Mr. David M. Scaturo, Director, P.E., P.G.
Division of Waste Management
Bureau of Land and Waste Management
South Carolina Department of Health and
Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Dear Mr. Scaturo:

SUBJECT: Savannah River Site (SRS) Site Treatment Plan (STP) 2016 Update

On July 7, 2011, the Department of Energy (DOE) requested a revision to the annual frequency for updating the STP. The South Carolina Department of Health and Environmental Control (SCDHEC) agreed that DOE shall submit an annual STP update to SCDHEC for Calendar Year 2011 and thereafter follow a 5-year frequency of preparing future updates. This 2016 Update is the first update prepared on the 5-year cycle. Enclosed, as requested, are two copies of the 2016 Update to the SRS Approved STP, which are submitted in accordance with provisions of the STP Consent Order, 95-22-HW (as amended) for your timely review and approval. In addition to the update, enclosed is a summary of the revisions made to the STP as compared to the approved 2011 Annual Update submittal and the Waste Isolation Pilot Plant Progress Report.

The 2016 Update documents storage of 135,113 cubic meters of mixed waste as of July 1, 2016, versus 146,262 cubic meters stored in 2011. The volumes on hand are summarized in Volume II Chapter 11 with additional details for transuranic and high-level waste included in Chapters 4 and 5, respectively.

This 2016 Update is also being submitted via electronic mail. If there are questions concerning this update, or if you require additional information, please contact Steve Danker (803) 952-8603.

Sincerely,

[Signature]

James G. DeMass, Director
Environmental Quality Management Division

EQMD-17-001
3 Enclosures:
1. Content Change Summary for SRS STP 2016 Update
2. WIPP Progress Report
3. SRS STP 2016 Update

c c w/o enclosures:
S. L. French, SCDHEC-Columbia

c c w/enclosures:
T. R. Fuss, SCDHEC-Aiken
Enclosure 1

SRS Site Treatment Plan, 2016 Update
Content Change Summary

### Volume I

<table>
<thead>
<tr>
<th>Change Location</th>
<th>Description</th>
<th>Major/Minor</th>
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<tr>
<td>Chapters 1, 2, 3, 4, 5, and Appendices</td>
<td>Editorial changes and updates</td>
<td>Minor</td>
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<tr>
<td>Chapters 3, 4, and Appendices A and B</td>
<td>Updates of commitments and scheduling</td>
<td>Minor</td>
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<tr>
<td>Chapter 3</td>
<td>Removed compliance schedules and descriptions for waste streams in compliance as of July 1, 2016</td>
<td>Minor</td>
</tr>
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<td>Chapter 3</td>
<td>Removed waste streams SR-W055, W060, W073, W080, W082, and W087. The status of these waste streams was updated to “Treated and Eliminated”. Thus, these waste streams should not be discussed in Volume I.</td>
<td>Major</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>Removed waste streams SR-W006 and SR-W053. The status of these waste streams was updated to “Re-characterized and Eliminated” and “Treated and Eliminated”, respectively. Thus, these waste streams should not be discussed in Volume I.</td>
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### Volume II

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<td>Chapters 3, 4, 5, 6, and 11</td>
<td>Editorial changes and updates of waste streams</td>
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<td>Chapter 3.1.1.1</td>
<td>Moved description of SR-W041 from Appendix to Chapter 3. It was previously mentioned in both locations.</td>
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<td>Chapter 3</td>
<td>Moved waste streams SR-W055, W060, W073, W080, W082, and W087 to Appendix to Chapter 3 due to updating status to “Treated and Eliminated”.</td>
<td>Major</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>Removed discussions of waste streams SR-W006 and SR-W053. The status of these waste streams was updated to “Re-characterized and Eliminated” and “Treated and Eliminated”, respectively.</td>
<td>Major</td>
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<tr>
<td>Chapter 5</td>
<td>Updated LDR Treatment Standard (Specified Technology) for LLW portion of waste streams SR-W016 &amp; SR-W017</td>
<td>Major</td>
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<tr>
<td>Chapter 11</td>
<td>Updated and/or verified status and volume as of July 1, 2016, of all waste streams</td>
<td>Minor</td>
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</tbody>
</table>
Enclosure 1

SRS Site Treatment Plan, 2016 Update
Content Change Summary

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Enclosure 2

Waste Isolation Pilot Plant Progress Report
September 2016

Savannah River Site (SRS) Status:

- SRS has completed 1,654 Transuranic (TRU) waste shipments to WIPP as of August 31, 2016.
- SRS has shipped 33,435 55-gallon drums to the WIPP site.
- SRS has shipped 1,146 direct loaded Standard Waste Boxes (SWB). These are being generated as the result of miscellaneous waste repackaging.
- SRS has shipped 232 direct loaded Standard Large Boxes (SLB). These are being generated as the result of miscellaneous waste repackaging.
- SRS has shipped approximately 10,700 cubic meters of stored TRU waste to the WIPP site.
- At the end of August 2016, approximately 764 cubic meters of waste remain in storage to be shipped to the WIPP site.
November 1, 2016

Srns-A0000-2016-00033
Srr-esh-2016-00083
Rsm Track #: 10667

Mr. Jack R. Craig, Manager
Savannah River Operations Office
P. O. Box A
Aiken, SC 29802

Dear Mr. Craig:

SAVANNAH RIVER SITE APPROVED SITE TREATMENT PLAN 2016 UPDATE

We certify, with this transmittal of the Savannah River Site Approved Site Treatment Plan (STP) 2016 Update, that Savannah River Nuclear Solutions, LLC (SRNS) and Savannah River Remediation LLC (SRR) have the capability to implement the company specific responsibilities for mixed waste treatment activities for FY2017 through FY2022 as discussed in Volume I of the STP 2016 Update, as long as funding requirements identified in the enclosed table are provided by DOE-SR in the annual operating budgets for SRNS and SRR.

Enclosed is the table that summarizes funding requirements for FY2017.

Sincerely,

Stuart A. MacVean
SRNS, President and CEO

Thomas A. Foster
SRR, President and Project Manager

kbd/
Enclosure

cc: J. L. Folk, DOE-SR, 704-S
    P. W. Mcguire, 730-B
    M. A. Mikolais, 730-B
    DOE ECATS (file copy), 730-B
    D. J. Dearolph, NNSA-SRFO, 246-H
    J. M. Allison, NA-23, 730-2B
    S. C. Cannon, NA-APM-1.4, 706-5F
    D. E. Eyler, SRNS, 730-1B
    N. G. Powell, 730-1B
    J. W. Temple, 730-1B
    K. R. McNeel, 730-1B
    J. L. Barry, 730-1B
    L. C. Clevinger, 730-1B
    T. A. Michalske, 773-A
    J. T. Curtis, 730-1B
    M. A. Schmitz, SRR, 766-H
    S. P. Fairchild, 766-H
    O. D. Stevens, 766-H
    P. M. Allen, 766-H
    G. D. Barker, 766-H
    Records Administration, 773-52A
bc: A. A. Holmes, DOE-SR, 730-B
    J. G. DeMass, 730-B
    L. M. Knowles, 730-B
    S. A. Danker, 730-B
    A. J. Watson, 730-B
    D. J. Ferguson, 704-S
    J. P. Ray, 703-H
    M. M. Ewart, NNSA, 730-2B
    M. A. Sargent, 706-5F
    J. C. Barnes, 246-H
    M. A. Flora, SRNS, 730-1B
    F. L. Fox, 704-59E
    M. C. Wright, 730-1B
    C. L. Bergren, 730-4B
    A. J. Meyer, 730-4B
    B. C. Terry, 730-4B
    M. P. Wilson, 730-4B
    K. W. Dyer, 730-4B
    K. B. Davis, 730-4B
    L. L. Clifton, 760-4B
    S. H. Berry, 704-34E
    W. A. Wilson, 730-1B
    D. P. Skiff, SRR, 766-H
    K. R. Liner, 704-S
    R. J. Petras, 703-H
Enclosure 1

*Site Treatment Plan 2016 Update*
Estimated Resource Requirements
($ in thousands)

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<th>Organization</th>
<th>FY 17 Requirements</th>
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<td>EM - SRR</td>
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<tr>
<td>EM - SRNS</td>
<td>477,674</td>
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<tr>
<td>NNSA/Other SRNS</td>
<td>400,706</td>
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</tbody>
</table>

* - Includes $142,823 to SRNS (Section J)
Savannah River Site Approved
Site Treatment Plan, 2016 Update (U)

Prepared By:
Savannah River Nuclear Solutions, LLC
Savannah River Site
Aiken, SC 29808

PREPARED FOR THE U. S. DEPARTMENT OF ENERGY UNDER CONTRACT NO. DE-AC09-08SR22470
SRNS Disclaimer

This document was prepared in conjunction with work accomplished under Contract No. DE-AC09-08SR22470 with the U.S. Department of Energy.

This work was prepared under an agreement with and funded by the U.S. Government. Neither the U.S. Government or its employees, nor any of its contractors, subcontractors or their employees, makes any express or implied: 1. warranty or assumes any legal liability for the accuracy, completeness, or for the use or results of such use of any information, product, or process disclosed; or 2. representation that such use or results or such use would not infringe privately owned rights; or 3. endorsement or recommendation of any specifically identified commercial product, process, or service. Any views and opinions of authors expressed in this work do not necessarily state or reflect those of the United States Government, or its contractors, or subcontractors.

Printed in the United States of America
Prepared for
U. S. Department of Energy
and
Savannah River Nuclear Solutions, LLC
Aiken, South Carolina
Savannah River Site Approved Site
Treatment Plan, 2016 Update (U)

Approved by:

Jack R. Craig, Manager
Savannah River Operations Office

Stuart A. MacVean, President & CEO
Savannah River Nuclear Solutions, LLC

Thomas A. Foster, President & Project Manager
Savannah River Remediation, LLC

Prepared for the U.S. Department of Energy under Contract No. DE-AC09-08SR22470
Savannah River Site Approved
Site Treatment Plan, 2016 Update

Volume I
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CHAPTER 1. PURPOSE AND SCOPE OF THE COMPLIANCE PLAN

For each facility at which the U.S. Department of Energy (DOE) generates or stores mixed wastes, Section 3021(b) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6721, as added by Section 105(a) of the Federal Facility Compliance Act (P. L. 102-386, the FFCAct), required DOE to devise a plan for developing treatment capacities and technologies to treat mixed waste. Upon submission of a plan to the South Carolina Department of Health and Environmental Control (SCDHEC), the FFCAct required SCDHEC to solicit and consider public comments, and approve, approve with modification, or disapprove the plan, within six months. The SCDHEC was to consult with the U.S. Environmental Protection Agency (EPA) and any state in which a facility affected by the plan was located. Upon approval of a plan, SCDHEC issued an order requiring compliance with the approved plan.

DOE prepared the Site Treatment Plan (STP) for Savannah River Site (SRS) mixed wastes in accordance with RCRA Section 3021(b), and SCDHEC approved the STP and issued an order enforcing the STP commitments in Volume I. DOE and SCDHEC agree that this STP fulfills the requirements contained in the FFCAct, RCRA Section 3021, and, therefore, pursuant to Section 105(a) of the FFCAct (RCRA Section 3021(b) (5)), DOE's requirements are to implement the plan for the development of treatment capacities and technologies pursuant to RCRA Section 3021. SCDHEC issued Consent Order 95-22-HW (Order) requiring compliance with the approved STP in September 1998. The Order was amended in 2002 and 2003.

Emerging and new technologies not yet considered may be identified to manage waste more safely, effectively, and at lower cost than technologies currently identified in the plan. DOE will continue to evaluate and develop technologies that offer potential advantages in public acceptance, privatization, consolidation, risk abatement, performance, and life-cycle cost. Should technologies that offer such advantages be identified, DOE may request a revision/modification of the STP in accordance with the provisions of Consent Order 95-22-HW.

The Compliance Plan Volume (Volume I) identifies project activity schedule milestones for achieving compliance with Land Disposal Restrictions (LDRs). Information regarding the technical evaluation of treatment options for SRS mixed wastes is contained in the Background Volume (Volume II). The 2006 update of the STP serves as an archive reference for Volume II, Chapters 1, 2, 7, 8, 9, 10, and 12, which no longer require an annual update.

Table 1.1 is a user’s guide to Chapters 3, 4, and 5 and serves as an aid in reviewing waste stream information in the STP. The table provides the status of each waste stream, the preferred option (PO), and the primary location(s) of the waste streams in Volumes I and II of the STP. Waste streams that have been eliminated, combined, or are in compliance, do not appear in Volume I other than in this table.

