01. Progress towards evaluating and/or establishing the capability has been reported under the PMP required by M-091-03. Table 9-10 contains information on the M-091-01 Capability for MLLW.

Table 9-10. Summary of the M-091-01 Capability.

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | MLLW-07, RH and Large Container |
| Tri-Party Agreement milestones related to this treatability group | M-091-43 and M-091-01 |
| Technology needed | Technology needs for processing this waste are planned for evaluation. |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | ~~To be determined based on design reports.~~Will be developed under M-091 series. |
| Regulatory status information: | |
| - Design reports | To be complete per TPA Milestone M-091-01A and -01B |
| - Submittal of RCRA permit application | To be determined during design, as applicable. |
| - Date operations begin | N/A |
| - Current regulatory status | N/A |
| Budget status for design, construction, and operations | Funding will be requested to support the M-091 milestones resulting from the current negotiations. |
| Alternatives for treating this waste | Under evaluation |

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### 9.2.2 Commercial Reactive Metal Deactivation

Waste in the MLLW-10 treatability group, Reactive Metals, requires deactivation prior to land disposal. Currently, there is no MLLW-10 waste in storage and none planned to be generated in the next five years. Table 9-11 contains information on commercial reactive metal deactivation.

Table 9-11. Commercial Reactive Metal Deactivation Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability group that the process is expected to treat | MLLW-10, Reactive Metals |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Technology needed for facility | Commercial deactivation |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | N/A |
| Treatment capacity | N/A |
| Regulatory status information: | |
| - Design reports | N/A |
| - Submittal of permit application | N/A |
| - Date design and construction contract to be awarded | N/A |

Table 9-11. Commercial Reactive Metal Deactivation Summary. (2 sheets)

| Type of Information | Information |
|---|---|
| - Date facility construction begins | N/A |
| - Date operations begin | 2005 |
| - Current regulatory status | N/A |
| Budget status for design, construction, and operations | N/A |
| Estimated date of completion of treatment with the assumption of available funding | N/A |
| Alternatives for treatment of this waste | Not anticipated |

## 9.3 MIXED WASTE TREATABILITY GROUPS REQUIRING FURTHER CHARACTERIZATION, OR FOR WHICH TECHNOLOGY DOES NOT EXIST OR A TECHNOLOGY ASSESSMENT HAS NOT BEEN DONE

Treatment planning for these waste treatability groups are incomplete and evaluations continue based on available treatment technologies.

### 9.3.1 Treatability Groups for which Further Characterization is Needed

Waste in the MLLW-03, MLLW-04, and MLLW-07 treatability groups from retrieval operations at the Hanford Site may contain non-conforming waste items once the treatment facility opens the packages for receipt inspections and/or treatment. The non-conforming waste items are characterized and disposed accordingly.

Secondary solid wastes will be generated by WTP as the result of laboratory commissioning activities scheduled to occur during the forecast period of this report. The waste will be transferred to the Tank Farm Operating Contractor (TOC) who will coordinate volume reduction and/or treatment. The TOC will transport treated WTP wastes to a permitted facility for final disposal.

The current baseline of waste requiring additional characterization is characterized in sequence with and near planned treatment and disposal dates. The close coordination of waste characterization schedules with planned treatment and disposal dates has the following benefits:

- Coordination avoids long lag times between characterization and treatment and disposal, minimizing the potential need to re-characterize waste as acceptance, treatment, and disposal criteria evolve.
- Coordination allows for closer matching of characterization efforts with budget constraints.

For other treatability groups, tank waste in the 241-CX Tank System requires characterization. Tank 72, one of the three tanks in this treatability group will be characterized to determine its disposition path.

### 9.3.2 Treatability Groups for Which Treatment Technology Has Not Been Selected

Some waste streams in storage have not had technology assessments assigning treatability groups for existing treatment processes. When the technology assessments for the waste in this category are completed, many of the waste streams can be treated in one of the existing processes. Waste treatability groups for which treatment technologies have not been selected include the following:

- MLLW-08, Unique Waste
- B Plant Cell 4
- B Plant Containment Building
- 241-CX Tank System
- HSTF
- ~~222-S T8 Tunnel~~
- 221-T Tank System
- ~~400 Area WMU.~~

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More than one land disposal restriction treatability variance is planned for waste in this category. Wastes in the MLLW-08 Unique Waste and the HSTF treatability groups are expected to be candidates for a treatability variance. The quantity of waste within the MLLW-08 treatability group is relatively small. If a treatability variance is granted by Ecology for the waste, the treatment technology will be in accordance with the approved variance treatment and disposition.

The wastes included in the B Plant Cell 4 and B Plant Containment Building are stored in accordance with interim status technical standards pending completion of closure. No additional waste will be stored in this location. B Plant has been retired from active operation and is in surveillance and maintenance mode pending final disposition which will be addressed using CERCLA remedial action that is coordinated with RCRA closure.~~treatability groups are stored in a facility managed under a regulator-approved long-term S&M plan, DOE/RL-99-24, *Surveillance and Maintenance Plan for the 221-B Facility (B-Plant)*. Therefore, treatment or disposal of the waste is not planned in the near term. Ongoing S&M activities for these two B-Plant Complex treatability groups will be conducted in accordance with the approved S&M plan and associated TPA commitments until DOE Headquarters initiates the disposition phase or other actions as required under the terms of the Tri-Party Agreement Action Plan, Section 8.1 or 8.3.3.~~

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Waste in both the 241-CX Tank System and the HSTF treatability groups will be addressed as part of the closure actions documented in the closure plans prepared for the TSD units.

~~In the resolution negotiations for the Notices of Deficiency for the 222-S Laboratory Complex Part B permit application, Ecology approved the 222-S T8 Tunnel waste to remain in the 222-S Laboratory Complex until closure. The current schedule reflects initiating cleanout of the 222-S Laboratory Complex in FY 2033 and transition to facility disposition in FY 2035.~~

Commented [MM55]: #97

Information concerning the 221-T Tank System Waste is included in Table 9-12.

Table 9-12. Information for the 221-T Tank System Waste for Which Treatment Technology Assessments Have Not Been Completed.

| Type of Information | Facility Information |
|---|---|
| Treatability group included in this category | 221-T Tank System |
| Tri-Party Agreement milestones related to this treatability group | None |
| Technology needed for facility | None |
| Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Characterization status information: | |
| - Characterization needed defined | Treatment path forward ~~U~~unknown until the ~~treatment capability is defined.~~characterization activities are performed. This waste might change radioactivity categories from low-level mixed waste to TRUM through evaporation. |
| - Characterization milestones | N/A |
| Treatment status information: | |
| - Treatability testing | N/A |
| - Feasibility analysis and reports | N/A |
| - Bench- and pilot-scale testing reports | N/A |
| - Research, development, and demonstration projects | N/A |
| - Design reports | N/A |
| - Permitting milestones | T Plant Complex submitted in 2002 to Ecology. |
| - Treatment milestones | None, residues to be handled with canyon disposition, in accordance with letter 01-RCA-192, "Request to Formalize 221-T Tank System Closure Agreement," (Hebdon, 2001). |
| Budget status for testing, development, design, construction, and operations | Priorities within the next five-year window do not include working on this waste group. |
| Estimated completion date for treatment of treatability group with the assumption of available funding | ~~With canyon disposition~~In accordance with approved closure plan. |

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## 9.4 RADIONUCLIDE SEPARATION PLANS

For MLLW, the only process that involves extensive separations is aqueous waste treatment at ETF. No separation activities are planned for any other MLLW treatability group.

## 9.5 MIXED WASTE DISPOSAL

MLLW is disposed of in the LLBG mixed waste trenches, ERDF, and Trench 94 of LLBG for defueled naval reactor compartments. The mixed waste trenches and ERDF are discussed in this section. Trench 94 is not included in the scope of this report. Disposal facilities to be used for

the disposal of immobilized low-activity waste (ILAW) from the vitrification of HLW are discussed in Section 11.6.

The MLLW shipped for treatment at the EnergySolutions Clive Utah site was also disposed at that site. This is a condition of their permits and license. The EnergySolutions Clive Utah contract with CHPRC concluded in 2012.

### 9.5.1 Low-Level Burial Ground Mixed Waste Trenches

The LLBG mixed waste trenches (218-W-5, Trenches 31 and 34) have been constructed to provide disposal capabilities for a portion of the Hanford Site RCRA mixed waste. Each disposal trench has a capacity of about 24,000 $m^3$ air volume. The LLBG mixed waste trenches are RCRA compliant. The estimated volumes contained in this report show that Trenches 31 and 34 will not be filled during the next five-year period.

### 9.5.2 Environmental Restoration Disposal Facility

ERDF is a landfill authorized under CERCLA that meets the substantive requirements of RCRA. The landfill is used primarily for disposal of environmental restoration waste generated from cleanup activities. ERDF is designed to receive and dispose of low-level radioactive waste or mixed waste generated through remediation and D4 activities on the Hanford Site. Disposal cells 1 through 4 have been filled since the landfill opened in 1996, and are temporarily capped. Cells 5 through 10 are currently being filled.

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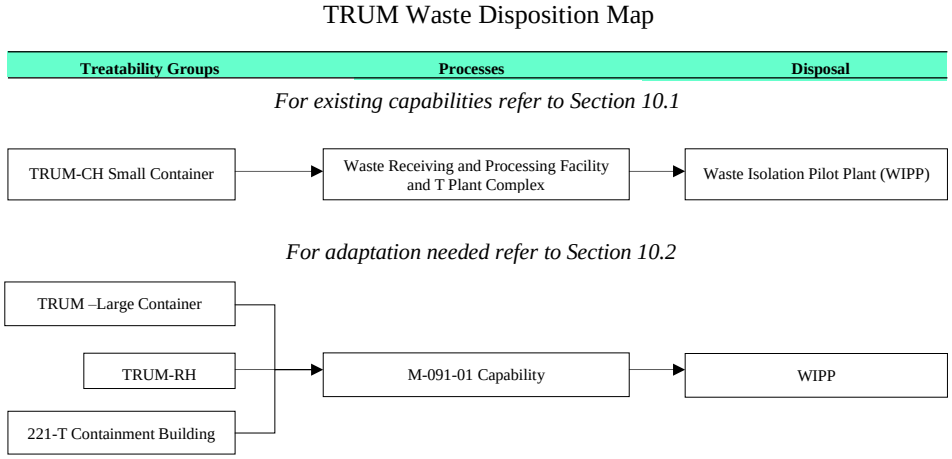
# 10.0 TRANSURANIC MIXED WASTE STREAMS

On the Hanford Site, small container CH TRUM waste is repackaged through the Hanford Site TRU Program. Functions in support of repackaging are conducted predominantly at WRAP and T Plant. Large container TRUM waste and RH TRUM waste are stored mostly within the CWC until such time as repackaging capabilities become available. The disposition map in Figure 10-1 shows an overview of the anticipated processing of TRUM waste treatability groups. This figure shows the major waste treatability groups and the planned process for each group.

Figure 10-1. Site Disposition Map for TRUM Treatability Groups.




## 10.1 TRANSURANIC MIXED WASTE STREAMS FOR WHICH PROCESSING TECHNOLOGY EXISTS

The primary purpose of WRAP and T Plant is to repackage and support certification of small container CH TRUM waste to meet WIPP waste acceptance criteria for disposal. WRAP and T Plant provide capabilities to receive waste, confirm contents of drummed and standard waste boxes, repackage waste, and support certification of waste. WRAP and T Plant currently only process CH TRUM waste in drums or standard waste boxes. Table 10-1 provides information concerning WRAP and T Plant.

Table 10-1. Information Concerning Processes at the Waste Receiving and Processing Facility and T Plant Complex.

| Type of Information | Facility-Specific information |
|---|---|
| Treatability group that the process is expected to treat | TRUM-CH Small Container |
| Tri-Party Agreement milestones related to this treatability group | M-091-42 |
| Projected volume of TRUM to be processed between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | Permitted capacity is 13 $m^3$/day. |
| Regulatory status information for WRAP: | For T Plant regulatory status, see Table 9-4. |
| - Date of RCRA permit application | June 1999 and settlement agreement in 2002 |
| - Date treatment contract established | N/A |
| - Date facility construction started | Groundbreaking April 1994 |
| - Date system testing started | Acceptance test procedures initiated on February 13, 1996. |
| - Date for commencement of operations | 1997 |
| - Current regulatory status | Operating under interim status standards pursuant to Permit Condition I.A.; ~~transition to final status is pending~~. |
| Budget status for continued operations | Funding has been requested in the FY 2015 budget and currently is planned to be requested through FY 2019. |
| Planned completion of treatment using this process | 2032 |
| Alternative processes that could be used in place of this process or to supplement capacity for this process. | Processes are available at several other DOE locations: Idaho National Laboratory (INL), Savannah River Site (SRS), Los Alamos, and offsite commercially. In addition, repackaging and characterization capabilities have been developed that can be deployed at sites, using temporary rather than permanent installation. |

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## 10.2 TRANSURANIC MIXED WASTE TREATABILITY GROUPS FOR WHICH CHARACTERIZATION AND PROCESSING TECHNOLOGIES NEED ADAPTATION

The requirements of M-091-01 are to provide for the processing of RH TRUM and oversize containers of TRUM waste. In addition, based on the latest approved PMP for M-091, a needed capability is anticipated to provide for processing of unique TRUM waste streams such as waste in underground alpha caissons and to address load out of RH shipments. Alternative approaches are currently planned for evaluation based on TPA Milestone M-091-01. Progress toward

evaluating and/or establishing the capability has been reported under the PMP required by M-091-03. Table 10-2 provides information for the M-091-01 capability.

Table 10-2. Information for the M-091-01 Capability.

| Type of Information | Information |
|---|---|
| Treatability group that the process is expected to treat | TRUM-CH Large Container; TRUM-RH; 221-T Containment Building |
| Tri-Party Agreement milestones related to these treatability groups | M-091-44 and M-091-01 |
| Technology needed for facility | Remote handling and large container processing technologies |
| Projected volume of TRUM to be processed between CY 2015 and the end of CY 2019 | Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | To be determined by design reports. |
| Regulatory status information: | |
| - Design reports | To be complete per TPA M-091-01A and -01B. |
| - Submittal of permit application | To be determined during design, as applicable. |
| - Date for commencement of operations | To be determined. |
| - Current regulatory status | ~~In planning~~Not yet permitted; alternatives are under review in accordance with M-091 plans and schedules. |
| Budget status for design, construction, and operations | Funding will be requested to support the M-091 milestones ~~resulting from the current negotiations~~. |
| Estimated date of processing completion of treatability groups with the assumption of available funding. | ~~To be determined.~~See M-091-44T. |
| Alternatives for processing of this waste. | Processes are available at another DOE locations: INL and offsite commercially. |

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## 10.3 TRANSURANIC MIXED WASTE TREATABILITY GROUPS WITH PROCESSING TECHNOLOGY NOT SELECTED

This section covers treatability groups that do not have a processing method. Before a processing method can be specified for these media, additional technology assessments need to be performed and/or further characterization might need to occur. Once a processing method is specified and before waste treatment, the existing TSD record information will be reviewed and characterization corrections will be made as necessary based on existing acceptable knowledge. Process planning for the following treatability groups continues:

- PUREX Plant
- PUREX Storage Tunnel
- 324 Building REC Waste.

The waste associated with these treatability groups needs to be characterized to meet WIPP waste acceptance criteria. RH equipment and techniques are needed to support characterization for most of the waste.

Waste transfers to certain on-site TSD units are performed in accordance with HNF-EP-0063, *Hanford Site Solid Waste Acceptance Criteria*. This document specifies waste characterization criteria necessary to support proper interim storage and future processing, storage, and/or disposal requirements for TRUM waste.

### 10.3.1 PUREX Storage Tunnels

The PUREX Storage Tunnels are a RCRA-regulated ~~storage unit~~TSD Group and are subject to Hanford Facility RCRA permit conditions. Waste in the PUREX Storage Tunnels treatability group is being stored at a final status miscellaneous unit. Under the Hanford Facility RCRA Permit, closure of the PUREX Storage Tunnels must be coordinated with the final closure plan for the PUREX facility which is under S&M provisions of Section 8.0 of the Tri-Party Agreement. Therefore, PUREX Storage Tunnels waste disposition will be coordinated with PUREX Plant waste discussed in Section 10.3.2.

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### 10.3.2 PUREX Plant

Ongoing S&M activities for the PUREX Plant treatability group are conducted in accordance with the approved S&M plan and associated TPA commitments until DOE Headquarters decides to initiate the disposition phase or actions required by the lead regulatory agency pursuant to the terms of the Tri-Party Agreement Action Plan, Sections 8.1 or 8.3.3. The waste included in the PUREX Plant treatability group is stored in accordance with interim status standards pursuant to Permit Condition I.A.~~under a regulator-approved long-term S&M plan~~. Therefore, certification/treatment or disposal of the waste is not planned in the near term.

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### 10.3.3 324 Building Radiochemical Engineering Cell Waste

DOE-RL is working with Ecology to modify the closure plan (DOE/RL-96-73, *324 Building Radiochemical Engineering Cells, High-Level Vault, Low-Level Vault, and Associated Area Closure Plan*) and existing TPA milestones to perform closure of the mixed waste units in parallel with disposition/demolition of the 324 Building.

## 10.4 DISPOSAL OF TRANSURANIC MIXED WASTE

As noted in Figure 10-1, the current plan is to ship TRUM waste to WIPP. Waste being disposed of at WIPP must meet WIPP waste acceptance requirements. Waste is shipped to WIPP in appropriate containers and special packages.

## 10.5 RADIONUCLIDE SEPARATION PLANS

No plans exist for radionuclide separation as a processing step for TRUM waste because radionuclide separation is not required for these treatability groups to meet WIPP disposal criteria.

## 11.0 HIGH-LEVEL WASTE STREAMS

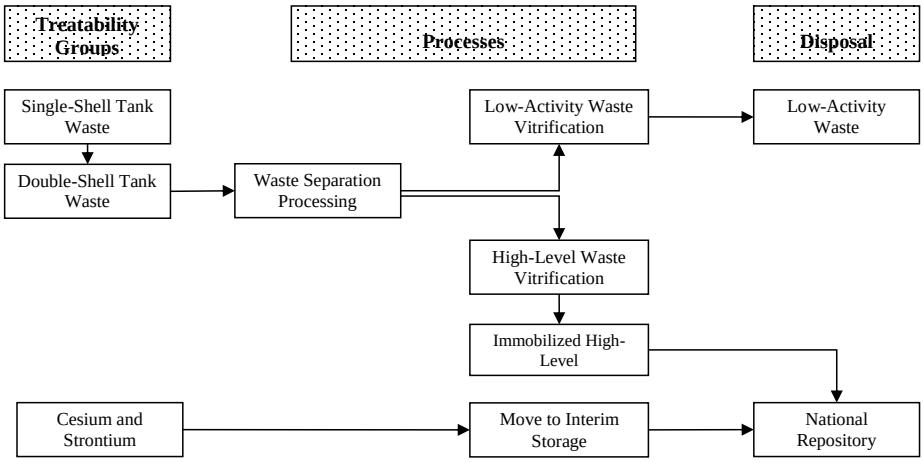
Figure 11-1 shows an overview of the anticipated treatment of HLW treatability groups. The basic process will be for the SST System waste to be moved to the DST System as space becomes available. The waste will be moved from the DSTs to a waste pretreatment or separation unit where most of the high-activity material will be removed and sent to the high-level vitrification unit. The larger volume of remaining LAW will be sent to a separate low-activity vitrification unit. The vitrification processes will convert the waste into a stable glass-like material for interim storage and eventual disposal. Note that the contents of some SSTs may classify as TRUM waste. If so, these wastes would be expected to follow a different treatment path.

It has been determined per the *Framework Agreement for Management of Polychlorinated Biphenyls (PCBs) in Hanford Tank Waste* (Ecology 2000), dated August 31, 2000, that some DSTs contain PCB remediation waste. The risk-based disposal approval process addresses the disposal of PCB remediation waste through the WTP where PCBs have been addressed as a constituent of concern. Figure 11-1 shows the HLW treatability groups and the planned treatment process.

Figure 11-1. High-Level Waste Disposition Map.

HLW Disposition Map

*For adaptation needed, refer to Section 11.2.*



## 11.1 EXISTING TREATMENT PROCESSES

No HLW LDR treatment processes currently are available for treating the Hanford Site waste. The Hanford Site does have HLW evaporators used for many years to concentrate HLW in the tanks and to make tank space available for new or transferred waste. The 242-A Evaporator operation is not LDR treatment; however, operations result in sending a portion of the tank waste (condensate) to LDR treatment at LERF/ETF.

## 11.2 WASTE STREAMS FOR WHICH TREATMENT TECHNOLOGY IS NEEDED

The LDR-specified treatment technology for HLW is vitrification (HLW vitrification). Planning for vitrification processes for the Hanford Site is ongoing and is a high priority. Details of the contract for completion of the design and construction of the treatment units for the HLW are available on the Internet[1]. Additional details of the planning for HLW management also are available on the Internet[1]. Table 11-1 summarizes the key information.

Table 11-1. Information for High-Level Waste Vitrification. (2 sheets)

| Type of Information | Information |
|---|---|
| Treatability groups that the process is expected to treat | DST Waste; SST Waste |
| Tri-Party Agreement milestones related to these treatability groups | M-092-00, M-090-00, and M-062-00 |
| Technology needed for facility | Vitrification technology has been used at both SRS and West Valley, but needs some modifications to be applicable to Hanford Site waste. |
| Projected volume of HLW to be treated between CY 2015 through the end of CY 2019 | Processing of mixed waste will be in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). |
| Treatment capacity | ~~To be determined by final design.~~4.2 MT/Day |
| Regulatory status information: | |
| - Submittal of RCRA permit application | WTP: Final status obtained September 2002.<br>DST System: Revised Part B Permit Application March 29, 2004. |
| - Date design and construction contract established | 2000 |
| - Date facility construction began | 2002 |
| - Date complete hot commissioning | 2018 |
| - Current regulatory status | DST: Operating to interim status standards<br>SST: Operating to interim status standards<br>WTP: Construction under final status |
| Budget status for design, construction, and operations | Funding is available for FY 2015 to continue design and construction. Funding for FY 2016 and beyond is contingent on Congressional budgets and actions. |

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[1] *Bechtel National, Inc., Design, Construction, and Commissioning of the Hanford Tank Waste Treatment and Immobilization Plant*, Contract No. DE-AC27-01RV14136 (DOE-ORP 2001).

Table 11-1. Information for High-Level Waste Vitrification. (2 sheets)

| Type of Information | Information |
|---|---|
| Estimated treatment completion date of treatability group with the assumption of available funding. | *Complete Pretreatment Processing and Vitrification of Hanford HLW and LAW Tank Wastes*, Tri-Party Agreement Milestone M-062-00 due December 31, 2047. |
| Alternatives for treatment of this waste. | None |

## 11.3 RADIONUCLIDE SEPARATION

The tank waste will be sent to the WTP where the waste will be separated into HLW and LAW fractions and treated to meet LDR standards.

## 11.4 STORAGE OF HIGH-LEVEL WASTE

Initial canisters of vitrified HLW are anticipated to be placed in an Interim HLW Storage facility, pending final disposal. The facility will have the capability of adding modules and will be built as needed. The maximum need will be determined at a later date as it depends on the vitrification rate and ability to ship waste from the Hanford Site to a national repository.

## 11.5 SHIPMENT OF HIGH-LEVEL WASTE TO A NATIONAL REPOSITORY

A national repository is expected to be prepared for the HLW and for the spent nuclear fuel accumulating at commercial nuclear power plants. Shipment dates are uncertain at this time, but will become more specific when the site is licensed and the national repository constructed and prepared to receive the HLW. These activities are beyond the scope of this report.

## 11.6 DISPOSAL OF THE MIXED LOW-ACTIVITY WASTE ON-SITE

Vitrified mixed ILAW from the WTP will be disposed on-site at the Integrated Disposal Facility (IDF). The IDF has been constructed under the Hanford Facility RCRA Permit (WA7890008967) and will accept ILAW when WTP generates the waste.

## 11.7 CESIUM/STRONTIUM CAPSULES

WESF stores the cesium and strontium capsules in pool cells. A statement of mission needs has been prepared to support removal of the capsules to a new dry storage facility; however, a decision on the final disposition of the capsules has not been made. The viability of direct disposal of the capsules in a national repository is being assessed in order to meet Milestone M-092-05.

The cesium/strontium capsules have not been classified as HLW, as the radiological waste determination has not been performed yet. The capsules have been managed in a manner appropriate to the risk they pose to human health and the environment, like HLW, and have been reported under the HLW treatability group historically in this report. The continued reporting of the cesium/strontium capsules in the HLW treatability group section is for the sake of continuity and should not be construed that a determination identified the capsules as HLW. When the

radiological determination and final disposal decisions are made, the cesium and strontium capsules will be reported in future revisions of this report under the correct treatability group, in accordance with that determination.

## 12.0 TREATMENT OF POTENTIAL MIXED WASTE

PMW is identified in Appendix C of this report. Some of the materials as managed in the future could result in the generation of mixed waste, which would be assigned to an existing or new treatability group. If the material is assigned to an existing treatability group, treatment can be considered along with that of the other location-specific waste streams within that treatability group. Other PMW may require new or modified treatment processes. Treatment plans for these waste streams will be defined further when the streams are determined to be mixed waste. Other materials will be determined not to be mixed waste and will be handled accordingly.

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## 13.0 SUMMARY OF CHARACTERIZATION INFORMATION

As part of generation of any waste, a generating unit must take steps necessary to confirm the proper management of this waste. This includes identifying proper radioactive classification, understanding the physical matrix, properly designating the waste, and, where applicable, identifying the appropriate underlying hazardous constituents. Types of information that can be used to characterize waste can include data from analysis of the waste and knowledge of the materials and/or processes used to generate the waste. The information must be sufficient to quantify constituents of regulatory concern and to determine waste characteristics, and to determine whether unit-specific waste acceptance criteria or requirements are satisfied.

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This section discusses and summarizes the waste treatability groups and the planned characterization activities for the waste. Waste must be sufficiently characterized so the waste can be stored and managed properly. In addition, waste must be sufficiently characterized before treatment to ensure that the proper treatment processes are applied and that the resultant treated waste meets LDR standards. Table 13-1 summarizes the planned characterization activities for each of the treatability groups. Additional detail can be found on the individual LSDSs (Appendix B). The planned characterization schedule information from Table 13-1 is reproduced in Table 2-2.

Table 13-1. Summary of Characterization Information for Each Treatability Group. (4 sheets)

| Treatability Group Name | Report Section | Additional Characterization Activities | Planned Characterization Schedule | Related Tri-Party Agreement Milestone |
|---|---|---|---|---|
| 221-T Containment Building | 10.2 | Completed[1] | Completed | None |
| 221-T Tank System | 9.3.2 | Additional characterization might be required to support waste treatment. | Will be done in conjunction with T Plant Complex Canyon disposition. | None |
| 222-S Laboratory Complex | 9.1.8 | Characterization performed as generated. | Ongoing | None |
| 222-S T8 Tunnel | 9.3.2 | As required to support cleanout of 222-S. | Will be done in conjunction with 222-S Laboratory building disposition. | None |
| 241-CX Tank System | 9.3.2 | Additional characterization will be performed as necessary, to support 200-IS-1 OU remedial decisions. | Characterization will be performed on waste in Tank 72 on a schedule determined with 200-IS-1 | Major Milestone M-015-00 |

Table 13-1. Summary of Characterization Information for Each Treatability Group. (4 sheets)

| Treatability Group Name | Report Section | Additional Characterization Activities | Planned Characterization Schedule | Related Tri-Party Agreement Milestone |
|---|---|---|---|---|
| 324 Building REC Waste | 10.3.3 | No further characterization planned for transfer to ERDF. | Completed | M-089-00 |
| 325 HWTU | 9.1.7 | Characterization performed as generated. | Ongoing | ~~M-016-00B~~None |
| 400 Area WMU | 9.3.2 | Completed.[1] | Completed | M-092-09 |
| B Plant Cell 4 | 9.3.2 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. | To be determined in conjunction with B Plant based on RCRA Permit Closure Plan.~~via Tri-Party Agreement Action Plan, Section 8.0.~~ | M-085-00 |
| B Plant Containment Building | 9.3.2 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. | To be determined ~~via~~ in conjunction with B Plant per Tri-Party Agreement Action Plan, Section 8.0. | M-085-00 |
| Cesium and Strontium Capsules | 11.4 | None | Completed | M-092-05 |
| DST Waste | 11.2 | Additional information could be required, per TPA milestone. | Ongoing | M-042-00, M-062, M-090 |
| ERDF – Treatment | 9.1.5 | Characterized as generated. Treatment and disposal are performed under CERCLA decision documents and treatment plans. | Ongoing | None |
| HSTF | 9.3.2 | Additional characterization will be performed, as necessary, to support removal of the tanks as part of 200-IS-1 OU activities | ~~Completed~~Ongoing | Major Milestone M-015-00 |
| LERF/ETF Liquid Waste | 9.1.6 | Characterization performed as generated. | Ongoing | M-026-07 |
| LERF/ETF Solid Waste | 9.1.10 | Characterization performed as generated. | Not required | None |
| MLLW-01 – LDR Compliant Waste | 9.1.10 | No further characterization is planned. | Completed | None |

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**Commented [MM67]:** #124

**Commented [MM68]:** #126

Table 13-1. Summary of Characterization Information for Each Treatability Group. (4 sheets)

| Treatability Group Name | Report Section | Additional Characterization Activities | Planned Characterization Schedule | Related Tri-Party Agreement Milestone |
|---|---|---|---|---|
| MLLW-02 – Inorganic Non-Debris | 9.1.1 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-03 – Organic Non-Debris | 9.1.3 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-04 – Hazardous Debris | 9.1.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-05 – Radioactive Lead Solids | 9.1.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-06 – Mercury Wastes | 9.1.9 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-07 – RH and Large Container | 9.2.1 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-43[3] | M-091-43[3] |
| MLLW-08 – Unique Waste | 9.3.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-09 – Radioactive Batteries | 9.1.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| MLLW-10 – Reactive Metals | 9.2.2 | As necessary to meet treatment facility waste acceptance criteria.[2] | M-091-42[3] | M-091-42[3] |
| PUREX Plant | 10.3.2 | To be determined via Tri-Party Agreement Action Plan, Section 8.0. | To be determined via Tri-Party Agreement Action Plan, Section 8.0. | M-085-00 |
| PUREX Storage Tunnels | 10.3.1 | To be determined in conjunction with PUREX Plant based on RCRA Permit Closure Plan. | To be determined in conjunction with the PUREX Plant per the Tri-Party Agreement Action Plan, Section 8.0. | M-085-00 |
| SST Waste | 11.2 | Further information may be required, per TPA milestone. | Ongoing | M-045, M-062, M-090 |
| TRUM-CH Large Container | 10.2 | As necessary to meet WIPP waste acceptance criteria. | M-091-44[3] | M-091-44[3] |

Table 13-1. Summary of Characterization Information for Each Treatability Group. (4 sheets)

| Treatability Group Name | Report Section | Additional Characterization Activities | Planned Characterization Schedule | Related Tri-Party Agreement Milestone |
|---|---|---|---|---|
| TRUM-CH Small Container | 10.1 | As necessary to meet WIPP waste acceptance criteria. | M-091-46[3] | M-091-46[3] |
| TRUM-RH | 10.2 | As necessary to meet WIPP waste acceptance criteria. | M-091-44[3] | M-091-44[3] |
| WTP Lab Complex | 9.3.1 | Not yet determined | Not yet determined | Not yet determined |

[1] Characterization information is contained in the Hanford Facility Operating Record unit-specific file for the TSD unit and is available upon request.
[2] Newly generated waste in these categories is fully characterized as generated. For waste in inventory before 1995, existing TSD record information will be reviewed and a graded approach to characterization will be made as necessary based on existing acceptable knowledge.
[3] Characterization is anticipated to be performed as necessary to meet M-091 milestones.

# 14.0 SUMMARY OF TREATMENT INFORMATION

This section summarizes the waste treatability groups and the volume of waste that will be treated. Table 14-1 contains information on treatment. The treatability groups are in alphabetical order. Certain information from Table 14-1 is reproduced in Table 2-2.

Table 14-2 provides a detailed list of the CERCLA documents supporting treatment schedules. Approved CERCLA documents, including RODs and Remedial Design Report/Remedial Action Work Plans, is presented first, followed by the TPA milestones for completion of CERCLA documentation in the future.

Table 14-1. Summary of Treatment Information for Each Treatability Group. (3 sheets)

| Treatability Group Name | Report Section | Treatment Process | Volume Currently Stored ($m^3$) | Projected Generation Volume 2015 Through 2019 ($m^3$) | Planned Treatment Period | Documents Supporting Schedule[1] |
|---|---|---|---|---|---|---|
| 221-T Containment Building | 10.2 | Not yet determined | 58.000 | 0 | 2035[2] | None |
| 221-T Tank System | 9.3.2 | Not yet determined | 1.7000 | 0 | 2035[2] | None |
| 222-S Laboratory Complex | 9.1.8 | Commercial Stabilization, Commercial Thermal | 7.140 | 50.000 | 2042[2]. | None |
| 222-S T8 Tunnel | 9.3.2 | Not yet determined | 0.200 | 0 | 2047[2] | None |
| 241-CX Tank System[3] | 9.3.2 | Not yet determined | 6.390 | 0 | To be determined through development of 200-IS-1 documentation. | M-015-00 |
| 324 Building REC Waste | 10.3.3 | As necessary, ERDF stabilization or macroencapsulation | 5.000 | 0 | In accordance with schedules established under M-089 milestone. | M-089-00 |
| 325 HWTU | 9.1.7 | HWTU, Commercial-Stabilization, Commercial-Thermal | 19.107 | 45.500 | Through 2028.[2] | M-016-00B |
| 400 Area WMU | 9.3.2 | Deactivation and conversion to sodium hydroxide | 1.900 | 0 | Treatment is planned to begin after 2018[1] | M-092-09 |
| B Plant Cell 4 | 9.3.2 | Not yet determined | 1.400 | 0 | In accordance with Tri-Party Agreement Action Plan, Section 8.0 | M-085-00 |
| B Plant Containment Building | 9.3.2 | Not yet determined | 294,000 kilograms | 0 | In accordance with Tri-Party Agreement Action Plan, Section 8.0 | M-085-00 |
| Cesium and Strontium Capsules | 11.4 | Not yet determined | 2.000 | 0 | Treatment options are still being assessed. | M-092-05 |
| DST Waste | 11.2 | WTP vitrification | 101,009.105 | 165.000 | 2018-2047 | M-042-00, M-062, M-090 |

Table 14-1. Summary of Treatment Information for Each Treatability Group. (3 sheets)

| Treatability Group Name | Report Section | Treatment Process | Volume Currently Stored ($m^3$) | Projected Generation Volume 2015 Through 2019 ($m^3$) | Planned Treatment Period | Documents Supporting Schedule[1] |
|---|---|---|---|---|---|---|
| ERDF – Treatment | 9.1.5 | ERDF treatment | 50.000 | 594.000 | Through 2035.[2] | Treatment and disposal are performed under a CERCLA decision document and treatment plans. See Table 14.2 for listing of approved CERCLA documents and TPA milestones for future documents. |
| HSTF | 9.3.2 | Not yet determined | 2.100 | 0 | To be determined through development of 200-IS-1 documentation. | M-015-00 |
| LERF/ETF Liquid Waste | 9.1.6 | ETF | 38,770.137 | 25,760.140 | Through 2032[2] | M-026-07B,C<br>Hanford Facility RCRA Permit, Revision 8C, Permit Number WA7890008967, Operating Unit 3 |
| LERF/ETF Solid Waste | 9.1.10 | ERDF treatment expected to be needed for some solid waste | 38.600 | 685.000 | To be determined | Hanford Facility RCRA Permit, Revision 8C, Permit Number WA7890008967, Operating Unit 3 |
| MLLW-01 – LDR-Compliant Waste | 9.1.10 & 9.1.6 | No treatment required | 0.416 | 0 | N/A | None |
| MLLW-02 – Inorganic Non-Debris | 9.1.1<br>9.1.4 | Stabilization/ Neutralization | 0.208 | 2.100 | M-091-42[4] | M-091-42 |
| MLLW-03 – Organic Non-Debris | 9.1.3 | Thermal | 0.322 | 2.100 | M-091-42 | M-091-42 |
| MLLW-04 Hazardous Debris | 9.1.2 | Macroencapsulation | 17.540 | 16.300 | M-091-42 | M-091-42 |
| MLLW-05 – Radioactive Lead Solids | 9.1.2 | Macroencapsulation | 0 | 0 | M-091-42[4] | M-091-42 |
| MLLW-06 – Mercury Waste | 9.1.9 | Amalgamation | 0 | 0 | M-091-42[4] | M-091-42 |

Table 14-1. Summary of Treatment Information for Each Treatability Group. (3 sheets)

| Treatability Group Name | Report Section | Treatment Process | Volume Currently Stored ($m^3$) | Projected Generation Volume 2015 Through 2019 ($m^3$) | Planned Treatment Period | Documents Supporting Schedule[1] |
|---|---|---|---|---|---|---|
| MLLW-07 – RH and Large Container | 9.2.1 | Additional M-091-01 capabilities and/or commercial treatment | 69.783 | 0 | M-091-43[4] | M-091-43 |
| MLLW-08 – Unique Waste | 9.3.2 | To be evaluated on a container by container basis | 0.040 | 0 | M-091-42[4] | M-091-42 |
| MLLW-09 – Radioactive Batteries | 9.1.2 | Macroencapsulation | 0 | 0 | M-091-42[4] | M-091-42 |
| MLLW-10 – Reactive Metals | 9.2.2 | Deactivation with selected stablization | 0 | 0 | M-091-42[4] | M-091-42 |
| PUREX Plant | 10.3.2 | Not yet determined | 1.000 | 0 | In accordance with Tri-Party Agreement Action Plan, Section 8.0 | M-085-00 |
| PUREX Storage Tunnels | 10.3.1 | Not yet determined | 2,800.000 | 0 | Coordinated with PUREX Plant waste. | M-085-00 |
| SST Waste | 11.2 | WTP vitrification | 109,000.000 | 0 | 2018-2047 | M-062-00 and M-090-00 |
| TRUM-CH Large Container | 10.2 | Additional M-091-01 capabilities and/or commercial treatment | 6,571.332 | 0 | M-091-44[4] | M-091-44 |
| TRUM-CH Small Container | 10.1 | WRAP Facility and/or T-Plant Complex and/or off-site | 4,508.646 | 116.500 | M-091-46[4] | M-091-46 |
| TRUM-RH | 10.2 | Additional M-091-01 capabilities and/or commercial treatment | 492.881 | 6.500 | M-091-44[4] | M-091-44 |
| WTP Lab Complex | 9.3.1 | To be determined[5] | 0 | 107.600 | TBD | TBD |

[1]Some wastes within treatability groups are also subject to the WAC 173-303-140 one-year clock for storage.
[2] Dates are anticipated to change based on changes to the DOE forecasted funding profile.
[3] The stored volume reported contains uncertainty as to the actual volume (Klein 2005).
[4] Treatment is anticipated to be performed as necessary to meet M-091 milestones. See the M-091 milestones to determine what portion of the total volume requires treatment under those milestones.
[5] Waste volume reduction, repackaging, treatment, and disposal to be performed by others as directed by DOE-ORP.

Table 14-2. CERCLA Documents Supporting Treatment Schedules (3 sheets)

| **APPROVED CERCLA DOCUMENTATION** | | |
|---|---|---|
| DOE/RL-2014-13-ADD1, *Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils*, U.S. Department of Energy, Richland Operation Office, Richland, Washington (this is the request for data review for the final ROD). | | |
| DOE/RL-2001-47, *Remedial Design Report/Remedial Action Work Plan for the 300 Area*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. | | |
| DOE/RL-2004-77, *Removal Action Work Plan for 300 Area Facilities*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. | | |
| EPA, 2013, *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington, and U.S. Department of Energy, Richland Operations Office, Richland, Washington. | | |
| EPA, 2002, *U.S. Department of Energy Environmental Restoration Disposal Facility, Hanford Site – 200 Area, Benton County, Washington, Amended Record of Decision, Decision Summary and Responsiveness Summary*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. | | |
| EPA, 1997, *U.S. Department of Energy Environmental Restoration Disposal Facility, Hanford Site – 200 Area, Benton County, Washington, Amended Record of Decision, Decision Summary and Responsiveness Summary*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. | | |
| EPA, 2008, *Record of Decision, Hanford 200 Area, 200-ZP-1 Superfund Site, Benton, County Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. | | |
| DOE/RL-2008-78, *200 West Area 200-ZP-1 Pump-and-Treat Remedial Design/Remedial Action Work Plan*, U.S. Department of Energy, Richland Operations Office, Richland Washington. | | |
| EPA, 2011, *Record of Decision, Hanford 200 Area, Superfund Site, 200-CW-5 and 200-PW-1, 200-PW-3 and 200-PW-6 Operable Units*, U.S. Environmental Protection Agency. | | |
| **TPA MILESTONES FOR CERCLA DECISION DOCUMENTATION** | | |
| **Milestone** | **Title** | **Due Date** |
| M-015-00 | Complete The RI/FS (or RFI/CMS) Process For All Non-Tank Farm OUs | 12/31/2016 |
| M-015-110A | Submit RCRA FI/CMS & RI/FS Work Plan for 200-DV-1 OU | 03/31/2015 |
| M-015-110B | Submit CMS & FS & Proposed Plan/CA Decision for 200-DV-1 OU | 09/30/2015 |
| M-015-112 | Submit Draft B 200-IS-1 RFI/CMS/RI/FS Work Plan to Ecology with Schedule Dates | 02/28/2014 |
| M-015-113 | Submit Draft B 200-SW-2 RFI/CMS/RI/FS Work Plan to Ecology Including Schedule | 03/31/2015 |

Table 14-2. CERCLA Documents Supporting Treatment Schedules (3 sheets)

| TPA MILESTONES FOR CERCLA DECISION DOCUMENTATION | | |
|---|---|---|
| **Milestone** | **Title** | **Due Date** |
| M-015-21A | Submit 200-BP-5 and 200-PO-1 OU FS Report & PP(s) to Ecology | 06/30/2015 |
| M-015-38B | Submit Rev'd FS Report & Rev'd PP for CW-1, CW-3 & OA-1 to EPA | 10/30/2015 |
| M-015-78 | Complete 2 yrs of GW and Aquifer Tube Sampling at 100-BC Expanded Monitoring Network | 02/28/2016 |
| M-015-79 | Submit CERCLA Remedial Investigation/Feasibility Study Report & Proposed Plan for 100-BC-1/2/5 | 12/15/2016 |
| M-015-91B | Submit FS Report & Proposed Plan for the 200-BC-1/ 200 -WA-1 OU | 12/31/2015 |
| M-015-92A | Submit RCRA FI/CMS & RI/FS Work Plan for 200-EA-1 OU to Ecology | 06/30/2015 |
| M-015-92B | Submit CMS & FS Reports & Proposed CA Decision/PP for 200-EA-1 & 200-IS-1 | 12/31/2016 |
| M-015-93B | Submit RCRA FI/CMS & RI/FS Report & Proposed CA Decision/PP for 200-SW-2 | 12/31/2016 |
| M-016-00 | Comp. Remedial Actions for All Non-Tank Farm & Non-Canyon Op OUs | 09/30/2024 |
| M-016-00A | Complete All Response Actions For 100 Areas Except GW in M-016-00 and 100 K Addressed in M-016-00C | 03/31/2017 |
| M-016-00B | Complete All Interim 300 Area Remedial Actions | 09/30/2018 |
| M-016-00C | Complete All Response Actions In The 100K Area | 12/31/2020 |
| M-016-110-T02 | Take Actions Such That Hexavalent Cr Meets Drinking Water Stds | 12/31/2020 |
| M-016-110-T03 | Take Actions To Contain Sr-90 GW Plume at 100-NR-2 OU | 12/31/2016 |
| M-016-110-T04 | Implement Remedial Actions in All 100A RODS For GW OUs | 12/31/2016 |
| M-016-110-T05 | Implement Sys To Meet Drinking Water Stds. For U at 300-FF-5 OU | 12/31/2015 |
| M-016-119-T01 | Operational Sys in Place To Contain GW Plumes in 200 NPL Area | 12/31/2020 |
| M-016-125 | Submit RD/RA Work Plan to EPA for 200-CW-5 & 200-PW-1/3/6 per ROD | 09/30/2015 |
| M-016-143 | Complete The Interim Response Actions For The 100K Area Phase 2 | 12/31/2015 |
| M-016-149 | Complete Interim Response Action for 36 100-IU-2/6 Waste Sites | 03/31/2015 |

Table 14-2. CERCLA Documents Supporting Treatment Schedules (3 sheets)

| TPA MILESTONES FOR CERCLA DECISION DOCUMENTATION | | |
|---|---|---|
| **Milestone** | **Title** | **Due Date** |
| M-016-159 | Complete Interim Response Action for 25 100D/H Area Waste Sites | 03/31/2015 |
| M-016-161 | Complete Interim Response Action for 29 100D/H Area Waste Sites & Decommission 147-D | 03/31/2016 |
| M-016-164 | Complete 100-N Interim Response Actions & Close 100-N Ancillary Facilities Area of Contamination | 03/31/2017 |
| M-016-173 | Select K Basin Sludge Treat. & Pkging Technology propose new MS's | 03/31/2015 |
| M-016-175 | Begin Sludge Removal from 105-KW Fuel Storage Basin | 09/30/2014 |
| M-016-176 | Complete sludge removal from 105-KW Fuel Storage Basin | 12/31/2015 |
| M-016-178 | Initiate Deactivation of 105-KW Fuel Storage Basin | 12/31/2015 |
| M-016-181 | Complete Deactivation, Demolition & Removal of 105-KW FSB | 09/30/2019 |
| M-016-186 | Initiate Soil Remediation Under 105-KW Fuel Storage Basin | 12/31/2019 |
| M-016-190 | Complete Installation of Wells for U-Plant Area Pump & Treat Per 200-UP-1 RD/RA WP | 09/30/2015 |
| M-016-191 | Complete Acceptance/Operation Test Procedures and Initiate Operations of U Plant Area Pump & Treat | 03/30/2016 |
| M-016-192 | Submit I-129 Technology Evaluation Plan Draft A to EPA Per 200-UP-1 RD/RA WP | 06/17/2016 |
| M-016-193 | Investigate SE Chromium Plume, Install Wells, Eval. GW Monitoring Data & Install Monitoring Wells | 09/30/2017 |
| M-016-200A | Complete U Plan Canyon (221 U Facility) Demolition | 09/30/2017 |
| M-016-200B | Complete U Plant Facility (221 U Facility) Barrier Construction | 09/30/2021 |
| M-016-69 | Complete All Interim 300 Area Remedial Actions | 09/30/2015 |

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# 15.0 TRI-PARTY AGREEMENT INFORMATION

The Tri-Party Agreement is a legal document covering Hanford Site environmental compliance and cleanup activities. The Tri-Party Agreement Action Plan implements the agreements among Ecology, DOE (both DOE-RL and DOE-ORP), and EPA.

## 15.1 DOCUMENTATION AND RECORDS

The Tri-Party Agreement Action Plan, Section 9.0, "Documentation and Records," defines the documents to be generated under the Action Plan, the classification and listing of primary and secondary documents, and the record systems to be implemented to preserve and access the documentation. The Action Plan, Section 12, "Changes to the Agreement," establishes a process for the parties to propose and implement changes to: elements of the Agreement; the Action Plan and Appendices; and supporting plans (specifically, the annual update of the LDR report).

## 15.2 LAND DISPOSAL RESTRICTIONS RELATED TRI-PARTY AGREEMENT MILESTONES

Table 15-1 identifies the current (as of December 31, 2014), active TPA milestone requirements through 2052. Pending TPA change control actions are not included.

