
FINAL

Office of River Protection

Tri-Party Agreement
Monthly Summary Report
February 2016



**Office of River Protection (ORP)
Tri-Party Agreement (TPA) Milestone Review
February 2016 (Monthly Summary Report)**

Project Earned Value Management System reflects December 2015 information

Page	Topic	Leads
2	Administrative Items/Milestone Status	Bryan Trimberger/Dan McDonald/Jeff Lyon
4	System Plan	Kaylin Burnett/Jeff Lyon/Dan McDonald
5	Acquisition of New Facilities	Janet Diediker/Jeff Lyon/Dan McDonald
6	Supplemental Treatment and Part B Permit Applications	Steve Pfaff/Jeff Lyon/Dan McDonald
8	242-A Evaporator Status	Paul Hernandez/Jeff Lyon
9	Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility	Richard Valle/ Stephanie Schleif
10	Tank System Update	Jeremy Johnson/Jeff Lyon
10	Single-Shell Tank Integrity Assurance	Jeremy Johnson/ Jim Alzheimer
12	In Tank Characterization and Summary	Billie Mauss/Michael Barnes
14	Tank Operations Contract Overview	ORP TPA Program Managers/Jeff Lyon
24	Single-Shell Tank Closure Program	Ryan Beach/Jeff Lyon
27	Single-Shell Tank Retrieval Program	Jeremy Johnson/ Jeff Lyon
28	Tank Waste Retrieval Work Plan Status	Jeremy Johnson /Jeff Lyon
29	Tank in Appendix H, "Status - Single Shell Waste Retrieval Criteria"	Jeremy Johnson /Jeff Lyon
30	Tank Retrievals with Individual Milestones	Jeremy Johnson/Jeff Lyon
CD	Waste Treatment and Immobilization Plant (WTP) Overall TPA Summary and Milestone Status; see the U.S. Department of Energy, Office of River Protection Consent Decree 08-5085-FVS Monthly Summary Report for WTP Facility-specific information	Joni Grindstaff/Dan McDonald

Administrative Items/Milestone Status
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Milestone	Title	Due Date	Completion Date	Status
Fiscal Year 2015				
M-062-45-T01	Comp. Neg's 6-Mo After Last Issuance of System Plan	04/30/2015		In Dispute
M-062-45-ZZ	Negotiate a One Time Supplemental Treatment Selection	04/30/2015		In Dispute
M-062-45-ZZ-A	Convert M-062-31-T01 Thru M-062-34-T01 to Interim Milestones	04/30/2015		In Dispute
M-045-92	Barrier 3 Design/Monitoring Approval From Ecology	06/30/2015		In Dispute
M-045-82	Submit Comp. Permit Modification Request for Tiers 1,2,3	09/30/2015		In Dispute
M-045-91E1	Provide SST Farms Dome Deflection Surveys Every Two Years.	09/30/2015	9/21/15	Complete
Fiscal Year 2016				
M-045-92N	Construct Barriers 1 and 2 in 241-SX Farm	10/31/2015		In Dispute
M-062-01AF	Submit Semi-Annual Project Compliance Report	01/31/2016	01/29/2016	Complete
M-047-07	CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to Ecology	03/31/2016		In Dispute
M-090-13	CD-1 for Interim Hanford Storage Project and CR for CD-2 to Ecology	03/31/2016		In Dispute
M-062-31-T01	Comp. Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016		In Dispute
M-045-92Q	Submit Barrier 4 Design/Monitoring Plan	06/30/2016		In Dispute
M-062-01AG	Submit Semi-Annual Project Compliance Report	07/31/2016		On Schedule
M-045-56L	Ecology And DOE Agree, At A Minimum, To Meet Yearly (By July)	07/31/2016		On Schedule
Fiscal Year 2017				
M-045-92P	Barrier 3 Construction Complete	10/31/2016		In Dispute
M-062-40E	Select a Minimum of Three Scenario's	10/31/2016		On Schedule
M-045-61A	Submit to Ecology a primary doc. Phase 2 CMS and Rev. O update to the RFI Report for WMA C	12/31/2016		On Schedule
M-045-62	Phase 2 Corrective Measures Implementation Work Plan For WMA-C	Six months after CMS approval (M-045-61A)		On Schedule
M-045-84	Comp Neg's of HFFACO Interim Milestones for Closure of 2 nd SST WMA	01/31/2017		On Schedule

Milestone	Title	Due Date	Completion Date	Status
M-062-01AH	Submit Semi-Annual Project Compliance Report	01/31/2017		On Schedule
M-062-01AI	Submit Semi-Annual Project Compliance Report	07/31/2017		On Schedule
M-045-91E2	Provide SST Farms Dome Deflection Surveys' Every Two Years	09/30/2017		On Schedule

CD-1/-2 = critical decision-1/-2.

CMD = current measuring device.

CR = change request.

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology

HFFACO = Hanford Federal Facility Agreement and Consent Order.

RCRA = Resource Conservation and Recovery Act.

RFI = RCRA Facility Investigation.

SST = single-shell tank.

TBD = to be determined.

WTP = Waste Treatment and Immobilization Plant

WMA-C = Waste Management Area C.

System Plan

Significant Past Accomplishments:

1. On October 24, 2013, Washington State Department of Ecology (Ecology) and U.S. Department of Energy (DOE), Office of River Protection (ORP) signed the Tri-Party Agreement (TPA) Change Control Form M-62-13-02, moving out the due date for this embedded milestone from October 31, 2013 to December 15, 2013, for selection of three, or more, scenarios to be modeled in the ORP-11242, *River Protection Project System Plan*, Rev. 7 (System Plan 7).
2. Ecology has defined five scenarios to be analyzed in System Plan 7. Washington River Protection Solutions LLC (WRPS) has included a description of each scenario in the *Selected Scenarios for the River Protection Project System Plan*, Rev. 7 document released to ORP on December 4, 2013. See joint ORP and Ecology letter 13-TPD-0070, "Completion of Hanford Federal Facility Agreement and Consent Order Milestone M-062-40C, to select a Minimum of Three Scenarios and Partial Completion of Milestone M-062-40," dated December 12, 2013, for completion and description of M-062-40C scenarios.
3. Detailed assumption review was completed and has been approved by Ecology.
4. On February 11, 2014, ORP transmitted a letter (14-TPD-0003, "Contract No. DE-AC27-08RV14800 – Approval to use Washington State Department of Ecology's Appendix B, "Key Assumptions and Success Criteria" for the ORP-11242, *River Protection Project System Plan*, Rev. 7") to WRPS in response to letter WRPS-1400313, "One System – Washington River Protection Solutions LLC Transmits to the U.S. Department of Energy, Office of River Protection for Approval, Appendix B Key Assumptions and Success Criteria for the River Protection Project System Plan, Revision 7, in Support of Contract Deliverable C.2.3.1 -1, River Protection Project System Plan," to approve the use of Ecology's Appendix B, "Key Assumptions and Success Criteria," for System Plan 7.
5. On February 13, 2014 Ecology presented the five selected scenarios to the Hanford Advisory Board Tank Waste Committee.
6. Ecology, ORP, and WRPS reviewed and provided comments for Sections 1.0 and 2.0 of System Plan 7 during the week of February 17, 2014.
7. Ecology, ORP and WRPS reviewed and provided comments for Section 3.0 of the System Plan 7 during the week of March 21, 2014.
8. Ecology, ORP and WRPS reviewed and provided comments for Appendix C, "Modeling Tools," of the System Plan 7 during the week of April 1, 2014.
9. During the week of April 28, 2014, WRPS and ORP facilitated meetings for Ecology to define detail spending assumptions for Case 5.
10. On July 29, 2014, WRPS case authors presented the results of the five cases to Ecology and ORP.
11. System Plan 7 was reviewed, all comments resolved, and comments incorporated into the document.