In 1995, DOE Headquarters expanded the scope of the master complex-wide database used to maintain mixed waste inventory data and to generate the 1995 Mixed Waste Inventory Report (MWIR). Non-mixed transuranic (TRU) data was incorporated into the database, which was re-named the Material Inventory and Tracking Information (MITI) database. With the expansion of the database, certain non-mixed TRU waste streams were assigned waste stream numbers SR-W074 through SR-W076. Maintenance of the database on a complex-wide basis was discontinued after fiscal year 1996. Waste stream numbers for future SRS mixed waste streams are expected to remain sequential.
<table>
<thead>
<tr>
<th>Waste Stream No.</th>
<th>Waste Stream Name</th>
<th>Preferred Option (PO)</th>
<th>Volume I Section Identification</th>
<th>Volume II Section Identification</th>
<th>Waste Stream Status</th>
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<tbody>
<tr>
<td>SR-W001</td>
<td>Rad-Contaminated Solvents</td>
<td>Combustion at Commercial Facility</td>
<td>N/A</td>
<td>3.1.2.6</td>
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<td>SR-W002</td>
<td>Rad-Contaminated Chlorofluorocarbons</td>
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<td>SR-W003</td>
<td>Solvent-Contaminated Debris (LLW)</td>
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<td>SR-W004</td>
<td>M-Area Plating Line Sludge from Supernate Treatment</td>
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<td>SR-W005</td>
<td>Mark 15 Filtercake</td>
<td>Waste Stream Treated and Eliminated</td>
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<tr>
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<td>CH Mixed TRU/Liquids</td>
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<td>SR-W007</td>
<td>SRNL Sample Material</td>
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<td>SR-W008</td>
<td>Separations Area Sample Receipts from SRNL</td>
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<tr>
<td>SR-W009</td>
<td>Silver-Coated Packing Material</td>
<td>Characterization at SRS – WIPP Disposal</td>
<td>4.1</td>
<td>4.2</td>
<td>Ready to Ship to WIPP</td>
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<tr>
<td>SR-W010</td>
<td>Scintillation Solution</td>
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<td>SR-W011</td>
<td>Cadmium-Coated HEPA Filters</td>
<td>Recycled under Scrap Metal Exclusion and Waste Stream Eliminated</td>
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<td>Appendix to Chapter 3</td>
<td>Recycled and Waste Stream Eliminated</td>
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<td>Toxic Characteristic Solids</td>
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<td>LLW Lead – To Be Decontaminated Ongoing Treatment</td>
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<td>SR-W015</td>
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<td>Vitrification at DWPF / Solidification in Saltstone Facilities</td>
<td>5.1</td>
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<td>H-Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste</td>
<td>Vitrification at DWPF / Solidification in Saltstone Facilities</td>
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<td>SR-W018</td>
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<td>SR-W019</td>
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<td>SR-W020</td>
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<td>Future Generation – Treatment To Be Determined</td>
<td>N/A</td>
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<td>Future Generation</td>
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<td>SR-W021</td>
<td>Poisoned Catalyst Material</td>
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<td>DWPF Benzene</td>
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<td>SR-W026</td>
<td>CH Mixed TRU/Thirds</td>
<td>Consolidated with SR-W027</td>
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<td>Waste Stream Treated &amp; Eliminated</td>
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<td>SR-W029</td>
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<td>SR-W032B</td>
<td>Mercury-Contaminated Heavy Water Residues</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Treated &amp; Eliminated</td>
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<tr>
<td>SR-W033</td>
<td>Thirds/TRU Job Control Waste &lt;100 nCi/g</td>
<td>Consolidated with SR-W091</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W091</td>
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<td>SR-W034</td>
<td>Calcium Metal</td>
<td>Consolidated with SR-W081</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W081</td>
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<tr>
<td>SR-W035</td>
<td>Mixed Waste Oil – Sitewide</td>
<td>Consolidated with SR-W001</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W001</td>
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<tr>
<td>SR-W036</td>
<td>Tritiated Oil with Mercury</td>
<td>Treatment by Aging Followed by Combustion</td>
<td>3.4</td>
<td>3.4</td>
<td>Awaiting Treatment</td>
</tr>
<tr>
<td>SR-W037</td>
<td>M-Area Plating Line Sludges</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>3.5.3</td>
<td>Waste Stream Treated &amp; Eliminated</td>
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<tr>
<td>Waste Stream No.</td>
<td>Waste Stream Name</td>
<td>Preferred Option (PO)</td>
<td>Volume I Section Identification</td>
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<td>Waste Stream Status</td>
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<td>SR-W038</td>
<td>Plating Line Sump Material</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>3.5.3</td>
<td>Waste Stream Treated &amp; Eliminated</td>
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<tr>
<td>SR-W039</td>
<td>Nickel Plating Line Solution</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
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<td>Waste Stream Treated &amp; Eliminated</td>
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<td>SR-W040</td>
<td>Listed Stabilized Sludge/Listaed LDR –  Compliant Debris</td>
<td>Waste Stream Treated in Compliance with LDR</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Treated</td>
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<tr>
<td>SR-W041</td>
<td>Aqueous Mercury and Lead</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Treated &amp; Eliminated</td>
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<td>SR-W042</td>
<td>Paints and Thinners</td>
<td>Consolidated with SR-W001</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W001</td>
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<td>SR-W043</td>
<td>Lab Waste with Tetraphenyl Borate &amp; n-Paraffin – TRU</td>
<td>Consolidated with SR-W012</td>
<td>N/A</td>
<td>Table 11.1</td>
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<td>SR-W044</td>
<td>Tri-Butyl-Phospho &amp; n-Paraffin – TRU</td>
<td>Consolidated with SR-W045</td>
<td>N/A</td>
<td>Table 11.1</td>
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<td>SR-W045A</td>
<td>PUREX Aqueous Waste</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
<td>Table 11.1</td>
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<td>SR-W045</td>
<td>PUREX Organic Waste</td>
<td>Preferred Treatment to Be Determined</td>
<td>N/A</td>
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<td>Preferred Treatment To Be Determined</td>
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<td>SR-W046</td>
<td>Consolidated Incineration Facility Ash</td>
<td>Waste Stream Eliminated</td>
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<td>SR-W047</td>
<td>Consolidated Incineration Facility Blowdown</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Eliminated</td>
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<tr>
<td>SR-W048</td>
<td>Soils from Spill Remediation</td>
<td>Stabilization by Commercial Vendor</td>
<td>N/A</td>
<td>3.1.2.5</td>
<td>Waste Stream Treated</td>
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<td>SR-W049</td>
<td>Tank E-3-1 Cleanout Material</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Waste Stream Eliminated</td>
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<tr>
<td>SR-W050</td>
<td>Waste to Support HLW Processing Demonstrations</td>
<td>Treatment by SRNL as a 90-Day Generator</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Complies with LDR</td>
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<tr>
<td>SR-W051</td>
<td>Spent Filter Cartridges and Carbon Filter Media</td>
<td>Consolidated with SR-W062</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W062</td>
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<tr>
<td>SR-W052</td>
<td>Cadmium-Contaminated Glovebox Section</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Waste Stream Eliminated</td>
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<tr>
<td>SR-W053</td>
<td>Rocky Flats Ash</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Waste Stream Treated &amp; Eliminated</td>
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<tr>
<td>SR-W054</td>
<td>Enriched Uranium Contaminated with Lead</td>
<td>Consolidated with SR-W037</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W037</td>
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<tr>
<td>SR-W055</td>
<td>Job Control Waste Containing Solvent Contaminated Wipes</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Treated and Eliminated</td>
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<tr>
<td>SR-W056</td>
<td>Job Control Waste with Enriched Uranium and Solvent Contaminated Wipes</td>
<td>Waste Stream Re-characterized</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Waste Stream Eliminated</td>
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<tr>
<td>Waste Stream No.</td>
<td>Waste Stream Name</td>
<td>Preferred Option (PO)</td>
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<td>SR-W057</td>
<td>D-Tested Neutron Generators</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Waste Stream Eliminated</td>
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<tr>
<td>SR-W058</td>
<td>Mixed Sludge Waste with Mercury from DWPF Treatability Studies</td>
<td>Consolidate with SR-W050</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W050</td>
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<tr>
<td>SR-W059</td>
<td>Tetrabutyl Titanate (TBT)</td>
<td>Consolidated with SR-W001</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W001</td>
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<td>SR-W060</td>
<td>Tritiated Water with Mercury</td>
<td>Waste Stream Treated (Offsite) and Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Treated (Offsite) and Eliminated</td>
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<td>SR-W061</td>
<td>DWPF Mercury</td>
<td>Consolidated with SR-W068</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W068</td>
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<tr>
<td>SR-W062</td>
<td>Normal Low-Level Contaminated Debris</td>
<td>Macrocapsulation or Stabilization by a Commercial Vendor and/or Alternative Debris Treatment at an Offsite Facility</td>
<td>N/A</td>
<td>3.1.2.2</td>
<td>Waste Stream Treated</td>
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<tr>
<td>SR-W063</td>
<td>Macrocapsulated Low-Level Waste (TC)</td>
<td>Consolidated with SR-W040</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W040</td>
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<tr>
<td>SR-W064</td>
<td>IDW and Remediation Soils/Sludges/Slurries</td>
<td>Consolidated with SR-W088</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W088</td>
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<td>SR-W065</td>
<td>IDW Monitoring Well Purge/Development Water</td>
<td>Consolidated with SR-W071 and W077</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W071 and W077</td>
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<tr>
<td>SR-W066</td>
<td>IDW and Remediation Debris (Parts)</td>
<td>Consolidated with SR-W062</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W062</td>
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<tr>
<td>SR-W067</td>
<td>IDW and Remediation PPE Waste</td>
<td>Consolidated with SR-W062</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W062</td>
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<tr>
<td>SR-W068</td>
<td>Elemental (Liquid) Mercury – Sitewide</td>
<td>Consolidated with SR-W014</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated with SR-W014</td>
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<tr>
<td>SR-W069</td>
<td>LLW Lead – To Be Macrocapsulated Offsite</td>
<td>Macrocapsulation by a Commercial Vendor at an Offsite Facility</td>
<td>N/A</td>
<td>3.1.2.3</td>
<td>Waste Stream Treated</td>
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<tr>
<td>SR-W070</td>
<td>Mixed Waste from Laboratory Samples</td>
<td>Consolidated aqueous with SR-W071 or SR-W077 and organic with SR-W001</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Consolidated aqueous with SR-W071 or SR-W077 and organic with SR-W001</td>
</tr>
<tr>
<td>SR-W071</td>
<td>Wastewater Suitable for Thermal Treatment or Stabilization</td>
<td>Thermal Treatment or Stabilization at Commercial Vendor Facility</td>
<td>N/A</td>
<td>3.1.2.6</td>
<td>Waste Stream Treated</td>
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<tr>
<td>SR-W072</td>
<td>Supernate or Sludge Contaminated Debris from HLW Operations</td>
<td>Extraction or Immobilization Alternative Debris Technologies as a 90-Day Generator</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Complies with LDR</td>
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<tr>
<td>Waste Stream No.</td>
<td>Waste Stream Name</td>
<td>Preferred Option (PO)</td>
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<td>Waste Stream Status</td>
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<tr>
<td>SR-W073</td>
<td>Cadmium-Containing Raschig Rings</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Treated and Eliminated</td>
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<tr>
<td>SR-W077</td>
<td>Aqueous Characteristic Wastewater</td>
<td>Ion Exchange, Filtration, and/or Stabilization at F/H ETP, Saltstone, or Commercial Vendor</td>
<td>N/A</td>
<td>3.1.1.1</td>
<td>Waste Stream Treated</td>
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<tr>
<td>SR-W078</td>
<td>LDR Hazardous Waste Wating Radiological Screening</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Eliminated</td>
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<td>SR-W079</td>
<td>PCB Mixed Waste</td>
<td>Combust in a TSCA Incinerator or Vendor Alternate Debris Technology Treatment</td>
<td>N/A</td>
<td>3.1.2.1</td>
<td>Waste Stream Treated</td>
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<tr>
<td>SR-W080</td>
<td>Charleston Naval Shipyard Waste</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Treated and Eliminated</td>
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<tr>
<td>SR-W081</td>
<td>Reactive/Ignitable Waste</td>
<td>Deactivation Followed by Stabilization or Combustion at Commercial Vendor</td>
<td>N/A</td>
<td>3.1.2.6</td>
<td>Waste Stream Treated</td>
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<td>SR-W082</td>
<td>Radioactive CMP Soil</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Treated and Eliminated</td>
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<tr>
<td>SR-W083</td>
<td>Mercury- and Chromium-Contaminated Residues</td>
<td>Waste Stream Re-Characterized</td>
<td>N/A</td>
<td>Table 11.1</td>
<td>Waste Stream Eliminated</td>
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<tr>
<td>SR-W084</td>
<td>Remediation Waste Soils that Meet LDR</td>
<td>Consolidated with SR-W040</td>
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<td>Table 11.1</td>
<td>Consolidated with SR-W040</td>
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<td>SR-W085</td>
<td>Rocky Flats Plutonium Fluoride Residues</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
<td>Table 11.1</td>
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<td>SR-W086</td>
<td>Characteristically Hazardous Non-Incinerable Solids</td>
<td>Amalgamation at Commercial Vendor</td>
<td>N/A</td>
<td>3.1.2.4</td>
<td>Waste Stream Treated</td>
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<td>SR-W087</td>
<td>Bettis Atomic Power Laboratory Contaminated Oil</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
<td>Appendix to Chapter 3</td>
<td>Waste Stream Treated and Eliminated</td>
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<tr>
<td>SR-W088</td>
<td>Sludges and Non-Debris Solids</td>
<td>Stabilization by Commercial Vendor</td>
<td>N/A</td>
<td>3.1.2.5</td>
<td>Waste Stream Treated</td>
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<td>SR-W089</td>
<td>TRU Mixed Waste from Mound Site</td>
<td>Characterization at SRS – WIPP Disposal</td>
<td>4.1</td>
<td>4.2</td>
<td>Ready to Ship to WIPP</td>
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<tr>
<td>SR-W090</td>
<td>Elemental Mercury – High Rad</td>
<td>Treatment by Aging Followed by Mercury Treatment</td>
<td>N/A</td>
<td>3.4</td>
<td>Waste Stream Treated</td>
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<td>SR-W091</td>
<td>Contaminated Debris (High Rad)</td>
<td>Macrocapsulation and Disposal at NNSS</td>
<td>N/A</td>
<td>3.1.1.2</td>
<td>Waste Stream Treated</td>
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<td>SR-W092</td>
<td>TRU Mixed Waste from Battelle Columbus Site</td>
<td>Characterization at SRS – WIPP Disposal</td>
<td>4.1</td>
<td>4.2</td>
<td>Ready to Ship to WIPP</td>
</tr>
</tbody>
</table>
Some waste streams may be only briefly mentioned if they have been treated to meet LDR standards, recharacterized, or consolidated. Only the waste streams that require a schedule and a compliance order will be found in the Compliance Plan Volume. Waste streams not found in the Compliance Plan Volume have been recharacterized, combined, or are in compliance with applicable regulations.
CHAPTER 2. KEY ORDER PROVISIONS

Implementation of the STP will be by SCDHEC Consent Order 95-22-HW (Order). The purpose of this chapter is to reiterate key provisions of the Order.

2.1 Definitions

a. **Project Activity Schedule(s)** shall mean the plan in the STP for performing key activities in support of mixed waste treatment(s). Project activity schedules will be provided in Chapters 3 through 5 of this volume in accordance with Section 3021(b) (1) (B) (ii) of the FFCAct.

b. **Milestone(s)** shall mean those specific date(s) or time frame(s) within the STP project activity schedule(s) that constitute the steps to which DOE is committed in providing treatment of its mixed waste.

c. **Cleanup Credits** shall mean activities performed by DOE as identified in the Statement of Mutual Understanding “Site Treatment Plan Cleanup Credits.”

d. **Day(s)** are defined as calendar days; activities defined as occurring within a given quarter shall be completed by the last day of the quarter.

e. **Revision(s)** shall mean a change to the STP, which includes but is not limited to the addition of a treatment facility, treatment capacity, or technology development not previously included in this compliance plan volume.

f. **Modification(s)** shall mean a change to the STP that does not constitute a revision.

gh. **Mixed Waste(s)** shall mean waste that contains both hazardous wastes and sources, special nuclear, or byproduct materials subject to the Atomic Energy Act of 1954 (42 2011 U.S.C. et seq.).

i. **Fiscal Year (FY)** shall mean the Federal fiscal year, which begins October 1 and ends September 30.

2.2 Project Activity Schedules

The schedules identified in Chapters 3, 4, and 5 represent DOE’s plan for treating SRS mixed waste. Changes to these schedules require SCDHEC approval. Appendix A represents those schedule activities that occur in the upcoming Federal fiscal year and that DOE agrees are enforceable commitments unless otherwise proposed by DOE and approved by SCDHEC. Cleanup Credits, as established in the Statement of Mutual Understanding – Site Treatment Plan Cleanup Credits, may be used to achieve compliance with enforceable STP commitments. Appendix B represents those schedule activities planned to occur in the subsequent five Federal fiscal years. During the STP quinquennial update process, Chapters 3, 4, and 5 schedule activities will be moved into Appendix B, and Appendix B activities will be moved to Appendix A as scheduled unless otherwise proposed by DOE and approved by SCDHEC.

During the annual budget planning process, DOE will seek funding by submitting a target budget request and identifying any additional funding required to accomplish activities identified in Appendix B as occurring in the upcoming Federal fiscal year plus one. Additionally, DOE will evaluate the funding status of the activities identified in Appendix B as occurring in the upcoming Federal fiscal year plus five and those activities identified in Appendix A.

If a funding shortfall is identified for Appendix A or B activities, DOE shall notify SCDHEC and attempt to resolve the shortfall through obtaining additional funds, reprioritization, and/or implementing improved operating efficiencies. If the funding shortfall for Appendix A is not resolved, DOE will request a schedule modification or revision, as appropriate.

2.3 Covered Matters

Applicability

Except as specifically set forth elsewhere, this plan shall apply to the RCRA LDR requirements pertaining to past, ongoing, and future generation, storage, and treatment of mixed waste at SRS, the hazardous component of which is subject to the LDRs. LDR requirements can be found in the South Carolina Hazardous Waste Management Regulations (SCHWMR) R.61-79.268 and the Code of Federal Regulations (CFR), Chapter 40, Part 268.
Mixed Waste Treatment

This plan addresses the development of treatment capacities and technologies for treating or otherwise managing SRS mixed wastes in accordance with the RCRA LDR regardless of the time when the mixed waste was generated. For the purpose of this plan, covered mixed waste shall mean mixed waste not excluded by the Covered Matters herein.

Exclusions—General

The intent of the FFCAct is to develop an STP to address compliance with RCRA Section 3004(j), this compliance plan volume shall not address 1) mixed waste being stored or generated at SRS that meets LDR requirements, regardless of when generated; or 2) mixed wastes that are being stored, or will be stored, when generated solely for the purpose of accumulating sufficient quantities of mixed wastes as are necessary to facilitate proper recovery, treatment, or disposal in accordance with SCHWMR R.61.-79.268.50. Information pertaining to the status of the mixed waste described above is provided in the background volume of this STP. By previous agreement with SCDHEC, small (less than 55 gallons) quantities of mixed waste(s) stored in RCRA Satellite Accumulation Areas (SAAs) [R.61-79.262.34(c)] are not subject to R.61-79.268 and are not included in this plan unless requested by SCDHEC.

RCRA/Comprehensive Environmental Response, Compensation, and Liability Act

Corrective actions and response actions shall be addressed by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120 Federal Facility Agreement (FFA) that was negotiated by EPA, DOE, and SCDHEC (effective date August 16, 1993), any RCRA hazardous waste permits issued or to be issued by the State of South Carolina and EPA, orders issued pursuant to Section 3008(h) of RCRA, and/or by an agreement, order, or legal action under CERCLA. SCDHEC and DOE acknowledge that this plan does not address mixed waste subject to corrective actions pursuant to RCRA and response actions pursuant to CERCLA unless waste is removed from the area of contamination and not otherwise subject to the provisions of the RCRA/CERCLA orders or agreements.

Environmental Restoration

This plan excludes 1) environmental restoration mixed wastes derived from RCRA corrective actions and CERCLA response actions that do not involve the land disposal of hazardous wastes (e.g., the placement of remediation wastes into or within a corrective action management unit or area of contamination) and/or 2) mixed waste for which a specific treatment path is included in another existing regulatory agreement (e.g., FFA, mixed aqueous Investigation Derived Waste (IDW) in the SRS IDW Management Plan, or mixed waste with a designated treatment listed in Records of Decision (RODs)/orders), permit or order or modifications thereof. Other environmental restoration mixed waste streams not specifically excluded will be dispositioned in accordance with the strategy provided in Volume II, Section 6.1. If DOE proposes to exclude information on any mixed waste from the STP, that proposal shall be submitted to SCDHEC for approval.

Compliance Issues

This plan does not address RCRA compliance issues other than those issues specifically addressed herein. Therefore, SCDHEC and DOE acknowledge that this plan does not affect the rights of SCDHEC to address any RCRA violations not specifically covered by this plan that exist or may exist at SRS.

2.4 Funding

Process

DOE shall use its best efforts, in accordance with the DOE Federal appropriations process, to request timely funding to meet its obligations under this plan.
Anti-Deficiency Act

No provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341.

2.5 Changes to STP

Annual Update

On July 7, 2011, DOE requested a revision to the annual frequency for updating the STP. SCDHEC agreed that DOE shall submit an Annual STP Update to SCDHEC for 2011 and thereafter follow a 5-year frequency of preparing future updates. This 2016 STP Update is the first update prepared on the 5-year update cycle. A meeting with SRS and SCDHEC staff is held annually to discuss the status of the STP. This proposed schedule can be modified if subsequent commitments are identified and will be reviewed in the annual proposed STP meetings. Updates shall comply with Section 3021(b) of the FFCAct and shall include, but not be limited to, an updated inventory of all mixed waste, the status of all treatment residuals, and an updated implementation schedule. Projections of new mixed waste streams generated, or to be generated, onsite and proposed to be received from offsite shall be included in the Update. A list of all proposed changes to the approved STP, as well as a justification for requesting such changes, shall be provided with the Update. Unless otherwise notified by SCDHEC, DOE shall not propose, in the Update, modifications, or revisions to the approved STP that have been previously denied by SCDHEC.

The STP 2016 Update documents storage of 135,113.3 m³ of Mixed Waste as of July 1, 2016, versus 146,262.03 m³ stored in 2011. The volumes on hand are summarized in Volume II Chapter 11.

Modifications and Revisions

DOE shall submit for SCDHEC approval a request for a modification or revision to Volume I of the approved STP for any change unless the change requires notification only. (See Section 2.1 of this volume for definitions of modification and revision.) All requests for modifications or revisions must meet the requirements of Section 3021(b) of the FFCAct. DOE may begin implementation of any modification or revision only upon receipt of written approval by the SCDHEC after appropriate public notice, if required. SCDHEC shall ensure that the public notice requirements of the FFCAct are addressed. The application of cleanup credits to an activity listed in this volume of the STP is not defined as a modification or revision to the STP.

Additional RCRA Permit Identification

If DOE determines that treatment preparation steps such as characterization may require RCRA permits, DOE will submit a revision or modification, as appropriate, to identify proposed permit application submittal dates to be included in Volume I project activity schedules.

Alternate Treatment Strategy

If DOE determines that a proposed treatment strategy is inappropriate, DOE will submit a revision or modification and identify the new proposed strategy.
CHAPTER 3. MIXED LOW-LEVEL WASTE TREATMENT

The sections of this chapter discuss project activity schedules proposed for the treatment of mixed waste in accordance with Section 2.2 of this volume. Refer to Table 1.1 in Chapter 1 of this volume for the user’s guide to the waste streams in the STP. The user’s guide identifies each waste stream, the PO, and the location where the waste stream is discussed in Volumes I and II. The sections of this chapter are divided into treatment categories as follows:

3.1 Mixed Low-Level Waste Streams with Treatment Capacity
3.2 Mixed Low-Level Waste Streams Requiring Technology Development
3.3 Mixed Low-Level Waste Streams for Which Further Characterization is Required
3.4 Mixed Low-Level Waste Streams Requiring Radionuclide Decay Prior to LDR Treatment
3.5 Mixed Low-Level Stream – Other Commitments

3.1 Mixed Low-Level Waste Streams with Treatment Capacity
This section discusses the schedules and plans associated with treatment of SRS mixed waste with currently available treatment capacity. This section of the chapter is divided into treatment categories as follows:

3.1.1 Onsite Treatment
3.1.2 Offsite Treatment
3.1.3 Preferred Treatment To Be Determined

3.1.1 Onsite Treatment
SRS has several onsite treatment facilities for treating mixed LLW. These facilities include the F-Area and H-Area Effluent Treatment Project (F/H ETP) and the Saltstone Facility. This category also includes treatability variance petition submittals, recycling, and miscellaneous onsite treatments not otherwise mentioned.

3.1.1.1 F-Area and H-Area Effluent Treatment Project
As waste characterizations are reviewed, treatment at F/H ETP may be the PO for aqueous characteristic waste streams.

All waste streams with this PO are in compliance.

3.1.1.2 Onsite Treatment Via Macroencapsulation
Macroencapsulation for debris waste was performed within the RCRA-permitted E-Area facility.

All waste streams with this PO are in compliance.

3.1.1.3 Onsite Treatment Via Treatability Variance Submittals
Submittal of a treatability variance for macroencapsulation is the PO for certain mixed waste streams.

Currently, there are no waste streams with this PO.

3.1.2 Offsite Treatment
For those waste streams that cannot be accommodated by SRS treatment facilities, various treatment technologies available at offsite facilities have been determined to be the PO. This section discusses the waste streams that are available for offsite treatment. Offsite treatment includes offsite commercial vendor treatment and offsite treatment at other DOE facilities.

3.1.2.1 DOE Thermal Treatment
Combustion at a Toxic Substance Control Act (TSCA) Incinerator or vendor alternate debris technology treatment is the PO for the certain waste streams.

All waste streams with this PO are in compliance.
3.1.2.2 Commercial Vendor Debris Treatment
Alternate debris technology treatment, or macroencapsulation, or shredding followed by stabilization, at an offsite commercial vendor’s facility is the PO for certain mixed waste streams.

All waste streams with this PO are in compliance.

3.1.2.3 Commercial Vendor Lead Treatment
Lead macroencapsulation at a commercial vendor’s facility is the PO for certain mixed waste streams. In the future, a portion of this waste stream may include items that are encapsulated onsite using LDR-compliant macroencapsulation bags. Prior to commencement of onsite encapsulation, SRS will satisfy all RCRA permitting requirements and obtain all approvals in accordance with Consent Order 95-22-HW.

All waste streams with this PO are in compliance.

3.1.2.4 Commercial Vendor Mercury Treatment
The PO is direct amalgamation (AMLGM) or stabilization by a commercial vendor, dependent upon vendor states’ approval of direct AMLGM for the waste.

In the future, a portion of waste stream SR-W014, Elemental (Liquid) Mercury - Sitewide may be amalgamated onsite at the Defense Waste Processing Facility (DWPF) in accordance with an approved Industrial Wastewater Permit Modification. All approvals in accordance with Consent Order 95-22-HW will be obtained prior to commencement of treatment activities.