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-015-00 | Complete The RI/FS (or RFI/CMS) Process For All Non-Tank Farm OUs | 12/31/2016 |
| M-015-110A | Submit RCRA FI/CMS & RI/FS Work Plan for 200-DV-1 OU | 03/31/2015 |
| M-015-110B | Submit CMS & FS & Proposed Plan/CA Decision for 200-DV-1 OU | 09/30/2015 |
| M-015-112 | Submit Draft B 200-IS-1 RFI/CMS/RI/FS Work Plan to Ecology with Schedule Dates | 02/28/2014 |
| M-015-113 | Submit Draft B 200-SW-2 RFI/CMS/RI/FS Work Plan to Ecology Including Schedule | 03/31/2015 |
| M-015-21A | Submit 200-BP-5 and 200-PO-1 OU FS Report & PP(s) to Ecology | 06/30/2015 |
| M-015-38B | Submit Rev'd FS Report & Rev'd PP for CW-1, CW-3 & OA-1 to EPA | 10/30/2015 |
| M-015-78 | Complete 2 Yrs of GW and Aquifer Tube Sampling at 100-BC Expanded Monitoring Network | 02/28/2016 |
| M-015-79 | Submit CERCLA Remedial Investigation/Feasibility Study Report & Proposed Plan for 100-BC-1/2/5 | 12/15/2016 |
| M-015-91B | Submit FS Report & Proposed Plan for the 200-BC-1/ 200 -WA-1 OU | 12/31/2015 |
| M-015-92A | Submit RCRA FI/CMS & RI/FS Work Plan for 200-EA-1 OU to Ecology | 06/30/2015 |
| M-015-92B | Submit CMS & FS Reports & Proposed CA Decision/PP for 200-EA-1 & 200-IS-1 | 12/31/2016 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-015-93B | Submit RCRA FI/CMS & RI/FS Report & Proposed CA Decision/PP for 200-SW-2 | 12/31/2016 |
| M-016-00 | Comp. Remedial Actions For All Non-Tank Farm & Non-Canyon Op OUs | 09/30/2024 |
| M-016-00A | Complete All Response Actions For 100 Areas Except GW in M-016-00 and 100 K Addressed in M-016-00C | 03/31/2017 |
| M-016-00B | Complete All Interim 300 Area Remedial Actions | 09/30/2018 |
| M-016-00C | Complete All Response Actions In The 100K Area | 12/31/2020 |
| M-016-110-T02 | Take Actions Such That Hexavalent Cr Meets Drinking Water Stds | 12/31/2020 |
| M-016-110-T03 | Take Actions To Contain Sr-90 GW Plume at 100-NR-2 OU | 12/31/2016 |
| M-016-110-T04 | Implement Remedial Actions in All 100A RODS For GW OUs | 12/31/2016 |
| M-016-110-T05 | Implement Sys To Meet Drinking Water Stds. For U at 300-FF-5 OU | 12/31/2015 |
| M-016-119-T01 | Operational Sys in Place To Contain GW Plumes in 200 NPL Area | 12/31/2020 |
| M-016-125 | Submit RD/RA Work Plan to EPA for 200-CW-5 & 200-PW-1/3/6 per ROD | 09/30/2015 |
| M-016-143 | Complete The Interim Response Actions For The 100K Area Phase 2 | 12/31/2015 |
| M-016-149 | Complete Interim Response Action for 36 100-IU-2/6 Waste Sites | 03/31/2016 |
| M-016-159 | Complete Interim Response Action for 25 100D/H Area Waste Sites | 03/31/2015 |
| M-016-161 | Complete Interim Response Action for 29 100D/H Area Waste Sites & Decommission 147-D | 03/31/2016 |
| M-016-164 | Complete 100-N Interim Response Actions & Close 100-N Ancillary Facilities Area of Contamination | 03/31/2017 |
| M-016-173 | Select K Basin Sludge Treat. & Pkging Technology propose new MS's | 03/31/2015 |
| M-016-175 | Begin Sludge Removal from 105-KW Fuel Storage Basin | 09/30/2014 |
| M-016-176 | Complete sludge removal from 105-KW Fuel Storage Basin | 12/31/2015 |
| M-016-178 | Initiate Deactivation of 105-KW Fuel Storage Basin | 12/31/2015 |
| M-016-181 | Complete Deactivation, Demolition & Removal of 105-KW FSB | 09/30/2019 |
| M-016-186 | Initiate Soil Remediation Under 105-KW Fuel Storage Basin | 12/31/2019 |
| M-016-190 | Complete Installation of Wells for U-Plant Area Pump & Treat Per 200-UP-1 RD/RA WP | 09/30/2015 |
| M-016-191 | Complete Acceptance/Operation Test Procedures and Initiate Operations of U Plant Area Pump & Treat | 03/30/2016 |
| M-016-192 | Submit I-129 Technology Evaluation Plan Draft A to EPA Per 200-UP-1 RD/RA WP | 06/17/2016 |
| M-016-193 | Investigate SE Chromium Plume, Install Wells, Eval. GW Monitoring Data & Install Monitoring Wells | 09/30/2017 |
| M-016-200A | Complete U Plan Canyon (221 U Facility) Demolition | 09/30/2017 |
| M-016-200B | Complete U Plant Facility (221 U Facility) Barrier Construction | 09/30/2021 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-016-69 | Complete All Interim 300 Area Remedial Actions | 09/30/2015 |
| M-024-00O | Complete Well Installations with RCRA/CERCLA Requirements | TBD |
| M-024-58H | Initiate Discussions of Well Commitments | 06/01/2015 |
| M-024-58I | Initiate Discussions of Well Commitments | 06/01/2016 |
| M-024-58J | Initiate Discussions of Well Commitments | 06/01/2017 |
| M-024-58K | Initiate Discussions of Well Commitments | 06/01/2018 |
| M-024-66 | Complete Construction of All Wells Listed for CY 2015 and Before as Identified in M-24-12-01 | 12/31/2015 |
| M-024-66-T01 | Conclude Discussions of Well Commitments | 08/01/2015 |
| M-024-67 | Complete Construction of All Wells Listed for CY 2016 and Before as Identified in M-24-13-01 | 12/31/2016 |
| M-024-67-T01 | Conclude Discussions of Well Commitments | 08/01/2016 |
| M-024-68 | Comp Const of All Wells Listed for CY17 and Before Identified in Att 1 of TPA Chg Pkg M-024-14-01 | 12/31/2017 |
| M-026-01AA | Submit Hanford Land Disposal Restrictions Summary Report | 04/30/2017 |
| M-026-01AB | Submit Hanford Land Disposal Restrictions Summary Report | 04/30/2018 |
| M-026-01AC | Submit Hanford Land Disposal Restrictions Summary Report | 04/30/2019 |
| M-026-01Y | Submit Full Hanford Land Disposal Restrictions Report | 04/30/2015 |
| M-026-01Z | Submit Hanford Land Disposal Restrictions Summary Report | 04/30/2016 |
| M-026-07D | Evaluation of Tritium Treatment Technology to EPA & Ecology | 03/31/2019 |
| M-035-00 | Complete Data Management Enhancements | TBD |
| M-035-09J | Conduct Biennial Assessments Of Information And Data Access Needs | 03/31/2016 |
| M-036-01E | Submit to EPA & Ecology Lifecycle Scope, Schedule & Cost Report | 01/31/2015 |
| M-036-01F | Submit to EPA & Ecology Lifecycle Scope, Schedule & Cost Report | 01/31/2016 |
| M-036-01G | Submit to EPA & Ecology Lifecycle Scope, Schedule & Cost Report | 01/31/2017 |
| M-036-01H | Submit to EPA & Ecology Lifecycle Scope, Schedule & Cost Report | 01/31/2018 |
| M-037-10 | Complete Closure for 7 Specified TSD Units | 09/30/2020 |
| M-037-11 | Complete Closure Requirements for 216-B-3 & 216-S-10 | 09/30/2016 |
| M-042-00A | Complete the Closure of All DST Tank Farms | 09/30/2052 |
| M-045-00 | Complete Closure Of All SST Farms | 01/31/2043 |
| M-045-13 | Interim Completion Of Tank S-112 SST Waste Retrieval And Closure | TBD |
| M-045-13E | Complete Negotiations for Interim Milestones for Closure of S-112 | TBD |
| M-045-15 | Completion Of Tank A-103 SST Waste Retrieval | 09/30/2022 |
| M-045-15A | Submit A Retrieval Data Report Pursuant to Agreement Appendix I | 09/30/2022 |
| M-045-15D | Exception to Waste Retrieval Criteria Pursuant to Agreement Appendix H | 09/30/2022 |
| M-045-56 | Complete Implementation Of Agreed-To Interim Measures | TBD |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-045-56K | Ecology And DOE Agree, At A Minimum, To Meet Yearly (By July) | 07/31/2015 |
| M-045-56L | Ecology And DOE Agree, At A Minimum, To Meet Yearly (By July) | 07/31/2016 |
| M-045-59 | Control Surface Water Infiltration Pathways As Needed | TBD |
| M-045-61 | Submit Draft A Phase 2 RCRA Facility Investigation secondary document Report for WMA C | 12/31/2014 |
| M-045-61A | Submit to Ecology a Primary Doc. Phase 2 CMS, and Rev. 0 Update to the RFI Report for WMA C | 12/31/2016 |
| M-045-62 | Submit Phase 2 Corrective Measures Implementation Work Plan For WMA C | 06/30/2015 |
| M-045-70 | Complete Waste Retrieval from all Remaining Single Shell Tanks | 12/31/2040 |
| M-045-82 | Submit Complete. Permit Modification Request for Tiers 1,2,3 | 09/30/2015 |
| M-045-83 | Complete the Closure of WMA C | 06/30/2019 |
| M-045-84 | Complete Negotiations of HFFACO Interim Milestones for Closure of 2nd SST WMA | 01/31/2017 |
| M-045-85 | Complete Negotiations of HFFACO Interim Milestones for Closure of Remaining WMAs | 01/31/2022 |
| M-045-86 | Submit Retrieval Data Report to Ecology for 19 Tanks Retrieved Under Consent Decree | TBD |
| M-045-86A | Submit Retrieval Data Report to Ecology for C-101 | TBD |
| M-045-86B | Submit Retrieval Data Report to Ecology for C-102 | TBD |
| M-045-86D | Submit Retrieval Data Report to Ecology for C-105 | TBD |
| M-045-86E | Submit Retrieval Data Report to Ecology for C-107 | TBD |
| M-045-86H | Submit Retrieval Data Report to Ecology for C-110 | 01/30/2015 |
| M-045-86I | Submit Retrieval Data Report to Ecology for C-111 | TBD |
| M-045-86J | Submit Retrieval Data Report to Ecology for C-112 | TBD |
| M-045-86K | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86L | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86M | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86N | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86O | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86P | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86Q | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86R | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-86S | Submit Retrieval Data Report to Ecology for Remaining 9 SSTs | TBD |
| M-045-91B-T01 | Provide Ecology report on the Concrete Core from Tank A-106 or alternate tank | 01/31/2015 |
| M-045-91E1 | Provide SST Farms Dome Deflection Surveys Every Two Years | 09/30/2015 |
| M-045-91E2 | Provide SST Farms Dome Deflection Surveys Every Two Years | 09/30/2017 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-045-91F | Provide Summary Conclusions Report on Leak Integrity | 06/30/2015 |
| M-045-91F-T02 | Provide Report of Liner Failures for SSTs | 03/31/2015 |
| M-045-91F-T04 | Provide Report on 100-Series SSTs as having Leaked in RPP-32681 | 12/26/2014 |
| M-045-91G | Provide Summary Conclusions Report of AOR for SSTs | 07/28/2015 |
| M-045-91G-T04 | Provide AOR Final Doc. for SSTs on 55,000 Gallon Tanks | 01/30/2015 |
| M-045-91H | Submit Change Package (if necessary) to est. Additional Milestones | 07/31/2015 |
| M-045-91I | Provide IQRPE Certification of SSTs Structural Integrity | 09/30/2018 |
| M-045-92 | Complete Installation of four Additional Interim Barriers | 10/31/2017 |
| M-045-92N | Construct Barriers 1 and 2 in 241-SX Farm | 10/31/2015 |
| M-045-92O | Submit Barrier 3 Design/Monitoring Plan | 06/30/2015 |
| M-045-92P | Barrier 3 Construction Complete | 10/31/2016 |
| M-045-92Q | Submit Barrier 4 Design/Monitoring Plan | 06/30/2016 |
| M-045-92R | Barrier 4 Construction Complete | 10/31/2017 |
| M-047-00 | Completion of Work for Management of Secondary Waste from the WTP | 12/31/2022 |
| M-047-07 | CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to ECY | 03/31/2016 |
| M-062-00 | Complete Pretreatment Processing and Vitrification Of HLW & LAW Tank Wastes | 12/31/2047 |
| M-062-01AD | Submit Semi-Annual Project Compliance Report | 01/31/2015 |
| M-062-01AE | Submit Semi-Annual Project Compliance Report | 07/31/2015 |
| M-062-01AF | Submit Semi-Annual Project Compliance Report | 01/31/2016 |
| M-062-01AG | Submit Semi-Annual Project Compliance Report | 07/31/2016 |
| M-062-01AH | Submit Semi-Annual Project Compliance Report | 01/31/2017 |
| M-062-01AI | Submit Semi-Annual Project Compliance Report | 07/31/2017 |
| M-062-21 | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2023 |
| M-062-21A | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2024 |
| M-062-21B | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2025 |
| M-062-21C | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2026 |
| M-062-21D | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2027 |
| M-062-21E | Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00 | 02/28/2028 |
| M-062-31-T01 | Comp. Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment | 04/30/2016 |
| M-062-32-T01 | Start Const. of Supp Vit Facility and/or WTP Enhancements | 04/30/2018 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-062-33-T01 | Comp. Const of Supp Treatment Vit Facility &/or WTP Enhancements | 04/30/2021 |
| M-062-34-T01 | Comp. Hot Commissioning of Supp Treat. Vit Fac. &/or WTP Enhance | 12/30/2022 |
| M-062-40 | Submit System Plan to Ecy/Select Minimum 3 Scenario's | TBD |
| M-062-40E | Select a Minimum of Three Scenario's | 10/31/2016 |
| M-062-40F | Submit System Plan | 10/31/2017 |
| M-062-45 | Comp. Neg's 6-Mo After Last Issuance of System Plan | TBD |
| M-062-45-A | Comp. Neg's 6-Mo After Last Issuance of System Plan | 04/30/2021 |
| M-062-45-B | Comp. Neg's 6-Mo After Last Issuance of System Plan | 04/30/2027 |
| M-062-45-T01 | Comp. Neg's 6-Mo After Last Issuance of System Plan | 04/30/2015 |
| M-062-45-XX | Comp. Neg's to Resolve Future Disputes M-062-45 Para 4&5 | 12/31/2021 |
| M-062-45-ZZ | Negotiate a one time supplemental treatment selection | 04/30/2015 |
| M-062-45-ZZ-A | Convert M-062-31-T01 Thru M-062-34-T01 to Interim Milestones | 04/30/2015 |
| M-083-00A | Complete PFP Facility Transition And Selected Disposition Activities | 09/30/2016 |
| M-083-24-T01 | Submit Rev. 0 of PFP Complex S & M Plan to Ecology | 06/30/2016 |
| M-083-44 | Complete Transition of 234-5Z&ZA/243-Z/291-Z & 291-Z-1 Facilities to Support PFP Decommissioning | 09/30/2015 |
| M-085-00 | Complete Response Actions for Specified Canyon Fac. & Waste Sites | TBD |
| M-085-01 | Submit a Change Package to Establish Date for Major Milestone M-085-00 | 09/30/2022 |
| M-085-02 | Submit Chg. Pkg. to Establish Schedule for Submittal of RI/FS WPs for Canyons & RAWPs for 224B & T | 09/30/2015 |
| M-089-00 | Closure Of Mixed Waste Units In 324 Bldg REC B&D Cells and High & Low Level Vaults | TBD |
| M-089-06 | Submit Permit Modification to Incorporate Approved 324 Closure Plan & Establish Schedule | 06/30/2016 |
| M-090-00 | Acquire/Modify Facilities For Storage of First Two Years of IHLW from WTP Operations | 12/31/2019 |
| M-090-13 | CD-1 for Interim Hanford Storage Project and CR for CD-2 to ECY | 03/31/2016 |
| M-091-00 | Complete Treatment to LDR Standards for all RCRA MLLW & TRUM Waste | TBD |
| M-091-01 | Complete Facilities for Retrieval, Storage, & Treatment/Processing of RCRA TRUM Waste | TBD |
| M-091-01A | Comp. Conceptual Design for RH TRUM & TRUM Facs & Change Pkg | 09/30/2016 |
| M-091-01B | Comp. Definitive Design for RH TRUM & TRUM Facilities & Change Pkg | 09/30/2018 |
| M-091-03 | Submit Revision of TRUM Waste & MLLW PMP To Ecology | TBD |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-091-03I | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2015 |
| M-091-03J | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2016 |
| M-091-03K | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2017 |
| M-091-03L | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2018 |
| M-091-03M | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2019 |
| M-091-03N | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2020 |
| M-091-03O | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2021 |
| M-091-03P | Submit Revision Of TRUM Waste And MLLW PMP To Ecology | 06/30/2022 |
| M-091-40 | Complete Retrieval & Designation of CH RSW in Burial Grounds 218-W-4B, W-3A & E-12B | 09/30/2016 |
| M-091-40L | Submit Quarterly Burial Ground Vent/Substrate Sampling Results | TBD |
| M-091-40L-044 | Submit Jul-Sep 4th Qrtr FY14 Burial Ground Sample Results | 12/15/2014 |
| M-091-40L-045 | Submit Oct-Dec 1st Qrtr FY15 Burial Ground Sample Results | 03/15/2015 |
| M-091-40L-046 | Submit Jan-Mar 2nd Qrtr FY15 Burial Ground Sample Results | 06/15/2015 |
| M-091-40L-047 | Submit Apr-Jun 3rd Qrtr FY15 Burial Ground Sample Results | 09/15/2015 |
| M-091-40L-048 | Submit Jul-Sep 4th Qrtr FY15 Burial Ground Sample Results | 12/15/2015 |
| M-091-40L-049 | Submit Oct-Dec 1st Qrtr FY16 Burial Ground Sample Results | 03/15/2016 |
| M-091-40L-050 | Submit Jan-Mar 2nd Qrtr FY16 Burial Ground Sample Results | 06/15/2016 |
| M-091-40L-051 | Submit Apr-Jun 3rd Qrtr FY16 Burial Ground Sample Results | 09/15/2016 |
| M-091-40L-052 | Submit Jul-Sep 4th Qrtr FY16 Burial Ground Sample Results | 12/15/2016 |
| M-091-40L-053 | Submit Oct-Dec 1st Qrtr FY17 Burial Ground Sample Results | 03/15/2017 |
| M-091-40L-054 | Submit Jan-Mar 2nd Qrtr FY17 Burial Ground Sample Results | 06/15/2017 |
| M-091-40L-055 | Submit Apr-Jun 3rd Qrtr FY17 Burial Ground Sample Results | 09/15/2017 |
| M-091-40L-056 | Submit Jul-Sep 4th Qrtr FY17 Burial Ground Sample Results | 12/15/2017 |
| M-091-40L-057 | Submit Oct-Dec 1st Qrtr FY18 Burial Ground Sample Results | 03/15/2018 |
| M-091-40L-058 | Submit Jan-Mar 2rd Qrtr FY18 Burial Ground Sample Results | 06/15/2018 |
| M-091-40L-059 | Submit Apr-Jun 3rd Qrtr FY18 Burial Ground Sample Results | 09/15/2018 |
| M-091-40L-060 | Submit Jul-Sep 4th Qrtr FY18 Burial Ground Sample Results | 12/15/2018 |
| M-091-40U-T01 | Retrieve a minimum of 250 cubic meters of CH RSW in FY 2012 | 09/30/2012 |
| M-091-40V-T01 | Retrieve a minimum of 250 cubic meters of CH RSW in FY 2013 | 09/30/2013 |
| M-091-40W-T01 | Retrieve a minimum of 250 cubic meters of CH RSW in FY 2014 | 09/30/2014 |
| M-091-40X | Retrieve a total of 1,250 cubic meters of CH RSW in Fiscal Year 2015 | 09/30/2015 |
| M-091-41 | Complete Retrieval & Designation of RH RSW | 12/31/2018 |
| M-091-41A | Complete Retrieval Of Non-Caisson RH RSW | 09/30/2016 |
| M-091-42 | Comp. Treatment of small container CH MLLW to meet LDR Standards | 09/30/2017 |

Table 15-1. Tri-Party Agreement Milestones and Target Dates Through 2052. (8 sheets)

| Milestone | Title | Due Date |
|---|---|---|
| M-091-43 | Comp. Treatment Lgr Container CH MLLW & RH MLLW to LDR Standards | 09/30/2017 |
| M-091-44 | Comp. Treatment Lrg Container CH TRUM & RH TRUM Waste | 12/31/2030 |
| M-091-44S | Certify 300 cubic meters Lrg Container CH TRUM &/or RH TRUM Waste | 09/30/2018 |
| M-091-44T | Submit Change Pkg to Complete Disposition of CH TRUM & RH TRUM | 09/30/2018 |
| M-091-44Z-005 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2014 |
| M-091-44Z-006 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2015 |
| M-091-44Z-007 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2016 |
| M-091-44Z-008 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2017 |
| M-091-44Z-009 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2018 |
| M-091-44Z-010 | Annual PMM or Qtrly Notification of Cert of CH/RH TRUM | 12/31/2019 |
| M-091-46 | Comp. Certification of small Container CH TRUM Waste | 09/30/2017 |
| M-091-46B-T01 | Certify 300 Cubic Meters Of Small Container CH TRUM Waste | 09/30/2012 |
| M-091-46C-T02 | Certify 125 Cubic Meters of Small Container CH TRUM Waste | 09/30/2013 |
| M-091-46D-T03 | Certify 125 Cubic Meters of Small Container CH TRUM Waste | 09/30/2014 |
| M-091-46E | Certify 250 cubic meters of small container CH TRUM waste | 09/30/2015 |
| M-091-46F | Certify 250 cubic meters of small container CH TRUM waste | 09/30/2016 |
| M-091-46H | Complete Offsite Shipment of All Small Container CH TRUM Waste | 09/30/2018 |
| M-092-00 | Acquire Facilities For Cs/Sr, Na & SCW | 09/30/2018 |
| M-092-05 | Determine Disposition Path and Establish Cs/Sr Interim Milestones | 06/30/2017 |
| M-092-09 | Establish Milestones and/or Target Dates For Sodium Facilities | 09/30/2018 |
| M-093-00 | Complete Final Disposition of All 100 Area Surplus Production Reactor Buildings | TBD |
| M-093-27 | Complete 105-KE &105-KW Reactor ISS in Accordance with Removal Action Work Plan | 12/31/2019 |
| M-093-28 | Submit Change Package for Proposed Interim Milestones for 105-KE/KW Reactor Interim Safe Storage | 12/31/2015 |
| M-094-00 | Complete Disposition Of All 300 Area Surplus Facilities Including 324 Building | 09/30/2018 |
| M-094-10 | Complete Disposition of 300 Area Surplus Facilities Excluding 324 Building | 09/30/2015 |

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*Toxic Substances Control Act of 1976*, Public Law 94-469

WAC 173-216, "State Waste Discharge Permit Program," *Washington Administrative Code*, Olympia, Washington

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, Olympia, Washington

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# APPENDIX A

# LAND DISPOSAL RESTRICTIONS REPORTING REQUIREMENTS

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# APPENDIX A

## LAND DISPOSAL RESTRICTIONS REPORTING REQUIREMENTS

The LDR reporting requirements and requirements of the Final Determination (Ecology, EPA 2000) are presented in Table A-1. Table A-1 is a crosswalk linking the requirements for this document to the location in the document where these requirements are addressed. Some of the items identified in the table were one-time requirements from the Final Determination that have been met already. For those items, the table indicates how the one-time requirements were closed out.

Additional LDR reporting requirements are established through monthly Tri-Party Agreement PMMs.

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 1 | 1.a (1990)<br>IV.3.A.1, pg 16 (FD)<br>IV.3.A.1.a, pg 16 (FD)<br>IV.3.A.1, pg 17 (FD)<br>IV.3.A.3, pg 18 (FD)<br>IV.3.B.a, pg 19 (FD)<br>23 items (Ltr) | Identification of mixed waste | Treatability Group Data Sheet (TGDS) 1.1 and 1.2, as well as Location Specific Data Sheets (LSDS) 1.1 – 1.3. LDR mixed waste is presented by a combination of treatment path forward and storage location on the two types of waste stream data sheets. In addition, the PMW Table (Appendix C) presents PMW that have the potential to be reported in the data sheets in future years, but currently are reported in a format that resulted from discussions with Ecology and EPA. |
| 2 | 1.a (1990)<br>IV.3.A.1, pg 16 (FD)<br>IV.3.A.1.a, pg 16 (FD)<br>IV.3.B.a, pg 19 (FD) | Description of mixed waste | Identification and description are included as part of Items 3 through 11 of this table.<br>TGDS 1.2 and portions of 3.0, as well as LSDS 1.3.1 and other portions of 1.0. |
| 3 | 1.a (1990)<br>IV.3.A.1.b, pg 16 (FD) | RCRA hazardous waste code(s) and state-only waste designations | TGDS 3.3.2. |
| 4 | IV.3.A.1.c, pg 16 (FD) | Applicable LDR treatment standard(s) and underlying hazardous constituents | TGDS 3.3.2. |
| 5 | 1.a (1990)<br>IV.3.A.1, pg 16 (FD)<br>IV.3.A.1.a, pg 16 (FD)<br>IV.3.A.1.c, pg 16 (FD) | Process information necessary for waste identification and LDR determinations | LSDS 1.3 and 2.12, applicable profiles referenced in LSDS 1.2. |
| 6 | 1.a (1990)<br>IV.3.A.1.c, pg 16 (FD) | History of how the waste was generated | LSDS 1.3 and 2.12. |
| 7 | 1.a (1990)<br>IV.3.A.1.c, pg 16 (FD) | Source of the hazardous constituents | LSDS 1.3. |
| 8 | 1.a (1990)<br>IV.3.A.1.c, pg 16 (FD) | How the waste was managed before storage | LSDS 2.1.1. |
| 9 | 1.a (1990)<br>IV.3.A.1.c, pg 16 (FD) | General timeframe determination that serves to categorize when the waste was placed in storage | LSDS 2.1.2 and portions of 1.3. |

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Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 10 | 1.a (1990)<br>IV.3.A.1.d, pg 16 (FD) | Radioactivity type | TGDS 3.1.1 and 3.1.2. |
| 11 | 1.a (1990)<br>IV.3.A.1.e, pg 16 (FD) | Physical form of the waste | TGDS 3.2.1 and 3.3.2. |
| 12 | 1.b (1990)<br>IV.3.A.1.f, pg 16 (FD) | Quantity of waste | TGDS 2.1, as well as LSDS 2.3. |
| 13 | 1.c (1990)<br>IV.3.A.1.g, pg 16 (FD)<br>IV.3.A.1, pg 17 (FD) | Physical location | LSDS 2.1 and 2.2 |
| 14 | 1.c (1990)<br>IV.3.A.1.g, pg 16 (FD) | Method of storage | LSDS 2.1 and 2.2. |
| 15 | 1.c (1990)<br>IV.3.A.1.g, pg 16 (FD) | List of areas permitted for storage | LSDS 2.5. |
| 16 | 1.d (1990)<br>IV.3.A.1.h, pg 16 (FD)<br>IV.3.A.2, pg 17 (FD)<br>IV.3.A.2, pg 17 (FD)<br>IV.3.A.2, pg 17 (FD) | DOE assessment of the compliance status | LSDS 2.7, PMW Table (Appendix C), and Chapter 3.0. |
| 17 | IV.3.A.2, pg 17 (FD) | Notification of which DOE organization is responsible for assessment within 60 days of final determination issuance | Timely notification was provided by letter ("Submittal of Sixty-Day Notifications Required by Final Determination" [French 2000]) and attachment. Item complete. |
| 18 | IV.3.A.2, pg 17 (FD) | Procedure used for storage method compliance assessments must meet minimum regulatory requirements (WAC 173-303 and 40 CFR 265) | Timely notification was provided by letter (French 2000) and attachment. Item complete. |
| 19 | IV.3.A.2, pg 17 (FD) | Opportunity for Ecology review and comment must be provided while developing storage method compliance assessment schedules and procedures | Timely notification was provided by letter (French 2000) and attachment. Item complete. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 20 | 1.e (1990)<br>IV.3.A.1.i, pg 17 (FD) | Identification of any releases of hazardous waste or hazardous constituents to the environment from these storage units | LSDS 2.9, as well as in Chapter 5.0. |
| 21 | 1.f (1990)<br>IV.3.A.1.j, pg 17 (FD) | Generation rates | TGDS 2.2, as well as LSDS 2.6, Table 2-1 and Table 2-2 contain estimates for the next 5 years. |
| 22 | 1.f (1990)<br>IV.3.A.1.j, pg 17 (FD) | Estimate of the storage capacity | LSDS 2.4 and Section 4.1. |
| 23 | 1.f (1990)<br>IV.3.A.1.j, pg 17 (FD) | When storage capacity will be reached | LSDS 2.4 and Section 4.1. |
| 24 | 1.f (1990)<br>IV.3.A.1.j, pg 17 (FD) | Identification of the bases and assumptions used in making the estimate | LSDS 2.4 2.12, and Chapter 4.0 text when applicable. |
| 25 | 1.g (1990)<br>IV.3.A.1.k, pg 17 (FD) | Plans to submit requests for variances, case-by-case extensions of the LDR requirements, or other exemptions | TGDS 4.8 and 5.0, and LSDS 2.10, and Section 4.3. |
| 26 | 2 (1990)<br>IV.3.A.1.k, pg 17 (FD) | Provide for the submittal of requests for case-by-case extensions, variances, and other exemptions of the LDR requirements in accordance with Section 3004 of RCRA | TGDS 4.8 and 5.0, and LSDS 2.10, and Section 4.3. |
| 27 | 3 (1990)<br>IV.3.A.3.a, pg 19 (FD)<br>IV.3.A.3.a, pg 19 (FD) | Plan and schedule to characterize all waste | LSDS 2.11, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 28 | IV.3.A.3, pg 19 (FD) | Reporting of waste characterization plan must delineate steps necessary to confirm which streams are subject to LDR | LSDS 2.11, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 29 | 3 (1990)<br>IV.3.A.3, pg 19 (FD) | Report characterization results to EPA and Ecology | Chapter 8.0. |
| 30 | 3 (1990) | Steps necessary to confirm which waste and which waste streams are subject to the LDR | TGDS 3.3.6. |

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Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 31 | 4.a (1990) | Treatment and disposal technologies | TGDS 3.3.2 and 5.0, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 32 | 4.a (1990) | Treatment capacity | TGDS 4.3, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 33 | 4.b (1990) | Commercial treatment technologies | Chapter 9.0. |
| 34 | 4.b (1990) | Capacity currently available | Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 35 | 4.c (1990) | DOE treatment technologies | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 36 | 4.c (1990) | Extent of capacity currently available | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 37 | 4.d (1990) | Whether any new commercial or DOE treatment capacity is scheduled to be available | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 38 | 4.d (1990) | When such new capacity will be available | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 39 | 4.e (1990) | Alternate technologies which are in development and which may be used to manage these LDR wastes | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 40 | 4.e (1990) | Assessment of when such alternate technologies may become available | Chapter 9.0, Chapter 10.0, and Chapter 11.0 |
| 41 | 4.f (1990) | Basis and assumptions used | TGDS 4.9 and Chapter 9.0, Chapter 10.0, and Chapter 11.0. |
| 42 | 4.f (1990) | Foreseeable contingencies | Chapter 9.0, Chapter 10.0, and Chapter 11.0. |
| 43 | 5 (1990)<br>IV.3.A.3, pg 18 (FD) | Milestones and schedules for the development and implementation of treatment technologies | TGDS 4.4, 4.5, and 4.6, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 44 | 5 (1990)<br>IV.3.A.3, pg 18 (FD)<br>IV.3.A.3.a, pg 18 (FD) | All applicable milestones and associated schedules for developing and implementing treatment or management technologies | TGDS 4.4, 4.5, and 4.6, Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 45 | IV.3.A.3.a, pg 18 (FD) | Schedules for submitting applicable permit applications, initiating construction, conducting systems testing, commencing operations, and processing backlogged and currently generated waste, for those waste types for which treatment technologies exist | TGDS 4.4, 4.5, and 4.6, Chapter 9.0, Chapter 10.0, Chapter 11.0, and Chapter 15.0. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 46 | IV.3.A.3.b, pg 18 (FD) | Schedules for identifying and developing treatment technologies for those waste types for which **no** treatment technologies currently exist, to include identification of funding requirements for the identification and development of such technologies, submitting treatability study exemptions, and submitting research and development permit applications | TGDS 4.4, 4.5, and 4.6, Chapter 9.0, Chapter 10.0, Chapter 11.0, and Chapter 15.0. |
| 47 | IV.3.A.3.c, pg 18 (FD) | Requirements for all cases where DOE proposes radionuclide separation of mixed waste or materials derived from mixed waste | Section 9.4, Section 10.5, and Section 11.3. |
| 48 | 6 (1990) | Provide that DOE may treat LDR waste in accordance with applicable law in advance of approved milestone dates | Activities always can be completed in advance of the milestone date, and are whenever possible. |
| 49 | IV.3.A.3, pg 18 (FD) | Propose milestones and associated schedules for known waste not covered by the report to be incorporated and established in accordance with the Tri-Party Agreement Action Plan (Section 12) | TGDS 4.6, Section 1.3, Chapter 9.0, Chapter 10.0, Chapter 11.0, and Chapter 15.0. |
| 50 | 7 (1990) | Identified methods for minimizing the generation of LDR waste | LSDS 3.2 and Chapter 6. |
| 51 | 7 (1990) | Process changes that can be made to reduce or eliminate LDR waste | LSDS 3.2 and Chapter 6. |
| 52 | 7 (1990) | Methods to minimize the volume of regulated and restricted waste through segregation and avoidance of commingling | LSDS 3.2, 3.3.3, and Chapter 6. |
| 53 | 7 (1990) | Substitution of less toxic materials for materials currently used at the Hanford Site | LSDS 3.2, 3.3.3, and Chapter 6. |
| 54 | 7 (1990) | Schedule for implementing waste minimization procedures | LSDS 3.3.2 and 3.3.3. |
| 55 | 7 (1990) | Projections for reducing newly generated waste | LSDS 3.3.2. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 56 | 7 (1990) | Basis for developing projections | LSDS 3.3.3. |
| 57 | 7 (1990) | Assumptions used in developing the projections | LSDS 3.3.3 (LSDS) and Chapter 6.0. |
| 58 | 7 (1990) | Annually revise and submit as part of the annual report that portion of the storage report associated with Item 1 of this table, to conform with the generation projections contained in the Waste Minimization Plan | The LDR report is revised annually, including the waste minimization content. |
| 59 | 7 (1990) | As part of the annual report, DOE shall submit an amendment to the Waste Minimization Plan | Chapter 6.0. |
| 60 | 7 (1990) | Annually, DOE shall revise and submit that portion of the Storage Report associated with Item 1 (and the "1990" reference) of this table, to conform with generation projections contained in the update to the Waste Minimization Plan | LSDS 3.1, 3.2, 3.3, and Chapter 6. |
| 61 | IV.3.A.3, pg 18 (FD)<br>IV.3.A.3, pg 18-19 (FD) | The Annual LDR Report must include a waste characterization plan and associated schedules based on the waste identified in accordance with the final determination. | Chapter 9.0, Chapter 10.0, Chapter 11.0, Chapter 13.0, and Chapter 14.0. |
| 62 | 8 (1990) | Describe how information, plans, and schedules contained in the LDR Plan will be updated as part of the annual report | Section 1.3 |
| 63 | 8 (1990) | Describe how and when the LDR Plan will be revised and reissued | Section 1.3. |
| 64 | IV.3.B.c, pg 19 (FD) | Each waste stream has an associated statement by DOE documenting whether sufficient work has been performed for continued compliance | Not applicable, based on Pollution Control Hearings Board stipulations. |
| 65 | IV.3.B.d, pg 19 (FD) | The Annual LDR Report will serve as a vehicle to propose schedules for newly discovered or to be generated mixed waste not yet covered by the report or the Tri-Party Agreement | Newly identified waste has been and continues to be added to the report each year, subject to scope of the report and waste stream definition. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 66 | IV.3.B.e, pg 19 (FD) | Annual LDR report will serve as vehicle to propose modified TPA schedules as necessary to achieve compliance with LDR treatment requirements in a manner equivalent to STPs as required by FFCA | Section 1.3. |
| 67 | IV.3.A.3.a, pg 19 (FD) | Proposed plans and schedules to sufficiently characterize mixed waste, including an inventory of mixed waste not sufficiently characterized by sampling and analysis | LSDS 2.11, Chapter 9.0, Chapter 10.0, and Chapter 11.0. |
| 68 | IV.3.B.b, pg 19 (FD)<br>IV.3.B.f, pg 20 (FD) | LDR report will be published as a primary document and will propose new waste streams as necessary | Signature page states that this report is a primary document, Section 1.1, and Section 1.3. |
| 69 | IV.3.B.b, pg 19 (FD) | LDR report will support equivalency to FFCA STPs | M-026-01 Milestone description. While not identical to an STP, the LDR report is equivalent to an STP. |
| 70 | IV.3.B.c, pg 19 (FD) | LDR report will serve as unified site-wide document detailing requirements of LDR Requirements Document[2] | This table delineates how the LDR report meets these requirements; refer to all items in second column of this table marked with "(1990)." |
| 71 | IV.3.B.c, pg 19 (FD) | LDR report will report DOE actions planned and taken to achieve and maintain full compliance with LDR and associated Tri-Party Agreement requirements in effect as of LDR report submittal date | This table delineates how the LDR report meets these requirements, refers to all items in second column of this table. |
| 72 | IV.3.B.f, pg 20 (FD) | Inclusion of specific statement regarding the LDR report being a primary document, and regarding binding and enforceable nature of contents: "This document has been prepared, submitted, revised and approved as a primary document in response to the requirements of Tri-Party Agreement Milestone Series M-026-01 and related RCRA LDR and Tri-Party Agreement requirements. As such, this document serves as a binding and enforceable document under the Tri-Party Agreement." | The signature page states that this report is a primary document and includes the required language. |

Table A-1. Land Disposal Restrictions Requirements. (8 sheets)

| Item[1] | Section ID[2] | Requirement[3] | Location of Information[4] |
|---|---|---|---|
| 73 | IV.3.B.f, pg 20 (FD) | Inclusion of specific statement regarding approval by DOE and Ecology: "Approval of DOE's annual LDR Report as a Tri-Party Agreement primary document shall be by written approval of DOE and Ecology IAMIT representatives." Signature blocks are to follow the above statement. | The signature page states that this report is a primary document, and includes signature blocks. |
| 74 | IV.3.C, pg 20 (FD) | The LDR report submitted in 2000 is an interim report documenting known information, and detailing actions planned to fully comply with the final determination. | Completed by issuing DOE/RL-2000-39, *Interim Report on Hanford Site Land Disposal Restrictions for Mixed Waste*, Volumes 1 through 3. |

FD = Final determination.

[1]Item number supplied for the convenience of the reader.
[2]The notation "(1990)" refers to the four-page "Requirements for the Hanford LDR Plan" (LDR Requirements Document) signed by EPA and Ecology in 1990. The notation "(FD)" refers to the "Director's Final Determination" issued by Ecology on March 29, 2000. The notation "(Ltr)" refers to the January 25, 2000 clarification letter from Ecology delineating the wastes required to be reported. Additional modifications to requirements have been made in the Resolution of Dispute dated March 14th, 2002 and during the monthly Tri-Party Agreement Project Managers Meeting for M-026-01.
[3]The text in this column is a brief summary of the requirement(s).
[4]The information in this column refers to the location of the information within this annual LDR report; for information presented on the data sheets of Appendix B, "(TGDS)" refers to the treatability group data sheet, and "(LSDS)" refers to the location –specific data sheet. A brief description of how the two types of data sheets are related can be found in Section 1.2 (see also Figure B-1 of Appendix B).

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# APPENDIX B

# WASTE STORAGE REPORT DATA SHEETS

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# APPENDIX B

# WASTE STORAGE REPORT DATA SHEETS

Figure B-1. Example Relationship Between Location-Specific and Treatability Group Data Sheets.

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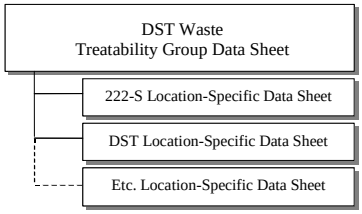
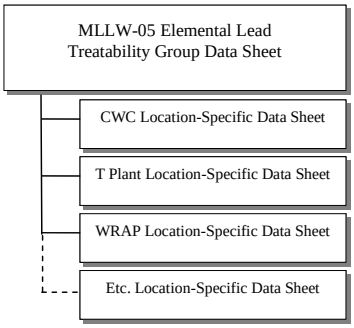
Figure B-1 markup

Relationship Between LDR Treatability Group and Location-Specific Data Sheets



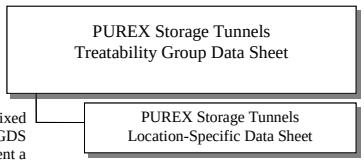

Treatability group data sheets (TGDSs) describe the common physical and chemical characteristics of the waste streams. They also provide a quantitative summary of some data in the associated location-specific data sheets (LSDSs).

Each TGDS has one or more LSDS associated with it. The LSDS describe on a plant/unit/project basis how, where, and how much of the waste is stored, and give a glimpse of the waste's past and future. Unique information is included on LSDSs that is not reflected on TGDS. The LDR report requires both to provide a clear picture of each waste stream.




In this example, the CWC LSDS would contain the CWC inventory and projected generation for any waste generated at CWC and coming from offsite directly to CWC.

LSDSs for generating locations contain the current facility inventory of this waste (if any, because SAA/90-day waste is not part of stored inventory), plus 5-year generation projections (including SAA/90-day waste).




This is an example of data sheets for mixed waste stored "long-term". Both a TGDS and a LSDS are required to present a complete picture of the waste.

Each treatability group data sheet is followed by one or more LSDSs that fall within that treatability group. Refer to Figure B-1 of this document for details of how the two types of sheets relate to each other. Refer to Table B-1 of this document for the index of data sheets.

**GENERAL INSTRUCTIONS FOR ALL DATA SHEETS:**

The basis for LDR reporting in this document is CY 2014, unless stated otherwise.

## B1.0 TREATABILITY GROUP DATA SHEET DATA FIELD DESCRIPTIONS

The following items are numbered to correspond to the numbers on the treatability group data sheets (i.e., the numbers refer to the data field locations in the data sheets).

**1.0 Waste Stream Identification**

**1.1 Treatability group name:** Supplies a short, descriptive name for the waste within the treatability group.

**1.2 Description of waste (list WSRd [waste specification record] numbers for this waste stream, as applicable):** Provides an overall description of the waste streams reported under the treatability group. WSRd numbers indicate a waste treatment and/or disposal pathway, and are used principally for waste stored at the CWC or received from off-site. Note that the grouping of waste into a treatability group can be based on any of the following: proposed treatment technology, storage location, or waste source. If there is no WSRd applicable to the treatability group, a description must still be provided.

**2.0 Waste Stream Inventory and Generation**

**2.1 Current total inventory for this waste stream (stored waste only, not accumulation areas). Total volume (cubic meters):** Automatically summed from stored inventory reported in individual LSDSs contributing to the treatability group data sheet.

**2.2 Estimated generation projection by calendar year:** Listed by year, and $m^3$ and/or kg: Also automatically summed from individual LSDSs contributing to the treatability group data sheet.

**3.0 Waste Stream Characterization**

**3.1 Radiological characteristics**

**3.1.1 Mixed waste type**. Lists three options, one of which must be selected. The choice indicates radiological classification (either high-level, transuranic, or low-level). If more than one selection applies to the treatability group data sheet, select the most appropriate one and enter explanatory comments in Section 3.1.3.

**3.1.2 Handling (as package contents would need to be handled during treatment)**. Lists two options, one of which must be selected. The choice differentiates between contact-

and remote-handled waste types. The choice made reflects the waste as if no longer packaged for storage, but instead as if it were unpackaged and handled for treatment. If more than one selection applies to the treatability group data sheet, select the most appropriate one and enter explanatory comments in Section 3.1.3.

**3.1.3 Comments on radiological characteristics (e.g., more specific information on content, treatment concerns caused by radiation, confidence level):** Provides space for explanatory information on radiological characteristics of the waste that cannot be supplied in the multiple-choice format used in previous sections of this data sheet. (Refer to explanations above for previous sections of the treatability group data sheet.)

**3.2 Physical form**

**3.2.1 Physical form of the waste.** Lists five options, one or more of which must be selected. The choice indicates the physical form (either solid, liquid, semi-solid, debris, or other). If the "Other" choice is selected or if there are any comments on the physical form, enter explanatory comments in Section 3.2.2.

**3.2.2 Comments on physical form:** Indicate any comments on the physical form of the waste within the treatability group data sheet. If there are no comments, enter "None."

**3.3 Regulated constituents and wastewater/non-wastewater category**

**3.3.1 Wastewater/non-wastewater under RCRA**. Lists three options, one of which must be selected. The choice indicates whether, under federal LDR requirements defined in 40 CFR 268.2, the waste stream is considered wastewater, non-wastewater, or is of an unknown type. If the unknown type is selected include a plan and schedule for refining the waste's characterization to specify the LDR treatability group. For state-only dangerous waste select unknown.

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**3.3.2 Regulated constituent table including treatment requirements and UHCs, if applicable**. Provides the following information in a table. Note that underlying hazardous constituent (UHC) information is included in this table. Footnotes provide further explanation for the table, as applicable:

- The EPA or state-only "EPA/State numbers" indicate the listed or characteristic waste numbers such as D001, F005, etc. Note that not all waste numbers listed in the table for waste reported on any particular treatability group data sheet will be applicable to all subcategories of waste in the treatability group (nor, therefore, will all waste numbers apply to each LSDS contributing to a particular treatability group). Note also that for waste for which more than one subcategory applies, the waste number appears in this table once for each of the applicable LDR subcategories.

- The "Waste description" indicates the characteristics of the waste or constituents of concern (e.g., "ignitable" or "methyl ethyl ketone").

- The "LDR subcategory" indicates any applicable subcategory of the assigned waste number (e.g., "corrosive characteristic waste" or "radioactive high level waste" for D002). The LDR subcategory applies only to D001 through D011. Some data sheets could show the constituent of concern in this field for F-coded waste. Note that if more than one subcategory applies, the waste number appears in this table once for each of the applicable LDR subcategories.

- "Concentration (typical or range)" of the constituent, if known, is included in the table as a range or a single value. In some cases, the concentration might not be known; in that case, this field is labeled "TBD" or explained with a footnote to the table or elsewhere in the data sheet.

- "Basis" explains how the concentration information was determined (i.e., "process knowledge" and/or "analytical data").

- The final column, "LDR Treatment Concentration Standard or Technology Code," lists either the regulatory-required method for treating the waste, or the required final concentration, as obtained from the applicable regulations. Note that TRUM waste is a special case.

**3.3.3** **List any waste numbers from Section 3.3.2 for which the waste stream already meets established LDR treatment standards**. Lists three options, one of which must be selected, that indicates the treatment status of the waste in the treatability group. When the "list" option is selected, the waste numbers from the Section 3.3.2 table must be entered meeting treatment standards.

**3.3.4** **Does this waste stream contain PCBs?** Lists three options, one of which must be selected regarding PCB content. The basis for the choice made can be process knowledge or laboratory analysis.

**3.3.4.1** **Is waste stream subject to TSCA regulations for PCBs?** Implies applicability as determined by TSCA regulations. Only answer this question when Section 3.3.4 is answered as "yes."

**3.3.4.2** **Indicate the PCB concentration range (ppm)**. Lists three options in a multiple choice format for reporting the appropriate PCB concentration range. Only answer this question when Section 3.3.4 is answered as "yes."

**3.3.5** **What is the confidence level for the regulated constituents?** Lists three options, one of which must be selected. This assigns a subjective rating to the accuracy of the information presented on regulated constituents.

**3.3.6** **Comments on regulated constituents and wastewater/non-wastewater category:** Provides space for explanatory information on regulated constituents and wastewater/non-wastewater category of the waste and confidence in the accuracy of the information that cannot otherwise be supplied in the format provided for the other sections of the treatability group data sheet.

**4.0 Waste Stream Treatment**

**4.1** **Is this waste stream currently being treated?** Lists two options, one of which must be selected. Details are provided only if treatment currently is under way. When no is selected, "N/A" will be entered.

**4.2** **Planned treatment**. Lists four options in a multiple-choice format. The appropriate box(es) is/are checked to indicate the status of existing plans for treating the waste to meet applicable regulations. When no treatment is required, skip to Section 5.0.

**4.3** **Planned treatment method, facility, and extent of treatment capacity available:** Describes details of planned treatment for on-site TSD units and off-site facilities, as well as details of how much of the required treatment capacity is available.

**4.4** **Treatment schedule information:** Provides space to include such information as start date of treatment, end date of treatment, and how much waste will be treated each year. Either treatment schedule information or other schedule-related information is provided, or if none exists as of the status reporting date for the treatability group, the current status of any active negotiations or applicable actions are described instead.

**4.5** **Applicable Tri-Party Agreement treatment milestone numbers (including permitting):** Provides table with Tri-Party Agreement milestone drop down menu to list appropriate existing milestone numbers related to treatment. "N/A" will be indicated when the table is empty. Milestones cited as commitments for treatment must be the specific milestone(s) that on completion will satisfy the LDR requirements for treatment.

**4.6** **Proposed new Tri-Party Agreement treatment milestones:** Provides space to list appropriate proposed new treatment milestones. If applicable, make reference to any active Tri-Party Agreement negotiations.

**4.7** **If treating or planning to treat on-site, was or will waste minimization be addressed in developing and/or selecting the treatment method?** If the corresponding box is selected in Section 4.2, three options for a multiple choice answer are provided to describe any waste minimization plans for the waste during treatment. **If yes, describe:** Self-explanatory. If the corresponding box in Section 4.2 is not checked, insert "N/A based on Section 4.2" in the comment field.

**4.8** **List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment already in place:** Space provided for supplying details of any existing or future treatability variances (40 CFR 268.44), equivalency petitions (40 CFR 268.42(b)), rulemaking petitions (WAC 173-303-910, 40 CFR 260.20), and case-by-case exemptions [WAC 173-303-140(6)]. If there are none, insert "None."

**4.9** **Key assumptions:** Provides space to list assumptions concerning treatment that cannot otherwise be supplied in the format provided. If there are no key assumptions, insert "None."

## 5.0 Waste Stream Disposal

**After treatment, how will the waste stream be disposed of (include locations, milestone numbers, variances required, etc., as applicable)?** Provides space to describe disposal methods, locations, variances required, technology, etc., as applicable.

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## B2.0 LOCATION-SPECIFIC DATA SHEET DATA FIELD DESCRIPTIONS

The following items are numbered to correspond to their numbers on the LSDSs (i.e., the numbers refer to the data field locations in the data sheets). The numbers have no relation to their position in this document appendix. Note that the term "storage" is used throughout the LSDSs based upon the definition of WAC 173-303-040. "Accumulation" or management in a CERCLA area of contamination is not considered "storage."

**1.0 Waste Stream Identification and Source**

**1.1 Unit/Plant Name:** Uniquely identifies the generating location of the waste.
**Waste Stream**: Supplies a short, descriptive name for the waste.
**Treatability group name**: Supplies the short, descriptive name for the waste treatability group to which the waste described in the particular LSDS is assigned.

**1.2 Applicable profile number(s) for this waste stream:** Lists waste profile numbers applicable to the waste if any. Waste profile numbers are used principally for waste that is transferred to the CWC or that is received from off-site generators. If there are no waste profiles, indicate "None."

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill cleanup waste, discarded lab materials, maintenance waste):** Describes where the waste came from, the general matrix, and constituents.

**1.3.2 History of how and where the waste was/is generated:** Describes how and where the waste was generated.

**1.3.3 Source of the regulated constituents**. Describes where the regulated constituents came from.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**. Information sources include analytical data, process knowledge, document number, etc.

**1.3.5 Additional notes:** Includes any information that would be helpful in identifying the waste and its generation. If no additional notes apply, indicate "None."

**2.0 Waste Stream Storage, Inventory, and Generation Information**
If the waste stream reported is managed in satellite accumulation areas, 90-day accumulation areas, or CERCLA area of contamination, skip to Section 2.6. The comment field in Section 2.3 can be used if necessary.

**2.1 Current storage method**. Lists seven options in multiple choice format to describe the type of storage used. No box is chosen if the waste reported on the data sheet is only managed in accumulation areas or a CERCLA area of contamination. Storage pursuant

to the Tri-Party Agreement must be addressed by checking the appropriate boxes. Note that as used here, "container (pad)" indicates drums or other containers such as boxes that are sitting on a concrete or other pad or area; "container (covered)" indicates drums or other containers such as boxes sitting under a roof or inside a building. Provide additional information about the storage location if other is checked (e.g., containment building).

**2.1.1 How was the waste managed prior to storage?** Describes routine and special management of the waste. Note: For waste in accumulation areas or CERCLA areas of contamination, the answer provided is "N/A."

**2.1.2 Timeframe when waste was placed into storage:** Supplies the date or dates the waste was placed in storage (waste storage history). Examples might be, "This waste has been generated and stored at this location from 1987 to the present" for waste continuously generated and stored, or "The waste currently in storage was generated in 1999" for waste no longer generated and stored. Note: For reporting of waste in accumulation areas or CERCLA areas of contamination, the answer provided is "N/A."

**2.2 Storage Inventory locations:** Lists the building and/or room number, as appropriate, with the number of storage containers/tanks for each storage location in a table format. Note: This section of this data sheet does not include satellite or 90-day accumulation areas. For reporting of waste in accumulation areas or CERCLA areas of contamination, the answer provided is "N/A" in both table cells.

**2.3 Current stored inventory for this stream**. Volume of waste (cubic meters) and reporting date in mm/dd/yyyy format of the volume is supplied. The default reporting date is December 31, 2014. In some cases, the date shown will be different if the volume is known only for another date. The volume information for each LSDS is summed to the reported volume for its associated treatability group data sheet. Note that for reporting of waste in accumulation areas or CERCLA areas of contamination, the answer provided here is "N/A" or zero. Accumulated waste or CERCLA areas of contamination volume is reported only in Section 2.6 of the LSDS as an estimated generation projection, as applicable. Note also that the volume will display three decimal points in the database. If necessary, comments on waste inventory can be entered in this section even if the waste is managed in a satellite accumulation area, 90-day accumulation area, or a CERCLA area of contamination. If there are no comments, enter "None."

**2.4 Is storage capacity at this location potentially an issue for this waste stream?** The two multiple choice options are "yes" and "no." **If "yes," what is the total estimated storage capacity?** Self-explanatory. Do not answer this question when no is selected, "N/A" will be displayed. **When is this capacity expected to be reached?** Self-explanatory. Do not answer this question when no is selected, "N/A" will be displayed. **Bases and assumptions used:** Lists any bases and assumptions used in estimating storage capacity limitations. Note: For waste reported in accumulation areas or CERCLA areas of contamination, the answer provided here is "N/A."

**2.5 Planned storage areas for this waste:** Five types of storage areas are provided in a multiple-choice format. More than one choice could apply. If the waste was in its

current location as of 12/31/04, or will remain in its current location for a finite period of time, the "current location" box in addition to any other known planned storage location indicates where the waste is intended to be stored. Note: For waste reported in accumulation areas or CERCLA areas of contamination, an answer can be provided here but is not required.

