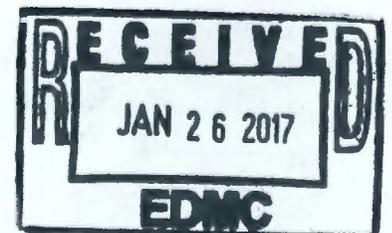


FINAL  
Office of River Protection  
Tri-Party Agreement  
Monthly Report  
January<sup>1</sup> 2017



<sup>1</sup> The narrative descriptions of progress in this report cover the period from December 1–31, 2016. Earned Value Management System data and descriptions cover the period of November 1–30, 2016.

## Tri-Party Agreement (TPA) Milestone Review

Page	Topic	Leads
2	Administrative Items/Milestone Status	B. Trimberger D. McDonald, J. Lyon
4	System Plan	K. Burnett J. Lyon, D. McDonald
5	Acquisition of New Facilities	J. Diediker J. Lyon, D. McDonald
6	Supplemental Treatment and Part B Permit Applications	S. Pfaff J. Lyon, D. McDonald
8	242-A Evaporator Status	P. Hernandez J. Lyon
10	Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility	R. Valle S. Schleif
11	Tank System Update	D. Stewart J. Lyon
13	Single-Shell Tank Integrity Assurance	D. Stewart J. Alzheimer
14	In-Tank Characterization and Summary	D. Stewart M. Barnes
16	Single-Shell Tank Closure Program	J. Bovier J. Lyon
19	Single-Shell Tank Retrieval Program	C. Kemp J. Lyon
22	Tank Waste Retrieval Work Plan Status	C. Kemp J. Lyon
24	Tank Operations Contract Overview	ORP TPA PMs J. Lyon
CD	Waste Treatment and Immobilization Plant (WTP) Overall TPA Summary and Milestone Status; see the Office of River Protection Consent Decree Monthly Report	J. Grindstaff D. McDonald

**Administrative Items/Milestone Status**

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>Completion Date</b>	<b>Status</b>
<b>Fiscal Year 2015</b>				
M-062-45-T01	Complete Negotiations 6-Mo After Last Issuance of System Plan	04/30/2015		In Abeyance
M-062-45-ZZ	Negotiate a One Time Supplemental Treatment Selection	04/30/2015		In Abeyance
M-062-45-ZZ-A	Convert the M-062-31-T01 Through M-062-34-T01 to Interim Milestones	04/30/2015		In Abeyance
M-045-82	Submit Comp. Permit Modification Request for Tiers 1,2,3	09/30/2015		In Program Planning
<b>Fiscal Year 2016</b>				
M-047-07	CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to Ecology	03/31/2016		In Abeyance
M-090-13	CD-1 for Interim Hanford Storage Project and CR for CD-2 to Ecology	03/31/2016		In Abeyance
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016		In Abeyance
<b>Fiscal Year 2017</b>				
M-062-40E	Select a Minimum of Three Scenarios	10/31/2016	10/06/2016	Completed
M-045-61A	Submit to Ecology a primary doc. Phase 2 CMS, and rev. 0 update to the RFI Report for WMA C	12/31/2016		Complete
M-045-62	Phase 2 Corrective Measures Implementation Work Plan For WMA-C	6 mo. after CMS appr. (M-045-61A)		On Schedule
M-062-01AH	Submit Semi-Annual Project Compliance Report	01/31/2017		On Schedule
M-045-84	Initiate Negotiations to Establish HFFACO Interim Milestones for Closure of 2nd SST WMA	04/03/2017		On schedule.

Milestone	Title	Due Date	Completion Date	Status
M-045-56M	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2017		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
M-045-92S	DOE And Ecology Will Agree On Locations For Barriers 3 And 4	09/30/2017		On Schedule
<b>Fiscal Year 2018</b>				
M-062-40F	Submit System Plan	10/31/2017		On Schedule
M-062-32-T01	Start Construction of Supplemental Vitrification Treatment Facility and/or WTP Enhancements	04/20/2018		In Abeyance
M-045-92O	Barrier 3 Design/Monitoring Plan Submitted to Ecology	06/30/2018		On Schedule
M-045-56N	Ecology And DOE Agree, At A Minimum, To Meet Yearly (By July)	07/31/2018		On Schedule
M-045-91I	Provide IQRPE Certification of SSTs Structural Integrity	09/30/2018		On Schedule
M-045-92T	Barrier 3 Design/Monitoring Plan Approved by Ecology	09/30/2018		On Schedule

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

CMS corrective measures study.

CR change request.

DOE U.S. Department of Energy.

Ecology Washington State Department of Ecology.

HFFACO Hanford Federal Facility Agreement and Consent Order.

IQRPE independent qualified registered professional engineer

RCRA Resource Conservation and Recovery Act.

RFI RCRA Facility Investigation.

SST single-shell tank.

WTP Waste Treatment and Immobilization Plant.

WMA waste management area.

WMA-C C Farm waste management area.

