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FINAL

Office of River Protection

Tri-Party Agreement

Report

January<sup>1</sup> 2018



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<sup>1</sup> The narrative descriptions of progress in this report cover the period from December 1–31, 2017. Earned Value Management System data and descriptions cover the period of November 1–31 2017.

<b><u>TOPIC</u></b>	<b><u>PAGE</u></b>
Acronyms and Abbreviations .....	2
Administrative Items/Milestone Status.....	3
System Plan.....	5
Acquisition of New Facilities .....	6
Supplemental Treatment and Part B Permit Applications .....	8
Low-Activity Waste Pretreatment System.....	10
242-A Evaporator Status.....	12
Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility.....	14
Tank System Update .....	16
Single-Shell Tank Integrity Assurance .....	19
In-Tank Characterization and Summary .....	20
Single-Shell Tank Closure Program .....	22
Single-Shell Tank Retrieval Program .....	26
Tank Operations Contract Overview .....	27

## Acronyms and Abbreviations

CV	cost variance
DFLAW	direct-feed low-activity waste
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
ETF	Effluent Treatment Facility
FY	fiscal year
IQRPE	independent qualified registered professional engineer
LAWPS	Low-Activity Waste Pretreatment System
LERF	Liquid Effluent Retention Facility
ORP	U.S. Department of Energy, Office of River Protection
SST	single-shell tank
SV	schedule variance
TPA	Tri-Party Agreement
TSCR	tank-side cesium removal
WMA	waste management area
WMA-C	C Tank Farm waste management area
WRPS	Washington River Protection Solutions LLC
WTP	Waste Treatment and Immobilization Plant

**Administrative Items/Milestone Status**

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>TPA Project Manager</b>	<b>Status/ Completion Date</b>
<b>Prior Years</b>				
M-062-45-T01	Complete Negotiations 6-Months After Last Issuance of System Plan	04/30/2015	Pfaff, Stephen H	In Abeyance
M-062-45-ZZ	Negotiate a One Time Supplemental Treatment Selection	04/30/2015	Pfaff, Stephen H	In Abeyance
M-062-45-ZZ-A	Convert the M-062-31-T01 Through M-062-34-T01 to Interim Milestones	04/30/2015	Pfaff, Stephen H	In Abeyance
M-047-07	CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to Ecology	03/31/2016	Diediker, Janet A	In Abeyance
M-090-13	CD-1 for Interim Hanford Storage Project and CR for CD-2 to Ecology	03/31/2016	Diediker, Janet A	In Abeyance
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016	Pfaff, Stephen H	In Abeyance
M-045-62	Submit to Ecology the draft Tier 3 closure plans to implement corrective measures	TBD <sup>1</sup>	Bovier, Jan B	On Schedule
M-045-83	Complete the Closure of WMA-C	TBD <sup>1</sup>	Bovier, Jan B	On Schedule
<b>Fiscal Year 2018</b>				
M-062-40F	Submit System Plan	10/31/2017	Burnett, Kaylin W	Completed 10/31/2017

Milestone	Title	Due Date	TPA Project Manager	Status/Completion Date
M-062-32-T01	Start Construction of Supplemental Vitrification Treatment Facility and/or WTP Enhancements	04/20/2018	Pfaff, Stephen H	In Abeyance
M-045-92O	Barrier 3 Design/Monitoring Plan Submitted to Ecology	06/30/2018	Bovier, Jan B	On Schedule
M-045-56N	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2018	Bovier, Jan B	On Schedule
M-045-91I	Provide IQRPE Certification of SSTs Structural Integrity	09/30/2018	Stewart, Dustin M	On Schedule
M-045-92T	Barrier 3 Design/Monitoring Plan Approved by Ecology	09/30/2018	Bovier, Jan B	On Schedule
<b>Fiscal Year 2019</b>				
M-045-92N	Complete Construction of Barriers 1 and 2 in 241-SX Farm	10/31/2018	Bovier, Jan B	On Schedule
M-045-92Q	Barrier 4 Design/Monitoring Plan Submitted to Ecology	06/30/2019	Bovier, Jan B	On Schedule
M-045-56O	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2019	Bovier, Jan B	On Schedule
M-045-91E3	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology	09/30/2019	Johnson, Jeremy M	On Schedule
M-045-92U	Barrier 4 Design/Monitoring Plan Approved by Ecology	09/30/2019	Bovier, Jan B	On Schedule

<sup>1</sup> To be established in accordance with the date identified in the M-045-82 Tier 2 closure plan.

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

CR = change request.

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

IQRPE = independent qualified registered professional engineer.

RCRA = *Resource Conservation and Recovery Act.*

SST = single-shell tank.

TBD = to be determined.

TPA = Tri-Party Agreement.

WTP = Waste Treatment and Immobilization Plant.

WMA-C = C Tank Farm waste management area.

## System Plan

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***One System Division Director:*** Jon Peschong

***Federal Program Manager:*** Kaylin Burnett

***Ecology Project Manager:*** Dan McDonald, Jeff Lyon

### **Significant Past Accomplishments**

- None.

### **Significant Planned Actions in the Next Six Months**

- Continue negotiations of the M-062-45 milestone and related milestones with intent to utilize information from the *River Protection Project System Plan*, Rev. 8.

### **Issues**

- None.

## Acquisition of New Facilities

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**Tank Farms Assistant Manager:** Glyn Trenchard

**Deputy Federal Project Director:** Janet Diediker

**Ecology Project Manager:** Dan McDonald, Jeff Lyon

- M-047-07**      **CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to Ecology**  
Due: March 31, 2016.  
Status: In Abeyance. Decision document 2016-005, *Hanford Federal Facility Agreement and Consent Order Integrity Management Integration Team (IAMIT) Decision / Determination / Action Agreement*, signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.
- M-090-13**      **CD-1 for Interim Hanford Storage Project and CR for CD-2 to ECY**  
Due: March 31, 2016.  
Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.
- M-090-00**      **Acquire/Modify Facilities for Storage of Immobilized High-Level Waste (IHLW)**  
Due: December 31, 2019.  
Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.
- 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: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

### Significant Past Accomplishments

- None.

### Significant Planned Actions in the Next Six Months

- None.

**Issues**

- Negotiations on the items identified in the M-062-45 milestone began on September 8, 2016, in accordance with a decision by the Interagency Management Integration Team.



## Supplemental Treatment and Part B Permit Applications

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*Tank Farms Assistant Manager:* Glyn Trenchard

*Federal Project Director:* Steve Pfaff

*Ecology Project Manager:* Dan McDonald

**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 Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

**M-062-45-ZZ (designation for M-062-45 item 3), Negotiate a one-time supplemental treatment selection**

Due: April 30, 2015.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

**M-062-45-ZZ-A Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones**

Due: April 30, 2015.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

**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 Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

**M-062-32-T01 Start construction of supplemental vitrification treatment facility and/or WTP enhancements**

Due: April 30, 2018.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

**M-062-33-T01 Complete construction of supplemental vitrification treatment facility and/or WTP enhancements**

Due: April 30, 2021.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

- M-062-45-XX**      **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 Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.
- M-062-21**            **Annually submit data that demonstrates operation of the WTP**  
Due: February 28, 2023.  
Status: At risk.
- M-062-00**            **Complete Pretreatment Processing and Vitrification of High-Level Waste and LAW Tank Wastes**  
Due: December 31, 2047.  
Status: At risk.