**2.6 Estimated generation projection by calendar year (includes waste in satellite accumulation areas, 90-day accumulation areas, or CERCLA areas of contamination):** Lists the estimated volume ($m^3$) or mass (kg) of the mixed waste or matrices projected to be generated as mixed waste in the next 5 years. When a volume is entered, the mass can be left blank. Waste volumes in satellite accumulation areas, 90-day accumulation area, or CERCLA areas of contamination at the end of the calendar year are reported in a LSDS for the first year's forecast. Note that the volume will display three decimal points.

**2.7 DOE Storage Method Compliance Assessment information:** Three options are provided in a multiple choice format. In some cases, more than one option is appropriate. The chosen option shows whether the assessment either has been or will be completed, and references the appropriate assessment end date or planned assessment date; or, it explains why neither of the other two options is an appropriate answer. For accumulation areas, CERCLA areas of contamination, or waste that has not been generated, check the "other" box and insert "N/A" for the explanation. When selecting "assessment has been completed," the assessment document number and the assessment date (e.g., transmittal letter date) must be entered into the table. The assessment schedule can be found in Section 3.2 of the report.

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:** Provides table with Tri-Party Agreement milestone drop down menu with associated due dates. Lists any applicable Tri-Party Agreement milestone(s) for storage. "N/A" indicates that this question is not applicable (i.e., waste is only in accumulation areas or there are no milestones). For TSD units, identifying the M-020 milestone or other permitting related milestone is appropriate. Milestones cited as commitments must be the specific milestone(s) that on completion will satisfy the LDR requirements.

**2.9 Has there ever been any non-permitted, unauthorized release of this waste stream from this storage unit to the environment?** Lists two options, one of which must be selected – "yes" and "no" – to report known spills, such as those reported in accordance with WAC 173-303-145, and -360 and the tank waste release status reports. Note: For waste reported in accumulation areas, select "No." **If yes, summarize releases and quantities and provide date:** Provide information or reference the Section of the LDR report that discusses the releases.

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?** Lists two options, one of which must be selected, "yes" and "no." **If yes, explain:** If "yes" is chosen, an explanation is provided. (Variances and/or exemptions associated with waste treatment are addressed in treatability group data sheets, Section 4.8.)

**2.11 Characterization:**

**2.11.1 Is further characterization needed about the waste prior to acceptance for storage?** Three options, one of which must be selected: "yes," "no," and "unknown at this time." Answer the question as whether further information is needed about the waste before acceptance for storage. Use the explanation area of question 2.12 if additional space is necessary.

Answer yes if characterization is required for any parameter or aspect (e.g., LDR information, waste designation information, packaging information, radionuclide information). If the answer is "yes," an explanation is required. The explanation either will reference to the milestone table or make reference to an agreement to obtain the information, reference active negotiations addressing the commitment, include a commitment to obtain the information, or the text will describe why a commitment is not necessary. The following are examples of characterization information needs that do not require a commitment:

- Radioactive characterization issues
- Characterization required as normal process when a cradle to grave process is being implemented (e.g., waste being sent to 200 Area Liquids)
- Unit-specific waste acceptance data not required for LDR waste characterization (e.g., total suspended solids for sending waste to the 200 Area Liquids, or Real-Time radiography).

Answer the question "no," if the mixed waste is in a satellite accumulation area or 90-day accumulation area and is ready to be placed into storage, or if the waste is already is storage.

Answer the question "unknown at this time," if characterization requirements for storage cannot be determined at this time. An explanation in the comment field is necessary. The explanation needs to identify what step(s) needs to be completed before the question can be answered.

If the answer is yes and Tri-Party Agreement milestones exist that address characterization, provide Tri-Party Agreement milestone number(s) in the table provided. If no milestones are selected from the drop down menu provided in the database, "N/A" will be automatically inserted. Milestones cited as commitments for characterization must be the specific milestone(s) that on completion will satisfy the LDR requirements for characterization.

**2.11.2 Is further characterization needed about the waste prior to acceptance for treatment?** Three options, one of which must be selected, are provided: "yes," "no," and "unknown at this time." Answer the question as whether further information is needed about the waste before acceptance for treatment. Use the explanation area of question 2.12 if additional space is necessary. Treatment is defined as any activity

meeting the definition of treatment in WAC 173-303-040 (broader than LDR treatment) which states:

> *"Treatment" means the physical, chemical, or biological processing of dangerous waste to make such wastes nondangerous or less dangerous, safer for transport, amenable for energy or material resource recovery, amenable for storage, or reduced in volume, with the exception of compacting, repackaging, and sorting as allowed under WAC 173-303-400(2) and 173-303-600(3).*

Answer the question "yes" if any information is needed for any parameter or aspect to allow treatment of the mixed waste. If the answer is yes, an explanation is required in the comment field. The explanation will reference to the milestone table, make reference to an agreement to obtain the information, reference active negotiations addressing the commitment, include a commitment to obtain the information, or the text will describe why a commitment is not necessary. Refer to the example circumstances in Section 2.11.1 for situations where a commitment is not required.

Answer the question "no" if the mixed waste is ready for treatment or if no treatment is required.

Answer the question "unknown at this time" if uncertainty exists about whether treatment is required for the mixed waste. An explanation in the comment field is necessary. The explanation needs to identify what step(s) needs to be completed before the question can be answered

If the answer is yes and Tri-Party Agreement milestones exist that address characterization, provide the Tri-Party Agreement milestone number(s) in the table provided. If no milestones are selected from the drop down menu provided in the database, "N/A" will be automatically inserted. Milestones cited as commitments for characterization must be the specific milestone(s) that on completion will satisfy the LDR requirements for characterization.

**2.11.3 Is further characterization needed about the waste prior to acceptance for disposal?** Three options, one of which must be selected, are provided: "yes," "no," and "unknown at this time." Answer the question as whether further information is needed about the waste before acceptance for disposal. Use the explanation area of question 2.12 if additional space is necessary.

Answer the question "yes" if any LDR treatment standard for the mixed waste is a concentration based standard that requires sampling and analysis to confirm that the treatment standard has been met after treatment. In addition, answer "yes" if information about other parameters (e.g., voids) needs to be obtained. If the answer is yes, an explanation is required in the comment field. The explanation will reference to the milestone table, make reference to an agreement to obtain the information, reference active negotiations addressing the commitment, include a commitment to obtain the information, or the text will describe why a commitment is not necessary. Refer to the

example circumstances in Section 2.11.1 for situations where a commitment is not required.

Answer the question "no" if all the LDR treatment standards for the mixed waste are a performance based treatment standard (e.g., a specified technology, debris rule macroencapsulation) or if the waste is TRUM destined for WIPP.

Answer the question "unknown at this time" if uncertainty exists about disposal location waste acceptance requirements. An explanation in the comment field is necessary. The explanation needs to identify what step(s) needs to be completed before the question can be answered

If the answer is yes and Tri-Party Agreement milestones exist that address characterization, provide the Tri-Party Agreement milestone number(s) in the table provided. If no milestones are selected from the drop down menu provided in the database, "N/A" will be automatically inserted. Milestones cited as commitments for characterization must be the specific milestone(s) that on completion will satisfy the LDR requirements for characterization.

**2.12 Other key assumptions related to storage, inventory, and generation information:** Explains anything about this waste that will provide greater understanding and clarification, or that cannot otherwise be supplied in the format provided. Also identifies assumptions that, if incorrect, would affect information in the data sheet or elsewhere in the report.

**3.0 Waste Minimization**

**3.1 Has a waste minimization assessment been completed for this stream?** Lists two options, one of which must be selected, "yes" and "no." **If yes, provide date assessment conducted:** If "yes" is chosen, provide date the assessment was conducted. **If yes, provide document number or other identification:** Provides the document number or other identification of the assessment and/or results. The information provided is sufficient for a reader to find the document. **If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate N/A:** If "no" is chosen, provide a future date assessment is planned to be completed. "N/A" is used only if the waste is no longer generated or if yes was selected. Note that if the waste is not generated at this location (i.e., if the location is for storage only), then this space can be used to explain that fact.

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials):** Space is provided for the explanation.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** How much waste has the facility avoided generating this past year as part of the waste minimization program?

**3.3.2 Projected future waste volume reductions:** Lists the next 5 years in volume ($m^3$) or mass (kg). The database will automatically add the individual years' entries to supply the LSDS total.

**3.3.3 Bases and assumptions used in above estimates:** Provide the bases and assumptions used to answer Sections 3.3.1 and 3.3.2 of the LSDS, if any estimates or schedules were provided. Note that any other explanation that will provide greater understanding and clarification about waste minimization activities for this waste can also be provided, in addition to the bases and assumptions required to support Sections 3.3.1 and 3.3.2 of the LSDS.

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Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **~~Unit/Plant~~Physical Location** | **Waste Stream** | **Contractor** |
| 221-T Containment Building | | | CHPRC |
| | T Plant Complex | 221-T Containment Building | CHPRC |
| 221-T Tank System | | | CHPRC |
| | T Plant Complex | RCRA Tank System | CHPRC |
| 222-S Laboratory Complex | | | WRPS |
| | 222-S | Containerized mixed waste | WRPS |
| | Tank Farm Facilities | Mixed waste from 616 | WRPS |
| 222-S T8 Tunnel | | | WRPS |
| | 222-S Laboratory Complex | T8 Tunnel RH-MLLW | WRPS |
| 241-CX Tank System | | | CHPRC |
| | 241-CX Tank System | CX Tank System | CHPRC |
| 324 Building REC Waste | | | WCH |
| | 324 Building | Radiochemical Engineering Cells | WCH |
| 325 HWTU | | | PNNL |
| | 325 HWTU | 325 HWTU | PNNL |
| 400 Area WMU | | | CHPRC |
| | 400 Area WMU | Mixed Waste | CHPRC |
| B Plant Cell 4 | | | CHPRC |
| | B Plant Complex | Cell 4 | CHPRC |
| B Plant Containment Building | | | CHPRC |
| | B Plant Complex | Containment Building Storage | CHPRC |
| Cesium and Strontium Capsules | | | CHPRC |
| | WESF | Cs and Sr Capsules | CHPRC |
| DST Waste | | | WRPS |
| | 222-S Laboratory Complex/219-S Waste Handling Facility | Bulk Aqueous Liquids | WRPS |
| | DST System | DST System | WRPS |
| | 204-AR Catch Tank | Aqueous Mixed Waste | WRPS |

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Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **~~Unit/Plant~~Physical Location** | **Waste Stream** | **Contractor** |
| ERDF—Treatment | | | WCH |
| | CERCLA Waste | CERCLA Waste | WCH |
| | CS&I | Hazardous Debris to ERDF | MSA |
| | PFP | D&D Hazardous Debris to ERDF | CHPRC |
| | Tank Farms | Hazardous Debris to ERDF | WRPS |
| | Waste Sampling and Characterization Facility (WSCF) | Laboratory Hazardous Waste | MSA |
| HSTF | | | CHPRC |
| | HSTF | HSTF 276-S-141/142 | CHPRC |
| LERF/ETF Liquid Waste | | | CHPRC |
| | 242-A Evaporator | Evaporator Process Condensate | WRPS |
| | LERF | Wastewater | CHPRC |
| | LLBG/Mixed Waste Trench | TR34 and TR31 Leachate | CHPRC |
| | PFP | Aqueous Waste | CHPRC |
| | T Plant Complex/2706-T Tank System | 2706-T Tank System | CHPRC |
| LERF/ETF Solid Waste | | | CHPRC |
| | ETF | Powder Drums | CHPRC |
| | LERF/ETF | Operations and Maintenance Waste | CHPRC |
| MLLW-01 – LDR Compliant Waste | | | CHPRC |
| | CS&I | Miscellaneous Non-Routine Streams | MSA |
| | CWC | LDR Compliant | CHPRC |
| | T Plant Complex | LDR Compliant | CHPRC |
| | WRAP | LDR Compliant | CHPRC |

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Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **~~Unit/Plant~~Physical Location** | **Waste Stream** | **Contractor** |
| MLLW-02 - Inorganic Non-Debris | | | CHPRC |
| | CWC | Inorganic Non-Debris Solids And Labpacks | CHPRC |
| | T Plant Complex | Inorganic Non-Debris | CHPRC |
| | WRAP | Inorganic Non-Debris Solids and Labpacks | CHPRC |
| | LLBG | Inorganic Non-Debris | CHPRC |
| MLLW-03 - Organic Non-Debris | | | CHPRC |
| | LLBG | MLLW Retrieval Organic Non-Debris | CHPRC |
| | T Plant Complex | Organic Non-Debris | CHPRC |
| | WRAP | Organic Non-Debris | CHPRC |
| | CWC | Organic Non-Debris | CHPRC |
| MLLW-04 - Hazardous Debris | | | CHPRC |
| | CWC | Hazardous Debris | CHPRC |
| | LLBG | MLLW Retrieval Debris | CHPRC |
| | T Plant Complex | Hazardous Debris | CHPRC |
| | WRAP | Hazardous Debris | CHPRC |
| | FFTF-440 Pad | Hazardous Debris | CHPRC |
| MLLW-05 – Radioactive Lead Solids | | | CHPRC |
| | CWC | Elemental Lead | CHPRC |
| | T Plant Complex | Elemental Lead | CHPRC |
| | WRAP | Radioactive Lead Solids | CHPRC |
| MLLW-06 – Mercury Wastes | | | CHPRC |
| | CWC | Elemental Mercury | CHPRC |
| | WRAP | Elemental Mercury | CHPRC |

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Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **~~Unit/Plant~~Physical Location** | **Waste Stream** | **Contractor** |
| MLLW-07 - RH and Large Container | | | CHPRC |
| | 325 HWTU | MLLW-07 RH | PNNL |
| | CWC | MLLW-07 | CHPRC |
| | LLBG | MLLW-07 | CHPRC |
| | T Plant Complex | RH and Large Container | CHPRC |
| | WRPS Tank Closure | RH and Large Container | WRPS |
| | WRAP | MLLW-07 | CHPRC |
| MLLW-08 - Unique Waste | | | CHPRC |
| | CWC | Unique Waste | CHPRC |
| | T Plant Complex | Mixed Waste Requiring Special Processing | CHPRC |
| | WRAP | Unique Waste | CHPRC |
| MLLW-09 – Radioactive Batteries | | | CHPRC |
| | CWC | Pb & Cd Batteries | CHPRC |
| | T Plant Complex | Radioactive Batteries | CHPRC |
| | WRAP | Misc. Heavy Metal Batteries | CHPRC |
| MLLW-10 - Reactive Metals | | | CHPRC |
| | CWC | Alkali Metals | CHPRC |
| | T Plant | Reactive Metals | CHPRC |
| PUREX Plant | | | CHPRC |
| | PUREX Plant | PUREX Containment Building | CHPRC |
| PUREX Storage Tunnels | | | CHPRC |
| | PUREX Storage Tunnels | Tunnels 1 and 2 | CHPRC |
| SST Waste | | | WRPS |
| | SST System | SST System | WRPS |

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Table B-1. Data Sheet Index. (5 sheets)

| Treatability Group Data Sheets | Location Specific Data Sheets | | |
|---|---|---|---|
| **Treatability Group Name** | **~~Unit/Plant~~Physical Location** | **Waste Stream** | **Contractor** |
| TRUM – CH Large Container | | | CHPRC |
| | CWC | TRUM Boxes | CHPRC |
| | LLBG | TRUM Retrieval Boxes | CHPRC |
| | T Plant Complex | TRUM Box | CHPRC |
| | WRAP | TRUM Large Container | CHPRC |
| TRUM – CH Small Container | | | CHPRC |
| | 325 HWTU | TRUM-CH | PNNL |
| | CWC | CH TRUM | CHPRC |
| | LLBG | TRUM-CH Retrieval | CHPRC |
| | PFP | TRUM Debris[1] | CHPRC |
| | T Plant Complex | TRUM-CH | CHPRC |
| | WRAP | TRUM-CH | CHPRC |
| TRUM - RH | | | CHPRC |
| | 325 HWTU | TRUM-RH | PNNL |
| | CWC | RH TRUM | CHPRC |
| | LLBG | RH TRUM | CHPRC |
| | T Plant Complex | TRUM-RH | CHPRC |
| | WRAP | TRUM-RH | CHPRC |
| WTP Lab Complex | | | BNI |
| | WTP Lab | WTP Lab Spent Ion Exchange Resin | BNI |
| | WTP Lab | WTP Lab Spent Chemicals/Reagents | BNI |
| | WTP Lab | WTP Lab Miscellaneous Compactable Debris | BNI |
| | WTP Lab | WTP Lab RLD | BNI |

[1] PFP TRUM Legacy holdup waste and TRUM-RH waste were combined into TRUM debris; PFP TRUM Legacy Holdup waste location has been removed from the table.

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# APPENDIX C

# POTENTIAL MIXED WASTE

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# APPENDIX C

# POTENTIAL MIXED WASTE

The origin and definition of PMW is discussed in Section 2.3. The content of each column is defined here.

Table C-1. Potential Mixed Waste Table Explanation. (2 sheets)

| Column | Column Title | Content Definition |
|---|---|---|
| A | Company, project | Self-explanatory. |
| B | Common name or description | Self-explanatory. |
| C | Facility number | Self-explanatory. |
| D | Solid waste with potential for mixed waste not integral to the building or structure (no use) | "Stuff" (e.g., equipment, materials) that is not currently in use and for which no future use is currently known, but for which the final disposition has not yet been determined. The "stuff" is not currently considered mixed waste and may or may not currently be contaminated, but includes items with the potential for becoming mixed waste, depending on future decisions regarding the ultimate use and disposition. "Stuff" integral to the building, e.g., walls, piping, ducting, is not to be included. "None" in this column indicates the project/facility contains no "stuff" known to be in this category. |
| E | Materials with potential to become solid waste and subsequently mixed waste (in standby, possible use) | "Stuff" (e.g., equipment, materials) that is currently in "standby" and may at some point, if it becomes waste, designate as mixed waste. Provide details for standby equipment/material that has a clear use or path for reuse/recycling, but may at some point, if/when it becomes waste, designate as mixed waste. A future use must be documented for material to be included in column E of the PMW Table. Documentation of the future use of items in column E shall be available upon request. **Columns D and E encompass contents of buildings and structures only. Floor sweepings, dust, etc., are not included. The structures themselves, including contaminated walls, floors, piping, ducting, etc., are not included. Equipment and chemicals that are in use are not included.** |
| F | DOE assessment of storage methods | Indicate when the DOE storage method compliance assessment for the purpose of meeting LDR report requirements is scheduled. Provide an alternative explanation if required (e.g., the assessment completion date, key facility in S&M phase, further DOE LDR storage method compliance assessment not needed). |

Table C-1. Potential Mixed Waste Table Explanation. (2 sheets)

| Column | Column Title | Content Definition |
|---|---|---|
| G | Schedule information | Include schedule information relative to materials detailed in these columns. Include references to pertinent documents (closure plans, RODs) and identify any applicable OUs or other Tri-Party Agreement drivers for remediation. Provide a date for completing the data gap plan, if applicable. Also, for major negotiations related to the path forward for the PMW, such as the start of facility transition or deactivation, provide a date for starting the negotiations with the regulators. |
| H | Integrating factors | Include factors that should be considered when determining when negotiations should occur. These include factors such as relative threat to human health and the environment of no action, ties to other activities such as OU remediation, ties of action to facility missions, etc. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CH2M Hill Plateau Remediation Company (CHPRC), D&D Project 100-K | 100-K Area | 105-KE and 105-KW | 105-KE: Old electrical equipment.<br><br>105-KW: None | 105-KE: Oil drained from equipment,<br><br>105-KW: Underwater lead | Completed 4th quarter CY 2007. | Data gap Plan: Completed 2nd quarter CY 2005<br>Starting TPA negotiations: N/A (completed)<br><br>The 105-KE basin structure has been D&D'd and disposed at ERDF. During 2011 portions of the 105-KE Reactor Building were demolished and disposed at ERDF (e.g., electrical equipment room, outer ROD room, miscellaneous storage room, supply fan room, metal storage room, control room, and administrative support rooms) in preparation for transition to interim safe storage (ISS) configuration. ISS activities will continue for this facility.<br><br>105-KW: Anticipated to be dispositioned by the end of FY 2018. | None |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project 100-K | 100-KE and KW Reactor Facilities | 115-KE<br>115-KW | Miscellaneous contaminated material in the facility is being managed as part of S&M activities. | None | DOE assessment: Completed 6/15/2004. Assessment excludes reactor. | Waste will be generated as part of the ISS activities.<br>Data gap plan: Completed June 15, 2004 Starting TPA negotiations: Completed as a part of River Corridor negotiations.<br>Tri-Party Agreement Milestone M-093-22, Complete 105- KE and 105-KW Reactor ISS, is anticipated in FY 2018. Core sampling of the 105-KE reactor has been completed. | The reactor is a key facility under Section 8.0 of the Tri-Party Agreement. |
| CHPRC, PFP Closure Project | 216-Z-9 Crib Soil Removal Glovebox (inactive) | 216Z-9A, B & C | Soil Removal Glovebox and mining equipment. Air compressor (potential for regulated oil). Residual contamination within glovebox (potential for mixed wastes during cleanout). Note: Glovebox probably will function as containment when conducting facility cleanout/transition activities. | None | DOE assessment: Completed 3rd quarter CY 2001. | To be dispositioned as CERCLA non-time critical removal action or in coordination with 200-PW-1 ROD.<br><br>Data gap plan: N/A Starting TPA negotiations: N/A (completed) | None |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, PFP Closure Project | Plutonium Finishing Plant | 234-5Z | Tanks, piping, lead, control, and processing equipment, including the Remote Mechanical A/ Remote Mechanical C (RMA/RMC) lines.<br>Note: Gloveboxes to be maintained and used for containment when conducting facility cleanout/transition activities. | Residues and low-grade special nuclear material (SNM) solids. | DOE assessment: Completed 3rd quarter CY 2001. | To be dispositioned as CERCLA non-time critical removal action.<br><br>M-083-44, Complete Transition of the 234-5Z (Plutonium Conversion Facility) and ZA (Plutonium Conversion Support Facility), 243-Z Low Level Waste Treatment Facility, 291-Z Exhaust Building, and 291-Z-1 Exhaust Stack to support PFP Decommissioning, due September 30, 2015.<br><br>Data gap plan: N/A<br>Starting TPA negotiations: N/A (completed). | None |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, PFP Closure Project | Plutonium Reclamation Facility | 236-Z | Pu nitrate reclamation tanks, piping, and control equipment. Miscellaneous treatment tanks, piping, and control equipment. Containment gloveboxes (reclamation and miscellaneous treatment). Chem. prep tanks, piping, and control equipment. Residual contamination within inactive process equipment and gloveboxes (potential for mixed waste during cleanout). Potential for liquids within inactive tanks, vessels, and piping. Miscellaneous tools and maintenance equipment located within canyon cell. Note: Gloveboxes to be maintained and used for containment when conducting facility cleanout/transition activities. | None. | DOE assessment: Completed 3rd quarter CY 2001. | To be dispositioned as CERCLA non-time critical removal action.<br><br>TPA milestone M-083-00A, Complete PFP Facility Transition and Selected Disposition Activities (due date: September 30, 2016).<br><br>Data gap plan: N/A Starting TPA negotiations: N/A (completed). | None |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, PFP Closure Project | PFP Settling Tank | 241-Z-361 | Tank containing waste from past practices and piping. | None. | DOE assessment: Completed 2nd quarter CY 2009. | To be dispositioned as CERCLA remedial action in accordance with schedule to be developed in the 200-PW-1/3/6 and 200-CW-5 Remedial Design/Remedial Action Work Plan (TPA Milestone M-016-125, due September 30, 2015). Data gap plan: 2nd quarter CY 2009 completed. Starting TPA negotiations: N/A. Characterization completed ("Tank Characterization Report for 241-Z-361, FH 0107145, December 20, 2001). | RCRA/CERCLA integration is provided in the PFP Below Grade EE/CA.<br><br>200-PW-1/3/6 and 200-CW-5 OU. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, PFP Closure Project | Waste Treatment Facility (inactive) | 242-Z | Miscellaneous process tanks, first floor and mezzanine level. Process piping. Containment gloveboxes. Potential for liquids within tanks, vessels, and piping. Residual contamination within gloveboxes, tanks, and piping (potential for mixed waste during cleanout). | None. | No assessments. ~~Facility is sealed currently because of high levels of radioactive contamination resulting from cation exchange column explosion, August 1976.~~ DOE assessment: N/A. | To be dispositioned as CERCLA non-time critical removal action.<br><br>TPA milestone M-083-00A, Complete PFP Facility Transition and Selected Disposition Activities (due date: September 30, 2016).<br>Data gap plan: N/A<br>Starting TPA negotiations: N/A (completed). | None. |

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Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project, S&M | Inactive miscellaneous underground storage tanks (IMUSTs) not associated with a building | 216-BC-201, 216-BY-201, 216-TY-201, 241-B-361, 241-U-361, 241-T-361 | Tank system heels in each IMUST, piping, equipment, and components. | None. | DOE assessment: Initiated 2nd quarter CY 2006 (see Table 2-1). | Data gap plan: 4th quarter CY 2013Starting TPA negotiations: Negotiations are not needed. | The IMUSTs will be dispositioned with their respective cribs. Further information regarding the remediation strategy can be found in the following OU documentation.<br><br>216-BC-201: 200-BC-1<br>216-BY-201: 200-TW-1<br>216-TY-201: 200-IS-1<br>241-B-361: 200-TW-2<br>241-U-361: 200-UW-1<br>241-T-361: 200-TW-2 |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D, and Infrastructure Project, S&M | 224-T | 224-T | D1: Potential for liquid in vessels. The presence or absence of mixed waste in the 224-T cells is not documented and the potential for waste was identified in the Silver List. D2: There is a glovebox/ hood with vessels in the glovebox/ hood, but mixed waste is not expected to be found in these items. | None. | DOE assessment: Completed 1st quarter CY 2002. | D1 and D2: Data gap plan: Completed 4th quarter CY 2002 Starting TPA negotiations: Negotiations are not needed. | The potential for mixed waste presence in the cells is a former Silver List issue that has not been closed out.<br><br>Facility decommissioning is being planned.<br><br>An Action Memorandum was completed in June 2005 (DOE/RL-2004-68, *Action Memorandum for the Non-Time-Critical Removal Action for the 224-T Plutonium Concentration Facility*). |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project, S&M | 231-Z | 231-Z | Potential for liquid in vessels | None | DOE assessment: Initiated Completed 2nd quarter CY 2009. | Data gap plan: 2nd quarter CY 2009. Starting TPA negotiations: Negotiations are not needed. | The potential for mixed waste to be present is a former Silver List issue that has not been closed out. Media that might designate as mixed waste, if present, are expected to be contained in stainless steel vessels. |
| CHPRC, D&D, Project, S&M | 242-B/BL | 242-B/BL | None. | Although no specific matrix can be identified at this time, a possibility exists that matrices could be found which would qualify as PMW. | DOE assessment: N/A Singleton 2011). | Data gap plan: N/A (Singleton 2011) Starting TPA negotiations: Negotiations are not needed | None. |

Commented [MM78]: #212, Full reference provided on P. 16-5.

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D, Project, S&M | B Plant | 207-BA, 211-B, 212-B, 217-B, 221-B, 221-BB, 221-BF, 221-BG, 271-B, 276-B, 291-BA, 291-B, 291-BB, 291-BD, 291-BF, 291-BG, 292-B, 2711-B, 2715-B, 270-E-1 (IMUST) | S&M Plan, DOE/RL-99-24 identifies the hazardous material remaining in the facility. Tank heels relate to TSD tank system and 270-E-1. | S&M Plan, DOE/RL-99-24, identifies the hazardous material remaining in the facility. | DOE assessment: N/A. | See Columns D & E: As described in the S&M Plan, DOE/RL-99-24. Data gap plan: N/A Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 8.0. M-085-00, TBD. | B Plant is in the S&M phase of the facility decommissioning process, as described in Chapter 8.0 of the Tri-Party Agreement. Final disposition of the IMUST and B Plant will be scheduled such that the activities are performed concurrently. See stored/forecasted portion of the report for details regarding waste stored in Cell 4 and in the containment building. |
| CHPRC, D&D Project, S&M | 224-B Building | 224-B | Chemicals associated with operations at the 224-B Building may exist as residual deposition in tanks. PMW remains in the 224-B process cells and vessels. | None. | DOE assessment: (Singleton 2011). Initiated 4th quarter CY 2006 (see Table 2-1). | Data gap plan: review on the status of mixed waste storage areas 1st quarter CY 2011. (Singleton 2011). Starting TPA negotiations: Negotiations are not needed. | Facility decommissioning is being addressed in DOE/RL-2004-36, *Action Memorandum for the Non-Time Critical Removal Action for the 224-B Plutonium Concentration Facility*. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D, Project, S&M | PUREX | 202-A, 203-A, 204-A, 206-A, 211-A, 212-A, 213-A, 214-A/B/C/D, 215-A, 216-A, 225-EC, 271-AB, 276-A, 281-A, 291-A, 291-AB/AC/ AD/AE/AG/ AH/AJ/AK., 291-A-1, 292-AA/AB, 293-A, A93-AA, 294-A, 295-A, 295-AA/AB/ AC/AD/AE, 296-A-1, 296-A-2, 296-A-3, 296-A-5A/5B, 296-A-6/7/8/9/ 10/14/ 24, 2711-A-1. 2712-A, 2714-A/U, 217-A, 252-AC/AB, 216-A-5 (IMUST) | S&M Plan, DOE/RL-98-35, *Surveillance and Maintenance Plan for the Plutonium-Uranium Extraction (PUREX) Facility*, identifies the hazardous material remaining in the facility. Tank heels relate to TSD tank system and 216-A-5. | S&M Plan, DOE/RL-98-35, identifies the hazardous material remaining in the facility. | DOE assessment: N/A. | Data gap plan: N/A. Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 8.0 | PUREX is in the S&M phase of the facility decommissioning process described in Chapter 8.0 of the Tri-Party Agreement. Final disposition of the IMUST at PUREX will be scheduled such that the activities are performed concurrently. See the stored/ forecasted portion of the report for TSD waste storage at PUREX. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project, S&M | REDOX | 202-S, 291-S, 292-S, 293-S, 2718-S, 211-S, 2711-S, 2715-S, 2904-SA, 2710-S, 2706-S | S&M Plan, DOE/RL-98-19, *Surveillance and Maintenance Plan for the 202-S Reduction Oxidation (REDOX) Facility*, identifies the hazardous material remaining in the facility. | S&M Plan, DOE/RL-98-19, identifies the hazardous material remaining in the facility. | DOE assessment: N/A. | Data gap plan: N/A Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 8.0 | REDOX is in the S&M phase of the facility decommissioning process described in Chapter 8.0 of the Tri-Party Agreement. |
| CHPRC, D&D Project, S&M | U Plant | 221-U, 276-U, 291-U, 292-U, 241-WR-001, 241-WR-002, 241-WR-003, 241-WR-004, 241-WR-005, 241-WR-006, 241-WR-007, 241-WR-008, 241-WR-009 | S&M Plan, DOE/RL-98-20, *Surveillance and Maintenance Plan for the 221-U Facility (U Plant)*, identifies the hazardous material remaining in the facility. | Remedial Design/ Removal Action Work Plan (RD/RAWP) for the 221-U Facility, DOE/RL-2006-21, *Remedial Design/ Remedial Action Work Plan for the 221-U Facility*, addresses the hazardous materials in the facility. | DOE assessment: N/A. | Data gap plan: N/A Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 80 | The U Plant facility is being dispositioned under RD/RAWP 2006-21 approved in February 2009. The equipment on deck was consolidated in the cells and U Plant was grouted up to the deck level. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, D&D Project, S&M | UO3 Facility | 270-W and slab foundations. | PMW in the underground tank. | Although no specific matrix can be identified at this time, a possibility exists that matrices could be found which would qualify as PMW. | DOE assessment: N/A (Singleton 2011). | Data gap plan: N/A (Singleton 2011).<br><br>Starting TPA negotiations: Complete. Any additional negotiations will be completed in accordance with the Tri-Party Agreement Action Plan Section 8.0. | All of the above ground structures have been dispositioned under RAWP (DOE/RL-2004-83, *U Plant Ancillary facilities Removal Action Work Plan, Phase II*). |
| CHPRC, Waste and Fuels Management Project | T Plant Canyon, RR Tunnel, Head-end | 221-T | Process cells containing an inventory of PMW include inaccessible cells, process cells proposed to be cleaned, and process cells with potentially no proposed future uses. Inaccessible cells include: 20R, 20L, and 16L. Proposed cells to be cleaned include (subject to change): 19R, 18R, 10R, and 7R. Cells with potentially no proposed future uses include (subject to change): 19L, 18L, 17L, 14L, 12R, 12L, 9R, 8L, 6R, 4R, 4L, and 3R. Examples of inventory are jumpers, tanks, pumps, pump racks, centrifuges, fuel racks, fuel canisters, and agitators. | Items having the potential for reuse include cover blocks, lead shielding (including portable lead walls), hand tools and tool boxes, metal ramp, chokers and slings, hoists, railroad ties, portable fences, cutters (e.g., jaws), portable pumps and hoses, impact wrenches, spill pallets, HEPA vacuums, HEPA filter and duct work, torch cart and welding cart, work bench, portable exhauster, aqueous make-up tanks, drum crusher, plasma arc cutter. | DOE assessment: 3rd quarter CY 2005. | Cells with no proposed future use will be addressed when final decommissioning of the canyon takes place.<br>Data gap plan: 3rd quarter CY 2007. DOE-RL responded to Ecology comments in October 2007.<br>Starting TPA negotiations: Completed. These activities have been discussed with Ecology during the T Plant Complex Dangerous Waste Permit Application Part A and Part B negotiations. | Milestone M-091-01 and RCRA permitting schedule.<br><br>Schedules for processing and operational activities on the canyon floor will impact the schedule for disposition of this PMW. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, Waste and Fuels Management Project | T Plant Canyon Cell 11-L | 221-T | Tank in Cell 11-L. The Cell 11-L tank contains approximately 500 gallons of a green liquid and saltcake mixture that will be designated as F001-F005, D002, D006, D007, D008, and D010 when removed from the tank. | None. | DOE assessment: 3rd quarter CY 2005. | Cell 11-L will be dispositioned along with the other R-CPP~~RCRA past practice~~ process cells in the T Plant canyon. Data gap plan: Cell 11-L was readdressed with Ecology during the LDR storage method compliance assessment/ data gap plan process documented in the July 24, 2008 T Plant TPA project managers meeting minutes. Starting TPA negotiations: Completed. These activities have been discussed with Ecology during the T Plant Complex Dangerous Waste Permit Application Part A and Part B negotiations. | Any commitment date will be dependent on the outcome of the Canyon Disposition Initiative.<br><br>Milestone M-091-01 and RCRA permitting<br><br>Schedules for processing and operational activities on the canyon floor will impact the schedule for disposition of this PMW. |

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Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| CHPRC, Waste and Fuels Management Project | T Plant Complex IMUSTs | 292-TK-1 and 292-TK-2 | 292-TK-1 and 292-TK-2 consist of two stainless steel 55-gallon drums encased in concrete. These units contained a mixture of irradiated fuel and nitric acid. The solutions in the tanks were then neutralized with molar equivalents of sodium hydroxide. | None. | DOE assessment: 3rd quarter CY 2005. | This Waste Information Data System site will be addressed as part of the CERCLA remediation activity. Data gap plan: See the July 24, 2008 T Plant TPA project managers meeting minutes. Starting TPA negotiations: Negotiations are not anticipated | Tanks are part of 200-IS-1 CERCLA remediation process. |
| CHPRC, Waste and Fuels Management Project | GAC Vapor Extraction System | None. | None. | Unsalvaged components of vapor extraction system | DOE assessment: N/A. | Data gap plan: N/A. Data for starting TPA negotiation: Negotiations are not anticipated. | None |

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|---|---|---|---|---|---|---|---|
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| Battelle Memorial Institute, Pacific Northwest National Laboratory | Radiochemical Processing Laboratory | 325 | Tank system formerly used for product materials subsequently used as feedstock for research projects. Tanks have been drained and flushed, but remain in place. | Hot cells, hoods, and gloveboxes used for radioactive materials and waste analysis and research (reused as needed for new or expanded research activities)<br><br>Contaminated equipment and materials stored for potential reuse. | DOE assessment: Completed 4th quarter CY 2001. | Data gap plan: Completed 4th quarter CY 2002. Starting TPA negotiations: N/A (no data gaps identified) | Part of an active facility; no special hazards known. |

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|---|---|---|---|---|---|---|---|
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| Mission Support Alliance, LLC (MSA), Public Works | 100-B Reactor Facilities | 105-B | Miscellaneous contained/controlled hazardous/contaminated material remains in the facility. | None. | DOE assessment: Completed June 15, 2004. Assessment excludes reactor. | Data gap plan: Completed June 15, 2004. Starting TPA negotiations: Approval of Tri-Party Agreement Change Request M-093-01-02 completed Tri-Party Agreement Milestone M-093-14, Initiate Negotiations for the Remaining Surplus Reactor Disposition Schedules. The B Reactor became a National Historic Landmark in September 2008 and became part of the Manhattan Project National Historic Park in December 2014. Planning for preservation is ongoing. | The reactor is a key facility under Section 8.0 of the Tri-Party Agreement. |
| Washington River Protection Solutions, LLC (WRPS), Tank Farms | 702-A Ventilation Building | 241-A-702 | Seal pot that received liquids from the HEPA pre-heater. | None. | DOE Assessment: Completed 4th Quarter 2004. | Data gap plan: None. When the building is deactivated, characterization of the seal pot heel will be completed as necessary. Starting TPA negotiations: N/A. | None. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| WRPS, Tank Farms | Double-Shell Tank Farms | 241-AN, AW, AP, AY, AZ, SY | Contaminated unusable equipment, e.g., ductwork, exhausters, piping, etc. | None. | DOE Assessments: Completed 4th Quarter 2004. | Data gap plan: The equipment will be handled in accordance with waste management procedure as it is removed. Starting TPA negotiations: N/A. Equipment will be taken care of on a continuous basis. | Tank Retrieval and Closure, Permit Conditions. |
| WRPS, Tank Farms | Single-Shell Tank Farms | 241-A, AX, B, BX, BY, C, T, TX, TY, S, SX, U, 244-AR, 244-CR | Contaminated unusable equipment, e.g., ductwork, exhausters, piping, ion exchange columns, etc. | None. | DOE Assessments: Completed 4th Quarter 2004. | Data gap plan: The equipment will be handled in accordance with waste management procedures as it is removed. Starting TPA negotiations: N/A Equipment will be taken care of on a continuous basis. | Tank Retrieval and Closure, Permit Conditions. |
| WRPS, Tank Farms | Evaporators | 242-S, T | Liquids/solids in process tanks and contaminated equipment, piping, and debris. | None. | DOE Assessment: Completed 4th Quarter 2005. | Data gap plan: Deferred until facility enters D&D due to industrial and radiological safety concerns with entering the portions of the facility necessary to gather meaningful data. Starting TPA negotiations: N/A. | None. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| WRPS, Tank Farms | IMUSTs not associated with a building | 200-W-7 (243-S-TK-1), 231-W-151, 240-S-302, 241-A-302B 241-B-301B, 241-B-302B, 241-BX-302A, 241-BX-302B, 241-BX-302C, 241-C-301C 241-ER-311A 241-S-302A and B, 241-SX-302, 241-T-301, 241-TX-302A and B, 241-TX-302BR, 241-TX-302X, 241-TY-302A and B, 241-Z-8, 242-T-135, 241-TA-R1, 244-BXR (Vault), 244-TXR (Vault), 244-UR (Vault) | Tank system heels and contaminated equipment associated with each IMUST | None. | DOE assessment, 3rd Quarter 2001. | Data gap plan: Deferred until closure of specific WMA. | SST Retrieval, SST Permit Conditions, Tank/WMA Closure Requirements. |
| WRPS, Tank Farms | Miscellaneous Building | 241-A-431, 241-C-801, 241-SX-401, 241-SX-402 | Liquids/solids in piping and debris. | None. | DOE Assessments completed: 2nd Quarter 2004, 3rd Quarter 2002, 1st Quarter 2001. | Data gap plan: Deferred until closure of specific WMA. | SST Retrieval, WTP Construction, Permit Conditions. |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| WRPS, Tank Farms | Reusable Contaminated Equipment | Various. | None. | Reusable contaminated equipment associated with tank farms activities. | DOE Assessment: Not applicable. | Data gap Plan: Not applicable<br><br>Starting TPA negotiations: N/A | None. |
| Bechtel National, Inc. (BNI), Waste Treatment Plant (WTP) | LAB | N/A | Hotcell prefilters. | None. | | The WTP Lab has forecasted the generation of waste in 2018 from methods development for equipment calibration. | |

Table C-2. Potential Mixed Waste. (21 sheets)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| **Company, Project** | **Common Name or Description** | **Facility Number** | **Solid Waste, with Potential for Mixed Waste, Not Integral to the Building or Structure (No Use)** | **Materials, with Potential to Become Solid Waste and Subsequently Mixed Waste (in Standby, Possible Use), or Recycled** | **DOE Assessment of Storage Methods** | **Schedule Information** | **Integrating Factors** |
| BNI, Hanford Tank WTP | LAB | N/A | Spent chemical/reagents (liquid lab pack). Eichrom resin columns (hotcell resins, mixed non-debris waste (organic waste stream that will require organic stabilization or thermal treatment). Rad lab miscellaneous compactable debris (lab glassware and other lab consumables, personal protective equipment, rags, and other compactable debris.) Miscellaneous hotcell compactable debris including sample bottles, ASX carriers, Isolok needles and parts, etc.<br>Miscellaneous non-compactable hotcell debris. | None. | TBD | TBD | TBD |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| Waste Neutralization Facility (340-Vault Tanks) | 340 | 2013 | 340 Vault tank heels and clean out residues and associated equipment (valves, piping, pumps, light fixtures). | The 340 Building was shipped on February 16, 2014, for disposal at ERDF. |
| Radiochemical Processing Laboratory | 325 | 2013 | Equipment containing approximately 5 tons of lead in numerous contaminated shipping containers, sample carriers, lead bricks, and other lead items. | This equipment was identified as waste and was disposed of in compliance with WAC 173-303 requirements. |
| 100 Area Waste/Material Transport Container | 100 Area Reactor Facilities (Primarily N and K Area) | 2011 | Containers which were being stored for future shipment of waste to be treated, disposed, or recycled. | Waste/material containers have been dispositioned to ERDF due to facilities D&D. |
| U Plant | 221-U | 2010 | Tank D-10 (TK-10) in Cell 30. | Tank was removed as part of the CERCLA remediation in 2011 and placed in storage at CWC. The tank is now tracked in the CWC TRUM-RH location. |
| Rail Car Staging Area | 212-R Rail Spur and PUREX Rail Cut | 2010 | Rail car and rail car components. | Rail cars were declared waste and disposed in ERDF, with the exception of four railcars which were sent to the B Reactor museum as "reusable equipment," not waste, as they are being used as displays. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| PFP Facilities | 234-5Z | 2010 | Radioactive Acid Digestion Test Unit Gloveboxes (potential for residual contamination during cleanout). | RADTU glovebox cleanout completed. |
| PFP Facilities | 2736-Z | 2010 | Residues and low grade SNM solids. | Residues and SNM solids removed. |
| U Plant | 211-UA | 2009 | The 211-UA structure was demolished. | A partial deletion from the PMWT. The 211-UA structure was demolished under RAWP DOE/RL-2004-83. |
| $UO_3$ Facility | 224-U, 203-UX, 211-U, 224-UA | 2009 | The above ground structures at the $UO_3$ Facility were demolished. | A partial deletion from the PMWT. The aboveground structures were demolished under RAWP DOE/RL-2004-83; only the underground tank, 270-W, and slab foundations remain. |
| 100-K Area | 105 KE and 105 KW | 2009 | Leak blankets. Neutron detectors with boron tri-fluoride tubes.[1] | A partial deletion from the PMWT. The lead was sent to ERDF for disposal. The neutron detectors were shipped to CWC as TRUM. |
| 200 North Area | 212-N, 212-P, 212-R | 2009 | 212-R contained a burial box with some radiologically-contaminated equipment. 212-P used to store PCBs. | The buildings and the burial box have been demolished and the waste was sent to ERDF. |
| 100-K Area | 105-KE | 2008 | Chemicals in storage cabinets, and lead used as shielding for Ion Exchange Columns and piping.[1] | A partial deletion from the PMWT. Chemicals were redispositioned for use at 105-KW or disposed of as appropriate. Lead was reused or dispositioned as waste. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| 231-Z | 231-Z | 2008 | Chemicals in gloveboxes.[1] | Activities to remove chemicals from gloveboxes were completed in 2008. |
| U-Plant | 2716-U, 2714-U | 2007 | Section 7.0 of the S&M plan, DOE/RL-98-20, indicated that 2714-U contained eleven 55-gal drums, but is not specific on the type of hazardous materials. | A partial deletion from the PMWT. 2716-U and 2714-U, among others, were dispositioned under a CERCLA action memorandum calling for demolition of the structures. |
| Mixed Waste Storage and Treatment Tanks | 241Z | 2007 | Heels, associated piping, line flushing, and sludge cleanout of Tank D-6. Tank D-6 deactivated in 1972 because of failure. Waste transferred from tank and tank/piping isolated.[1] | The 241-Z tank system has been clean closed, tank D-6 heels were removed, the piping was removed, and the floor was cleaned. The end point criteria requirements were addressed. |
| 200 Area North | 212-N | 2007 | 14 wooden boxes in the transfer bay of suspected TRUM nuclear fuel fabrication equipment from the 308 Building.[1] | A partial deletion from the PMWT. The boxes were transferred to the CWC. |
| 327 Building | 327 | 2005 | Lead bricks. | The building deactivation and demolition was completed in 2010. The lead bricks are included in the forecasted waste volume to be treated at ERDF. |
| 333 Building | 333 | 2005 | Miscellaneous equipment, piping, and ductwork. | The building was deactivated and demolished in CY 2006. Equipment, piping, and ductwork disposed at ERDF. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| 100-K Area | 105-KW | 2005 | Lead in the back of a utility truck.[1] | The lead in the truck was removed from the vehicle and sent to the ERDF facility for disposal |
| 3711 Building | 3711[2] | 2004 | Lead cask, pipe, pipe joints, and metal railing contaminated with lead. | Matrices were disposed of in 2005. |
| 2711-E | 2711-E | 2004 | Radiator from crane-suspect lead solder. | Matrices were disposed of in 2005. |
| $U0_3$ | 203-U, 2715-UA, 272-U | 2004 | Any matrices described in the $UO_3$ S&M Plan, DOE/RL-98-22, *Surveillance and Maintenance Plan for the Uranium Trioxide ($UO_3$) Facility*. | 203-U, 2715-UA, and 272-U have been demolished as part of the CERCLA Removal Action. |
| U Plant | 2716-U, 275-UR | 2004 | Any matrices described in the U Plant S&M Plan, DOE/RL-98-20. | 2714-U and 275-UR have been demolished as part of the CERCLA Removal Action. |
| Heavy Equipment Staging Area | 4734D | 2004 | Heavy equipment components. | Equipment is no longer cleaned at this location. |
| PFP Facilities | 232-Z, 236-Z, and portions of 234-5Z. | 2003 | Incinerator and leaching gloveboxes. Inactive process tanks, piping, and control equipment. Reclamation tanks, piping, and control equipment. Miscellaneous tools.[1] | Materials have been dispositioned, did not meet the definition of PMW, or are forecasted to be generated as mixed waste. |
| 340 Facility Complex | 340-A, 340-B, and 300 RLWS | 2003 | Tanks, process piping, ancillary equipment, and related equipment. | Facilities did not contain mixed waste or PMW. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| 100 Areas Facilities | Many | 2003 | Miscellaneous contaminated material. | Facilities did not contain mixed waste or PMW |
| 100-N Lead Storage Area | 1714-N[2] | 2002 | Lead sheeting and bricks, lead lined containers, and a lead lined survey booth. | Matrix is now included in the LSDS for CERCLA lead under the ERDF – Treatment treatability group. |
| 242-A Evaporator | 242-A | 2002 | Ion exchange column(s) | The ion exchange column(s) were disposed on-site. |
| 314 | 314[2] | 2002 | Large equipment previously used in the facility. | LDR storage method compliance assessment concluded facility contained no mixed waste or PMW. |
| 3708 | 3708[2] | 2002 | Solid obsolete laboratory equipment. | LDR storage method compliance assessment concluded facility contained no mixed waste or PMW. |
| Heavy Equipment Staging Area | 2711E | 2001 | Miscellaneous equipment. | No material left at this location, as it was shipped off-site for reuse. |
| Rad. Storage Area | 3711[2] | 2001 | Lead bricks. | Shipped September 26, 2001 to Duratek Inc. in Memphis, TN for decontamination/lead casting |
| Waste Storage Building | 2724WB | 2001 | Radiators (from motor vehicles). | Shipped September 26, 2001 to Duratek Inc. in Memphis, TN for decontamination/metal melt |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| Plutonium Finishing Plant | 234-5Z | 2001 | E1: Laboratory Reagents<br>E2: Archive Laboratory Samples<br>E3: PR cans that have lead liners.<br>E4: Low-grade SNM solutions not run through the precipitation process, but with potential to become solid waste (e.g. the direct discard process).[1] | E1: These chemicals are in use within the laboratory.<br>E2: Samples are archived in accordance with sample exclusion.<br>E3 and E4: Material is now included on LSDSs.<br>Note: Only the contents noted were removed from Table C-2. Table C-2 still contains other potential waste in this location. |
| Mixed Waste Treatment and Storage Tanks | 241-Z | 2001 | Tank D-9, Treatment chemicals. | Tank D9 is in use to mix treatment chemicals. Treatment chemicals are in use in transferring waste from the PFP to DSTs. Note: Only the contents noted were removed from Table C-2 of this document. Table C-2 still contains other potential waste in this location. |
| Waste Handling Facility | 219-S | 2001 | Tank 103 and heel content. | Combined with existing LSDS for the 219-S Waste Handling Facility. |
| 300-RRLWS | RRLWS | 2001 | Retired radioactive liquid waste sewer piping and ancillary structures might designate as mixed waste. | Below-ground structure: Does not meet reporting criteria for PMWT. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| 2706-T Conex Box | Conex box CC2W0136 and CC2W137 | 2001 | Various decontamination equipment, spill pallets, shipping coolers, carts, hoses, storage cabinets, and sampling equipment. | These conex boxes were opened and the contents visually verified and photographs taken. The photographs clearly demonstrate that the equipment is readily accessible. The equipment will be used in the future as part of the 2706-T Complex operations (e.g., decontamination, sampling, etc.). The photographs are maintained in the T Plant Complex operating record. |
| 224-T (Includes Transuranic Waste Storage and Assay Facility [TRUSAF]) | 224-T | 2001 | Liquid in the sumps and the deep cell. Two cardboard boxes in the cells.[1] | Determined to not have a hazardous component, and therefore not a mixed waste. Note: Only the contents noted were removed from Table C-2. Table C-2 of this document still contains other potential waste in this location. |
| C855 (CAT) Substation | 252U | 2001 | Transformer. | The transformer has been designated and found not to have a dangerous component. Therefore, it is not mixed waste. |
| 324 | 324 | 2001 | Shielded glovebox. PMW residue. Former Silver List Item 11.8. | Glovebox was included in the 4th quarter CY 2002 LDR storage method compliance assessment and determined to contain only floor sweeps. |
| 200 ETF | 2025E | 2001 | Thin film dryer rotor. | Rotor was rebuilt for reuse at the 200 ETF. |
| 100 K Basins | 105-KW | 2001 | Lead bricks, sheets. | The lead has been declared CERCLA waste. A LSDS was created. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| Environmental Sciences Laboratory | 3720[2] | 2001 | Laboratory equipment, hoods, and gloveboxes used for radioactive materials and waste analysis and research (reused as needed for new or expanded research activities). | On-site inspection revealed that contaminated equipment is in use. Hoods and gloveboxes listed are part of the structure of the building. |
| 100 C Reactor Facility | 105-C, 118-C-4 | 2001 | Reactor core and equipment remaining in the facility. | Reactor core was part of the structure of the building. Mixed waste is removed during the reactor ISS. |
| 100 D/DR Reactor Facility | 105-D, 105-DR, 117-DR[2], 190-DR[2] | 2001 | Reactor core and equipment remaining in the facility. | Reactor core was part of the structure of the building. Mixed waste is removed during the reactor ISS. |
| 100 F Reactor Facility | 105-F | 2001 | Reactor core and equipment remaining in the facility. | Reactor core was part of the structure of the building. Mixed waste is removed during the reactor ISS. |
| 100 H Reactor Facility | 105-H, 1720-HA[2], 1713-H | 2001 | Reactor core and equipment remaining in the facility. | Reactor core is part of the structure of the building. Mixed waste was removed during the reactor ISS. |
| 100-N Reactor Facilities | See Table 1, S&M Plan for the 100-N Deactivated Facilities, DOE/RL-98-64, *Surveillance and Maintenance Plan for the 100-N Area Deactivated Facilities* | 2001 | Some remaining hazardous materials consisting of activated materials and fission products contained within the reactor block. (Further details are provided in DOE/RL-98-64). | Reactor core is part of the structure of the building. Mixed waste was removed during the reactor decommissioning. |

Table C-3. Historical List of Materials Deleted from Potential Mixed Waste Table. (8 sheets)

| Common Name or Description | Facility Number | Last Calendar Year Reported in Table C-2 | "Stuff"/Material Deleted | Reason for Deletion |
|---|---|---|---|---|
| REDOX | 276-S-141/142 | 2001 | Tanks and heel content. | A treatability group was developed to account for the 276-S-141/142 tanks (see Appendix B). |
| Semi Works | 241-CX-70, 241-CX-71, 241-CX-72, 276-C | 2001 | Tanks and heel content. | A treatability group was developed to account for the 241-CX tanks (see Appendix B). |

[1]Additional PMW is identified in Table C-2 for this location.
[2]Facility has been demolished subsequent to this entry.

