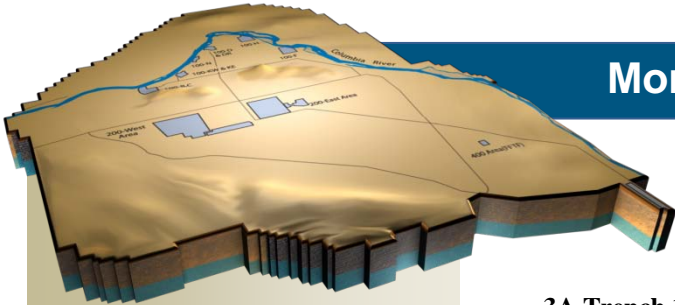


# Section C

## Solid Waste Stabilization and Disposition (RL-0013)



### Monthly Performance Report

**3A Trench 17 Box  
82 Wooden Cover  
Installation**



L.T. Blackford  
Vice President and  
Project Manager for  
Waste and Fuels  
Management Project

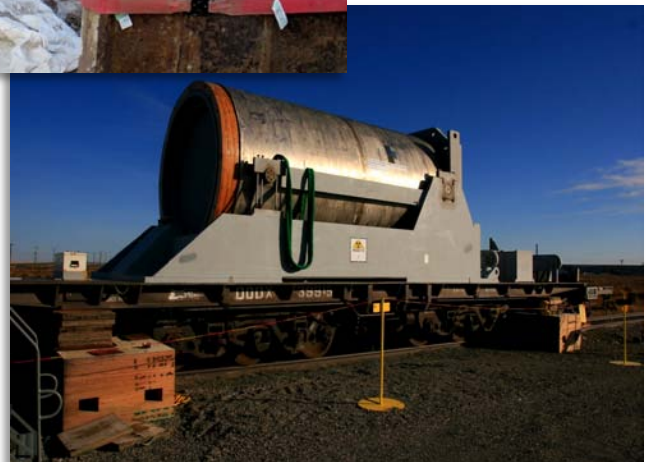
K. A. Dorr  
Vice President for  
Engineering, Projects  
and Construction

December 2009  
DOE/RL-2008-69, Rev. 14  
Contract DE-AC06-08RL14788  
Deliverable C.3.1.3.1 - 1



**3A Trench 17 Box 82  
Sheet Piling and  
Bracing Installation**

**Navy Core Basket  
Prepped for  
Critical Lift**



## PROJECT SUMMARY

The Waste and Fuels Management Project (WFMP) focused on delivering safe, compliant performance.

### **American Recovery and Reinvestment Act (ARRA)**

Weekly and monthly Recovery Act Reporting continued. Mixed and low level waste (M/LLW) shipped 45.2m<sup>3</sup> and completed 6.2m<sup>3</sup> of M-91-42 waste during the month. In addition, M/LLW shipped 8.8m<sup>3</sup> of M-91-43 waste. TRU Retrieval initiated box disassembly activities with installation of sheet piling, bracing and initial deployment of temporary wooden cover on Box 82. Next Generation Retrieval awarded a contract for real-time radiography (RTR) equipment and services to VJ Technologies. The Alpha Caisson Retrieval project approved and released functional design criteria; and issued a summary level Conceptual Design Report for review. TRU Repackaging initiated training of the second wave of nuclear chemical operators (NCOs) and radiological control technicians (RCTs). T Plant completed repackaging 181 TRU containers, shipped 116 containers, and received 155 containers. The Waste Receiving and Processing Facility (WRAP) completed non-destructive examination (NDE) for 353 drums and non-destructive assay (NDA) 353 drums. The Management Self Assessment (MSA) for Central Characterization Project (CCP) Interface Document Activities at WRAP was completed. The final shipment of roll-on/roll-off containers for self performing waste deliveries to the Environmental Restoration Disposal Facility (ERDF) was received for a total inventory of 400 containers. In addition, another new super dump truck was received bringing the total fleet of super dumps to five. The mixed waste disposal trenches received six offsite shipments (19 containers) and shipped one on-site transfer (one Effluent Treatment Facility tanker).