12. On October 31, 2014, ORP transmitted System Plan 7 to Ecology.
13. ORP received Ecology's January 14, 2015, transmitted letter 15-NWP-004, "Department of Ecology Review of the *River Protection Project System Plan*, ORP-11242, Revision 7," regarding Ecology's review of System Plan 7.
14. ORP met with Ecology at the Tank Farms TPA and Consent Decree (CD) monthly status meeting on February 25, 2015.
15. ORP transmitted Letter 15-WSC-0027, "Washington State Department of Ecology Review of ORP-11242, *River Protection System Plan*, Rev. 7, 15-NWP-004, January 14, 2015," ORP's response to Ecology's letter 15-NWP-004 to Ecology on June 2, 2015. ORP's letter provided clarification and several attachments of additional information requested in Ecology's January 14, 2015, letter.

Significant Planned Actions in the Next Six Months:

- Scenario selection discussions will be conducted to support M-062-40E due October 31, 2016

Issues: None.

Acquisition of New Facilities

M-090-13, Submit Critical Decision-1 for Interim Hanford Storage Project and TPA Change Request for CD-2 to Ecology, Due: March 31, 2016, Status: To be missed. Change control form M-90-15-01 was submitted by ORP to Ecology for approval on December 30, 2015.

M-090-00, Acquire/Modify Facilities for Storage of Immobilized High-Level Waste (IHLW), Due: December 31, 2019, Status: On schedule.

M-047-07, Submit CD-1 for Secondary Liquid Waste Treatment and Change Request (CR) for CD-2 to Ecology, Due: March 31, 2016, Status: To be missed. Change control form M-47-15-01 was submitted by ORP to Ecology for approval on December 30, 2015.

M-047-00, Complete Work Necessary to Provide Facilities for Management of Secondary Waste from the Waste Treatment and Immobilization Plant (WTP), Due: December 31, 2022, Status: On schedule.

Significant Past Accomplishments: None.

Significant Planned Actions in the Next Six Months: None.

Issues: None.

Supplemental Treatment and Part B Permit Applications

M-062-45ZZ (designation for M-062-45 item 3), Negotiate a one-time supplemental treatment selection, Due: April 30, 2015, Status: In dispute.

M-062-45ZZ-A, Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones, Due: April 30, 2015, Status: In dispute.

M-062-31-T01, Complete final design and submit Resource Conservation and Recovery Act Part B permit modification request, Due: April 30, 2016, Status: In dispute.

M-062-32-T01, Start construction of supplemental vitrification treatment facility and/or WTP enhancements, Due: April 30, 2018, Status: In dispute.

M-062-33-T01, Complete construction of supplemental vitrification treatment facility and/or WTP enhancements, Due: April 30, 2021, Status: In dispute.

M-062-45-T01, Every six years, within six months after last revision of the System Plan, negotiate tank waste retrieval sequencing, Due: April 30, 2015, Status: In Dispute.

M-062-45XX, No later than December 31, 2021, the DOE and Ecology shall complete negotiations to establish a mechanism that will apply to resolve future disputes regarding the determinations in M-062-45, paragraphs 4 and 5, Due: December 31, 2021, Status: On schedule.

M-062-34-T01, Complete hot commissioning of supplemental vitrification treatment facility and/or WTP enhancements, Due: December 30, 2022, Status: In dispute.

M-062-21, Annually submit data that demonstrates operation of the WTP, Due: February 28, 2023, Status: On schedule.

M-062-00, Complete Pretreatment Processing and Vitrification of High-Level Waste and LAW Tank Wastes, Due: December 31, 2047, Status: On schedule.

Significant Past Accomplishments:

*Per ORP letter 14-TF-0052, "Documentation of U.S. Department of Energy, Office of River Protection and Washington State Department of Ecology Agreement that the Office of River Protection will not Submit A One-Time Hanford Tank Waste Supplemental Treatment Technologies Report," signed by ORP on May 6, 2014, and provided to Ecology on May 7, 2014, ORP documented the ORP/Ecology discussions for the *One-Time Hanford Tank Waste Supplemental Treatment Technologies Report* and that ORP does not intend to submit this report. ORP received Ecology's response letter, 14-NWP-110, "Acknowledgement that the U.S. Department of Energy, Office of River Protection Will Not Submit a One-Time Supplemental Treatment Technologies Report," on May 29, 2014. ORP letter 14-TF-0088, "Hanford Federal Facilities Agreement and Consent Order Class II Change Request for Deletion of Tri-Party Agreement Milestone M-062-40ZZ, One-Time Hanford Tank Waste Supplemental Treatment Technologies Report," dated and delivered to Ecology on July 31, 2014, submitted a

signed TPA change package to delete the requirement of the *One-Time Hanford Tank Waste Supplemental Treatment Technologies Report* from TPA Milestone M-062-40. Ecology signed TPA Change Package M-62-14-01 deleting M-062-40ZZ on August 12, 2014.

Significant Planned Actions in the Next Six Months: None.

Issues:

On January 30, 2015, ORP provided Ecology Change Control Form M-62-14-02, which proposed adding language under TPA Milestone M-062-45 to defer negotiations required under M-062-45. Ecology did not respond with the 14-day review period that ended February 13, 2015 which is deemed disapproval in accordance with the TPA. In letter 15-TF-0014, "Initiation of Dispute Resolution Regarding Disapproval of Hanford Federal Facility Agreement and Consent Order Change Control Form M-62-14-02," dated February 20, 2015, ORP initiated a dispute resolution. Ecology provided a justification for their disapproval on March 12, 2015 via letter 15-NWP-036, "Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Package, Change Number M-62-14-02, dated 01/30/2015." Ecology and ORP signed an extension of the dispute resolution period at the TPA project manager level until February 18, 2016. The extension is available in the TPA Administrative Record at <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=1509230319>

242-A Evaporator Status

(previously reported under Milestone M-48, which has been closed out)

The 242-A Evaporator campaign strategy for fiscal year (FY) 2015 through third quarter of FY 2016 depicted in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
FY 2015	EC-01	AP-103 AP-104	AP-107	Campaign and flush activities completed on June 21, 2015.
FY 2015	EC-02	AZ-102	AP-103	Completed July 21, 2015.
FY 2015	EC-03	AZ-102	AP-103	Completed September 25, 2015.
FY 2016	EC-04	AP-104	AP-103	Estimated to begin third quarter FY 2016.
FY 2016	EC-05	AP-104	AP-103	Estimated to begin third quarter FY 2016.
FY 2016	EC-06	AY-101	AP-104	Estimated to begin fourth quarter FY 2016.