# CALENDAR YEAR 2014 HANFORD SITE MIXED WASTE LAND DISPOSAL RESTRICTIONS FULL REPORT

DOE/RL-2015-08, Rev. 0

Supplement to address Ecology Comments on 2014 Hanford Site Mixed Waste Land Disposal Restrictions Full Report-

Comments 154 – 208

**Revisions to LDR Treatability Group (TGDS) and Location-Specific Data Sheets (LSDS)**

#154- P. B-22, TGDS, 221-T Containment Building, Section 3.3.2; Modify text: "Large equipment, debris or non-debris". Delete the phrase "(e.g., sandblasting grit) from TGDS, Section 1.2 on P. B-21 and from LSDS, Section 1.3.1 on P. B-25 as they are incorrect.

#155- P. B-22, TGDS, 221-T Containment Building, Section 3.3.2; No changes for 2014. Table for 2019 Full LDR Report comments/discussions.

#156- Duplicate of #155.

#157- P. B-22, TGDS, 221-T Containment Building, Section 3.3.2; No changes for 2014 Report.

#158- P. B-23, TGDS, 221-T Containment Building, Section 3.3.2; Modify text: "This waste will be treated under M-091. In addition, add the following language to the TGDS, Section 3.1.3 on P. B-21: "Radiological characteristics of the waste will be evaluated at the time of dispositioning and may consist of MLLW, TRUM, TRU, or a combination of these three categories."

#159- P. B-23, General on all TGDS; Database administrator has corrected the grammatical error.

#160- P. B-24, TGDS, 221-T Containment Building, Section 4.4; Modify text: "The treatment schedule for these wastes will depend on the following factors: (1) continued progress in implementation of canyon deck and process cell cleanout; (2) potential for future need of 221-T in support of Hanford cleanup; and (3) development of M-091 capabilities."

#161- P. B-24, TGDS, 221-T Containment Building, Section 4.9; Modify text: "None."

#162- P. B-24, TGDS, 221-T Containment Building, Section 5.0; Modify text: "Wastes are anticipated to be disposed at Trenches 31/34, ERDF, or WIPP as appropriated after treatment."

#163- P. B-25, LSDS, 221-T Containment Building, Section 1.3.3; No change in 2014 Report; will address in 2019 Full Report.

#164- P. B-25, LSDS, 221-T Containment Building, Section 2.1.2; No change in 2014 Report.

#165- P. B-26, LSDS, 221-T Containment Building, Section 2.2; Parties agreed to Header change (i.e., Physical Location).

#166- P. B-31, TGDS, 221-T Tank System, Section 4.4; No change in 2014 Report; will be addressed in 2019 Report.

#167- P. B-29, TGDS, 221-T Tank System, Section 3.2; Report text to remain as written.

#168- P. B-30, TGDS, 221-T Tank System, Section 3.3.2; No change in 2014 Report; will be addressed in 2019 Report.

#169- P. B-31, TGDS, 221-T Tank System, Section 3.3.6; No change in 2014 Report; will be addressed in 2019 Report.

#170- P. B-33, LSDS, 221-T Tank System, Section 1.3.1; Delete note and everything after in Section 1.3.1 on page B-33.

#171- P. B-33, LSDS, 221-T Tank System, Section 1.3.2; Modify text: "Waste resulting from decontamination activities, including precipitation run-on and direct additions from other onsite and offsite generators (e.g., FFTF condensate, laboratory returns, etc.). These canyon tanks were permanently removed from service in June of 1999. Engineering and administrative measures have been taken to ensure that no additional liquids are placed into this tank system."

#172- P. B-33, LSDS, 221-T Tank System, Section 1.3.2; No change needed.

#173- P. B-33, LSDS, 221-T Tank System, Section 1.3.3; (2014LDR-051); Modify text: "Waste treatment process, decontamination, facility or equipment operation and maintenance waste, and analytical laboratory waste, from wastes generated at T Plant which does not include other laboratory wastes."

#174- P. B-34, LSDS, 221-T Tank System, Section 2.2; No change needed.

#175- P. B-34, LSDS, 221-T Tank System, Section 2.5; Propose addressing in 2019 Parking Lot discussions.

#176- P. B-36, LSDS, 221-T Tank System, Section 2.12; Propose addressing in 2019 Parking Lot discussions.

#177- P. B-43, TGDS, 222-S Laboratory Complex, Section 4.4; Modify text: "Waste that cannot be treated off-site will be shipped to CWC and will be subject to the schedules for characterization and treatment."

#178- P. B-53, TGDS, 222-S T8 Tunnel; Schedule will be consistent with resolution to Comment #179 (i.e., letter 0047988).

#179- P. B-53, TGDS, 222-S T8 Tunnel, Section 2.1.1; Modify text: "This waste was being staged in the shielded T-8 tunnel alcove per Ecology approval (letter 0047988, "Request for approval to Stage Out of Service Ancillary Drain Piping in the 222-S Laboratory Service Tunnels."

#180- P. B-63, TGDS, 241-CX Tank System, Section 4.5; Modify text: (Reference TPA change control form M-37-15-01.); M-037-10; and 09/30/2020.

#181- P. B-76, LSDS, 324 Building REC Waste, Section 2.2; Closed for 2014 Report. Will address in 2019 Full Report.

#182- P. B-77, LSDS, 324 Building REC Waste, Section 2.8; No change in 2014 Report. Table for 2019 Full LDR Report comments/discussions. Note: M-089-06 is addressed in TGDS, Section 4.5 on P. B-73.

#183- P. B-85, TGDS, 325 HWTU; Modify text: "Waste stored for a year or more is scheduled for treatment and/or disposal as soon as practical. The schedule for final disposal of all 325 HWTUs waste is defined in the 325 HWTUs closure plan, Addendum H to the 325 HWTUs OUG section of the Hanford RCRA Permit."

#184- P. B-90, LSDS, 325 HWTU; Modify text: "Section 3.3.1, 3.3.2, 3.3.3, show CY14 reductions in volume of 2 $m^3$, realized through accumulation of waste until safe and effective consolidation or waste into larger containers for shipment could be achieved."

#185- P. B-85, TGDS, 325 HWTU, Section 4.4; Modify text: "Waste stored for a year or more is scheduled for treatment and/or disposal as soon as practical. The schedule for final disposal of all 325 HWTUs waste is defined in the 325 HWTUs closure plan, Addendum H to the 325 HWTUs OUG section of the Hanford RCRA Permit."

#186- P. B-98, LSDS, 400 Area WMU, Section 2.7; Waste needing development of treatment technology in 2019 Full Report.

#187- P. B-94, TGDS, 400 Area WMU, Section 3.3.2; Modify text: "***The concentration varies and is based on process knowledge and/or analytical data."

#188- P. B-96, LSDS, 400 Area WMU, Section 2.1; The "Container (covered)" box will be checked.

#189- P. B-98, LSDS, 400 Area WMU, Section 2.8; Waste needing development of treatment technology in 2019 Full Report.

#190- P. B-101 and B-114, TGDS, B Plant Cell 4 and B Plant Containment Building; A treatment technology will be selected for the 2019 Full Report. Modify text: "Cell 4 waste resulted from WESF hot cell maintenance waste (i.e., manipulator boots, light bulbs, high-efficiency particulate air [HEPA] filters, misc. debris). This waste is stored in accordance with interim status technical standards pending completion of RCRA closure. No additional waste will be stored in this location. B Plant has been retired from active operation and is in surveillance and maintenance mode pending final disposition, which will be addressed using CERCLA remedial action that is coordinated with RCRA closure."

#191- P. B-103, TGDS, B Plant Cell 4, Section 4.5; Modify text: "M-085-00"; and "TBD".

#192- P. B-111, TGDS, B Plant Containment Building, Section 2.1; Modify text: "294,000 kg (quantity, not volume).

#193- P. B-133, LSDS, DST Waste, 204-AR Catch Tank; No change needed.

#194- P. B-113, TGDS, B Plant Containment Building, Section 4.5; Modify text; “M-085-00”.

#195- P. B-139, LSDS, DST Waste, Section 2.2; Closed for 2014 Report. Will address in 2019 Full Report.

#196- P. B-233, TGDS, MLLW-01 – LDR Compliant Waste; No change needed.

#197- Pgs. B-242, 243, 259, 310, 372, 381, 402, 478, 482, 491, 506, 519, 539, LSDS, Section 2.2; Closed for 2014 Report. Will address in 2019 Full Report.

#198- Pgs. B-243, 260, 312, 374, 383, 403, 454, 479, 483, 488, 492, 507, 512, 521, 540, 544, 549, LSDS, Section 2.8; Closed for 2014 Report. Will address in 2019 Full Report.

#199- P. B-451, TGDS, PUREX Storage Tunnels; Modify text: “Radiological characteristics of the waste will be evaluated at the time of dispositioning and may consist of MLLW, TRUM, TRU, or a combination of these three categories.”

#200- Pgs. B-451, 471, 495, 529, TGDS, TRUM – CH Large Container; Section 3.1 will be changed to reflect “transuranic” rather than “low-level” to be consistent.

#201- P. B-504, LSDS, TRUM – CH Small Container, Section 3.1;

**3.0 WASTE MINIMIZATION**

**3.1 Has a waste minimization assessment been completed for this stream?**

☒ Yes ☐ No

If yes, provide date assessment conducted: Ongoing~~N/A~~

If yes, provide document number or other identification:

See 3.2~~N/A~~

If no, provide date assessment will be completed, or if waste stream is no longer generated, then indicate N/A:

~~Assessment date to be determined.~~

B-504

#202- Pgs. B-505 and B-538, LSDS, Section 1.3.1; No change needed.

#203- P. B-511, LSDS, TRUM – CH Small Container, Section 2.2; Closed for 2014 Report. Add physical location in 2019 Full Report.

#204- Pgs. B-314 – 317, LSDS, MLLW-04 – Hazardous Debris; No change needed.

#205- P. B-538, LSDS, TRUM – RH, Section 1.3.1; No change needed.

#206- P. B-542, LSDS, TRUM – RH, Section 2.1; No change needed.

#207- P. B-543, LSDS, TRUM – RH, Section 2.2; Closed for 2014 Report. Add physical location in 2019 Full Report.

#208- P. B-544, LSDS, TRUM – RH, Section 2.12; No change needed.

## Ecology Comments on 2014 Hanford Site Mixed Waste Land Disposal Restrictions Full Report. DOE/RL-2015-08, Rev. 0. August 31, 2016

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| Final | | | | | | | | | |
| 1 | General (Comp) | | Since the LDR report is a TPA primary document, the document itself may contain the enforceable schedule. If a TPA milestone does not exist the LDR report can specifically include the enforceable schedule. | T, TS, S, Err | Acknowledge. | 06/15/17 | Ecology concurred as proposed on 06/15/17. | None | Closed<br>Start of Comment Resolution Meeting #1 on October 1, 2018. |
| 2 | Throughout (Comp) | Use of the terms, sufficient, sufficiently, generally, typically. | Indeterminate language is too vague. Revise the text to describe actualities. | Ed | Reject. Specific comments will be addressed. | 07/20/17 | Ecology concurred on 07/20/17. | None | Closed |
| 3 | p. 1-1, Section 1.1 (EPA) | …or the waste is managed at a Hanford Site location managing mixed waste pursuant to the CERCLA off-site rule (40 CFR 300.440, "Procedures for Planning and Implementing Off-site Response Actions"). | Units subject to a CERCLA off-site rule determination are not a distinct category from a 90-day accumulation area or a TSD unit. The highlighted text should be simply deleted. Another option is to have a separate sentence that says "Where a TSD unit is managing wastes generated pursuant to a CERCLA decision document and that unit is not on-site with respect to the scope of the CERCLA action, then the unit must also be subject to a CERCLA off-site determination of acceptability, in addition to authorization to treat, store or dispose according to the Hanford dangerous waste permit." The CERCLA off-site rule simply does not provide any authority to authorize the treatment, storage or disposal of regulated waste. | T,TS, | Modify. Revise text as follows:<br>Mixed waste is not subject to the storage prohibition until generated and managed in a 90-day accumulation area or a treatment, storage, and/or disposal (TSD) unit~~, or the waste is managed at a Hanford Site location managing mixed waste pursuant to the CERCLA off-site rule (40 CFR 300.440, "Procedures for Planning and Implementing Off-site Response Actions"). Although mixed waste managed in a 90-day accumulation area is not considered stored, the EPA has indicated that the storage prohibition clock begins when mixed waste is managed in the 90-day accumulation area.~~ | 04/26/17 | Ecology concurred as proposed on 04/26/17.<br><br>**Reopen:** Upon final review, DOE deleted text that should have been retained. The LDR clock does start when mixed waste is managed in a 90-day accumulation area. | ~~None~~DOE: Restore text "Although mixed waste managed in a 90-day accumulation area is not considered stored, the EPA has indicated that the storage prohibition clock begins when mixed waste is managed in the 90-day accumulation area." that went beyond what the commenter requested. | ~~Closed~~~~Open~~ Closed on 10/10/18.<br><br>10/1/18- DOE Action: W. Toebe will utilize/tweak language from "Comment" section for Ecology review to address comment. Action completed on 10/10/18.<br><br>10/10/18- Final text mutually agreed to: "Although mixed waste managed in a 90-day accumulation area is not considered stored, the EPA has indicated that the storage prohibition clock begins when mixed waste is managed in the 90-day accumulation area. Where a TSD unit is managing wastes generated pursuant to a CERCLA decision document and that unit is not on-site with respect to the scope of the CERCLA action, then the unit must also be subject to a CERCLA off-site determination of acceptability, in addition to authorization to treat, store or dispose according to the |

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**Ecology Comments on 2014 Hanford Site Mixed Waste Land Disposal Restrictions Full Report. DOE/RL-2015-08, Rev. 0. August 31, 2016**

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | | | | | | | | Hanford Facility RCRA permit." |
| 4 | p. 1-1, Section 1.1 (KAC) | Sources and Organization of Waste Storage Data- what the report does… | The LDR Report does the following:<br>1) Provide an inventory and projected generation of mixed waste subject to LDR;<br>2) Provide an assessment of how these wastes are stored;<br>3) Provides an identification of the treatment capacity necessary for these wastes;<br>4) Provides plans and schedules for developing and acquiring needed treatment capacity not currently available, and for treating the current and projected waste inventories.<br>Based on the Director's Final Determination, this is what the report does and the above language needs included. Add it to the introduction or 1-1. | T, TS, S | Explain. Reference Comment 15. See comment 15. | 05/11/17 | Ecology concurred as proposed on 05/11/17. | None | Closed |
| 5 | p. 1-1, Section 1.1 (KAC) | "a result of discussions among DOE, Ecology, EPA"… | Unless there is a referenced signed document verifying these discussions, delete this sentence. How is this relevant and what was the discussion? Report is based on a director determination and TPA milestones. | Ed | Accept. Modify text as follows:<br>Other mixed waste streams are being reported under the Tri-Party Agreement Milestone M-026-01 as a result of ~~discussions held among DOE, Ecology, and EPA~~the 2002 *Resolution of Dispute Pertaining to Hanford Federal Facility Agreement and Consent Order Calendar Year 2000 Hanford Site Mixed Waste Land Disposal Restrictions Report*. | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 6 | p. 1-1, Section 1.1 (KAC) | "mixed waste that meets LDR treatment standards" | The report is for: 1) Provide an inventory and projected generation of mixed waste subject to LDR;<br>If a waste meets the LDR treatment standards, why is it on this report? Please explain. | Ed | Explain. This section is included because Ecology has required it of DOE.<br>Reference January 25, 2000, letter from R. Stanley, Ecology, to G.H. Sanders, RL.<br>On January 20, 2000, DOE requested clarification from Ecology on its draft resolution of dispute. Clarification #2 of DOE's request asked Ecology to explain the scope of the phrase "each and all mixed waste stream," and asked Ecology to indicate which waste streams applied to this phrase. Ecology responded that the "information must cover all mixed waste streams, not just those prohibited from land disposal." Ecology's response also clarified that mixed hazardous waste *not* subject to the LDRs actively managed in permitted or unpermitted TSD storage for less than or greater than one year did apply to the "each and all waste stream" reporting expectation.<br>DOE recommends removal of this section. | 04/26/17 | Accepted reference explanation, and requested that DOE add an appendix to the LDR Report that documents the change history of report requirements.<br><br>Comment withdrawn. LDR compliant waste needs to be tracked in the LDR Report per the 1992 FFCA Site Treatment Plan requirements: Sec. 3021(a) Mixed Waste Inventory | **2014LDR-001**<br>(Ecology)<br>Discuss removal of this section internally. Ecology recommended that LDR-compliant waste be exempt from LDR reporting requirements and omitted form the LDR report. Action closed 05/04/17.<br>**2014LDR-006**<br>(DOE)<br>Discuss Ecology's proposal to add an appendix to the LDR Report that documents the change history of report requirements.<br>DOE sent proposed response to Ecology on 07/29/17. DOE has proposed that changes to requirements that are established via formal | Closed on 10/1/18 ~~Open~~<br><br>Comment withdrawn. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | | | | | | Reports (2) Inventory of Wastes (B) "The amount of each type of mixed waste currently stored at each Department of Energy facility in each State, set forth separately by mixed waste that is subject to the land disposal prohibition requirements of section 3004 and mixed waste that is not subject to such prohibition requirements." This requirement was explained in the R. Stanley letter. | correspondence could be documented in LDR Report Appendix A. | |
| 7 | p. 1-2, Section 1.1 (KAC) | Storage Report | Provide the section (s) or language in your report that complies with these requirements of the Storage Report in this LDR Plan:<br>*"For those wastes covered in the Storage Report, the LDR Plan will include a Treatment Report, identifying :*<br>*(a)-treatment and disposal technologies and treatment capacity needed to manage these LDR wastes, assuming current waste generation rates;*<br>*(b)- commercial treatment technologies and extent of capacity currently available to manage LDR wastes;*<br>*(c)- DOE treatment technologies and extent of capacity currently available to manage LDR wastes;*<br>*(d)- whether any new commercial or DOE treatment capacity is scheduled to be available to manage LDR wastes, and an assessment of when such new capacity will be available; and*<br>*(e). - alternate technologies which are in development and which may be used to manage LDR wastes, and an assessment of when such alternate technologies may become available.*<br>*(f)- for (d). and (e). above, identification of the basis and assumptions utilized in forming the response and in making the assessments, and any foreseeable contingencies* | S | Explain. Land Disposal Restriction Report requirements, including storage report requirements from the LDR Plan, are listed in Appendix A, Table A-1, as follows. In addition, "key assumptions concerning treatment that cannot otherwise be supplied in the format provided" are listed in TGDS § 4.9.<br>**Item** **Reference**<br>(a) Table A-1, Items 31 and 32 (TGDS 3.3.2, 4.3, and 5.0, and Chapters 9.0, 10.0, 11.0, 13.0, and 14.0)<br>(b) Table A-1, Items 33 and 34 (Chapters 9.0, 10.0, 11.0, 13.0, and 14.0)<br>(c) Table A-1, Items 35, 36 (Chapters 9.0, 10.0, and 11.0)<br>(d) Table A-1, Items 37 and 38 (Chapters 9.0, 10.0, and 11.0)<br>(e) Table A-1, Items 39 and 40 (Chapters 9.0, 10.0, and 11.0)<br>(f) Table A-1, Items 41 and 42 (TGDS 4.9 and Chapters 9.0, 10.0, and 11.0) | 06/15/17 | Ecology concurred with explanation on 06/15/17. | None | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | *(including permit reviews) which may affect the assumptions."* | | | | | | |
| 8 | p. 1-2, Section 1.1 (EPA) | General | The concepts of "treatability group," "waste stream" and "waste" are confusing and difficult to understand. The LDR report needs to have clear, understandable definitions of each term that reflect how the terms are used to classify wastes and associate wastes with treatment technologies and schedules, and have clear and consistent use of the terms. Section 1.1, for example, states "This storage report provides aggregate waste stream data based on a set of waste treatability groups." This implies that treatability groups consist of a set of one or more waste streams. However, text in the TGDSs in Appendix B is less clear. For example, under Section 1.0 "Waste Stream Identification," section 1.2 reads "Description of waste (list WSRd numbers for this waste stream, as applicable." Suggesting that waste stream and waste are interchangeable.<br><br>Are waste streams and what is described in LSDS the same?<br><br>See comments on Section 8.0.<br>The collection of waste streams | T, TS, S | Accept. Modify text as follows:<br>This storage report provides aggregate waste stream data based on a set of waste treatability groups. Waste stream means mixed waste that has been or will be generated from the same or similar generating processes~~and evaluated for the purpose of grouping together with other mixed waste to form a treatability group~~. Treatability group means waste streams that are grouped together based on a required, common method of treatment or based on physical, chemical, and radiological characteristics that are amenable to a common method of treatment for meeting LDR treatment standards. ~~for evaluation and selection of treatment technology and capability that will provide for identification of a specific treatment process meeting the LDR standards.~~ Treatability group information is documented on treatability group data sheets. More information concerning treatability groups can be found in Sections 7.0 through 15.0, and on Treatability Group Data Sheets in App. B.<br>Waste within a Treatability Group may exist at multiple ~~Many~~ locations. ~~of mixed waste can exist within a treatability group and t~~These locations are detailed on LSDSs for the sources of waste.<br><br>~~More information concerning treatability groups can be found in Sections 7.0 through 15.0.~~ Per agreement with Ecology on February 6, 2003, mixed waste generated and sent directly to disposal does not need to be reported in the LDR report ("M-026 LDR Report Project Manager Meeting Minutes," [Ecology et al., 2003]). If any storage of the mixed waste occurs, or is forecasted to occur, the mixed waste must be reported. | Sent to Ecology on 07/29/17 for planned discussion on 08/03, but actual discussion date may vary. | Ecology concurred as proposed on 08/03/17.<br>**Reopen:** Additional clarification on language is needed. Treatability groups cannot contain multiple waste streams requiring different LDR treatment requirements. Grouping waste streams in this manner prevents the assessment of treatment capacity & availability; which ultimately determines whether or not a particular waste needs a treatment schedule. This is the main purpose of the LDR Report. | None | ~~Closed~~~~Open~~Closed<br><br>10/17/19: Placed in PARKING LOT as text is related to reorganization of treatability groups. |
| 9 | p. 1-2, Section 1.1 (Comp) | Mixed waste is reported here as projected waste when the waste meets either of the following criteria:<br>The waste has not been generated and therefore is not subject to the storage prohibition.<br>The waste is managed in either a satellite accumulation area, a 90-day accumulation area, or is CERCLA mixed waste | Why is waste managed in a 90-day accumulation area being considered as projected waste? A modification to the LSDS (section 2.3) should add an additional entry that lists the waste stored in 90-day accumulation areas. | S, Ed, Err | Explain.<br>Reference January 25, 2000, letter from R. Stanley, Ecology, to G.H. Sanders, RL.<br>Note related items 6 and 196 addressed on April 26.<br>Also note the following specifically requested clarifications:<br>...mixed hazardous waste accumulated in 90-day accumulation areas: does not apply recognizing proviso (4) at *Resolution of Dispute* pp. 8-9 "Further | 05/11/17 | Ecology concurred as proposed on 05/11/17. | None | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | destined for treatment at ERDF. | | | clarifications regarding resolution of this and the following dispute elements: | | | | |
| 10 | p. 1-4, Table 1-1, entry for "MLLW-06 – Mercury wastes" (EPA) | Various forms of mercury (elemental and amalgamated) from various locations. | In at least one instance (PUREX storage tunnels), there are wastes that contain elemental mercury (equipment with elemental mercury in thermo wells). Unless all sources of elemental mercury are identified in the LDR report inventory, the LDR report cannot effectively function as a planning document for identification and acquisition of necessary treatment capacity. All treatability groups should be carefully reviewed for similar issues.<br><br>Presumably, all mercury within this treatability group is contaminated with radioactive material, such that they fit into the D009 treatability group for elemental mercury contaminated with radioactive materials. The MLLW-06 treatability group description should be amended to clarify this point. If true, then at least some wastes, those that are already amalgamated, already meet the applicable LDR treatment standard, and should be included in the MLLW-01 - LDR Compliant Waste, not the MLLW-06 treatability group. | Err, S, T | Explain. Mercury in the PUREX storage tunnels is identified within the PUREX Tunnels treatability group (see the associated treatability group sheet, pp. B-451-454).<br>The decision to amalgamate this mercury cannot be made until the closure is coordinated with CERCLA actions for the canyon. Furthermore, if the mercury is transuranic, it will be managed in accordance with the WIPP waste acceptance requirements. | 06/15/17 | Ecology inquired if it would be possible to add constituent quantities in addition to concentrations in TGDS sections 3.3.2. Using the PUREX tunnels example, Ecology stated that this information is available, but it is buried in the report, thus Ecology asserted the LDR Report does not currently meet storage report requirements.<br>Note this comment related to comment 32.<br>Open pending resolution of 2014LDR-016.<br>The questions raised on elemental mercury contaminated with radioactive material in MLLW-06 & PUREX storage tunnels apply to overarching issues with Treatability Group organization. Place reorganization of Treatability Groups on the Parking Lot for | **2014LDR-016**<br>(DOE)<br>Review and consider alternative treatability groups.<br>DOE sent proposed response to Ecology on 07/29/17 in anticipation of discussion on 08/03/17. DOE has determined that alternative treatability groups are not required. | ~~Open~~ ~~Closed~~<br>Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | | | | | | the next full LDR Report. See comment #32 for further information. | | |
| -11 | p. 1-4, Table 1-1, entry for "MLLW-08 – Unique Waste" (EPA) | Waste stream consists of unique waste that requires special processing not typically employed for the other MLLW waste streams. | This treatability group seems like an excellent example that likely contains multiple individual wastes that require special processing distinct from the balance of the larger MLLW-08 treatability group. Unless the larger treatability group is appropriately subdivided, it is essentially impossible to match specific quantities of waste with particular treatment requirements to the corresponding "special processing" treatment technology that is required. The description of MLLW-09, including mention of beryllium powder, PCB oils, aqueous wastes with PCBs, makes it abundantly clear that multiple and very distinct treatment technologies will be required for the various unique wastes lumped into this treatability group. All of the treatability groups in Table 1-1 should be critically reviewed with respect to this point. | T | Explain.<br>Current waste package consists of small partially full propane bottles that were removed from legacy retrieved TRU waste.<br>The 2014 LDR Full Report has an inconsistency in the MLLW-08 waste description.<br>MLLW-08 Treatability Group data sheet description of waste, section 1.2 states:<br>• Currently this treatability group contains one drum of beryllium waste and some mixed waste subject to thermal treatment for PCBs.<br>MLLW-08 – Unique Waste/T Plant Location Specific Data Sheet, section 2.3 states:<br>• Current waste package consists of small partially full propane bottles that were removed from legacy retrieved TRU waste<br>Note: both the TGDS and LSDS are consistent with reporting a total volume of 0.040 cubic meters of MLLW-08.<br>Update the MLLW-08 TGDS to be consistent with the LSDS. See attached redline/strikeout. | Sent to Ecology on 07/29/17 for planned discussion on 08/03, but actual discussion date may vary. | Pending resolution of 2014LDR-055<br>DOE's proposed redline deletes all content of MLLW-08 except information related to the propane bottles. If there is truly no longer beryllium powder, transformer fluids/oils, sludge with PCB, aqueous waste with PCBs, etc., Table 1-2 "Streams no Longer Applicable to Report" should be updated and MLLW-08 removed from the next LDR Report. The questions raised on the different waste streams with very different LDR treatment requirements in MLLW-08 apply to overarching issues with Treatability Group organization. Place on the Parking Lot for reorganization of Treatability Groups for the | 2014LDR-055<br>(DOE)<br>Incorporate project input to complete section 4.0 entries<br>**Response:**<br>See redline/strikeout provided in 2014LDR-055.<br>**ACTION CLOSED** | Closed<br>Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report.~~Open~~ |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | | | | | | next full LDR Report. | | |
| 12 | p. 1-4, Table 1-1, entry for "MLLW-10 – Reactive Metals" (EPA) | Waste stream consists of unique waste that requires special processing not typically employed for the other MLLW waste streams. | This is another example of a treatability group that contains diverse wastes that are subject to distinct treatment requirements. As documented in Table 2-1, this treatability group includes water reactive alkali metals as well as cyanides/sulfides, which are typically not water reactive but do react with acids. It is unlikely that a single treatment technology could treat both alkali metal wastes and cyanide/sulfide. Therefore, to defensibly establish a planning basis for necessary treatment technologies, it will be necessary to separate this treatability group into subgroups, each of which contains wastes amenable to treatment via a common treatment technology. Again, this is a comment that may apply to multiple treatability groups. | T | Explain. It is not expected that a single treatment technology could treat all MLLW-10 wastes. See the reactive metals LSDS, Section 2.11.2, which states that characterization needs are determined after the containers are opened and the contents are examined (p. B-439). Subsequently, the container is either reassigned to another treatability group/WSRd datasheet, or it is declared non-mixed waste. Currently, there are no wastes in the MLLW-10 treatability group in storage and none planned for generation over the next 5 years. | 06/15/17 | Open pending resolution of 2014LDR-026<br>All waste with a common LDR treatment requirement must be included in the corresponding Treatability Group. Consistent with Comment #8, Treatability group means waste streams that are grouped together based on a required method of treatment or based on physical, chemical, and radiological characteristics that are amenable to a common method of LDR treatment for meeting LDR treatment standards. The questions raised on the different waste streams with very different LDR treatment requirements in MLLW-10 apply to overarching issues with Treatability Group organization. Place on the Parking Lot for reorganization of | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | Closed<br>Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report.~~Open~~ |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | | | | | | Treatability Groups for the next full LDR Report. | | |
| 13 | p. 1-~~57~~, Table 1-2 (EPA, KAC) | Various | This table includes four entries for "streams no longer applicable to report [sic]," but for which no Reason is provided. Please include the missing information.<br>Also, while past history, it is not clear why Purgewater was "closed and not used in 2011." Given that purgewater continues to be generated, it is not clear why it is not included in the report.<br>Are you referring to modutank unit 1? The unit is no longer there but has not officially closed under an issued permit.<br>There are other modutank units (2, 3, and 4) that currently accept and store purgewater. Update this section to specifically identify and describe Hanford purgewater. | Err | 200-UP-1 / 200-UP-1 groundwater produced as a result of groundwater remediation under the 200-UP-1 Interim Record of Decision (ROD). / Waste streams are now covered under the latest 200-UP-1 OU Interim ROD and therefore are not being generated independently.<br>TX/TY Treatability Test Wells / 200-ZP-1 groundwater, produced as part of a treatability test. / Waste streams are now covered under the latest 200-ZP-1 OU ROD and therefore are not being generated independently.<br>PFP – Lab Chemicals/Reagents, LDR Compliant / PFP laboratory decontamination and decommissioning (D&D) / Lab Chemicals reagents, LDR Compliant, cleanout was completed before demolition activities commenced and therefore are no longer being generated.<br>LLBG Unique Waste / Beryllium, F027 contaminated waste and waste with unique processing concerns which had been placed in disposal at the Low-Level Burial Grounds (LLBG). / There are no longer plans to generate and store this waste within the LLBG. | 05/11/17 | Concurred with completion of 2014LDR-007 on 06/15/17<br><br>Reopen:<br>All CERCLA mixed waste not yet generated must be included as projected waste. Once generated, CERCLA mixed waste in storage longer than a year requires a treatment schedule. Groundwater containing mixed waste or exhibiting a dangerous characteristic must be managed as if it is a dangerous/ mixed waste.<br><br>Purgewater that contains listed waste or exhibits a dangerous characteristic and that is radiologically contaminated is subject to requirements of the LDR Report.<br><br>CERCLA mixed waste accumulated, treated, stored or to be disposed of | **2014LDR-007**<br>(DOE)<br>Change text in TX/TY Treatability Test Wells from 200-UP-1 OU to 200ZP-1 OU and delete "Interim." | ~~Closed~~ ~~Open~~ Closed<br><br>10/1/18 DOE Action: W. Toebe go back and address what EPA proposed (tied/related to Comment #3). Action completed on 10/10/18<br><br>10/10/18 DOE Action: W. Toebe confirm Treatability Test has been completed as of 2014. Action completed on 11/7/18. W. Toebe confirmed test was completed prior to CY2014.<br><br>10/10/18 DOE Action: W. Toebe will confirm Purgewater is and/or will be captured in the LERF/ETF location specific data sheet(s). Action completed on 11/7/18. W. Toebe confirmed. Supporting documents provided to Ecology to support Ecology action.<br><br>10/10/18 Ecology Action: Confirm DOE Action for Purgewater (10/10/18) will satisfy EPA (D. Bartus) comment. 11/7/18 Ongoing. Documents provided by W. Toebe for review. Action completed on 11/29/18. Ecology |