All waste streams with this PO are in compliance.

3.1.2.5 Commercial Vendor Solids Treatment
The PO can include several treatment steps. Wastes that contain organic material in excess of the LDR Treatment Standard are initially treated to separate the organic portion of the contaminants using solvent extraction or thermal separation. The desorbed chemical constituents are then treated via direct chemical oxidation or combustion. The waste material remaining after organics are removed or the non-organic waste material is then directly stabilized, shredded and stabilized, macroencapsulated or subjected to alternative debris treatment technologies. No stabilization of organics is performed, and no impermissible dilution occurs. Wastes that do not contain significant organics are directly stabilized, shredded and stabilized, macroencapsulated, or subjected to alternative debris treatment technologies as appropriate under RCRA regulations.

All waste streams with this PO are in compliance.

3.1.2.6 Commercial Vendor “Non-PUREX” Treatment
The PO can include several treatment steps. Wastes that contain organic material in excess of the LDR Treatment Standard are initially treated to separate the organic portion of the contaminants using solvent extraction or thermal separation if necessary. The desorbed chemical constituents are then treated via direct chemical oxidation or combustion. The waste material remaining after organics are removed is then directly stabilized, shredded and stabilized, macroencapsulated or subjected to alternative debris treatment technologies. No stabilization of organics is performed, and no impermissible dilution occurs.

All waste streams with this PO are in compliance.

3.1.2.7 Commercial Vendor Deactivation Treatment
Currently, there are no waste streams with this PO.

3.1.3 Preferred Treatment To Be Determined
One waste stream is currently waiting for the preferred treatment to be determined:
SR-W045, PUREX Organic Waste

PUREX waste was stored in the RCRA-permitted Solvent Storage Tanks (SST) S33-S36 Facility. A small heel remains in the SSTs. During the closure process for the SST Facility, options for disposal of the remaining PUREX will be evaluated.

This waste stream is in compliance.

3.2 Mixed Low-Level Waste Streams Requiring Technology Development

Due to the complexity of some waste streams, no technologies have been developed to adequately treat the waste. Therefore, treatment strategies for some waste streams have not been selected. This section addresses those mixed LLW streams that require technology development for the treatment of the waste stream.

3.2.1 Development of Mobile Unit Technology

Currently, there are no waste streams in this category.

3.2.2 Development of Characterization Technology

Currently, there are no waste streams in this category.

3.2.3 Development of Treatment Technology

Currently, there are no waste streams in this category.

3.3 Mixed Low-Level Waste Streams for Which Further Characterization is Required

This section discusses the schedules for those specific waste streams that require further chemical or radiological characterization prior to the selection of a PO. The categories in this section are divided into waste streams to be further characterized and hazardous wastes awaiting radiological screening.

3.3.1 Waste Streams to be Further Characterized

Currently, there are no waste streams in this category.

3.3.2 Hazardous Waste Awaiting Radiological Screening

Currently, there are no waste streams in this category.

3.4 Mixed Low-Level Waste Streams Requiring Radionuclide Decay Prior to LDR Treatment

The PO for the following waste stream is treatment by aging in a regulated storage facility followed by combustion and/or appropriate mercury treatment:

SR-W036, Tritiated Oil with Mercury

Estimated Schedule for Treatment of this Waste Stream

The tritiated oil will be stored in a RCRA interim status, permitted, or accumulation area in compliance with SCHWMR R.61-79.262.34. Based on a tritium half-life of 12 years and the present tritium contamination of up to 185 Ci/L, the projected worst-case radioactive decay time appropriate to eliminate release of excessive tritium during combustion would be approximately 2060. A location for combustion and/or mercury treatment will be selected at a later date. See Volume II, Section 3.4, for additional details about this waste stream and its proposed treatment.
3.5  *Mixed Low-Level Waste Streams – Other Commitments*

There are currently no other commitments for mixed LLW streams at SRS.
CHAPTER 4. MIXED TRANSURANIC WASTE STREAMS

The current DOE strategy for management of mixed transuranic (MTRU) waste is to maintain the MTRU wastes in safe interim storage; to characterize, certify, process if necessary, and package the wastes to meet the Waste Acceptance Criteria (WAC) of the Waste Isolation Pilot Plant (WIPP); and to permanently dispose of applicable MTRU waste in WIPP.

The National Defense Authorization Act for Federal Fiscal Year 1997, which contained amendments to the 1992 WIPP Land Withdrawal Act, was signed by the President on September 22, 1996. The Secretary of Energy declared WIPP open and ready to receive waste in May 1998. The amendments also exempt DOE from the requirements to obtain a RCRA no-migration determination from EPA. EPA agrees that the no-migration determination is redundant to the more stringent radioactive waste disposal standard and that the exemption will not jeopardize the environment. WIPP has obtained a RCRA Part B Permit from the State of New Mexico to receive MTRU for disposal.

Site-specific information is included in the following section to outline activities being performed at SRS to maintain safe compliant storage, waste characterization activities, and other activities planned to support the ultimate goal of shipment to and disposal at WIPP.

Refer to Table 1.1, Chapter 1 of this volume for the user’s guide to the waste streams. The user’s guide identifies each waste stream, the PO, and the location where the waste stream is discussed in Volumes I and II of this STP.

4.1 Site MTRU Waste Management Approach

Transuranic (TRU) waste is defined in DOE Order 435.1 as waste contaminated with alpha-emitting transuranic radionuclides (radionuclides with atomic numbers greater than 92) with half-lives greater than 20 years in concentrations greater than 100 nCi/g of waste matrix. TRU waste at SRS that also contains hazardous constituents as defined in 40 CFR 261 and the SCHWMR R.61-79.261 is managed in accordance with both DOE Orders and SCHWMR and is referred to as MTRU waste.

MTRU waste streams are generated primarily by Plutonium Separations Facilities and the Analytical Laboratories. Other past generators of significantly smaller volumes include Naval Fuels Facility, the Reactor Facility, the Fuel Fabrication Facility, the Radioactive Liquid Waste Tank Farms, and the Solid Waste Management Facility. SRS has received volumes of MTRU waste from offsite generators, including the Los Alamos National Laboratory, Knolls Atomic Power Laboratory, the DOE Mound Site, and Battelle Columbus Laboratory.

All legacy MTRU waste streams have been re-packaged in WIPP-compliant containers, characterized, and certified for shipment to WIPP. All newly generated MTRU waste streams will be packaged to meet the WIPP WAC. Characterization and certification activities will be conducted periodically. The MTRU waste streams currently proposed for shipment to WIPP include:

SR-W009, Silver Coated Packing Material
SR-W027, CH Mixed TRU
SR-W089, CH Mixed TRU from Mound for Shipment to WIPP
SR-W092, CH Mixed TRU from Battelle Site for Shipment to WIPP

TRU Pad Secondary Containment

All commitments regarding MTRU waste containers stored on interim status TRU pads have been completed.
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CHAPTER 5. HIGH-LEVEL RADIOACTIVE WASTE

The following project activity schedules are planned for the treatment of high-level waste (HLW) in accordance with Section 2.2 of this volume. Refer to Table 1.1, Chapter I of this volume for the user’s guide to the waste streams. The user’s guide identifies each waste stream, the PO, and the location where the waste stream is discussed in Volumes I and II of the STP.

5.1 **High-Level Waste Treated Onsite in Existing Facilities**

Currently, DWPF is the only facility at SRS that treats high-level waste.

Vitrification in the DWPF for the high-level liquid waste portion and stabilization by solidification in the Saltstone Facilities for the low-level liquid waste portions are the PO for certain mixed waste streams, including, but not limited to, the following:

SR-W016, 221-F Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste

SR-W017, H-Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste

**Estimated Schedule for this Onsite Facility**

- **Submittal of all applicable permit applications:** Completed. The industrial wastewater treatment facility construction and operating permits for the DWPF have been received. DWPF also operates under the SRS Part 70 (Title V) Air Permit.

- **Entering into contracts:** Completed. Contracts were entered prior to approval of the STP on September 29, 1995.

- **Initiating construction:** Completed. DWPF construction was initiated in April 1983.

- **Conducting systems testing:** Completed. Systems testing was initiated in January 1993.

- **Commencing operations:** Completed. Operations commenced March 7, 1996, and remain ongoing.

- **Submit processing backlogged and currently generated mixed waste schedule:** Completed. The schedule was submitted May 21, 1996. Commitments in the schedule stated that DWPF would remain in a start-up mode through 1996. During that time, operating conditions will be confirmed. Upon the beginning of full operations, DWPF will maintain canister production sufficient to meet the commitment for the removal of the backlogged and currently generated waste inventory by 2028.
Appendix A – Current Fiscal Year Commitments for Federal Fiscal Year 2017

Appendix A is a summary of commitments compiled from Volume I for the current Federal fiscal year 2017, including the deliverable date to meet each commitment. The process used to prepare this appendix is found in Section 2, Chapter 2, of this volume.

Federal Fiscal Year Identified: 2017

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Appendix B – Commitments for Upcoming Federal Fiscal Year +1 through +5

Appendix B is a summary list of commitments compiled from Volume I for the first through fifth years after the current Federal fiscal year, including the deliverable dates for each commitment. The process used to prepare this appendix is found in Section 2, Chapter 2, of this volume.

Federal Fiscal Year Identified: 2018 to 2022

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Site Treatment Plan, 2016 Update

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CHAPTER 3. MIXED LOW-LEVEL WASTE STREAMS

This chapter discusses the wastes, waste groups and treatment options for the mixed low-level waste (LLW) stream category. The wastes are categorized according to the proposed treatment. These proposed treatment options include the following:

3.1 Mixed LLW with Treatment Capacity
3.2 Mixed LLW Streams Requiring Technology Development
3.3 Mixed LLW Streams for Which Further Characterization is Required
3.4 Mixed LLW Streams Requiring Radionuclide Decay Prior to LDR Treatment
3.5 SRS Treatment Facilities that have Discontinued Operations

Refer to Table 1.1, Chapter 1, of Volume I of the Site Treatment Plan (STP) for the user’s guide. The user’s guide identifies each mixed waste stream, the preferred option (PO), and the section in which the waste stream is discussed in Volumes I and II of this STP.

3.1 Mixed Low-Level Waste Streams with Treatment Capacity

This section discusses the schedules and plans associated with treatment of Savannah River Site (SRS) mixed waste with currently available treatment capacity. This section of the chapter is divided into treatment categories as follows:

3.1.1 Onsite Treatment
3.1.2 Offsite Treatment
3.1.3 Preferred Treatment To Be Determined

3.1.1 Onsite Treatment

Several onsite treatment facilities are available at SRS for treating mixed LLW, including the F- and H-Area Effluent Treatment Project (F/H ETP) and the Saltstone Facility. This section addresses treatability variance petition submittals, recycling, and miscellaneous onsite treatments not otherwise mentioned.

3.1.1.1 F-Area and H-Area Effluent Treatment Project

As waste characterizations are reviewed, treatment at F/H ETP may be the PO for aqueous characteristic waste streams. This category currently includes the following:

SR-W077, Aqueous Characteristic Wastewater

General Information

SR-W077, Aqueous Characteristic Wastewater

Certain volumes of this waste stream consist of certain aqueous sample residues and unused samples, particularly from groundwater monitoring wells that have been returned from onsite or offsite laboratories. Laboratory waste in this stream also may include characteristically hazardous aqueous laboratory standards from onsite laboratories. It also includes purge water from wells at the Mixed Waste Management Facility. A variety of other wastewaters from various facilities may contribute to this stream, e.g., wastewater collected from Consolidated Incineration Facility (CIF) sumps and the H-Canyon LLW stream. A portion of SR-W070, Mixed Waste from Laboratory Samples has been consolidated with this waste stream.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Aqueous wastewater
**Waste Code**
- D002A (corrosive wastewater)
- D005 (Barium (Ba))
- D006A (TCLP Cadmium (Cd))
- D007 (Chromium (Cr))
- D008A (TCLP Pb)
- D009A (TCLP Hg)
- D010 (Selenium (Se))
- D011 (TCLP Silver (Ag))
- D018 (Benzene)
- D038 (Pyridine)
- D039 (Tetrachloroethylene (PCE))
- D040 (Trichloroethylene (TCE))
- F006 (wastewater treatment sludges from electroplating operations)
- Wastewater

The original volume of this waste stream was treated. Future additions to the waste stream may include additional waste codes based on the source.

**Land Disposal Restriction Treatment Standard**
- D002A = specified technology = Deactivation (DEACT)
- D005 = concentration-based standard = 1.2 mg/L
- D006A = concentration-based standard = 0.69 mg/L
- D007 = concentration-based standard = 2.77 mg/L
- D008 = concentration-based standard = 0.69 mg/L
- D009A = concentration-based standard = 0.15 mg/L
- D010 = concentration-based standard = 0.82 mg/L
- D011 = concentration-based standard = 0.43 mg/L
- D018 = concentration-based standard = 0.14 mg/L
- D038 = concentration-based standard = 0.014 mg/L
- D039 = concentration-based standard = 0.056 mg/L
- D040 = concentration-based standard = 0.054 mg/L
- F006 = concentration-based standard = 0.69 – 3.98 mg/L

D002 through D043 wastewaters must also meet Universal Treatment Standards (UTS) for underlying hazardous constituents (UHCs) unless they are rendered non-hazardous and subsequently managed in a Clean Water Act (CWA) treatment facility or are rendered non-hazardous and subsequently injected in a Class I Safe Drinking Water Act (SDWA) well.

**Waste Characterization**
- Process knowledge and sample results are used to characterize the waste stream.

**Radiological Characterization**
- Alpha and beta/gamma emitters are present.
3.1.1.2 Onsite Treatment Via Macroencapsulation

Macroencapsulation for debris waste is to be performed within the RCRA-permitted E-Area facility for the following waste stream:

SR-W091, Contaminated Debris (High Rad)

General Information

SR-W091, Contaminated Debris (High Rad)

This waste stream was declared in August 2004. SRS submitted a temporary authorization (TA) for macroencapsulation in E-Area followed by a Part B permit modification for macroencapsulation as the treatment. These containers were macroencapsulated in a stainless steel container and seal welded for disposal at Nevada National Security Site (NNSS).

This waste stream consisted of greater than Class A debris (metal, floor tiles, fluorescent lamps, instruments, and other equipment, including debris generated from operations at CIF and machinery used in the remediation of various contamination sites that could not be decontaminated) contaminated with TCLP metals and radionuclides. (NOTE: This is a different stream from SR-W015, Mercury-/Tritium-Contaminated Equipment.)

This waste required a permitted Treatment, Storage, and Disposal (TSD) for treatment since it was in permitted storage. This waste stream also included tools and other non-incinerable items found in waste stream SR-W055, Job Control Waste Containing Solvent-Contaminated Wipes and Personal Protective Equipment (PPE); SR-W025, Solvent/TRU Job Control Waste < 100 nCi/g; SR-W042, Paints and Thinners; and other waste streams shredded in preparation for treatment by combustion. It also included job control waste from other facilities as well as job control waste that were macroencapsulated onsite and sent to NNSS.

In addition to the CIF debris, this waste stream consisted of filters, job control waste from the segregation and decontamination of lead in Building 105-C, and soil associated with other equipment or debris from the M-Area Vendor Treatment Facility, the tank farms, and other site locations. Radioactive Hg and nickel-cadmium (Ni-Cd) batteries were included in this waste stream.

Volume

- Volume data on this waste stream can be found in Chapter 11.

Waste Stream Composition

- Inorganic debris

Waste Code

- D004 (TCLP Arsenic (As))
- D005 (TCLP Ba)
- D006A (TCLP Cd)
- D007 (TCLP Cr)
- D008A (TCLP Pb)
- D009A (TCLP Hg)
- D010 (TCLP Se)
- D011 (TCLP Ag)
- D035 (Methyl ethyl ketone)
- D039 (PCE)
- F001 (Unspecified solvents)
- F002 (Unspecified solvents)
- F003X (Unspecified solvents)
- F004X (Unspecified solvents)
- F005X (Unspecified solvents)
- F006 (Metal plating waste without cyanide)
• P048 (2,4-Dinitrophenol)
• P113 (Thallic Oxide)
• U002 (Acetone)
• U003 (Acetonitrile)
• U019 (Benzene)
• U037 (Chlorobenzene)
• U080 (Methylene Chloride)
• U123 (Formic Acid)
• U127 (Hexachlorobenzene)
• U131 (Hexachloroethane)
• U151 (TCLP Hg)
• U159 (Methyl Ethyl Ketone (MEK))
• U165 (Naphthalene)
• U188 (Phenol)
• U209 (1,1,2,2-Tetrachloroethane)
• U210 (PCE)
• U211 (Carbon Tetrachloride)
• U220 (Toluene)
• U226 (1,1,1-Trichloroethane)
• U228 (TCE)
• U239 (Xylenes)
• Non-wastewater

Specific waste codes varied depending upon where the waste was generated. Wastes from CIF contained all of the waste codes that were fed to CIF. The F-listed solvents listed reflect the non-incinerable items found in waste streams SR-W025 and SR-W055. Items from SR-W025 and SR-W055 may have contained other P- and U-listed codes.

Land Disposal Restriction Treatment Standard
• D004 = concentration-based standard = 5.0 mg/L, TCLP
• D005 = concentration-based standard = 21 mg/L, TCLP
• D006 = concentration-based standard = 0.11 mg/L, TCLP
• D007 = concentration-based standard = 0.60 mg/L, TCLP
• D008 = concentration-based standard = 0.75 mg/L, TCLP
• D009 = concentration-based standard = 0.025 mg/L, TCLP
• D010 = concentration-based standard = 5.7 mg/L, TCLP
• D011 = concentration-based standard = 0.14 mg/L, TCLP
• D035 = concentration-based standard = 36 mg/kg
• D039 = concentration-based standard = 6.0 mg/L, TCLP
• F001 = concentration-based standard = 6-30 mg/kg
• F002 = concentration-based standard = 6-30 mg/kg
• F003 = concentration-based standard = 2.6 - 160 mg/kg
• F004 = concentration-based standard = 5.6 - 14 mg/kg
• F005 = concentration-based standard = 10 - 170 mg/kg
• F006 = concentration-based standard = 0.11 – 11.0 mg/L, TCLP
• P048 = concentration-based standard = 160 mg/kg
• P113 = specified technology = RTHRM / Stabilization (STABL)
• U002 = concentration-based standard = 160 mg/kg
• U003 = specified technology = Combustion (CMBST)
• U019 = concentration-based standard = 10 mg/kg
• U037 = concentration-based standard = 6 mg/kg
• U080 = concentration-based standard = 30 mg/kg
• U123 = specified technology = CMBST
• U127 = concentration-based standard = 10 mg/kg
• U131 = concentration-based standard = 30 mg/kg
• U151 = concentration-based standard = 0.025 mg/L, TCLP
• U159 = concentration-based standard = 36 mg/kg
• U165 = concentration-based standard = 5.6 mg/kg
• U188 = concentration-based standard = 6.2 mg/kg
• U209 = concentration-based standard = 6.0 mg/kg
• U210 = concentration-based standard = 6 mg/kg
• U211 = concentration-based standard = 6 mg/kg
• U220 = concentration-based standard = 10 mg/kg
• U226 = concentration-based standard = 6 mg/kg
• U228 = concentration-based standard = 6.0 mg/kg
• U239 = concentration-based standard = 30 mg/kg

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

Waste Characterization
• Process knowledge is used to characterize the waste stream.
• Confidence level is high based on knowing process history of the waste.

Radiological Characterization
• Radioactivity will vary depending on the generation source and location.
• Waste is contact handled (CH).
• Low-level radioactive waste

3.1.1.3 Onsite Treatment via Treatability Variance Submittals
Submittal of a treatability variance for macroencapsulation is the PO for certain mixed waste streams.

Currently, there are no waste streams in this category.