### **Base**

The WFMP continued maintaining facilities in a safe and compliant condition. The Waste Encapsulation and Storage Facility (WESF) continued support to Energy Savings Performance Contract construction demolition and upgrade activities. The Canister Storage Building completed the annual RAD-Vault inspections. The Central Waste Complex (CWC) received ten on-site transfers, 290 containers, two off-site shipments, 16 containers and completed three off-site shipments, 86 containers and 18 on-site transfers, 428 containers. Low level waste burial grounds placed two concrete lifts into Module 10 waste encasement. The 200 Area Treated Effluent Disposal Facility (TEDF) discharged 1.7M gallons. Slightly Irradiated Fuel (SIF) completed teardown and return of Manitowoc 4100 cranes. The mixed waste disposal trenches received the second Navy reactor compartment into Trench 94.

## EMS Objectives and Target Status

Objective #	Objective	Target	Due Date	Status
09-EMS-WFM-OB1-T1	Reduce the potential for releases from TRU retrieval waste repackaging activities in the Low-Level Burial grounds.	Implement a point-of-generation approach to waste management that minimized the transport and handling of wastes.	10/1/11	On schedule
		No exceedances of permit conditions. Participate in readiness assessment and establish process to confirm permit levels have been met.	9/30/2010	On schedule
10-EMS-WFM-OB2-T1	Reduce the levels of air pollution and increase the energy efficiency of WESF Plant heating and cooling operations	Eliminate the use of the refrigerant R22	2/26/2010	Behind schedule ECD March 31, 2010
		Inactivate the fuel oil fired steam plant and replace with heat recovery chiller and electrical resistance heaters.	2/26/2010	Complete August 2009
10-EMS-WFM-OB3-T1	Reduce the generation of waste through implementation of pollution prevention practices.	Conduct a pollution prevention assessment of waste packaging and other operations at T-Plant to identify waste minimization opportunities.	3/30/2010	On schedule

## TARGET ZERO PERFORMANCE

	CM Quantity	FYTD Quantity	Comment
Days Away, Restricted or Transferred	1	1	On 12/31/09 a field worker supervisor (FWS) slipped when entering 481 pump house building. Employee was sent to AMH for evaluation and directed to Kadlec for follow up X-ray of tailbone. Initial evaluation indicated no fractures. Employee expected to return to work with no restrictions. Kadlec emergency provided prescription strength pain medication and muscle relaxant, and instructed employee to "take it easy" for three days. Employee returned to work the following Monday after release with no restriction from AMH. The FWS was wearing appropriate shoes and area had ice melt applied. The site was closed at noon that day for weather conditions. (20624)
Total Recordable Injuries	1	1	Same as above.
First Aid Cases	3	14	On 12/14/09 an employee reported pain in the left wrist after performing work on wrapping PAPR equipment. Employee was transported to AMH and evaluated. Returned to work with self limiting restriction as tolerated, provided over the counter non prescription strength medication. (20597)  On 12/28/09 an OS&H employee slipped, in an area that normally is a "good walking area" (it was previously designated as part of the walking path from working areas to admin trailers for those in MO 720) that suddenly turned bad. Employee was transported by management to AMH and released back to work without restrictions. (20617)
Near-Misses	0	0	N/A

## KEY ACCOMPLISHMENTS

### ARRA

#### 13.01 Project Management

- Training continued for the ARRA-funded staff
- Continuing weekly and monthly Recovery Act Reporting

#### 13.04 Mixed Low Level Waste (MLLW) Treatment

- Reduced the inventory of M/LLW at CWC/WRAP/T-Plant to fewer than 1,000 waste packages (946 packages totaling 376m<sup>3</sup>).
- Submitted the Site-specific land disposable restrictions variance for the P015 drum (beryllium dust) to DOE-RL
- M-91-42 TPA:
  - 45.2m<sup>3</sup> shipped and 6.2m<sup>3</sup> completed during month
  - 8,089m<sup>3</sup> shipped and 7,882m<sup>3</sup> completed since January 2003 (Base & ARRA)
- M-91-43 TPA:
  - 8.8m<sup>3</sup> shipped and 0m<sup>3</sup> completed during month
  - 671m<sup>3</sup> shipped and 661m<sup>3</sup> completed since January 2003 (Base & ARRA)