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| | | | | | Accept and Explain. The purgewater management TSD unit has been clean closed. No more waste will be generated, therefore, it has been removed from the report. Purgewater is currently managed under a CERCLA decision document (DOE/RL-2011-41, *Hanford Site Strategy for Management of Investigation Derived Waste*). When this waste is transferred to a location that makes it subject to storage requirements, it will be included.<br>DOE proposed revisions were provided as part of the Group 2 package. See table insert above.<br><br>**Ecology response on 200-UP-1 entry:** Please revise the language "Waste streams are now covered under the latest 200-UP-1 OU Interim ROD and therefore are not being generated independently." To "200-UP-1 OU contaminated groundwater is extracted and treated in the 200-West Area Pump-and-Treat facility, then reinjected back to the aquifer through injection wells." Language mutually agreed to on 10/10/18.<br><br>**Ecology response on TX/TY Treatability Test Wells entry:** The 2013 summary report Pg. 1-4 states for 2011 Changes, "A new location specific datasheet was established for the TX/TY Treatability Test Wells under the Liquid Effluent Retention Facility (LERF)/ETF Treatability Group Data Sheet where contaminated groundwater is pumped from the 200-ZP-1 Operable Unit at the TX/TY Tank Farm and conveyed to LERF/ETF." The 2014 report indicates the waste stream is no longer applicable to report. Is this because the treatability test is over? If yes, that is the information that should be included in the "Reason" column. DOE Action on 10/10/18 needed prior to closure.<br><br>**Ecology response on PFP-Lab Chemicals/Reagents LDR Compliant entry:** Agree with explanation.<br><br>**Ecology response on LLBG Unique Waste entry:** Agree with explanation.<br><br>**Ecology response on Purgewater:** Generated Purgewater that contains listed waste or exhibits a dangerous characteristic and that is radiologically contaminated is subject to requirements of the LDR Report. A location specific data sheet(s) needs to be added (to LERF/ETF Liquid Waste treatability group?) to account for storage of contaminated purgewater that is generated each year. | | must be included in the LDR Report as the FFCA does not provide an exclusion from site treatment plans for wastes managed pursuant to CERCLA action. Reference January 25, 2000, letter from R. Stanley, Ecology, to G.H. Sanders, RL. | | confirmed EPA is satisfied and comment can be closed.<br><br>11/7/18 DOE Action: W. Toebe will update "Reason" column with applicable language. Action completed on 3/7/19- W. Toebe indicated the LSDS Sheet was prepared in error. It was confirmed the unique waste in the "Reason" column was never in storage.<br><br>11/29/18 Parties agreed "Purgewater" should be taken out of Table 1-2 and placed in appropriate data sheets for 2019 Report. |
| 14 | p. 1-5, Table 1-2 (Comp) | Significant amounts of alkali metal waste are no longer | Where is this waste being stored at CWC? | Err, S | Explain. The waste in question was merged into the MLLW-10 treatability group, and is reported in a | 05/11/17 | Concurred with completion of | **2014LDR-008** | ~~Closed~~ Closed ~~Open~~ |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | generated. This inventory is stored at the Central Waste Complex (CWC) and reported as part of that inventory. | | | CWC LSDS under MLLW-10. See pages B-433 through B-436. | | 2014LDR-008 on 06/15/17<br>**Reopen:**<br>Inventory for MLLW-10, CWC LSDS is 0. As this waste was dispositioned in 2010/2011, the comment to update the "Reason" in Table 1-2 for the 2014 LDR Report is valid. | (DOE)<br>Confirm where the subject waste is being stored in CWC. Modify text as needed.<br>DOE explained that in 2009, 40 MLLW containers of sodium metal contaminated waste was stored at the CWC in the Alkaline Metal Waste Storage Modules. These 40 MLLW containers were shipped offsite to Tennessee in 2010/2011 and dispositioned (i.e., the sodium was reacted and the residual debris material returned to Hanford and disposed in to T31/T34).<br><br>(DOE) Update "Reason" column for the 4843 Sodium Storage Facility Waste to reflect waste was dispositioned in 2010/2011 and residual debris disposed in T31/34, as described in DOE response. | 10/1/18 DOE agreed to Ecology proposed text. |
| 15 | p. 1-9, Section 1.3 (KAC) | Annual report revisions | What is the approved document reference and number that verifies this bullet list and final determination for the annual LDR reports? List references for bullets in the list. | Ed | Explain/Modify. This is an introductory sentence. The full requirement set is identified in Appendix A.<br>Modify text as follows:<br>The following summarizes the information updated in each annual report, ~~as documented in Appendix A revisions consist of the following~~: | 04/26/17 | Ecology concurred as proposed on 04/26/17.<br>Reopen:<br>Explanation is fine. Resolution of the comment is completed with including a reference to Appendix A as the source for the bullet list. | ~~None~~DOE: Add the reference to Appendix A. | ~~Closed~~ Closed ~~Open~~<br>10/1/18 - DOE agreed to Ecology proposed text. |
| 16 | p. 1-9, paragraph starting with "Changes…" (EE) | "either updating the document and publishing the updated report, documenting changes through use of errata sheets, or | This is not what Fig 9-1 in the TPA Action plan says about the process for primary documents. It should be acknowledged that this is the way it has been done a few times. Furthermore, what does it mean with "annual LDR report"? Is this the annual summary report or the full | Ed | Accept/Modify. Modify text as follows:<br>Each annual LDR Report~~update~~ is issued ~~as a complete replacement~~ with a unique~~new~~ document number. Each full report ~~that~~ supersedes the previous full report, and each | 04/26/17 | Closed with completion of 2014LDR-002. The TPA section Manager | **2014LDR-002**<br>(Ecology)<br>Discuss proposed markup with TPA Section Manager. | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | could be incorporated in the next annual LDR report". | report? The sentence describing the "third option" will be deleted. | | summary report supersedes the previous summary report~~year's LDR Report~~. Proposed TPA milestones or proposed changes to TPA milestones are identified and processed using existing processes contained in the TPA Action Plan, Section 12.0, and not as part of the annual LDR report review and approval process. Modifications to TPA milestones listed in the LDR report are incorporated in the next year's report. Commitments other than TPA milestones ~~however,~~ can be proposed in the LDR Report when required. ~~Modification of commitments in the report are made by: using an LDR Report change form for within-year changes; by agreement through TPA lead regulatory agency project manager meetings; by agreement through LDR TPA project manager meetings; or by DOE in the annual update agreed on by Ecology during the primary document review and comment process. Changes to commitments proposed by DOE as part of the primary document process are summarized in Section 1.5.~~<br>~~Changes made to the LDR Report after DOE submits the document to Ecology can be incorporated by either updating the document and publishing the updated report or documenting changes through use of errata sheets. A third option is to incorporate changes in the next annual LDR report. The decision to choose a particular pathway is made jointly by DOE and Ecology project managers responsible for the work scope in question. Modification to TPA milestones listed in the LDR report is incorporated in the next annual LDR report and are not issued as errata sheets.~~ | | approved of the suggested changes on 05/04/17. | | |
| 17 | p.1-10 – 1-11, Section 1.5 (Comp) | Ecology and DOE Richland Operations Office (DOE-RL) initiated M-091-45 negotiations on September 8, 2009, to reach an agreement on adjustments in work scope and milestones consistent with the shift of resources to the River Corridor and other higher priority Hanford Site cleanup tasks. The Parties agreed that it was prudent to expand the scope of the negotiations to encompass all of the M-091 series milestones and to simplify the M-091 language, both in response to public comments that the milestones were | Delete the paragraphs in the prior column. | Ed | Accept. Modify text as follows:<br>**1.5 SUMMARY OF PROPOSED CHANGES TO COMMITMENTS IN THE LAND DISPOSAL RESTRICTIONS REPORT**<br>~~LDR report commitments can be changed through the processes described in Section 1.3. This section contains any commitment changes that are proposed by DOE in the annual update and agreed on by Ecology during the primary document review and comment process.~~<br>~~Ecology and DOE Richland Operations Office (DOE-RL) initiated M-091-45 negotiations on September 8, 2009, to reach an agreement on adjustments in work scope and milestones consistent with the shift of resources to the River Corridor and other higher priority Hanford Site cleanup tasks. The Parties agreed that it was~~ | 06/15/17 | Ecology concurred as proposed with the addition of minor modification provided during 06/15 meeting.<br><br>**Reopen:** Text highlighted in yellow should be retained in the Report as the introduction to the section. | None<br>(DOE) Please restore deleted text highlighted in yellow to Section 1.5 introduction. | ~~Closed~~ ~~Closed~~ ~~Open~~<br><br>~~10/1/18~~ - DOE agreed to Ecology proposal. |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | difficult to read and understand.<br>In September 2009, a Tri-Party Agreement milestone change request (M-091-01) modifying the M-091 series of milestones, was signed and approved by DOE and the regulators, with a due date to be established pursuant to milestones M-091-01A and M-091-01B. This M-091 change request provided a comprehensive, easily understood series of milestones to measure progress on the safe and stable processing and shipping of Hanford Site wastes. The change also included establishing enforceable milestones for the shipment of TRUM waste from the Hanford Site. | | | ~~prudent to expand the scope of the negotiations to encompass all of the M-091 series milestones and to simplify the M-091 language, both in response to public comments that the milestones were difficult to read and understand.~~<br>~~In September 2009, a Tri-Party Agreement milestone change request (M-091-09-01) modifying the M-091 series of milestones, was signed and approved by DOE and the regulators, with a due date to be established pursuant to milestones M-091-01A and M-091-01B. This M-091 change request provided a comprehensive, easily understood series of milestones to measure progress on the safe and stable processing and shipping of Hanford Site wastes. The change also included establishing enforceable milestones for the shipment of TRUM waste from the Hanford Site.~~<br>The decision to issue a full LDR report every five years with summary reports each year during the intervening years was agreed to ~~(~~ in TPA Change Control Form~~Request~~ M-026-06-01~~) has proven to be an efficient and cost effective change~~. The change will remain in effect unless revised per the TPA process ~~above~~. | | | | |
| 18 | p. 2-1, Section 2.0 (KAC) | Summary Inventory – "The treatability group breakout of retrievably stored waste is described in the PMP… | The Final Determination required information for this LDR report must be in this report. Also, given that a PMP has not been approved by Ecology currently (and could occur in the future) it cannot be used to satisfy these waste streams. Add this information to this report. | Ed | Explain. RSW that currently resides in the LLBG is technically not yet generated under RCRA because it was disposed prior to the effective date for mixed waste regulation at Hanford (August 19, 1987). RSW that was placed in or on the ground before August 19, 1987, is not subject to RCRA/LDR requirements. RSW is not subject to RCRA LDR requirements, and is addressed as projected waste.<br>§ 2.1 states, "The volume of mixed waste currently in storage *and the volume projected to be generated* and subsequently stored at Hanford *during the next five calendar years* are presented in Table 2-1." According to HNF-19169, *M-091 Transuranic Mixed/Mixed Low-Level Waste Project Management Plan*, "…retrieval of RSW is not anticipated to occur during FY2016 through FY2021," so these wastes are not reflected in Table 2-1 in the 2014 LDR Report. | 06/15/17 | Ecology concurred with explanation on 06/15/17.<br>**Reopen:** DOE explanation rejected, and original Ecology comment withdrawn. RSW is currently addressed in the 2014 LDR Report under the appropriate treatability group data sheets and associated location specific data sheets for LLBG. | (DOE) Restore all deleted text, treatability group data sheets, and associated location specific data sheets related to RSW located in the LLBGs. Remove RSW information from Appendix C, Potential Mixed Waste. ~~None~~ | ~~Closed~~~~Open~~Closed<br>10/1/18 Parties agreed to elevate to attorney level for discussion.<br>10/10/18 Parties indicated both sets of attorney's have been contacted/briefed. |
| 19 | p. 2-1, Section 2.1 (EPA) | "The WTP is a new TSD unit…" | The WTP is NOT a "TSD unit." It is a collection of distinct dangerous waste management units. Please revise the cited text accordingly. | Ed | Accept. Modify text as follows:<br>The WTP is a new TSD Group~~unit~~… | 07/20/17 | Ecology concurred with minor change | None | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | above on 07/20/17. | | |
| 20 | p. 2-1, Section 2.3 (EPA) | Reference to RCRA past practice units. | The classification RCRA past practice unit, or RPP unit, no longer exist in the TPA. Most likely, this reference needs to be replaced with one to RCRA/CERCLA past practice unit, or R-CPP. It is essential that each and every submission of the LDR report be carefully edited to ensure it is true, accurate, and up-to-date. | Ed | Accept. Update the text as follows:<br>2.3 POTENTIAL MIXED WASTE<br>The PMWT (Appendix C) 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. The materials included in the PMWT (equipment, piping, etc.) are those that currently are not being used and do not have a clear path for reuse or recycling. The waste that has not been actively managed as mixed waste is, in many cases, at *Resource Conservation and Recovery Act of 1976* (RCRA)-CERCLA past-practice (R-CPP) units or CERCLA past-practice (CPP) units under the Tri-Party Agreement. Past practice waste is waste that was abandoned before the first effective LDR date in Washington State, August 19, 1987. Classification of waste management units (WMUs) as past-practice units is described in Section 3.0 of the Tri-Party Agreement Action Plan. When cleanup actions occur in the operable unit (OU) for these past-practice units, mixed waste could, or is expected to be, generated. The PMWT also includes a similar category of materials currently in standby for a potential future use. The table was developed for the following reasons:<br>Modify Table C-2 as follows:<br>Cell 11-L will be dispositioned along with the other R-CPP~~RCRA past practice~~ process cells in the T Plant canyon. | 05/11/17 | Ecology concurred as proposed on 05/11/17 | None | Closed |
| 21 | p. 2-2, Section 2.3 (EPA) | Past-practice waste is waste that was abandoned before the first effective LDR date in Washington State, August 19, 1987. | The term "abandoned" should be replaced with "disposed of." In some cases, such as waste "abandoned" in a tank system is still being actively managed under the dangerous waste program.<br>The Potential Mixed Waste Table needs to be re-evaluated for deletion of line items (e.g. B Plant and PUREX tanks) and inserted in applicable sections and tables required in the LDR report. | Ed | Explain. Abandonment is a form of disposal as discussed in WAC 173-303. The TPA defines a past practice unit as "a waste management unit where wastes have been disposed (intentionally or unintentionally), and that is not subject to regulation as a TSD Unit" (Action Plan Executive Summary Page 2). | 07/20/17 | Open pending resolution of 2014LDR-028<br><br>The term "abandoned" is used in defining a solid waste (see WAC 173-303-016). It is not defined in WAC 173-303-040. In the context of defining waste subject to mixed waste regulation as of August 19, | **2014LDR-028**<br>(Ecology)<br>Discuss ongoing active management discussions with Nina and Stephanie<br><br>(DOE) Revise text to state: Past-practice waste is a waste that was disposed of before the first effective date of applicable designation regulations in Washington State, typically August 19, 1987 for mixed waste. | Closed~~Open~~<br><br>10/1/18: Parties agreed to proposed text, except add after "disposed" (intentionally or unintentionally) to line up with TPA definition. |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1987 vs. past practice waste, the correct term is "disposed" as defined in WAC 173-303-040, and as used in the TPA past practice definition. See revised text. Also second part of comment regarding Appendix C, Potential Mixed Waste table was not addressed. | | |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 22 | p. 2-4, Table 2-1 (Comp) | 221-T Tank System, Current Inventory ($m^3$)[2]: 1.7 | Past years report 0 and .36 for the inventory with no projected generation. Identify the process used for collecting the data. | Err, S | Explain.<br>The current inventory data for 221-T Tank System must be estimated because the volume is below detection limits. The different reported values reflect different estimates for the volume. 0 $m^3$ is the lowest volume that can be estimated, 1.7 $m^3$ is the maximum volume before reaching detection levels, and 0.36 $m^3$ is an estimate based on evaporation rates. | 07/20/17 | Open pending resolution of 2014LDR-029. DOE provided proposed response to Ecology on 07/29/17 for planned discussion on 08/03, but actual discussion date may vary. | **2014LDR-029**<br>(DOE)<br>Summarize status and approach for 221-T Tank System volume estimations<br>**DOE Response FROM Action No. 2014LDR-029:**<br>The residues in the 221-T Tank System cannot be confirmed as being dry. Until information is obtained indicating that the tank system contents are dry, the LDR Report will indicate that a combination of forms exists (solid, liquid, semi-solid) within the tank system. The contents were previously thought to be dry based on calculations of anticipated evaporation rates. Because the contents cannot be confirmed as dry, the closure plan will provide the best available information.<br>**ACTION CLOSED 7/27/2017** | ~~Open~~Closed<br>10/1/18- DOE agrees to close comment as marked. |
| 23 | p. 2-5, Table 2-1, entry for B-Plant Containment Building (EPA) | Description section | While the building itself is legitimately under long-term S&M, whatever this plan is does NOT substitute for permit authorization to store mixed debris. Please revise accordingly. | Ed, S | Accept.<br>Modify the text as follows:<br>B Plant Cell 4- Waste resulted from WESF hot cell maintenance waste (i.e., manipulator boots, light bulbs, high-efficiency particulate air [HEPA] filters, misc. debris). This waste is stored in accordance with interim status technical standards pending completion of closure. ~~B Plant, including Cell 4, was placed in long-term S&M in 1998.~~ No additional waste ~~will~~~~is intended to~~ will be stored in this location ~~as B Plant is under long-term S&M~~.<br>B Plant Containment Building- Stream consists of failed equipment (e.g., process jumpers, pumps, etc.) used in the 221-B canyon. Contaminated | 07/20/17 | Ecology concurred with minor change reflected above 07/20/17<br>**Reopen:** See additional changes to high-lighted text. | None | Closed 8/7/19- Language agreed to by all parties.~~Closed~~~~Open~~<br>10/1/18 DOE and Ecology Action(s): W. Toebe and Ecology work on language to ensure both S&M intent is reflected, while ensuring storage is clearly authorized under Part A interim status technical standards. Language |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | debris/equipment derived from the processing of "F" listed wastes for the recovery of strontium and cesium. Also contains elemental lead used for counterbalances and shielding. This waste ~~was placed in long-term S&M~~ is stored in accordance with interim status technical standards pending completion of closure~~Section 8.0 of the Tri-Party Agreement. in 1999.~~ No additional waste ~~is intended to~~will be stored at this location. ~~The B Plant is under long-term S&M.~~ | | | | needs to reflect coordinated closure. DOE Action completed on 10/10/18<br><br>10/10/18: Ecology Action: Review the following DOE proposed language with EPA: "B Plant has been retired from active operation and is in surveillance and maintenance mode pending final disposition, which will be addressed using CERCLA remedial action coordinated with RCRA closure." 11/7/18: Ongoing. Action completed on 3/7/19: Ecology proposed language agreed to by the Parties.<br>3/7/19: Ecology Proposed Language: "Cell 4 waste resulted from WESF hot cell maintenance waste (i.e., manipulator boots, light bulbs, high-efficiency particulate air [HEPA] filters, misc. debris). This waste is stored in accordance with interim status technical standards pending completion of RCRA closure. No additional waste will be stored in this location. B Plant has been retired from active operation and is in surveillance and maintenance mode pending final disposition, which will be addressed using CERCLA remedial action |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | that is coordinated with RCRA closure." |
| 24 | p. 2-5, Table 2-1 (Comp) | ERDF – Treatment: This waste stream reflects mixed waste that requires treatment before disposal at ERDF. The waste is stored at the OU/facility, and is transferred to ERDF where the waste is treated and disposed.<br>Generation Projections: 2015 (150.5 $m^3$), 2016 (137.5 $m^3$), 2017 (102 $m^3$), 2018 (102 $m^3$), 2019 (102 $m^3$) | DOE-RL-2014-17 Rev. 0 reports the following. Generation Projections: 2014 (52,947.396 $m^3$), 2015 (25,061.416 $m^3$), 2016 (25,036.112 $m^3$), 2017 (25,000.612 $m^3$), 2018 (25,000.612 $m^3$). What accounts for the significant change in projections? | T, Err | Explain.<br>Projections are estimates and based on the available funding, milestones, and realistic probability that work will be done on that unit/facility. In 2014 ERDF anticipated receiving much greater quantities of contaminated soil than they anticipated in their projections as of 2015. | 06/15/17 | Ecology concurred with explanation on 06/15/17. | None | Closed |
| 25 | P. 2-5, Table 2-1 (Comp) | B Plant Cell 4 and B Plant Containment Building | This table does not include mixed waste from outside of the containment building at B Plant. | Err, S | Concur.<br>Agreed. The table entries for these two treatability groups only include wastes within Cell 4 and the containment building as identified in the associated LSDSs (pages B-105 and B-115). | 06/15/17 | Open pending resolution of 2014LDR-037. See associated comment 128.<br><br>Because 276-BA was identified prior to 2014 and contains a waste heel, it must be added to the Report. Please note that a closure plan is currently in development. | **2014LDR-018**<br>(Ecology)<br>Determine where 276BA waste is reported and the wastes' LDR status. Closed 07/27/17.<br>**2014LDR-037**<br>(DOE)<br>Determine if 276BA was identified prior to 2014.<br>**Response:**<br>Yes the subject waste was identified prior to 2014. In the future, any wastes outside B Plant will be addressed appropriately. DOE and Ecology have agreed that 276-BA is a container; this information will be reflected in the issuance of DOE/RL-2016-46, Removal Action Work Plan for the B Plant Complex Tier 2 Buildings/Structures.<br>**ACTION CLOSED**<br>(DOE) Add 276-BA to the LDR report as it was identified prior to 2014, and contains a waste heel. | Closed~~Open~~<br><br>10/10/18 DOE Action: W. Toebe verify 276-BA is an empty container, and modify DOE Response as appropriate. If determined empty, Ecology agrees comment is closed. 10/10/18 Ongoing. Action completed 11/7/18. W. Toebe verified empty and will modify response. |
| 26 | p. 2-5, Table 2-1, entry for DST wastes (EPA) | Current inventory value of 101,009.105 cubic meters | Is the quantity of DST wastes known to nine significant figures? All data should be reported to a number of significant figures that reflects the accuracy and precision of the underlying data. | Err, S | Accept.<br>Modify text as follows:<br>101,000.000~~101,009.105~~ | 05/11/17 | Concurred as proposed on 05/11/17. | None | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 27 | p. 2-5, Table 2-1 (Comp) | DSTs - 33.000 | The transfer of waste from the SSTs to the DSTs is done in campaigns, and it would seem that the generation projections would vary more. | Ed | Explain.<br>The DST treatability group generation projections do not refer to SST to DST transfers. SST waste is already in storage; this does not constitute generation. | 05/11/17 | Ecology accepted ORP's explanation of 2014LDR-009 on 06/29/17. | **2014LDR-009**<br>(DOE)<br>Identify how the 33.000 was estimated for DST 2015 generation projection.<br>ORP explained that all WRPS personnel with LDR report process familiarity had retired, and any answer provided by new staff would be entirely speculative. | Closed |
| 28 | p. 2-6, Table 2-1, entry for MLLW-02 (EPA) | Description section | This is an excellent example of a treatability group that contains distinct wastes subject to distinct treatment technologies (in this case, waste with a method of treatment LDR treatment standard and wastes with concentration-based treatment standards that can be treated via any applicable method. The LDR report must be structured such that plans and schedules for particular technologies can be associated with the particular wastes requiring that technology, as well as schedules for same. Currently the LDR report lumps wastes needing to be treated with multiple distinct treatment technologies with treatment plans/schedules that often do not identify particular treatment technologies, or schedules that are not specific to any particular technology. Therefore, it is simply not possible to extract a defensible plan and schedule for a particular volume of waste and its particular LDR treatment standard. In this sense, the LDR report fails its core function and is therefore deficient. | T, TS | Explain.<br>The first paragraph in Chapter 9.0 acknowledges that MLLW-02 is a treatability group that could be treated under more than one process. Treatability groups in the Hanford LDR Report have never been intended to be necessarily limited to a "distinct" waste subject to an individual (i.e., one-for-one) treatment technology.<br>> As noted in Figure 9-1, some treatability groups (MLLW-02, -04) could be treated under more than one process. (p. 9-1)<br>The MLLW-02 treatability group is described in Table 2-1 as<br>> ...non-debris waste ~~that contains hazardous constituents~~ that are subject to either a ~~require~~ non-thermal treatment standard (specified technology), or a concentration-based treatment standard based on the performance of ~~non-thermal treatment is the~~ best demonstrated available technology (BDAT).... (p. 2-6)<br>Wastes for which a specified technology is ~~BDAT~~ the required LDR treatment standard are legitimate candidates for grouping together with wastes subject to the same specified technology. | 06/15/17 | Open pending resolution of 2014LDR-026<br>See redline/strikeout changes. Text changes needed throughout: Pg. 2-6, Table 2-1, MLLW-02; Pg. 2-7, Table 2-1, MLLW-03; Pg. 9-11, Sec. 9.1.9; Pg. B-253, Sec. 1.2; & Pg. B-275, Sec. 1.2. The intent of this change is not to alter the makeup of MLLW-02, but to better reflect the nature of applicable LDR treatment standards. EPA establishes concentration-based treatment standards based on the performance of BDAT technology, but any technology may be used to satisfy the standards. | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | Closed ~~Open~~<br>~~Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report.~~<br>Correction for 2014 Report will include the correction of the use of BDAT, the LDR Report must be specific to each treatment technology.<br>11/7/18 Parties agreed BDAT language is still open.<br>11/7/18 DOE Action: W. Toebe will revisit language and offer corrections/new language.<br>11/7/18 Ecology Action: Ecology will revisit language.<br>3/7/19 DOE Action: W. Toebe will provide revised language and M. Mills will send to Ecology for review. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 7/25/19: Parties agreed to language. |
| 29 | p. 2-7, Table 2-1, entry for MLLW-03 (EPA) | Text in the description section reading "...or thermal treatment is BDAT for meeting the applicable LDR treatment standards (concentration-based standards). | This does not accurately reflect LDR regulatory requirements. While EPA does establish concentration-based standards based on BDAT, but once established, any technology may be used to meet a concentration-based treatment standard. This is important in developing schedules, since actually applying a thermal treatment process may not be necessary for all wastes in the MLLW-03 treatability group.<br><br>Consistent with comments on other treatability groups, MLLW-03 includes wastes that are likely to be subject to multiple distinct treatment technologies. For example, soils and labpacks are not likely to be amenable to treatment in the same treatment process based on significant differences in their chemical and physical form, even if both contain the general class of organic non-debris waste, particularly if alternate LDR treatment standards for labpacks is applied. Therefore, it is essential that both the treatability group and associated treatment plans and schedules clearly reflect these sorts of subsets within the existing treatability groups. | T, TS | Accept.<br>Modify text as follows:<br>This treatability group is for non-debris waste that contains hazardous constituents that either requires thermal treatment (specified technology) or is subject to concentration-based treatment standards~~thermal treatment is BDAT for meeting the applicable LDR treatment standards (concentration-based standards)~~. Stabilization of the thermal treatment residue also might be required. The primary applicable WSRds for this treatability group are: 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 427, 429, 430, 431, 432, 500, 501, 502, 503, 504, 505, 520, 522, 700, 701, 720, 721, 920, 921, 922, and 923. This waste stream consists of many different inorganic and organic solids (e.g., particulates, absorbed liquids, sludge, resins, soils) and labpacks that are contaminated with organic regulated dangerous waste constituents. This waste stream may also include dangerous waste containing PCBs that required thermal destruction. This waste stream does not include hazardous debris other than incidental debris material commingled with the non-debris | 07/20/17 | Ecology concurred with minor change on 07/20/17. | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>None | Closed |
| 30 | p. 2-7, Table 2-1 (Comp) | MLLW-04 – Hazardous Debris, Generation Projection 2015-2019 ($m^3$)[2]: 66.260 annually | These projections are up from last year's report which showed Generation Projection 2014-2018 ($m^3$)[2]: 3.26 annually. What has contributed to the projections increased? | Err | Explain.<br>Projections are estimates and based on the available funding, milestones, and realistic probability that work will be done on that unit/facility. The values provided in the 2013 report were underestimated by an order of magnitude. The values in the 2014 report are better estimates. | 06/15/17 | Ecology concurred with explanation on 06/15/17. | None | Closed |
| 31 | p. 2-7, Table 2-1, MLLW-05, Radioactive Lead Solids (EPA) | Current and projected inventory | These numbers don't make sense. Table 2-1 under B Plant Containment Building states that lead, including shielding, is stored in the B-Plant process cells. Presumably, this is radioactive and would require the same treatment as wastes in the RLS treatability group. This points out a structural flaw in the LDR report – identical wastes can show up in different treatability groups. This can be problematic in two ways. First, by not accounting for the full inventory of identical wastes, defensible planning for the necessary treatment capacity cannot take place. Second, planning can be misleading – if planning on the current and projected inventory of zero without accounting for identical wastes in other treatability groups, the necessary treatment capacity might not be properly planned for. | Err, T, S | Explain.<br>The treatment process for the B Plant Containment Building wastes has not yet been selected (see Section 9.3.2 and associated TGDS, pp. B-331-335). This treatability group will be addressed under TPA Milestone M-085-00. Adding this waste to the MLLW-05 treatability group is not appropriate because the B Plant Containment Building treatability group consists of remote-handled wastes, while the MLLW-05 treatability group is intended for contact-handled wastes. | 06/15/17 | Ecology concurred with explanation on 06/15/17<br><br>Reopen: All waste with a common LDR treatment requirement must be included in the corresponding Treatability | None | ~~Closed~~Closed~~Open~~<br>Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report.<br><br>3/7/19: Closed for the 2014 report. Parking Lot for the next full LDR Report. |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Group. Consistent with Comment #8, Treatability group means waste streams that are grouped together based on a required method of treatment or based on physical, chemical, and radiological characteristics that are amenable to a common method of LDR treatment for meeting LDR treatment standards. | | |
| 32 | p. 2-8, Table 2-1, Entry for MLLW-06, Mercury Wastes (EPA) | Current and projected inventory | What about elementary mercury documented as being present in thermowells in equipment stored in PUREX tunnels? As with the RLS treatability group, this zero inventory is simply misleading, as there are clearly mercury wastes in storage requiring treatment. Also, the closure plan in the draft re-issue permit states that ancillary equipment for the HSTF tank systems includes an intact mercury manometer, presumably containing elemental mercury.<br>This comment is highly parallel to that above for MLLW-05, Radioactive Lead Solids. | Err,T | Explain.<br>The inventory for MLLW-06 is not intended to identify all mercury wastes at Hanford, but is intended to only identify mercury wastes that are planned for treatment under the identified treatability group. Mercury is documented as being present in the thermowells in PUREX tunnels under the PUREX Tunnels treatability group (pp. B451-454). If plans for treatment change, the information will be changed accordingly.<br>See response to comment 10. | 06/15/17 | Pending resolution of 2014LDR-016.<br>There are 2 options to address the PUREX Tunnel elemental radioactive mercury waste. 1) Leave it in the PUREX Tunnels treatability group, and establish a TPA milestone schedule for obtaining a Treatability Variance or Determination of Equivalent Treatment if the specified LDR treatment method will not be used. Add a paragraph explaining this | **2014LDR-016**<br>(DOE)<br>Review and consider alternative treatability groups.<br>DOE sent proposed response to Ecology on 07/29/17 in anticipation of discussion on 08/03/17. DOE has determined that alternative treatability groups are not required. | Closed ~~Open~~<br>Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report.<br>7/7/19 Closed for the 2014 report. Add PUREX Tunnels as needing a TPA milestone schedule for obtaining a Treatability Variance of Determination of Equivalent Treatment for elemental mercury (and any other waste) left in the grouted tunnels. For next full LDR Report, add a paragraph to Section 4.3 explaining this approach. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | approach to Section 4.3. 2) Move the waste to the MLLW-06 Treatability Group, and add to the list of waste needing a treatment schedule. | | |
| 33 | p. 2-8, Table 2-1 (Comp) | MLLW-07 – RH and Large Container, Current Inventory ($m^3$)[2]: 69.783 Generation Projection 2015-2019 ($m^3$)[2]: 0 annually | CY 2013 Report had no Generation Projection 2015-2019 ($m^3$)[2]: 0 annually, yet the waste volume increased by ~20 $m^3$. What accounts for the increase if nothing was projected for generation? | Err | Explain.<br>Based on a review of SWITS information for waste packages residing in CWC-OSAA, it was determined that waste package ZB754-002 (17.36 $m^3$ FRP) was incorrectly listed in the CY 2013 report as TRUM waste and is actually MLLW. Therefore it was assigned to the MLLW-07 treatability group. This change was made in July 2014. | 06/15/17 | Ecology concurred with explanation on 06/15/17. | None | Closed |
| 34 | p. 2-9, Table 2-1, Entry for MLLW-10, Reactive Metals. (EPA) | Description and inventory | As with the RLS and mercury treatability groups, there are in fact inventories of related waste in other treatability groups. For example, wastes included in another treatability group (400-Area WMU) also contain reactive metals in the form of metallic sodium and NaK alloy. The organization of the LDR report needs to be reviewed to ensure it is transparent in identifying all wastes of similar character and treatment requirements, and that plans/schedules for such treatment account for all of the similar wastes.<br>Also, cyanides/sulfides are not generally water reactive. Why are they included in a treatability group cited as containing water reactive wastes? | T, Ed | Explain.<br>This comment is similar to Comment 12 and pertains to MLLW-10 (reactive metals treatability group); please see the related response above to comment 12.<br>Regarding transparency and the presence of reactive metals in the 400 WMU treatability group, the associated TGDS, Section 4.3 (p. B-431) indicates that planned treatment is production of sodium hydroxide onsite. This planned approach differs from planned treatment for the MLLW-10 treatability group, which is still being assessed (with plans for disposal of treated waste). Unless treatment plans change, it is not appropriate to organize plans for these wastes as suggested by the comment. | 06/15/17 | Open pending resolution of 2014LDR-026 | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. Agreed to changes on the tables will be applied to the next full LDR Report. | ~~Closed~~ ~~Open~~<br>Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report.<br>~~7/7/19~~ Closed for the 2014 report. Parking Lot for the next full LDR report |
| 35 | p. 2-11, Table 2-2 (KAC) | Last column – "Projected Volume to be Treated" | This is an incorrect statement and wrong answer. It does not provide the volume of the waste to be treated. Remove this statement and provide the correct information. The column heading needs to reflect the underlying text. Identify specific TPA milestones, CERCLA RODs and permit for each treatability group name. | Err, T | Alternate Suggestion.<br>Reconfigure/restructure several table -- to be discussed | 06/15/17 | Open pending resolution of 2014LDR-026<br><br>Response to comment does not address lack of projected treatment volume information. See "LDR Report | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026** | ~~Open~~ ~~Closed~~<br>~~10/10/19~~ Parties agreed to close the comment with the understanding that the projected volumes would remain in the table for the 2019 Full Report and subsequent reports. Data provided will be a "snapshot in |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Issues for Discussion" handout provided at the 12/13/2017 LDR PMM. | (Ecology) Review and provide comment on DOE concept treatability group summary table. | time" and can change from year-to-year based on pertinent/relevant information. 11/7/18 DOE Action: General language from 10/10/18 understanding (see above) will be captured in "LDR Over-Arching Agreements". Action completed on 11/12/18. Added language to "LDR Over-Arching Agreements". Start of Comment Resolution Meeting #2 on October 10, 2018. |
| 36 | p. 2-11, Table 2-2, Entry for 221-T Tank System (EPA) | Characterization Schedule | This is not entirely accurate. Given that the 221-T tank system is a dangerous waste management unit subject to closure, characterization must be done as part of, if not prior to, closure and must be according to the approved closure plan in the permit. Thus, this language should read "Will be done pursuant to the approved closure plan, in coordination with T-Plant Complex Canyon Disposition." That said, a final decision on a closure plan for the 221-T tank system is not yet in place. | TS, S | Accept.<br>Modify text as follows:<br>Will be done pursuant to the approved closure plan in ~~conjunction~~ coordination with T-Plant Complex Canyon disposition. | 05/11/17 | Concurred with resolution of 2014LDR-010 on 06/29/17.<br><br>Reopen: 221-T needs a schedule for characterization, and an updated storage assessment. Delaying treatment to the schedule in the closure plan is ok as long as the closure plan includes the plans/schedules for treatment that would otherwise be included in the LDR Report. | **2014LDR-010**<br>(Ecology) Review recommended comment response in context of 36, 101, 104, 170, 176. | Closed. Keep DOE's proposed language for 2014 Report.~~Closed~~~~Open~~<br><br>10/10/18 Parties agreed that characterization or treatment schedule is needed for 2019 and beyond.<br><br>10/10/18 DOE Action- Develop 221-T Characterization schedule (i.e., Storage Assessment). 11/7/18- DOE confirmed that characterization schedules will be developed for ongoing storage in the Closure Plan. 11/29/18 Ecology/EPA do not agree this is sufficient. Characterization is needed for ongoing storage during the closure plan. D. Bartus says, "No" to delaying this characterization to |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | the closure plan schedule.<br><br>11/7/18 Kelly's language here...<br>11/29/18 Parties agreed language is now obsolete as it pertained to characterization scheduled in closure plan.<br><br>3/7/19 Add 221-T tank system as needing a TPA milestone schedule for characterization of tank waste for extended storage and eventual treatment. Also add 221-T to list of units needing an updated Storage Assessment. For the language in Table 2-2, for the 2014 report, Ecology is ok with the original agreed upon language: "Will be pursuant to the approved closure plan in coordination with T-Plant Complex Canyon disposition." |
| 37 | p. 2-11, Table 2-2, Entry for 222-S Laboratory Complex (EPA) | Treatment process | The 222-S laboratory complex is correctly noted as generating wastes on a current, on-going basis. Further, the text says that commercial stabilization and thermal treatment processes will be used. If this is true (presumably so, since it is stated in a TPA primary document), why is there no projected volume to be treated cited, and why does the projected volume column say that treatment under CERCLA RODs will occur? CERCLA RODs seldom, if ever, apply to commercial treatment. This latter element of the comment also applies to similar text for the 325 HWTU treatability group.<br>This entry also states that treatment will occur in the 222-S Laboratory Complex. Assuming this statement is exclusive of the 219-S tank system, which is separately considered as part of the DST treatability group, treatment cannot occur in any of the container storage units within the 222-S laboratory complex – see Addendum C in the draft re-issue | T, TS, S | Accept.<br>Modify Treatment Process column entry as follows:<br>~~222-S Laboratory Complex,~~ Commercial Stabilization, Commercial Thermal | 07/20/17 | Ecology concurred as proposed 07/20/17<br>**Reopen:** First part of comment (highlighted in yellow) is not addressed. Replace the text in the "Projected Volume to be Treated…" column with the actual projected volumes to be treated. | None | ~~Closed~~Open~~Ed~~<br><br>10/30/18 DOE Action- Double check with B. Trimberger about strike-out language? Parties agreed that if strike-out language is correct then the comment can be closed. Action completed on 10/29/18- B. Trimberger confirmed language can be struck-out. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | permit. Therefore, it is not clear why "222-S Laboratory Complex" is cited as a treatment process. | | | | See "LDR Report Issues for Discussion" handout (Issue 9) provided at the 12/13/2017 LDR PMM. | | |
| 38 | p. 2-12, Table 2-2, Entry for 324 Building REC Waste (EPA) | Projected Volume to be Treated 2015 through 2019 | As an example of a constructive means of addressing the comment above under 221-T Containment Building, this entry for the 324 Building REC Waste might be "The entire 5.000 cubic meters of waste will be treated and disposed of within this period according to the closure schedule for324 Building DWMUs to be established in the Hanford dangerous waste permit." | T, TS, | Alternate Suggestion.<br>Reconfigure/restructure several table; to be discussed | 06/15/17 | Open pending resolution of 2014LDR-026<br><br>Response to comment does not address lack of projected treatment volume information. See "LDR Report Issues for Discussion" handout (Issue 9) provided at the 12/13/2017 LDR PMM. | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | ~~Open~~ Closed<br><br>10/10/18 Parties agreed that characterization or treatment schedule is needed for 2019 and beyond. |
| 39 | p. 2-12, Table 2-2, Entry for 400 Area WMU (Note: the "400 Area WMU" is not a single waste management unit. Rather, it is two individual dangerous waste management units. Thus, "WMU" must be plural.) (EPA) | Treatment Process | The various wastes being stored in the two 400-Area DWMUs are generally contaminated with metallic sodium (but not all - at least some contain NaK alloy), and it is very reasonable to conduct treatment via deactivation by reaction with water (or more likely, water vapor). The reaction product of this method of deactivation is, of course, sodium hydroxide. It is not likely, however, that the resulting sodium hydroxide can be feasible recovered for beneficial re-use from treatment of contaminated core component pots or the various sodium-contaminated debris stored in the outside storage area. The text "...and conversion to sodium hydroxide" can be read to suggest that this is the case. Please review and revise accordingly. Better text would be "Deactivation via reaction with water or water vapor." | T, TS | Accept.<br>Modify text as follows:<br>~~Deactivation and conversion to sodium hydroxide~~<br>Deactivation via reaction with water or water vapor | 06/15/17 | Ecology concurred as proposed on 06/15/17. | None | Closed |
| 40 | p. 2-14, Table 2-2, Entry for | Planned Characterization Schedule | On the face of it, characterization of this waste is very much required – it is very confusing to state that either | TS | Accept. | 05/11/17 | Ecology concurred as | None | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | LERF/ETF Solid Waste (EPA) | | characterization or a characterization schedule is not required. It would make far more sense to use the entry "Ongoing" included for the LERF/ETF Liquid Waste treatability group. | | Modify text as follows:<br>~~Not required~~Ongoing | | proposed on 05/11/17. | | |
| 41 | p. 2-14, Table 2-2, Entry for MLLW-02 – Inorganic Non-Debris (EPA) | Planned Characterization Schedule | The cited M-091-42 milestone addresses only completion of treatment. It is not clear what this means in terms of a characterization schedule - is there characterization that needs to be completed prior to treatment (as might reasonably be the case for MLLW-03), or is it implied that the planned characterization schedule is implicit in the cited completion of treatment. If the latter, it is probably not enforceable, as the only firm date is the milestone completion date, and figuring out whatever prior schedule for characterization would be highly subjective. This comment applies to all table entries citing the M-091-42 milestone.<br>Also, it seems odd to cite a treatment milestone for the characterization schedule. What about information that may be needed during storage of the waste to ensure it is safely and properly managed (e.g., sufficient characterization of the waste to ensure it is compatible with other wastes and with the container in which it is stored)?<br>Need to identify associated permits for characterization scheduling and storage. | TS, S | Reject.<br>The footnote clarifies that the milestone includes characterization for reporting purposes as follows:<br>Characterization and Treatment will be performed in accordance with applicable M 091 milestones. See the M-091 milestones to determine what portion of the total volume requires treatment under those milestones.<br>This is consistent with January 9, 2002, LDR Project Manager Meeting minutes, which provide: "…characterization can be rolled up as part of treatment milestones since characterization is needed prior to treatment." | 06/15/17 | Ecology concurred with rejection on 06/15/17.<br>**Reopen:** Upon review of the cited LDR PMM minutes, Ecology determined they pre-date the 2002 Final Resolution. See "LDR Report Issues for Discussion" handout (Issue 1) provided at the 12/13/2017 LDR PMM. | None | ~~Closed~~~~Open~~Closed<br><br>10/10/18: DOE Action-I. Siddoway will review M-91 work scope and confirm characterization schedules are needed. Action completed on 11/7/18: I. Siddoway indicated M-91 characterization will be addressed in the M-91 Milestone language and specific details will be addressed in the M-91 Project Management Plan (PMP).<br><br>10/10/18: DOE Action-M. Mills will develop "LDR Over-Arching Agreements" list for future reference. First input: DOE will obtain characterization schedules for identified M-91 waste streams that need them (i.e., Storage, Treatment, and Disposal). Action completed on 11/7/18: M. Mills will provide the list as a follow-up to the 11/7/18 Comment Resolution meeting. |
| 42 | p. 2-14, Table 2-2, Entry for MLLW-02 – Inorganic Non-Debris (EPA) | Treatment Process | Table 2-1 states that wastes in the MLLW-02 treatability group contain wastes that have particular methods of treatment as the required LDR treatment standard. It is not at all clear whether the stated treatment process of stabilization/neutralization will satisfy specified methods of treatment for all wastes within this treatability group. | T | Explain.<br>According to footnote entries for the MLLW-02 treatability group in Table 13-1, characterization is anticipated to be performed as necessary to meet M-091-42 and additional characterization will be performed as needed to meet treatment facility waste acceptance criteria (p. 13-2). Also, the MLLW-02 TGDS, Section 3.3 identifies this treatability group as needing deactivation for | 06/15/17 | Open pending resolution of 2014LDR-026<br>Agree with DOE's explanation. | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, | ~~Open~~ Closed<br><br>10/10/18: Parties confirmed closure language. |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | ignitability and corrosivity and concentration-based treatment for TC metals, which can be achieved through stabilization (pp. B-254-5). Section 3.3.6 clarifies that "if, during the conformation process it is determined that some of the waste does not meet the MLLW-02 waste stream description, then it will be reassigned into the appropriate waste stream (e.g., MLLW-03 through 10) and treated accordingly." (p. B-256) | | | 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | |
| 43 | P. 2-14, Table 2-2 (Comp) | MLLW-02, MLLW-03, MLLW-04 | M-091-42 covers waste in above-ground storage as of June 30, 2009 and in retrievable storage. How does it cover projected waste? | TS, S | Explain.<br>Milestones apply for mixed wastes in storage, not for projected waste. Projected waste would be covered after actual generation and placement into storage.<br>See also comment 50. | 07/20/17 | Ecology concurred as proposed on 07/20/17 | None | Closed |
| 44 | p. 2-14, Table 2-2, Entry for MLLW-05, Radioactive Lead Solids (EPA) | Treatment Process | This is not correct - pursuant to 40 CFR 268.40, incorporated by reference by WAC 173-303-140, the applicable LDR treatment standard is the method of treatment MACRO. Macroencapsulation is a debris-rule treatment technology which is not applicable to RLS for which the MACRO method of treatment is required. | T | Accept.<br>Modify text as follows:<br>~~Macroencapsulation~~MACRO | 05/11/17 | Ecology concurred as proposed on 05/11/17. | None | Closed |
| 45 | p. 2-15, Table 2-2, Entry for MLLW-08 – Unique Waste (EPA) | Planned Characterization Schedule and Treatment Process | This is an excellent example of why an explicit characterization schedule is necessary. If the treatment process is to be evaluated on a container-by-container basis, which implies the need for container-specific characterization data, then there needs to be a separate characterization schedule specific to each unique waste (not just the treatability group as a whole) that ensures the needed data are available sufficiently in advance of the cited treatment milestone in order to design and implement the needed treatment according to the treatment milestone. Citing a treatment milestone in this context will do little more than set up the entire process for failure as characterization will not be required to be completed until the due date for treatment to be completed.<br>Add the correct schedule for this waste stream. | T, TS | Reject.<br>The footnote clarifies that the milestone includes characterization for reporting purposes. This is consistent with January 9, 2002, LDR Project Manager Meeting minutes, which provide: "…characterization can be rolled up as part of treatment milestones since characterization is needed prior to treatment."<br>Reference comment 41, closed 06/15/17. | 07/20/17 | Open pending resolution of 2014LDR-030<br>Upon review of the cited LDR PMM minutes, Ecology determined they pre-date the 2002 Final Resolution. See "LDR Report Issues for Discussion" handout (Issue 1) provided at the 12/13/2017 LDR PMM.<br><br>Also, this response is inconsistent with previous DOE response that no waste is left in the MLLW-08 TG. | **2014LDR-030**<br>(Ecology)<br>Reanalyze characterization schedule/milestone requirements and discuss with EPA | ~~Open~~ Closed<br><br>10/10/18. Parties agreed to close and move this comment. Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report. |
| 46 | p. 2-15, Table 2-2, Entry for | Planned Characterization Schedule | Is it really necessary to have a compliance schedule for characterization of batteries? What characterization | TS | Accept. | Provided to Ecology on | Ecology concurred as | None | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | MLLW-09, Radioactive Batteries (EPA) | | information is needed other that what can be obtained by reading the label on the battery?<br>Add the correct schedule for this waste stream (CCRC?). | | Where inventory is zero, all information except the treatability group name will be deleted. If in the future this type of waste is generated, and it is stored > 1 year, the treatability group and location-specific data sheets will be populated, as needed. | 07/29/17 for planned discussion on 08/03/17. | proposed on 08/03/17. | | |
| 47 | P. 2-16, Table 2-2, PUREX Storage Tunnels (EE) | Under Treatment process it says that "not yet determined". | This might be correct, but it should also mention that some of the waste is TRUM waste that needs to be disposed at WIPP. So any treatment process must include retrieval of waste, and not just in-situ treatment. Add this information. | Err | Explain.<br>The report does mention that some PUREX storage tunnel waste is TRUM.<br>Table 1-1 notes:<br>This treatability group includes both TRUM and non-mixed transuranic (TRU) waste.<br>Section 10.3, "Transuranic Mixed Waste Treatability Groups with Processing Technology Not Selected," includes process planning for PUREX Plant, PUREX Storage Tunnel, and 324 Building REC Waste treatability groups, and states:<br>The waste associated with these treatability groups needs to be characterized to meet WIPP waste acceptance criteria.<br>The TGDS for PUREX Storage Tunnels notes that "treatment options (are) still being addressed" (pp. B-451-454). | 06/15/17 | Ecology concurred following discussion on 06/15/17.<br>Refer back to comment #32 for PUREX Tunnels on plans/schedules to obtain DET or TV. | None | Closed |
| 48 | p. 2-16, Table 2-2, Entry for PUREX Plant (EPA) | Treatment Process | Given that this waste stream is described as "Concrete rubble contaminated with trace chromium as a corrosion product," it is hard to imagine that this waste will be treated via anything other than stabilization. For purposes of documenting necessary treatment technologies and their capacities, stabilization should be identified as the applicable treatment technology.<br>As a general rule, the LDR report should not cite "Not yet determined" when there is a presumptive treatment process that is likely to be successfully applied to the subject waste. In this instance, stabilization is very likely to be successfully applied to the wastes as described in the LDR report. | T, Err | Explain.<br>The PUREX Plant TGDS, page B-444, Section 3.3.2 indicates the presumed LDR treatment for this waste is the alternative debris macroencapsulation standard.<br>"Presumptive" and "likely to be applied" are not commitments. See the PUREX Plant TGDS, page B-445, Sections 4.3 and 4.4, which indicate that "no commitments will be made for waste disposal" until a final decision is made on the canyon disposition. | 06/15/17 | Ecology concurred following discussion on 06/15/17.<br>**Reopen:**<br>Response does not address comment. | None | ~~Closed~~ ~~Open~~ Closed<br>11/7/18: Parties agreed that the 2014 Full LDR Report will modify Table 2-2 to reference details in Appendix B and for the 2019 Full LDR Report, and beyond, a full reorganization of Table 2-2 will occur in association of the Treatment processes detailed in their respective Data Sheets.<br>Start of Comment Resolution Meeting #3 on November 7, 2018. |
| 49 | p. 2-16, Table 2-2, Entry for TRUM-CH Small Container (EPA) | Treatment Process | This table entry specifies the general location where treatment may occur, but is silent on the particular treatment and disposal technologies required. While it may well be the case that the various DWMUs within the WRAP and T-Plant complexes have the necessary treatment technologies, the whole point of the LDR report | T, | Explain.<br>There are no LDR treatment and disposal technologies for the TRUM-CH small container wastes. They will be packaged to support certification and meet WIPP acceptance requirements for disposal. Table 2-2 is summary | 06/15/17 | Ecology concurred with explanation on 06/15/17.<br>Reopen:<br>Response does | None | ~~Closed~~ ~~Open~~ Closed<br>11/7/18: Parties agreed that the 2014 Full LDR Report will modify |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | is to ensure objective documentation of the waste inventory (current and projected), necessary treatment, and availability of specific treatment technologies (and the need to develop same if not already available) and plans and schedules to complete necessary treatment. Unless specific technologies are identified for the entire TRUM-CH small container treatability group (including prohibited items), it is not possible for the LDR report to satisfy its intended function and ensure that there are no orphan wastes for which treatment is not available or planned for. | | information. See Section 10.1 and the associated TGDSs, Section 3.3.3.<br>*Waste Isolation Pilot Plant Land Withdrawal Act*, Section 9.(a)(1)(H), Public Law 102-579, October 30, 1992, 106 Stat. 4777, as amended. | | not address Treatment Process entry in Table 2-2, which states "WRAP and/or T Plant Complex and/or off-site". LDR treatment must be identified, even if DOE hasn't decided on a treatment. Future changes to the treatment technology selected would be reflected in the next annual LDR Report. Plans and schedules for preparing CH-TRUM for acceptance/shipment to WIPP are needed. | | Table 2-2 to reference details in Appendix B and for the 2019 Full LDR Report, and beyond, a full reorganization of Table 2-2 will occur in association of the Treatment processes detailed in their respective Data Sheets. |
| 50 | p. 2-16, 2-17, Table 2-2 (Comp) | TRUM-CH Small Container, TRUM-RH | M-091-46 covers waste in above-ground storage as of June 30, 2009 and in retrievable storage. How does it cover projected waste? | TS, S | Explain.<br>Milestones apply for mixed wastes in storage, not for projected waste. Projected waste would be covered after actual generation and placement into storage.<br>See also comment 43. | 07/20/17 | Ecology concurred as proposed on 07/20/17 | None | Closed |
| 51 | p. 2-17, Table 2-2, Entry for WTP Lab Complex (EPA) | Planned Characterization Schedule | Characterization schedules are certainly appropriate for legacy, back-log wastes. Why is a characterization schedule contemplated for wastes that will be current as-generated wastes once the WTP laboratory complex is operational? Shouldn't these wastes be designated at the time of generation, and information required by the LDR program, to be obtained as part of compliant generator activities? | TS | Explain.<br>Waste generated at WTP will be designated at the time of generation. No waste has been generated at this time. | 05/11/17 | Ecology concurred as proposed on 05/11/17.<br>**Reopen:** There is not an accompanying proposed change to the WTP Lab entry for Table 2-2. Under "Planned Characterization Schedule" column, replace the text "Not yet | None | ~~Closed~~~~Open~~~~Closed~~<br>~~1/7/19~~ DOE agreed to Ecology proposed language. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | determined," with "Waste will be designated at the time of generation". "Treatment Process" column should include reasonable best guess based on current knowledge. "Projected Volume to be Treated" should include the amount of projected waste to be treated. | | |
| 52 | p. 2-17, Table 2-2, Footnote 2 (EPA) | Characterization and Treatment will be performed in accordance with applicable M-091 milestones. See the M-091 milestones to determine what portion of the total volume requires treatment under those milestones. | The plain language of TPA milestone M-091-042 makes no mention of characterization. As noted in a previous comment, the M-091-042 milestone implies that characterization required to complete treatment is implied in the treatment milestone. However, characterization is NOT directly driven by this milestone. Given that the express intent of the characterization schedule requirement in the LDR report is to establish specific plans and schedules to conduct characterization activities, lack of a clear, complete and transparent enumeration of characterization requirements associated with the cited milestones supports a conclusion that the LDR report is deficient in this regard. For example, the 1990 LDR requirements document states "The Waste Characterization" portion of the LDR Plan shall include the steps necessary to "confirm which wastes and which waste streams are subject to the LDR." A reference to the M-091 milestone fails to provide the required enumeration of necessary characterization steps.<br>In the case of M-91-044 and -046, WIPP certification is the likely compliance option. Since WIPP certification is fundamentally based on characterization as necessary to demonstrate compliance with the WIPP WAP, the highlighted text makes more sense. | T, TS | Reject.<br>The footnote clarifies that the milestone includes characterization for reporting purposes. This is consistent with January 9, 2002, LDR Project Manager Meeting minutes, which provide: "...characterization can be rolled up as part of treatment milestones since characterization is needed prior to treatment."<br>Reference comment 41, closed 06/15/17. | 07/20/17 | Open pending resolution of 2014LDR-030<br>Upon review of the cited LDR PMM minutes, Ecology determined they pre-date the 2002 Final Resolution. See "LDR Report Issues for Discussion" handout (Issue 1) provided at the 12/13/2017 LDR PMM. See highlighted text for additional guidance. | **2014LDR-030**<br>(Ecology)<br>Reanalyze characterization schedule/milestone requirements and discuss with EPA | ~~Open~~ Closed<br>11/7/18: Parties agreed this comment had the same response as Comment #41: *"I. Siddoway indicated M-91 characterization will be addressed in the M-91 Milestone language and specific details will be addressed in the M-91 Project Management Plan (PMP)."* |
| 53 | p. 3-1, Section 3.0 (KAC) | Compliance Assessments – LDR storage assessments provide..... | What is this and how does it relate to the required compliance assessment to be conducted for compliance status of storage methods pursuant to applicable state and federal requirements?<br>Explain and provide your procedure for conducting compliance assessments per the final determination. How | S | Accept. | 05/11/17 | Ecology concurred with proposed changes on 06/29/17. | **2014LDR-011**<br>(Ecology)<br>Review redline/strikeout markup related to storage method compliance assessment terminology. | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | do you assess compliance with state and federal standards for the LDR report? | | Storage method compliance assessments were required in the original 1990 LDR requirements and the 2000 Director's Determination.<br>DOE will modify the text to use storage method compliance assessment (SMCA) consistently.<br>DOE's procedure for conducting compliance assessments was provided in 2000. Reference:<br>French, R. T., and Klein, K. A., 2000, "Submittal of Sixty-Day Notifications Required by Final Determination," (external letter 00-ORL-055 to T. C. Fitzsimmons, State of Washington, Department of Ecology) U.S. Department of Energy, Office of River Protection and U.S. Department of Energy, Richland Operations Office, Richland, Washington, May 23. | | | Determine where LERF/ETF Solid Waste that is NOT LDR compliant belongs in Figure 8-1. | |
| 54 | p. 3-1, Section 3.1 (KAC) | Introduction | Explain this statement and what it means. How does it relate to the required compliance assessment for status of storage methods pursuant to applicable state and federal requirements? There are compliance issues with LDR at Hanford documented in EPA and NWP inspection reports. | S | Explain.<br>There were no changes to applicable State and Federal standards that would affect the status of previously completed storage method compliance assessments during the reporting period. Recommend deleting the section. The language does not serve as an actual introduction or meet any requirement. Any global changes driven by changes in State/Federal standards would be reflected in Section 3.2.<br>~~3.1 INTRODUCTION~~<br>~~No indicators requiring global actions for LDR reporting were identified in the activities associated with assessments in CY 2014.~~ | 05/11/17 | Ecology concurred as proposed on 05/11/17. | None | Closed |
| 55 | p. 3-1, Section 3.0, first paragraph (EPA) | In addition, daily, weekly, monthly, quarterly, and annual contractor assessments and inspections are conducted at Hanford Site mixed waste storage areas in accordance with company policies, DOE requirements, permit conditions, and other LDR storage obligations. | The 1990 LDR report requirements document requires that the storage assessment be conducted "pursuant to applicable State and Federal standards." Company policies are not a state or federal standard. While DOE-RL may require assessments according to company policies as a matter of contract administration, company policies should not be cited as a means of demonstrating compliance with the required content of the LDR report. | S | Accept.<br>Modify text as follows:<br>DOE assessments include reviewing other independent assessments and inspections and ~~contractor~~ self-assessments. In addition, daily, weekly, monthly, quarterly, and annual ~~contractor~~ assessments and inspections are conducted at Hanford Site mixed waste storage areas in accordance with ~~company policies,~~ DOE requirements, and applicable State and Federal standards~~permit conditions, and other LDR storage obligations~~. | 05/11/17 | Ecology concurred as proposed on 05/11/17. | None | Closed |
| 56 | p. 3-1, Section 3.1, Introduction (EPA) | No indicators requiring global actions for LDR reporting were identified in the activities associated with assessments in CY 2014. | What does this mean? What criteria were applied to making this decision (what are the indicators not identified)? Does the lack of "global actions" suggest that there are numerous local actions that are necessary? Does this statement fairly reflect the findings of EPA and Ecology compliance actions as of the date of the LDR report? | S | Reference comment 54.<br>Duplicate of 54. | 05/11/17 | Ecology concurred as proposed on 05/11/17. | None | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 57 | p. 3-1, section 3.2. (EE) | "No additional DOE-RL assessments are currently scheduled." | I don't know about "scheduled" but Ecology requested additional IMUST assessments to be added to list in table 3-2. This table says they are "In Progress" since 2006. Please fix the text and the table so that they say the same thing and are correct. | S. Err | Explain.<br>The scope/reporting timeframe of the 2014 LDR Report was Jan 1-Dec 31, 2014. Ecology's request for additional IMUSTs was received January 22, 2015. Therefore, the request for additional IMUSTs occurred during the reporting period for the 2015 LDR Summary Report, not the 2014 LDR Full Report. Text from the 2015 LDR Summary Report states: "Additional DOE-RL assessments are being considered for IMUSTs not associated with a building, but none are currently scheduled." | 07/20/17 | Ecology concurred as proposed on 07/20/17 | None | Closed |
| 58 | p. 3-1, Section 3.2 (NM) | Table 3-1 lists IMUSTs as having continuing assessments. | Please add verbiage describing the type of continuing assessments and on what schedule. | S, Ed | Explain<br>See comment response 57.<br>The scope/reporting timeframe of the 2014 LDR Report was Jan 1-Dec 31, 2014. Ecology's request for additional IMUSTs was received January 22, 2015. Therefore, the request for additional IMUSTs occurred during the reporting period for the 2015 LDR Summary Report, not the 2014 LDR Full Report. Text from the 2015 LDR Summary Report states: "Additional DOE-RL assessments are being considered for IMUSTs not associated with a building, but none are currently scheduled." | Provided to Ecology on 07/29/17 for planned discussion 08/03/17. | Pending resolution of 2014LDR-056 | 2014LDR-056<br>(DOE)<br>Provide updated explanation and redline of Table 3-1<br>**Response:**<br>Table 3-1 reports results of assessments. Therefore, row 1 will be deleted. Any specific results for completed assessments will be identified. In addition, Table 3-2 was modified to replace "In progress" with "None Planned." See 2014LDR-056 markup.<br>**ACTION CLOSED** | ~~Open~~Closed |
| 59 | p. 3-1, Section 3.2, second paragraph (EPA) | However, Ecology determined that inactive miscellaneous underground storage tank (IMUST) assessments shall remain on the assessment list because of their complex storage conditions and, therefore, they are listed on Table 3-2 for further assessment. No additional DOE-RL assessments are currently scheduled. Any additional DOE-RL assessments will be negotiated with Ecology in LDR Project Manager Meetings (PMMs) and documented in related meeting minutes. | Absolutely. DOE's expectation of what the assessments might reveal is not controlling - the final determination and the FFCA require the assessments. | S | Acknowledge | 07/20/17 | Ecology Concurred on 07/20/17 | None | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 60 | p. 3-2, Section 3.2 (EPA) | LDR assessments will be completed in the future when the need arises. | What criteria apply to the concept of "when the need arises?" This seems a highly ambiguous and highly subjective criteria. Even if criteria do exist, who decides? Specific criteria need to be included in the LDR report to ensure that assessments are current as of the date of the LDR report. | S | Explain.<br>Any additional DOE RL assessments will be negotiated with Ecology in LDR Project Manager Meetings (PMMs) and documented in related meeting minutes.<br>Modify text as follows:<br>In CY 2014, the DOE Office of River Protection (DOE-ORP) conducted no assessments, and no LDR assessments have been identified as required. ~~LDR assessments will be completed in the future when the need arises.~~ Table 3-3 shows that no new LDR assessment activities are identified for DOE-ORP in CYs 2015 through 2016. | 07/20/17 | Ecology concurred as proposed on 07/20/17 | None | Closed |
| 61 | p. 4-1, Section 4.1.3 (EPA) | The waste stored in the B Plant Complex and the PUREX Plant is with lead regulatory agency approval of the specific long-term S&M plans in accordance with Section 8.0 of the Tri-Party Agreement Action Plan. The S&M plans do not allow for storage of any additional waste in these TSD units. | An S&M plan does NOT reflect required approval under the Hanford DW permit for storage of these mixed wastes, or approval through the permit of an extended schedule for closure. While the S&M plans may well not allow for storage of any additional waste, it is only the permit that has legal authority to authorize (or not authorize) storage of regulated waste in dangerous waste management units. | S, Ed | Explain.<br>This comment is intended to be addressed consistent with comment disposition # 64 (below), | 06/15/17 | Ecology concurred with explanation on 06/15/17. | None | ~~Closed~~Closed ~~Open~~<br>1/17/19 See comment #23 and associated Ecology Action.<br>3/7/19 closed pending Ecology review/approval of language.<br>7/25/19 Parties agreed to language. |
| 62 | p. 4-1, Section 4.1.3 (EPA) | Other TSD unit storage exists for units managed by the CHPRC, but these TSD units typically process and treat waste without the intent of long term storage. | This language is very subjective. What does "typically" mean? Are there exceptions that need to be documented? What role does "intent" have in determining whether or not wastes in these "Other TSD units" needs to be included in the LDR report? The 1990 LDR report requirements document does not establish intent as a criterion for determining whether or not a waste and its associated storage location must be included in the LDR report. | Ed | Partially Accept.<br>Sentence can be omitted without changing intent of the paragraph, which is to describe long-term storage of mixed wastes under CHPRC's purview.<br>Modify the text as follows:<br>**4.1.3 CH2M HILL Plateau Remediation Company (CHPRC)**<br>CHPRC manages the long-term storage locations of mixed waste in the 200 Areas, except for the DST System, SST System, 242-A Evaporator, and the 222-S Laboratory Complex managed by WRPS, and the ERDF managed by WCH. CHPRC long-term storage areas include mixed waste at the T Plant Complex, B Plant Complex, the PUREX Storage Tunnels, the PUREX Plant, the CWC, the 600 Area Purgewater Storage and Treatment Facility, the 241-CX Tank System, and HSTF. ~~The waste stored in the B Plant Complex and the PUREX Plant is with lead regulatory agency approval of the specific long-term S&M plans~~managed ~~in accordance with Section 8.0 of the Tri-Party Agreement Action Plan. The S&M plans do not allow for storage of any~~ | 06/15/17 | Ecology concurred as proposed on 06/15/17.<br>**Reopen:** See Ecology response to Comment #23. Delete yellow high-light. | None | ~~Closed~~Closed ~~Open~~<br>1/17/19 DOE and Ecology Action: Review language. See Comment #23.<br>3/7/19 closed pending Ecology review/approval of language.<br>7/25/19 Parties agreed to language. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | ~~additional waste in these TSD units. Other TSD unit storage exists for units managed by the CHPRC, but these TSD units typically process and treat waste without the intent of long-term storage.~~ | | | | |
| 63 | p. 4-1, Section 4.1.3 (Comp) | CHPRC long-term storage areas include mixed waste at the T Plant Complex, B Plant Complex, the PUREX Storage Tunnels, the PUREX Plant, the CWC, the 600 Area Purgewater Storage and Treatment Facility, the 241-CX Tank System, and HSTF. | WRAP also has MW in storage. | S, Ed | Accept.<br>Modify text as follows:<br>CHPRC long-term storage areas include mixed waste at the T Plant Complex, B Plant Complex, the PUREX Storage Tunnels, the PUREX Plant, the CWC, WRAP, ~~the 600 Area Purgewater Storage and Treatment Facility~~, the 241-CX Tank System, and HSTF. | 06/15/17 | Ecology concurred as proposed on 06/15/17. | None | Closed. The 600 Area Purgewater Storage and Treatment Facility waste stream was closed in 2011. See Table 1-2. |
| 64 | p. 4-1, Section 4.1.3 (Comp) | The waste stored in the B Plant Complex and the PUREX Plant is with lead regulatory agency approval of the specific long-term S&M plans in accordance with Section 8.0 of the TPA Action Plan. | EPA rescinded their approval of the S&M plan. | S, Ed | Accept.<br>Modify text as follows:<br>~~The waste stored in the B Plant Complex and the PUREX Plant is with lead regulatory agency approval of the specific long-term S&M plans managed in accordance with Section 8.0 of the Tri-Party Agreement Action Plan, "Facility Disposition Process."~~<br>See also comment 99. | 06/15/17 | Ecology concurred as proposed on 06/15/17.<br>**Reopen:** See Ecology response to Comment #23. Delete yellow high-light. | None | ~~Closed~~ ~~Closed~~ ~~Open~~<br>11/7/18 See Comment(s) 23, 61, and 62.<br>3/7/19 closed pending Ecology review/approval of language.<br>7/25/19 Parties agreed to language. |
| 65 | p. 4-2, Section 4.2 (EPA) | No storage issues were identified for CY 2014 reporting. Storage capacity issues identified and resolved in the future will be reported in the year following their resolution. | As a more general comment, the compliance status of dangerous waste management units can change with time. Given that existing assessments were mostly conducted years ago, it simply is not defensible to assume that past assessments reflect the current compliance status of various DWMUs.<br><br>"Storage issue" needs to be reported in the LDR report associated with the date that the issue is first identified, regardless of when the issue is resolved. Of course, resolution of "storage issues" also needs to be timely reported in the LDR report. | S | Reject.<br>There is a requirement to provide SMCA updates (repeat assessments) as needed. No standards in the requirements for what "as needed" means.<br>While the comment correctly states that compliance status can change over time, there is no requirement to check the compliance status in the LDR Report. DOE/contractors inspect TSD units regularly to ensure compliance. | 06/15/17 | Ecology concurred as proposed on 06/15/17. | None | Closed |
| 66 | p. 4-2, Section 4.3 (EPA) | Title and entire section | The cited site-specific treatability variances have to do with treatment, not storage. Why are they cited in a section related to planned variances/exemptions for storage? Add a section that discusses treatment variances. | T | Partially Accept. | 05/11/17 | Ecology concurred as proposed on 05/11/17.<br>**Reopen:** Unclear if a section will be added on treatment variances that | None | ~~Closed~~ ~~Open~~ Closed<br>11/7/18 Parties agreed that Section 4.3 is better suited at the end of Section 9.1. Recommend moving language. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Planned variances or exemptions for storage are reported in LSDS sections 2.10. Planned variances or exemptions for treatment are reported in TGDS sections 4.8. If the parties agree to include treatment variances in the LDR Report, the appropriate section for such information would be 9.0.<br>4.3 ~~PLANNED VARIANCES OR EXEMPTIONS FOR STORAGE~~<br>~~Requests for variances and other exemptions related to storage are addressed in Section 2.10 of the LSDSs (Appendix B). One site-specific LDR Variance Request was granted by Ecology in 2009 per WAC 173-303-140(2)(a) ("Approval of Site-Specific Land Disposal Restrictions (LDR) Variance Request," [Hedges 2009]). This variance allows the DOE to encapsulate radioactive barium waste rather than conduct treatment to the LDR D005 barium standard prior to disposal in the Hanford Site LLBGs.~~<br>~~On February 22, 2010, Ecology notified DOE of approval of the site-specific LDR Variance Request for beryllium powder, designated as P015 waste. The approved treatment method requires the waste to be stabilized at Perma-Fix Northwest, in accordance with their Permit, and returned to the Hanford Site for disposal at the mixed waste disposal unit.~~<br>~~On January 28, 2015, DOE-RL submitted to Ecology the request for a site-specific treatability variance from applicable LDR treatment standards for specific waste items at WESF. This variance will ensure the action to grout wastes in place in two of the WESF hot cells does not create future waste that does not satisfy LDR treatment standards.~~<br>~~Additional site-specific LDR variance requests may be made in the future. Variance requests are being contemplated for waste in the MLLW-07, MLLW-08, and the HSTF Treatability Groups.~~ | | will contain deleted text. There are/were no storage exemptions granted for any DWMUs at the Hanford Facility. Therefore, revised Section 4.3 to discuss planned variances or exemption for treatment. Move deleted text to Section 9.0, as appropriate. | | 7/7/19 Parties agreed that Section 4.3 should include 4.8 (TGDS) and 2.10 (LSDS). Going to have one section that addresses all variances (storage and treatment). Section 4.0 will address all potential storage and treatment issues. March 29, 2000 Director's Determination is origination. Closed for 2014 Report. 2019 Full LDR Report will revise Section 4.0.<br><br>7/7/19 DOE Action: W. Toebe review history of Storage Variances. |
| 67 | p. 6-1, section 6.0 (EE) | The Hanford Site Pollution Prevention and Waste Minimization Program Plan… | Add that this also keeps the site compliant with the requirements in WAC 173-303-380(1)(q). | Ed | Reject.<br>WAC 173-303-380 requires TSD facility owners/operators to keep a written operating record. Information related to waste minimization must be kept in the operating record in accordance with WAC 173-303 and the Hanford Facility RCRA Permit. The LDR Report does not affect compliance with operating record requirements in any way. | 05/11/17 | Ecology Concurred as proposed on 05/11/17. | None | Closed |
| 68 | p. 7-1, Section 7.0 (EPA) | Waste characterization and treatment activities on the Hanford Site continue to | Treatment capacity at the WRAP and T-Plant DWMUs is currently shut down, hardly indicative of a continuing increase in waste management activities. If this statement | T, Ed | Modify text as follows: | 04/26/17 | Ecology concurred as | None | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | increase as waste management facilities are completed and funded to process and/or treat the waste. | is nevertheless true, it should be supported by specific reference to actual characterization and treatment activity data. This text is identical to that appearing in the 2009 LDR report – has this text been reviewed to reflect the current status of characterization and treatment activities? | | Sections 7.0 through 15.0 of the LDR report discuss characterization, treatment and disposal actions, and plans for managing mixed waste on the Hanford Site. ~~Waste characterization and treatment activities on the Hanford Site continue to increase as waste management facilities are completed and funded to process and/or treat the waste.~~ This chapter briefly describes the development process for the treatment plan contained in this report and identifies other documents that can be consulted for additional information concerning the Hanford Site and expected waste treatment activities. ~~This report has been organized to be similar to the site treatment plans (STPs) prepared by other DOE sites governed by the *Federal Facilities Compliance Act of 1992* (FFCA) requirements.~~ | | proposed on 04/26/17. | | |
| 69 | p. 7-1, Section 7.1 (EPA) | For the existing processes, Hanford Site schedules can be determined based on anticipated budgets and overall on-site needs. | This mechanism does not reflect the mechanism established in the TPA, which is that work schedules are first established, followed by budget requests based on compliance with the established milestones. It is interesting to note that Figure 7-1 below suggests that funding needs follow from schedules, which is consistent with existing TPA requirements, but contradicts the cited text. | TS | Accept.<br>Modify text as follows:<br>The overall information needs and relationships for the report are shown in Figure 7-1. Initial activities include identifying waste streams and available and needed characterization data associated with the streams, and defining the regulatory treatment requirements. The treatment requirements define the treatment categories and technologies needed for each waste type. The physical, chemical, and radiological characteristics of the waste determine the treatability group in which the waste is included. Hanford Site dangerous waste management~~TSD~~ units and available commercial processes for treating the mixed waste also are identified along with their capabilities. Knowing the processes for the treatment capabilities and the treatment requirements for each treatability group, the treatability group can be assigned to either existing treatment capacity or to future processes. Hanford Site schedules are established followed by budget requests based on compliance with the established milestones. ~~For the existing processes, Hanford Site schedules can be determined based on anticipated budgets and overall on-site needs. These schedules confirm the need for operations funding. For the future processes, the waste that requires further characterization determines the types of technology needs and, subsequently, the requirements and capabilities. The future processes will be scheduled and operated as budgets allow.~~ | 07/20/17 | Ecology concurred as proposed on 07/20/17<br>Reopen: The additional text "Hanford Site schedules are established followed by budget requests based on compliance with the established milestones." is needed to complete the explanation of Site Treatment Plan Activities in Section 7.1, and correlate with Figure 7-1. | None | ~~Closed~~~~Open~~Closed<br>~~1/7/19~~ DOE Action: M. Mills identify language that is consistent with CY2014 TPA Budget language. Action completed on ~~5~~/22/19- "For the existing and future processes, Hanford Site cost, schedule, and integration planning will be consistent with the *Hanford Federal Facility Agreement and Constant Order (Tri-Party Agreement), Legal Agreement, Part FIVE, Article XLVIII Cost, Schedule, Scope Integration, Planning and Reporting* (specifically paragraphs 148 & 149). |