3.1.2 Offsite Treatment
For those waste streams that cannot be accommodated by SRS treatment facilities, various treatment technologies available at offsite facilities have been determined to be the PO. This section discusses the treatment options that are available for offsite treatment. These include offsite vendor treatment and offsite treatment at other Department of Energy (DOE) facilities.

3.1.2.1 DOE Thermal Treatment
Combustion at a Toxic Substances Control Act (TSCA) Incinerator or vendor alternate debris technology treatment is the PO for the following waste stream:

SR-W079, Polychlorinated Biphenyl (PCB) Mixed Waste

General Information

SR-W079, Polychlorinated Biphenyl (PCB) Mixed Waste
This waste stream has been reserved for all PCB-contaminated mixed waste for which treatment to destroy the PCBs is required under TSCA or debris that can be disposed under the PCB “mega rule” after Resource Conservation and Recovery Act (RCRA) contaminants are treated to meet Land Disposal Restrictions (LDRs). This waste stream includes waste from laboratory analyses, paint chips, debris from the demolition of excess site facilities, and PCB spill cleanup waste.

Volume
• Volume data for this waste stream can be found in Chapter 11.
Waste Stream Composition
- PCB-contaminated, organic liquid, miscellaneous solids

Waste Code
- D001B (High Total Organic Compound (TOC) Ignitable)
- D002B (corrosive, non-wastewater)
- D004 (TCLP As)
- D005 (TCLP Ba)
- D006A (TCLP Cd)
- D007 (TCLP Cr)
- D008A (TCLP Pb)
- D009A (TCLP Hg)
- D010 (TCLP Se)
- D035 (MEK)
- D040 (TCE)
- F001 and F002 (Spent halogenated solvents)
- Non-wastewater

Land Disposal Restriction Treatment Standard
- D001 = specified technology = CMBST
- D002 = specified technology = DEACT
- D004 = concentration-based standard = 5.0 mg/L, TCLP
- D005 = concentration-based standard = 21 mg/L, TCLP
- D006 = concentration-based standard = 0.11 mg/L, TCLP
- D007 = concentration-based standard = 0.60 mg/L, TCLP
- D008 = concentration-based standard = 0.75 mg/L, TCLP
- D009 = concentration-based standard = 0.025 mg/L, TCLP
- D010 = concentration-based standard = 5.7 mg/L, TCLP
- D035 = concentration-based standard = 36 mg/kg.
- D040 = concentration-based standard = 6.0 mg/kg.
- F001 and F002 = concentration-based standard = 6-30 mg/kg

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

Waste Characterization
- Sampling and analysis are used to characterize this waste stream.
- Confidence level is high because sampling and analysis has been performed.

Radiological Characterization
- Beta/gamma emitters are present (Cs-137, Sr-90, and others).
- Alpha emitters are present (U-235, U-238, Pu-239, Pu-240, and others).
- Waste is CH.
- Low-level radioactive waste
3.1.2.2 Commercial Vendor Debris Treatment

Alternate debris technology treatment, or macroencapsulation, shredding followed by stabilization at an offsite vendor’s facility is the PO for certain mixed waste streams, including the following:

SR-W062, Low-Level Contaminated Debris

**General Information**

**SR-W062, Low-Level Contaminated Debris**

This waste stream previously consisted of debris (metal, floor tiles, fluorescent lamps, instruments, and other equipment including debris generated from operations at CIF and machinery used in the remediation of various contamination sites that could not be decontaminated) contaminated with TCLP metals and radionuclides. (NOTE: This is a different stream from SR-W015, Mercury/Tritium Contaminated Equipment). This waste required a permitted TSD for treatment since it has been in permitted storage.

This waste stream also included tools and other non-incinerable items found in waste stream SR-W055, Job Control Waste Containing Solvent-Contaminated Wipes and PPE, SR-W025, Solvent/TRU Job Control Waste < 100 nCi/g; SR-W042, Paints and Thinners; and other waste streams shredded in preparation for treatment by combustion.

In addition to the CIF debris, this waste stream also consisted of filters, job control waste from the segregation and decontamination of lead in Building 105-C, and soil associated with other equipment or debris from the M-Area Vendor Treatment Facility, the tank farms, and other site locations. Radioactive Hg and Ni-Cd batteries were included in this waste stream.

Waste streams SR-W003, Solvent Contaminated Debris (LLW); portions of SR-W012, Toxic Characteristic Solids; SR-W043, Lab Waste with Tetraphenyl Borate; SR-W051, Spent Filter Cartridges and Carbon Filter Media; SR-W066, IDW and Remediation Debris; and SR-W067, IDW and Remediation PPE Waste have been consolidated into this waste stream.

**Volume**

- Volume data on this waste stream can be found in Chapter 11.

**Waste Stream Composition**

- Inorganic debris

**Waste Code**

- D001 (High TOC Ignitable)
- D004 (TCLP As)
- D005 (TCLP Ba)
- D006A (TCLP Cd)
- D007 (TCLP Cr)
- D008A (TCLP Pb)
- D009A (TCLP Hg)
- D010 (TCLP Se)
- D011 (TCLP Ag)
- D012 (Endrin)
- D013 (Lindane)
- D014 (Methoxychlor)
- D015 (Toxaphene)
- D016 (2,4,-D)
- D017 (2, 4, 5-TP)
- D018 (Benzene)
- D019 (Carbon tetrachloride)
- D020 (Chlordane)
- D021 (Chlorobenzene)
- D022 (Chloroform)
- D023 (o-Cresol)
- D024 (m-Cresol)
- D025 (p-Cresol)
- D026 (Total Cresols)
- D027 (p-Dichlorobenzene)
- D028 (1,2-Dichloroethane)
- D029 (1,1-Dichloroethylene)
- D030 (2,4-Dinitrotoluene)
- D031 (Heptachlor)
- D032 (Hexachlorobenzene)
- D033 (Hexachlorobutadiene)
- D034 (Hexachloroethane)
- D035 (MEK)
- D036 (Nitrobenzene)
- D037 (Pentachlorophenol)
- D038 (Pyridine)
- D039 (PCE)
- D040 (TCE)
- D041 (2,4,5-Trichlorophenol)
- D042 (2,4,6-Trichlorophenol)
- D043 (Vinyl chloride)
- F001 (Spent halogenated degreasing solvents)
- F002 (Spent halogenated solvents)
- F003X (Unspecified solvents)
- F004X (Unspecified solvents)
- F005X (Unspecified solvents)
- F006 (Metal plating waste without cyanide)
- P048 (2,4-Dinitrophenol)
- P113 (Thallic Oxide)
- U002 (Acetone)
- U003 (Acetonitrile)
- U019 (Benzene)
- U037 (Chlorobenzene)
- U080 (Methylene Chloride)
- U123 (Formic Acid)
- U127 (Hexachlorobenzene)
- U131 (Hexachloroethane)
- U151 (TCLP Hg)
- U159 (MEK)
- U165 (Naphthalene)
- U188 (Phenol)
- U209 (1,1,2,2-Tetrachloroethane)
- U210 (PCE)
- U211 (Carbon Tetrachloride)
- U220 (Toluene)
- U226 (1,1,1-Trichloroethane)
- U228 (TCE)
- U239 (Xylenes)
- Non-wastewater
Specific waste codes varied depending upon where the waste was generated. Wastes from CIF contained all of the waste codes that were fed to CIF. The F-listed solvents listed reflected the inclusion of non-incinerable items found in waste streams SR-W025 and SR-W055. Items from SR-W025 and SR-W055 may have contained other P- and U-listed codes.

**Land Disposal Restriction Treatment Standard**

- **D001** = specified technology = Recovery of Organics (RORGs) or CMBST
- **D004** = concentration-based standard = 5.0 mg/L, TCLP
- **D005** = concentration-based standard = 21 mg/L, TCLP
- **D006** = concentration-based standard = 0.11 mg/L, TCLP
- **D007** = concentration-based standard = 0.60 mg/L, TCLP
- **D008** = concentration-based standard = 0.75 mg/L, TCLP
- **D009** = concentration-based standard = 0.025 mg/L, TCLP
- **D010** = concentration-based standard = 5.7 mg/L, TCLP
- **D011** = concentration-based standard = 0.14 mg/L, TCLP
- **D012** = concentration-based standard = 0.13 mg/kg
- **D013 & D031** = concentration-based standard = 0.066 mg/kg
- **D014** = concentration-based standard = 0.18 mg/kg
- **D015** = concentration-based standard = 2.6 mg/kg
- **D016, D018, & D032** = concentration-based standard = 10.0 mg/kg
- **D017** = concentration-based standard = 7.9 mg/kg
- **D019, D021, D022, D027, D028, D029, D039, D040, & D043** = concentration-based standard = 6.0 mg/kg
- **D020** = concentration-based standard = 0.26 mg/kg
- **D023, D024, D025, & D033** = concentration-based standard = 5.6 mg/kg
- **D026** = concentration-based standard = 11.2 mg/kg
- **D030** = concentration-based standard = 140 mg/kg
- **D034** = concentration-based standard = 30 mg/kg
- **D035** = concentration-based standard = 36 mg/kg
- **D036** = concentration-based standard = 14 mg/kg
- **D037, D041, & D042** = concentration-based standard = 7.4 mg/kg
- **D038** = concentration-based standard = 16 mg/kg
- **F001** = concentration-based standard = 6-30 mg/kg
- **F002** = concentration-based standard = 6-30 mg/kg
- **F003** = concentration-based standard = 2.6 - 160 mg/kg
- **F004** = concentration-based standard = 5.6 - 14 mg/kg
- **F005** = concentration-based standard = 10 - 170 mg/kg
- **F006** = concentration-based standard = 0.11 - 11.0 mg/L, TCLP
- **P048** = concentration-based standard = 160 mg/kg
- **P113** = specified technology = Thermal Recovery (RTHRM) or STABL
- **U002** = concentration-based standard = 160 mg/kg
- **U003** = specified technology = CMBST
- **U019** = concentration-based standard = 10 mg/kg
- **U037** = concentration-based standard = 6 mg/kg
- **U080** = concentration-based standard = 30 mg/kg
- **U123** = specified technology = CMBST
- **U127** = concentration-based standard = 10 mg/kg
- **U131** = concentration-based standard = 30 mg/kg
- **U151** = concentration-based standard = 0.025 mg/L, TCLP
- **U159** = concentration-based standard = 36 mg/kg
- **U165** = concentration-based standard = 5.6 mg/kg
- **U188** = concentration-based standard = 6.2 mg/kg
- **U209** = concentration-based standard = 6.0 mg/kg
U210 = concentration-based standard = 6 mg/kg
U211 = concentration-based standard = 6 mg/kg
U220 = concentration-based standard = 10 mg/kg
U226 = concentration-based standard = 6 mg/kg
U228 = concentration-based standard = 6.0 mg/kg
U239 = concentration-based standard = 30 mg/kg

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

Waste Characterization
- Process knowledge is used to characterize the waste stream.
- Confidence level is high based on knowing process history of the waste.

Radiological Characterization
- Alpha emitters (U-233, U-234, U-235, U-238, Pu-238, Pu-239) may be present.
- Beta/gamma emitters (Cs-137 and Sr-90) may be present.
- Waste is CH.
- Low-level radioactive waste

3.1.2.3 Commercial Vendor Lead Treatment
Lead Macroencapsulation at an offsite vendor’s facility is the PO for certain mixed waste streams, including the following:

SR-W069, Low-Level Waste (LLW) – To be Macroencapsulated Offsite

General Information

SR-W069, Low-Level Waste (LLW) Lead – To Be Macroencapsulated Offsite

This waste stream consists of LLW lead and lead compounds that are inseparably mixed with non-lead components. Examples of this waste stream are lead-lined gloves, aprons and equipment containing lead solder, and radioactive lead acid batteries. This stream also includes miscellaneous lead items (e.g., lead blankets, lead snakes, lead plates/bricks, etc.) that cannot be decontaminated.

In the future, a portion of this waste stream may include items that are encapsulated onsite using LDR-compliant macroencapsulation bags. Prior to commencement of onsite encapsulation, SRS will satisfy all RCRA permitting requirements and obtain all approvals in accordance with Consent Order 95-22-HW.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Elemental lead
- Non-elemental lead

Waste Code
- D002 (corrosive)
- D004 (TCLP As)
- D006 (TCLP Cd)
- D008A (TCLP Pb)
- D008B (lead acid batteries and radioactive lead solids)
- D008C (elemental Pb)
- Non-wastewater
Land Disposal Restriction Treatment Standard
- D008 = specified technology = Macroencapsulation (MACRO)

Waste Characterization
- Process knowledge is used to characterize the waste stream.
- Confidence level is high based on the fact that waste is easily identified as containing lead.

Radiological Characterization
- Beta/gamma emitters are present (Cs-137 and Sr-90).
- Alpha emitters are present (Pu-238, Pu-239, and U-235).
- Waste is CH.
- Low-level radioactive waste

3.1.2.4 Commercial Vendor Mercury Treatment
The PO is direct amalgamation (AMLGM) or stabilization by a commercial vendor, dependent upon vendor states’ approval of direct AMLGM for the waste. The following waste streams are in this category:

SR-W014, Elemental (Liquid) Mercury – Sitewide
SR-W068, Elemental (Liquid) Mercury – Sitewide (Consolidated with SR-W014)
SR-W086, Characteristically Hazardous Non-Incinerable Solids

General Information

SR-W014, Elemental (Liquid) Mercury – Sitewide
This waste stream includes elemental mercury generated at different SRS facilities, primarily at the High Level Waste (HLW) Tank Farms, Defense Waste Processing Facility (DWPF) and Defense Programs. At the HLW Tank Farms and DWPF, elemental mercury is recovered during the evaporation and vitrification of HLW. Currently, H-Canyon Dissolving Operations will re-use a portion of the mercury generated by the HLW Tank Farms and DWPF. The re-use will continue until the dissolving operations cease. This waste stream also includes elemental mercury used as a pumping fluid in diffusion pumps for the transfer of tritium gas. The mercury waste is generated from pump maintenance or pump failure due to mercury oxide fouling. This waste stream also includes broken thermometers, unbroken thermometers, and mercury spill cleanup materials generated sitewide. SR-W068, Elemental (Liquid) Mercury – Sitewide has been combined with SR-W014.

In the future, a portion of this waste stream may be amalgamated on-site at the DWPF in accordance with an approved Industrial Wastewater Permit Modification. All approvals in accordance with Consent Order 95-22-HW will be obtained prior to commencement of treatment activities.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Elemental mercury

Waste Code
- D009D (elemental Hg)
- Non-wastewater

Land Disposal Restriction Treatment Standard
- D009 = specified technology = Amalgamation (AMLGM)

Waste Characterization
- Process knowledge is used to characterize the waste stream.
Confidence level is high based on the waste composition.

Radiological Characterization
- Radioactivity will vary depending on the generation source and location.
- Waste is CH and meets Nuclear Regulatory Committee (NRC) Class A limits.
- Low-level radioactive waste

SR-W086, Characteristically Hazardous Non-Incinerable Solids
This waste stream consisted of filters, swipes and other cleanup material that contained mercury concentrations greater than 260 mg/kg. The waste was generated from mercury spill cleanup, broken and unbroken thermometers, and filtering activities. This waste stream also included and may in the future include batteries, floor tiles, and fluorescent lamps.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Heterogeneous organic and inorganic debris

Waste Code
- D007 (TCLP Cr)
- D008 (TCLP Pb)
- D009C (High Hg (inorganic))
- D009D (Elemental Hg)

Land Disposal Restriction Treatment Standard
- D009C = specified technology = Retorting or Roasting (RMERC)
- D009D = specified technology = AMLGM

Waste Characterization
- Sampling and analysis were used to characterize this waste stream.
- Confidence is high.

Radiological Characterization
- Average total activity is 50 nCi/g with depleted uranium.
- Waste is CH.
- Low-level radioactive waste

3.1.2.5 Commercial Vendor Solids Treatment
The PO can include several treatment steps. Wastes that contain organic material in excess of the LDR treatment standard are initially treated to separate the organic portion of the contaminants using solvent extraction or thermal separation. The desorbed chemical constituents are then treated via direct chemical oxidation or combustion. The waste material remaining after organics or non-organic waste material is removed is then directly stabilized, shredded and stabilized, maceroencapsulated, or subjected to alternative debris treatment technologies. No stabilization of organics is performed, and no impermissible dilution occurs. Wastes that do not contain significant organics are directly stabilized, shredded and stabilized, maceroencapsulated, or subjected to alternative debris treatment technologies as appropriate under RCRA regulations.

The following waste streams are included in this category:

SR-W048, Soils from Spill Remediation (stabilization thermal treatment)
SR-W088, Sludges and Non-Debris Solids (thermal treatment, stabilization)
General Information

SR-W048, Soils from Spill Remediation

This waste consisted of soils, sand, and associated debris (rocks, wood, etc.) resulting from cleanup activities of spills surrounding operations. This waste stream does not include any soils to be addressed in the Environmental Compliance and Area Completion Projects (EC&ACP) program. The original value of waste in stream SR-W048 was treated in M-Area Vitrification Facility. Additional waste was added to SR-W048 with a new PO. Waste codes F002, F003 and F005 were added as a result of a Pad 1 Mound Drum. The cleaned up soil carried these codes.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Uncategorized soils

Waste Code
- D002 (corrosive)
- D006 (TCLP Cd)
- D007 (TCLP Cr)
- D008 (TCLP Pb)
- D009A (TCLP Hg)
- F001 (spent halogenated degreasing solvents)
- F002, F003 and F005 (spent and non-spent halogenated solvents)
- Non-wastewater

Land Disposal Restriction Treatment Standard
- D002 = DEACT
- D006 = concentration-based standard = 0.11 mg/L, TCLP
- D007 = concentration-based standard = 0.60 mg/L, TCLP
- D008 = concentration-based standard = 0.75 mg/L, TCLP
- D009 = concentration-based standard = 0.025 mg/L, TCLP
- F001 = concentration-based standard = 6-30 mg/kg
- F002 = concentration-based standard = 6.0 mg/kg Total (tetrachloroethylene); 30 mg/kg total (methylene chloride)
- F003 = concentration-based standard = 0.75 mg/L, TCLP - 160 mg/kg
- F005 = concentration-based standard = 4.8 mg/L, TCLP-170 mg/kg except 2 Ethoxyethanol and 2-Nitropropane = CMBST

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

Waste Characterization
- Process knowledge is used to characterize the waste stream.
- Confidence level is high based on process knowledge of what was spilled or located at a particular site.

Radiological Characterization
- Alpha and beta/gamma emitters are present.
- Waste is CH.
- Low-level radioactive waste

SR-W088, Sludges and Non-Debris Solids

This waste stream consists primarily of dry solid material such as scabbled concrete, paint chips and crushed lamps. The scabbled concrete is generated from the demolition of SRS facilities performed by EC&ACP (previously Site Decommissioning and Deactivation (D&D)). Paint chips and spent contaminated lamps are generated by sitewide
maintenance activities. These waste forms are primarily hazardous for metals. This stream also includes halogenated or non-halogenated sludges that required stabilization. Portions of waste stream SR-W012, Toxic Characteristic Solids have been consolidated into this waste stream.

**Volume**
- Volume data for this waste stream can be found in Chapter 11.

**Waste Codes**
- D001A (High TOC Ignitable)
- D004 (TCLP As)
- D005 (TCLP Ba)
- D006A (TCLP Cd)
- D007 (TCLP Cr)
- D008A (TCLP Pb)
- D009A (TCLP Hg)
- D010 (TCLP Se)
- D011 (TCLP Ag)
- D018 (Benzene)
- D035 (MEK)
- Non-wastewaters

**Land Disposal Restriction Treatment Standard**
- D001A = specified technology = RORGS or CMBST
- D004 = concentration-based standard = 5.0 mg/L, TCLP
- D005 = concentration-based standard = 21 mg/L, TCLP
- D006 = concentration-based standard = 0.11 mg/L, TCLP
- D007 = concentration-based standard = 0.60 mg/L, TCLP
- D008 = concentration-based standard = 0.75 mg/L, TCLP
- D009 = concentration-based standard = 0.025 mg/L, TCLP
- D010 = concentration-based standard = 5.7 mg/L, TCLP
- D011 = concentration-based standard = 0.14 mg/L, TCLP
- D018 = concentration-based standard = 10 mg/kg
- D035 = concentration-based standard = 36 mg/kg

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

**Waste Characterization**
- Process knowledge and sampling and analysis have been used to characterize these waste streams.