FY = fiscal year.

Significant Planned Actions in the Next Six Months:

- Future campaign and outage scheduling
- 242-A Evaporator instrument calibrations and preventive maintenance

Issues: None.

Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility

Status:

The Liquid Effluent Retention Facility (LERF) liquid levels, inventory, and received waste is shown in the table below for the time period of January 1 – 31, 2016.

Note: Volumes in this table are estimated. Tanker shipment volumes are estimated by multiplying the number of shipments by the capacity of the tanker being used.

	242AL-42 (Basin 42)	242AL-43 (Basin 43)	242AL-44 (Basin 44)
Volume (as of 01/31/16)	~4.88 Mgal	~6.64 Mgal	~6.57 Mgal
AZ-301 Tanker Shipments	-	-	-
MWBT-31 and 34 Leachate	-	-	~28,000 gal
Perched Water Tanker Shipments	-	-	-
ERDF Leachate Transfers	-	162,000 gal	-
Other (325 Building Totes)	-	~2,300 gal	-

ERDF Environmental Restoration Disposal Facility
Gal gallon

Mgal million gallons
MWBT mixed waste burial trench

Significant Planned Actions in the Next Six Months:

- Staff training, component and system testing, and readiness activities will be performed before restart approval can be granted.
- Berm special protective coating of specific areas at the Effluent Treatment Facility (ETF) and LERF are to be repaired in the following months.
- Class 1 Modifications package submitted by March 30, 2016.

Issues: None.

Tank System Update

Significant Planned Actions in FY 2016:

Double Shell Tank (DST) Integrity

- Enhanced annulus video inspection:
 - 241-AN-101
 - 241-AN-103
 - 241-AN-104
 - 241-AN-105
 - 241-AN-106
 - 241-AW-103
 - 241-AW-106
 - 241-SY-101
 - 241-SY-102
 - 241-SY-103.
- Ultrasonic testing (UT) inspections (two risers for primary wall/welds, one riser for secondary floor):
 - 241-AN-105
 - 241-AW-103.
- Continuing bi-weekly inspections of AY-102 waste accumulation site
- Continuing bi-monthly comprehensive inspection of AY-102 annulus
- Revise and update RPP-7574, *Double-Shell Tank Integrity Project Plan*
- Release DST independent qualified registered professional engineer (IQRPE) integrity assessment report per WAC 173-303-640(2).

Single Shell Tanks (SST) Integrity

- In-tank video inspections:
 - 241-T-107
 - 241-T-110
 - 241-TX-103
 - 241-TX-111
 - 241-TX-113
 - 241-TX-116
 - 241-B-101
 - 241-B-201
 - 241-BY-105
 - 241-U-102
 - 241-U-105
 - 241-U-107.
- Intrusions mitigation (M45-56):
 - Complete 241-T-111
 - Subsequent tank to be determined.

Current Status

- The blanket master agreement (BMA) for nondestructive examination services is being placed.

Single-Shell Tank Integrity Assurance

M-045-91I, Provide to Ecology an Independent, Qualified, Registered Professional Engineer (IQRPE) certification of single-shell tanks (SST) structural integrity for the remainder of the mission, or for such time as the IQRPE believes he/she can reasonably certify, Due: September 30, 2018, Status: On schedule.

Significant Past Accomplishments:

Completion of M-045-91E1 on September 21, 2015 with issuance of RPP-RPT-55202, *Dome Survey Report for Hanford Single-Shell Tanks*, Rev 1. The report was discussed with Ecology on October 13, 2015, and both parties expressed interest in continuing this work but not requiring formal transmittal as a TPA milestone requirement.

Significant Planned Actions in the Next Six Months:

Continue planning for the SST integrity assessment by an IQRPE (M-045-91I).

Issues: None.

In Tank Characterization and Summary

For the period from January 1 through January 31, 2016:

Accomplishments:

- Completed RPP-RPT-46616, *Derivation of Best-Basis Inventory for Tank 241-C-104 as of January 1, 2016*, Rev 7.
- Completed RPP-RPT-58699, *Derivation of Best-Basis Inventory for Tank 241-TX-108 as of October 1, 2015*, Rev 0.
- Completed RPP-RPT-58655, *Derivation of Best-Basis Inventory for Tank 241-BX-111 as of January 1, 2016*, Rev 1.
- Completed RPP-RPT-45147, *Derivation of Best-Basis Inventory for Tank 241-C-108 as of January 1, 2016*, Rev 5.
- Completed RPP-PLAN-58022, *Sampling and Analysis Plan for 242-A Evaporator Cooling Water and Steam Condensate*, Rev 2.
- Completed HNF-EP-0182, *Waste Tank Summary Report for Month Ending November 30, 2015*, Rev 335.
- RPP-RPT-59131, *Final Report for Tank 241-AN-106 Grab Samples in Support of Corrosion Mitigation and Waste Compatibility*, Rev 0, was released.
- RPP-RPT-59055, *Initial Baseline Results for 241-AY/AZ Stack Chemical Emissions*, Rev. 0, was released.
- RPP-RPT-59018, *Boildown Test Final Report: 242-A Evaporator Campaign EC-02*, Rev 0, was released.
- RPP-RPT-59115, *Final Report for Tank 241-C-105 Solid Waste Samples in Support of Retrieval Operations*, Rev 0, was released.
- Completed 241-AY-102 Leak Detection Pit (LDP) grab sampling January 11, 2016. Four samples were received at the lab.
- Completed 241-C-111 hard heel retrieval in-process sampling on January 21, 2016, and on January 26, 2016. A total of four samples were received at the lab.
- Completed 241-AN-101 organic surface sampling on January 21, 2016, and January 22, 2016. Two samples were received at the lab.
- 241-AP-104 grab sampling December 29, 2015. Thirteen samples were received at the lab.

Planned Action within the Next Six Months:

Tank sampling:

- Tank 241-C-111 in-process hard heel retrieval grab sampling is planned for January and February 2016.
- Tank 241-C-102 extended reach sluicing system (ERSS) closure sampling at Riser 03 is planned to begin February 2016.
- Tank 241-SY-101 grab sampling is planned for March 2016.

- Tank 241-AN-101 grab sampling at completion of C-111 hard heel retrieval is planned for March 2016.
- Tank 241-AY-101 grab sampling to support Evaporator campaign EC-06 is planned for March 2016.
- Tank 241-C-102 extended reach sluicing system (ERSS) closure sampling at Riser 06 is planned to begin March 2016.
- Tank 241-AP-107 core sampling is planned to begin April 2016.
- Tank 241-C-111 Off-Riser Sampling System (ORSS) closure sampling is planned for June 2016.
- Tank 241-AP-102 grab sampling in support of AY-102 retrieval is planned for June 2016.
- Tank 241-AW-103 grab sampling is planned for July 2016.