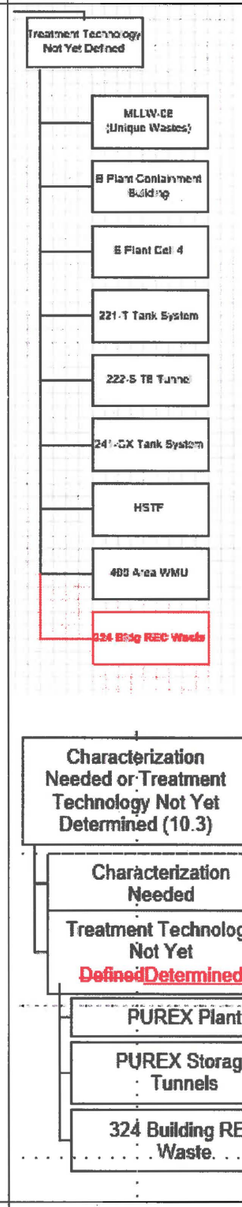
| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 70 | p. 7-3, Figure 7.1 (EPA) | Text box reading "Define Treatment Requirements per:<br>(1) EPA<br>(2) Ecology<br>(3) DOE<br>(4) Technology requirements | Given that the entire point of the LDR report is to establish plans and schedules necessary to achieve compliance with treatment standards under Ecology's authorized Land Disposal Restrictions program regulatory requirements, it is not clear why the various agencies are listed as the source of treatment requirements. This text box should read "Define treatment requirements pursuant to 40 CFR Part 268, incorporated by reference by WAC 173-303-140." What are technology requirements? Are they separate or distinct from LDR treatment requirements under the cited regulations? | Ed | Explain.<br>Figure 7-1 provides an outline of activities to complete a treatment plan. It is not intended to be limited to identification of LDR regulatory standards. Although the regulations in 40 CFR 268 are applicable by reference at WAC 173-303-140, they were federally promulgated. Additionally, DOE requirements (e.g., for the radioactive component of the mixed waste) and technology requirements (e.g., consideration of the waste matrices in addition to the presence of RCRA constituents) must be considered for each planned treatment (e.g. for WIPP disposal). | 07/20/17 | Pending resolution of 2014LDR-031<br><br>Ecology:<br>Define treatment requirements pursuant to 40 CFR Part 268, incorporated by reference by WAC 173-303-140. LDR treatment standards are defined in 40 CFR 268. Any variances or equivalent treatment methods needed for example due to the radiological nature of the waste are granted by EPA are through 40 CFR 268.<br><br>~~Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report.~~ | **2014LDR-031**<br>(DOE)<br>Propose substitute language for text box. DOE provided the following suggested markup on 07/29/17 for planned 08/03/17 discussion.<br>**Define Treatment Requirements ~~per:~~**<br>~~**(1) EPA**~~<br>~~**(2) Ecology**~~<br>~~**(3) DOE**~~<br>~~**(4) Technology requirements**~~ | ~~Open~~ Closed<br><br>11/7/18: Parties agreed to deletion of text in the box.<br><br>11/7/18: Parties agreed to strike-out Parking Lot text in "Ecology's Disposition" column. |
| 71 | p. 8-1, Section 8.0 (EPA) | Each waste treatability group is or will be assigned to a specific treatment process. These assignments are based on the treatment and/or characterization requirements of the treatability group and the treatment process capability. | At least in theory, this approach to defining a 1:1 relationship between treatability groups and specific treatment processes is very defensible. However, this does not seem to be how wastes/waste streams are assigned to treatability groups. For example, the 222-S Laboratory treatability group description reads:<br>"This waste stream consists of many different inorganic and organic solids and liquids that are RCRA regulated or have been contaminated with inorganic and organic regulated dangerous waste constituents, including PCBs. This waste stream also includes hazardous debris."<br>It is not reasonable to presume that all wastes within this treatability group are amenable to a single treatment | T, TS | Partially Accept.<br>Treatability groups are not necessarily intended to have a 1:1 relationship with treatment processes. Some treatability groups could be treated under more than one process. For example, there is no intent to send all wastes within the 222-S treatability group to a single process. It is anticipated that treatment will potentially include stabilization, thermal and/or macroencapsulation. Please see the 222-S Laboratory TGDS, Sections 4.3 and 4.4, which describe planned treatment for this treatability group. There is no need for a 1:1 ratio between treatment technologies and TGs. The | 06/15/17 | Ecology concurred as proposed, with minor edit (changing "process" to "processes") on 06/15/17.<br>Reopen:<br>Reorganization of Treatability Groups is on the PARKING LOT for | None | ~~Closed~~~~Open~~Closed<br><br>11/7/18: Parties agreed the 2014 Report text is acceptable and the Treatability Group's decisions will be addressed in the 2019 Report and beyond. |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | process. Rather, in this example the relationship between wastes assigned to this treatability group and the assigned treatment processes is almost certainly many-to-many, not 1:1 as suggested by the cited text. This issue is a fundamental flaw in the LDR report, which significantly and adversely affects the ability of the report to establish plans and schedules for treatment of specific wastes by specific treatment processes. | | treatability group structure was mutually agreed on and has been accepted by Ecology in previous 5-year reports.<br>Modify text as follows:<br>Each waste treatability group is or will be assigned to ~~a specific~~ one or more treatment processes. | | next full LDR Report. | | |
| 72 | p. 8-1, Section 8.0 (EPA) | Treatment is not planned for waste requiring processes not yet defined; however, additional characterization might occur as part of the design and development of the proposed treatment units. | The set of wastes for which treatment is not planned on the basis that treatment processes have not yet been defined seems to be a mix of wastes where there is a legitimate need for additional data or significant decisions to define the treatment pathway and associated technologies (e.g., Cs/Sr capsules) and wastes that are well-characterized with respect to identification of LDR treatment requirements but DOE-RL has simply not made a treatment decision (e.g. 222-S T8 tunnel). The LDR report should clearly distinguish between these two classes of wastes. Further, the 1990 LDR Report requirements document clearly contemplates that where an LDR treatment technology does not yet exist, the LDR report must include plans and schedules for whatever work is necessary to develop or define the necessary treatment technology | T, TS | Reject.<br>See comment 98. | 07/20/17 | Pending resolution of 2014LDR-032<br>See response to Comment #98. There are no implications of listing a specified technology in the LDR Report. If a different treatment technology is identified, it can be changed in the next LDR Report.<br>If LDR treatment does not exist, identify plans/schedules for developing/defining the necessary treatment technology. | **2014LDR-032**<br>(Ecology)<br>Discuss with EPA the implications of listing a specified technology in the LDR Report<br>ACTION CLOSED. Discussed with EPA and in agreement there are no implications of listing a specified technology in the LDR Report. | ~~Open~~Closed |
| 73 | p. 8-2, Figure 8-1. Correlation Between Mixed Low-Level Wastes and Treatment Facilities. (Comp) | | Under current treatment processes, if there is no treatment needed for ERDF treatment (MLLW-01 and LERF-ETF) should not be included. Under characterization needed - no treatment yet defined, B Plant covers canyon only. 221-T Tank System does not cover 2706 tank system. | T | Accept. | 05/11/17 | Concurred with noted changes on 07/20/17. | **2014LDR-012**<br>(DOE)<br>Determine where LERF/ETF Solid Waste that is NOT LDR compliant belongs in this graphic. Closed 06/15/17 with the addition of LERF/ETF to Figure 8-1.<br>**2014LDR-015**<br>(DOE)<br>Review and update Figure 9-1 to include LERF/ETF solid waste. Closed 07/20/17. | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | On 04/26/17 the parties agreed to review the inclusion of LDR-compliant wastes in the report. This information will be removed from the figure.<br>Modify Figure 8-1 as follows:<br>~~No Treatment Needed~~<br>~~MLLW 01 (LDR Compliance Waste)~~<br>~~LERF/ETF Solid Waste~~<br>DOE agrees that the B Plant Containment Building treatability group does not include wastes outside of the building, and that the 221-T tank system treatability group does not cover the existing 2706-T tank system. | | | | |
| 74 | p. 8-3, fig 8-2 (EE) | 324 Building REC Waste | The 324 building does not contain any TRU or TRUM waste. All is potential MLLW debris that is pretty radioactive because of Sr and Cs content. This waste should be added to Fig 8-1, under "Treatment Technology not yet defined". Consistently use either "not yet defined" or "not yet determined". | Err, Ed | Accept.<br>Tables correct at time of printing.<br>Remove 324 Bldg REC Waste from Figure 8-2, and add to Figure 8-1 as shown. In addition, change "not yet defined" to not yet determined" in both figures. | 06/15/17 | Ecology concurred with changes and comment response on 06/29/17. | **2014LDR-019**<br>(DOE) Determine 324 Building REC waste information and path forward known to contractor at end of CY2014. | Closed |

Ecology Comments on 2014 Hanford Site Mixed Waste Land Disposal Restrictions Full Report. DOE/RL-2015-08, Rev. 0. August 31, 2016

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | |  | | | | |
| 75 | p. 9-1, Section 9.0 (EPA) | Because the treatment plan for the remaining MLLW treatability groups is not well developed, a flowsheet for these groups is not included. | While the lack of a flow-sheet through disposal for certain waste streams is defensible, the LDR report must include plans and schedules necessary to fully develop a complete, defensible treatment plan for all wastes. | T, TS | Reject<br>LDR Report "shall establish and include all applicable milestones and associated schedules for the development and implementation of treatment or management technologies to achieve | Provided to Ecology on 07/29/17 for planned | Pending resolution of 2014LDR-020. | **2014LDR-020**<br>(DOE)<br>Propose revisions to Chapter 9 | ~~Closed~~ 3/7/19 ~~Open~~<br>3/7/19 DOE and Ecology Action(s): Look |

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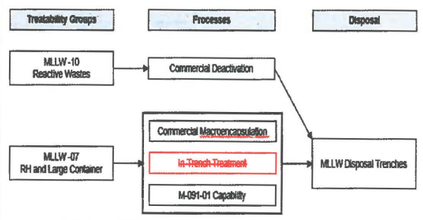
| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | compliance with LDR requirements." LDR report requirements do not include plans and schedules necessary to fully develop a complete, defensible treatment plan for all wastes. | 08/03/17 discussion | Plans and schedules to fully develop a complete defensible treatment plan for all waste must be included in the LDR report even if that inclusion is by reference to TPA milestones or other enforceable documents per April 30th Resolution of Dispute (Att. 1, LDR Expectation #1, 4). | **Response:** Proposed redline/strikeout changes are attached in 2014LDR-020. Subsequent reorganization/rewriting of the report may be considered. **ACTION CLOSED** | at rewrite of Section 9.0.<br><br>11/7/18: Parties agreed that minor fixes should be addressed in the 2014 Report and major fixes/rewrite would take place for the 2019 Report. The Parties also agreed the rewrite of Section 9.0 should be placed in the Parking Lot because it connects to the Treatability Group Parking Lot. |
| 76 | p. 9-2, Fig 9-2 (EE) | "In Trench Treatment" | This needs to be removed from the figure as it is not allowed under LDR regulations. It should be noted that EPA's CERCLA office is seeking a variance to continue using in trench treatment at ERDF for large equipment. That is a different issue though. | Err, Ed | Accept.<br>Modify Figure 9-2 as shown:<br>  | 07/20/17 | Ecology concurred as proposed 07/20/17 | None | Closed |
| 77 | p. 9-2, Section 9.1 (EPA) | General | This section begins with text reading "This section generally describes each treatment process and provides information concerning the processes identified in Figure 9-1." However, the various subsections of Section 9.1 variously describe treatment processes (e.g., Commercial Macroencapsulation, thermal treatment of organics) and locations (T-Plant, 222-S) that are either not specific to any particular treatment process or do not have treatment processes. This is very confusing. More specifically, the description of the T-Plant Complex in Section 9.1.4 does say "Commercial treatment of waste by stabilization and macroencapsulation to meet land disposal requirements could be supplemented or replaced by capabilities that exist within the T Plant Complex," but the description of two several dangerous waste management units (The T Plant Complex canyon, assumed to mean the 221-T canyon | T | None | 06/15/17 | Pending resolution of 2014LDR-020. Note associated comments 77, 96<br>Revisions do not completely address comment. See yellow high-light. | **2014LDR-020** (DOE) Propose revisions to Chapter 9 **Response:** Proposed redline/strikeout changes are attached in 2014LDR-020. Subsequent reorganization/rewriting of the report may be considered. **ACTION CLOSED** | ~~Open~~Closed<br><br>11/29/18: Parties agreed on the following language: "… could be supplemented or replaced by capabilities that exist, and could be developed within the T Plant Complex …"<br>Start of Comment Resolution Meeting #2 on November 29, 2018 |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | deck or containment building, and the 2706-T building) do not clearly document that stabilization or macroencapsulation are among the treatment technologies that exist within the T-Plant Complex. Section 9.1.8, which discusses the 222-S Laboratory Complex, is also very confusing, in that there are no treatment technologies within the three container storage dangerous waste management units within the 222-S Laboratory Complex (See the draft re-issue permit). Even more confusing is Table 9-8, which suggests that the 222-S Laboratory Complex with no treatment capacity can treat a diverse range of wastes associated with the 222-S Laboratory Complex treatability group in Table 2-1. Finally, the phrase "222-S Laboratory Complex" seems to be used interchangeably to refer to a treatability group and a treatment technology, further confusing things. Section 9.1 needs to be revised to address these points. | | | | | | |
| 78 | p. 9-2, Section 9.1 (EPA) | The planning baseline indicates that sufficient capacity exists or will exist, to treat this volume of MLLW using the identified treatment process and alternatives: commercial stabilization, commercial thermal treatment, T Plant Complex, Broad Spectrum contracts, etc. However, the exact distribution of treatment among these treatment processes has not been finalized. This allows the Hanford Site to optimize the use of funds (minimize unit costs), to react to changing conditions and capabilities of the treatment processes, and to use emerging national treatment contracts. | The requirements for the content of the LDR report are very clear that there must be detailed and complete plans and schedules for LDR treatment of all wastes. The fact that DOE-RL's planning baseline does not specify the exact distribution of treatment among the various treatment processes does not provide a basis for not establishing LDR report plans and schedules. If anything, the LDR report should provide the basis for the planning baseline, not the other way around. Of course, nothing precludes changes to the LDR report plans and schedules (subject to Ecology approval through the TPA change process, of course) for purposes of optimization or to take advantage of national treatment contracts as they become available. | T,TS | Accept.<br>Modify text as follows:<br>~~The planning baseline indicates that s~~Sufficient capacity exists or will exist, to treat this volume of MLLW using the identified treatment process and alternatives: commercial stabilization, commercial thermal treatment, on-site treatment at T Plant Complex, etc. However, the exact distribution of treatment among these treatment processes has not been finalized. The inventories and treatment requirements identified in the LDR Report will be used as inputs to finalize the distribution of treatment among these options. ~~This allows the Hanford Site to optimize the use of funds (minimize unit costs), to react to changing conditions and capabilities of the treatment processes, and to use emerging national treatment contracts.~~ | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17.<br>Reopen:<br>Text was added to clarify the relationship between the LDR Report and the planning baseline. More specifically, the LDR Report is the basis for the planning baseline, not something that reflects the planning baseline. | None | ~~Closed~~~~Open~~Closed<br>11/29/18: Parties agreed on the following text changes: strike "to finalize" and replace with "for". |
| 79 | p. 9-2, third paragraph and p. 9-5, Table 9-2 (EE) | The text talks about "Broad Spectrum contracts" | This gives the impression that is a special treatment technology while it is probably just talking about broad spectrum contracts for treatment. Rewrite text to accurately reflect the situation. | Ed | Modify text as follows:<br>The planning baseline indicates that sufficient capacity exists or will exist, to treat this volume of MLLW using the identified treatment process and alternatives: commercial stabilization, commercial thermal treatment, on-site treatment at T Plant Complex, ~~Broad Spectrum contracts,~~ etc. However, the exact distribution of treatment among these treatment processes has not been finalized. This allows the Hanford Site to optimize the use of funds (minimize unit costs), to react to changing conditions and capabilities of the treatment | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | processes, and to use emerging national treatment contracts.<br>Table 9-2<br>Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (e.g., commercial stabilization, commercial thermal treatment, on-site treatment at T Plant Complex~~, Broad Spectrum contracts, etc.~~). | | | | |
| 80 | p. 9-2, Section 9.1 (Comp) | Contracts have been awarded to Perma-Fix Northwest, Materials and Energy Corporation located in Tennessee, Perma-Fix DSSI located in Tennessee, and EnergySolutions Clive Site located in Utah (EnergySolutions contract with CHPRC concluded in 2012). | Will contract be revived or why is it listed here? | Ed | Accept.<br>Delete portion from text.<br>Contracts have been awarded to Perma-Fix Northwest, Perma-Fix Materials ~~and~~& Energy Corporation, ~~located in Tennessee,~~ and Perma-Fix, Diversified Scientific Services, Inc. ~~DSSI located in Tennessee, and EnergySolutions Clive Site located in Utah (EnergySolutions contract with CHPRC concluded in 2012)~~. | 05/11/17 | Ecology concurred as proposed on 05/11/17.<br>**Reopen:** Chapter 9.0 proposed redline/strikeout deletes this paragraph entirely. | None | ~~Closed~~~~Open~~Closed<br>11/29/18 Parties agreed to not use previous Chapter 9.0 rewrite, circa 2017. Chapter 9.0 will be left as-is for 2014 Report and a new full rewrite will occur for 2019 Report. |
| 81 | p. 9-3, Section 9.1.1 (StL) | The second paragraph states "Existing commercial contracts neither include all of the waste types nor all of the forecasted volumes." Table 9-1, after the information type "Treatment capacity" states, "Sufficient capacity exists..." | Revise the statement in Table 9-1 to reflect the reality that the treatment capacity does not currently exist, or clarify. | T. TS | Accept. | 05/11/17 | Ecology concurred as proposed on 05/11/17.<br>**Reopen:** This comment is tied to Comment #77 regarding T Plant treatment for stabilization & macroencap-sulation. Also, final redline/ strikeout does not completely reflect DOE proposed changes. | None | ~~Closed~~~~Open~~Closed<br>11/29/18 Parties agreed to not use previous Chapter 9.0 rewrite, circa 2017. Chapter 9.0 will be left as-is for 2014 Report and a new full rewrite will occur for 2019 Report. |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Sufficient capacity isn't dependent on the volume of waste currently contracted for treatment. The suggested edit states that sufficient capacity exists to treat the waste, and that capacity will be employed as required.<br>Stabilization is a treatment technology for non-debris waste that contains heavy metals or other specific hazardous components. Most non-debris waste will be solid, but stabilization could be used to neutralize and solidify some liquid wastes. Stabilization immobilizes the hazardous component(s) by fixation into low-solubility materials, and by encapsulation to reduce the potential for future releases. Usually, stabilization is accomplished by mixing the waste with Portland cement or pozzolanic materials at a preselected ratio, but stabilization also can include mixing with reducing agents or polymer materials. This treatment prepares the waste to meet land disposal requirements. Existing commercial treatment contracts neither include all of the waste types nor all of the forecasted volumes. Therefore, it is expected that some waste will be treated on the Hanford Site, or that additional commercial contracts will be competitively awarded as required.~~Therefore, additional contracts are expected to be placed with commercial treatment contractors~~. Table 9-1 contains information on the commercial stabilization process, using Perma-Fix Northwest as a representative example for regulatory status information.<br>**Table 9-1**<br>Treatment capacity - Sufficient capacity exists to treat this volume of MLLW using the identified treatment processes and alternatives (commercial stabilization, T Plant Complex.) | | | | |
| 82 | p. 9-3, Section 9.1.1 (StL) | Table 9-1, after the Projected volume ... Information type refers to TPA milestones, permits, CERCLA RODs, and state Regulations. This is vague, and the reader does not have this information at hand. I'm uncertain if the information is available. | Provide more specific reference citations so the reader can find the information, for this and for the other treatment methods. | Ed | Reject.<br>No requirement to project volume to be *treated*. Removing any reference to "Projected volume to be *treated*" from report will prevent confusion in the future and more accurately reflect the requirements for projecting waste (only generation).<br>See also comment 37. | 06/15/17 | Ecology concurred with rejection on 06/15/17.<br>**Reopen:**<br>Response to comment does not address lack of projected treatment volume information. See "LDR Report Issues for | None | ~~Closed~~~~Open~~Closed<br>~~11/29/18~~ Parties agreed to keep current language and update 2019 Report. The following will be placed in the Over-Arching Agreements: "Five years of projected treatment volumes will be provided in the 2019 Full Report. |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Discussion" handout (Issue 9)provided at the 12/13/2017 LDR PMM. | | |
| 83 | p. 9-3 and following pages, Section 9 Tables (Comp) | e.g. Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019<br><br>Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). | DOE-RL-2015-08 does not specify volumes treated in the Section 9 and Section 10 Tables but rather uses generic language. Past year reports used specific volumes when it was available. | T, TS, Ed | Reject.<br>This comment is in reference to projected volume of MLLW to be treated between CY 2015 and CY 2019. There is no requirement to report projected volume to be treated, only projected volume to be generated.<br>DOE recommends deletion of this information from the LDR Report. See also comments 100 and 107. | 07/20/17 | Pending resolution of 2014LDR-033<br>Response to comment does not address lack of projected treatment volume information. See "LDR Report Issues for Discussion" handout (Issue 9) provided at the 12/13/2017 LDR PMM. | **2014LDR-033**<br>(DOE)<br>Propose modifications to Chapter 9 tables<br>**Response:**<br>Proposed redline/strikeout changes are attached in 2014LDR-020.<br>Subsequent reorganization/rewriting of the report may be considered.<br>**ACTION CLOSED** | ~~Open~~Closed<br><br>11/29/18 Parties agreed to keep current language and update 2019 Report. |
| 84 | p. 9-4, Section 9.1.2 (StL) | Third sentence of the 1st paragraph says "Existing contracts do not include all of the waste streams." Table 9-2 then states sufficient capacity exists to treat this volume... | This seems to pose an inconsistent message. | Err. Ed | Explain.<br>The fourth sentence in that paragraph states, "Therefore, it is expected that some waste will be treated on the Hanford Site, or that additional commercial contracts will be competitively awarded as required." Sufficient capacity isn't dependent on the volume of waste currently contracted for treatment. The report states that sufficient capacity exists to treat the waste, and that capacity will be employed as required. | 05/11/17 | Ecology concurred as proposed on 05/11/17.<br>Reopen: The LDR Report needs to have sufficiently detailed plans and schedules, siting specific waste streams and volumes to be treated at particular times to demonstrate completion of treatment of documented inventories. | None | ~~Closed~~~~Open~~Closed<br><br>11/29/18 Parties agreed to keep current language and update 2019 Report. |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

**Ecology Comments on 2014 Hanford Site Mixed Waste Land Disposal Restrictions Full Report. DOE/RL-2015-08, Rev. 0. August 31, 2016**