**Radiological Characterization**
- Alpha and beta/gamma emitters are present.
- Alpha (U-235, Pu-238, Pu-239) are present.
- Beta/gamma emitters (CS-137 and Sr-90) may be present.
- Waste is CH.
- Low-level radioactive waste

### 3.1.2.6 Commercial Vendor “Non-PUREX” Treatment

The PO can include several treatment steps. Wastes that contain organic material in excess of the LDR treatment standard are initially treated to separate the organic portion of the contaminants using solvent extraction or thermal separation. The desorbed chemical constituents are then treated via direct chemical oxidation or thermal treatment. The waste material remaining after organics are removed is then directly stabilized, shredded and stabilized, macroencapsulated, or subjected to alternative debris treatment technologies. No stabilization of organics is performed, and no impermissible dilution occurs.
The following waste streams are included in this category:

SR-W001, Rad-Contaminated Solvents (thermal treatment)

SR-W003, Solvent-Contaminated Debris (LLW) (Consolidated with SR-W062)

SR-W012, Toxic Characteristic (TC) Solids (Consolidated with SR-W062 and SR-W088)

SR-W018, Listed Incinerable Solids (macroencapsulation or stabilization)

SR-W035, Mixed Waste Oil – Sitewide (Consolidated with SR-W001)

SR-W042, Paints and Thinners (Consolidated with SR-W001)

SR-W051, Spent Filter Cartridges and Carbon Filter Media (Consolidated with SR-W062)

SR-W070, Mixed Waste from Laboratory Samples (Consolidated with SR-W001, SR-W071 or SR-W077)

SR-W071, Wastewater Suitable for Thermal Treatment or Stabilization (Broad Spectrum)

SR-W081, Reactive/Ignitable Waste*

*SR-W081 has undergone deactivation at generator facility prior to final treatment by commercial vendor.

**General Information**

**SR-W001, Rad-Contaminated Solvents**

This waste stream is radioactively contaminated solvent and solvent mixtures such as solvents used for cleaning equipment in the Separations or Reactors Areas, degreasing solvents for depleted uranium fines used to assure unhindered adsorption of water in the tritium process, used or unused organic reagents and solutions used in bioassay and other laboratory analyses, and catalyst material for an incinerator that is no longer operational. The non-halogenated solvents in storage are wastes that used carbon (C-14) and tritium (H3) labeled materials as tracers, or mixtures of waste scintillation counter calibration standards. The halogenated solvents are degreasing solvents contaminated with tritium and uranium. This waste stream is a consolidation of SR-W002, Rad-Contaminated Chlorofluorocarbons; SR-W006 CH Mixed TRU/Liquids; SR-W010, Scintillation Solution; SR-W030, Spent Methanol Solution; SR-W035, Mixed Waste Oil – Sitewide; SR-W042, Paints and Thinners; SR-W059, Tetrabutyl Titanate; and SR-W070, Mixed Waste from Laboratory Samples (organic). This waste stream also includes liquids formerly in waste stream SR-W078, Hazardous Waste Awaiting Radiological Screening (stream now closed), which the results of radiological analysis have showed to be mixed waste, or were indeterminate.

**Volume**

- Volume data for this waste stream can be found in Chapter 11.

**Waste Stream Composition**

- Organic liquid

**Waste Code**

- D001A (High TOC Ignitable)
- D002 (corrosive, non-wastewater)
- D004 (TCLP As)
- D005 (TCLP Ba)
- D006A (TCLP Cd)
- D007 (TCLP Cr)
Since this waste stream previously included wastes generated by previous CIF operations, additional waste codes may have applied to this stream. Waste codes depended on the specific generation episode at CIF. Potentially, any of the many waste codes included in the CIF RCRA Part B permit could have applied. (Reference 1988 CIF Part B Permit Application).

**Land Disposal Restriction Treatment Standard**
- D001 = specified technology = RORGS or CMBST
- D002 = specified technology = DEACT
- D004 = concentration-based standard = 5.0 mg/L TCLP
- D005 = concentration-based standard = 21 mg/L TCLP
- D006 = concentration-based standard = 0.11 mg/L TCLP
- D007 = concentration-based standard = 0.60 mg/L TCLP
- D008 = concentration-based standard = 0.75 mg/L TCLP
- D009 = concentration-based standard = 0.025 mg/L TCLP
- D010 = concentration-based standard = 5.7 mg/L TCLP
- D011 = concentration-based standard = 0.14 mg/L TCLP
- D018 = concentration-based standard = 10 mg/kg
- D019, D022, D029, D039, D040 = concentration-based standard = 6.0 mg/kg
Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

Waste Characterization
- Process knowledge and sampling and analysis have been used to characterize waste streams.
- Confidence level is high based upon the known composition of the solvents used in the processes and of sample analyses for some of the organics.

Radiological Characterization
- Sampling and analysis results indicate tritium present up to 1700 pCi/ml.
- Beta/gamma emitters are present.
- U-238 alpha present is in solvent from the tritium facility and Reactor Materials Facilities.
- Alpha (U-235, U-238, Pu-238, Pu-239) emitters are present.
- Waste is CH.
- Low-level radioactive waste

SR-W018, Listed Incinerable Solids
This waste stream consisted of F006 job control waste, remediation waste from M-Area and other site operations, process control waste from M-Area Vendor Treatment operations and remediation activities.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Organic debris
Waste Code
- D006 (TCLP Cd)
- D008 (TCLP Pb)
- D018 (Benzene)
- F005 (Halogenated and nonhalogenated spent solvents)
- F006 (metal plating line waste, without cyanide)
- U080 (Methylene chloride)
- Non-wastewater

Land Disposal Restriction Treatment Standard
- D006 = concentration-based standard = 0.11 mg/L TCLP
- D008 = concentration-based standard = 0.75 mg/L TCLP
- D018 = concentration-based standard = 10.0 mg/L TCLP
- F005 = concentration-based standards = 4.8 mg/L TCLP-170 mg/kg, except 2-Ethoxyethanol and 2-Nitropropane = CMBST
- F006 = concentration-based standards = 0.11-11 mg/L TCLP
- U080 = concentration-based standard = 30 mg/kg

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

Waste Characterization
- Process knowledge and sampling and analysis are used to characterize the waste.
- Confidence level high due to availability of sample results and knowledge the process generates listed waste.
- Primary contaminant is Ni. Others included are Cd, Cr, Pb, and Ag, but these are below RCRA LDR concentration standards.

Radiological Characterization
- Typical activity is 5.0E-1 nCi/g
- Alpha emitters are U-234, U-235, U-236, and U-238
- Waste is CH.
- Low-level radioactive waste

SR-W071, Wastewater Suitable for Thermal Treatment or Stabilization
This waste stream consists of wastewaters that are suitable for thermal treatment, stabilization, or macroencapsulation. These wastewaters include aqueous wastes with listed organic constituents that can be incinerated, stabilized, or macroencapsulated in compliance with LDR requirements. Examples include wastewater collected from CIF sumps and aqueous solutions with organic contaminants such as a small volume of outdated ethyl ether in water stored in an analytical laboratory satellite accumulation area (SAA). It is anticipated that other wastes of a similar nature could be generated in the future. Wastewaters that do not meet the requirements of SCHWMR R.268.3(c) will be stabilized. Portions of SR-W065, IDW Monitoring Well Purge/Development Water and SR-W070, Mixed Waste from Laboratory Samples have been included in this waste stream.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Aqueous liquid

Waste Code
- D001C (Low TOC Ignitable)
- D002 (corrosive, wastewater)
- D004 (TCLP As)
- D005 (TCLP Ba)
• D006A (TCLP Cd)
• D007 (TCLP Cr)
• D008A (TCLP Pb)
• D009A (TCLP Hg)
• D010 (TCLP Se)
• D011 (TCLP Ag)
• D018 (TCLP Benzene)
• D019 (Carbon tetrachloride)
• D035 (MEK)
• D036 (Nitrobenzene)
• D038 (Pyridine)
• D039 (PCE)
• D040 (TCE)
• F001 (Spent halogenated degreasing solvents)
• F002 (Spent halogenated solvents)
• F003A (Spent nonhalogenated solvents)
• F005A (Halogenated and nonhalogenated solvents)
• Non-wastewater
• Wastewater

Land Disposal Restriction Treatment Standard
• D001 = specified technology = DEACT, RORGS, or CMBST
• D002 = specified technology = DEACT
• D004 = concentration-based standard = 5.0 mg/L, TCLP
• D005 = concentration-based standard = 21 mg/L, TCLP
• D006 = concentration-based standard = 0.11 mg/L, TCLP
• D007 = concentration-based standard = 0.60 mg/L, TCLP
• D008 = concentration-based standard = 0.75 mg/L, TCLP
• D009 = concentration-based standard = 0.025 mg/L, TCLP
• D010 = concentration-based standard = 5.7 mg/L, TCLP
• D011 = concentration-based standard = 0.14 mg/L, TCLP
• D018 = concentration-based standard = 10 mg/kg
• D019 = concentration-based standard = 6.0 mg/kg
• D035 = concentration-based standard = 36 mg/L TCLP
• D036 = concentration-based standard = 14 mg/L TCLP
• D038 = concentration-based standard = 16 mg/kg
• D039 = concentration-based standard = 6.0 mg/kg
• D040 = concentration-based standard = 6.0 mg/kg
• F001 = concentration-based standard = 6-30 mg/kg
• F002 = concentration-based standard = 6-30 mg/kg
• F003 = concentration-based standard = 0.75 mg/L, TCLP through 60 mg/kg
• F005 = concentration-based standard = 4.8 mg/L, TCLP through 170 mg/kg; except 2-Ethoxyethanol, 2-
Nitropropane = CMBST

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any
UHC that may be present, as applicable.

Waste codes depended on the specific generation episode at CIF. Potentially, any of the many waste codes included
in the CIF RCRA Part B permit could have applied apply. (Reference 1988 CIF Part B Permit Application).

Waste Characterization
• Radiological and chemical analysis will be performed on wastes that are included in this waste stream.
• Confidence level is high because sampling and analysis has been performed.
Radiological Characterization
- Radiological characterization of future waste streams cannot be determined at this time. Both alpha and beta/gamma emitters are expected.
- Waste is CH.
- Low-level radioactive waste

SR-W081, Reactive/Ignitable Waste
This waste stream is currently composed of SRNL laboratory wastes generated as a result of preparing metal specimens for examination in the transmission electron microscope. Metal disks were electropolished using a solution of perchloric acid, butylenesolve, and methanol. Because of its reactivity, the spent perchloric acid solution is deactivated with distilled water in the storage area. SR-W034, Calcium Metal has been consolidated with this waste stream.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Aqueous liquid
- Inorganic debris

Waste Codes
- D001A (High TOC Ignitable)
- D003 (Reactivity)
- Non-wastewater

Land Disposal Restriction Treatment Standard
- D001 = specified technology = RORGS or CMBST
- D003 = specified technology = DEACT

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

Waste Characterization
- Process knowledge
- Confidence level is high based upon the known composition and quantity of chemicals used to formulate the perchloric acid polishing solution.

Radiological Characterization
- Radionuclides may include Co-60, H3, Pu-239, Pu-238.
- Waste is CH.

3.1.2.7 Commercial Vendor Deactivation Treatment
Currently, there are no waste streams in this category.
3.1.3 Preferred Treatment to Be Determined

One waste stream is currently waiting for the preferred treatment to be determined:

SR-W045, PUREX Organic Waste

**General Information**

**SR-W045, PUREX Organic Waste**

This waste stream was previously planned to be treated by thermal treatment at CIF. On June 26, 2006, SCDHEC agreed to transfer closure and decommissioning of CIF to the Federal Facility Agreement (FFA). The current treatment for waste stream SR-W045, PUREX Organic Waste is stabilization followed by macroencapsulation via a site-specific one-time treatability variance granted by EPA-4 on February 26, 2008. This variance was granted as a contingency in the event that the final stabilized form did not meet LDR. This treatment method allowed treatment of this waste stream to be completed on a greatly accelerated time scale and at a considerable cost-savings compared to CIF. Shipments of the treated NNSS were completed on September 10, 2009.

The PUREX waste was stored in the RCRA-permitted Solvent Storage Tanks (SST) S33-S36 Facility. A small heel remains in the SSTs, which accounts for the 0.7 m³ volume reported in Chapter 11. During the closure process for the SST Facility, options for disposal of the remaining PUREX will be evaluated.

An organic solvent generated in the Plutonium/Uranium Extraction Process (PUREX) used in the Separations areas, SR-W044, Tri-Butyl-Phosphate and n-Paraffin TRU, has been combined with this waste stream.

**Volume**

- Volume data for this waste stream can be found in Chapter 11.

**Waste Stream Composition**

- Organic liquid

**Waste Code**

- D004 (TCLP As)
- D005 (TCLP Ba)
- D006A (TCLP Cd)
- D007 (TCLP Cr)
- D008A (TCLP Pb)
- D009A (TCLP Hg)
- D010 (TCLP Se)
- D011 (TCLP Ag)
- D018 (Benzene)
- D040 (TCE)
- Non-wastewater

**Land Disposal Restriction Treatment Standard**

- D004 = concentration-based standard = 5.0 mg/L TCLP
- D005 = concentration-based standard = 21 mg/L TCLP
- D006 = concentration-based standard = 0.11 mg/L TCLP
- D007 = concentration-based standard = 0.60 mg/L TCLP
- D008 = concentration-based standard = 0.75 mg/L TCLP
- D009 = concentration-based standard = 0.025 mg/L TCLP
- D010 = concentration-based standard = 5.7 mg/L TCLP
- D011 = concentration-based standard = 0.14 mg/L TCLP
- D018 = concentration-based standard = 10 mg/kg
- D040 = concentration-based standard = 6 mg/kg
Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

*Waste Characterization*
- Sampling and analysis are used to characterize the waste stream.
- Confidence level is high because sampling and analysis is available.

*Radiological Characterization*
- Total activity is 120 nCi/g.

### 3.2 Mixed Low-Level Waste Streams Requiring Technology Development

Due to the complexity of some waste streams, technologies have not been developed that can adequately treat the waste. Therefore treatment strategies for some waste streams have not been selected. This section addresses those mixed LLW streams that require technology development for the treatment of the waste stream.

#### 3.2.1 Development of Mobile Unit Technology
Currently, there are no waste streams in this category.

#### 3.2.2 Development of Characterization Technology
Currently, there are no waste streams in this category.

#### 3.2.3 Development of Treatment Technology
Currently, there are no waste streams in this category.

### 3.3 Mixed Low-Level Waste Streams for Which Further Characterization is Required

This section discusses the schedules for those specific waste streams that require further chemical or radiological characterization prior to the selection of a PO. The categories in this section are divided into waste streams to be further characterized and hazardous wastes awaiting radiological screening.

#### 3.3.1 Waste Streams to be Further Characterized
Currently, there are no waste streams in this category.

#### 3.3.2 Hazardous Waste Awaiting Radiological Screening
Currently, there are no waste streams in this category.

### 3.4 Mixed Low-Level Waste Streams Requiring Radionuclide Decay Prior to LDR Treatment

The PO for the waste streams in this waste group is treatment by aging in a regulated storage facility followed by combustion and/or appropriate mercury treatment. The following waste streams are included in this category:

SR-W036, Tritiated Oil with Mercury

SR-W090, Elemental Mercury – High Rad
General Information

SR-W036, Tritiated Oil with Mercury
This waste stream consists of used oil from pumps and compressors operated in the tritium facilities. The oil is contaminated with tritium and mercury. Reliable characterization is hindered because of concerns about exposure of laboratory personnel to the high levels of radiation in the oil. Moreover, the radiation has the potential to cause scintillation counting interferences. The possibility of mercury contamination has been established, but the concentration has not been quantified. This waste stream exceeds Class A limits per 10 CFR 61.55.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Other inorganic particulates

Waste Code
- D009E (hydraulic oil contaminated with Hg and radioactive materials)
- Non-wastewater

Land Disposal Restriction Treatment Standard
- D009 = Specified Technology = Incineration of Wastes Containing Organics and Mercury (IMERC)

Waste Characterization
- Process knowledge is used to characterize the waste stream.
- Confidence level is low. High tritium levels prevent analysis.

Radiological Characterization
- Tritium contamination variable (background to ~ 185 Ci/l).
- Waste is CH.
- Low-level radioactive waste

SR-W090, Elemental Mercury (High Rad)
This waste stream consists of used elemental mercury that has become contaminated with tritium and exhibits concentrations of tritium that exceed our current commercial vendor’s acceptance criteria.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Other inorganic particulates

Waste Code
- D009D

Land Disposal Restriction Treatment Standard
- D009 = specified technology = AMLGM

Waste Characterization
- Process knowledge is used to characterize the waste stream.
- Confidence level is low. High tritium levels prevent analysis.

Radiological Characterization
- Tritium contamination variable
Waste is CH.
Low-level radioactive waste

3.5 SRS Treatment Facilities That Have Discontinued/Suspended Operations

3.5.1 Consolidated Incineration Facility (CIF)
The CIF responsibilities have been moved to the FFA for SRS.

3.5.2 Recycling
Recycling in D-Area Heavy Water Facility was the PO for certain waste streams, including the following:

SR-W032A, Mercury Contaminated Heavy Water


3.5.3 M-Area Vendor Treatment
This option has been completed. The following waste streams in this option have been treated and eliminated:

SR-W004, M-Area Plating Line Sludge from Supernate Treatment (Consolidated with SR-W037)
SR-W005, Mark 15 Filtercake
SR-W029, M-Area Sludge Treatability Samples
SR-W031, Uranium/Chromium Solution
SR-W037, M-Area Plating Line Sludges
SR-W038, Plating Line Sump Material
SR-W039, Nickel Plating Line Solution

3.5.4 Decontamination
Decontamination in an existing onsite facility was the PO for certain mixed waste streams, including, but not limited to, the following:

SR-W013, Low-Level Waste (LLW) Lead – To Be Decontaminated

Completion of treatment of SR-W013 occurred January 31, 2002, when no deconnable lead was in RCRA storage. Future deconnable lead is managed as useable material and is decontaminated on a regular basis.
Appendix for LDR Compliant Wastes

This appendix contains descriptive information on waste streams that do not appear in the Compliance Plan Volume PO discussion because they meet the LDR treatment standard, meet the LDR standard when they are generated, have been treated and closed as a stream, or are recycled (includes scrap metal).

SR-W011, Cadmium-Coated HEPA Filters

These filters were recycled under the Scrap Metal Exclusion, and the waste stream has been eliminated.

SR-W015, Tritium-Contaminated Equipment

Retired process equipment (mostly pumps) contaminated with tritium and sometimes mercury, lead, and/or silver.

Retired equipment has both adsorbed and matrix-diffused tritium contamination and wetted-surface mercury residues from direct contact with process gases. Lead is present in some of the equipment (fuel cells, solder and lead collars).

Volume

- Data for this waste stream can be found in Chapter 11.

Waste Stream Composition

- Predominantly metal debris

Waste Code

- D008A (TCLP Pb)
- D009A (TCLP Hg)
- D011 (TCLP Ag)

Land Disposal Restriction Treatment Standard

- D008A, D009A, D011 = specified technology = MACRO

Waste Characterization

- Process Knowledge

Radiological Characterization

- U-238 and tritium are present.