#### 13.05 TRU Retrieval

- Disassembly of 3A Trench 17 Boxes 82 and 80
  - Received Hazard Review Board approval to proceed with disassembly.
  - Received additional tools, tool modifications, and materials based upon Simulation Test Site mock-up.
  - Completed site preparations (excavation, backfilling, access ramp) and equipment and materials staging.
  - Trained personnel on operation of passive aerosol generator system.
  - Began box disassembly activities with installation of sheet piling bracing and initial deployment of temporary wooden cover on Box 82.
- Continued excavation and removal preparations for 3A Trench 17 Box 3
- Continued planning and engineering activities to support start-up of removal in 3A Trench 8
- Loaded high-dose (remote handled) container WH-74-076 into shielded concrete overpack
- Covered three exposed containers with plastic tarps and stabilized 4B Trench 11 pending resolution of 4B Trench 10 issue.
- Awarded contract for concrete overpack dividers & shield rings
- Next Generation Retrieval
  - Awarded contract for RTR equipment and services to VJ Technologies
  - Completed vent station CONEX factory inspection on December 29
  - Modified the design package for the trench face process system procurement specification; removed the shredder unit and added a sorting table unit
- Alpha Caisson Retrieval
  - Project Review Board concluded with recommendation to complete conceptual design
  - Functional Design Criteria approved and released
  - ARES submitted Waste Retrieval System (WRS) conceptual design for CHPRC review
  - Areva submitted Waste Processing System (WPS) conceptual design for CHPRC review
  - CHPRC completed summary level conceptual design report document and issued for review
  - Completed Material at Risk reports on Alpha Caisson 1 and draft reports on Caissons 2, 3, and 4
  - Completed draft report on energetic reactions
  - Issued hazard analysis tables for review

- Submitted safety design strategy to DOE for approval
- Issued Technical Readiness Level report
- Issued statements of work (SOWs) for follow on WRS and WPS design packages

### **13.06 TRU Repackaging**

- Repackaged 181 TRU containers at T Plant this period generating 231 offspring drums
- Released eight drums from on-hold drum list (59 to-date out of approximately 980)
- Initiated training of second wave of new NCOs and RCTs
- Continued to fabricate the empty drum storage tent near R-5
- Conducted multiple walk downs of the empty drum compactor in the canyon in preparation for the January Hazard Review Board (HRB)
- Shipped 116 containers from T Plant
- Received 155 containers at T Plant
- Received one empty roll off box at T Plant

### **13.07 Waste Receiving and Processing Facility (WRAP)**

- NDE 353 drums
- NDA 353 drums
- Continued support of PU-238 activities
- 21 NCOs completed site training and will commence WRAP specific training Jan/Feb

### **13.10 ERDF Additional Capabilities**

- Issued notice to proceed for remaining mechanical and electrical construction work scope.
- Received, reviewed and provided comments on design/build contractor's mechanical and electrical design. Anticipate receipt of stamped building electrical and mechanical drawings for construction by no later than January 19.
- Alternate building "vapor barrier" has been approved for construction and will result in cost and schedule savings of approximately \$35K
- Excavation of the building foundation has been completed, forms set, and approximately 150 cubic yards of concrete was placed and finished. Excavation for placement of conduit (i.e., power, lighting, truck hot starts) continues.
- Receipt of key long lead materials and equipment are in-process (e.g. power poles, luminaries, electrical panels, breakers) ahead of critical path dates. Long lead mechanical components remain, but no schedule impacts are currently anticipated.
- Container saw horse design and SOW were approved and issued for bid. Draft proposal received and is currently under review.

### **13.15 TRU Disposition**

- Continuing close-out schedule for Hanford TRU program
  - Closed 26 of 56 non-conformance reports
  - Cancelled nine of 50 procedures
  - Transmitted 21 of 75 boxes of records to Records Holding Area (21 remaining)
- Signed revised Memorandum of Agreement with CCP.
- Signed revised Interface Document with CCP.
- Continuing public clearance reviews for acceptable knowledge documents in support of CCP waste streams approvals
- Coordinating new trailers at WRAP to support new staff
- MSA for CCP Interface document activities at WRAP completed: two findings (closed)
- Closed all CCP pre-start punch list activities at WRAP
- Provided conceptual design comments for Alpha Caissons Project



**13.21 Mixed Waste Disposal Trenches**

- Shipped one on-site transfer, one Effluent Treatment Facility (ETF) Tanker
- Received six offsite shipments, 19 containers

**Base****13.02 Capsule Storage & Disposition**

- Waste Encapsulation and Storage Facility (WESF)
  - Continued support to Energy Savings Performance Contract construction demolition and upgrade activities