## System Plan

### Significant Past Accomplishments:

- The River Protection Project System Plan, Rev. 8 (System Plan 8) scenario selection discussions, to support M-062-40E, between the U.S. Department of Energy (DOE), Office of River Protection (ORP) and the Washington State Department of Ecology (Ecology), are complete.
- The System Plan 8 scenario selection document was transmitted to Ecology for concurrence by letter 16-WSC-0050, "Request for Concurrence on Selected Scenarios for the River Protection Project System Plan, Revision 8," dated September 27, 2016.
- Ecology's concurrence on scenario selection was received on October 11, 2016, thereby satisfying the requirement to provide scenarios one year prior to submittal of the System Plan identified in M-062-40.
- ORP received the River Protection Project System Plan, Rev. 8, Model Starting Assumptions via letter WRPS-1605218 on 11-21-2016 documenting the assumptions agreed to by the working team to describe the base case for the System Plan.
- Scenario modeling has begun with first modeling products in internal review.

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

- Continue negotiations of the M-062-45 milestones with intent to utilize information from System Plan 8 in negotiations.
- Complete scenario modeling and life cycle cost modeling by April 10, 2017.

### Issues:

- None.

## Acquisition of New Facilities

- 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: 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-090-13**      **Submit Critical Decision-1 for Interim Hanford Storage Project and TPA Change Request for CD-2 to Ecology**  
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: 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.
- 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: 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:

- None.

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

- None.

### Issues:

- None.

## Supplemental Treatment and Part B Permit Applications

- 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 per decision at the Internal Agency Management Integration Team meeting.

## 242-A Evaporator Status

The 242-A Evaporator campaign strategy for fiscal year (FY) 2016 through fourth quarter of FY 2017 is depicted in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
FY 2016	EC-04	AP-104	AP-103	Completed April 15, 2016. WVR = 258 kgal
FY 2016	EC-05	AP-104	AP-104	Completed April 21, 2016. WVR = 46 kgal
FY 2016	EC-06	AY-101	AP-104	242-A Evaporator campaign EC-06 has been postponed until replacement of failed Radiation Monitoring systems RC-1, RC-2 and RC-3 are completed. This is expected midyear of CY2017.
FY 2017	EC-07	AW-106	AP-104	242-A Evaporator campaign EC-07 will immediately follow EC-06.
FY 2018	EC-08	AP and AZ Blends	AP-103 AP-104	Will require blending of waste in 102-AW, sampling, and sampling analysis prior to campaign start. This cannot occur until campaign EC-07 is completed.

FY            fiscal year.  
kgal        thousand gallons.  
WVR        waste volume reduction.

### Significant Past Accomplishments:

- Part A Unit Group Workshop for 242-A Evaporator completed in October 2016.
- WRPS awarded a design/fabrication contract (P.O. 00061664) for the 242-A Evaporator spare reboiler to ABW Technologies Inc. on November 15, 2016.
- The class 2 permit modification covering the removal of the diesel generator requiring changes to Chapter 6.0, "Procedures to Prevent Hazards" and Chapter 7.0, "Contingency Plan," and updates to storage volumes in Chapter 1.0, "Part A Form" at the 242-A Evaporator were submitted to Ecology for informal review on 11/14/2016.

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

- Future campaign and outage scheduling
- Continue integrity assessment on 242-A Evaporator components
- Replace P-B-2 pump and associated pressure relief valves.
- Replace Radiation Monitoring systems RC-1, RC-2, and RC-3

**Issues:**

- None.

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

The Liquid Effluent Retention Facility (LERF) liquid levels, inventory, and received waste is 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>
Volume (as of 12/31/2016)	~ 5.49 Mgal	~ 2.52 Mgal	~ 7.09 Mgal
AZ-301 Tanker Shipments	-	-	-
MWT-31 and 34 Leachate	-	-	~ 21,000 gal
Other (325 Building Totes)	-	-	-
242-A Campaigns	-	-	-

gal           gallon.

Mgal       million gallons.

MWT       mixed waste trench.

### Significant Past Accomplishments:

- Total FY 2017 volume processed (as of 12/31/2016): 912,000 gallons.

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

- Part A unit group workshop for Liquid Effluent Retention Facility/Effluent Treatment Facility held on January 31, 2017.
- Empty LERF Basin 43 by processing waste through ETF

### Issues:

- None

## Tank System Update

### Significant Past Accomplishments

#### Double-Shell Tank (DST) Integrity:

- Enhanced annulus video inspections:  
All FY 2016 DST enhanced annulus video inspections have been completed and inspection reports issued.
- All FY 2016 ultrasonic testing inspections have been completed and reports issued.

#### Single-Shell Tanks (SST) Integrity:

- None.