SR-W020, Salt Processing Filters

These filters may be a future debris waste stream. The filters are used in the treatment and separation of salt solution in preparation for processing in the DWPF and Saltstone Facility. The salt solution is treated to remove radioactive cesium and to adsorb strontium and plutonium. This process is expected to eventually foul the filters, requiring their removal, treatment, and disposal.

Volume

- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition

- Inorganic debris

Waste Code

- D009A (TCLP Hg)
- D018 (Benzene)
• D036 (Nitrobenzene)
• Non-wastewater

Land Disposal Restriction Treatment Standard
• D009 = concentration-based standard = 0.025 mg/L TCLP
• D018 = concentration-based standard = 10 mg/kg
• D036 = concentration-based standard = 14 mg/kg
• Alternate debris technology may be applied.

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

Waste Characterization
• Process knowledge is used to characterize the waste stream.
• Confidence level is medium since this waste stream has not yet been generated.
• Typical expected concentration is 236 g Hg per filter. This is estimated by calculation.

Radiological Characterization
• Total activity is estimated to be 64-3400 Ci/filter.
• Beta/gamma emitters are Cs-137, Cs-134, Sr-90, Tc-99, Ru-106, Sb-125, and I-129.
• Waste is remote handled (RH).
• Low-level radioactive waste

SR-W023, Cadmium Safety/Control Rods
The safety/control rods are steel encapsulated, cadmium-containing rods used to control neutron flux in the reactors. The rods are approximately 22 feet long, one inch in diameter. The Cadmium rods are macroencapsulated by being placed in a stainless or mild steel container that is welded closed. One rod was cut and placed in a drum; other rods were not cut prior to placement in a box.

Volume
• Volume Data for this waste stream can be found in Chapter 11.

Waste Stream Composition
• Cadmium-containing metal debris

Waste Code
• D006A (TCLP Cd)

Land Disposal Restriction Treatment Standard
• D006A = specified technology = MACRO

Waste Characterization
• Sample Results

Radiological Characterization
• Beta/gamma emitters are present.

SR-W024, Mercury/Tritium Gold Traps
Elemental mercury has been amalgamated on gold foil. A typical trap consists of a stainless steel cylindrical housing that is 38 inches high and 2 inches in diameter that contains gold foil on 16 evenly spaced trays. Each trap contains approximately 125 g of elemental gold. Contamination is variable, depending on use and change out frequency. Retired traps typically show surface amalgamation on approximately one-fourth of the gold, and contain 0.6 g of bound mercury. The estimated tritium contamination is 200 Ci per trap and is deemed conservative. The traps are macroencapsulated in a stainless steel container that is welded closed.
Volume
- Volume Data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Metal debris

Waste Code
- D009A (TCLP Hg)

Land Disposal Restriction Treatment Standard
- D009A = specified technology = MACRO

Waste Characterization
- Process knowledge

Radiological Characterization
- Tritium is present.

SR-W028, Mark 15 Filter Paper
This waste stream has been treated and eliminated.

SR-W032B, Mercury-Contaminated Heavy Water Residues
SR-W032B is the residue from treatment of SR-W032A. Both waste streams have been treated and eliminated.

SR-W040, Listed Stabilized Sludge/Listed LDR-Compliant Debris
This waste was stabilized sludge generated from the treatment of nickel-plating line waste water and was stored in the M-Area pad. It also included equipment, associated with the vitrification treatment process, which met LDR. This included an approximately 90,000 lb (gross weight) melter (14.3 m³) full of treated F006 waste and small amounts of debris/spill material, which met the LDR standards. The stream also included debris items, meeting LDR, that were generated by CIF operations or RCRA-listed contaminated soil.

Volume
- Volume Data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Stabilized sludge and miscellaneous debris

Waste Code
- F001–F003, F005 (halogenated and non-halogenated spent solvents)
- F006 (wastewater treatment sludges from electroplating operations)
- F028 (residues from thermal treatment of F020, F021, F026, and F027 wastes)
- U002 (Acetone)
- U003 (Acetonitrile)
- U019 (Benzene)
- U037 (Chlorobenzene)
- U080 (Methylene chloride)
- U123 (Formic acid)
- U127 (Hexachlorobenzene)
- U131 (Hexachloroethane)
- U159 (Methyl ethyl ketone)
- U165 (Naphthalene)
- U188 (Phenol)
• U210 (Tetrachloroethylene)
• U211 (Carbon tetrachloride)
• U220 (Toluene)
• U226 (1,1,1-Trichloroethane)
• U228 (Trichloroethylene)
• U239 (Xylenes)

*Land Disposal Restriction Treatment Standard*

• F001 and F002 = concentration-based standard = 6.0 – 30 mg/kg
• F003 = concentration-based standard = 0.75 mg/L, TCLP – 160 mg/kg
• F005 = concentration-based standard = 4.8 mg/L, TCLP – 170 mg/kg except 2-Ethoxyethanol and 2-Nitropropane = CMBST
• F006 = concentration-based standard = 0.11 – 11 mg/L TCLP
• F028 = = concentration-based standard = = 0.001 to 7.4 mg/kg
• U002 = concentration-based standard = 160 mg/kg
• U003 = concentration-based standard = 38 mg/kg or CMBST
• U019 = concentration-based standard = 10 mg/kg
• U037 = concentration-based standard = 6.0 mg/kg
• U080 = concentration-based standard = 30 mg/kg
• U123 = specified technology = CMBST
• U127 = concentration-based standard = 10 mg/kg
• U131 = concentration-based standard = 30 mg/kg
• U165 = concentration-based standard = 5.6 mg/kg
• U188 = concentration-based standard = 6.2 mg/kg
• U210 = concentration-based standard = 6.0 mg/kg
• U211 = concentration-based standard = 6.0 mg/kg
• U220 = concentration-based standard = 10.0 mg/kg
• U226 = concentration-based standard = 6.0 mg/kg
• U228 = concentration-based standard = 6.0 mg/kg
• U239 = concentration-based standard = 30 mg/kg

*Waste Characterization*

• Sample results

*Radiological Characterization*

• Alpha and beta/gamma emitters present.

**SR-W041, Aqueous Mercury and Lead**
This waste stream has been treated and eliminated.

**SR-W046, Consolidated Incineration Facility (CIF) Ash**
The volume of waste remaining after the closure of CIF was treated and the waste stream eliminated.

**SR-W047, Consolidated Incineration Facility (CIF) Blowdown**
The volume of waste remaining after the closure of CIF was treated and the waste stream eliminated.

**SR-W050, Waste to support High-Level Waste (HLW) Processing Demonstrations**
The waste will be generated by laboratory research, development, and analytical programs at SRNL to support the operations of the DWPF. This waste stream will be generated by shielded cell operations during projects for the glass technology group and will come from demonstrations of the DWPF and Interim Waste Technology (IWT) processes on actual HLW samples. The liquid waste will most likely contain mercury and chromium. The chromium will most likely be at low levels, below TCLP.
SR-W058, Mixed Sludge Waste with Mercury from DWPF Treatability Studies has been consolidated into this waste stream.

**Volume**
- Volume Data for this waste stream can be found in Chapter 11.

**Waste Stream Composition**
- Aqueous slurry

**Waste Code**
- D007 (Cr)
- D009A (TCLP Hg)
- D018 (Benzene)
- Non-wastewater

**Land Disposal Restriction Treatment Standard**
- D007 = concentration-based standard = 0.60 mg/L TCLP
- D009 = concentration-based standard = 0.20 mg/L TCLP; or specified technology = RMERC
- D018 = concentration-based standard = 10 mg/kg

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

**Waste Characterization**
- Sample results and process knowledge

**Radiological Characterization**
- Beta/gamma emitters are present.

**SR-W055, Job Control Waste Containing Solvent Contaminated Wipes**
This waste stream has been treated (offsite) and eliminated.

**SR-W060, Tritiated Water with Mercury**
This waste stream has been treated and eliminated.

**SR-W072, Supernate or Sludge Contaminated Debris from High-Level Waste Operations**
This waste consists of a wide variety of equipment/metal debris and other items contaminated with radioactive materials and characteristically hazardous waste. The waste is derived from contacting HLW. The majority of the contamination is surface contamination. Future generation rates are dependent upon construction operations, maintenance activities, and site decommissioning activities.

**Volume**
- Volume Data for this waste stream can be found in Chapter 11.

**Waste Stream Composition**
- Inorganic debris

**Waste Code**
- D005 (Ba)
- D006A (TCLP Cd)
- D007 (Cr)
- D008A (TCLP Pb)
- D009A (TCLP Hg)
- D010 (Se)
- D011 (Ag)
- D018 (Benzene)
- Non-wastewater

**Land Disposal Restriction Treatment Standard**
- D005 = concentration-based standard = 21 mg/L, TCLP
- D006A = concentration-based standard = 0.11 mg/L, TCLP
- D007 = concentration-based standard = 0.60 mg/L, TCLP
- D008A = concentration-based standard = 0.75 mg/L, TCLP
- D009A = concentration-based standard = 0.025 mg/L, TCLP
- D010 = concentration-based standard = 5.7 mg/L, TCLP
- D011 = concentration-based standard = 0.14 mg/L, TCLP
- D018 = concentration-based standard = 10 mg/kg

Non-wastewaters with waste codes D001 through D043 to be land disposed must be treated to meet UTS for any UHC that may be present, as applicable.

**Waste Characterization**
- Process knowledge

**Radiological Characterization**
- Alpha and beta/gamma emitters are present.

**SR-W073, Cadmium-Containing Raschig Rings**
This waste stream has been treated and eliminated.

**SR-W078, LDR Hazardous Waste Awaiting Radiological Screening**
This stream has been eliminated.

**SR-W080, Charleston Naval Shipyard Waste (CN-W001, CN-W004)**
This waste stream has been treated and eliminated.

**SR-W082, Radioactive Chemicals, Metals, and Pesticides (CMP) Soils**
This waste stream has been treated and eliminated.

**SR-W087, Bettis Atomic Power Laboratory Contaminated Oil, (BT-W035 part of BT-W003)**
This waste stream has been treated and eliminated.
CHAPTER 4. MIXED TRANSURANIC WASTE

The current DOE strategy for management of mixed transuranic (MTRU) waste is to maintain the MTRU wastes in safe interim storage; to characterize, certify, process if necessary, and package the wastes to meet the Waste Acceptance Criteria (WAC) of the Waste Isolation Pilot Plant (WIPP); and to permanently dispose of applicable MTRU waste in WIPP.

The National Defense Authorization Act for Federal Fiscal Year 1997, which contained amendments to the 1992 WIPP Land Withdrawal Act, was signed by the President on September 22, 1996. The Secretary of Energy declared WIPP open and ready to receive waste in May 1998. The amendments also exempt DOE from the requirement to obtain a RCRA no-migration determination from EPA. EPA agrees that the no-migration determination is redundant to the more stringent radioactive waste disposal standard, and that the exemption will not jeopardize the environment. WIPP has obtained a RCRA Part B Permit from the State of New Mexico to receive MTRU waste for disposal.

Site-specific information is included in the following section to outline activities being performed at SRS to maintain safe compliant storage, waste characterization activities, and other activities planned to support the ultimate goal of shipment to and disposal at WIPP.

This chapter reviews the project activity schedules that have been planned for the treatment of MTRU waste in accordance with Section 2.2 of this volume. Section 4.1 discusses the site’s MTRU waste management approach and Section 4.2 details the MTRU waste streams that are proposed to be shipped to WIPP for treatment. Refer to Volume 1, Table 1.1, of the STP for the user’s guide. The user’s guide identifies each mixed waste stream, the PO, and identifies the section in which the waste stream is discussed in this STP.

4.1 Site MTRU Waste Management Approach

Transuranic (TRU) waste is defined in DOE Order 435.1 as waste contaminated with alpha-emitting transuranic radionuclides (radionuclides with atomic numbers greater than 92) with half-lives greater than 20 years and radionuclide concentrations greater than 100 nCi/g. TRU waste at SRS that includes hazardous constituents as identified in 40 CFR 261 and SCHWMR R.61-79.261 is managed in accordance with DOE orders and SCHWMR and is referred to as MTRU.

MTRU waste streams are, and have been, generated primarily by Plutonium Separations Facilities and the Analytical Laboratories. Other past generators of significantly smaller volumes include Naval Fuels Facility, the Reactor Facility, the Fuel Fabrication Facility, the Radioactive Liquid Waste Tank Farms, and the Solid Waste Management Facility. SRS has received volumes of MTRU waste from offsite generators, including the Los Alamos National Laboratory, Knolls Atomic Power Laboratory, the DOE Mound Site, and Battelle Columbus Laboratory. This waste has been remediated and repackaged in WIPP-compliant containers.

Due to the variety of container types, MTRU waste is generally described by its container: drums, standard waste boxes (SWBs), and standard large boxes (SLBs).

SRS Solid Waste Management Strategy

The SRS solid waste management strategy supports and is in alignment with the National TRU Program Initiatives. The TRU waste program includes identification, characterization/certification and disposition of TRU waste to WIPP for final disposal. WIPP started accepting DOE-Complex TRU waste in December 1999. Since that time, SRS has shipped a total of approximately 10,700 m³ of TRU waste to WIPP.
Savannah River Site  
Site Treatment Plan, 2016 Update  
November 2016 Volume II  

SRS has made the following shipments of TRU waste to WIPP:

<table>
<thead>
<tr>
<th>Term</th>
<th>No. of Shipments</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY01</td>
<td>7</td>
</tr>
<tr>
<td>FY02</td>
<td>16</td>
</tr>
<tr>
<td>FY03</td>
<td>185</td>
</tr>
<tr>
<td>FY04</td>
<td>239</td>
</tr>
<tr>
<td>FY05</td>
<td>125</td>
</tr>
<tr>
<td>FY06</td>
<td>115</td>
</tr>
<tr>
<td>FY07</td>
<td>122</td>
</tr>
<tr>
<td>FY08</td>
<td>123</td>
</tr>
<tr>
<td>FY09</td>
<td>115</td>
</tr>
<tr>
<td>FY10</td>
<td>81</td>
</tr>
<tr>
<td>FY11</td>
<td>123</td>
</tr>
<tr>
<td>FY12</td>
<td>164</td>
</tr>
<tr>
<td>FY13</td>
<td>179</td>
</tr>
<tr>
<td>FY14*</td>
<td>60</td>
</tr>
<tr>
<td>FY15*</td>
<td>0</td>
</tr>
<tr>
<td>FY16*</td>
<td>0</td>
</tr>
</tbody>
</table>

*WIPP stopped accepting waste in 2014 and has not recommenced waste acceptance at this time.

### Plan Assumptions

The MTRU waste plan is based on the following key assumptions:

- Funding is available to support the plan.
- WIPP does not close prior to the final disposition of waste.

### Plan Activities

The SRS solid waste management strategy addresses the following activities and provides a path forward for resolution:

- Interim Storage
- TRU Waste Certification
- Outyear Schedule

### Interim Storage

SRS continues to safely store MTRU waste containers in preparation for WIPP characterization and disposal.

### MTRU Waste Certification/Characterization

Activities in the MTRU waste area involve certification of containers to meet the WIPP WAC. The WIPP certification program requires characterization of the waste matrix through radionuclide assay, radiography, and headspace gas sampling for all waste containers.

SRS utilizes the Central Characterization Program (CCP) for the inspection/characterization and shipment of TRU waste from SRS to WIPP. The CCP mobilized in 2QFY01 and began characterization operations in 4QFY01. The CCP provides this characterization and shipping capability through the use of three mobile systems. The first is a real time radiography system that is used to x-ray TRU drums to determine drum contents and waste attributes. Following x-ray, the drums are processed through a non-destructive assay (NDA) system. NDA provides the radiological makeup of the waste. After assay, the drum’s headspace gas is sampled and analyzed. This system assures a safe transport to WIPP. The drums are then moved to storage waiting for shipment. In the loading area, the drums are shrink wrapped configured, and loaded into TRUPACT-II containers for transport to WIPP for disposal. The loading area is currently set-up on TRU waste storage Pad #3.

### 4.2 MTRU Waste Streams Proposed for Shipment to WIPP

This section discusses the waste streams that are classified as MTRU. In the previous revision of the STP (2011 Update), the waste streams were divided into waste groupings to support planning for future processing to meet the requirements of the WIPP WAC. All MTRU waste streams have been re-packaged in a WIPP-compliant container, characterized, and certified for shipment to WIPP. The MTRU waste streams currently proposed for shipment to WIPP include:
SR-W009, Silver Coated Packing Material

SR-W027, CH Mixed TRU

SR-W089, CH Mixed TRU from Mound for Shipment to WIPP

SR-W092, CH Mixed TRU from Battelle Site for Shipment to WIPP

Volume data for these waste streams is provided in Chapter 11.

The following waste streams have been reclassified and consolidated with other waste streams, re-characterized and eliminated, treated and eliminated and are not further discussed in this chapter:

SR-W006, CH Mixed TRU/Liquids (Re-characterized and Eliminated)

SR-W025, Solvent/TRU Job Control Waste <100 nCi/g (Consolidated with SR-W091)

SR-W026, CH Mixed TRU/Thirds (Consolidated with SR-W027)

SR-W033, Thirds/TRU Job Control Waste <100 nCi/g (Consolidated with SR-W091)

SR-W053, Rocky Flats Ash (Treated and Eliminated)

General Information

SR-W009, Silver Coated Packing Material

This material is ceramic packing material coated with silver nitrate (silver-coated Berl saddles) that was used in the offgas systems in the F-Canyon and H-Canyon dissolver operations to bond radioactive iodine-129 and iodine-131 emissions to the packing material as silver iodide. Spent packing material is changed out from the process when pluggage occurs or when the iodine level measured at the stack elevates such that levels start to approach the emission limit.

SR-W027, CH Mixed TRU

This waste stream is a job control waste and is composed primarily of organic solids such as booties, lab coats, floor sweepings, rags, labware, solvent contaminated rags and other job control waste generated primarily through separation activities. A small percentage (<20%) of this waste stream includes sludges, piping, resins, filters, and miscellaneous waste. The sludges are caustic and acidic evaporated residues that have been neutralized and absorbed.

SR-W089, CH Mixed TRU from Mound for Shipment to WIPP

This waste stream is a defense-related job control and D&D waste and is composed of organic solids such as booties, lab coats, floor sweepings, rags, labware, soils, and other job control waste along with gloveboxes, fume hoods, and general D&D debris. A small percentage (<5%) of this waste stream includes sludges, resins, filters, and miscellaneous waste.

SR-W092, CH and RH Mixed TRU from Battelle Site for Shipment to WIPP

The CH-TRU and RH-TRU waste was generated from D&D of the Battelle JN-1 Plutonium Facility in Columbus, Ohio between 1978 and 1982. This waste stream is a defense-related job control and D&D waste and is composed of heterogeneous debris which consists of a variable combination of organic & inorganic compositions. Waste items include rubber gloves, hoses, paper, combustible trash, wood, plastic bags, plastic containers, crushed metal cans, aerosol cans, scrap metal, tubing, piping, paint chips, filters, filter housings, hand tools, nuts, bolts, nails, plexiglass, glass jars, glass, crucibles, solidified liquids, soil, or dirt, equipment such as vacuum cleaners.
CHAPTER 5. HIGH-LEVEL RADIOACTIVE WASTE (HLW)

The following waste streams are in the mixed HLW category. This chapter discusses the radioactive liquid waste streams and the available treatment. Refer to Table 1.1, Chapter 1, Volume I of the STP for the user’s guide. The user’s guide identifies each mixed waste stream, the PO, and the section in which the waste stream is discussed in Volumes I and II of the STP.

5.1 High-Level Waste Treated Onsite in Existing Facilities

Vitrification in the DWPF for high-level liquid waste portions and stabilization by solidification in the Saltstone Production Facility for the low-level liquid portions are the PO for certain mixed waste streams, including, but not limited to, the following:

SR-W016, 221-F Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste

SR-W017, H-Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste

General Information

SR-W016, 221-F Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste

This waste is an aqueous liquid containing fission products generated from deactivation of the 221-F Canyon facility. The extraction of plutonium from reactor target assemblies and dissolution of spent fuel rods was suspended in FY02. The last transfer of material from F-Canyon to the F-Area Tank Farm occurred on August 26, 2005.