**13.03 Canister Storage Building**

- Completed annual RAD-Vault inspections

**13.07 Waste Receiving and Processing Facility (WRAP)**

- Maintained the facility in a safe and compliant condition

**13.08 T Plant**

- Maintained the facility in a safe and compliant condition

**13.09 Central Waste Complex (CWC)**

- Completed three off-site shipment, 86 containers
- Completed 18 on-site transfers, 428 containers
- Received ten on-site transfers, 290 containers
- Received two off-site shipments, 16 containers
- Supported Pu-238 activities
- Supported off-site road closure shipments
- Low Level Waste Burial Grounds (LLBG)
  - 218-W-5 - MWT 34 – Placed two concrete lifts into Module 10 waste encasement
  - Hazard Review Board reconvened and passed the limited scope for the Navy Core Basket offload work package

**13.11 Liquid Effluent Facilities**

- Received (December) 25 tankers; (CY) 645M gallons
- Treated (December) zero gallons; (CY) 22M gallons
- 200A TEDF discharged (December) 1.7M gallons; (CY) 337M gallons
- Maintenance activities
  - Completed replacement of 92 percent acid diaphragm valves (safety item)
  - Completed installation and restart of thin film dryer rotor assembly
  - Completed inspection and re-installation of vent header
  - Installed rebuilt reverse osmosis pump 60F-P-1A (retest remains)
  - Replaced flowmeter on ultra violet/oxidation unit
  - Initiated resin change-out and regeneration of polisher column resin
  - Transferred 30 customer waste drums to the Concentrate Tank A
- 310/340 Facilities
  - Issued operating procedures for 310 retention transfer system

**13.12 Integrated Disposal Facility**

- Maintained the facility in a safe and compliant condition

**13.16 Off Site SNF Disposition**

- Slightly Irradiated Fuel (SIF)
  - Completed all closure welding of the outside storage unit plug and have begun project closeout activities.
  - Implemented new project baseline for the container restraint system (for interim storage casks located in the new 200E Area Protected Area) and continued definitive design.

**13.21 Mixed Waste Disposal Trenches**

- Maintained the trenches in a safe and compliant condition
- 218-E-12B – Concentrated effort in progress to minimize spread of contaminated tumbleweeds
  - Seasonal herbicides sprayed
  - Rad-Rover tractor performed extensive surveys throughout 12B burial grounds and commenced radiological control technician monitoring to verify conditions
- 218-E-12B – Received the second Navy reactor compartment into Trench 94

## MAJOR ISSUES

**Issue Statement** – Integrity of retrievably stored waste (RSW) containers is significantly less than expected. Increased resources are required to retrieve containers. Retrieval volumes required to meet Tri-Party Agreement (TPA) milestones or performance based incentives may not be reached.

**Corrective Actions** – Use multiple crews for concurrent retrieval; redirect resources to alternate retrieval sites; stabilize deteriorated containers pending in trench processing or alternate disposition.

**Status** – Hired additional staff, implemented multiple trench retrieval activities, and initiated interim stabilization preparations. **This is the last report on this issue.**

**Issue Statement** – Unknown item has been identified in 4B Trench 10.

**Corrective Actions** – Shifting retrieval operations to another trench pending resolution

**Status** – Waste removal from 4B Trench 11 is on hold. Information on unknown item is scheduled for February 2010.

**Issue Statement** – RL determined Trench Face Processing System is a major modification to Low-Level Burial Grounds.







**Corrective Actions** – Propose tailored approach to DOE-STD-1189 (December 2010). Document impacts of agreed-to approach in letter to RL (January 2010).



















**Status** – Additional documents are required and potential 6-month schedule impact due to required DOE-RL review durations.



## RISK MANAGEMENT STATUS

Unassigned Risk  
Risk Passed  
New Risk

 Working - No Concerns  
 Working - Concern  
 Working - Critical  
 Increased Confidence  
 No Change  
 Decreased Confidence