### **Significant Past Accomplishments**

- None.

### **Significant Planned Actions in the Next Six Months**

- None.

### **Issues**

- Negotiations on the items identified in the M-062-45 milestone began on September 8, 2016, in accordance with a decision by the Interagency Management Integration Team.

## **Low-Activity Waste Pretreatment System**

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<b><i>Tank Farms Assistant Manager:</i></b>	Glyn Trenchard
<b><i>LAWPS Federal Manager:</i></b>	Steve Pfaff
<b><i>TSCR Federal Manager:</i></b>	Sahid Smith
<b><i>Ecology Project Manager:</i></b>	Dan McDonald, Jeff Lyon

### **Significant Past Accomplishments**

#### *Low-Activity Waste Pretreatment System:*

- Washington River Protection Solutions LLC (WRPS) continued work activities/proposal development for tank-side cesium removal and the optimized Low-Activity Waste Pretreatment System (LAWPS) facility, both using a nonelutable ion exchange media.
- Principal Deputy Assistant Secretary for the U.S. Department of Energy (DOE), Office of Environmental Management James Owendoff met with Washington State Department of Ecology (Ecology) Director Maia Bellon on November 9, 2017, to discuss potential initiatives to accelerate cleanup of the Hanford Site. Several of these potential initiatives were discussed at that meeting, including but not limited to, putting the High-Level Waste and Pretreatment facilities into preservation mode, while still meeting applicable Amended Consent Decree milestones, to allow the DOE Office of River Protection (ORP) to focus on bringing direct-feed low-activity waste (DFLAW) into operation. Director Bellon responded by letter dated November 17, 2017, indicating Ecology’s willingness to participate in further discussions. DOE provided a response to Ecology on December 1, 2017, which summarized DOE’s key takeaways from the November meeting, highlighting numerous ideas under consideration, and provided further information, as requested by Ecology, regarding the tank-side cesium removal (TSCR) and redesign of LAWPS. The letter reiterated concerns about DFLAW that DOE had discussed with Ecology during the November meeting, specifically, “concerns about the cost, schedule, and the permitting status of LAWPS, and how these concerns have prompted [DOE] to explore ways to reinforce the timely treatment of LAW.” The letter described WRPS’ and DOE’s analysis of the feasibility of changing the specifications for low-activity waste feed in order to simplify the LAWPS’ filtration system, the possibility of using an “optimized LAWPS” design in addition to TSCR, and DOE’s direction to WRPS to suspend certain design and testing activities for the current LAWPS facility in order to conserve resources that could be lost if there were a decision to pursue TSCR and optimize LAWPS. Letter WRPS-1704216 R1, “Contract Number DE-AC27-08RV14800 – Washington River Protection Solutions LLC Submits Recommendations from External Expert Review on Low-Activity Waste Pretreatment System,” October 23, 2017, included a copy of RPP-RPT-60405, *External Expert Review of the Low-Activity Waste Pretreatment System (LAWPS) Project*. The letter noted it would be useful to meet again with Ecology for a more detailed discussion of this approach.

Tank-Side Cesium Removal:

- See above text under LAWPS.

**Significant Planned Actions in the Next Six Months**Low-Activity Waste Pretreatment System:

- WRPS to continue design development of the optimized LAWPS facility with a nonelutable ion exchange media.
- WRPS to submit contract change proposal for the optimized LAWPS facility with nonelutable ion exchange media.

Tank-Side Cesium Removal:

- WRPS to submit proposal for a technology demonstration of a TSCR capability.
- WRPS to complete the engineering procurement specification for the TSCR capability.
- WRPS to issue a request for proposal for the design and fabrication of the TSCR capability.

**Issues**Low-Activity Waste Pretreatment System:

- At ORP's request, WRPS conducted an external expert review of the LAWPS Project. The external expert review team concluded that the existing LAWPS design could not be completed in time or within budget to meet the December 2021 low-activity waste feed contractual commitment. The team endorsed an alternative approach using a two-phased pretreatment strategy. As previously discussed with Ecology in November 2017 and as summarized in the December 1, 2017, letter to Ecology, DOE has described "concerns about the cost, schedule, and permitting status of LAWPS, and how these concerns have prompted [DOE] to explore ways to reinforce the timely treatment of LAW".

Tank-Side Cesium Removal:

- None.

## 242-A Evaporator Status

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**Tank Farms Assistant Manager:** Glyn Trenchard

**Federal Program Manager:** Paul Hernandez

**Ecology Project Manager:** Jeff Lyon

The 242-A Evaporator campaign strategy for fiscal year (FY) 2018 is in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
2018	EC-08	Blend of AP-106 AP-107	AP-103	222-S Laboratory analysis is underway and on target to allow an April 2018 campaign.
2018	EC-09	Blend of AP-106 AP-108	AP-104	242-A Evaporator campaign EC-09 will require blending of waste in Tank AW-106, sampling, and sample analysis prior to campaign start. In addition, the waste will need to be transferred from Tank AW-106 to Tank AW-102 after EC-08 completes.

### Significant Past Accomplishments

- Completed sampling from Tank AW-102 and initiated sample analysis at 222-S Laboratory in support of EC-08
- Continued replacement of control room air conditioning units.

### Significant Planned Actions in the Next Six Months

- Establish the future campaign and outage scheduling
- Install new effluent sampling station
- Replace outdated fire alarm control panel
- Clear flammable gas air purge line.

**Issues**

- The flammable gas purge air line for the safety instrumented system began to plug slightly during and following the EC-06 Evaporator campaign. Efforts to unplug the line are ongoing.

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

**Tank Farms Assistant Manager:** Glyn Trenchard

**Federal Program Manager:** Richard Valle

**Ecology Project Manager:** Stephanie Schleif

The Liquid Effluent Retention Facility (LERF) liquid levels, inventory, and received waste are shown in the table below. 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.

	<b>242AL-42 (Basin 42)</b>	<b>242AL-43 (Basin 43)</b>	<b>242AL-44 (Basin 44)</b>
<b>Total Volume (as of Dec. 31, 2017)</b>	~ 2.72 Mgal	~ 4.41 Mgal	~ 7.42 Mgal

<b>Waste Received</b>			
AZ-301 Tanker Shipments	-	-	-
MWT-31 and 34 Leachate	~ 14,000 gal	-	
Other (e.g., Totes, Modutank)	~2,100 gal	-	
242-A Evaporator Campaigns	-	-	-

gal = gallon.

Mgal = million gallons.

MWT = mixed waste trench.

### Significant Past Accomplishments

- Total FY 2018 volume processed (as of December 31, 2017): approximately 256,000 gallons
- Completed repairs to the thin film dryer boiler electrical system
- Completed required tank inspections (Concentrate Tank-B, Secondary Waste Receiving Tank-B, and Surge Tank)
- Completed the Surge Tank leak test in support of Effluent Treatment Facility (ETF) integrity project.