### Independent Qualified Registered Professional Engineer Activities

- Washington River Protection Solutions LLC (WRPS) revised the DST independent qualified registered professional engineer (IQRPE) integrity assessment report (RPP-RPT-58441, *Double-Shell Tank System Integrity Assessment Report (DSTAR)*) per WAC 173-303-640(2), "Tank systems" and report transmitted to ORP via letter WRPS-1603683, "Contract Number DE-AC27-08RV14800 – Washington River Protection Solutions LLC Submittal of 2016 Double-Shell Tank System Integrity Assessment Report Revision 1."

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

#### DST Integrity:

- Continuing bi-weekly inspections of AY-102 waste accumulation site.
- Continuing bi-monthly comprehensive inspection of AY-102 annulus.
- Continuing quarterly comprehensive inspection of AY-101 annulus.
- Work planning for FY 2017 enhanced annulus visual inspections has already begun. The following tanks will be inspected in FY 2017:
 

– 241-AN-102	– 241-AW-105
– 241-AN-107	– 241-AY-101
– 241-AP-101	– 241-AZ-101
– 241-AP-107	– 241-AZ-102
- Work planning for FY 2017 ultrasonic testing inspections has already begun. The following tanks will be inspected in FY 2017:
 

– 241-AN-106	– 241-AZ-101
– 241-AY-101	

**SST Integrity:**

- Inspections for FY 2016 are complete.
- Work planning for FY 2017 in-tank video inspections has already begun. The following tanks will be inspected in FY 2017 (note SX-113 was deleted and S-104 was added)
  - 241-BX-102
  - 241-BX-107
  - 241-BY-109
  - 241-S-104
  - 241-SX-110
  - 241-T-104
  - 241-T-106
  - 241-T-109
  - 241-TX-105
  - 241-TX-106
  - 241-TX-109
  - 241-U-107
- Intrusion mitigation (M-045-56):
  - The POR06 exhauster has been down since December 8, 2016. An instrument cabinet heater control replacement was ordered to fix the problem and restore the exhauster to operation. Data collection and reporting software is still not working. The total volume of water evaporated from T-111 since mid-July 2015 was very, roughly estimated at 7,100 gal. A report will be released in early 2017 to document the exhauster operation. The exhauster will continue operation as resource availability permits, and periodic video inspections will be conducted to visually observe changes to the liquid pool in the tank.

**Issues:****DST Integrity:**

- None.

**SST Integrity:**

- None.

### **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:**

- None.

**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

### Accomplishments:

For the period from December 1 through December 31, 2016, the following reports were completed or issued:

- Completed RPP-RPT-43992, *Derivation of Best-Basis Inventory for Tank 241-AN-106 as of October 1, 2016*, Rev 17.
- Completed RPP-RPT-58534, *Derivation of Best-Basis Inventory for Tank 241-B-109 as of October 1, 2016*, Rev 1.
- Completed RPP-RPT-59768, *Derivation of Best-Basis Inventory for Tank 241-BY-108 as of October 1, 2016*, Rev 0.
- Completed RPP-RPT-44637, *Derivation of Best-Basis Inventory for Tank 241-AZ-101 as of October 1, 2016*, Rev 10.
- Completed RPP-RPT-54017, *Derivation of Best-Basis Inventory for Tank 241-AP-102 as of October 1, 2016*, Rev 3.
- Completed RPP-RPT-58929, *Derivation of Best-Basis Inventory for Tank 241-C-201 as of October 1, 2016*, Rev 0.
- Completed RPP-RPT-58176, *Derivation of Best-Basis Inventory for Tank 241-TY-102 as of October 1, 2016*, Rev 1.
- Completed RPP-RPT-59838, *Derivation of Best-Basis Inventory for Tank 241-BY-109 as of November 1, 2016*, Rev 0.
- Completed RPP-PLAN-55317, *Sampling and Analysis Plan for Tank AZ-301 Liquid*, Rev. 3.
- Completed RPP-PLAN-61252, *Tank 241-AW-104 Grab Sampling and Analysis Plan – Fiscal Year 2017*, Rev. 0.
- Completed HNF-SD-WM-DQO-001, *Data Quality Objectives for Tank Farm Waste Compatibility Program*, Rev 23.
- Completed HNF-EP-0182, *Waste Tank Summary Report for Month Ending November 30, 2016*, Rev. 347.
- RPP-RPT-59637, *Boildown Test Final Report: 242-A Evaporator Campaigns EC-04 and EC-05*, Rev 0, has been released.
- RPP-RPT-59590, *Boildown Test Final Report: 242-A Evaporator Campaigns EC-06*, Rev 0, has been released.
- RPP-RPT-59115, *Final Analytical Report for Tank 241-C-105 Solid Waste Samples in Support of Retrieval Operations*, Rev 1, has been released.

**Planned Action within the Next Six Months:**

## Tank sampling:

- Tank 241-AP-105 grab sampling is planned to for January 2017.
- Tank 241-AW-104 grab sampling is planned for February 2017.
- Tank 241-AP-107 core sampling is planned for March 2017.
- Tank 241-AP-107 grab sampling is planned for March 2017.