Risk Title	Risk Strategy/Handling	Assessment		Comments
		Month	Trend	
WSD-007: TRU Retrieval Contamination Levels	Accelerate "next generation" retrieval			No near-term impacts
WSD-008: Classified Waste Storage Limitations	Implement mobile shredding; evaluate establishing secure storage at CWC or other location			Researching mobile shredding feasibility
WSD-013A: TRU Waste Volumes or Characteristics - Retrieval	Implement in-trench assaying as part of Next Generation retrieval			No issues regarding unexpected waste volumes or characteristics experienced to date
WSD-013B: TRU Waste Volumes or Characteristics - Processing	Use ARRA funds to add additional process lines			No issues regarding unexpected waste volumes or characteristics experienced to date
<b>WSD-018: CSB Major Equipment Failure</b>	<b>Risk accepted without mitigation</b>			<b>Risk is very unlikely; reclassified as Unassigned Risk</b>
WSD-025: Unexpected Waste Volumes/Characteristics	Work with generators to update forecasting data monthly/quarterly/semi-annually			Waste volumes to ERDF significantly greater than projected due to ARRA work acceleration
WSD-043: Orphan Wastes	Obtain regulatory relief for "no path forward" wastes			Working to identify treatment options for all waste currently in storage
PRC-042: Resource Availability	Evaluate onsite posting of additional positions, substitution of less radiologically intensive work in lieu of currently scheduled higher risk work, consolidating work teams/work areas, etc. Conduct job fairs; contract with alternate resource providers; develop training programs and work with local educational facilities and union halls to train required job specialties; establish company-wide prioritization for resource assignments			RCT shortage will impact TRU retrieval; teamster shortage may temporarily impact waste shipments to ERDF.
Retrieval Area Issues	<b>Potential to impact project scope, schedule and cost as a result of issues identified outside the RS burial grounds.</b>			<b>Working to identify operational impacts/issues with the Non-RS burial grounds.</b>

## PROJECT BASELINE PERFORMANCE

### Current Month (CM)

(\$M)

WBS 013/RL-0013 Waste and Fuels Management Project	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)	Budget at Completion (BAC)
<b>ARRA</b>	8.3	11.5	10.2	3.2	38.2	1.3	11.2	137.9
<b>Base</b>	<u>6.0</u>	<u>6.8</u>	<u>8.0</u>	<u>0.8</u>	13.5	<u>-1.2</u>	(17.8)	<u>90.2</u>
<b>Total</b>	<b>14.3</b>	<b>18.3</b>	<b>18.2</b>	<b>4.0</b>	<b>27.9</b>	<b>0.1</b>	<b>0.5</b>	<b>228.2</b>

Numbers are rounded to the nearest \$0.1M.

#### ARRA

##### CM Schedule Performance (+\$3.2M/+38.2%)

The current month positive schedule variance is primarily attributable to the ERDF schedule adjustment to align to expected receipt of transports, containers, and the construction of the maintenance facility.

##### CM Cost Performance (+\$1.3M/+11.2%)

The current month positive cost variance is primarily due to the recovery of ERDF schedule without commensurate cost increases resulting in reduced costs.

#### Base

##### CM Schedule Performance (+\$0.8M/+13.5%)

The current month positive schedule variance is primarily due to a point adjustment in TRU Retrieval associated with realignment for higher confidence delivery schedules coupled with recovery of SNF Disposition schedule activities.

##### CM Cost Performance (-\$1.2M/-17.8%)

The current month negative cost variance is attributable to personnel assigned to TRU Characterization, T Plant, and WRAP incorrectly charging to Min Safe Operations. Corrections are planned for January.

## Contract-to-Date (CTD) (\$M)

WBS 013/RL-0013 Waste and Fuels Management Project	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)	Budget at Completion (BAC)
<b>ARRA</b>	51.1	52.7	49.7	1.6	3.1	3.0	5.7	297.9
<b>Base</b>	<u>169.9</u>	<u>166.9</u>	<u>161.2</u>	<u>-3.0</u>	(1.8)	<u>5.7</u>	3.4	<u>1,548.8</u>
<b>Total</b>	<b>221.0</b>	<b>219.6</b>	<b>210.9</b>	<b>-1.4</b>	<b>(0.6)</b>	<b>8.7</b>	<b>4.0</b>	<b>1,846.8</b>

Numbers are rounded to the nearest \$0.1M.

### ARRA

#### CTD Schedule Performance (+\$1.6M/+3.0%)

The CTD positive schedule variance is primarily due to the acceleration of FY 2010 MLLW treatment and TRU Repackaging activities, partially offset by delays in ERDF self perform procurements.

#### CTD Cost Performance (+\$3.0M/+5.7%)

The CTD positive cost variance is primarily attributable to efficiencies in MLLW 435.1 Compliance waste disposal activities due to direct disposal vs. planned treatment. This is partially offset by additional allocation for ramp up and transition associated with increased ARRA spending within the PBS.