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 85 | p. 9-4, 2nd paragraph (StL) | The inapplicability certification used as a basis for not using thermal treatment is not cited. | Provide the citation to the certification. | Ed | Modify text as follows:<br>The Hanford Site is allowed to treat, and will continue to treat, the MLLW-04 Hazardous debris using macroencapsulation in accordance with a site-wide 1,609 kilometer (1,000 mile) inapplicability certification for the Washington State O/C LDR per WAC 173-303-140(4)(d)(iii) (99-EAP-055, "Certification to Allow Land Disposal of Hanford Organic/Carbonaceous Mixed Waste" [Rasmussen, 1998]).<br>Add reference to reference list:<br>Rasmussen, J. E., 1998, "Certification to Allow Land Disposal of Hanford Organic/Carbonaceous Mixed Waste," (external letter 99-EAP-055 to M. A. Wilson, Washington State Department of Ecology), U.S. Department of Energy, Richland Operations Office, Richland, Washington, December 1. | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 86 | p. 9-7, Table 9-4 (EPA) | Mixed waste operations under interim status, Part A Permit Application, began August 19, 1987. | This is not correct - the various DWMUS within the T-Plant complex are operating under final status pursuant to Permit Condition I.A. | Err, Ed | Accept.<br>Modify text as follows:<br>Mixed waste operations under interim status standards, Part A Permit Application, began August 19, 1987. | 06/15/17 | Ecology concurred with the addition of "standards" as shown on 06/15/17.<br><br>DOE: Add the following clarification to address the comment: "Mixed waste operations under interim status standards, pursuant to Permit Condition I.A began August 19, 1987." | None | Closed |
| 87 | p. 9-8, Table 9-5 (Comp) | Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | Remove the permit requirement from this text. | Ed | This comment is in reference to projected volume of MLLW to be treated between CY 2015 and CY 2019. There is no requirement to report projected volume to be treated, only projected volume to be generated. See Comment 83 and response.<br>All references to projected volume to be treated will be removed from the document.<br>Modify text as follows:<br>Processing of mixed waste will be performed in accordance with TPA milestones, ~~permit~~ | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17.<br>**Reopen:** See "LDR Report Issues for Discussion" handout (Issue 9) provided at the | None | ~~Closed~~ ~~Open~~ Closed<br><br>~~11/29/18:~~ Parties agreed to keep current language and update 2019 Report. |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | ~~requirements,~~ CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). | | 12/13/2017 LDR PMM. | | |
| 88 | p. 9-9, Section 9.1.7 (EPA) | Tri-Party Agreement milestones related to this treatability group<br>M-016-00B | This milestone is for "Complete all interim 300 Area remedial actions." It is not at all clear what relevance a CERCLA remedial action milestone has to the 200 area ETF. | TS, S | Explain.<br>Table 9-6 address LERF/ETF and cites the M-026-07D milestone. | 06/15/17 | Ecology withdrew comment on 06/15/17. | None | Closed |
| 89 | p. 9-9, Table 9-7 (Comp) | The Tri-Party Agreement milestone related to this treatability group is M-016-00B. The treatment capacity is 14 $m^3$ / day and planned completion of treatment using this facility is 2028. | The milestone doesn't directly relate to a schedule for treatment and disposition of 325 HWTU mixed waste. | TS | Accept.<br>Modify text as follows:<br>~~M-016-00B~~None. The 325 Building HWTU is a permitted RCRA TSD unit. | 06/15/17 | Ecology concurred as proposed on 06/15/17.<br>**Reopen:** Change language to RCRA TSD Group. | None | ~~Closed~~~~Open~~Closed<br>11/29/18 DOE accepts Ecology's proposed language. |
| 90 | p. 9-10, Section 9.1.8 (EPA) | The 222-S Laboratory Complex is a RCRA permitted TSD unit… | The 222-S Laboratory Complex is NOT a permitted TSD unit. Rather, there are three container storage DWMUs within the complex.<br>Language in the second sentence of the paragraph containing the cited text is much better. | S | Accept.<br>Modify text as follows:<br>The 222-S Laboratory Complex is a RCRA permitted TSD Group~~unit~~… | 07/20/17 | Ecology concurred with minor change reflected above 07/20/17 | None | Closed |
| 91 | p. 9-11, Section 9.1.9 (EPA) | MLLW-06 Mercury waste requires amalgamation as the BDAT treatment. Mercury can be present as a small-percentage waste component, but also can be present in high concentrations. Mercury present in concentrations >260 mg/kg requires RMERC. The Hanford Site inventory of mercury-bearing waste is currently zero. | The statement in the first sentence cited that MLLW-06 require amalgamation is correct, in that this waste stream is contaminated with radioactive materials. The following two sentences are confusing, however, in that they apply to different LDR treatability groups that do not apply to MLLW-06 wastes – MLLW-06 is limited to radioactive mercury. As noted in a previous comment on Table 1-1, it is assumed that the MLLW-06 treatability group contains only elemental mercury contaminated with radioactive materials. If so, the second two sentences appear inconsistent with the Table 1-1 treatability group description. Please review and revise accordingly so that this text and that in Table 1-1 are consistent. The evaluation will serve to establish a basis as to whether or not RMERC will be required. It is not clear that RMERC for radioactive mercury waste streams makes sense, unless part of a treatment train followed by AMALG.<br>Finally, the last sentence in the cited text is not true. Thermowells in equipment stored in the PUREX tunnels contain mercury. By not including all elemental mercury at Hanford in the MLLW-06 treatability group, the LDR report cannot effectively establish plans and schedules for LDR treatment of all wastes at Hanford. | T, Err | Accept.<br>Modify text as follows:<br>MLLW-06 Mercury waste requires amalgamation as the BDAT treatment. Mercury can be present as a small-percentage waste component, but also can be present in high concentrations. ~~Mercury present in concentrations >260 mg/kg requires RMERC. The Hanford Site inventory of mercury-bearing waste is currently zero.~~ Commercial capabilities are available when the wastes are generated. Table 9-9 contains information on commercial amalgamation. | 06/15/17 | Ecology concurred as proposed on 06/15/17. | None | Closed |
| 92 | p. 9-11, Table 9-9 (EPA) | Alternatives are under evaluation. An LDR treatability variance is planned for some waste in this treatability group. | At least based on the MLLW-06 treatability group description in Table 1-1, it is not clear why alternatives or a TV would be necessary for a waste stream consisting of elemental and amalgamated mercury. Please review Table 1-1 and the cited text to ensure that they are not inconsistent. | T | Accept.<br>Alternatives are under evaluation. ~~An LDR treatability variance is planned for some waste in this treatability group.~~ | 07/20/17 | Ecology concurred as proposed 07/20/17. | None | Closed |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 93 | p. 9-13, Table 9-~~10~~ 9 (EPA) | Alternatives for treatment of this waste Alternatives are under evaluation. An LDR treatability variance is planned for some waste in this treatability group. | Consistent with Section 5 of the 1990 LDR Report requirements document, the LDR report must contain specific plans and schedules for the evaluation documented in the cited text. | T,TS | Accept.<br>Not expecting to seek future variances. Treatability group is limited to contact-handled elemental mercury. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Pending resolution of 2014LDR-057<br>This was a repeat of Comment 92. | **2014LDR-057**<br>(DOE)<br>Delete second sentence of quoted text.<br>**Response:**<br>This text does not exist in Table 9-10. It exists but has been deleted in Table 9-9, "Commercial Amalgamation Summary," as noted in Comment 92. See 2014LDR-057 markup.<br>**ACTION CLOSED** | ~~Open~~Closed<br>Repeat of Comment 92 |
| 94 | p. 9-13, Table 9-10 (EPA) | Treatment capacity To be determined based on design reports. | This is confusing. Treatment capacity should be as necessary to treat the inventory documented in the LDR report. Of course, there is a relationship between the treatment rate of a treatment process and the schedule for completion of treatment for a given volume of waste. Please revise to better articulate how the LDR report waste inventory, treatment capacity and treatment schedules relate.<br>This comment applies to all similar instances of the cited language. | T, TS | Accept.<br>Modify text as follows:<br>Will be developed under M-091 series~~To be determined based on design reports.~~ | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17. | None | Closed |
| 95 | p. 9-13, Section 9.2.2 (EPA) | Currently, there is no MLLW-10 waste in storage and none planned to be generated in the next five years. | There are reactive metals in the current Hanford mixed waste inventory, but it is included in the 400-Area treatability group. Therefore, misleading conclusions are drawn from this means of organizing wastes in the report. | T,Err | Explain.<br>The presence of reactive metals in the 400 WMU treatability group does not necessarily mean these reactive metals should be identified in the MLLW-10 treatability group. Currently-generated reactive wastes in the MLLW-10 treatability group are sent offsite to a commercial facility for treatment. According to the MLLW-10 TGDS, Section 4.3, there is only limited capability/capacity available and additional capabilities are being sought. According to the MLLW-10 TGDS, Section 4.4, legacy waste currently stored is on hold until funding is allocated to treat the waste based on the overall site cleanup priorities. The MLLW-10 LSDSs for CWC and T Plant state that currently there is no MLLW-10 waste in storage at these two facilities but that the waste stream will very likely need to be stored [at these two facilities] in the future. Currently, waste in the 400 WMU treatability group has planned treatment identified in its TGDS, Section 4.2 that is different from plans for MLLW-10. Plans for the 400 WMU include treating the waste onsite and recovering sodium hydroxide for use at the Hanford tank waste vitrification plant. It would not be appropriate at this time to include waste from the 400 WMU in the MLLW-10. If in the future, waste | 06/15/17 | Open pending resolution of 2014LDR-026 | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | ~~Open~~Closed<br>Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report.<br>~~11/29/18~~ Parties agreed to keep language for 2014 Report. |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | from the 400 WMU is transferred to CWC or T Plant, it may end up a candidate for the MLLW-10 treatability group. | | | | |
| 96 | p. 9-13, Table 9-11 (EPA) | - Current regulatory status N/A | Why is the regulatory status of a commercial facility or capacity that needs to treat regulated waste Not Applicable? Seems like the regulatory status of such capacity is an essential piece of information that needs to be included in the LDR report. If the commercial capacity is not currently permitted, the 1990 LDR report requirements document specifies that the LDR report needs to include plans and schedules for ensuring the commercial capacity is permitted. Unless the regulatory status of commercial capacity is clearly documented, it is not possible to evaluate whether or not the LDR report is complete and reflects compliance with the 1990 LDR Report requirements document. | T, TS | Reject.<br>The regulatory status information for this commercial treatment availability is historical and is not the responsibility of DOE to track. The facility has been in operations since 2005, and has been identified as a candidate to treat these wastes. | 06/15/17 | Pending resolution of 2014LDR-020. Note associated comments 77, 96.<br>Disagree. DOE must assess annually continued availability and extent of capacity of commercial treatment technologies as part of the Treatment Report required by #4 of the 1990 LDR Report requirements document. For example, in any given year, if treatment capacity were no longer available, DOE would need to identify this and develop plans and schedules for acquiring the lost treatment capacity. | **2014LDR-020**<br>(DOE)<br>Propose revisions to Chapter 9<br>**Response:**<br>Proposed redline/strikeout changes are attached in 2014LDR-020. Subsequent reorganization/rewriting of the report may be considered.<br>**ACTION CLOSED** | ~~Open~~Closed<br><br>11/29/18 Parties agreed to keep language for 2014 Report. Information requirements for commercial facilities will also be addressed in Chapter 9.0 rewrite for 2019 Report.<br><br>Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report. |
| 97 | p. 9-15, Section 9.3.2 (EPA) | In the resolution negotiations for the Notices of Deficiency for the 222-S Laboratory Complex Part B permit application, Ecology approved the 222-S T8 Tunnel waste to remain in the 222-S Laboratory Complex until closure. | Ecology lacks the legal authority to make such an approval other than through the permitting process, which has NOT occurred to date. Ecology may have agreed to propose a draft permit that includes permit authorization to store these wastes, but proposal of a draft permit does NOT constitute approval. Only a final effective permit can do that. | S | Explain.<br>Waste is stored under interim status standards. This is being worked as Part of the Rev 9 process. | 07/20/17 | Pending resolution of 2014LDR-032<br>Alternative treatment standards for hazardous debris are readily available for this waste stream. Remove 222-S T8 Tunnel and associated | **2014LDR-032**<br>(Ecology)<br>Discuss with EPA the implications of listing a specified technology in the LDR Report | ~~Open~~Closed<br><br>11/29/18 DOE Action: B. Trimberger follow-up. Action completed on 12/13/18. Remove from Section 9.3.2 and confirm Macroencapsulation. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | language from Section 9.3.2. Relocate to Section 9.1 MIXED WASTE STREAMS FOR WHICH TREATMENT TECHNOLOGY EXISTS. Language referring to the 222-S Part B and Ecology approval must be deleted. Language referring to the 1997 agreement letter may be referenced (see T8 Tunnel LSDS, Section 2.1.1). | | |
| 98 | p. 9-15, Section 9.3.2 (EPA) | General | This section states that for some treatability groups, treatment technologies have not been selected. While this is legitimate for some of the enumerated treatability groups, it is not for others. For example, the mixed debris in the 222-S T-8 tunnel is a classic example of mixed debris that can be successfully treated via size reduction and debris-rule macroencapsulation. The fact that DOE-RL has not selected a technology does not provide a legitimate basis to establish plans and schedules for treatment of this mixed debris in the LDR report based on a presumptive treatment process that has a very high probability of being perfectly acceptable. A similar argument can be made for the chromium-contaminated concrete chips in the B-Plant Cell 4. Finally, it is highly likely that all of the reactive metal wastes in the 400-Area WMU treatability group can be treated by water (or water vapor) deactivation, recognizing that some degree of process development may be necessary to adapt this technology for the unique core component pots. | T, TS | Reject.<br>The report's purpose is not to preconceive paths forward for treatability groups when the treatment pathway is not yet determined. Restructuring treatability groups on yet-to-be-determined pathways would be inappropriate.<br>Initially DOE rejected the comment. Following discussion Ecology proposed the following redline/strikeout.<br>• Modify text as follows:<br>• MLLW-08, Unique Waste<br>• B Plant Cell 4<br>• B Plant Containment Building<br>• 241-CX Tank System<br>• HSTF<br>• ~~222-S T8 Tunnel~~<br>• 221-T Tank System<br>• ~~400 Area WMU.~~<br>DOE disagrees with the deletion of 222-S from this list. See 2014LDR-021. | 06/15/17 | Pending resolution of 2014LDR-032<br><br>There are no implications of listing a specified technology in the LDR Report. If a different treatment technology is identified, it can be changed in the next LDR Report.<br>This section of the report needs to be deleted, and associated TGDS's and LSDS's updated with specified LDR treatment requirements, or plans/schedules for DET/TV. | **2014LDR-021**<br>(DOE)<br>Confer with WRPS on Ecology's suggestion to delete 222-S T8 Tunnel as shown.<br>ORP conferred with WRPS on Ecology's suggestion to delete 222-S T8 Tunnel as shown. ORP does not agree that the T8 Tunnel should be deleted from this section.<br>Page B-55 (LDR Report Treatability Group Data Sheet for 222-S T8 Tunnel) has "Treatment options still being assessed" marked (section 4.2) with TBD for treatment method (section 4.3). Action closed 07/20/17.<br>**2014LDR-032**<br>(Ecology)<br>Discuss with EPA the implications of listing a specified technology in the LDR Report | ~~Open~~ Closed<br><br>7/29/18: DOE Action: D. Carter follow-up.<br><br>7/7/19: DOE Action: Look at list of units, decide which ones you could select an LDR treatment for now, which ones you can't, and therefore need to develop TPA milestones. Those that have an identified treatment technology will be removed from Section 9.0 and the treatment will be included in the data sheets. The others that don't will stay in Section 9.0 and go on the list for needing a schedule to develop that treatment technology. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 99 | p. 9-15, Section 9.3.2 (Comp) | The wastes included in the B Plant Cell 4 and B Plant Containment Building treatability groups are stored in a facility managed under a regulator-approved long-term S&M plan, DOE/RL-99-24, *Surveillance and Maintenance Plan for the 221-B Facility (B-Plant).* | EPA rescinded their approval of the S&M plan. | S | Accept.<br>Modify text as follows:<br>The wastes included in the B Plant Cell 4 and B Plant Containment Building treatability groups are ~~stored in a facility~~ managed in accordance with Section 8.0 of the Tri-Party Agreement Action Plan ~~under a regulator-approved long-term S&M plan, DOE/RL-99-24, *Surveillance and Maintenance Plan for the 221-B Facility (B-Plant)*. Therefore, treatment or disposal of the waste is not planned in the near term. Ongoing S&M activities for these two B Plant Complex treatability groups will be conducted in accordance with the approved S&M plan and associated TPA commitments until DOE Headquarters initiates the disposition phase or other actions as required under the terms of the Tri-Party Agreement Action Plan, Section 8.1 or 8.3.3.~~<br>~~See also response to comment 64.~~ | 06/15/17 | Ecology concurred as proposed on 06/15/17.<br>**Reopen:** See Ecology response to Comment #23. Delete yellow high-light. | None | ~~Closed~~ Closed ~~Open~~<br>11/29/18 Parties agreed this is associated with Comment #23 and Ecology's Action.<br>3/7/19 Closed pending Ecology review/approval of the revised language.<br>7/25/19 Parties agreed to language. |
| 100 | p. 9-16, Table 9-12 (Comp) | Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019 | There are no permitting documents, TPA milestones or CERCLA RODs associated. | T, TS | Reject.<br>This comment is in reference to projected volume of MLLW to be treated between CY 2015 and CY 2019. There is no requirement to report projected volume to be treated, only projected volume to be generated.<br>DOE recommends deletion of this information from the LDR Report. See also comments 83 and 107. | 07/20/17 | Pending resolution of 2014LDR-033<br>Response to comment does not address lack of projected treatment volume information. See "LDR Report Issues for Discussion" handout (Issue 9) provided at the 12/13/2017 LDR PMM. | **2014LDR-033**<br>(DOE)<br>Propose modifications to Chapter 9 tables<br>**Response:**<br>Proposed redline/strikeout changes are attached in 2014LDR-020. Subsequent reorganization/rewriting of the report may be considered.<br>**ACTION CLOSED** | ~~Open~~ Closed<br>11/29/18 Parties agreed this is closed for 2014 and will be addressed in 2019 Report. |
| 101 | p. 9-16, Table 9-12 (Comp) | None, residues to be handled with canyon disposition, in accordance with letter 01-RCA-192, "Request to Formalize 221-T Tank System Closure Agreement," (Hebdon, 2001) | This is not documentation of an approval by Ecology, but rather documentation of DOE's request to Ecology to formalize agreement. | S | Explain. | 05/11/17 | Ecology concurred with noted change on 06/29/17.<br>Reopen: Needs to get added to the list of waste without a schedule. T Plant is not a TPA Section 8 Facility, does not have | **2014LDR-010**<br>(Ecology)<br>Review recommended comment response in context of 36, 101, 104, 170, 176.<br>Ecology proposed changes:<br>None. Closure will be done pursuant to the approved closure plan in coordination with T Plant | Closed 3/7/19 Parties agreed to leave the language and close for 2014 Report. ~~Closed~~ ~~Open~~<br>12/13/18 Ecology Action: Review Canyon language in line with Comment #23; Potential Parking Lot. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | This language is virtually identical to language that was approved by Ecology in the 2009 full LDR Report. An updated closure plan was submitted in 2013 that has not yet been approved by Ecology. The information in the current 221-T Tank System Closure Plan will be reviewed and updated as appropriate (e.g., documentation of accurate information regarding tank system contents) for incorporation into Revision 8C of the Hanford Facility RCRA Permit.<br>For purposes of LDR reporting for the period ending in calendar year 2014, 01-RCA-192 will remain as referenced for closure of the 221-T Tank System, as previously agreed upon through finalization of the 2009 report. After approval of the 221-T Tank System Closure Plan for incorporation into the Hanford Facility RCRA Permit, Revision 8C, the reference in the LDR Report will be updated to the approved closure plan. | | any milestones, and DOE will need to figure out what this looks like. A closure plan with a treatment schedule would satisfy requirement, or new TPA milestones. | Complex disposition as described in ~~residues to be handled with canyon disposition, in accordance with~~ letter 01-RCA-192, "Request to Formalize 221-T Tank System Closure Agreement," (Hebdon, 2001) | 12/13/18: Ecology indicates that 221-T needs a Storage Assessment and Milestone negotiations.<br>Start of Comment Resolution Meeting #5 on December 12, 2018.<br><br>3/7/19: DOE Action: Characterization for extended storage will have TPA milestone. A revised storage assessment will be performed. Actual treatment schedule can be included in the closure plan which will be coordinated with the canyon disposition. Action for W. Toebe to revise language consistent with other revised language on T Plant and 221-T tank system. |
| 102 | p. 9-16, Table 9-12 (Comp) | Estimated completion date for treatment of treatability group with the assumption of available funding – with canyon disposition. | There is no milestone for T Plant canyon disposition. | T, Err, Ed | Accept.<br>Modify text as follows:<br>In accordance with approved closure plan~~With canyon disposition.~~ | 07/20/17 | Ecology concurred as proposed on 07/20/17 | None | Closed |
| 103 | p. 9-16, Table 9-12 (EPA) | - Characterization needed defined "Unknown until the treatment capability is defined. This waste might change radioactivity categories from low-level mixed waste to TRUM through evaporation." | This is not entirely defensible. At least in part, baseline characterization of a waste/waste stream is needed in order to start the process of identifying candidate or required treatment. From a practical standpoint, it may well be that characterization and treatment requirements need to be developed in parallel. However, it is NOT entirely the case that characterization information is fully unknown until treatment capability is defined. | T, | Accept.<br>Baseline characterization has been developed for this waste. The regulated constituents (TC metals and F-codes) have been identified in the TGDS 3.3.5 with "medium" confidence level. TGDS 3.3.4 identifies the presence of PCBs in the waste. The physical form of the waste is known, as is the potential presence of some TRU constituents.<br>Modify text as follows:<br>Treatment path forward ~~U~~unknown until the ~~treatment~~ characterization activities are performed~~capability is defined~~. This waste might change radioactivity categories from low-level mixed waste to TRUM through evaporation. | 06/15/17 | Ecology concurred with redline changes shown on 06/15/17.<br>Reopen: Need schedule for characterization and treatment. | None | ~~Closed~~~~Open~~Closed<br>12/13/18: Ecology provides direction that both a Schedule and Storage Assessment is needed. This comment is tied to Comment #101. Evaluate the need for additional characterization during the Storage Assessment along with process knowledge to choose treatment technology. Parties agreed this will be corrected in next full LDR Report. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 104 | p. 9-16, Table 9-12 (EPA) | - Treatment milestones "None, residues to be handled with canyon disposition, in accordance with letter 01-RCA-192,<br>"Request to Formalize 221-T Tank System Closure Agreement," (Hebdon, 2001)." | This is not exactly correct. As dangerous waste management units, the residues must be handled in accordance with the approved closure plan in the permit. While the closure plan itself may be developed in coordination with canyon disposition, this is very different that the closure of the tanks and the associated residue "handling" being done under the canyon disposition process.<br><br>Also, given that a permit modification request was submitted October 18, 2013, why is 01-RCA-192 cited? Shouldn't the 2013 submission supersede the 2001 document? | T | Accept and Explain.<br>DOE agrees that closure wastes will be handled in accordance with the approved closure plan. However, current plans are to manage wastes generated during 221-T Tank System closure in conjunction with the CERCLA work. In other words, the closure will be coordinated with the canyon work, but will be done in a manner that meets ~~WAC-173-303-610 and~~ the approved closure plan.<br>As stated in the response to comment 101 for LDR reporting purposes, 01-RCA-192 will be cited in the 2014 report consistent with the 2009 approved report. The citation will be changed after Ecology approval of the 221-T Tank System Closure Plan for incorporation into the Hanford Facility RCRA Permit, Revision 8C.<br>06/29/17<br>Ecology proposed response:<br>None. Closure will be done pursuant to the approved closure plan in coordination with T Plant Complex disposition as described in ~~residues to be handled with canyon disposition, in accordance with~~ letter 01-RCA-192, "Request to Formalize 221-T Tank System Closure Agreement," (Hebdon, 2001). | 05/11/17 | Ecology concurred with redline changes shown on 06/29/17.<br><br>Reopen: Needs to get added to the list of waste without a schedule. T Plant is not a TPA Section 8 Facility, does not have any milestones, and DOE will need to figure out what this looks like. A closure plan with a treatment schedule would satisfy requirement, or new TPA milestones. | **2014LDR-010**<br>(Ecology)<br>Review recommended comment response in context of 36, 101, 104, 170, 176.<br>Ecology proposed changes:<br>None. Closure will be done pursuant to the approved closure plan in coordination with T Plant Complex disposition as described in ~~residues to be handled with canyon disposition, in accordance with~~ letter 01-RCA-192, "Request to Formalize 221-T Tank System Closure Agreement," (Hebdon, 2001) | ~~Closed~~ 3/7/19 Parties agreed to leave the language and close for 2014 Report.<br>~~Closed~~~~Open~~<br>12/13/18 Ecology Action: Review language.<br><br>3/7/19 Same as 101. When 101 is fixed, this will answer 104. |
| 105 | p. 10-1, Fig 10-1 (EE) | WRAP and 221-T listed as existing capabilities | I think this is a misrepresentation of the situation. WRAP is not ready to process any of the M-091 waste and is planned to be shut down. 221-T has the to process large and RH containers, but does not possess that capability right now. | Err | Explain.<br>A determination to put WRAP into closure has not been made.<br>We agree the capability will be developed under M-091. | 07/20/17 | Ecology withdrew comment on 07/20/17 | None | Closed |
| 106 | p. 10-1, Fig 10-1 (EE) | The figure shows 221-T as the only TRUM-RH facility. | The PUREX Tunnels need to be added to this group. | Err | Reject.<br>The PUREX tunnels path forward is not yet determined. See PUREX Tunnels TGDS Section 5.0. | 07/20/17 | Ecology withdrew comments on 07/20/17 | None | Closed |
| 107 | p. 10-2 and 10-3, Section 10 ~~Tables~~ (Tables (Comp) | e.g. Projected volume of MLLW to be treated between CY 2015 and the end of CY 2019<br><br>Processing of mixed waste will be performed in accordance with TPA milestones, permit requirements, CERCLA RODs, and state Dangerous Waste Regulations (WAC-173-303). | DOE-RL-2015-08 does not specify volumes treated in the Section 9 and Section 10 Tables but rather uses generic language. Past year reports used specific volumes when it was available | Ed | Reject.<br>This comment is in reference to projected volume of MLLW *to be treated* between CY 2015 and CY 2019. There is no requirement to report projected volume to be treated, only projected volume to be generated.<br>DOE recommends deletion of this information from the LDR Report. See also comments 83 and 100. | 07/20/17 | Pending resolution of 2014LDR-033<br>Response to comment does not address lack of projected treatment volume information. See "LDR Report Issues for Discussion" handout (Issue 9) provided at the | **2014LDR-033**<br>(DOE)<br>Propose modifications to Chapter 9 tables<br>**Response:**<br>Proposed redline/strikeout changes are attached in 2014LDR-020. Subsequent reorganization/rewriting of the report may be considered.<br>**ACTION CLOSED** | ~~Open~~Closed<br>12/13/18 Parties agreed to close in 2014 Report and place treatment volumes in 2019 Full LDR Report. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 12/13/2017 LDR PMM. | | |
| 108 | p. 10-2, Table 10-1 (EPA) | - Current regulatory status "Operating under interim status; transition to final status is pending." | This is factually incorrect - both T-Plant and WRAP DWMUs are operating under final status authority through the permit. It is true that the WRAP and T-Plant DWMUs are operating according to interim status technical standards, but that is a very different statement than the various DWMUs operating "under interim status." | Err | Accept.<br>See duplicate/related comment 86.<br>Modify text as follows:<br>Operating under interim status standards pursuant to Permit Condition I.A.~~; transition to final status is pending~~. | 06/15/17 | Ecology concurred with redline changes shown on 06/15/17.<br>Add Pursuant to Permit Condition I.A. | None | Closed |
| 109 | p. 10-3, Table 10-2 (EPA) | Tri-Party Agreement milestones related to these treatability groups M-09-44 and M-091-01 | Should the milestone "M-09-44" be "M-091-44?" | Ed | Modify text as follows:<br>M-091-44 and M-091-01 | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 110 | p. 10-3, Table 10-2 (EPA) | - Current regulatory status "In planning" | What does this mean? Shouldn't this be something like "Not yet permitted – the design and subsequent permit modification/application materials under development?" | Ed | Modify text as follows:<br>Not yet permitted; alternatives are under review in accordance with M-091 plans and schedules~~In planning~~. | 04/26/17 | Ecology concurred with change as noted (addition of "Not yet permitted;" and "plans and schdules") on 04/26/17. | None | Closed |
| 111 | p. 10-3, Table 10-2 (EPA) | Budget status for design, construction, and operations "Funding will be requested to support the M-091 milestones resulting from the current negotiations." | The Department of Energy is obligated to seek funding for current enforceable milestones. By being silent on current funding request obligations, and instead speaking only to projected but not yet approved milestones, this report suggests that Energy is not intending to maintain compliance with current enforceable milestones. State current funding request. | Ed | Accept.<br>Modify text as follows:<br>Funding will be requested to support the M-091 milestones~~. resulting from the current negotiations.~~ | 07/20/17 | Ecology concurred with minor change shown on 07/20/17 | None | Closed |
| 112 | p. 10-3, Table 10-2 (EPA) | Estimated date of processing completion of treatability groups with the assumption of available funding.<br>To be determined. | What does this mean? There are enforceable milestones in place for completion of at least the TRUM-CH and TRUM-RH wastes - why would this report say the dates of currently enforceable milestones with actual dates are "To be determined?" Add dates from currents milestone series. | Ed | See proposed table for milestones related to treatability groups. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Open pending resolution of 2014LDR-026<br>Need to reference M-091 milestone that identifies when processing will be complete. | **2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | ~~Open~~Closed<br>12/13/18 Parties agreed to reference specific M-091 Milestone (circa 2014). |
| 113 | p. 10-3, Section 10.3 (EPA) | Text indicating that the processing technology for the 324 REC has not been selected. | Aren't the current plans to dispose of the cells and wastes in them in ERDF, not WIPP? | Ed | Explain.<br>This report reflects the inputs of the operating contractor WCH as of 2014. This report does not reflect current (2017) data. | 07/20/17 | Ecology concurred as proposed on 07/20/17. | None | Closed |
| 114 | p. 10-3, Section 1-3 bullets and p. | 324 building REC waste | The 324 building does not contain any TRU or TRUM waste as commented on page 8-3. All planning for disposition of this facility assumes LLW and MLLW. This information | Err. Ed | This report reflects the inputs of the operating contractor WCH as of 2014. This report does not reflect currently known (2017) data. | 07/20/17 | Ecology concurred as proposed on 07/20/17. | None | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | 1-4, section 10.3.3 (EE) | | needs to be moved to section 9.3.2. Move entire section 10.3.3 to chapter 9. | | | | | | |
| 115 | p. 10-4, Section 10.3.1 (EPA) | The PUREX Storage Tunnels are a RCRA-regulated storage unit | This is not correct. There are two storage tunnels, each of which is an individual dangerous waste management unit. | Err, S | Accept.<br>Modify text as follows:<br>The PUREX Storage Tunnels are a RCRA-regulated TSD Group~~storage unit~~ | 07/20/17 | Ecology concurred with change shown on 07/20/17 | None | Closed |
| 116 | p. 10-4, Section 10.3.2 (EPA) | The waste included in the PUREX Plant treatability group is stored under a regulator-approved long-term S&M plan. | This is neither accurate nor appropriate - the "regulator-approved long-term S&M plan" simply cannot authorize storage of wastes subject to the dangerous waste regulations. Only the permit can provide authorization for storage of dangerous/mixed wastes. | Err, S | Accept.<br>Modify text as follows:<br>Ongoing S&M activities for the PUREX Plant treatability group are conducted in accordance with the approved S&M plan and associated TPA commitments until DOE Headquarters decides to initiate the disposition phase or actions required by the lead regulatory agency pursuant to the terms of the Tri-Party Agreement Action Plan, Sections 8.1 or 8.3.3. The waste included in the PUREX Plant treatability group is stored in accordance with interim status standards pursuant to Permit Condition I.A~~stored under a regulator-approved long-term S&M plan~~. Therefore, certification/treatment or disposal of the waste is not planned in the near term. | 07/20/17 | Ecology concurred with minor change shown on 07/20/17.<br><br>Ecology: Language added to "DOE's Proposed Response", "pursuant to Permit Condition I.A". | None | Closed |
| 117 | p. 11-2, table 11-1 (EE) | Date complete hot commissioning: 2018 | Edit to align with reality. | Err, Ed | Explain.<br>Date correct at time of printing. | 05/11/07 | Ecology concurred as proposed on 05/11/17. | None | Closed |
| 118 | p. 11-2, Table 11-1 (EPA) | Treatment capacity To be determined by final design. | Given clear knowledge (to nine significant figures) of the volume of DST and SST waste and the enforceable schedules in the TPA and the Consent Decree, the necessary capacity of HLW treatment is clearly defined. Why does this entry say that capacity will be determined by the final design? If anything, the required treatment capacity should be an input to the final design, not something derived from it. | Ed | Initially DOE rejected with the following explanation<br>WTP design is not final; therefore, the treatment capacity of the WTP is not yet determined.<br>Following discussion with Ecology on 07/20/17, DOE proposed the following:<br>~~To be determined by final design.~~Final treatment capacity will be determined upon completion of performance testing. | 07/20/17 | Pending resolution of 2014LDR-034<br>While exact treatment capacity may will be know only after startup, treatment capacities can be included using design basis and adjusted in future LDR reports based on performance testing. | **2014LDR-034**<br>(Ecology)<br>Provide feedback on DOE's response | ~~Closed~~~~Open~~<br>12/13/18: DOE Action: M. Mills check with B. Trimberger with regards to email provided by Ecology. Action completed on 2/21/19. B. Trimberger confirmed that 4.2 MT/Day for HLVIT Treatment Capacity is sufficient as a snapshot (Ref. 2014LDR-034). |
| 119 | p. 12-1, Section 12.0 (EPA) | Treatment plans for these waste streams will be defined further when the streams are determined to be mixed waste. | This is a fair statement for those potential mixed waste where existing data are insufficient to support a conclusive or likely determination that, when generated, the waste will be designated as mixed waste. However, not all wastes in the potential mixed waste table fit into this category. For example, the potential mixed T Plant Canyon | T, TS | Reject.<br>Potential mixed waste is identified as such since it has not yet been "generated" by being removed from the location in which it presently exists. | 06/15/17 | Ecology concurred with rejection on 06/15/17. | None | ~~Closed~~~~Open~~Closed<br>12/13/18: Parties agreed to restore all proposed text and close for 2014. Parties also |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | Cell 11-L clearly states that wastes in the canyon cell designated as mixed waste. Thus, this particular waste must be included in plans and schedules for treatment to LDR standards in the LDR report. More generally, any potential mixed waste where there is a reasonable basis that it does designate or is likely to designate when generated must be included in LDR report treatment plans and schedules. | | | | Reopen: ~~Active management discussion.~~ Cell 11-L tank needs to be included in TGDS/LSDS. | | agreed to defer to Attorney's for 2019 Report. |
| 120 | p. 13-1, Section 13.0 (Comp) | | There is no milestone to support delaying T Plant Complex Canyon characterization and treatment. The characterization and treatment schedule for the 221-T Tank System must be provided. | T, TS | Modify text as follows:<br>Will be done pursuant to the approved closure plan in ~~conjunction~~coordination with T Plant Complex Canyon disposition. | 07/27/17 | Ecology concurred with noted change 07/27/17. DOE action to apply this change throughout document relative to any canyon. Open pending resolution of action -038.<br><br>See Ecology's response to Comment #104. | **2014LDR-038**<br>(DOE)<br>Consider modifying text throughout report when referencing canyon facilities to indicate characterization and treatment "will be done pursuant to the approved closure plan."<br>**Response:**<br>DOE disagrees with excluding CERCLA coordination in accordance with TPA Action Plan Section 8.0 from the reference to the approved closure plans.<br>**ACTION CLOSED** | ~~Closed~~<br><br>3/7/19 Fix language for 2019 Report; Same as #101.<br>~~Open~~<br>12/13/18 Ecology Action: Review language.<br><br>3/7/19 DOE agrees milestones are needed for characterization for extended storage and treatment. Use same language about 221-T waste treatment happening during closure, in coordination with canyon disposition. |
| 121 | p. 13-1, Section 13.0 (Comp) | | 2706-Tanks are not located in the Canyon, and must be characterized separately from the 221-T Tank System. The characterization and treatment schedule for the 2706-T Tanks must be provided. | T, TS, S | Explain<br>Liquid wastes from the newer tanks in 2706-T are included in the LERF/ETF treatability group because these wastes are treated under the LERF/ETF treatability group. See the LERF wastewater LSDS, Section 2.11, which provides characterization needs for this waste. Please note that historical decontamination wastes from 2706-T are addressed by the 221-T Tank System treatability group. See Table 1-1 and the discussion in Section 9.1.4. See also the discussion in the 221-T Tank System LSDS, Section 1.3.2. | 07/27/17 | Ecology withdrew comment 07/27/2017. | None | Closed |
| 122 | p. 13-1, Section 13 (EPA) | The information must be sufficient to quantify constituents of regulatory concern and to determine waste characteristics and unit specific waste acceptance criteria. | Information about a waste can be used to determine whether or not unit-specific waste acceptance criteria are satisfied. Unit-specific waste acceptance criteria depend on the nature and capability of the receiving unit. Please edit accordingly. | S | Modify text as follows:<br>As part of generation of any waste, a generating unit must take steps necessary to confirm the proper management of this waste. This includes identifying proper radioactive classification, understanding the physical matrix, properly designating the waste, and, where applicable, identifying the appropriate underlying hazardous | 04/26/17 | Ecology concurred with proposed redline/strikeout changes on 06/29/17. | **2014LDR-003**<br>(Ecology)<br>Discuss internally use of waste acceptance criteria vs. waste acceptance requirements.<br>**2014LDR-004** | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | constituents. Types of information that can be used to characterize waste can include data from analysis of the waste and knowledge of the materials and/or processes used to generate the waste. The information must be sufficient to quantify constituents of regulatory concern, ~~and~~ to determine waste characteristics, and to determine whether unit-specific waste acceptance criteria or requirements are satisfied. ~~unit-specific waste acceptance criteria.~~ | | | (DOE)<br>Provide recommendation on "waste acceptance criteria" and "waste acceptance requirement" wording/usage.<br>**2014LDR-014**<br>(Ecology)<br>Review redline/strikeout changes replacing waste acceptance criteria with waste acceptance requirements. | |
| 123 | p. 13-1, Table 13-1 (Comp) | 221-T Tank System, will be done in conjunction with T Plant Complex Canyon disposition. | There is no milestone for T Plant canyon disposition. The characterization and treatment schedule for the T Plant Complex and 221-T Tank System must be provided. | TS | Duplicate comment. | 07/27/17 | Open pending resolution of action -038.<br><br>See Ecology's response to Comment #104. | **2014LDR-038**<br>(DOE)<br>Consider modifying text throughout report when referencing canyon facilities to indicate characterization and treatment "will be done pursuant to the approved closure plan." | ~~Closed~~<br><br>3/7/19 Same as #104.<br>~~Open~~<br>12/13/18 Ecology Action: Review language. |
| 124 | p. 13-2, Table 13-1, entry for B-Plant Cell 4 Table 13-1, entry for B Plant Containment Building (EPA) | To be determined via Tri-Party Agreement Action Plan, Section 8.0.<br>To be determined via Tri-Party Agreement Action Plan, Section 8.0. | Given the expected parallel approach for dealing with closure issues and schedules for DWMUs within the B-Plant and PUREX complexes, and language in TPA Action Plan Section 8.1.3 concerning the relationship between closure and facility transition, the language in the "Additional Characterization Activities" and "Planned Characterization Schedule" for PUREX Storage Tunnels should be reflected here. | TS, | Accept.<br>Modify text as follows:<br>To be determined in conjunction with B Plant based on RCRA Permit Closure Plan.~~via Tri-Party Agreement Action Plan, Section 8.0.~~<br><br>To be determined in conjunction with B Plant per the~~via~~ Tri-Party Agreement Action Plan, Section 8.0. | 06/15/17 | Ecology concurred as proposed on 06/15/17. | None | ~~Closed~~ |
| 125 | p. 13-2, Section, 13.0 (Comp) | | M-085 covers only MW within the canyons of B Plant and PUREX. Any MW outside the canyon needs a schedule. | TS | Explain.<br>The scope of M-085-00 is as follows:<br>Complete response actions for the canyon facilities/associated past practice waste sites, other Tier 1 Central Plateau facilities not covered by existing milestones, and Tier 2 Central Plateau facilities. This includes B Plant, PUREX, and REDOX canyons and associated past practice waste sites in 200-CB-1, 200-CP-1, and 200-CR-1 OUs. The milestone does not include U Plant or T Plant canyons. | 07/27/17 | Comment open pending resolution of -039 and -040. | **2014LDR-039**<br>(DOE)<br>Suggest neutral language that addresses mixed waste outside of canyons.<br>**2014LDR-040**<br>(Ecology)<br>Suggest neutral language that addresses mixed waste outside of canyons.<br>**Response:** ~~Suggested language -~~<br>All mixed wastes in RCRA storage are covered by a treatability group and | ~~Closed~~<br><br>3/7/19 DOE will remove the words "Suggested language" from the DOE response in Follow-on Actions column. No waste in the tank. No added language for 2019 Report.<br>~~Open~~<br>12/13/18 Ecology Action: Review language. Clarify any other waste and where |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | listed on a location specific data sheet. Any mixed wastes outside of B Plant and PUREX that are placed into storage or otherwise determined to be in RCRA storage will be added in the future to data sheets in Appendix B. **ACTION CLOSED** | to capture in 2014 Report. |
| 126 | p. 13-2, Table 13-1, entry for the HSTF (EPA) | Additional characterization will be performed, as necessary, to support removal of the tanks as part of 200-IS-1 OU activities Completed | The statements that "Additional characterization will be performed..." and "Completed" are inconsistent. Either the characterization is complete or is not. | T | Accept.<br>Modify text as follows:<br>~~Completed~~Ongoing | 06/15/17 | Ecology concurred as proposed on 06/15/17. | None | Closed |
| 127 | p. 13-2, Table 13-1 (Comp) | | Using the M-016-00B or M-094 long-term schedules is inappropriate for all 325 HWTU wastes. Schedules for treatment of 325 HWTU wastes should be proposed in the LDR report. | TS | Modify text as follows:<br>~~M-016-00B~~None | 07/27/17 | Ecology concurred as proposed 07/27/17 | None | Closed |
| 128 | p. 13-2, Table 13-1 (Comp) | B Plant Containment Building | There should be another treatability group identified to cover waste outside of the Canyon. | T | Reject.<br>All waste stored at the B Plant Containment Building is covered by the B Plant Containment Building treatability group. There is no waste in storage outside the canyon. | 06/15/17 | Open pending resolution of 2014LDR-037. See associated comment 25.<br><br>See response to Comment #25. 276-BA will be added to the Report. | **2014LDR-018**<br>(DOE)<br>Determine where 276BA waste is reported and the wastes' LDR status Closed 07/27/17.<br>**2014LDR-037**<br>(DOE)<br>Determine if 276BA was identified prior to 2014.<br>**Response:**<br>Yes the subject waste was identified prior to 2014. In the future, any wastes outside B Plant will be addressed appropriately. DOE and Ecology have agreed that 276-BA is a container; this information will be reflected in the issuance of DOE/RL-2016-46, Removal Action Work Plan for the B Plant Complex Tier 2 Buildings/Structures. **ACTION CLOSED** | Closed<br>~~Open~~<br>~~Tied to~~ Tied to Comment #125. |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 129 | p. 13-2, Table 13-1, entry for MLLW-02 – Inorganic Non-Debris (EPA) | As necessary to meet treatment facility waste acceptance criteria.<br>M-091-42<br>M-091-42 | The cited M-091-42 milestone reads "Complete the treatment of small container CH MLLW (in above ground storage as of June 30, 2009 and in retrievable storage) to meet applicable LDR treatment standards in compliance with WAC 173-303-140." This milestone at best implies completion ~~of necessary~~of necessary characterization, but it does NOT satisfy the requirements of Section 3 of the 1990 LDR Requirements document for a comprehensive characterization plan, including the requirements "The Waste Characterization portion of the LDR Plan shall include the steps necessary to confirm which wastes and which waste streams are subject to the LDR." Citation of a final treatment milestone does not constitute a plan documenting the steps necessary for waste characterization.<br>Also, characterization "as necessary to meet treatment facility waste acceptance criteria" is a different set of requirements than required of the LDR report characterization report, which is to document the steps necessary to confirm which wastes/waste streams "are subject to the LDR."<br>Based on these points, the cited entry in this table does not reflect compliance with the 1990 LDR report document.<br>This comment applies to the following table entries for MLLW-03 through -10, and the table entries for TRUM-CH and TRUM-RH entries below. | T, TS | Explain.<br>The footnote clarifies that the milestone includes characterization for reporting purposes. This is consistent with January 9, 2002, LDR Project Manager Meeting minutes, which provide: "...characterization can be rolled up as part of treatment milestones since characterization is needed prior to treatment."<br>Reference comment 41, closed 06/15/17. | 07/27/17 | Open pending resolution of 2014LDR-041<br><br>Upon review of the cited LDR PMM minutes, Ecology determined they pre-date the 2002 Final Resolution. See "LDR Report Issues for Discussion" handout (Issue 1) provided at the 12/13/2017 LDR PMM. | **2014LDR-041**<br>(Ecology)<br>Discuss characterization milestones with EPA before dispositioning. | ~~Open~~Closed<br>12/13/18: Parties agreed to defer to the M-091 Milestone Negotiations and close for 2014 Report. New Milestones for 2019 Report. |
| 130 | p. 13-2, Table 13-1 (Comp) | | M-091-42 covers the treatment of MLLW for small container CH MLLW in above ground storage as of June 30, 2009 and in retrievable storage. No other MW should be lumped under M-091-42. | T, TS, S | Explain.<br>MLLW-02, -03, 04, -05, -06, -08, -09, and -10 are all contact-handled, small-container wastes. | 07/27/17 | Pending resolution of 2014LDR-042. | **2014LDR-042**<br>(DOE)<br>Update explanation on M-091-42.<br>**Response:**<br>DOE is reevaluating coverage of M-091 milestone series.<br>**ACTION REMAINS OPEN** | ~~Open~~Closed<br><br>Reorganization of Treatability Groups is on the PARKING LOT for next full LDR Report. |
| 131 | p. 13-3, Table 13-1, entry for PUREX Storage tunnels (EPA) | | The footnote to Table 1-1 says that it is difficult to distinguish between TRU and TRUM for waste that has been in storage for an extended period. Based on this, the table entry "Additional Characterization Activities" must clearly document the need to designate, or verify designation, of PUREX Storage Tunnel wastes in storage. | S | Reject.<br>The entry currently says "To be determined in conjunction with PUREX Plant based on RCRA Permit Closure Plan." This language accurately reflects additional characterization needs. | 06/15/17 | Ecology concurred as proposed on 06/15/17.<br>Reopen: Plans and schedules needed.<br><br>Refer to Comment #32. | None | ~~Closed~~~~Open~~Closed<br>12/13/18: Parties agreed to close for 2014 Report and work on language for 2019 Report. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 132 | p. 14-2- , Section 14.0 (Comp) | | Section 14, Some of the planned treatment periods are discrepant with associated milestones and are not specified in referenced milestones. | TS | Draft table addresses this comment. | Provided on 07/29/17 for planned discussion 08/03/17. | Open pending resolution of 2014LDR-026<br>Draft table will not address. Planned treatment period column deleted. | **2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | ~~Open~~ Closed<br>12/13/18 Parties agreed to close for 2014 Report. Discuss in Parking Lot for 2019 Report. |
| 133 | p. 14-2, Table 14-1 | This table provides information on the projected generation Volume 2015 through 2019. It seems this information, where available, should be in the Tables in Section 9. | Provide the volume information in Table 14-1 in the tables in Section 9 as well. | S | Explain.<br>This information is provided in Table 2-1, 2-2, and 14-1. | 05/11/17 | Ecology concurred as proposed on 05/11/17. | None | Closed |
| 134 | p. 14-3, Section 14.0 (Comp) | | The CERCLA document (ROD, work plan, design document, etc.) that is quoted for the schedule must have a definitive schedule listed in it. The location of the schedule dates in the CERCLA documents must be referenced in the LDR report. | TS | Reject.<br>CERCLA documents will be referenced. | Provided to Ecology on 07/29/17 for planned discussion 08/03/17. | Ecology concurred as proposed on 08/03/17. | None | Closed |
| 135 | p. 15-1, Section 15.0 (Comp) | | Using Tri-Party Agreement Milestones for which the due date was exceeded does not provide for compliance with any LDR requirements. Listed in this section are the following exceeded milestones: M-015-112; M-016-175; M-036-01E; M-045-61; M-045-86H; M-045-91M-T01; M-045-91F-T04; M-045-91G-T04; M-062-01AD; M-091-40L-044; M-091-40U-T01; M-091-40V-T01; M-091-40W-T01; N-091-44Z-005; M-091-46B-T01; M-091-46C-T02; and M-091-46D-T03. | TS | Explain.<br>The authoritative TPA database maintaining milestone data, the Central Milestone Module, was queried in December 2014. The query does not indicate milestone changes in progress, in negotiations, etc., but instead reflects milestones at a single point in time. | 07/27/17 | Ecology concurred with explanation on 07/27/17. | None | Closed |
| 136 | p. A-2, Table A-1 (Comp) | 3-RCRA hazardous waste code | and "state only" waste designation(s). | Ed | Verbage consistent with with A.1.)b. on page 16 of the 2000 Final Determination here.<br>Revise text as follows:<br>RCRA hazardous waste code(s) and state-only waste designations | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 137 | p. A-3, Table 1-A (Comp) | 13-Physical location | The location specific data sheets have a table in Section 2.2 for reporting each building and room number location. However, the data sheets do not provide this information for all locations. | S | Acknowledge.<br>That is correct. The instructions for LSDS Section 2.2 are as follows: Lists the building and/or room number, as appropriate, with the number of storage containers/tanks for each storage location in a table format.<br>On 07/27/17, Ecology proposed to change the instruction to DWMU and/or building as appropriate. | 07/27/17 | Pending resolution of 2014LDR-043<br>Suggested wording: change "Building/Room Number" heading to. "Physical location" and modify instruction for clarity. | **2014LDR-043**<br>(DOE)<br>Consider Ecology's suggestion to change LSDS format to record TSD Group/DWMU instead of Building/Room number<br>**Response:**<br>Possible implementation approaches are being considered.<br>**ACTION REMAINS OPEN** | ~~Open~~ Closed<br>12/13/18 DOE Action: MSA confirm updates on "how best to report waste groups" is doable in the LDR Database. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | see 1990 LDR Plan 1.c. | | |
| 138 | p. A-3, Table 1-A (Comp) | 14-Method of storage | LSDS Section 2.2 has a table provided to show number of containers or tanks. However, not all location specific data sheets record this information. A very good example of a LSDS which shows the information according to the instructions can be found on P. B-45 for 222-S Labs. An example showing little information provided is MLLW-04, CWC on P. B-310. | S | Duplicate of 137. | 07/27/17 | Pending resolution of 2014LDR-043<br><br>DOE proposed table will not solve. Need to update LSDS's per instructions.<br>Suggested wording: change "Number of Containers/tank" heading to "Method of Storage" and modify instruction for clarity.<br>see 1990 LDR Plan 1.c. "Method of Storage" heading will still include the information on the number of containers/tanks if applicable. | **2014LDR-043**<br>(DOE)<br>Consider Ecology's suggestion to change LSDS format to record TSD Group/DWMU instead of Building/Room number<br>**Response:**<br>Possible implementation approaches are being considered.<br>**ACTION REMAINS OPEN** | ~~Open~~Closed 12/15/18 DOE Action: MSA confirm updates on "how best to report waste groups" is doable in the LDR Database. |
| 139 | p. A-4, Table A-1 (Comp) | 20-Identification of any releases | Add "of hazardous waste or hazardous constituents to the environment from these storage units." | S | Consistent with *Requirements for Hanford LDR Plan*, page 1, item 1.e. here. Revise text as follows:<br>Identification of any releases of hazardous waste or hazardous constituents to the environment from these storage units | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 140 | p. A-4, Table A-1 (Comp) | 31-Treatment and disposal technologies | TGDS 3.3.2 does not discuss treatment and disposal technologies. | T | Accept.<br>TGDS 3.3.2 does discuss treatment technology (see column on far right). Section 5.0 discusses disposal, but will be modified as follows:<br>**5.0 Waste Stream Disposal**<br>**After treatment, how will the waste stream be disposed of (include locations, milestone numbers, variances required, technology, etc., as applicable)?** Provides space to describe disposal methods, locations, variances required, etc., as applicable. | 05/11/17 | Ecology concurred as proposed on 05/11/17 | None | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 141 | p. A-5, Table A-1 (Comp) | 32-Treatment capacity | TGDS 4.3 is a location to indicate treatment capacity available. However, individual LSDS do not identify availability. | T | Concur.<br>DOE concurs with this statement of fact. | 06/15/17 | Ecology concurred on 06/15/17. | None | Closed |
| 142 | p. B-1, Text accompanying Figure B-1 (EPA) | ...and give a glimpse of the waste's past and future. | The Final Determination and the 1990 LDR Report requirements document have very specific information requirements that must be provided. Whether or not "give a glimpse" satisfies these specific information requirements is entirely unclear. | S | Accept.<br>Modify text as shown in attached Figure B-1 markup. | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 143 | p. B-1, Text accompanying Figure B-1 (EPA) | Unique information is included on LSDSs that is not reflected on TGDS. | Better language would be "Information specific to wastes within the treatability group stored in specific locations that is not reflected in TGDSs." This recommended language is better aligned with the stated function of LSDSs. | T, TS, S | Modify text as shown in attached Figure B-1 markup. | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 144 | p. B-1, Text accompanying Figure B-1 (EPA) | The LDR report requires both to provide a clear picture of each waste stream. | Whatever may be "a clear picture" needs to be defined in terms of the FFCA, the FD and the 1990 document. Suggested text change: "The combination of TGDS and LSDS provide the information required to be included in the LDR report by the 1990 LDR Report Requirements document."<br>This comments pertains to language "present a complete picture" shown in Figure B-1 with the PUREX Storage Tunnels information. | T, TS, S | Modify text as shown in attached Figure B-1 markup. | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 145 | p. B-1, Text accompanying Figure B-1 (EPA) | LSDSs for generating locations contain the current facility inventory of this waste | To avoid confusion as to the meaning of "facility," this text should be re-written to read: "LSDS for generating locations contain the current inventory of this waste at the generating location." | Ed | Modify text as shown in attached Figure B-1 markup. | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 146 | p. B-3, Instructions for TGDS, Section 3.3.1 (EPA) | The choice indicates whether, under federal LDR requirements defined in 40 CFR 268.2, the waste stream is considered wastewater, non-wastewater, or is of an unknown type. | If the "unknown type" option is selected for wastes subject to other than state-only LDR requirements, the LDR report must include a plan and schedule for refining the waste's characterization to specify the LDR treatability group. | T, TS | Accept.<br>Comment is correct.<br>Ecology proposes to add *include a plan and schedule for refining the waste's characterization to specify the LDR treatability group* to the instruction on B-3 WHEN the unknown type is checked. | 07/27/17 | Ecology concurred with DOE's acceptance of redline changes. | None | Closed |
| 147 | p. B-4, Section 3.3.5 (Comp) | What is the confidence level for the regulated constituents? Lists three options, one of which must be selected. This assigns a subjective rating to the accuracy of the information presented on regulated constituents. | What is the value of this step? This question suggests that DOE does not necessarily know what their waste is. | Ed | Acknowledge.<br>LSDS are not designed to reflect treatment capacity. Thus, Table A 1 does not reference LSDSs as locations of that information. | 07/27/17 | Ecology withdrew comment on 07/27/17. | None | Closed |
| 148 | p. B-7, Instructions for LSDS, Section 2.1 (EPA) | Storage pursuant to the Tri-Party Agreement must be addressed by checking the appropriate boxes. | What does this mean? Assuming "storage" is intended to reference storage of mixed waste subject to dangerous waste requirements, only the Hanford dangerous waste permit can provide authorization to treat, store or disposal of mixed or dangerous waste. The TPA cannot be used to authorize storage of waste regulated under the dangerous waste program. | S, Ed | Accept.<br>2.1 Current storage method. Lists seven options in multiple choice format to describe the type of storage used. No box is chosen if the waste reported on the data sheet is only managed in accumulation areas or the waste is managed in a CERCLA area of contamination for future | 05/11/17 | Ecology concurred as proposed on 05/11/17.<br>Reopen: See redline. | None | ~~Close~~Closed<br>~~2/7/19~~ Closed for 2014 report. Will look at this language when rewriting report for 2019. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | generation. ~~Storage pursuant to the Tri-Party Agreement must be addressed by checking the appropriate boxes.~~ Note that as used here, "container (pad)" indicates drums or other containers such as boxes that are sitting on a concrete or other pad or area; "container (covered)" indicates drums or other containers such as boxes sitting under a roof or inside a building. Provide additional information about the storage location if other is checked (e.g., containment building). | | | | ~~d~~~~Open~~ 12/13/18: DOE Action: W. Toebe to review history. |
| 149 | p. B-8, Instructions for LSDS, Section 2.2 (EPA) | **Storage Inventory locations:** Lists the building and/or room number, as appropriate, with the number of storage containers/tanks for each storage location in a table format. | This probably should be worded "List the specific dangerous waste management units where." | Ed | Explain.<br>The current directions for LSDS Section 2.2 satisfy the requirement to report on the physical location of the waste. | 06/15/17 | Ecology concurred with DOE explanation on 06/29/17.<br>Reopen: see comment #137 and #138 for resolution. | **2014LDR-022**<br>(DOE)<br>Consider modifying the instructions for LSDS section 2.2 to account for wastes stored outside of buildings.<br>The parties agreed that 276-BA is a container and therefore is not waste in storage. No other wastes were identified in storage outside B Plant or other facilities. Action closed 06/29/17. | ~~Closed~~~~Open~~Closed 12/13/18: DOE Action: MSA confirm updates on "how best to report waste groups" is doable in the LDR Database. Tied to Comment(s) 138 and 139. |
| 150 | p. B-9, Instructions for LSDS, Section 2.7 (EPA) | **2.7 DOE Storage Compliance Assessment information:** | The reference to the assessment document for completed assessments may be adequate, but it would seem essential to document the results of the assessment, specifically the applicable storage requirements and whether or not they are being complied with. Compliance assessments are not an end in themselves – they are intended to provide information necessary to ensure safe management until the waste is treated. In this sense, the results of the assessment are just as important as whether or not the assessments were completed. | S | Explain.<br>Results of the storage assessments are included by reference in section 2.7. | 05/11/17 | Pending resolution of 2014LDR-013<br><br>ECOLOGY:<br>DOE will ensure that all available storage assessments can be readily retrieved from the DOE AR. | **2014LDR-013**<br>(Ecology)<br>Provide feedback (to EPA) on recommendation to reference storage assessments. | Closed<br><br>2/21/19- DOE Action: M. Mills send Parties the Storage Assessment Table (C. Noonan document) with Links to the Administrative Record. Parties agreed that a Hyperlink embedded in the 2019 Full LDR Report, and beyond, to the Administrative Record would benefit the report. Action will be closed upon submission of revised 2014 LDR Report to Ecology.<br>~~Open~~<br>Start of Comment Resolution Meeting #6 on Febcuary 21, 2019. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 151 | p. B-15, Table B-1 (EPA) | Column heading **"Unit/Plant."** | This probably should read, or include "unit group."<br>That said, many of the "unit/plant" locations consist of multiple dangerous waste management units, each of which may have very different management capabilities and wastes that they managed. To fully meet the intent and clear requirements of the LDR report, location-specific data sheets need to identify specific dangerous waste management units (or groups of DWMUs when they are sufficiently similar that there is no | Ed | Alternate Suggestion.<br>Reconfigure/restructure several summary tables – to be discussed | 06/15/17 | Pending resolution of 2014LDR-023 | **2014LDR-023**<br>(DOE)<br>Consider revising the column heading and associated data to reflect current practice (e.g., "Plant" is likely obsolete).<br>DOE provided the following proposed response on 07/29/17 for planned 08/03/17 discussion:<br>Modify the text as follows:<br>~~Unit/Plant~~DWM~~U/TSD Group.~~ Suggested wording: change "Unit/Plant" heading to "Physical location". | Closed<br>Parties agreed to header change (i.e., Physical Location)<br>~~Open~~ |
| 152 | p. B-16, LERF/ETF (EE) | Contractor: CHPRC | WRPS will be the contractor when this report comes out. | Err, Ed | Explain.<br>The commenter is correct; however, the report provides a snapshot as of 12/31/14 and CHPRC was the contractor for LERF/ETF on that date. No change needed. | 05/11/17 | Ecology concurred as proposed on 05/11/17. | None | Closed |
| 153 | p. B-21 and following pages, TGDSs (Comp) | e.g. …however, legacy waste currently stored is on hold until funding is allocated to treat the waste based on the overall site cleanup priorities. | Numerous Data Sheets don't have treatment schedule information or milestones that point to a specific date or refer to a document or process that does not specify a date. | Err, TS | Explain.<br>The TPA provides enforceable schedules for this waste (M 091 series). | 07/27/17 | Ecology concurs comment 160 sufficiently closes this comment 07/27/2017. | None | Closed |
| 154 | p. B-22, TGDS 221-T Containment Building, Section 3.3.2 (EPA) | Large equipment and/or debris. | This text is inconsistent with the description of wastes in Section 1.2 that states that the waste also include non-debris such as sandblast grit. Please revise to ensure consistency within the TGDS. | Err | Accept. Modify text as follows:<br>Large equipment, debris, ~~and/~~or non-debris. ~~and/or debris.~~ | 07/27/17 | Ecology concurred as proposed 07/27/17. | None | Closed |
| 155 | p. B-22, TGDS, 221-T Containment Building, Section 3.3.2 (EPA) | Constituent concentration and basis column entries of "unknown" and "process knowledge." | The statement that the concentration range of constituents is unknown based on process knowledge does not make sense. If anything, this table should state that there is a lack of process knowledge to establish constituent concentrations. Also, it is curious that the table seems to suggest that, by hint of the waste being associated with numerous toxicity characteristic waste codes, the corresponding constituents are present at levels exceeding the toxicity characteristic levels, yet the concentration of the very same constituents is stated as "unknown." | Ed | Explain.<br>The lack of knowledge regarding toxicity characteristic constituent concentrations will not hinder treatment plans because the wastes carry F-codes, which will require treatment that will address these constituents (e.g., alternative debris treatment standard of macroencapsulation). | 07/27/17 | Pending resolution of 2014LDR-044.<br>In the "Concentration" column of Table 3.3.2, delete the word "Unknown," and replace with "Inconsistent/ Variable." | **2014LDR-044**<br>(DOE)<br>Add treatment standards regardless of concentration to 221-T Containment Building TGDS and any others marked unknown.<br>**Response:**<br>See 2014LDR-044 markup.<br>**ACTION CLOSED** | ~~Open~~Closed<br>~~7/24/19~~ Table for 2019 Full LDR Report comments/discussions. |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 156 | p. B-22, TGDS, 221-T Containment Building, Section 3.3.2 (EPA) | LDR Treatment Concentration Standard or Technology Code | Why are LDR treatment standards cited as "unknown?" 40 CFR 268.40 is explicitly clear for D004 wastes, for example, what the wastewater and non-wastewater treatment standards are. Given that this TGDS states that the physical form of these wastes are solid, there is no ambiguity as to what the LDR treatment standard is. Since the wastes are described as being in part mixed debris, it would be appropriate to identify debris rule macroencapsulation as an alternative treatment standard likely to be applied to at least some of the wastes in this treatability group. | Ed | Duplicate of 155 | 07/27/17 | Pending resolution of 2014LDR-044.<br><br>In the "Concentration" column of Table 3.3.2, delete the word "Unknown," and replace with "Inconsistent/ Variable." | **2014LDR-044**<br>(DOE)<br>Add treatment standards regardless of concentration to 221-T Containment Building TGDS and any others marked unknown.<br>**Response:**<br>See 2014LDR-044 markup.<br>**ACTION CLOSED** | ~~Open~~Closed |
| 157 | p. B-22, TGDS, 221-T Containment Building, Section 3.3.2 (EPA) | LDR subcategory identified as "spent solvent" for F001-F005 waste codes | This is very confusing. There are four treatability subgroups for F001 wastes, all of which are for solvent wastes. Thus, this entry simply fails to distinguish which of the four F001 treatability subgroups apply to this treatability subgroup. It is simply not possible to identify what LDR treatment standard applies. By hint of the 6.0 mg/kg treatment standard for 1,1,1-trichloroethane, one can infer that the wastes fall into the first treatability group for F001 wastes. | Ed | Explain.<br>Treatment standards have been adequately identified. No further characterization is needed for this treatability group prior to treatment and disposal (See Table 13-1 and Sections 2.11.2 and 2.11.3 on associated LSDS). Although treatment is planned under M-091-01, treatment options are still being assessed (See Table 10-2 and Section 4.2 on TGDS). | 07/27/17 | Ecology withdrew comment on 07/27/17.<br>~~Flag for review w/EPA~~. Reopen: In the "LDR Treatment Concentration Standard or Technology Code" column, replace concentrations with the appropriate alternative treatment standard for hazardous debris. | None | ~~Close~~Closed<br><br>Closed for 2014 Report. Add Alternative Treatment Standard (e.g. footnote) in addition to the Concentration Base Standard in the 2019 Full Report.d~~Open~~ |
| 158 | p. B-23, TGDS, 221-T Containment Building, footnote to Section 3.3.2 (EPA) | This waste will ~~either~~ be treated under M-091~~, macroencapsulated, or treated with other approved methods~~. | This enumeration of possible treatment pathways is so broad. It is impossible to document a unique plan or schedule for treatment of specific wastes within this treatability group for treatment by a specific technology. "M-91" process does not even identify any specific treatment technology - therefore, it is not possible to verify that any of the M-91 treatment technologies are in fact capable of meeting applicable LDR treatment standards for this particular treatability group. | T, Err | Reject.<br>Treatment options are still being assessed for this waste. See section 4.2, which notes "Treatment options still being assessed" (page B-24). The information provided in this data sheet reflects what was known at the time of the report.<br>Reference:<br>*Waste Isolation Pilot Plant Land Withdrawal Act*, Section 9.(a)(1)(H), Public Law 102-579, October 30, 1992, 106 Stat. 4777, as amended. | 06/15/17 | Ecology concurred as proposed on 06/15/17.<br><br>Reopen: Change the text as identified in redline. All of this waste will be processed under M-091. | None | ~~Close~~Closed<br><br>Parties agreed to Ecology's recommended disposition.d~~Open~~ |
| 159 | p. B-23, General on all TGDSs (Comp) | | Grammatical Error was "$" instead of ">=" under section 3.3.4.2. *(This appears to have happened across the board on all LDR Report Treatability Group Data Sheets)* | Ed | The database administrator has corrected this error. Subsequent report exports will reflect this change. | 04/26/17 | Concurred as proposed on 04/26/17. | None | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 160 | p. B-24, TGDS, 221-T Containment Building, Sections 4.2 (EPA) | | The sentence in Section 4.4 is difficult, if not impossible to parse or understand. Please revise to ensure it is clearly understandable. | Ed | Modify text as follows:<br>~~Dependent upon M-091 capability, canyon deck and process cell cleanout continues, or in support of other missions.~~The treatment schedule for these wastes will depend on the following factors: (1) continued progress in implementation of canyon deck and process cell cleanout; (2) potential for future need of 221-T in support of Hanford cleanup; and (3) development of M-091 capabilities. | 04/26/17 | Ecology concurred as proposed on 04/26/17 | None | Closed |
| 161 | p. B-24, TGDS, 221-T Containment Building, Sections 4.9 (EPA) | All efforts to segregate low-level from mixed and transuranic from low-level and/or mixed waste. | This is an incomplete sentence. If the intent of this sentence is to suggest that separation of various classifications of waste will be performed, why is not such separation technology described in the treatment section of the TGDS? | Ed | Data field 4.9, "Key Assumptions," covers assumptions concerning treatment not provided previously in the TGDSs or LSDSs; therefore, this assumption is being removed.<br>Modify text as follows:<br>~~All efforts to segregate low-level from mixed and transuranic from low-level and/or mixed waste. In addition, size-reduction techniques will also be used.~~None. | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 162 | p. B-24, TGDS, 221-T Containment Building, Section 5.0 (EPA) | Dependent upon M-91 as well as ongoing and future missions (e.g., K Basin sludge storage, etc.), and canyon/process cell cleanout. | This doesn't make sense. - The factors enumerated may well influence the timing and nature of treatment, but doesn't seem to have anything to do with how the waste stream will be disposed of. Please revise to be responsive to the stated question: "How will the waste stream be disposed of?" | T, Ed | Modify text as follows:<br>Dependent upon M-91 ~~as well as ongoing and future missions (e.g., K Basin sludge storage, etc.)~~, and canyon/process cell cleanout, ~~.W~~wastes are anticipated to be disposed at Trenches 31/34, ERDF ~~and/~~or WIPP. | 04/26/17 | Ecology concurred as proposed on 04/26/17.<br><br>See additional redline/ strikeout in "DOE's Proposed Response" column. | None | Closed |
| 163 | p. B-25, LSDS, 221-T Containment Building, Section 1.3.3 (EPA) | F listed (F001 through F005) based upon process knowledge from decontaminating of tank farm equipment | How does this source explanation explain the presence of the various dangerous metals enumerated in the TGDS? | S | Explain.<br>The listed codes have been applied based on process knowledge. The wastes have been designated in accordance with WAC 173-303-070(3)(b), which states that a person "must check each section, in the order set forth, until they determine whether or not the waste is designated as a dangerous waste." WAC 173-303-070(3)(b) further states, "once the waste is determined to be a dangerous waste, further designation is not required except as required by subsection (4) or (5) of this section." See 221-T Containment Building TGDS Section 3.3.2, which indicates that the concentrations for the metals are unknown. Please note that the 221-T LSDS, Sections 2.11.2 and 2.11.3 indicate that further characterization is not needed prior to treatment and disposal of these wastes. In other words, the wastes that contribute | 07/27/17 | Pending resolution of 2014LDR-045 | **2014LDR-045**<br>(DOE)<br>Add codes from TGDS to LSDS as appropriate<br>**Response:**<br>See 2014LDR-045 markup.<br>**ACTION CLOSED**<br><br>Further characterization for identifying concentrations of metals is not needed because the waste is debris. As previously noted, additional changes required are to replace Concentration column "unknown" with | ~~Open~~Closed<br><br>~~7/21/19~~ DOE Action: W. Toebe confirm data. Non-debris materials information accurate/adequate to treat?<br><br>~~7/7/19~~ Sand blast grit. In body of report it's called TRUM. Data sheets call is MLLW. Errors throughout the document will be corrected in the body of the document. Data sheet errors will be |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | to this treatability group have been sufficiently characterized to establish a treatment process. | | | "variable", and to replace LDR Treatment Concentrations with alternative treatment standard for hazardous debris. | corrected using errata sheets.<br><br>6/7/19 No change in 2014 Report; will address in 2019 Full Report. |
| 164 | p. B-25, LSDS, 221-T Containment Building, Section 2.1.2 (EPA) | This process is ongoing as T Plant Complex continues to prepare for current as well as future missions (e.g., K-Basin Sludge). | If on-going, why is there no projected generation information for the next five years? At least preparation for receipt of K-basin sludge should occur within the next five years. | S | Accept<br>K Basins sludge would not be included in mixed waste projections because it is not designated as mixed waste. If mixed wastes are anticipated to be generated, then information will be added. The K Basins reference will be removed. | 07/27/17 | Ecology concurred as pending resolution of 2014LDR-046, and as long as waste anticipated from future missions are included in mixed waste projections.<br><br>Response did not address comment. Missed the point that cleanout of cells in preparation for K Basins sludge will generate waste (i.e., waste from cell cleanout). | **2014LDR-046**<br>(DOE)<br>Confirm all references to K Basin sludge removed from report.<br>**Response:**<br>Redline file attached. K Basins Sludge is listed in Table 1-2, "Streams No Longer Applicable to Report;" Table 14-2, "CERCLA Documents Supporting Treatment Schedules;" and Table C-3, "Historical List of Materials Deleted from Potential Mixed Waste Table." Those references remain in the report. The reference has been deleted from pages B-24 and B-25. K Basin is left in text on page B-138 and B-538.<br>**ACTION CLOSED** | ~~Open~~Closed<br><br>7/21/19 DOE Action: W. Toebe review LDR 2009 Report and talk with CHPRC Project about projected waste streams to confirm accuracy.<br><br>8/6/19 No change in 2014 Report. |
| 165 | p. B-26, LSDS, 221-T Containment Building, Section 2.2 (EPA) | Building/Room Number, Number of Containers/Tanks<br>221-T Canyon (RR, Deck) (7L, 13R, 17R), deck, RR | How should this be read? That wastes associated with this LSDS are stored in the railroad tunnel (presumably what the reference "RR" means) or on the canyon deck? Are there actually any wastes in the railroad tunnel? If so, how does storage of wastes in the RR tunnel relate to use of the tunnel to move K-basin sludge into designated T-Plant canyon cells? | S | Explain.<br>Mixed waste is stored in Cells 7L, 13R, 17R and 16R (which was missing from the data sheet); there is no mixed waste stored in the RR Tunnel, and there is only satellite accumulation on the deck – no storage. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Pending resolution of 2014LDR-043<br>Suggested wording: change "Building/Room Number" heading to. "Physical location" and modify instruction for clarity. | **2014LDR-043**<br>(DOE)<br>Consider Ecology's suggestion to change LSDS format to record TSD Group/DWMU instead of Building/Room number<br>**Response:**<br>Possible implementation approaches are being considered.<br>**ACTION REMAINS OPEN** | Closed<br><br>Parties agreed to header change (i.e., Physical Location)~~Open~~ |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 166 | p. B-31, 221-T Tank System, TGDS, Section 4.4 (Comp) | | This is not a treatment schedule. A schedule needs to be proposed to cover the T Plant Canyon. This language appears on other TGDS. | TS | Explain.<br>Schedules will be identified pursuant to the approved closure plan in coordination with T Plant Complex Canyon disposition under TPA Section 8.0. | 07/27/17 | Pending resolution of 2014LDR-047<br><br>See Ecology's response to Comment #104. | **2014LDR-047**<br>(DOE)<br>Consider modifying text of 221-T Tank System TGDS Section 4.4 to read: "Schedules will be done pursuant to the approved closure plan."<br>**Response:**<br>DOE disagrees with excluding CERCLA coordination in accordance with TPA Action Plan Section 8.0 from the reference to the approved closure plans.<br>**ACTION CLOSED**<br><br>**2014LDR-047**<br>(DOE)<br>Consider modifying text of 221-T Tank System TGDS Section 4.4 to read: "Schedules will be done pursuant to the approved closure plan."<br>**Response:**<br>This action is duplicate in intent of 2014LDR-038. Comment 166 will be grouped with Comment 120 under action 2014LDR-038.<br>**ACTION CLOSED** | ~~Open~~ Closed<br><br>7/21/19 DOE Action: W. Toebe confirm storage assessment information and determine if new assessment is needed.<br><br>8/7/19 Closed pending Ecology review/approval of revised language. Same as previous comments for the 221-T Tank System. Tied to comment #101.<br><br>8/6/19 No change in 2014 Report; will address in 2019 Full Report. |
| 167 | p. B-29, TGDS, 221-T Tank System Section 3.2 (EPA) | Physical form indicated as solid, liquid and semi-solid. | The draft permit issued by Ecology includes the following statement regarding the 221-T tank system:<br>"Liquids have naturally evaporated from the tank waste at a rate of approximately 30 liters per day (11,053 liters per year) until presently the tank system contains only dry waste residues."<br>Thus, the "liquid" and "semi-solid" boxes checked in the LDR report are inconsistent with the certified permit application provided to Ecology. This sort of discrepancy must be corrected.<br>A similar comment applies to Section 1.3.1 in the LSDS for the 221-T Tank system. | Err | Subsequent LDR report language and final permit language will be consistent. Report text to remain as written. | 04/26/17 | Ecology concurred as proposed on 04/26/17. | Ecology to provide 221-T presentation for DOE reference. Presentation provided by E. Eberlein on 04/26/17 at 3:56 p.m. via email.<br>**2014LDR-029**<br>(DOE)<br>Summarize status and approach for 221-T Tank System volume estimations<br>**Response:** | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | The residues in the 221-T Tank System cannot be confirmed as being dry. Until information is obtained indicating that the tank system contents are dry, the LDR Report will indicate that a combination of forms exists (solid, liquid, semisolid) within the tank system. The contents were previously thought to be dry based on calculations of anticipated evaporation rates. Because the contents cannot be confirmed as dry, the closure plan will provide the best available information. **ACTION CLOSED** | |
| 168 | p. B-30, TGDS, 221-T Tank System, Section 3.3.2 (EPA) | UHCs have not been determined for this waste stream. | If this is the case, it would seem that there is a need to include plans and schedules to complete characterization of wastes in this treatability group. Is this a footnote? If so, how does it apply? | TS | Explain.<br>Characterization will be conducted pursuant to the approved closure plan in coordination with T Plant Complex Canyon disposition under TPA Section 8.0.<br>Ecology concurs that deleting this footnote would close comment. DOE action to delete comment. (two instances of non footnotes) | 07/27/17 | Pending resolution of 2014LDR-048<br><br>Need to add characterization/ treatment schedule for 221-T waste. | **2014LDR-048**<br>(DOE)<br>Delete non-footnote footnotes related to UHCs<br>**Response:**<br>Upon examination, the footnote was relevant. Asterisks added for clarity to B-30, -54, -255, -280, -365, and -413. See 2014LDR-048 markup.<br>**ACTION CLOSED** | ~~Open~~Closed<br><br>Closure pending resolution of Comment #166<br>~~3/7/19~~ closed pending Ecology review/approval of language.<br><br>~~3/6/19~~ No change in 2014 Report; will address in 2019 Full Report. |
| 169 | p. B-31, TGDS, 221-T Tank System, Section 3.3.6 (EPA) | There is a potential for additional sampling to evaluate waste for long term storage and underlying hazardous constituents. | If additional characterization work is necessary, the characterization plans and schedules need to be documented in the LDR report. Lack of such characterization plans and schedules is a deficiency with respect to Item 3 in the 1990 LDR report requirements document.<br>This comment also applies to Section 2.11.1 of the 221-T tank system LSDS. | T,TS | Explain.<br>Characterization will be conducted pursuant to the approved closure plan in coordination with T Plant Complex Canyon disposition under TPA Section 8.0.<br>Ecology proposed to update explanation as follows:<br>Characterization to evaluate waste for long term storage and underlying hazardous constituents will be conducted pursuant to the approved closure | 08/03/17 | Pending resolution of 2014LDR-048.<br><br>An updated storage assessment evaluation is | 2014LDR-049<br>(DOE)<br>Consider Ecology's proposed changes to explanation<br>**Response:**<br>DOE does not agree with the proposed change to the explanation. | ~~Open~~Closed<br><br>Closure pending resolution of Comment #166<br><br>~~3/7/19~~ closed pending Ecology |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | | | | plan ~~in coordination with T Plant Complex Canyon disposition under TPA Section 8.0~~. | | needed to demonstrate waste can be safely stored until the tank system is closed. | **ACTION CLOSED** | review/approval of language.<br><br>~~1/8/19~~ No change in 2014 Report; will address in 2019 Full Report. |
| 170 | p. B-33, LSDS, 221-T Tank System, Section 1.3.1 (EPA) | Closure currently is planned for 2025. | This may be factually correct from a facility perspective, the fact remains that the actual closure schedule must be as established by Ecology in the approved closure plan, which has yet to happen. There needs to be a note stating that the actual schedule for conducting and completing closure activities will be as established in closure plan approved through the permitting process. Further, the 2025 date is not documented in the draft 221-T tank system closure plan dated October 18, 2013. Please resolve this discrepancy. | TS | Explain.<br>Recommend dispositioning in accordance with 36, 101, and 104 (pending Ecology action 2014LDR-010).<br>On 06/29/17, Ecology closed associated 2014LDR-010, but proposed the following changes to close comment 170: Delete note and everything after in Section 1.3.1 on page B-33. | 06/15/17 | Concurred with redlined change on 07/20/17. | **2014LDR-010**<br>(Ecology)<br>Review recommended comment response in context of 36, 101, 104, 170, 176.<br>**2014LDR-027**<br>(DOE)<br>Delete "NOTE" text on page B-33, Section 1.3.1.<br>Action closed 07/20/17. | Closed |
| 171 | p. B-33, LSDS, Section 1.3.2 (Comp) | New tanks have been installed in 2706-T/2706-TA for newly generated waste. See the 2706-T location specific data sheet. | During a 2014 Ecology inspection of T Plant, facility representatives stated they were closing these tanks. | Err | Accept.<br>~~The subject tanks were not closed in 2014.~~<br>Modify text as follows:<br>Waste resulting from decontamination activities ~~at the 221-T and 2706-T~~, including precipitation run-on and direct additions from other onsite and offsite generators (e.g., FFTF condensate, laboratory returns, etc.). These canyon tanks were permanently removed from service in June of 1999. Engineering and administrative measures have been taken to ensure that no additional liquids are placed into this tank system. ~~New tanks have been installed in 2706-T/2706-TA for newly generated waste. See the 2706-T location specific data sheet.~~ | 06/15/17 | Ecology concurred with strikeout markup shown on 06/15/17. | None | Closed |
| 172 | p. B-33, 221-T Tank System, LSDS, Section 1.3.2 (Comp) | See the 2706-T location specific data sheet. | Where is the location-specific data sheet for 2706-T? These tanks should be separate from the 221-T Tank System, as they are not part of the same system. Why is this LSDS shown under LERF/ETF liquid waste? | Err | Explain.<br>By definition, the 221-T Tank System includes wastes from historical decontamination activities at both 221-T and 2706-T as major waste sources. See Table 1-1 and the discussion in Section 9.1.4. Liquid wastes from the newer tanks in 2706-T are included in the LERF/ETF treatability group because these wastes are intended for treatment under the LERF/ETF treatability group. See the discussion in the 221-T Tank System LSDS, Section 1.3.2 and the information in the 2706-T LSDS. No change needed. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Pending resolution of 2014LDR-050 | **2014LDR-050**<br>(Ecology)<br>Clarify comment on 2706-T | ~~Open~~Closed |
| 173 | p. B-33, LSDS, 221-T Tank System, | Source of the regulated constituents:<br>Waste treatment process, decontamination, facility or | At least based on laboratory wastes associated with the 222-S lab complex, it seems odd that only D005-D008 and F001-F005 dangerous waste numbers are associated with the 221-T tank system. Please verify. | Ed | Explain.<br>Codes based on acceptable process knowledge. | Provided to Ecology on 07/29/17 for planned | Pending resolution of 2014LDR-051 | **2014LDR-051**<br>(DOE)<br>Verify waste codes and | Closed<br><br>Action 2014LDR-051. ~~Open~~ |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | Section 1.3.3 (EPA) | equipment operation and maintenance waste, and analytical laboratory waste. | | | | 08/03/17 discussion. | Please identify the specific laboratory that generated this analytical waste.<br><br>Ecology: Resolved with action 2014LDR-051. | provide updated explanation<br>**Response:**<br>The analytical wastes addressed on the 221-T Tank System LSDS are limited to analytical wastes associated with wastes generated at T Plant and do not include other laboratory wastes.<br>**ACTION CLOSED** | |
| ~~17~~174 | p. B-34, LSDS, Section 2.2 (Comp) | Storage inventory locations | Identify the six tanks. | Ed | Explain.<br>As previously agreed, Section B2.0 describes LSDS data field input parameters. Section 2.2 requires listing the building and/or room number, as well as the number of storage containers or tanks for each storage location. It does not define a requirement to list container numbers. Reference comment 195. | 06/15/17 | Ecology concurred as reposed on 06/15/17. | None | Closed |
| 175 | p. B-34, LSDS, 221-T Tank System, Section 2.5 (EPA) | Other Area(s) (list):<br>Refer to DOE/RL Letter 01-RCA-192 for discussion on proposed management of this waste and the "Hanford Facility Dangerous Waste Permit Application, T Plant Complex," DOE/RL-95-36. Revision 1. | This text is inconsistent with language in the draft 221-T tank system closure plan that states "No liquid waste remains in the 221-T Tank System, and removal of solid waste residues is not anticipated." How can other areas be considered for management of this waste if the closure plan documents that the waste will not be removed from its current location? | Ed | Explain The 2014 report cited the Part A permit application (2002). The commenter is citing the draft closure plan. | Provided to Ecology on 07/29/17 for planned discussion 08/03/17. | Pending resolution of 2014LDR-052 | 2014LDR-052 (Ecology)<br>Follow up with EPA. | Closed<br><br>7/23/19 Ecology Action: Follow up with EPA. DOE Action: Tied to Comment #166 Action.<br><br>8/7/19 Closed. An errata sheet will be prepared deleting this language from the data sheet.~~Open~~ |
| 176 | p. B-36, LSDS, Section 2.12 (Comp) | Negotiations on closure approach of the 221-T RCRA Tanks System have been accomplished with Ecology during the Part B workshop process. The disposition of the 221-T RCRA Tank System is document in "Hanford Facility Dangerous Waste Permit Application, T Plant Complex," DOE/RL-95-36, Revision 1. | | Ed | Recommend dispositioning in accordance with 36, 101, and 104 (pending Ecology action). | 06/15/17 | Ecology withdrew comment on 06/29/17.<br><br>Reopen: Language referring to the 222-S Part B and Ecology approval must be deleted. This process does not substitute for approval through issuance of a | **2014LDR-010**<br>(Ecology)<br>Review recommended comment response in context of 36, 101, 104, 170, 176. | ~~Closed~~Closed ~~Open~~<br><br>Held up on previous comments.<br><br>8/7/19 Closed. An errata sheet will be prepared deleting this language from the data sheet. |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | permit. See responses to Comments 36, 101 and 104. | | |
| 177 | p. B-43, TGDS, 222-S Laboratory Complex, Section 4.4 (Comp) | The goal of the 222-S Laboratory Complex is to treat waste off-site at commercial treatment facilities generally within one year. Waste that cannot be treated off-site will be shipped to CWC and will be subject to the schedules for characterization and treatment. ~~set forth in proposed TPA milestone M-091-42 (for contact-handled waste).~~ | Language is too vague. If it is shipped off-site for treatment within one year, it is compliant. If the MW remains in storage longer than one year, it needs a schedule to be compliant. M-091-42 is only for CH MLLW that was in storage prior to 2009, or in retrieval trenches. Need to propose interim schedules for MW in storage over one year. | TS, S | Reject.<br>The footnote clarifies that the milestone includes characterization for reporting purposes as follows:<br>~~Characterization and Treatment will be performed in accordance with applicable M-091 milestones. See the M-091 milestones to determine what portion of the total volume requires treatment under those milestones.~~<br>This is consistent with January 9, 2002, LDR Project Manager Meeting minutes, which provide: "…characterization can be rolled up as part of treatment milestones since characterization is needed prior to treatment."<br>Reference comment 41, closed 06/15/17. | 07/20/17 | Open pending resolution of 2014LDR-036<br><br>Response does not address comment, regardless of whether or not 222-S has the potential to generate TRU waste. Reference to M-091 must be removed. M-091 is not a catch-all for all TRU/TRUM waste, it is for legacy waste. Delete text as indicated in strikeout. A schedule needs to be developed for any waste in storage longer than one year. See comment #183. | **2014LDR-035**<br>(DOE)<br>Confirm with lab whether or not they generate TRU waste.<br>DOE confirmed the lab has the potential to generate TRU waste.<br>**2014LDR-036**<br>(Ecology)<br>Evaluate evolution of M-091-42 milestone series | Closed<br><br>12/13/18: B. Trimberger approved language in original text column. ~~Open~~ |
| 178 | p. B-53, TGDS, 222-S T-8 Tunnel (Comp) | | Needs a schedule. | TS | Explain.<br>Waste is stored under interim status standards. This is being worked as Part of the Rev 9 process. | 07/20/17 | Open pending resolution of 2014LDR-032 | **2014LDR-032**<br>(Ecology)<br>Discuss with EPA the implications of listing a specified technology in the LDR Report<br><br>Ecology: LDR treatment must be identified, even if DOE hasn't decided on a treatment. Future changes to the treatment technology selected would be reflected in the next annual LDR Report. Add to | Closed<br><br>12/13/18: B. Trimberger confirmed schedule is consistent with Comment #179 and will follow #179 logic. ~~Open~~ |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | | | | | | | list needing a treatment schedule. | |
| 179 | p. B-57, LSDS, section 2.1.1 (Comp) | This waste was being staged in the shielded T-8 tunnel alcove per Ecology approval ("Request for Approval to Stage Out of Service Ancillary Drain Piping in the 222-S Laboratory Service Tunnels," dated October 10, 1997) until closure of the 222-S Laboratory Complex. | Change text to say that this is the approval letter from Ecology (letter #0047988). | S | Accept.<br>Modify text as shown:<br>This waste was being staged in the shielded T-8 tunnel alcove per Ecology approval (letter 0047988, "Request for approval to Stage Out of Service Ancillary Drain Piping in the 222-S Laboratory Service Tunnels." Dated October 10, 1997) until closure of the 222-S laboratory complex | 05/11/17 | Ecology concurred as proposed on 05/11/17.<br><br>Note: Need to ensure T8 Tunnel Alcove is properly identified in the next LDR Report. Identified as a Closing TSD Unit through the Rev. 9 permitting process. | None | Closed |
| 180 | p. B-61, TGDS, 241-CX Tank System (Comp) | | Needs a schedule.<br>Change milestone reference to M-037-13. | TS | Partially Accept.<br>In CY 2014, Milestone M-037-10 was applicable to the 241-CX Tank System (241-CX-70/71/72). M-037-10 was modified in 2016 to remove the 241-CX Tank System. Milestone M-037-13 was created specific to 241-CX Tank System effective 05/20/2016). (Reference TPA change control form M-37-15-01.)<br>Modify text as follows:<br>~~N/A~~M-037-10 ~~N/A~~09/30/2020 | 06/15/17 | Ecology concurred as proposed on 06/15/17.<br><br>Note: The milestone only addresses completion of closure. The milestone needs to be modified to address completion of treatment, unless the closure plan itself has a schedule for treatment. Add to list needing a treatment schedule. | None | Closed |
| 181 | p. B-76, LSDS, Section 2.2 (Comp) | Storage inventory locations | Identify the six tanks. | Ed | Explain.<br>As previously agreed, Section B2.0 describes LSDS data field input parameters. Section 2.2 requires listing the building and/or room number, as well as the number of storage containers or tanks for each storage location. It does not define a requirement to list container numbers. Reference comment 195. | 06/15/17 | Open pending resolution of 2014LDR-024.<br><br>Ecology: see comment #137 and #138 for resolution. | **2014LDR-024**<br>(DOE)<br>Determine the number of tanks in the 324 Building Radiochemical Engineering Cells.<br>DOE has confirmed the 324 Building RECs contain eight tanks. | Closed Closed for 2014 Report. Parking Lot for 2019 Full Report. ~~Open~~ |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 182 | p. B-77, LSDS, Section 2.8 | Applicable Tri-Party Agreement milestones related to storage at this location | Identify the associated milestone. (M-089-06) | TS | Accept.<br>Modify text as shown:<br>~~N/A~~M-089-06 06/30/2016 | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17. | None | Closed<br>~~7/25/19~~ Table for 2019 Full LDR Report comments/discussions. |
| 183 | p. B-85, TGDS, 325 HWTU (Comp) | Waste to be treated in the 325 HWTUs or at commercial treatment facilities will generally be treated and/or shipped as soon as practical but may be held over one year for various reasons. Waste shipped to CWC under an exemption will not be treated within one year; such waste will be subject to the schedules for treatment set forth in proposed TPA milestone M-091-42 (for contact-handled waste). | Language is too vague. If it is shipped off-site for treatment within one year, it is compliant. If the MW remains in storage longer than one year, it needs a schedule to be compliant. M-091-42 is only for CH MLLW that was in storage prior to 2009, or in retrieval trenches. Need to propose interim schedules for MW in storage over one year. | T. TS | Accept. Modify text as shown:<br>~~Waste to be treated in the 325 HWTUs or at commercial treatment facilities will generally be treated and/or shipped as soon as practical but may be held over one year for various reasons. Waste shipped to CWC under an exemption will not be treated within one year; such waste will be subject to the schedules for treatment set forth in TPA milestone M-091-42 (for contact-handled waste)~~Waste stored for a year or more is scheduled for treatment and/or disposal as soon as practical. The schedule for final disposal of all 325 HWTUs waste is defined in the 325 HWTUs closure plan, Addendum H to the 325 HWTUs OUG section of the Hanford RCRA Permit. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17. | None | Closed |
| 184 | p. B-90, TSDS - 325 HWTU (Comp) | Sections 3.3.1, 3.3.2, 3.3.3 show reduction achieved in 2014 as 2 $m^3$. Each year from 2015-2019, the projected reduction was 6 $m^3$. The assumptions are based on consolidation for shipment volumes and not a reduction in what was generated. | Reductions in volume were from consolidation and not treatment and disposition. How does this pertain to treatment and disposition of the mixed waste? | T | Accept.<br>Modify text as follows:<br>Sections 3.3.1, 3.3.2, 3.3.3 show CY14 reductions in volume of ~~achieved in 2014 as~~ 2 $m^3$, realized through accumulation of waste until safe and effective consolidation of waste into larger containers for shipment could be achieved. Each year from 2015-2019, the projected reduction was 6 $m^3$. The assumptions are based on consolidation for shipment volumes and not a reduction in what was generated. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Pending resolution of 2014LDR-053.<br>Ecology: Agree as proposed, withdraw comment. | **2014LDR-053**<br>(DOE)<br>Determine how to address this comment when quoted text doesn't seem to exist.<br>**Response:**<br>DOE requests that Ecology withdraw this comment. The referenced report text was in the waste minimization portion of the TSDS, yet the comment was treatment oriented. In addition, the referenced text does not exist.<br>**ACTION CLOSED** | ~~Open~~Closed |
| 185 | p. B-85, TGDS, Section 4.4 (Comp) | Waste to be treated in the 325 HWTUs or at commercial treatment facilities will generally be treated or shipped as soon as practical but may be held over one year for various reasons. | Any waste stored over 12 months needs to be included in the report. This waste does not meet the criteria for M-091-42. It is not retrievably stored waste. | TS | Duplicate of 183. Modify text as follows:<br>Accept. Modify text as shown:<br>~~Waste to be treated in the 325 HWTUs or at commercial treatment facilities will generally be treated and/or shipped as soon as practical but may be held over one year for various reasons. Waste shipped to CWC under an exemption will not be treated within one year; such waste will be subject to the schedules for treatment set forth in~~ | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17. | None | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
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| | | | | | ~~TPA milestone M-091-42 (for contact-handled waste)~~Waste stored for a year or more is scheduled for treatment and/or disposal as soon as practical. The schedule for final disposal of all 325 HWTUs waste is defined in the 325 HWTUs closure plan, Addendum H to the 325 HWTUs OUG section of the Hanford RCRA Permit. | | | | |
| 186 | p. B-98, TGDS, Section 2.7 400 Area WMU (Comp) | | Need a schedule for continued storage. Section 2.7, "An assessment is not needed. The TSD unit is a new unit managed in compliance with WAC 173-303." This is incorrect. A compliance report was issued in 2014 stating that the TSD is not in compliance. Need a storage compliance assessment. | TS,S | Reject. 400 Area WMU is intended for long-term storage (see Part A application).<br>Reference 17-AMRP-0189. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Pending resolution of 2014LDR-054 | **2014LDR-054**<br>(Ecology)<br>Confirm assessment.<br><br>See resolution to 20147LDR-054: planning and schedule for all waste in storage for longer than one year. | Closed<br><br>Add to group of waste needing development of treatment technology in 2019 Report.~~Open~~ |
| 187 | p. B-94, TGDS, Section 3.3.2 (Comp) | *** | No footnote identifying the significance of the asterisks. Identify the footnote for "***" | Ed | Accept.<br>Modify text as follows:<br>*LDR Subcategory marked N/A if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40CFR 268.40)<br>**If waste is not consistent in concentration, this may not apply. Described in section 3.3.6<br>***The concentration varies and is based on process knowledge and/or analytical data | 06/15/17 | Ecology concurred as proposed on 06/15/17.<br>Add to list of wastes needing a treatment schedule. | None | Closed |
| 188 | p. B-96, LSDS, Section 2.1 (Comp) | Current Storage Methods | The containers in the 400 Area WMU are both covered and on a pad, but only "Container (Pad)" is marked. | Err, Ed | Check the "Container (covered)" box. (The database does allow multiple boxes to be checked.) | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |
| 189 | p. B-98, LSDS, Section 2.8 (Comp) | Applicable Tri-Party Agreement Milestones related to storage at this location: N/A | No Milestone, schedule, or dates identified. | TS, S | Explain.<br>400 Area WMU is intended for long-term storage (see Part A application).<br>Reference 17-AMRP-0189. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Pending resolution of 2014LDR-054<br><br>All mixed waste in storage longer than 1 year requires a treatment schedule, regardless of permit approvals. | **2014LDR-054**<br>(Ecology)<br>Confirm assessment. | Closed<br><br>Same as Comment #186.~~Open~~ |
| 190 | p. B-101 and B-114 TGDS, B Plant Cell 4 and B Plant Containment | B-Plant is under long term surveillance and maintenance in accordance with Section 8.0 of the Tri-Party Agreement Action, Facility Decommissioning Process. | Section 4.9 incorrectly identified a key assumption. EPA rescinded approval of this S&M plan. A schedule needs to be developed for this MW. In addition a compliance storage assessment needs to be performed to assess all MW storage areas outside of the canyon. | TS, S | Explain.<br>Modify text as follows.<br>**Description of waste (list WSRd numbers for this waste stream, as applicable)** | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Pending resolution of 2014LDR-054<br><br>All mixed waste in storage longer | **2014LDR-054**<br>(Ecology)<br>Confirm assessment. | Closed<br><br>7/31/19 Ecology Action: Review Red-Lines in DOE response |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | Building (Comp) | | | | Waste resulted from WESF hot cell maintenance waste (i.e. manipulator boots, light bulbs, HEPA filters, misc. debris). B Plant, including Cell 4, was placed in ~~long term~~ surveillance and maintenance in 1998. No additional waste is intended to ~~will~~ be stored in this location ~~as B Plant is under long term S&M~~.<br>**Key Assumptions**<br>B-Plant waste is stored under interim status standards and managed ~~under long term surveillance and maintenance~~ in accordance with Section 8.0 of the Tri-Party Agreement Action Plan~~,~~ ~~Facility Decommissioning Process.~~. | | than 1 year requires a treatment schedule, regardless of permit approvals. | | and provide suggested changes. DOE Action: Is there a storage assessment on file and does it need updating?<br><br>~~1/7/19~~ Closed. A treatment technology will be selected and included in an errata sheet. Language will be revised to use standard language provided in Comment 23.~~Open~~ |
| 191 | p. B-103, TGDS, Section 4.5 (Comp) | Applicable Tri-Party Agreement milestones related to storage at this location | Identify the associated milestone. | TS | Accept. Modify text as follows:<br>~~N/A~~M-085-00 ~~N/A~~TBD | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17. | None | Closed |
| 192 | p. B-111, TGDS, Section 2.1 (Comp) | Total Volume (cubic meters): 0.000 | Should report 294,000 kg. | Err, Ed | Accept.<br>The data field description allows for reporting<br>Modify text as follows:<br>~~0.000~~294,000 kg (quantity, not volume) | 06/15/17 | Ecology concurred as proposed on 06/15/17. | None | Closed |
| 193 | p. B-133, TGDS, 204-AR Catch Tank (Comp) | | Develop a schedule for treatment for 204-AR. | TS | Explain.<br>In 2014, the 204-AR catch tank was part of the DST system. | 07/20/17 | Ecology concurred as proposed 07/20/17. | None | Closed |
| 194 | p. B-113, TGDS, Section 4.5 (Comp) | Applicable Tri-Party Agreement milestones related to storage at this location | Identify the associated milestone. | TS | Accept.<br>Modify text as shown:<br>~~N/A~~M-085-00 | 05/11/17 | Ecology concurred as proposed on 05/11/17. | None | Closed |
| 195 | p. B-139, LSDS, Section 2.2 (Comp) | Storage inventory locations | Identify the three tanks. | Ed | Explain.<br>Section B2.0 describes LSDS data field input parameters. Section 2.2 requires listing the building and/or room number, as well as the number of storage containers or tanks for each storage location. It does not define a requirement to list container numbers. | 05/11/17 | Ecology concurred as proposed on 05/11/17.<br><br>Reopen: see comment #137 and #138 for resolution. | None | Closed |
| 196 | p. B-233, LSDS, MLLW-01-LDR Compliant Waste (Comp) | | Why is this waste in this LDR report? | Ed | Reference January 25, 2000, letter from R. Stanley, Ecology, to G.H. Sanders, RL.<br>On January 20, 2000, DOE requested clarification from Ecology on its draft resolution of dispute. Clarification #2 of DOE's request asked Ecology to explain the scope of the phrase "each | 04/26/17 | Concurred with resolution of 2014LDR-005, on 05/04/17. | **2014LDR-005**<br>(Ecology)<br>Discuss removal of this section internally.<br>Ecology proposed and DOE agreed to remove the | Closed |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | and all mixed waste stream," and asked Ecology to indicate which waste streams applied to this phrase. Ecology responded that the "information must cover all mixed waste streams, not just those prohibited from land disposal." Ecology's response also clarified that mixed hazardous waste not subject to the LDRs actively managed in permitted or unpermitted TSD storage for less than or greater than one year did apply to the "each and all waste stream" reporting expectation. | | | requirement to report on LDR-compliant mixed waste. | |
| 197 | pgs. B-242, 243, 259, 310. 372, 381, 402, 478. 482, 491, 506, 519, 539 LSDS, Section 2.2 (Comp) | Storage inventory locations | Identify the building and room numbers where the waste is stored. | Ed, S | Reject.<br>Reference comment 195, closed 05/11/17.<br>Section B2.0 describes LSDS data field input parameters. Section 2.2 requires listing the building and/or room number, as well as the number of storage containers or tanks for each storage location. It does not define a requirement to list container numbers. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Pending resolution of 2014LDR-043.<br>See Comment # 217.<br><br>Response does not address the original comment. Inventory locations are required by building/ room number. In addition, the draft table is a rollup of other summary tables. It does not replace information required to be included in TGDS's and associated LSDS's.<br>Reopen: see comment #137 and #138 for resolution. | **2014LDR-043**<br>(DOE)<br>Consider Ecology's suggestion to change LSDS format to record TSD Group/DWMU instead of Building/Room number<br>**Response:**<br>Possible implementation approaches are being considered.<br>**ACTION REMAINS OPEN** | Closed<br><br>Closed for 2014 Report. Will be addressed in 2019 Report.~~Open~~ |
| 198 | pgs. B-243, 260, 312, 374, 383, 403,454, 479, 483, 488, 492, 507, 512, 521, 540, 544, 549<br>LSDS, Section 2.8 (Comp) | Applicable Tri-Party Agreement milestones related to storage at this location | Identify the associated milestone. | TS, S | Explain.<br>Draft table addresses this comment. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Open pending resolution of 2014LDR-026<br>See Comment # 217.<br><br>In addition, the draft table is a | **2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | Closed<br><br>Closed for 2014 Report. Instructions will be worked in for 2019 Report.~~Open~~ |