**Best-Basis Inventory updates:**

Best-basis inventory updates for the following tanks were completed in December 2016:

- 241-AN-106
- 241-AP-102
- 241-AZ-101
- 241-B-109
- 241-BY-108
- 241-BY-109
- 241-C-201
- 241-TY-102

Best-basis inventory updates for the following tanks currently are planned to be completed in January 2017:

- 241-BX-108
- 241-BY-105
- 241-TY-106

**Data Quality Objectives:**

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 completed in January 2017.

**Issues:**

- None.

## Single-Shell Tank Closure Program

- 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-045-82**      **Submit complete permit modification requests for Tiers 1, 2, and 3 of the SST System**  
Due: September 30, 2015  
Status: In program planning. A tentative agreement between Ecology and DOE-ORP to resolve this dispute was signed November 22, 2016 (16-TF-0127). The tentative agreement is to implement a HFFACO Change Control Form (M-45-16-01) to (1) modify the M-045-82 milestone for submittal of the draft Tier 2 closure plan, (2) create a new milestone (M-045-82A) to submit the draft Tier 3 closure plans for the C-200 tanks, (3) modify the M-045-62 milestone to require submittal of a Tier 3 closure plan for corrective measures agreed upon through a Corrective Measures Implementation Work Plan, and (4) modify the M-045-83 milestone for completion of closure of WMA C. The HFFACO Change Control Form will undergo a 45-day public comment period prior to finalization.
- M-045-61A**      **Submit to Ecology for review and approval as an Agreement primary document, a Phase 2 Corrective Measures Study, and Revision 0 update to the RFI Report for WMA-C.**  
Due: December 31, 2016  
Status: Complete. Both were submitted to Ecology on December 29, 2016, via letter 16-TF-0142.
- M-045-62**      **Submit to Ecology for review and approval as an agreement primary document, a Phase 2 Corrective Measures Implementation Work Plan for WMA-C**  
Due: Six months after the approval of the corrective measures study submitted under milestone M-045-61A.  
Status: On schedule. This milestone will be modified through resolution of the dispute on M-045-82.
- M-045-84**      **Initiate negotiations to establish HFFACO interim milestones for closure of second SST WMA**  
Due: April 3, 2017  
Status: On schedule.
- M-045-56M**      **Complete Implementation of Agreed to Interim Measures**  
Due: July 28, 2017

Status: On schedule. An annual meeting is held between ORP and Ecology to discuss the prior FY accomplishments and the next FY proposed interim measures. The last annual meeting was held July 20, 2016 (M-045-56L), and the meeting minutes are in the Administrative Record.

- M-045-92S**      **DOE and Ecology agree on locations for Barriers 3 and 4**  
Due: September 30, 2017  
Status: On schedule.
- M-045-92O**      **Barrier 3 Design and Monitoring Plan Submitted to Ecology**  
Due: June 30, 2018  
Status: On schedule.
- 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-045-83**      **Complete the closure of WMA-C**  
Due: June 30, 2019  
Status: To be missed. The tentative agreement to end the dispute on M-045-82 currently in negotiation between Ecology and ORP, which will also revise M-045-83, with submission of a revised WMA-C Closure Schedule, expected in the March 31, 2017 Tier 2 Closure Plan.
- 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 be addressed with the negotiations supporting M-062-45.

**December Accomplishments:**

- Submit Rev. 0 of the *Phase 2 RCRA Facility Investigation Report and Corrective Measures Study for WMA C* to Ecology for review in letter 16-TF-0142 on December 29, 2016.

**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 FY 2016.
- The M-045-82 HFFACO Change Control Form will undergo a 45-day public comment period prior to finalization.
- Begin resolution of Ecology's comments on the *Resource Conservation and Recovery Act of 1976* (RCRA) Tier 1 Closure Plan.
- Submit the draft Tier 2 Closure Plan for WMA C, and a draft Tier 3 Closure Plan for the C-200 Series Tanks to Ecology for review.
- Begin discussions on locations for Barriers 3 and 4.

**Issues:**

- Developing path forward for resolving Ecology's comments on the RCRA Tier 1 Closure Plan.

## Single-Shell Tank Retrieval Program

- M-045-86**      **Submit retrieval data report (RDR) to Ecology for 19 tanks retrieved**  
Due: To be determined (12 months after retrieval certification).  
Status: On schedule.
- 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 have begun.