Best-Basis Inventory (BBI) updates:

BBI updates for the following tanks were completed in January 2016:

- 241-BX-111
- 241-C-104
- 241-C-108
- 241-TX-108

BBI updates for the following tanks currently are planned to be completed in February 2016:

- 241-AN-106
- 241-BY-101
- 241-BY-102
- 241-C-102
- 241-C-109
- 241-C-110
- 241-SY-102

Data Quality Objectives (DQO):

- RPP-8532, *Double-Shell Tanks Chemistry Control Data Quality Objectives*, Rev 15, is in-process to identify additional analyses for corrosion mitigation and to simplify quality control parameters is planned to be released in February 2016.

Issues: None.

Tank Operations Contract Overview

Project Performance

The earned value performance reporting reflects the format, work breakdown structure reporting levels, and variance thresholds as agreed to with the Tank Operations Contractor (TOC) for monthly performance reporting. The earned value analysis is not intended to be a measurement of performance against existing TPA milestones.

As of December 31, 2015 WRPS Tank Operations Contract has worked 455,148 hours or 36 days without a Lost Time Workday Injury, and has worked 455,148 hours or 36 days since the last Recordable case.

December-15										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	42,662	38,998	41,461	(3,663)	(2,463)	0.91	0.94			
FYTD	110,792	107,990	111,075	(2,802)	(3,086)	0.97	0.97	553,115		
CTD	2,961,632	2,939,242	2,935,743	(22,390)	3,499	0.99	1.00	3,403,955	3,420,817	(16,862)

ACWP = actual cost of work performed.
 BAC = budget at completion.
 BCWP = budgeted cost of work performed.
 BCWS = budgeted cost of work scheduled.
 CM = current month
 CPI = cost performance index.
 CTD = cumulative to date

CV = cost variance.
 EAC = estimate at completion.
 FYTD = fiscal year to date
 SPI = schedule performance index.
 SV = schedule variance.
 VAC = variance at completion.

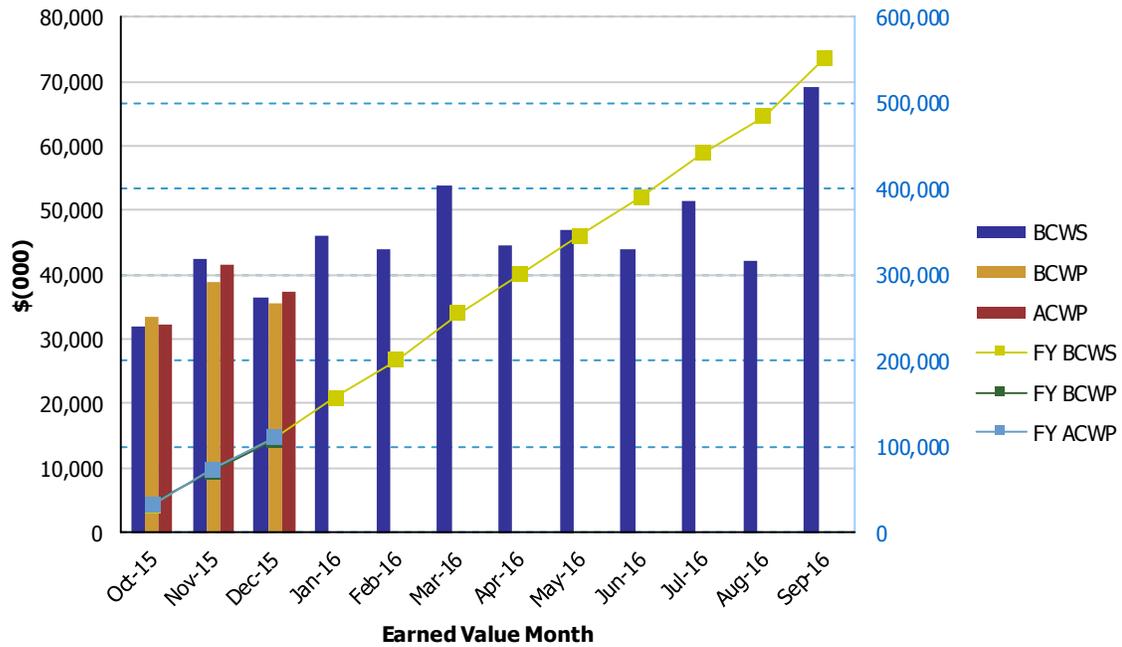
EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2016

December-15

Tank Farms ORP-0014

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$31,937	\$33,377	\$32,188	1.05	1.04	\$31,937	\$33,377	\$32,188	1.05	1.04
Nov 2015	\$42,325	\$38,998	\$41,461	0.92	0.94	\$74,262	\$72,376	\$73,649	0.97	0.98
Dec 2015	\$36,530	\$35,614	\$37,416	0.97	0.95	\$110,792	\$107,990	\$111,065	0.97	0.97
Jan 2016	\$46,100					\$156,892				
Feb 2016	\$44,100					\$200,992				
Mar 2016	\$53,955					\$254,947				
Apr 2016	\$44,598					\$299,545				
May 2016	\$46,951					\$346,496				
Jun 2016	\$43,944					\$390,440				
Jul 2016	\$51,353					\$441,793				
Aug 2016	\$42,223					\$484,017				
Sep 2016	\$69,099					\$553,115				

CTD	\$2,961,632	\$2,939,242	\$2,935,743	0.99	1.00
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- CTD = contract to date
- EVMS = Earned Value Management System.
- FY = fiscal year.
- SPI = schedule performance index

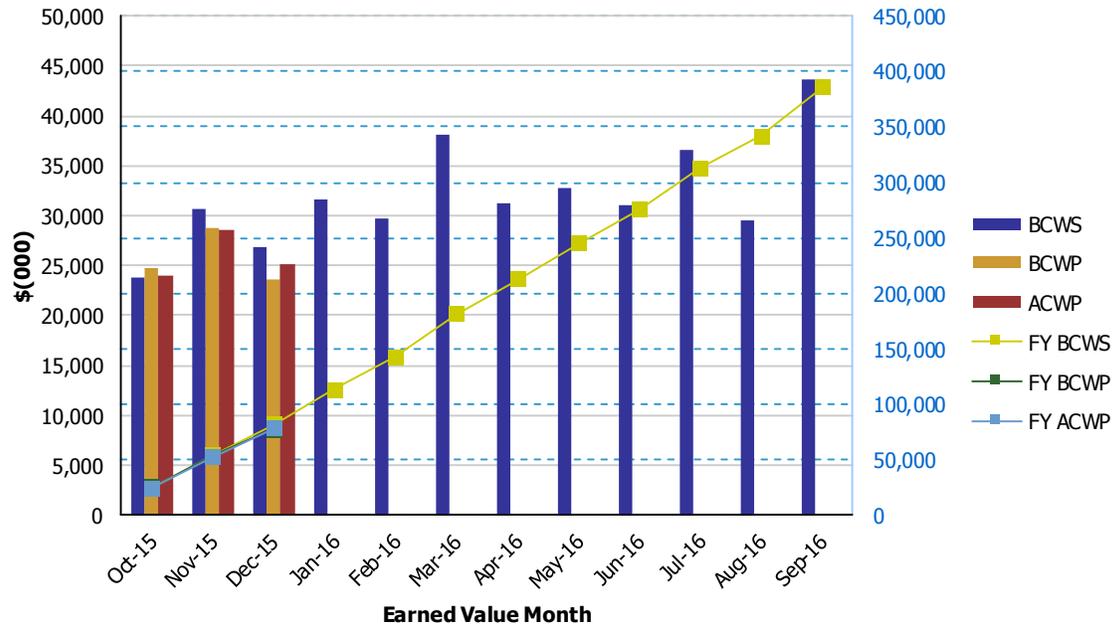
EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2016