Volume
• Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
• Aqueous liquid

Waste Code
• D002A (corrosive waste managed as wastewater)
• D005 (TCLP Ba)
• D007 (TCLP Cr)
• D008A (TCLP Pb)
• D009A (TCLP Hg)
• D011 (TCLP Ag)
• Non-wastewater slurry

Land Disposal Restriction Treatment Standard
• All waste codes = specified technology = Vitrification (HLVIT) / STABL

Waste Characterization
• Sampling and analysis are used to characterize the waste stream.
• Confidence level is high based on availability of analysis, with the exceptions of TCLP.

Radiological Characterization
• Total activity for radiological characterization is ~7.1 Ci/gal.
• Alpha emitters (U-235, U-238, Pu-238, Pu-239, Pu-240, Pu-241, Am-241, Cm-241, and others) are present.
• Beta/gamma emitters (Sr-90, Ru-106, Zr-95, Nb-95, Rh-106, Cs-137, Ce-144, Pr-144, Pm,-147, H-3, and others) are present.
• Waste is RH.
• High-level radioactive waste
SR-W017, H-Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste

This waste stream is an aqueous liquid containing mixed fission products from the H-Canyon facility in support of the modified PUREX process. The stream also contains decontamination solution from maintenance activities in the H-Area Tank Farm. H-Canyon waste materials are generated from the processing of nuclear materials. This Waste stream includes sample returns to H-Canyon from SRNL.

Volume
- Volume data for this waste stream can be found in Chapter 11.

Waste Stream Composition
- Aqueous liquid

Waste Code
- D002A (corrosive waste managed as wastewater)
- D005 (TCLP Ba)
- D007 (TCLP Cr)
- D008A (TCLP Pb)
- D009A (TCLP Hg)
- D011 (TCLP Ag)
- Non-wastewater slurry

Land Disposal Restriction Treatment Standard
- All waste codes = specified technology = HLVIT / STABL

Waste Characterization
- Sampling and analysis are used to characterize the waste stream.
- Confidence level is high based on availability of analysis, with the exceptions of TCLP.

Radiological Characterization
- Total activity for radiological characterization is ~9.7 Ci/gal.
- Alpha emitters (U-235, U-238, Pu-239, Pu-240, Pu-241, Am-241, and Cm-241) are present.
- Beta/gamma emitters (Sr-90, Ru-106, Zr-95, Nb-95, Rh-106, Cs-137, Ce-144, Pr-144, Pm-147, and H-3) are present.
- Waste is RH.
- High-level radioactive waste

The following information applies to all the waste streams in this waste group.

Technology and Capacity Needs

Vitrification is the specified technology for all of the waste codes denoting the high-level liquid portion of radioactive wastes SR-W016 and SR-W017. These wastes primarily are generated from the extraction of plutonium and the recovery of enriched uranium. DWPF has been designed with capacity to treat the identified existing and future liquid high-level radioactive waste streams at SRS. Stabilization by solidification has been identified as the specified technology for treatment of the low-level liquid radioactive waste portion of radioactive waste streams SR-W016 and SR-W017 with subsequent disposal at the Saltstone Disposal Facility.

The radioactive liquid waste tanks in F-Area and H-Area currently store (as listed in Table 11.2) salt solution, saltcake or precipitate, and sludge generated mostly from the dissolution of target and fuel assemblies irradiated in the SRS reactors. It is expected that an additional volume of liquid waste from H-Canyon will be generated at SRS until approximately 2024. The treatment schedule prioritizes the removal of waste from tanks that are at most risk. These are the single-walled tanks and tanks that have only a partial secondary containment structure.
Treatment Option Information

A general diagram of the radioactive liquid waste treatment process at SRS is shown below.

The F- and H-Area Tank Farms contain waste tanks and evaporator systems to manage and treat the liquid radioactive wastewaters generated by SRS operations. These units function to receive fresh wastes, allow integrated processing of stored waste, provide preliminary clarification by gravity settling, and concentrate dissolved salts by evaporation. The low activity aqueous portion (overheads from the evaporator systems) is transferred to F/H ETP for treatment prior to discharge to Upper Three Runs or is returned to the Tank Farm for further processing.
H-Area Tank Farm contains process units to treat the accumulated sludges and salts. The sludge processing operation is designed to prepare the sludges for transfer to the DWPF Vitrification Facility for further treatment. H-Area Tank Farm also directly receives a LLW stream (SR-W077) from the H-Canyon Facility, which is acceptable for onsite disposal. It is sent to the Saltstone Production Facility where it is treated and then disposed of in the Saltstone Disposal Facility.

The processing flow plan for treatment of the waste is shown below.

Salt processing of a limited amount of the waste originating in Tank 41H using the deliquification, dissolution and adjustment (DDA) process was completed in 2011 and notification of completion by letter dated May 13, 2011, was provided to the South Carolina Department of Health and Environmental Control. The decontaminated salt solution (DSS) stream resulting from this processing was sent to the Saltstone Production Facility where it was treated and disposed of in the Saltstone Disposal Facility. Other Interim Salt Processing facilities, i.e., the Actinide Removal Process (ARP) and the Modular Caustic Side Solvent Extraction Unit (MCU), continue to be operational. DSS from ARP/MCU is being sent to the Saltstone Facilities and will be solidified in saltstone disposal units in Z-Area. The high curie cesium-laden strip effluent stream and HLW solids are being sent to DWPF. The high-capacity Salt Waste Processing Facility (SWPF) is under construction.

Vitrification has been identified by EPA as the specified technology for treatment of the high-level liquid portion of radioactive waste streams SR-W016 and SR-W017. Borosilicate glass has been determined to be the best stabilization matrix. Stabilization by solidification has been identified as the specified technology for the treatment of the low-level liquid radioactive waste portion of radioactive waste streams SR-W016 and SR-W017 with subsequent disposal in the Saltstone Disposal Facility.
TCLP tests of simulated HLW were done on both expected metal levels of wastes to be processed in DWPF and at three times the level of metals expected. These tests indicated that the waste form produced at DWPF will be below the hazardous waste characteristic limits for toxicity (reference WSRC-IM-91-116-13, Revision 0, and WSRC-TR-94-025, Revision 0).

Facility Status

The DWPF, ARP/MCU, and Saltstone Production and Disposal Facilities are all operational. DWPF is currently in coupled operation receiving both sludge and salt wastes. The high-capacity Salt Waste Processing Facility is conducting facility start-up testing and additional saltstone disposal units are under construction.

Regulatory Status

These Liquid Waste facilities are operated under a series of industrial wastewater treatment facility construction and operating permits and a Part 70 (Title V) Air Quality Permit. Saltstone disposal is accomplished in accordance with a Class 3 landfill permit.

Treatment Option Status and Uncertainties

DWPF continues to vitrify the high-level liquid portion of radioactive waste streams SR-W016 and SR-W017. The waste is then poured into stainless steel canisters, which are placed in interim storage at SRS awaiting final disposition. The Saltstone Production Facility continues to receive the low-level liquid portion of the radioactive waste stream SR-W016 and SR-W017 where it is mixed with dry cementitious materials to form a grout mixture. The grout is then pumped to the saltstone disposal units in the Saltstone Disposal Facility where it solidifies into saltstone.

Budget Status

Progress toward the ultimate goal of immobilizing all the HLW at SRS is highly dependent on available funding. With a reduction in funding, activities that ensure safe storage of waste claim first priority. Funding above that required for safe storage enables risk reduction activities, i.e., waste removal, treatment (sludge and salt processing) - including immobilization - and tank closure to continue.

DOE shall use its best efforts, in accordance with the DOE Federal appropriations process, to request timely funding to meet its obligations under this STP, including requests that support regulatory commitments as defined in Appendix L of the SRS FFA and Statement of Resolution of Dispute Concerning Extension of Closure Dates for Savannah River Site High-Level Radioactive Waste Tanks.

This STP assumes full funding of the estimated costs to accomplish the required project and operations activities.

Uncertainty Issues

Currently, both processing and storage space within the liquid radioactive waste storage tanks is critically short. To maintain the ability to prepare sludge for continued DWPF operations, and to provide the necessary tank space for salt waste preparation and treatment, several tank space initiatives are being undertaken. Included among these initiatives are the ongoing ARP/MCU processes and operations. In addition, development of the next generation solvent for use at the Salt Waste Processing Facility and completion of the Tank Closure Cesium Removal Unit to provide additional salt processing capability are planned by DOE. These initiatives along with completion of facility startup testing of the Salt Waste Processing Facility are needed to minimize impacts to DOE’s programmatic objectives.
CHAPTER 6. FUTURE GENERATION OF MIXED WASTE STREAMS

This chapter addresses waste streams generated by Area Completion Projects (ACP), which is a part of the EC&ACP organization, for which specific waste characterization data is needed before an in-depth options analysis can be performed. The section explains the types of waste to be generated in future activities at SRS.

6.1 Soil and Groundwater Closures Waste

The SRS ACP mission is to address the cleanup of inactive waste sites and the D&D of facilities across SRS. SRS has implemented a comprehensive environmental program to maintain compliance with environmental regulations and to mitigate impacts to the environment. ACP activities at SRS are governed by the FFA. The FFA is a tri-party agreement among the DOE, EPA, and SCDHEC, which became effective on August 16, 1993. The FFA requires that SRS set work priorities on an annual basis with schedules and deadlines for cleanup actions. SRS must also submit to EPA and SCDHEC long-term projections including projected deliverable dates for work activities to be conducted over the next two fiscal years and ROD dates for the third fiscal year and beyond.

Other ACP activities are defined by RCRA permits, closure plans, groundwater corrective action requirements, settlement agreements, and consent decrees. Known mixed wastes for which a cleanup decision is scheduled within the next five years and for which treatment in accordance with the RCRA LDRs may be required are discussed for general planning purposes. Due to the uncertainty of how these environmental restoration wastes ultimately will be managed, their inclusion into the STP (and therefore the specification of how and when they will be treated) will not occur until a final cleanup decision (under CERCLA or RCRA) has been reached.

If ACP mixed waste is removed from an area of contamination and is not otherwise subject to a RCRA/CERCLA order or agreement or specifically excluded from the STP, the following actions will be taken to include these waste streams in the STP: 1) review characterization data and obtain more information if necessary to proceed with the PO selection process; 2) determine if the new waste would fit into any existing waste stream category by reviewing the waste opposite the characterization information and the PO for the existing waste stream; 3) if able to fit into an existing waste stream, modify the MWIR and the STP at the next annual update of the MWIR and STP and proceed with treatment on the same schedule as has been identified for the existing waste stream; 4) if unable to fit this new waste stream into an existing waste category, create a new waste stream and notify SCDHEC within 30 days of discovery as required in the Consent Order, 95-22-HW; 5) identify a PO (using the same or similar process as was used to develop other POs) and schedule within one year of the notification date.

6.2 Deactivation and Demolition Waste

At the end of a facility’s lifecycle when it or its mission is no longer needed by DOE, the facility undergoes a process referred to as “disposition.” This is a series of stages where the facility is brought from its condition and status at the time operations end to a final end state that involves decommissioning or conversion for another use. As additional specific projects are funded, walkdowns and initial characterization will be done to generate the best estimated volume and nature of wastes that could be generated. Consequently, D&D waste will be generated as a result of the following: surveillance and maintenance activities, hazard mitigation activities, deactivation activities, and decommissioning activities. It is possible that a new mixed waste stream will be identified during these activities. If so, SRS will follow the requirements of new mixed waste generation found in Consent Order 95-22-HW.

6.3 Additional Waste Streams

Other Mixed Waste Generated at SRS

A verbal agreement has been reached with SCDHEC and SRS that waste in SAAs that is treated in a 90-day staging area or by elementary neutralization will not be included in the STP or the MWIR. Exceptions to this agreement are if the waste is continually generated and treated (e.g., SR-W050 supporting ITP process sampling activity) or if the waste is a large quantity (e.g., SR-W072 debris treatment by HLW Operations). These cases are evaluated on a case-by-case basis.
CHAPTER 7. RESERVED

THE 2006 VERSION OF CHAPTER 7 HAS BEEN ARCHIVED AND IS LOCATED IN THE 2006 UPDATE OF THE STP
CHAPTER 8. DISPOSAL IN SUPPORT OF THE STP DISCUSSIONS
THE 2006 VERSION OF CHAPTER 8 HAS BEEN
ARCHIVED AND IS LOCATED IN THE 2006 UPDATE OF
THE STP
CHAPTER 9. TREATMENT FACILITIES AND TREATMENT TECHNOLOGIES
THE 2006 VERSION OF CHAPTER 9 HAS BEEN ARCHIVED AND IS LOCATED IN THE 2006 UPDATE OF THE STP
CHAPTER 10. OFFSITE WASTE STREAMS FOR WHICH SRS IS THE PREFERRED OPTION

THE 2006 VERSION OF CHAPTER 10 HAS BEEN ARCHIVED AND IS LOCATED IN THE 2006 UPDATE OF THE STP
CHAPTER 11. VOLUME SUMMARY INFORMATION

This chapter includes volume and treatment residue summaries of legacy wastes for the waste streams listed in the STP. Table 11.1 lists the volume summary of each waste stream by its unique waste stream number. Table 11.2 lists the volume summary for each waste stream by treatment facility. Volume summaries include inventories as of July 1, 2016. Table 11.3 shows the volume and status of mixed treatment residues for those waste streams that have been treated and the residues must continue to be managed as a mixed waste.

<table>
<thead>
<tr>
<th>Waste Stream No.</th>
<th>Waste Stream Name</th>
<th>Preferred Option (PO)</th>
<th>Current Cumulative Inventory through 07/01/16 (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-W001</td>
<td>Rad-Contaminated Solvents</td>
<td>Combustion at Commercial Facility</td>
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</tr>
<tr>
<td>SR-W002</td>
<td>Rad-Contaminated Chlorofluorocarbons</td>
<td>Consolidated with SR-W001</td>
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</tr>
<tr>
<td>SR-W003</td>
<td>Solvent Contaminated Debris (LLW)</td>
<td>Consolidated with SR-W062</td>
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<tr>
<td>SR-W004</td>
<td>M-Area Plating Line Sludge from Supernate Treatment</td>
<td>Consolidated with SR-W037</td>
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</tr>
<tr>
<td>SR-W005</td>
<td>Mark 15 Filtercake</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W006</td>
<td>CH Mixed TRU/Liquids</td>
<td>Waste Stream Re-characterized and Eliminated</td>
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</tr>
<tr>
<td>SR-W007</td>
<td>SRNL Sample Material</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W008</td>
<td>Separations Area Sample Receipts from SRNL</td>
<td>Consolidated with SR-W017</td>
<td>N/A</td>
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<tr>
<td>SR-W009</td>
<td>Silver-Coated Packing Material</td>
<td>Characterization at SRS – WIPP Disposal</td>
<td>6.9</td>
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<tr>
<td>SR-W010</td>
<td>Scintillation Solution</td>
<td>Consolidated with SR-W001</td>
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<tr>
<td>SR-W011</td>
<td>Cadmium-Coated High Efficiency Particulate Air (HEPA) Filters</td>
<td>Recycled under Scrap Metal Exclusion and Waste Stream Eliminated</td>
<td>N/A</td>
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<tr>
<td>SR-W012</td>
<td>Toxic Characteristic Solids</td>
<td>Consolidated with SR-W062 &amp; W088</td>
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<tr>
<td>SR-W013</td>
<td>LLW Lead – To Be Decontaminated Onsite</td>
<td>Reclassified as Material in Use – Waste Stream Eliminated</td>
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<td>SR-W014</td>
<td>Elemental (Liquid) Mercury – Sitewide</td>
<td>Amalgamation – Offsite Commercial Vendor</td>
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<tr>
<td>SR-W015</td>
<td>Tritium-Contaminated Equipment</td>
<td>Macrocapsulation in Stabilization / Solidification Container as 90-Day Generator</td>
<td>40.9</td>
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<tr>
<td>SR-W016</td>
<td>221-F Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste</td>
<td>Vitrification at DWPF / Solidification in Saltstone Facilities</td>
<td>54,803</td>
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<tr>
<td>SR-W017</td>
<td>H-Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste</td>
<td>Vitrification at DWPF / Solidification in Saltstone Facilities</td>
<td>79,796</td>
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<td>Waste Stream No.</td>
<td>Waste Stream Name</td>
<td>Preferred Option (PO)</td>
<td>Current Cumulative Inventory through 07/01/16 (m³)</td>
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<tr>
<td>------------------</td>
<td>-------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>SR-W018</td>
<td>Listed Incineral Solids</td>
<td>Combustion at Commercial Facility or Macroencapsulation or Stabilization at Commercial Facility</td>
<td>0.0</td>
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<tr>
<td>SR-W019</td>
<td>244-H RBOF High Activity Liquid Waste</td>
<td>Consolidated with SR-W017</td>
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<tr>
<td>SR-W020</td>
<td>Salt Processing Filters</td>
<td>Future Generation – Treatment To Be Determined</td>
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</tr>
<tr>
<td>SR-W021</td>
<td>Poisoned Catalyst Material</td>
<td>Waste Stream Eliminated</td>
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</tr>
<tr>
<td>SR-W022</td>
<td>DWPF Benzene</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
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<tr>
<td>SR-W023</td>
<td>Cadmium Safety/Control Rods</td>
<td>Macroencapsulation in a Cask as a 90-day Generator</td>
<td>3.4</td>
</tr>
<tr>
<td>SR-W024</td>
<td>Mercury/Tritium Gold Traps</td>
<td>Macroencapsulation in a Cask</td>
<td>3.0</td>
</tr>
<tr>
<td>SR-W025</td>
<td>Solvent/TRU Job Control Waste &lt;100 nCi/g</td>
<td>Consolidated with SR-W091</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W026</td>
<td>CH Mixed TRU/Thirds</td>
<td>Consolidated with SR-W027</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W027</td>
<td>CH Mixed TRU</td>
<td>Characterization at SRS – WIPP Disposal</td>
<td>437</td>
</tr>
<tr>
<td>SR-W028</td>
<td>Mark 15 Filter Paper</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W029</td>
<td>M-Area Sludge Treatability Samples</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W030</td>
<td>Spent Methanol Solution</td>
<td>Consolidated with SR-W001</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W031</td>
<td>Uranium/Cobaltium Solution</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W032A</td>
<td>Mercury-Contaminated Heavy Water</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W032B</td>
<td>Mercury-Contaminated Heavy Water Residues</td>
<td>Solidification in Container as a 90-day Generator – Waste Stream Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W033</td>
<td>Thirds/TRU Job Control Waste &lt;100 nCi/g</td>
<td>Consolidated with SR-W091</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W034</td>
<td>Calcium Metal</td>
<td>Consolidated with SR-W081</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W035</td>
<td>Mixed Waste Oil – Sitewide</td>
<td>Consolidated with SR-W001</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W036</td>
<td>Tritiated Oil with Mercury</td>
<td>Treatment by Aging Followed by Combustion</td>
<td>12.7</td>
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<tr>
<td>SR-W037</td>
<td>M-Area Plating Line Sludges</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W038</td>
<td>Plating Line Sump Material</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W039</td>
<td>Nickel Plating Line Solution</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W040</td>
<td>Listed Stabilized Sludge/Listed LDR-Compliant Debris</td>
<td>Waste Stream Treated in Compliance with LDR</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W041</td>
<td>Aqueous Mercury and Lead</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W042</td>
<td>Paints and Thinners</td>
<td>Consolidated with SR-W001</td>
<td>N/A</td>
</tr>
<tr>
<td>Waste Stream No.</td>
<td>Waste Stream Name</td>
<td>Preferred Option (PO)</td>
<td>Current Cumulative Inventory through 07/01/16 (m³)</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>SR-W043</td>
<td>Lab Waste w/Tetraphenyl Borate</td>
<td>Consolidated with SR-W012</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W044</td>
<td>Tri-Butyl-Phosphate &amp; n-Paraffin – TRU</td>
<td>Consolidated with SR-W045</td>
<td>N/A</td>
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<tr>
<td>SR-W045A</td>
<td>PUREX Aqueous Waste</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W045B</td>
<td>PUREX Organic Waste</td>
<td>Waste Stream Renamed SR-W045</td>
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<tr>
<td>SR-W045</td>
<td>PUREX Organic Waste</td>
<td>Preferred Treatment to Be Determined</td>
<td>0.7</td>
</tr>
<tr>
<td>SR-W046</td>
<td>Consolidated Incineration Facility Ash</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W047</td>
<td>Consolidated Incineration Facility Blowdown</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W048</td>
<td>Soils from Spill Remediation</td>
<td>Stabilization by Commercial Vendor</td>
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<tr>
<td>SR-W049</td>
<td>Tank E-3-1 Clean Out Material</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
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<tr>
<td>SR-W050</td>
<td>HLW Processing Demonstrations</td>
<td>Treatment by SRNL as a 90-Day Generator</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W051</td>
<td>Spent Filter Cartridges and Carbon Filter Media</td>
<td>Consolidated with SR-W062</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W052</td>
<td>Cadmium-Contaminated Glovebox Section</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W053</td>
<td>Rocky Flats Ash</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W054</td>
<td>Enriched Uranium Contaminated with Lead</td>
<td>Consolidated with SR-W037</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W055</td>
<td>Job Control Waste Containing Solvent Contaminated Wipes</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W056</td>
<td>Job Control Waste with Enriched Uranium and Solvent-Contaminated Wipes</td>
<td>Waste Stream Re-characterized and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W057</td>
<td>D-Tested Neutron Generators</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W058</td>
<td>Mixed Sludge Waste with Mercury from DWPF Treatability Studies</td>
<td>Consolidated with SR-W050</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W059</td>
<td>Tetrabutyl Titanate (TBT)</td>
<td>Consolidated with SR-W001</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W060</td>
<td>Tritiated Water with Mercury</td>
<td>Waste Stream Treated (Offsite) and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W061</td>
<td>DWPF Mercury</td>
<td>Consolidated with SR-W068</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W062</td>
<td>Normal Low-Level Contaminated Debris</td>
<td>Macroencapsulation or Stabilization by a Commercial Vendor and/or Alternative Debris Treatment at an Offsite Facility</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W063</td>
<td>Macroencapsulated Low-Level Waste (TC)</td>
<td>Consolidated with SR-W040</td>
<td>N/A</td>
</tr>
<tr>
<td>Waste Stream No.</td>
<td>Waste Stream Name</td>
<td>Preferred Option (PO)</td>
<td>Current Cumulative Inventory through 07/01/16 (m³)</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------</td>
<td>-----------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>SR-W064</td>
<td>IDW and Remediation Soils/Sludges/Slurries</td>
<td>Consolidated with SR-W088</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W065</td>
<td>IDW Monitoring Well Purge/Development Water</td>
<td>Consolidated with SR-W071 and W077</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W066</td>
<td>IDW and Remediation Debris (Parts)</td>
<td>Consolidated with SR-W062</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W067</td>
<td>IDW and Remediation PPE Waste</td>
<td>Consolidated with SR-W062</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W068</td>
<td>Elemental (Liquid) Mercury – Sitewide</td>
<td>Consolidated with SR-W014</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W069</td>
<td>LLW Lead – To Be Macrocapsulated Offsite</td>
<td>Macrocapsulation by a Vendor at an Offsite Facility</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W070</td>
<td>Mixed Waste from Laboratory Samples</td>
<td>Consolidated aqueous with SR-W071 or SR-W077 and organic with SR-W001</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W071</td>
<td>Wastewater Suitable for Thermal Treatment or Stabilization</td>
<td>Thermal Treatment or Stabilization at Commercial Vendor Facility</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W072</td>
<td>Supernate or Sludge Contaminated Debris from High-Level Waste (HLW) Operations</td>
<td>Extraction or Immobilization Alternative Debris Technologies as a 90-Day Generator</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W073</td>
<td>Cadmium-Containing Raschig Rings</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W077</td>
<td>Aqueous Characteristic Wastewater</td>
<td>Ion Exchange, Filtration, and/or Stabilization at F/H ETP, Saltstone, or Commercial Vendor</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W078</td>
<td>LDR Hazardous Waste Awaiting Radiological Screening</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W079</td>
<td>PCB Mixed Waste</td>
<td>Combustion at TSCA Incinerator or Vendor Alternate Debris Technology Treatment</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W080 (CN-W001, CN-W004)</td>
<td>Charleston Naval Shipyard Waste</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W081</td>
<td>Reactive/Ignitable Mixed Waste</td>
<td>Deactivation Followed by Thermal Treatment or Stabilization or Combustion at Commercial Vendor</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W082</td>
<td>Radioactive CMP Soil</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W083</td>
<td>Mercury- and Chromium-Contaminated Residues</td>
<td>Waste Stream Re-characterized and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W084</td>
<td>Remediation Waste Soils that Meet LDR</td>
<td>Consolidated with SR-W040</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W085</td>
<td>Rocky Flats Plutonium Fluoride Residues</td>
<td>Waste Stream Eliminated</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Table 11.1 Volume Summary by Waste Stream Number