### Significant Accomplishments for the Prior Three Months:

- Completed removal and disposal of 801A building legacy interior and equipment
- Completed AX 801-B/C building demolition
- Completed AX Farm air and water service building major utilities installation
- Received slurry pump hose support assemblies for AX-102/104
- Completed an additional AX Farm pit clean out (AX-04D); six of eight pit clean outs completed
- Completed AX POR-126 Exhauster & POR-127 Exhauster Cold Operational Acceptance Tests (OATs) and Hot Tie-ins
- Completed electrical service installation for A/AX Change Trailer
- Submitted C-102 Retrieval Data Report (RDR) to Ecology
- The removed C-105 MARS-V components were shipped to ERDF for disposal
- Removed C-105 A & C pit cover blocks and completed pit/riser inspections
- Received three Extended Reach Sluicer Systems (ERSS) for installation in Tank C-105

### Significant Planned Activities in the Next Three Months:

- Initiate C-Farm Hose-in-Hose Transfer Line removals that have been plan for fiscal year 2017.
- Negotiate contract proposal for installing and performing the third retrieval technology at Tank C-105
- Complete Tank C-105 third retrieval technology design
- Initiate C-105 ERSS installation
- Complete AX ventilation readiness/turnover at portable exhauster POR126 and POR127
- Initiate AX-102 and AX-104 in-tank equipment removal
- Complete the two remaining AX-104 pit clean outs

- Initiate AX-101 and AX-103 pit clean out activities

**Issues:**

- On July 11, 2016, the Hanford Atomic Metal Trades Council (HAMTC), a labor organization composed of various unions working at Hanford, issued a “stop work” requiring mandatory use of supplied air within the perimeter fence lines of both single- and double-shell tank farms. This letter also included six other demands HAMTC expected WRPS to implement immediately. On August 31, 2016, WRPS and HAMTC signed a Memorandum of Agreement which documents HAMTC’s agreement to lift the stop work, based upon WRPS’s agreement to remain on supplied air until chemical cartridge testing is complete and reviewed by a third party selected by HAMTC. On July 21, 2016, the Washington State Attorney General and Citizens (Local Union 598 and Hanford Challenge) filed motions for preliminary injunction in federal court (Case 4:15-cv-05086-TOR) seeking, among other things, that all work inside the perimeter fences of any tank farm be performed while wearing *mandatory* supplied air. A hearing on the preliminary injunction motions was held on October 12, 2016. The court denied the motions for preliminary injunction in their entirety, however, the Memorandum of Agreement and interim measures associated with the motions for preliminary injunction slowed and/or delayed field work at the AX and C farms.<sup>2</sup> For example, the AX-102 and AX-104 retrieval construction (removal of legacy/long length equipment) was affected by not being able to operate the tank-specific ventilation system. Due to the prior technical challenges related to completing retrievals at Tank 241-C-102 and Tank 241-C-111, and the current modifications to Tank 241-C-105, funding will be needed to complete Tank 241-AX-102 and Tank 241-AX-104 tank retrieval system(s) installation through FY 2018 with retrieval operations starting in FY 2019 to meet milestone D-16B-03 by December 31, 2020.
- ORP submitted letter 16-TF-0102, “Status Update Related to Tank Farm Vapors,” on September 15, 2016, to make certain Ecology is aware of several recent events regarding the Hanford tank farms retrieval activities, to pass along relevant information, and provide updates on the status of ongoing processes related to those vapor events and their mitigation. Ecology acknowledged receipt of this letter on October 17, 2016 and requested a copy of the WRPS response to ORP’s September 8, 2016 request for additional information. WRPS responded to ORP’s September 8, 2016 request by letter dated November 22, 2016. ORP discussed the WRPS November 22, 2016 letter informally with Ecology on November 25, 2016; ORP formally provided this on December 2, 2016 in 16-TF-0132. ORP submitted letter 16-ORP-0097 on December 6, 2017 which formally notified Ecology that serious risk has risen that DOE may be unable to meet CD milestones B-2 and B-3.
- In ORP letter 16-ORP-0097, ORP also noted that although the November 22, 2016, WRPS letter indicates that the expanded and extended usage of SCBA within all tank farms has potential impacts on DOE’s ability to meet CD Milestone A-9, *Low Activity Waste (LAW) Facility Hot Commissioning Complete*, DOE has determined that there are a number of

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<sup>2</sup> The interim measures associated with the Memorandum of Agreement remained in effect until the Court’s recent ruling on the motions for preliminary injunction.

options available to modify operational and programmatic priorities so as to meet the A-9 milestone. As a result, DOE has not made a determination at this time that a serious risk has arisen that DOE may be unable to meet CD Milestone A-9 and, therefore, is not providing notification regarding CD Milestone A-9.

### Tank Waste Retrieval Work Plan Status

Tank	TWRWP	Expected Revisions	Retrieval Technology		
			First	Second	Third
AX-101	RPP-RPT-58932, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
AX-102	RPP-RPT-58933, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
AX-103	RPP-RPT-58934, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
AX-104	RPP-RPT-58935, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	-
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	Complete	MARS-V	MARS-V-High Pressure Water Spray	Chemical Dissolution Process with ERSS
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	-

Tank	TWRWP	Expected Revisions	Retrieval Technology		
			First	Second	Third
C-109	RPP-21895, Rev. 5	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0037	-
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.

TWRWP Tank Waste Retrieval Work Plan.  
V vacuum.

#### Significant Accomplishments:

- None.