### Significant Planned Actions in the Next Six Months

- Resume LERF Basin 42 waste processing through the ETF
- Enter plant clean-out/outage before initiating LERF Basin 44 waste processing through the ETF

- Begin design and procurement/fabrication for second cover replacement project at LERF Basin 42.

**Issues**

- The inter-basin transfer from LERF Basin 42 to LERF Basin 43 was halted due to investigation of increased leachate level at LERF Basin 43. Additional response actions were implemented to continue pumping the leachate, monitor the sump in-leakage rate, and maintain equipment as needed. In speaking with the vendor who installed the leachate collection system, it is anticipated the leachate rate will not stabilize for at least a month following the pumping of the excess leachate. At that time, improved estimates may be determined and the path-forward established.



## Tank System Update

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***Tank Farms Assistant Manager:*** Glyn Trenchard  
***Federal Program Manager:*** Dusty Stewart  
***Ecology Project Manager:*** Cheryl Whalen, Jeff Lyon

Reports are identified as completed (internal access only) or released (external access).

### Significant Past Accomplishments

#### Double-Shell Tank Integrity:

- WRPS is in the process of placing contracts for FY 2018 corrosion testing. Emphasis this year is on new specification development to accommodate DFLAW returns and secondary liner testing.
- Report RPP-RPT-60546, *Ultrasonic Inspection Results for 241-SY Tank Farm Annulus Floors – FY 2017*, was released. This report documents recent annulus floor ultrasonic testing results. No areas of reportable wall thinning and no pit-like indications were identified that exceeded 25 percent of wall thickness.

### Significant Planned Actions in the Next Six Months:

- Enhanced annulus visual inspections are planned for these tanks in FY 2018:
 

– 241-AP-102	– 241-AP-108
– 241-AP-103	– 241-AW-101
– 241-AP-104	– 241-AW-102
– 241-AP-105	– 241-AW-104.
– 241-AP-106	
- Ultrasonic testing inspections are planned for these tanks in FY 2018:
  - 241-AY-101
  - 241-AZ-101
  - 241-AP-107.
- Continuing bi-weekly inspections of Tank AY-102 waste accumulation site.
- Continuing bi-monthly comprehensive inspection of Tank AY-102 annulus.
- Continuing annual comprehensive inspection of Tank AY-101 annulus.
- Enhanced annulus visual inspections are in progress at Tank AY-101.

- Secondary liners:
  - Perform laboratory testing of secondary liners for corrosion from moisture in the soil and for use of corrosion inhibitors. Both are methods that could be used to protect the secondary liner.
  - Model potential water ingress routes into the annulus systems: ongoing.
  - Perform a visual inspection of the Tank 241-AP-102 annulus floor; scheduled for FY 2018.
  - Perform another ultrasonic test scan of the area in question and additional areas in all four quadrants of the Tank 241-AP-102 annulus: scheduled for FY 2019.<sup>2</sup>
  - Investigate and develop nondestructive examination methods, in particular long-range, guided wave ultrasonic testing to support more comprehensive examination capability for double-shell tank bottoms. Field testing could begin as early as FY 2019.<sup>3</sup>

Single-Shell Tank Integrity:

**Significant Past Accomplishments:**

- WRPS awarded the contract for the single-shell tank (SST) integrity assessment project as described in M-045-91I (assessment of structural integrity) to Meier Architecture Engineering. The integrity assessment activities are underway.
- Completed in-tank video inspections for the following tanks: TX-105, TX-106, TX-109, TX-118, SX-101, SX-103, SX-105, and SX-113. Videos are currently being reviewed by WRPS Engineering.

**Significant Planned Actions in the Next Six Months:**

Work planning for FY 2018 in-tank video inspections is in process, and is expected to involve 12 tanks.

The following in-tank video inspections are planned for FY 2018:

- |                          |                          |
|--------------------------|--------------------------|
| • 241-B-104              | • 241-SX-113 (completed) |
| • 241-B-105              | • 241-TX-105 (completed) |
| • 241-S-107              | • 241-TX-106 (completed) |
| • 241-SX-101 (completed) | • 241-TX-109 (completed) |
| • 241-SX-103 (completed) | • 241-TX-118 (completed) |
| • 241-SX-105 (completed) | • 241-U-103.             |

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<sup>2</sup> Will not occur in the next six months, included for information only.

<sup>3</sup> Will not occur in the next six months, included for information only.

**Independent Qualified Registered Professional Engineer Activities**

- The independent qualified registered professional engineer (IQRPE) submitted the final, certified Rev. 0 version of RPP-RPT-60098, *242-A Evaporator System Integrity Assessment Report* to WRPS on December 20, 2017. The document is being entered into SmartPlant, a records/documentation control system, and will be submitted for external clearance (release). The IQRPE states that the 242-A Evaporator meets the requirements of WAC 173-303-640(2), “Tank systems,” and can be certified as fit for use. The report presents no findings; reasonable recommendations are made for improvement.
- Work continues on RPP-PLAN-61349, *Effluent Treatment Facility Integrity Program Plan*. The plan will support the FY 2019 IQRPE ETF integrity assessment.
- WRPS awarded the contract for the 219-S integrity assessment project to Meier Architecture Engineering. Planning is underway for conducting visual, ultrasonic, and leak tests in the facility. RPP-PLAN-61634, *219-S Integrity Assessment Plan*, has been released and will serve as a guide for conducting these inspections.
- WRPS awarded the contract for the SST integrity assessment project as described in M-045-91I (assessment of structural integrity) to Meier Architecture Engineering. The integrity assessment activities are underway.

**Issues:**Double-Shell Tank Integrity:

- None.

Single-Shell Tank Integrity:

- None.

## Single-Shell Tank Integrity Assurance

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**Tank Farms Assistant Manager:** Glyn Trenchard

**Federal Program Manager:** Dusty Stewart

**Ecology Project Manager:** Jeff Lyon

Reports are identified as completed (internal access only) or released (external access).

**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

- Document RPP-PLAN-61510, *Single-Shell Tank Structural Integrity Assessment Plan*, for the 2018 SST IQRPE report was released. WRPS awarded the contract for the SST integrity assessment project as described in M-045-91I (assessment of structural integrity) to Meier Architecture Engineering.

### Significant Planned Actions in the Next Six Months

- IQRPE development of the SST integrity assessment. A technical meeting is planned for January 10, 2018, to familiarize the IQRPE with the results from the SST structural analysis done by Pacific Northwest National Laboratory during SST integrity project activities. The Pacific Northwest National Laboratory subject matter expert will deliver a presentation on this to Ecology, ORP, and WRPS at the meeting.

### Issues:

- None.