<table>
<thead>
<tr>
<th>Waste Stream No.</th>
<th>Waste Stream Name</th>
<th>Preferred Option (PO)</th>
<th>Current Cumulative Inventory through 07/01/16 (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-W086</td>
<td>Characteristically Hazardous Non-Incinerable Solids</td>
<td>Amalgamation at Commercial Vendor</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W087</td>
<td>Bettis Atomic Power Laboratory Contaminated Oil Waste Stream</td>
<td>Waste Stream Treated and Eliminated</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W088*</td>
<td>Sludges and Non-Debris Solids</td>
<td>Stabilization by Commercial Vendor</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W089</td>
<td>TRU Mixed Waste From Mound Site</td>
<td>Characterization at SRS – WIPP Disposal</td>
<td>5.6</td>
</tr>
<tr>
<td>SR-W090</td>
<td>Elemental Mercury – High Rad</td>
<td>Treatment by Aging Followed by Mercury Treatment</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W091</td>
<td>Contaminated Debris (High Rad)</td>
<td>Macroencapsulation and Disposal at NNSS</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W092*</td>
<td>TRU Mixed Waste from Battelle Columbus Site</td>
<td>Characterization at SRS – WIPP Disposal</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td></td>
<td><strong>135,113.3</strong></td>
</tr>
</tbody>
</table>

**TABLE 11.1 NOTES:** The volumes may not represent actual volumes of mixed waste stored at SRS as of the date of the update. The volume of wastes stored in tanks or certain special containers marked with an asterisk (*) is reported as net. Volume of wastes stored in other containers such as boxes or drums is reported as gross. Volumes have been updated from those volumes reported in the 2010 STP update due to waste treatment progress, waste generation, changes in volume of waste streams based on further characterization, reassignment of some stream volumes to different stream numbers, and inventory adjustments.

Waste streams with ‘0.0’ volumes have been treated or otherwise managed in accordance with RCRA regulations or are future waste streams.

Waste streams with ‘N/A’ in the volume columns have had their waste volume incorporated into other waste streams or, if they have been re-characterized, are no longer a part of the STP. Additionally, these waste streams may have been treated and the waste stream eliminated because not future waste is expected to be generated in that waste stream.
### Table 11.2 Volume Summary by Treatment Facility

<table>
<thead>
<tr>
<th>Waste Stream No.</th>
<th>Waste Stream Name</th>
<th>Current Cumulative Inventory through 7/01/16 (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Vendor Treatment – Thermal Treatment</td>
<td>SR-W001 Rad-Contaminated Solvents</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>SR-W018 Listed Incinerable Solids</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>SR-W071 Wastewater Suitable for Thermal Treatment or Stabilization</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>SR-W081 Reactive/Ignitable Waste</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>0.0</strong></td>
</tr>
<tr>
<td>Effluent Treatment Project – Wastewater Treatment</td>
<td>SR-W077 Aqueous Characteristic Wastewater</td>
<td>0.0</td>
</tr>
<tr>
<td>Liquid Waste Operations</td>
<td>SR-W020 Salt Processing Filters</td>
<td>0.0</td>
</tr>
<tr>
<td>Defense Waste Processing Facility / Saltstone Facilities</td>
<td>SR-W016 221-F Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste</td>
<td>54,803</td>
</tr>
<tr>
<td></td>
<td>SR-W017 H-Canyon High-Level Radioactive Liquid Waste / Low-Level Radioactive Liquid Waste</td>
<td>79,796</td>
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<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>134,599</strong></td>
</tr>
<tr>
<td>Meet Treatment Standards</td>
<td>SR-W024 Tritium Gold Traps</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>SR-W040 Stabilized Sludge/LDR-Compliant Debris</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>SR-W050 HLW Processing Demonstrations</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>3.0</strong></td>
</tr>
<tr>
<td>Macroencapsulation as a 90-Day Generator</td>
<td>SR-W015 Tritium-Contaminated Equipment</td>
<td>40.9</td>
</tr>
<tr>
<td></td>
<td>SR-W023 Cadmium Safety/Control Rods</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>SR-W072 Supernate or Sludge Contaminated Debris from HLW Operations</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>44.3</strong></td>
</tr>
<tr>
<td>SRS – Macroencapsulation</td>
<td>SR-W091 Contaminated Debris – High Rad</td>
<td>0.0</td>
</tr>
<tr>
<td>Treatment by Aging Followed by Thermal Treatment and/or Hg Treatment</td>
<td>SR-W036 Tritiated Oil with Mercury</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>SR-W090 Elemental Mercury – High Rad</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>12.7</strong></td>
</tr>
</tbody>
</table>
### Table 11.2 Volume Summary by Treatment Facility

<table>
<thead>
<tr>
<th>Waste Stream No.</th>
<th>Waste Stream Name</th>
<th>Current Cumulative Inventory through 7/01/16 (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Offsite Vendor Facility – Macroencapsulation</strong></td>
<td></td>
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</tr>
<tr>
<td>SR-W062</td>
<td>Low-Level Contaminated Debris</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W069</td>
<td>LLW Lead – To Be Macroencapsulated Offsite</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Offsite Vendor Stabilization</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SR-W048</td>
<td>Soils from Spill Remediation</td>
<td>0.0</td>
</tr>
<tr>
<td>SR-W088</td>
<td>Sludges and Non-Debris Solids</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Offsite Vendor Facility – Amalgamation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SR-W014</td>
<td>Elemental (Liquid) Mercury – Sitewide</td>
<td>0.1</td>
</tr>
<tr>
<td>SR-W086</td>
<td>Characteristically Hazardous Non-Incinerable Solids</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Offsite DOE – Combust in a TSCA Incinerator</strong></td>
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<tr>
<td>SR-W079</td>
<td>PCB Mixed Waste</td>
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</tr>
<tr>
<td><strong>Preferred Treatment to Be Determined</strong></td>
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<td></td>
</tr>
<tr>
<td>SR-W045</td>
<td>PUREX Organic Waste</td>
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</tr>
<tr>
<td><strong>TRU Waste Streams for Shipment to WIPP</strong></td>
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<td></td>
</tr>
<tr>
<td>SR-W009</td>
<td>Silver-Coated Packing Material</td>
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</tr>
<tr>
<td>SR-W027</td>
<td>CH Mixed TRU</td>
<td>437</td>
</tr>
<tr>
<td>SR-W089</td>
<td>TRU Waste From Mound</td>
<td>5.6</td>
</tr>
<tr>
<td>SR-W092</td>
<td>TRU Mixed Waste from Battelle Columbus</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>453.5</td>
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<tr>
<td><strong>Waste Streams Consolidated</strong></td>
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<td>SR-W002</td>
<td>Rad-Contaminated Chlorofluorocarbons</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W003</td>
<td>Solvent Contaminated Debris (LLW)</td>
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<td>SR-W004</td>
<td>M-Area Plating Line Sludge from Supernate Treatment</td>
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</tr>
<tr>
<td>SR-W008</td>
<td>Separations Area Sample Receipts from SRNL</td>
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</tr>
<tr>
<td>SR-W010</td>
<td>Scintillation Solutions</td>
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</tr>
<tr>
<td>SR-W012</td>
<td>Toxic Characteristic Solids</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W019</td>
<td>244-H RBOF High Activity Liquid Waste</td>
<td>N/A</td>
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<td>SR-W025</td>
<td>Solvent/TRU Job Control Waste &lt;100 nCi/g</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W026</td>
<td>CH Mixed TRU/Thirds</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W030</td>
<td>Spent Methanol Solution</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W033</td>
<td>Thirds/TRU Job Control Waste &lt;100 nCi/g</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W034</td>
<td>Calcium Metal</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W035</td>
<td>Mixed Waste Oil–Sitewide</td>
<td>N/A</td>
</tr>
<tr>
<td>Waste Stream No.</td>
<td>Waste Stream Name</td>
<td>Current Cumulative Inventory through 7/01/16 (m³)</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>SR-W042</td>
<td>Paints and Thinners</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W043</td>
<td>Lab Waste with Tetraphenyl Borate</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W044</td>
<td>Tri-Butyl-Phosphate &amp; n-Paraffin–TRU</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W051</td>
<td>Spent Filter Cartridges and Carbon Filter Media</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W054</td>
<td>Enriched Uranium Contaminated with Lead</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W058</td>
<td>Mixed Sludge Waste with Mercury from DWPF Treatability Studies</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W059</td>
<td>Tetrabutyl Titanate (TBT)</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W061</td>
<td>DWPF Mercury</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W063</td>
<td>Macrocapsulated Low-Level Waste</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W064</td>
<td>IDW and Remediation Soils/Sludges/Slurries</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W065</td>
<td>IDW Monitoring Well Purge/Development Water</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W066</td>
<td>IDW and Remediation Debris (Parts)</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W067</td>
<td>IDW and Remediation PPE Waste</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W068</td>
<td>Elemental (Liquid) Mercury – Sitewide</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W070</td>
<td>Mixed Waste from Laboratory Samples</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W084</td>
<td>Remediation Waste Soils that Meet LDR</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td><strong>Waste Streams Re-characterized or Eliminated</strong></td>
<td></td>
</tr>
<tr>
<td>SR-W005</td>
<td>Mark 15 Filtercake</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W006</td>
<td>CH Mixed TRU/Liquids</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W007</td>
<td>SRNL Sample Material</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W011</td>
<td>Cadmium-Coated HEPA Filters</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W013</td>
<td>LLW Lead – To Be Decontaminated Onsite</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W021</td>
<td>Poisoned Catalyst Material</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W022</td>
<td>DWPF Benzene</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W028</td>
<td>Mark 15 Filter Paper</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W029</td>
<td>M-Area Sludge Treatability Samples</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W031</td>
<td>Uranium/Chromium Solution</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W032A</td>
<td>Mercury-Contaminated Heavy Water</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W032B</td>
<td>Mercury-Contaminated Heavy Water Residues</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W037</td>
<td>M-Area Plating Line Sludge</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W038</td>
<td>Plating Line Sump Material</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W039</td>
<td>Nickel Plating Line Solution</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Table 11.2 Volume Summary by Treatment Facility

<table>
<thead>
<tr>
<th>Waste Stream No.</th>
<th>Waste Stream Name</th>
<th>Current Cumulative Inventory through 7/01/16 (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-W041</td>
<td>Aqueous Mercury and Lead</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W045A</td>
<td>PUREX Aqueous Waste</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W045B</td>
<td>Purex Organic Waste</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W046</td>
<td>Consolidated Incineration Facility Ash</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W047</td>
<td>Consolidated Incineration Facility Blowdown</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W049</td>
<td>Tank E-3-I Clean Out Material</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W052</td>
<td>Cadmium Contaminated Glovebox Section</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W053</td>
<td>Rocky Flats Ash</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W055</td>
<td>Job Control Waste Containing Solvent Contaminated Wipes</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W056</td>
<td>Job Control Waste with Enriched Uranium and Solvent Contaminated Wipes</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W057</td>
<td>D-Tested Neutron Generators</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W058</td>
<td>Tritated Water with Mercury</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W059</td>
<td>Cadmium-Containing Raschig Rings</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W060</td>
<td>LDR Hazardous Waste Awaiting Radiological Screening</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W080</td>
<td>Charleston Naval Shipyard</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W082</td>
<td>Radioactive CMP Soil</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W083</td>
<td>Mercury- and Chromium-Contaminated Residues</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W085</td>
<td>Rocky Flats Plutonium Fluoride Residues</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-W087</td>
<td>Bettis Atomic Power Laboratory Contaminated Oil</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**TOTAL** | 135,113.3

**TABLE 11.2 NOTES:** Volumes reflect inventories as of July 1, 2016. They may not represent actual volumes of mixed waste of SRS as of the date of the update.

Waste streams with ‘0.0’ volumes have been treated or otherwise managed in accordance with RCRA regulations or are future waste streams.

Waste streams with ‘N/A’ in the volume columns have had their waste volume incorporated into other waste streams or, if they have been re-characterized, are no longer a part of the STP. Additionally, these waste streams may have been treated and eliminated because no future waste is expected to be generated in that waste stream.
### Table 11.3 Mixed Waste Treatment Residue Summary

Residues from mixed waste treatment requiring RCRA Subtitle C disposal (as of 7/1/16).

<table>
<thead>
<tr>
<th>Waste Stream</th>
<th>Treatment</th>
<th>Residue Status</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-W015</td>
<td>Macroencapsulated in stainless steel containers</td>
<td>Containers stored at SRS on TRU Pad 18. Total Volume = 40.9 m³</td>
<td>Waste continues to be generated.</td>
</tr>
<tr>
<td>SR-W023</td>
<td>Macroencapsulated in stainless steel containers</td>
<td>Container stored at SRS on TRU Pad 2. Upon closure of TRU Pad 2, container will be re-located to TRU Pad 19. Volume of Waste = 3.4 m³</td>
<td>Total Volume = 15.2 m³ Calculated from container outside dimension.</td>
</tr>
<tr>
<td>SR-W024</td>
<td>Macroencapsulated in stainless steel containers</td>
<td>Containers stored at SRS on TRU Pad 18. Total Volume = 3.0 m³</td>
<td></td>
</tr>
<tr>
<td>SR-W040</td>
<td>Stabilization at CIF Ashcrete Unit or Vitrification at M-Area Vendor Treatment Facility</td>
<td>Containers of M-Area vitrified glass were delisted and moved to LLW disposal</td>
<td></td>
</tr>
</tbody>
</table>

### Table 11.3 NOTES:

The following characteristic waste streams have undergone treatment. However, treatment residues are not Toxicity Characteristic Leaching Procedure (TCLP) hazardous and do not require disposal in a RCRA Subtitle C facility: SR-W041, Aqueous Mercury and Lead; SR-W077, Aqueous Characteristic Wastewater; SR-W032B, Mercury-Contaminated Heavy Water Residues.

As of July 1, 2016, DWPF has produced or filled a total of 4,077 stainless steel glass canisters, which have been placed in storage at SRS awaiting final disposition.

As of November 5, 2001, all CIF stabilized ashcrete and blowdown had been shipped offsite for disposal.

The following material has been recycled in part or total. No residues have been generated requiring disposal as mixed waste by SRS: SR-W011, Cadmium-Coated HEPA Filters; SR-W032, Mercury-Contaminated Heavy Water.

By previous agreement with SCDHEC, small (less than 55 gallons) quantities of mixed waste(s) stored in RCRA Satellite Accumulation Areas [R.61-79.262.34(c)] are not subject to R.61-79.268 and are not included in this plan unless requested otherwise by SCDHEC. Also per agreement with SCDHEC, wastes stored in 90-day accumulation areas are not included in the waste inventory.