#### Significant Planned Activities in the Next Three Months:

- Finalize AX Farm tank retrieval work plans.
- Incorporate third retrieval technology for C-105

#### 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 for monthly performance reporting. The earned value analysis is not intended to be a measurement of performance against existing TPA milestones.

November-16										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	48,628	45,387	44,614	(3,241)	773	0.93	1.02			
FYTD	81,679	78,889	76,412	(2,790)	2,477	0.97	1.03	627,118		
CTD	3,537,628	3,514,024	3,485,276	(23,604)	28,748	0.99	1.01	4,751,406	4,748,615	2,791

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.

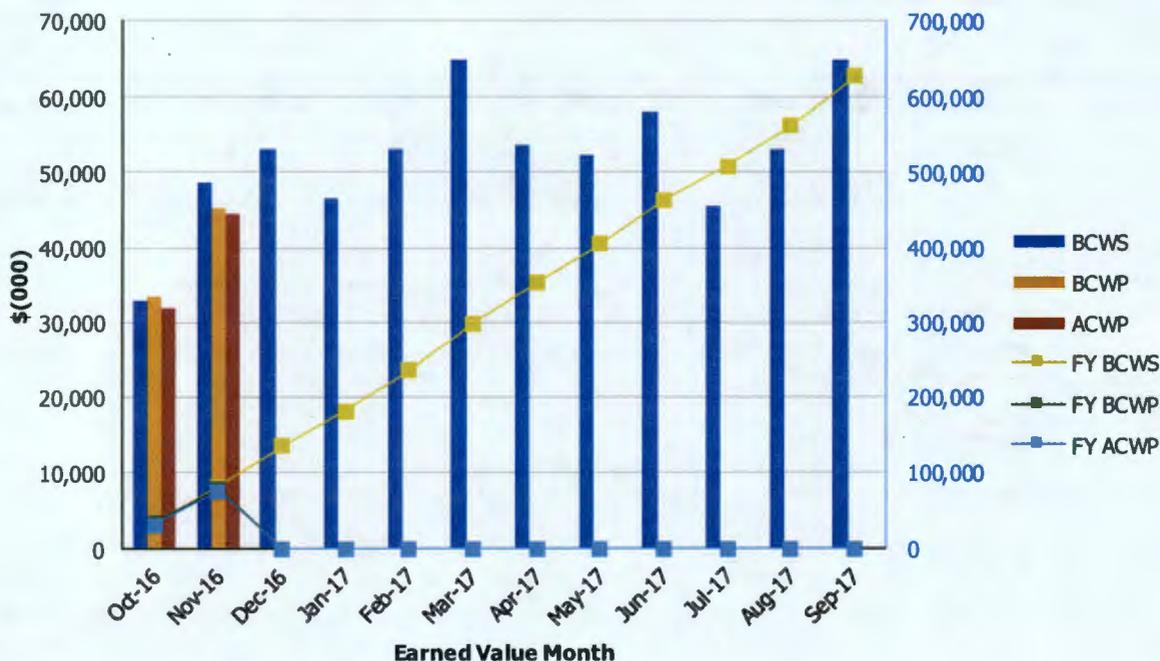
### EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2017

November-16

#### 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 2016	\$33,051	\$33,501	\$31,798	1.01	1.05	\$33,051	\$33,501	\$31,798	1.01	1.05
Nov 2016	\$48,628	\$45,386	\$44,614	0.93	1.02	\$81,679	\$78,887	\$76,412	0.97	1.03
Dec 2016	\$53,144	\$0	\$0	0.00	0.00	\$134,823	\$0	\$0	0.00	0.00
Jan 2017	\$46,480	\$0	\$0	0.00	0.00	\$181,303	\$0	\$0	0.00	0.00
Feb 2017	\$53,034	\$0	\$0	0.00	0.00	\$234,337	\$0	\$0	0.00	0.00
Mar 2017	\$64,964	\$0	\$0	0.00	0.00	\$299,301	\$0	\$0	0.00	0.00
Apr 2017	\$53,612	\$0	\$0	0.00	0.00	\$352,913	\$0	\$0	0.00	0.00
May 2017	\$52,346	\$0	\$0	0.00	0.00	\$405,259	\$0	\$0	0.00	0.00
Jun 2017	\$58,053	\$0	\$0	0.00	0.00	\$463,312	\$0	\$0	0.00	0.00
Jul 2017	\$45,657	\$0	\$0	0.00	0.00	\$508,969	\$0	\$0	0.00	0.00
Aug 2017	\$53,218	\$0	\$0	0.00	0.00	\$562,187	\$0	\$0	0.00	0.00
Sep 2017	\$64,931	\$0	\$0	0.00	0.00	\$627,118	\$0	\$0	0.00	0.00
<b>CTD</b>	<b>\$3,537,628</b>	<b>\$3,514,024</b>	<b>\$3,485,276</b>	<b>0.99</b>	<b>1.01</b>					