December-15

Tank Farms ORP-0014
Base Operations 5.01

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$23,768	\$24,839	\$24,025	1.05	1.03	\$23,768	\$24,839	\$24,025	1.05	1.03
Nov 2015	\$30,658	\$28,752	\$28,562	0.94	1.01	\$54,426	\$53,592	\$52,587	0.98	1.02
Dec 2015	\$26,911	\$23,637	\$25,173	0.88	0.94	\$81,336	\$77,229	\$77,760	0.95	0.99
Jan 2016	\$31,677					\$113,013				
Feb 2016	\$29,648					\$142,661				
Mar 2016	\$38,070					\$180,732				
Apr 2016	\$31,215					\$211,946				
May 2016	\$32,797					\$244,743				
Jun 2016	\$31,068					\$275,811				
Jul 2016	\$36,625					\$312,436				
Aug 2016	\$29,503					\$341,938				
Sep 2016	\$43,586					\$385,524				
CTD	\$1,973,220	\$1,959,442	\$1,951,589	0.99	1.00					

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|---|--|
| ACWP = actual cost of work performed. | CTD = contract to date |
| BCWP = budgeted cost of work performed. | EVMS = Earned Value Management System. |
| BCWS = budgeted cost of work scheduled. | FY = fiscal year. |
| CPI = cost performance index. | SPI = schedule performance index |

Base Operations and Tank Farm Projects

The current month unfavorable Schedule Variance (SV) of **(\$3,274K)** is due to:

- AW-106 Pump and Jumper Removal and Installation - Schedule delays in installing both the pump and jumper for AW-106. Inability to flush the currently plugged pump resulted in a recovery plan, risk mitigation strategy, that requires fabrication of a clam shell device that will puncture holes lengthwise down the pump shaft in order to unclog the pump
- AP Tank Farm Ventilation Upgrade (Exhausters) - Delay due to issues with fabrication of requisite equipment/components to continue the field work onsite. Impacts include delays in excavation and concrete pouring, electrical installation & drain system fabrication.
- Tank Vapor Head Space & Stack Sampling - Additional time needed for Engineering and work package planning and final review of Tank Head Space Sampling and Analysis Plan Documentation. A recent shift in sampling strategy being utilized to sample head space at varying depths for FY 2016 Head Space Sampling.

The current month unfavorable Cost Variance (CV) of **(\$1,536K)** is due to:

- Additional costs have been contributed to construction crew's continuing to accelerate schedule recovery by working overtime, weekend shifts and allocating more resources to critical path construction activities. Crews also spent additional time resolving field challenges (re-routing hose, re-installation AY-02D drain, and re-routing portions of AP-102 electrical conduit/wiring).

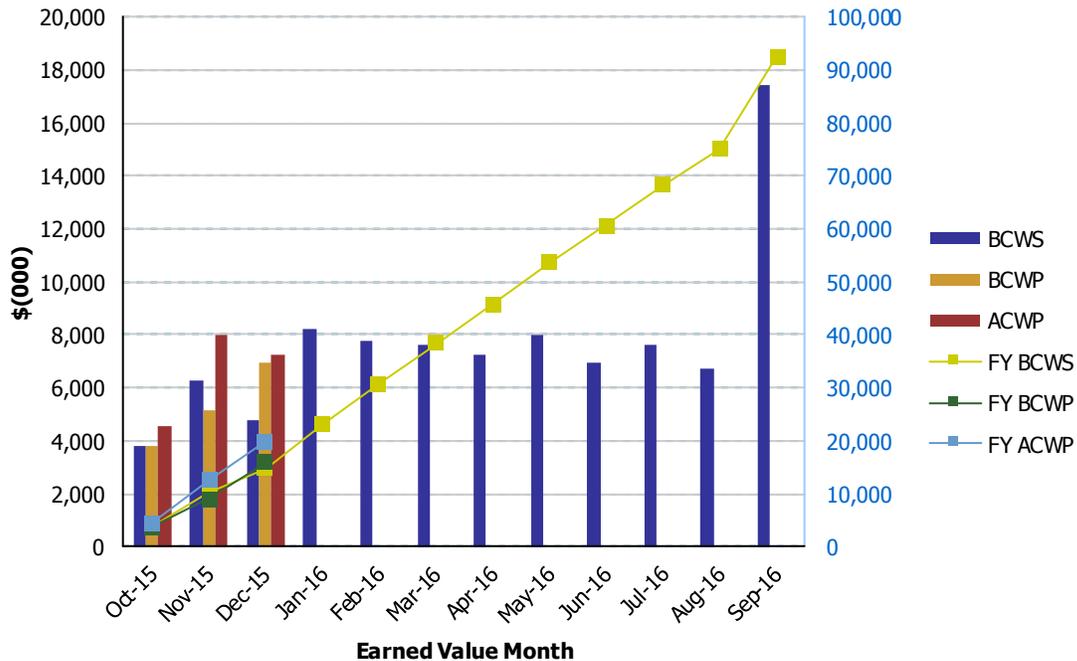
EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2016

December-15

Tank Farms ORP-0014
Retrieve and Close SST's 5.02

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$3,770	\$3,814	\$4,560	1.01	0.84	\$3,770	\$3,814	\$4,560	1.01	0.84
Nov 2015	\$6,282	\$5,131	\$8,006	0.82	0.64	\$10,052	\$8,946	\$12,566	0.89	0.71
Dec 2015	\$4,769	\$6,970	\$7,255	1.46	0.96	\$14,821	\$15,915	\$19,821	1.07	0.80
Jan 2016	\$8,231					\$23,052				
Feb 2016	\$7,740					\$30,791				
Mar 2016	\$7,610					\$38,402				
Apr 2016	\$7,251					\$45,652				
May 2016	\$8,010					\$53,662				
Jun 2016	\$6,951					\$60,613				
Jul 2016	\$7,642					\$68,255				
Aug 2016	\$6,735					\$74,989				
Sep 2016	\$17,430					\$92,419				

CTD	\$607,298	\$601,142	\$629,793	0.99	0.95
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- CTD = contract to date
- EVMS = Earned Value Management System.
- FY = fiscal year.
- SPI = schedule performance index

Retrieve and Close Single Shell Tanks

The current month favorable schedule variance (SV) of \$2,201K is due to:

- Work planners completed previously overdue work packages for AX Farm regarding at-tank installation and ventilation installation for the refurbished exhausters. In addition, construction crews completed all remaining FY 2015 carryover field activities in AX Farm during December.