## **In-Tank Characterization and Summary**

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***Tank Farms Assistant Manager:*** Glyn Trenchard

***Federal Program Manager:*** Dusty Stewart

***Ecology Project Manager:*** Jeff Lyon

### **Significant Past Accomplishments**

For the period from December 1 through December 31, 2017, the following reports were completed (internal access only) or released (external access):

- Released RPP-RPT-46686, *Derivation of Best-Basis Inventory for Tank 241-AW-106 as of October 1, 2017*, Rev. 8.
- Released RPP-RPT-48103, *Derivation of Best-Basis Inventory for Tank 241-AP-107 as of October 1, 2017*, Rev. 9.
- Released RPP-RPT-60519, *Derivation of Best-Basis Inventory for Tank 241-SX-103 as of November 1, 2017*, Rev. 0.
- Released RPP-RPT-60498, *Derivation of Best-Basis Inventory for Tank 241-U-110 as of November 1, 2017*, Rev. 0.
- Released RPP-RPT-46792, *Derivation of Best-Basis Inventory for Tank 241-AW-102 as of October 1, 2017*, Rev. 13.
- Released RPP-RPT-51226, *Derivation of Best-Basis Inventory for Tank 241-TX-109 as of December 1, 2017*, Rev. 1.
- Released RPP-RPT-60514, *Derivation of Best-Basis Inventory for Tank 241-U-107 as of December 1, 2017*, Rev. 0.
- Released RPP-RPT-48639, *Derivation of Best-Basis Inventory for Tank 241-AP-104 as of October 1, 2017*, Rev. 16.
- Released HNF-EP-0182, *Waste Tank Summary Report for Month November 30, 2017*, Rev. 359.
- Completed RPP-PLAN-61908, *Tank 241-AP-106 Grab Sampling and Analysis Plan – Fiscal Year 2018*, Rev. 0.
- Completed RPP-RPT-60490, *Final Analytical Report for Tank 241-SY-102 Grab Samples Collected September 2017*, Rev. 0.
- Completed 241-AP-106 liquid grab sampling December 18, 2017. Five samples were received at the laboratory.

### **Significant Planned Actions in the Next Six Months**

#### *Tank sampling:*

- Tank 241-AW-106 liquid grab sampling is planned for March 2018.

- Tank 241-AW-105 liquid grab sampling is planned for March 2018.
- Tank 241-C-105 post-retrieval solids grab sampling is planned for April 2018.
- Tank 241-A-104 solids grab sampling is planned for May 2018.
- Tank 241-A-105 solids grab sampling is planned for June 2018.

### **Best-Basis Inventory Updates**

Best-basis inventory updates for the following tanks were completed in December 2017:

- 241-AP-107
- 241-AW-102
- 241-AW-106
- 241-SX-103
- 241-TX-109
- 241-U-107
- 241-U-110.

Best-basis inventory update for the following tank is currently planned to be completed in January 2018:

- 241-AN-106.

### **Data Quality Objectives Updates**

- Completed TFC-ENG-CHEM-C-16, *Data Quality Objectives for Sampling and Analysis*, Rev. C-0.

### **Issues**

- None.

## Single-Shell Tank Closure Program

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*Tank Farms Assistant Manager:* Glyn Trenchard

*Federal Program Manager:* Jan Bovier

*Ecology Project Manager:* Jeff Lyon

- 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: To be determined.
- M-045-62**      **Submit to Ecology for review, in accordance with HFFACO Action Section 9.2.2, the draft Tier 3 closure plan to implement corrective measures identified in the approved Phase 2 Corrective Measures Implementation Work Plan (CMIP) for WMA-C**  
Due: To be established in accordance with the date identified in the M-45-82 Tier 2 closure plan.  
Status: On schedule.
- M-045-83**      **Complete the Closure of WMA-C by completing all closure activities specified in the Tier 2 closure plan not including activities specifically described in the Tier 2 closure plan as requiring integration with closure of other WMAs**  
Due: To be established in accordance with the date identified in the M-45-82 Tier 2 closure plan.  
Status: On Schedule.
- M-045-84**      **Initiate Negotiations to Establish HFFACO Interim Milestones for Closure of 2<sup>nd</sup> SST WMA**  
Due: April 3, 2017.  
Status: Complete (March 14, 2017). Negotiations initiated on March 14, 2017.  
Note: Decision on location of next waste management area (WMA) to be closed needs to be finalized.
- M-045-92O**      **Barrier 3 Design and Monitoring Plan submitted to Ecology**  
Due: June 30, 2018.  
Status: On Schedule. A joint decision between ORP and Ecology regarding the size of the barrier needs to be made to allow the design to progress.
- M-045-92T**      **Barrier 3 Design and Monitoring Plan approved by Ecology**  
Due: September 30, 2018.  
Status: On schedule.

- M-045-92N**      **Complete construction of Barriers 1 and 2 in SX Farm**  
Due: October 31, 2018.  
Status: On schedule.
- M-045-92Q**      **Barrier 4 Design and Monitoring Plan submitted to Ecology**  
Due: June 30, 2019.  
Status: On schedule.
- M-045-92U**      **Barrier 4 Design and Monitoring Plan approved by Ecology**  
Due: September 30, 2019.  
Status: On schedule.
- M-045-92P**      **Complete construction of Barrier 3**  
Due: October 31, 2019.  
Status: On schedule.
- M-045-92R**      **Complete construction of Barrier 4**  
Due: October 31, 2020.  
Status: On schedule.
- M-045-85**      **Initiate negotiations to establish HFFACO interim milestones for closure of remaining SST WMAs**  
Due: January 31, 2022.  
Status: On schedule.
- M-045-00**      **Complete Closure of all SST Farms**  
Due: January 31, 2043.  
Status: At risk. Decision document 2016-005 signed August 22, 2016, requires this milestone to be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

### **Significant Past Accomplishments**

- Working on the resolution of Ecology's review comments on the C Tank Farm WMA (WMA-C) performance assessment.
- Began construction of the evapotranspiration basin and associated piping for the SX Tank Farm interim surface barriers. Ecology toured the construction site on December 19, 2017.
- Agreed to locations for interim barrier 3 (TX Tank Farm) and interim barrier 4 (U Tank Farm) (Milestone M-045-92S).
- A meeting to discuss the 90 percent design of the SX Tank Farm expansion barrier was held with WRPS and Ecology on December 20, 2017.
- In follow-up to his letter of September 20, 2017, Principal Deputy Assistant Secretary for the DOE Office of Environmental Management James Owendoff met with Maia Bellon, Director of Ecology, on November 9, 2017, to discuss potential initiatives to accelerate



cleanup of the Hanford Site. Several of these potential initiatives were discussed at that meeting, including but not limited to, closure of C Tank Farm. Director Bellon responded by letter dated November 17, 2017, indicating Ecology's willingness to participate in further discussions. DOE provided a response to Ecology on December 1, 2017, which summarized DOE's key takeaways from the November meeting, highlighting numerous ideas under consideration including, but not limited to, a streamlined approach to closure of C Tank Farm.

### Significant Planned Activities in the Next Six Months

- Begin resolution of Ecology's comments on the *Resource Conservation and Recovery Act* Tier 1, 2, and 3 closure plans.
- Begin resolution of Ecology's comments on the *Resource Conservation and Recovery Act* Facility Investigation report and Corrective Measures Study report for WMA-C.