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

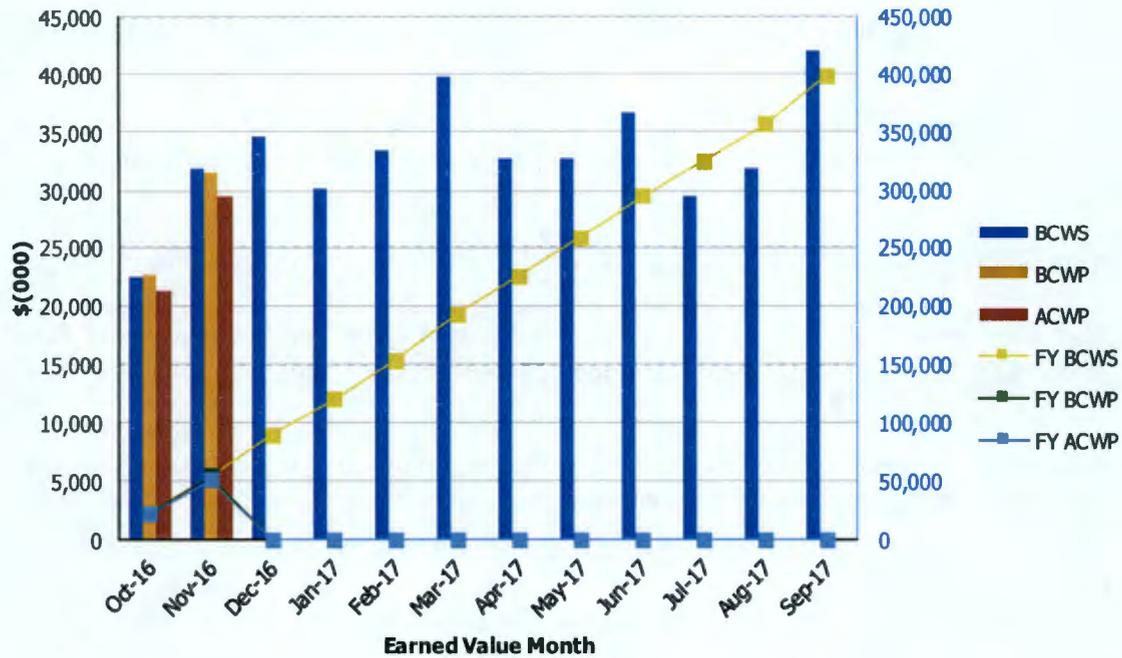
### EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2017

November-16

**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 2016	\$22,507	\$22,546	\$21,216	1.00	1.06	\$22,507	\$22,546	\$21,216	1.00	1.06
Nov 2016	\$31,885	\$31,496	\$29,527	0.99	1.07	\$54,392	\$54,042	\$50,743	0.99	1.07
Dec 2016	\$34,659	\$0	\$0	0.00	0.00	\$89,051	\$0	\$0	0.00	0.00
Jan 2017	\$30,131	\$0	\$0	0.00	0.00	\$119,182	\$0	\$0	0.00	0.00
Feb 2017	\$33,489	\$0	\$0	0.00	0.00	\$152,670	\$0	\$0	0.00	0.00
Mar 2017	\$39,741	\$0	\$0	0.00	0.00	\$192,412	\$0	\$0	0.00	0.00
Apr 2017	\$32,806	\$0	\$0	0.00	0.00	\$225,217	\$0	\$0	0.00	0.00
May 2017	\$32,751	\$0	\$0	0.00	0.00	\$257,968	\$0	\$0	0.00	0.00
Jun 2017	\$36,755	\$0	\$0	0.00	0.00	\$294,723	\$0	\$0	0.00	0.00
Jul 2017	\$29,451	\$0	\$0	0.00	0.00	\$324,174	\$0	\$0	0.00	0.00
Aug 2017	\$31,965	\$0	\$0	0.00	0.00	\$356,139	\$0	\$0	0.00	0.00
Sep 2017	\$42,077	\$0	\$0	0.00	0.00	\$398,217	\$0	\$0	0.00	0.00

CTD	\$2,353,071	\$2,346,365	\$2,318,168	1.00	1.01
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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 (5.01)**

The November variances below do not directly impact or delay TPA milestones.

The current month **unfavorable** Schedule Variance (SV) of (\$389K) is primarily due to:

- Two activities were completed earlier than planned creating a current month unfavorable schedule variance. These activities include:
  - Waste Retrieval System (WRS) Readiness support was completed in parallel with Operational testing.
  - AY-102 ERSS Operational/System Testing and Demobilization was initiated (completed) earlier than planned as a result of the early finish on installation activities.

The current month **favorable** Cost Variance (CV) of \$1,969K is primarily due to:

- A shift in prioritization of support for the New Vapor Detection Technologies Project has resulted in less than anticipated labor and subcontract costs supporting installation and testing.
- Fabrication has become more proficient in the production of spare transfer pumps leading to lower cost in delivery and acceptance.