The current month unfavorable cost variance (CV) of (\$285K) is due to:

- Retrieval operations at Tank 241-C-111 resumed on December 11th (after a brief pause due to a hydraulic leak near the hydraulic pump unit) and crews were able to perform retrieval activities on 10 out of the 28 days. The project team is required to maintain the retrieval crews during non-retrieval operations (suspension/work stoppages) to monitor the tank and retrieval equipment. Performance is based on retrieval operations (gallons retrieved).

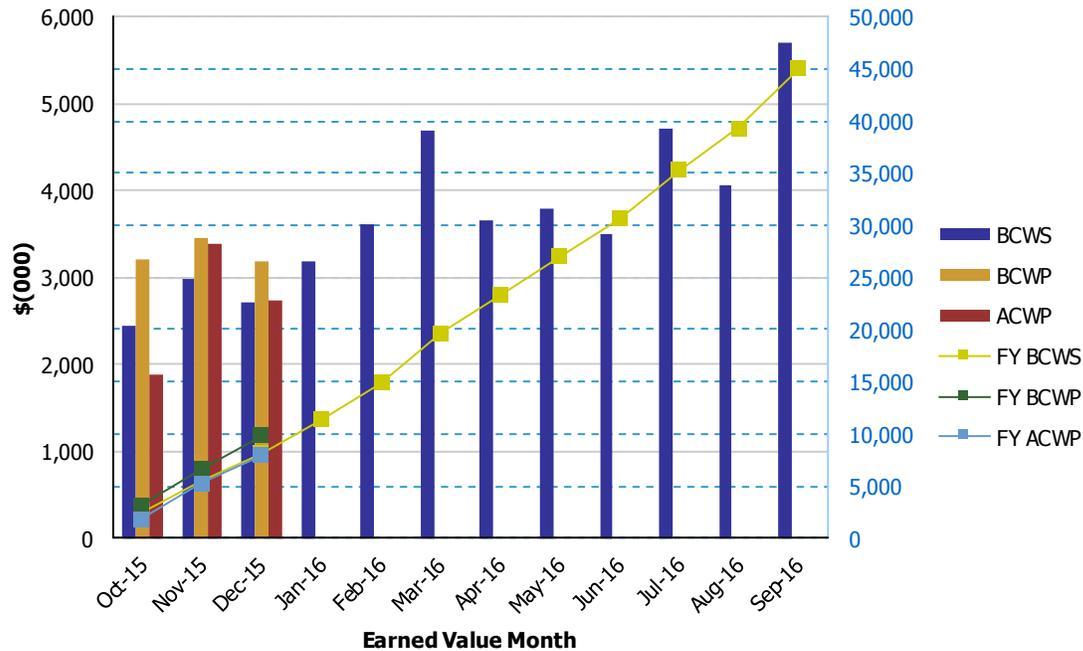
EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2016

December-15

Tank Farms ORP-0014
Waste Feed Delivery/Treatment/Double-Shell Tank Retrieval Closure 5.03

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$2,434	\$3,210	\$1,876	1.32	1.71	\$2,434	\$3,210	\$1,876	1.32	1.71
Nov 2015	\$2,987	\$3,446	\$3,379	1.15	1.02	\$5,421	\$6,656	\$5,255	1.23	1.27
Dec 2015	\$2,714	\$3,193	\$2,743	1.18	1.16	\$8,134	\$9,849	\$7,998	1.21	1.23
Jan 2016	\$3,193					\$11,328				
Feb 2016	\$3,600					\$14,928				
Mar 2016	\$4,693					\$19,621				
Apr 2016	\$3,660					\$23,281				
May 2016	\$3,795					\$27,076				
Jun 2016	\$3,491					\$30,566				
Jul 2016	\$4,714					\$35,281				
Aug 2016	\$4,055					\$39,336				
Sep 2016	\$5,707					\$45,042				

CTD	\$336,806	\$336,125	\$313,081	1.00	1.07
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- CTD = contract to date
- EVMS = Earned Value Management System.
- FY = fiscal year.
- SPI = schedule performance index

Waste Feed Delivery/Treatment/Double-Shell Tank Retrieval Closure

The current month favorable schedule variance (SV) of \$480k is due to:

- Completion of scope which was not completed as planned in FY 2015 and has been carried over into FY 2016. Also Pacific Northwest National Laboratory (PNNL) has been able to begin the upfront planning in support of the FY 2016 scope, which was originally planned to start at the beginning of January, 2016.

The current month favorable cost variance (CV) of \$451k is due to:

- Performance related to immobilized low activity waste (ILAW) glass testing which experienced labor usage efficiencies in subcontract resources and labor resources.
- PNNL contracted to support Secondary Waste Form Development in FY 2015 experienced resource usage and price efficiencies.

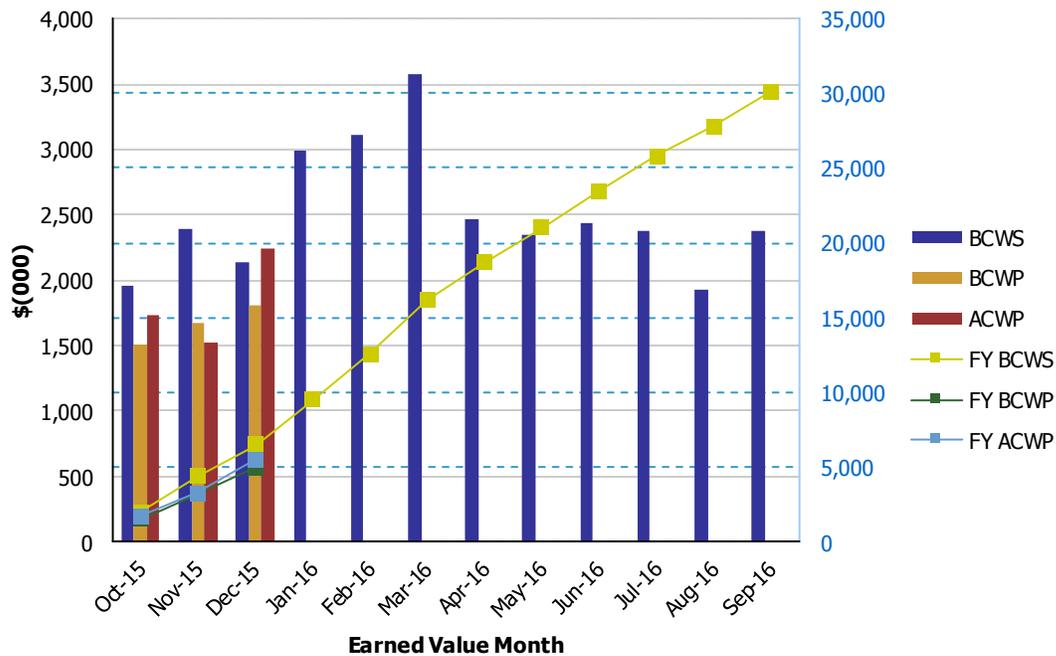
EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2016