### Issues

- Document DOE/ORP-2014-02, *Clean Closure Practicability Demonstration for the Single-Shell Tanks*, was submitted to Ecology by letter 14-ECD-0030, "Transmittal of Clean Closure Practicability Demonstration for the Single-Shell Tanks DOE/ORP-2014-02," dated July 23, 2014. ORP received Ecology letter 15-NWP-149, "Department of Ecology's Response Comment Regarding Review of the Clean Closure Practicability Demonstration for the Single-Shell Tanks DOE/ORP-2014-02," dated August 3, 2015. ORP met with Ecology in November 2017 to discuss path forward.
- DOE and Ecology need to agree on the area to be covered by an interim surface barrier at TX Tank Farm to support M-045-92O. ORP provided a draft Tri-Party Agreement (TPA) Change Package via email to Ecology on December 14, 2017.
- Document RPP-RPT-58858, *Tier 1 Closure Plan Single-Shell Tank System*. Submitted to Ecology September 30, 2015. Received partial comments on April 11, 2016. Awaiting final Ecology comments.
- Document RPP-RPT-58339, *Phase 2 RCRA Facility Investigation Report for Waste Management Area C*. Submitted to Ecology February 13, 2017. Awaiting Ecology comments.
- Document RPP-RPT-59379, *Waste Management Area C Phase 2 Corrective Measures Study Report*, to complete milestone M-045-61A. Submitted to Ecology on February 13, 2017. Awaiting Ecology comments.
- Document RPP-RPT-59389, *Tier 2 Resource Conservation and Recovery Act (RCRA) Closure Action Plan for Waste Management Area C*. Submitted to Ecology on May 15, 2017. Ecology requested a continuing extension on September 12, 2017, to provide comments by October 16, 2017. Ecology subsequently requested an extension until November 22, 2017 (M-045-82). Awaiting Ecology comments.
- Document RPP-RPT-59390, *Tier 3 Resource Conservation and Recovery Act (RCRA) Component Closure Action Plan for 241-C-200 Series Tanks*. Submitted to Ecology on

May 15, 2017. Ecology requested a continuing extension on September 12, 2017, to provide comments by October 16, 2017. Ecology subsequently requested an extension until November 22, 2017 (M-045-82A). Awaiting Ecology comments.

## **Single-Shell Tank Retrieval Program**

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*Tank Farms Assistant Manager:* Glyn Trenchard

*Federal Program Manager:* Jeff Rambo

*Ecology Project Manager:* Jeff Lyon

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

**M-045-70**      **Complete waste retrieval from all remaining SSTs**  
Due: December 31, 2040.  
Status: At risk. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

### **Significant Past Accomplishments**

- Refer to the Consent Decree monthly report for retrieval accomplishments.

### **Significant Planned Activities in the Next Six Months**

- Refer to the Consent Decree monthly report for planned activities.

### **Issues**

- Refer to the Consent Decree monthly report for retrieval issues.

## Tank Operations Contract Overview

November-17										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	62,362	60,636	58,396	(1,726)	2,240	0.97	1.04			
FYTD	104,867	100,136	96,029	(4,731)	4,107	0.95	1.04	693,587		
CTD	4,197,657	4,168,799	4,139,832	(28,858)	28,967	0.99	1.01	4,786,377	4,786,185	192

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 = contract 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.

The Earned Value Management System is intended to provide a status of how the contractor is progressing against its monthly planned work (i.e., schedule), and whether it is costing more or less to complete the work than planned. The earned value analysis is not intended to be a measurement of performance against existing TPA milestones.

The project plan is measured by expressing the schedule in terms of dollars spread over the anticipated project duration, and then for each month, determining how much of the planned work was accomplished or “earned,” as measured in equivalent dollars. If more work is accomplished than planned, then the project is ahead of schedule and has a favorable schedule variance (SV). Similarly, if less work is accomplished, the project is behind schedule and has an unfavorable SV. Accomplished work is reported in the month it was completed, which may not be when it was planned. For example, work completed in a month earlier than planned would be reported as a favorable SV for the month in which it was completed, but would be reported as an unfavorable SV in the month it was planned. The end result would be a net zero overall cumulative SV over these months. Likewise, work completed late will recover an earlier reported unfavorable SV.

The cost variance (CV) measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10K of work was planned to-date, \$8K was reported as being performed (earned), at an actual cost of \$9K. This work would be reported as being \$2K behind schedule [a negative or unfavorable SV:  $\$8K - \$10K = (\$2K)$ ], and has cost \$1K more [a negative or unfavorable CV:  $\$8K - \$9K = (\$1K)$ ] than was planned for completing that work scope. Likewise, a favorable or positive CV would be reported if it cost less to complete the work than the performed dollar value of the work.

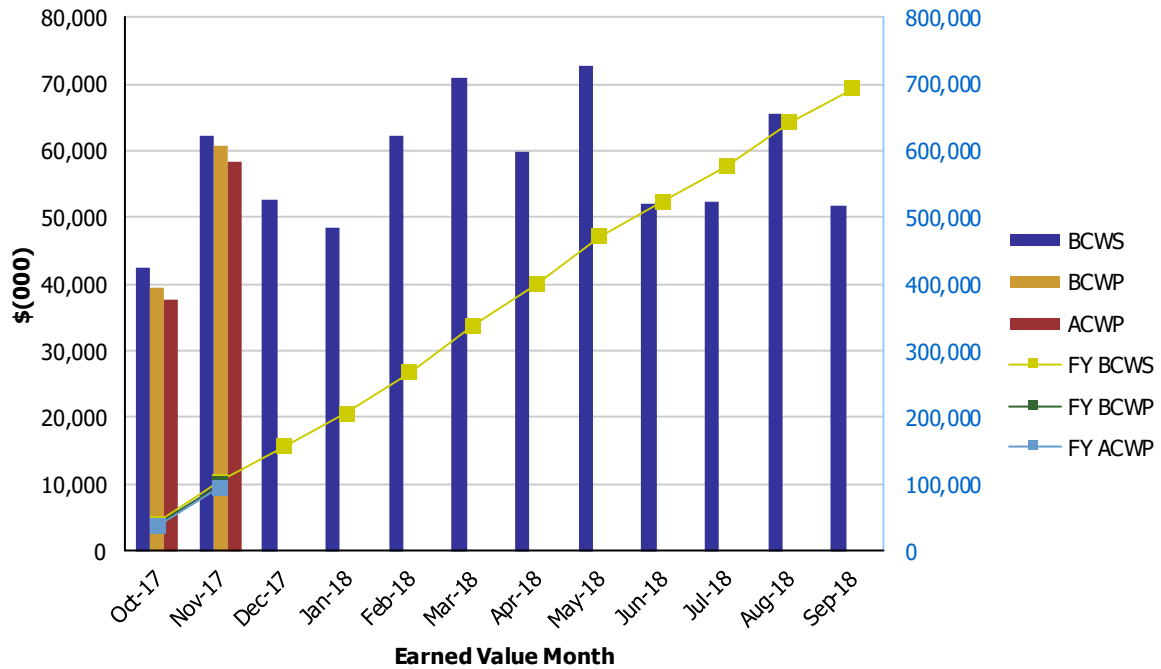
The SV and CV are reported for each monthly period, FY-to-date, as well as for the contract-to-date value. The monthly variances can fluctuate significantly (for reasons noted earlier), so the FY or contract-to-date report provides a better indicator of the overall project completion status and can give a reasonable projection of how the project will finish, based on the progress-to-date.