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| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | rollup of other summary tables. It does not replace information required to be included in TGDS's and associated LSDS's. | | |
| 199 | p. B-451, TGDS, Purex Tunnels. (EE) | Waste is expected to contain a combination of TRU and TRUM. | Why is this not reflected in section 3.1 of the sheet describing "radiological characteristics"? | Ed | Accept.<br>This appears to be a typographical error regarding the radiological characteristics of the waste within the PUREX Storage Tunnels. The TGDS, Section 3.1 should be changed to reflect "transuranic" rather than "low-level" to be consistent with information elsewhere in the report.<br>Modify text as follows:<br>~~Waste is expected to contain a combination of TRU and TRUM.~~Radiological characteristics of the waste will be evaluated at the time of dispositioning and may consist of MLLW, TRUM, TRU, or a combination of these three categories. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17. | None | Closed |
| 200 | pgs. B-451, B-471, B-495, B-529, TGDS, TRUM-CH large container (EE) | Radiological Characteristics is marked as Low-Level. Section 1.2 states wastes is TRU or TRUM. | Why is this not reflected in section 3.1 of the sheet describing "radiological characteristics"? | Ed | Accept.<br>This appears to be a typographical error regarding the radiological characteristics of the waste within the PUREX Storage Tunnels. The TGDS, Section 3.1 should be changed to reflect "transuranic" rather than "low-level" to be consistent with information elsewhere in the report.<br>DOE to provide redline/strikeout of subject TGDSs. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17. | None | Closed |
| 201 | p. B-504, LSDS, Section 3.1 (Comp) | Assessment date to be determined. | Perform assessment or propose a date for the assessment to be performed. | S | Explain.<br>Assessments are ongoing as described in 3.2.<br>Modify text as shown in B-504. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology concurred as proposed on 08/03/17. | None | Closed |
| 202 | pgs B-505 and 538LSDS, Section 1.3.1 (Comp) | The description in Section 1.3.2 is for retrievably stored waste. However, Sections 1.3.1 and Section 2.1.1 indicate that it is not. # of containers in Section 2.2 also indicates it was retrievably stored waste. | Clarify if all of these containers were or were not from the retrieval trenches. | S | Reject.<br>The LSDS Section 2.1 provides historical information on the point of generation. | 06/15/17 | Ecology concurred as proposed on 06/15/17. | None | Closed |
| 203 | p. B-511, LSDS, Section 2.2 (Comp) | Storage inventory locations | Identify burial ground and trench where the waste is stored. | S | Explain.<br>As previously agreed, Section B2.0 describes LSDS data field input parameters. Section 2.2 requires listing the building and/or room number, as well as | 06/15/17 | Open pending resolution of 2014LDR-025. | **2014LDR-025**<br>(DOE)<br>Determine if/how the LDR Report should document | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | the number of storage containers or tanks for each storage location. The number of containers is listed. Reference comment 195. | | DOE explanation rejected, RSW is currently addressed in the 2014 LDR Report under the appropriate treatability group data sheets and associated location specific data sheets for LLBG. Please identify burial grounds/trenches where waste is stored.<br><br>The original comment is to "Identify burial ground and trench where the waste is stored." Comment #195 has been re-opened, see comment #137 and #138 for resolution. | wastes that are considered disposed (placed in ground before 1987) until they are removed from the ground.<br>**Response:**<br>Retrievably stored waste will be reported in Appendix C.<br>See markup labeled 2014LDR-025.<br>**ACTION CLOSED** | Close for 2014 Report. Add physical location in 2019 Report.~~Open~~ |
| 204 | p. B-314-317, LSDS (KAC) | LSDS FFTF 440 Pad | SAA areas are exempt from LDR requirements. Waste in SAA areas is not considered to be stored according to 40 CFR 268.50. This SAA has accumulated a broken tritium sign since 2007 or 2009. This waste needs to be part of the current inventory for regulated storage. This is not estimated generation projection. Revise this section and any other LSDS that are SAA with stored waste.<br>Also because this sign is broken that had tritium inside it, confirm that this waste is mixed (still contains tritium) and not just hazardous.<br>Explain in detail how a facility that is cold and dark continues to generate waste and specifically what the waste are. | S | Explain.<br>As of December 31, 2014, the waste was managed in an SAA under accumulation standards. The waste was not in storage at this time. Subsequently, the waste has been removed and sent for disposal. No change needed. | 06/15/17 | Ecology concurred with explanation on 06/15/17. | None | Closed |
| 205 | p. B-538, LSDS, Section 1.3.1 (Comp) | The description in Section 1.3.2 is for retrievably stored waste. However, Sections 1.3.1 and Section 2.1.1 indicate that it is not. # of containers in Section 2.2 also indicates it was retrievably stored waste. | Clarify if all of these containers were or were not from the retrieval trenches. | Ed, S | Explain.<br>The LSDS Section 2.1 provides historical information on the point of generation. | 06/15/17 | Ecology concurred with explanation on 06/15/17. | None | Closed |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 206 | p. B-542, LSDS, Section 2.1 (KAC) | "Other" explanation – "Stored pursuant to M-091 TPA milestones" | This is factually correct.<br>Isn't all of the retrievably—stored waste in containers, as noted in the box "Container (retrievably buried)?" If so, why is the box "other" checked? This comment also applies to similar text in Section 2.3 | S | Explain.<br>The selection of both "Container" and "Other" reflects ongoing retrieval activities. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Open pending resolution of 2014LDR-025 and 2014LDR-058.<br><br>DOE explanation accepted. Disagree with DOE's Follow-on Actions response. RSW is currently addressed in the 2014 LDR Report under the appropriate treatability group data sheets and associated location specific data sheets for LLBG. See previous comments on RSW. | **2014LDR-025**<br>(DOE)<br>Determine if/how the LDR Report should document wastes that are considered disposed (placed in ground before 1987) until they are removed from the ground.<br>**2014LDR-058**<br>(DOE)<br>Remove check from "Other" and propose alternative language for Section 2.3 on page B-543.<br>**Response:**<br>Retrievably stored waste will be reported in Appendix C.<br>See markup labeled 2014LDR-025.<br>**ACTION CLOSED** | ~~Open~~ Closed |
| 207 | p. B-543, LSDS, Section 2.2 (Comp) | Storage inventory locations | Identify burial ground and trench where the waste is stored. | S | Reject.<br>Reference comment 195, closed 05/11/17.<br>Section B2.0 describes LSDS data field input parameters. Section 2.2 requires listing the building and/or room number, as well as the number of storage containers or tanks for each storage location. It does not define a requirement to list container numbers. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Open pending resolution of 2014LDR-025.<br>Section B2.0 and Section 2.2 description and field inputs parameters need to be modified to better identify actual waste locations. The comment does not ask for container numbers to be listed. See comment #137 and #138 for resolution. | **2014LDR-025**<br>(DOE)<br>Determine if/how the LDR Report should document wastes that are considered disposed (placed in ground before 1987) until they are removed from the ground.<br>**Response:**<br>Retrievably stored waste will be reported in Appendix C.<br>See markup labeled 2014LDR-025.<br>**ACTION CLOSED** | Closed<br><br>Close for 2014 Report. Add physical location in 2019 Report. ~~Open~~ |
| 208 | pg. B-544, LSDS, Section 2.12 (KAC) | "Waste generation projections are based on current baseline retrieval rates and assumptions of what percentage of retrieved waste will designate as TRUM" | | T, S | N/A<br>No comment provided | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Ecology withdrew comment on 08/03/2017 | None | Closed |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 209 | p. C-1, Appendix C (Comp) | The PMWT (Appendix C) includes materials that have not been generated as mixed waste and waste that has not been actively managed as mixed waste.<br>The waste that has not been actively managed as mixed waste is, in many cases, at *Resource Conservation and Recovery Act of 1976* (RCRA) or CERCLA past-practice units under the Tri-Party Agreement. Past-practice waste is waste that DOE/RL-2015-08, Rev. 0 2-2 was abandoned before the first effective LDR date in Washington State, August 19, 1987. | e.g. B Plant's tank systems hold an estimated 17,010 gallons of mixed waste, the majority of this mixed waste was abandoned after August 19, 1987. B Plant operated in support of WESF between 1990 and 1995. B Plant activities between 1995 and 1998 were in support of a disposition process, which was known as the Transition Phase. The Possibility of Mixed Waste generated and stored in Dangerous Waste Management Unit vessels is likely during these time frames. Sampling and inventorying efforts were made during the transition phase and even earlier. These efforts were documented in HNF-3208 and the B Plant Preclosure Plan.<br>The Potential Mixed Waste Table needs to be re-evaluated for deletion of line items (e.g. B Plant and PUREX tanks) and inserted in applicable sections and tables required in the LDR report. | S | Reject.<br>Table C-2 has been reviewed, and determined that no potential mixed waste has been "generated." Duplicate of 210, which was closed on 06/15/17. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Open pending resolution of 2014LDR-028<br><br>This is the "active management" issue that has been carried over to tanks that do not meet the "disposal" criteria. This is a larger AG discussion that will need to be resolved for the Hanford Site.<br><br>See Ecology Action Response to 2014LDR-028 for resolution. | **2014LDR-028**<br>(Ecology)<br>Discuss ongoing active management discussions with Nina and Stephanie | Closed<br><br>Closed for 2014 Report. AG/Attorney's will address for the 2019 Report.~~Open~~ |
| 210 | p. C-3- , Table C-2, Potential mixed waste table. (Comp) | | Some of the Solid Waste on the Potential Mixed Waste Table (PMWT) has already been sampled and inventoried. This information could indicate the exclusion of the mixed waste from the PMWT and inclusion of the mixed waste in the remainder of the report. (B Plant and PUREX) | S | Reject.<br>Table C-2 has been reviewed, and determined that no potential mixed waste has been "generated." | 06/15/17 | Ecology concurred with explanation on 06/15/17.<br>**Reopen:** This is the "active management" issue that has been carried over to tanks that do not meet the "disposal" criteria. This is a larger AG discussion that will need to be resolved for the Hanford Site.<br>See Ecology Action Response to 2014LDR-028 for resolution. | None | Closed<br><br>Closed for 2014 Report. AG/Attorney's will address for the 2019 Report.~~Closed~~~~Open~~ |
| 211 | p. C-8 (EE) | DOE Assessments. | This mentions that the 242-Z facility with the McCluskey room is sealed. This is not correct, as work is ongoing to D&D this facility. Update information. | Err | Modify text as follows:<br>No assessments. ~~Facility is sealed currently because of high levels of radioactive contamination resulting from cation exchange~~ | 04/26/17 | Ecology concurred as proposed on 04/26/17. | None | Closed |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

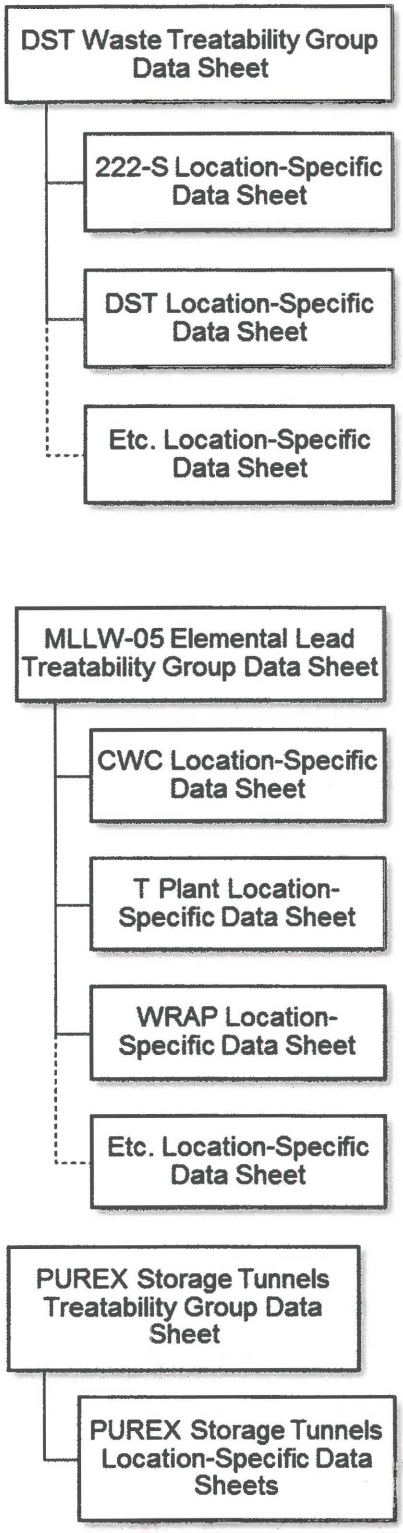
| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | ~~column explosion, August 1976.~~D&D began in 2014.<br>DOE assessment: N/A. | | | | |
| 212 | p. C-11, Table C-2 (Comp) | For 242-B/BL<br>DOE assessment: N/A Singleton 2011). | Language missing from what was documented in the DOE-RL-2014-17, Rev. 0 Report.<br>"DOE assessment: N/A ("Waste Storage Assessment of 224-B, 242-B/BL, 270-W, and IMUSTs Not Associated with a Building" [Singleton 2011])." | | Reference corrected to be consistent with remainder of the table. Modify text as follows:<br>DOE assessment: N/A (Singleton 2011). | 04/26/17 | Ecology concurred as proposed on 04/26/17.<br><br>**Reopen:** Please correct the reference. Providing less information in the LDR Report from year to year is not helpful. Citing "Singleton 2011" is vague, as there are likely several letters or PMM minutes that could contain the required information. | None | ~~Closed~~<br><br>Update in 2014 and 2019 Report.~~Closed~~Open |
| 213 | p. C-15, Table C-2 (Comp) | T Plant Canyon, RR Tunnel, Head-end and T Plant Canyon Cell 11-L<br>Tank in Cell 11-L. The Cell 11-L tank contains approximately 500 gallons of a green liquid and saltcake mixture that will be designated as F001-F005, D002, D006, D007, D008, and D010 when removed from the tank. | Volumes of waste are known for numerous tanks in 221-T, which are actively storing mixed waste. Yet these tanks have no schedule associated with treatment and disposition. The listed line items of mixed waste identified in Table C-2 need to be reassessed and possibly placed into applicable LDR tables identifying the mixed waste, treatment, and schedule for disposition. | T, TS, S | Reject.<br>Table C-2 has been reviewed, and determined that no potential mixed waste has been "generated." Duplicate of 209 and 210. | Provided to Ecology on 07/29/17 for planned 08/03/17 discussion. | Open pending resolution of 2014LDR-028<br>See Comment # 210. Ecology disagrees. The Cell 11-L tank is actively storing mixed waste based on process knowledge. As the waste in the tank has not been "disposed," active management is not a consideration. See D-10 tank prior litigation.<br>See Ecology Action Response to 2014LDR-028 for resolution. | **2014LDR-028**<br>(Ecology)<br>Discuss ongoing active management discussions with Nina and Stephanie<br><br>(DOE) Move the information for the waste in the Cell 11-L tank from Appendix C to the appropriate Treatability Group Data Sheet and associated Location Specific Data Sheet. | ~~Closed~~<br><br>Closed for 2014 Report. AG/Attorney's will address for the 2019 Report.~~Open~~ |

(T=treatment; TS= Treatment schedule; S=storage; Ed=editorial; Err=error)

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| 214 | General, p. B-15 | Table B-1 does not describe in enough detail the Treatability Groups and the waste streams that they represent. | Update Table B-1 as proposed in the file attached to this letter. | T, S | Alternate Suggestion.<br>Reconfigure/restructure several summary tables. | 06/15/17 | Open pending resolution of 2014LDR-026<br>See Comment # 217. | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | ~~Closed~~<br>Closed for 2014 Report. Move to Parking Lot for 2019 Report.~~Open~~ |
| 215 | General, p. 2-11 | Table 2-2 does not describe in enough detail about the Storage, Characterization and Treatment Activities in the different the Treatability Groups. | Update Table 2-2 as proposed in the file attached to this letter. | | Alternate Suggestion.<br>Reconfigure/restructure several summary table; to be discussed. | 06/15/17 | Open pending resolution of 2014LDR-026<br>See Comment # 217. | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | ~~Closed~~<br>Closed for 2014 Report. Move to Parking Lot for 2019 Report.~~Open~~ |
| 216 | General, p. 13-1 | Table 13-1 does not describe in enough detail the Characterization information for the different the Treatability Groups. | Update Table 13-1 as proposed in the file attached to this letter. | | Alternate Suggestion.<br>Reconfigure/restructure several summary table; to be discussed. | 06/15/17 | Open pending resolution of 2014LDR-026<br>See Comment # 217. | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept | ~~Closed~~<br>Closed for 2014 Report. Move to Parking Lot for 2019 Report.~~Open~~ |

| # | Page / Section | Text | Comment | Major issue | DOE's Proposed Response | Date Proposed | Ecology's Disposition | Follow-on Actions | Status |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | treatability group summary table. | |
| 217 | General, p. 14-2 | Table 14-1 does not describe in enough detail the Treatment information for the different the Treatability Groups. | Update Table 14-1 as proposed in the file attached to this letter.<br><br>**Review of DOE Proposed Table:** Proposed table combines information from existing Tables 2-2, 13-1, 14-1, and B-1 into one table. The proposed table does not provide any additional information on further breakdown of specific waste storage locations, and actually results in an overall loss of information. **Information that was lost includes:**<br>• **Table 2-2:**<br>o Planned Characterization Schedule;<br>o Projected Volume to be Treated 2015 through 2019 (m3).<br>• **Table 13-1:**<br>o Identification of LDR Report section by Treatability Group for Characterization information;<br>o Additional Characterization Activities (replaced by Waste Characterization Status);<br>o Planned Characterization Schedule.<br>• **Table 14-1:**<br>o Identification of LDR Report section by Treatability Group for Treatment information;<br>o Planned Treatment Period;<br>o Documents Supporting Schedule (replaced with Associated TPA Milestone or Schedule).<br>• **Table B-1:**<br>o Breakdown by Treatability Group of LSDS Waste Streams by Unit/Plant. This information is still available by looking through the TGDS and associated LSDS…it just wouldn't be summarized any longer;<br>o Identification of the responsible Contractor. | | Alternate Suggestion.<br>Reconfigure/restructure several summary table; to be discussed. | 06/15/17 | Open pending resolution of 2014LDR-026<br>Recommend deferring table reorganization to next full report. The proposed table will not provide the additional information Ecology is seeking.<br><br>Ecology and DOE will work together to address treatability groups for the next full LDR Report, calendar year 2019 due in 2020. | **2014LDR-017**<br>(DOE)<br>Provide proposed consolidated table for discussion of treatability group structure.<br>Reference comments 12, 28, 34, 35, 38, 42, 95, 214, 215, 216, 217. Table provided on 06/29/17.<br>**2014LDR-026**<br>(Ecology)<br>Review and provide comment on DOE concept treatability group summary table. | Closed<br><br>Closed for 2014 Report. Move to Parking Lot for 2019 Report. ~~Open~~ |

Figure B-1 markup




Treatability group data sheets (TGDSs) describe the common physical and chemical characteristics of the waste streams. They also provide a quantitative summary of some data in the associated location-specific data sheets (LSDSs).

Each TGDS consolidates information about wastes represented by ~~has~~ one or more LSDS ~~associated with it~~. The TGDS is used to associate these wastes with the treatment technologies described in the full report. ~~The LSDS describe on a plant/unit/project basis how, where, and how much of the waste is stored, and give a glimpse of the waste's past and future.~~ The LSDSs provide certain information specific to waste streams within treatability groups that is not reflected in TGDSs. ~~Unique information is included on LSDSs that is not reflected on TGDS.~~ The information in both the TGDSs and LSDSs is required to satisfy reporting requirements as listed in Table A-1. ~~LDR report requires both to provide a clear picture of each waste stream.~~

In this example, the CWC LSDS would contain the CWC inventory and projected generation for any waste generated at CWC and coming from offsite directly to CWC.

LSDSs for generating locations contain the current ~~facility~~ storage inventory of this waste (if any, because SAA/90-day waste is not part of stored inventory), plus 5-year generation projections (including SAA/90-day waste).

This is an example of data sheets for mixed waste stored "long~~-~~term.". ~~Both a~~ Combined, the TGDS and a LSDS address the requirements outlined in EPA and Ecology's 1990 *Requirements for Hanford LDR Plan* ~~are required to present a complete picture of the waste~~.

## 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

☒ Yes ☐ No

If yes, provide date assessment conducted: Ongoing~~N/A~~

If yes, provide document number or other identification:

See 3.2~~N/A~~

If no, provide date assessment will be completed, or if waste stream is no longer generated, then indicate N/A:

~~Assessment date to be determined.~~

B-504