December-15

**Tank Farms ORP-0014
Treat Waste 5.5**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$1,965	\$1,513	\$1,735	0.77	0.87	\$1,965	\$1,513	\$1,735	0.77	0.87
Nov 2015	\$2,399	\$1,669	\$1,517	0.70	1.10	\$4,364	\$3,182	\$3,252	0.73	0.98
Dec 2015	\$2,137	\$1,814	\$2,245	0.85	0.81	\$6,501	\$4,996	\$5,497	0.77	0.91
Jan 2016	\$2,998					\$9,499				
Feb 2016	\$3,113					\$12,611				
Mar 2016	\$3,582					\$16,193				
Apr 2016	\$2,472					\$18,665				
May 2016	\$2,350					\$21,015				
Jun 2016	\$2,435					\$23,450				
Jul 2016	\$2,372					\$25,822				
Aug 2016	\$1,931					\$27,753				
Sep 2016	\$2,376					\$30,129				

CTD	\$24,197	\$22,423	\$22,119	0.93	1.01
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ACWP = actual cost of work performed.
 BCWP = budgeted cost of work performed.
 BCWS = budgeted cost of work scheduled.
 CPI = cost performance index.

CTD = contract to date
 EVMS = Earned Value Management System.
 FY = fiscal year.
 SPI = schedule performance index

Treat Waste

The current month unfavorable schedule variance (SV) of (\$323K) is due to:

- The delay in the procurement of spherical resorcinol formaldehyde (sRF) resin for the integrated test. A work around has been developed to acquire the sRF resin. In addition, the schedule variance is also attributed to the activity being planned earlier than needed.

The current month unfavorable cost variance (CV) of (\$431K) is due to:

- The awarded Integrated Scale and Ion Exchange Test subcontractor execution work plan is significantly different than the current performance measurement baseline (PMB). The Integrated Scale and Ion Exchange Test are currently being re-planned to align with the subcontractor's execution work plan, which will be implemented in January 2016.

Single-Shell Tank Closure Program

M-045-00, Complete closure of all SST farms, Due: January 31, 2043, Status: On schedule.

M-045-56K, Complete Implementation of Agreed to Interim Measures, Due: July 31, 2015, Status: Complete. Annual meeting was held July 15, 2015. Meeting notes have been placed in the Administrative Record at this location:

<http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0080444H>

M-045-59, Control surface water infiltration pathways as needed to control or significantly reduce the likelihood of migration of subsurface contamination to groundwater at the SST Waste Management Areas (WMA) (pending the Corrective Measures Study report, Milestone M-45-58, and implementation of other interim corrective measures), Due: To be determined, Status: On schedule.

M-045-61A, Submit to Ecology for review and approval as an Agreement primary document, document review process, a Phase 2 Corrective Measures Study, and Revision 0 update to the RFI Report for WMA-C), Due: December 31, 2016, Status: On Schedule. The *Phase 2 RCRA Facility Investigation Report* Draft A for Waste Management Area C (WMA-C), RPP-RPT-58339, was transmitted to Ecology on December 23, 2014, via letter 14-TF-0131. This milestone was created by *Hanford Federal Facility Agreement and Consent Order* (HFFACO) change package M-45-14-03, signed October 1, 2014.

M-045-62, Submit to Ecology for review and approval as an agreement primary document a Phase 2 Corrective Measures Study Implementation Plan for WMA-C, Due: Six months after the approval of the corrective measures study (CMS) submitted under milestone M-045-61A. Status: On schedule. TPA Change Control form M-45-15-02 approved on April 14, 2015.

M-045-82, Submit complete permit mod requests for Tiers 1, 2, and 3 of the SST, Due: September 30, 2015, Status: In dispute. Please see issues.

M-045-83, Complete the closure of WMA-C, Due: June 30, 2019, Status: To be missed. Please see issues.

M-045-84, Complete negotiations of TPA interim milestones for closure of second WMA, Due: January 31, 2017, Status: On schedule.

M-045-85, Complete negotiations of TPA interim milestones for closure of remaining WMAs, Due: January 31, 2022, Status: On schedule.

M-045-92 (N, O, P, Q, R) Complete Installation of Four (4) Additional Interim Barriers, Due: October 31, 2017, Status: In Dispute. Please see issues.

Significant Past Accomplishments:

- Submitted TPA/RCRA Tier I Closure Plan on September 30, 2015 to Ecology
- Finalized Integrated Disposal Facility (IDF) PA data packages from workshop 2.

Significant Planned Activities in the Next Six Months:

- Continue data collection for T Farm and TY Farm interim surface barrier monitoring and develop the annual interim barrier monitoring report for 2015.
- Complete TPA/RCRA Tier 3 closure plan templates for C-200 Tanks
- Finalize/Issue for IDF PA Summary Analysis.

Issues:

- **M-045-82, Submit complete permit mod requests for Tiers 1, 2, and 3 of the SST**
 - Change Control Form M-45-15-03 was submitted by ORP via letter 15-TF-0065, “The U.S. Department of Energy, Office of River Protection Transmittal of Hanford Federal Facility Agreement and Consent Order Change Control Form M-45-15-03 to Modify Milestone M-045-82 for Approval,” to Ecology for approval on June 30, 2015.
 - Ecology disapproved M-45-15-03 via letter 15-NWP-128, “Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Control Form, Change Number M-45-15-03, Dated June 25, 2015,” on July 14, 2015.
 - ORP initiated dispute resolution via letter 15-TF-0069, “Initiation of Dispute Resolution Regarding Disapproval of Hanford Federal Facility Agreement and Consent Order Change Control Form M-45-15-03,” on July 16, 2015.
 - This dispute has been extended to February 18, 2016. ORP submitted a closure schedule for regulator decision to Ecology on January 13, 2016.
- **M-045-92 (N, O, P, Q, R), Complete Installation of Four Additional Interim Barriers**
 - (N) Construct SX ISB 1 and 2 by October 31, 2015
 - (O) Design ISB 3 by June 30, 2015
 - (P) Construct ISB 3 by October 31, 2016
 - (Q) Design ISB 4 by June 30, 2016
 - (R) Construct ISB 4 by October 31, 2017
 - Change control form M-45-15-01 was submitted by ORP via letter 15-TF-0027, “Transmittal for Approval of the Hanford Federal Facility Agreement and Consent Order Change Control Form M-45-15-01 to Modify Milestone M-045-92 Due Dates,” to Ecology for approval on March 31, 2015.