Earned Value Data: Fiscal Year 2018

November-17

**Tank Farms ORP-0014**  
**WBS 5 - River Protection Project**

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 2017	\$42,505	\$39,501	\$37,634	0.93	1.05	\$42,505	\$39,501	\$37,634	0.93	1.05
Nov 2017	\$62,362	\$60,635	\$58,396	0.97	1.04	\$104,867	\$100,136	\$96,029	0.95	1.04
Dec 2017	\$52,753			0.00	0.00	\$157,620			0.00	0.00
Jan 2018	\$48,362			0.00	0.00	\$205,982			0.00	0.00
Feb 2018	\$62,330			0.00	0.00	\$268,311			0.00	0.00
Mar 2018	\$70,854			0.00	0.00	\$339,166			0.00	0.00
Apr 2018	\$59,951			0.00	0.00	\$399,117			0.00	0.00
May 2018	\$72,706			0.00	0.00	\$471,823			0.00	0.00
Jun 2018	\$52,179			0.00	0.00	\$524,001			0.00	0.00
Jul 2018	\$52,483			0.00	0.00	\$576,484			0.00	0.00
Aug 2018	\$65,496			0.00	0.00	\$641,980			0.00	0.00
Sep 2018	\$51,607			0.00	0.00	\$693,587			0.00	0.00
CTD	\$4,197,657	\$4,168,799	\$4,139,832	0.99	1.01					

ACWP = actual cost of work performed.  
 BCWP = budgeted cost of work performed.  
 BCWS = budgeted cost of work scheduled.  
 CPI = cost performance index.

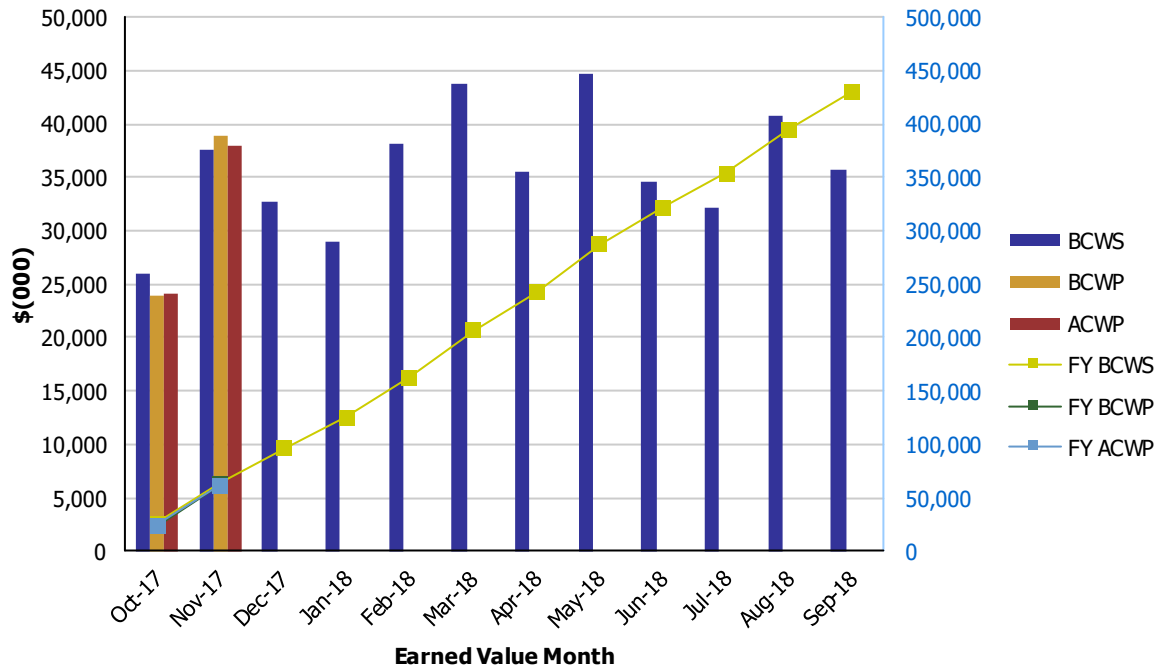
CM = current month.  
 CTD = contract to date.  
 FY = fiscal year.  
 SPI = schedule performance index.

Earned Value Data: Fiscal Year 2018

November-17

**Tank Farms ORP-0014**  
**WBS 5.1 - Base Operations**

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 2017	\$25,995	\$23,854	\$24,021	0.92	0.99	\$25,995	\$23,854	\$24,021	0.92	0.99
Nov 2017	\$37,542	\$38,850	\$37,961	1.03	1.02	\$63,537	\$62,704	\$61,982	0.99	1.01
Dec 2017	\$32,637			0.00	0.00	\$96,174			0.00	0.00
Jan 2018	\$28,985			0.00	0.00	\$125,159			0.00	0.00
Feb 2018	\$38,113			0.00	0.00	\$163,272			0.00	0.00
Mar 2018	\$43,767			0.00	0.00	\$207,039			0.00	0.00
Apr 2018	\$35,614			0.00	0.00	\$242,653			0.00	0.00
May 2018	\$44,785			0.00	0.00	\$287,438			0.00	0.00
Jun 2018	\$34,531			0.00	0.00	\$321,969			0.00	0.00
Jul 2018	\$32,134			0.00	0.00	\$354,103			0.00	0.00
Aug 2018	\$40,852			0.00	0.00	\$394,955			0.00	0.00
Sep 2018	\$35,678			0.00	0.00	\$430,633			0.00	0.00
CTD	\$2,788,741	\$2,769,449	\$2,736,367	0.99	1.01					

ACWP = actual cost of work performed.  
 BCWP = budgeted cost of work performed.  
 BCWS = budgeted cost of work scheduled.  
 CPI = cost performance index.

CM = current month.  
 CTD = contract to date.  
 FY = fiscal year.  
 SPI = schedule performance index.

***Tank Farms Assistant Manager:*** Glyn Trenchard

***Federal Project Director:*** Ellen Mattlin

**Base Operations and Tank Farm Projects (5.01)**

The November 2017 variances below do not impact TPA milestones.

The **favorable** SV of \$1,308,000 is primarily due to:

- Schedule recovery of the mobile leased trailers procurement. Procurement of these trailers was planned to occur in September 2017 but was delayed while the procurement was evaluated. Approval was received and performance was taken this period.