Additionally, TRU Repackaging continues to experience efficiencies; partially offset by TRU Retrieval project's incurrence of cost while unable to make planned progress due to significantly deteriorated boxes, resolving the 85-gallon Overpack issues, a respirator failure and associated recovery actions, and weather impacts.

### Base

#### CTD Schedule Performance (-\$3.0M/-1.8%)

The CTD negative schedule variance is primarily attributable to delays in next generation TRU Retrieval procurements, large/RH package capabilities, ETF fine filter upgrades and returns of W5 waste.

#### CTD Cost Performance (+\$5.7M/+3.4%)

The CTD positive cost variance is primarily attributable to efficiencies in MLLW treatment, liquid effluents, slightly irradiated fuel, CCP Support, Solid Waste Operations Complex Facilities, and Project Management coupled with a labor rate reduction (continuity of service). This is partially offset by increased cost for TRU Retrieval activities associated with significantly deteriorated containers and resolution of the 85-gallon drum overpack issues.

**Contract Performance Report Formats are provided in Appendix A and Appendix A-1.**

## FUNDS vs. SPEND FORECAST (\$M)

WBS 013/RL-0013 Waste and Fuels Management Project	FY 2010		
	Projected Funding	Spending Forecast	Variance
<b>ARRA</b>	143.9	142.0	1.8
<b>Base</b>	<u>108.7</u>	<u>96.6</u>	<u>12.1</u>
<b>Total</b>	<b>252.6</b>	<b>238.6</b>	<b>14.0</b>

Numbers are rounded to the nearest \$0.1M.

### Funds/Variance Analysis

Projected funding includes FY 2009 uncosted and FY 2010 expected new budget authority.

### Critical Path Schedule

Critical path analysis can be provided upon request.

### Estimate at Completion (EAC)

The BAC and EAC now include FY 2009 through FY 2018.

### Baseline Change Requests

AWA-PRC-10-017.

## MILESTONE STATUS

Tri-Party Agreement milestones represent significant events in project execution. DOE Enforceable Agreement milestones were established to provide high-level visibility to critical deliverables and specific status on the accomplishment of these key events. The PRC Baseline submitted in June defines CHPRC planning with respect to TPA milestones.

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
M-091-40G-T01	Retrieve 9,950 Cubic Meters CH-RSW (Cumulative)	TPA	9/30/09			Field work completed 03/04/09. Awaiting RL completion letter.
M-16-93A	Submit implementation work plan to prepare TRU/TRUM waste for disposal.	TPA	12/29/09			Complete
M-091-45	Complete Negotiations And Submit Change Package Replacing Specified M-91 TBD Dates	TPA	2/28/10			On schedule. Due date extended two months by change package M-91-09-02.
C-026-07E	Tritium Treatment Technology Developments to Ecology and EPA	TPA	3/31/10			On schedule
M-091-03D-01	Submit Annual Revision of TRUM and MLLW PMP to Ecology	TPA	6/30/10			On schedule
M-091-43D-T01	Treat 300 CM per Year RH MLLW and Large Containers CH MLLW	TPA	6/30/10			Field work complete 8/31/09. Awaiting RL Completion Letter.
M-091-40G-T02	Retrieve CH-RSW 10,700 Cubic Meters (Cumulative)	TPA	9/30/10			On schedule
M-091-42J-T02	Treat 200 Cubic Meters of CH TRUM by 9/30/10	TPA	9/30/10			On schedule

## SELF-PERFORMED WORK

The Section H. clause entitled, Self-Performed Work, is addressed in the Monthly Report Overview.

### GOVERNMENT FURNISHED SERVICES AND INFORMATION (GFS/I)

Waste Isolation Pilot Plant (WIPP) provides shipping resources and manages the schedule for transportation of containers to WIPP. The schedule is variable and the number of shipments is controlled by DOE-HQ on a complex-wide priority. Cost for shipment of waste offsite is borne by the Carlsbad Field Office (CBFO).

Contract Section	Project	GFS/I	Status
<b>CONTRACT</b>			
J.12/C.2.3.6	PBS-13, Transuranic Waste Certification	WIPP provides shipping resources and manages the schedule for transportation of these containers to WIPP. The schedule is variable and the number of shipments is controlled by DOE-HQ on a complex-wide priority. Cost for shipment of TRU waste offsite is borne by the CBFO.	Ongoing