- Ecology disapproved M-45-15-01 via letter 15-NWP-075, “Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Control Form, Change Number M-045-15-01, dated 03/26/15,” on April 17, 2015.
- ORP initiated dispute resolution via letter 15-TF-0042, “Initiation of Dispute Resolution Regarding Disapproval of Hanford Federal Facility Agreement and Consent Order Change Control Form M-45-15-01,” on April 20, 2015.
- This dispute has been extended to February 16, 2016, with a proposed draft settlement proposed by Ecology.

Single-Shell Tank Retrieval Program

M-045-70, Complete waste retrieval from all remaining SSTs, Due: December 31, 2040,
Status: On schedule.

M-045-86, Submit retrieval data report (RDR) to Ecology for 19 tanks retrieved, Due: To be determined (12 months after retrieval certification), Status: At risk.

- M-045-86I: RDR for C-101 was due September 24, 2015, completed on September 24, 2015 with letter 15-TF-0099, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-101.”
- M-045-86C: RDR for C-104 was due March 21, 2014, completed on February 18, 2014 with letter 14-TF-0013, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-104.”
- M-45-86E: RDR for C-107 was due July 28, 2015, completed on September 15, 2015 with letter 15-TF-0086, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-107.”
- M-045-86F: RDR for C-108 was due May 1, 2014, completed on November 27, 2013 with letter 13-TF-0120, “Submittal of Retrieval Data Report for Single-Shell Tank 241-C-108, RPP-RPT-55896, Revision 1.”
- M-045-86G: RDR for C-109 was due June 4, 2014, completed on March 13, 2014 with letter 14-TF-0020, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-109.”
- M-045-86H: RDR for C-110 was due January 29, 2015, completed on August 6, 2014 with letter 14-TF-0086, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-110.”
- M-045-86K: RDR for C-112 was due September 30, 2015, completed on September 30, 2015 with letter 15-TF-0098, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-112.”

Significant Past Accomplishments:

- Washington State Department of Ecology (Ecology) approved practicability evaluation request to forego a third retrieval technology in Tank 241-C-102.
- Completed Tank 241-C-102 Retrieval Completion Certification.
- Retrieved approximately 45 percent of waste from Tank 241-C-105 utilizing the Mobile Arm Retrieval System – Vacuum (MARS-V) and high-pressure water.
- Obtained Tank 241-C-105 in-process sample.
- Added 17,000 gallons of caustic (third technology) to Tank 241-C-111 in preparation of resuming retrieval operations in February, an estimated 20,500 gallons of waste remain in the tank.

- Completed C-101, C-107, and C-112 retrieval data reports (RDR).
- Completed isolation of legacy duct ventilation lines at Tanks 241-AX-101, Tank 241-AX-102, 241-AX-103 and Tank 241-AX-104.

Significant Planned Activities in the Next Six Months:

- Complete Tank 241-C-102 post retrieval sampling.
- Complete Tank 241-C-105 second and third retrieval technologies.
- Complete Tank 241-C-111 ERSS retrieval operations using high-pressure water, with caustic/water dissolution (second and third technologies).
- Complete AX Farm field work for tower, stack extension, and platform installation.
- Complete equipment removal/disposal at AX-101 pit and riser.
- Complete AX-2707 fencing and gate upgrades
- Complete AX Ventilation Installation, Testing and Startup at POR126.
- Complete building AX-2707 and building AX-80 removal and disposal.

Issues: None.

Tank Waste Retrieval Work Plan Status

Tank	TWRWP	Expected Revisions	First Retrieval Technology	Second Technology	Third Technology
C-101	RPP-22520, Rev. 8	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	-
C-102	RPP-22393, Rev. 7	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	-
C-104	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0018	-
C-105	RPP-22520, Rev. 8	Third Technology	MARS-V	MARS-V-High Pressure Water Spray	TBD
C-107	RPP-22393, Rev. 7	Complete	MARS-S	MARS-S -High Pressure Water Spray	Water Dissolution
C-108	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0025	-
C-109	RPP-21895, Rev. 5	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0037	-

Tank	TWRWP	Expected Revisions	First Retrieval Technology	Second Technology	Third Technology
C-110	RPP-33116, Rev. 3	Complete	Modified Sluicing	Mechanical Waste Conditioning with an In-Tank Vehicle	High Pressure Water
C-111	RPP-37739, Rev. 2	Complete	Modified Sluicing	High pressure water using the ERSS	Chemical Dissolution Process with ERSS
C-112	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process	-

ERSS = Extended Reach Sluicing System
MARS = Mobile Arm Retrieval System
S = sluicing

TBD = TBD
TWRWP = Tank Waste Retrieval Work Plan
V = vacuum

Significant Accomplishments: None.

Significant Planned Activities in the Next Six Months:

- Finalize AX Farm tank waste retrieval work plans.
- Modify RPP-22520, “241-C-101, and 241-C-105, Tanks Waste Retrieval Work Plan, (C-105 TWRWP) to include a third technology for C-105 retrieval

Issues: None.

Tank in Appendix H, “Status - Single Shell Waste Retrieval Criteria”

Tank 241-C-106

Significant Past Accomplishments: None

Significant Planned Activities in the Next Six Months:

- Continue U.S. Nuclear Regulatory Commission (NRC) review of the C-106 exception request. A request for additional information was received from the NRC in February 2009.

Issues:

- It has been discussed with the NRC that much of the additional information requested is dependent upon development of C Farm residual waste PA and, therefore, cannot be provided until the PA is published.

Tank Retrievals with Individual Milestones

Tank 241-A-103

M-045-15, Completion of Tank A-103 SST Waste Retrieval, Due: September 30, 2022, Status: On schedule. Change package M-45-11-04 replaced Tank S-102 with Tank A-103 and changed the milestone completion date for M-045-15 to September 30, 2022.

M-045-15A, Embedded Milestone, Submit a Retrieval Data Report Pursuant to Agreement Appendix I, Due: September 30, 2022, Status: On schedule. Updated with Tank A-103 and due date of September 30, 2022, per change package M-45-11-04.

M-045-15D, Embedded Milestone, if appropriate, DOE will request an exception to waste retrieval criteria pursuant to Agreement Appendix H, Due: September 30, 2022, Status: On schedule. Updated with Tank A-103 and due date of September 30, 2022, per change package M-45-11-04.

Significant Past Accomplishments:

- Change package M-45-11-04 was signed by ORP and Ecology on April 19, 2011.

No significant planned activities in the next six months and no issues for Tank 241-A-103.

Tank 241-S-112

M-045-13, Interim Completion of Tank S-112 SST Waste Retrieval and Closure Demonstration Project, Due: To be determined (in accordance with M-045-84 or M-045-85), Status: On schedule.

M-045-13E, Complete Negotiations for Interim Milestones for Closure of S-112, Due: To be determined, Status: On schedule as part of M-045-84 or M-045-85.

Significant Past Accomplishments:

- Ecology letter of January 7, 2008, concurred with ORP that retrieval of Tank S-112 is complete.

No significant planned activities in the next six months and no issues for Tank 241-S-112.