The **favorable** CV of \$889,400 is primarily due to:

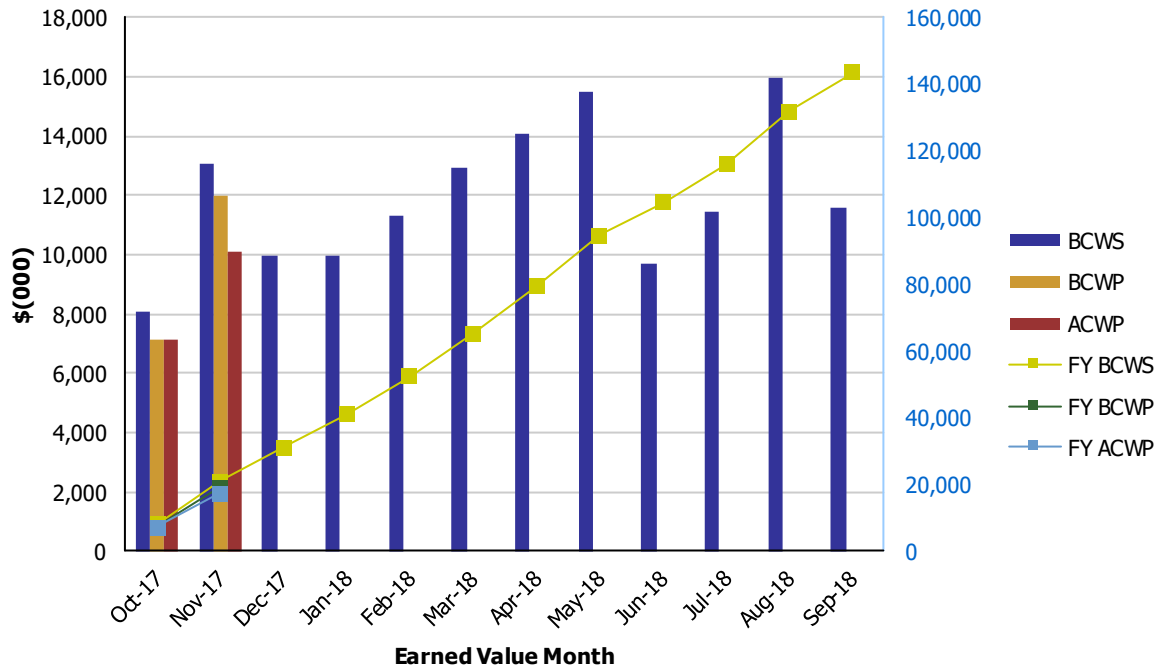
- Labor efficiencies were achieved by performing the prerequisites for three tank waste transfer activities simultaneously versus performing them as three separate activities. These included double-shell tank waste transfer from Tank AP-106 to Tank AW-102, Tank AP-106 recirculation, and Tank AP-106 level rise.

Earned Value Data: Fiscal Year 2018

November-17

**Tank Farms ORP-0014**  
**WBS 5.2 - Retrieve and Close SSTs**

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 2017	\$8,053	\$7,119	\$7,127	0.88	1.00	\$8,053	\$7,119	\$7,127	0.88	1.00
Nov 2017	\$13,058	\$11,996	\$10,119	0.92	1.19	\$21,111	\$19,115	\$17,245	0.91	1.11
Dec 2017	\$9,964			0.00	0.00	\$31,075			0.00	0.00
Jan 2018	\$9,928			0.00	0.00	\$41,004			0.00	0.00
Feb 2018	\$11,311			0.00	0.00	\$52,314			0.00	0.00
Mar 2018	\$12,899			0.00	0.00	\$65,213			0.00	0.00
Apr 2018	\$14,099			0.00	0.00	\$79,312			0.00	0.00
May 2018	\$15,461			0.00	0.00	\$94,773			0.00	0.00
Jun 2018	\$9,662			0.00	0.00	\$104,435			0.00	0.00
Jul 2018	\$11,460			0.00	0.00	\$115,895			0.00	0.00
Aug 2018	\$15,929			0.00	0.00	\$131,824			0.00	0.00
Sep 2018	\$11,558			0.00	0.00	\$143,383			0.00	0.00
CTD	\$824,682	\$823,777	\$855,797	1.00	0.96					

ACWP = actual cost of work performed.  
 BCWP = budgeted cost of work performed.  
 BCWS = budgeted cost of work scheduled.  
 CPI = cost performance index.

CM = current month.  
 CTD = contract to date.  
 FY = fiscal year.  
 SPI = schedule performance index.



*Tank Farms Assistant Manager:* Glyn Trenchard

*Federal Program Manager:* Jeff Rambo

**Retrieve and Close Single-Shell Tanks (5.02)**

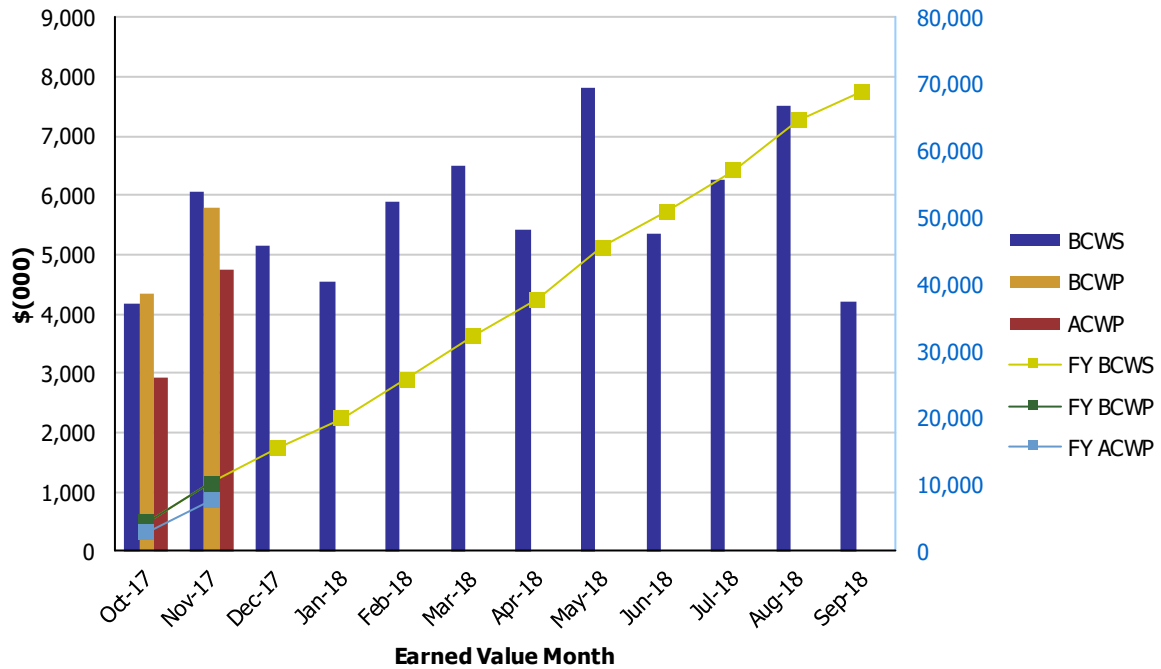
For the retrieval portion see the Consent Decree monthly report for cost and schedule status.

Earned Value Data: Fiscal Year 2018

November-17

**Tank Farms ORP-0014**  
**WBS 5.3 - WFD/Treatment Plng/DST Retrieval/Closure**

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 2017	\$4,163	\$4,326	\$2,909	1.04	1.49	\$4,163	\$4,326	\$2,909	1.04	1.49
Nov 2017	\$6,068	\$5,798	\$4,754	0.96	1.22	\$10,231	\$10,124	\$7,663	0.99	1.32
Dec 2017	\$5,132			0.00	0.00	\$15,363			0.00	0.00
Jan 2018	\$4,530			0.00	0.00	\$19,892			0.00	0.00
Feb 2018	\$5,881			0.00	0.00	\$25,773			0.00	0.00
Mar 2018	\$6,495			0.00	0.00	\$32,268			0.00	0.00
Apr 2018	\$5,431			0.00	0.00	\$37,699			0.00	0.00
May 2018	\$7,818			0.00	0.00	\$45,518			0.00	0.00
Jun 2018	\$5,338			0.00	0.00	\$50,855			0.00	0.00
Jul 2018	\$6,246			0.00	0.00	\$57,101			0.00	0.00
Aug 2018	\$7,520			0.00	0.00	\$64,621			0.00	0.00
Sep 2018	\$4,219			0.00	0.00	\$68,840			0.00	0.00
<b>CTD</b>	<b>\$442,988</b>	<b>\$440,443</b>	<b>\$404,474</b>	<b>0.99</b>	<b>1.09</b>					

ACWP = actual cost of work performed.  
 BCWP = budgeted cost of work performed.  
 BCWS = budgeted cost of work scheduled.  
 CPI = cost performance index.

CM = current month.  
 CTD = contract to date.  
 FY = fiscal year.  
 SPI = schedule performance index.

**One System Division Director:** Jon Peschong

**Federal Program Manager:** Kaylin Burnett

### **Waste Feed Delivery/Treatment (5.03)**

The November 2017 variances below do not impact TPA milestones.

The **unfavorable** SV of (\$270,200) is primarily due to:

- The Effluent Management Facility bottoms project leachate testing required additional analysis, which has extended the original schedule.
- The completion of the DFLAW feed qualification maturation project work was performed ahead of schedule, so the work was reported in previous reporting periods.

The **favorable** CV of \$1,044,100 is primarily due to:

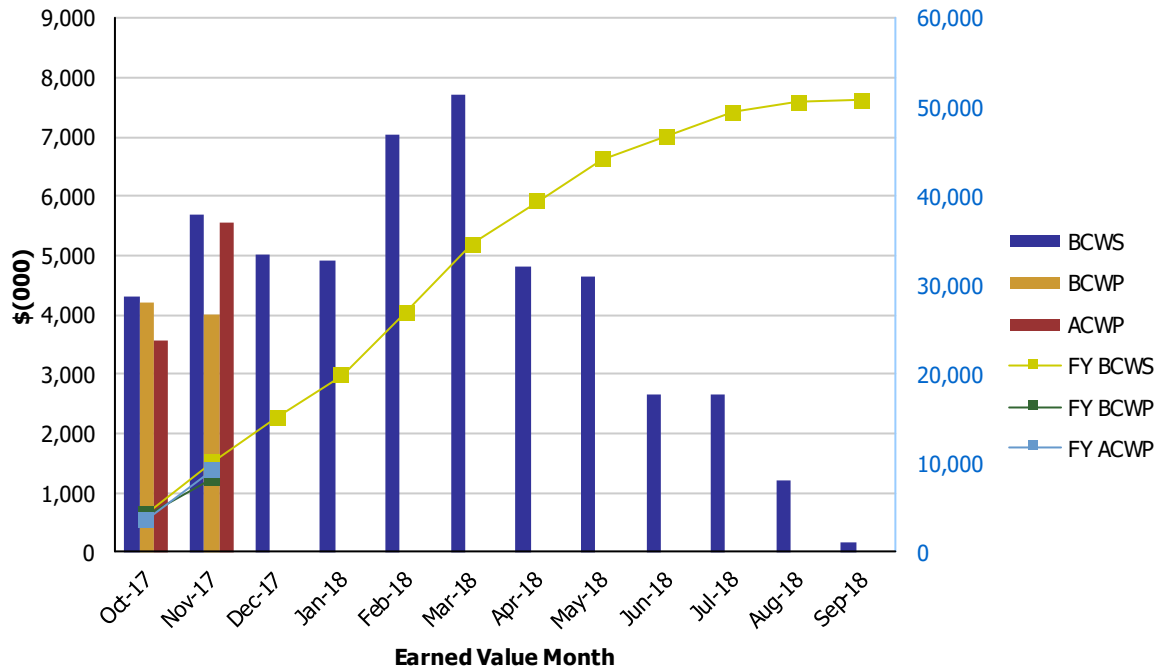
- The waste feed delivery technical baseline project has experienced delays in predictive maintenance due to a delay in receiving materials.
- Resource efficiencies in three projects:
  - The software maintenance and support project performed work with lower-rated engineering staff than was originally estimated in the baseline.
  - The technology maturation and analysis project required less management support than was originally planned in the baseline.
  - The immobilized low-activity waste transporter project for the package-specific safety document work scope required fewer resources than anticipated.

Earned Value Data: Fiscal Year 2018

November-17

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

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 2017	\$4,294	\$4,202	\$3,576	0.98	1.17	\$4,294	\$4,202	\$3,576	0.98	1.17
Nov 2017	\$5,693	\$3,992	\$5,562	0.70	0.72	\$9,988	\$8,193	\$9,139	0.82	0.90
Dec 2017	\$5,020			0.00	0.00	\$15,008			0.00	0.00
Jan 2018	\$4,919			0.00	0.00	\$19,927			0.00	0.00
Feb 2018	\$7,025			0.00	0.00	\$26,951			0.00	0.00
Mar 2018	\$7,694			0.00	0.00	\$34,646			0.00	0.00
Apr 2018	\$4,807			0.00	0.00	\$39,453			0.00	0.00
May 2018	\$4,641			0.00	0.00	\$44,094			0.00	0.00
Jun 2018	\$2,648			0.00	0.00	\$46,742			0.00	0.00
Jul 2018	\$2,643			0.00	0.00	\$49,385			0.00	0.00
Aug 2018	\$1,194			0.00	0.00	\$50,579			0.00	0.00
Sep 2018	\$152			0.00	0.00	\$50,731			0.00	0.00

CTD	\$121,136	\$115,019	\$124,032	0.95	0.93
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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.

CM = current month.  
 CTD = contract to date.  
 FY = fiscal year.  
 SPI = schedule performance index.

***Tank Farms Assistant Manager:*** Glyn Trenchard

***Deputy Federal Project Director:*** Janet Diediker

**Treat Waste (5.5)**

The November 2017 variances below do not impact the TPA milestones.

The **unfavorable** SV of (\$1,701,600) is primarily due to:

- The schedule variance resulted primarily from DOE direction to WRPS to cease certain aspects of the current LAWPS design strategy and submit a contract change proposal for an optimized LAWPS design strategy. Additionally, there were delays associated with the American Society of Mechanical Engineers tanks design package. The preliminary design package was planned to be delivered to WRPS in November 2017, but was delivered in December.

The **unfavorable** CV of (\$1,570,300) is primarily due to:

- The LAWPS existing design team working to place the design documentation under configuration control and initiate the new design plan and providing assistance in the preparation of the new contract change proposal.