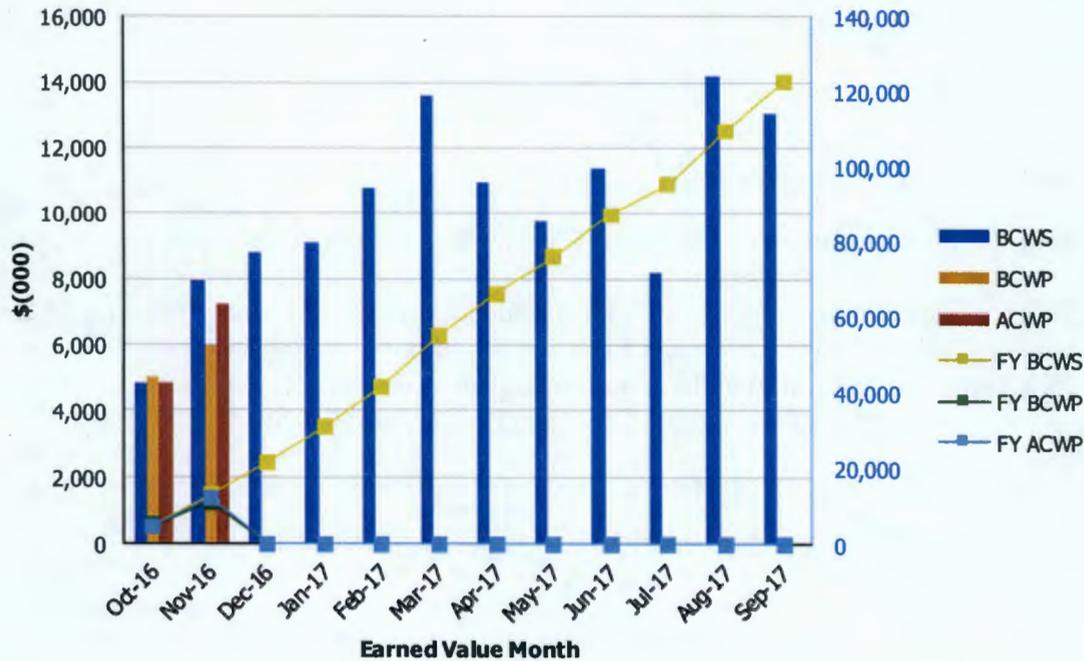
### EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2017

November-16

**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 2016	\$4,816	\$4,996	\$4,822	1.04	1.04	\$4,816	\$4,996	\$4,822	1.04	1.04
Nov 2016	\$7,924	\$5,969	\$7,241	0.75	0.82	\$12,740	\$10,965	\$12,063	0.86	0.91
Dec 2016	\$8,772	\$0	\$0	0.00	0.00	\$21,512	\$0	\$0	0.00	0.00
Jan 2017	\$9,093	\$0	\$0	0.00	0.00	\$30,605	\$0	\$0	0.00	0.00
Feb 2017	\$10,763	\$0	\$0	0.00	0.00	\$41,369	\$0	\$0	0.00	0.00
Mar 2017	\$13,612	\$0	\$0	0.00	0.00	\$54,981	\$0	\$0	0.00	0.00
Apr 2017	\$10,950	\$0	\$0	0.00	0.00	\$65,931	\$0	\$0	0.00	0.00
May 2017	\$9,771	\$0	\$0	0.00	0.00	\$75,702	\$0	\$0	0.00	0.00
Jun 2017	\$11,344	\$0	\$0	0.00	0.00	\$87,046	\$0	\$0	0.00	0.00
Jul 2017	\$8,180	\$0	\$0	0.00	0.00	\$95,226	\$0	\$0	0.00	0.00
Aug 2017	\$14,158	\$0	\$0	0.00	0.00	\$109,385	\$0	\$0	0.00	0.00
Sep 2017	\$13,021	\$0	\$0	0.00	0.00	\$122,406	\$0	\$0	0.00	0.00

CTD	\$721,907	\$709,014	\$732,737	0.98	0.97
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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 (5.02)**

The November variances have a no impact on TPA milestones for tank retrieval.

The current month **unfavorable** schedule variance (SV) of (\$1,955K) is due to:

- Critical field activities such as in-tank equipment removal within AX Farm has been impacted due to the injunction and current stop work limiting waste distributing activities. Tank ventilation is considered a waste distributing activity, Active ventilation is required to remove in tank equipment. Non tank intrusive work has been impacted due to self-contained breathing apparatus (SCBA) usage and resulting inefficiencies.
- Installation of the C-105 slurry pump and jumpers has been impacted due to the A & C pit risers failing go/no go gauge test.

The current month **unfavorable** cost variance (CV) of (\$1,272K) is due to:

- Increased costs are associated with the continued inefficiencies associated with SCBA usage. Additional costs were incurred as a result of possible Beryllium contamination in A/AX Farm and C-Farm pits that required confirmatory sampling smears. These sampling series delayed work until Beryllium results were finalized

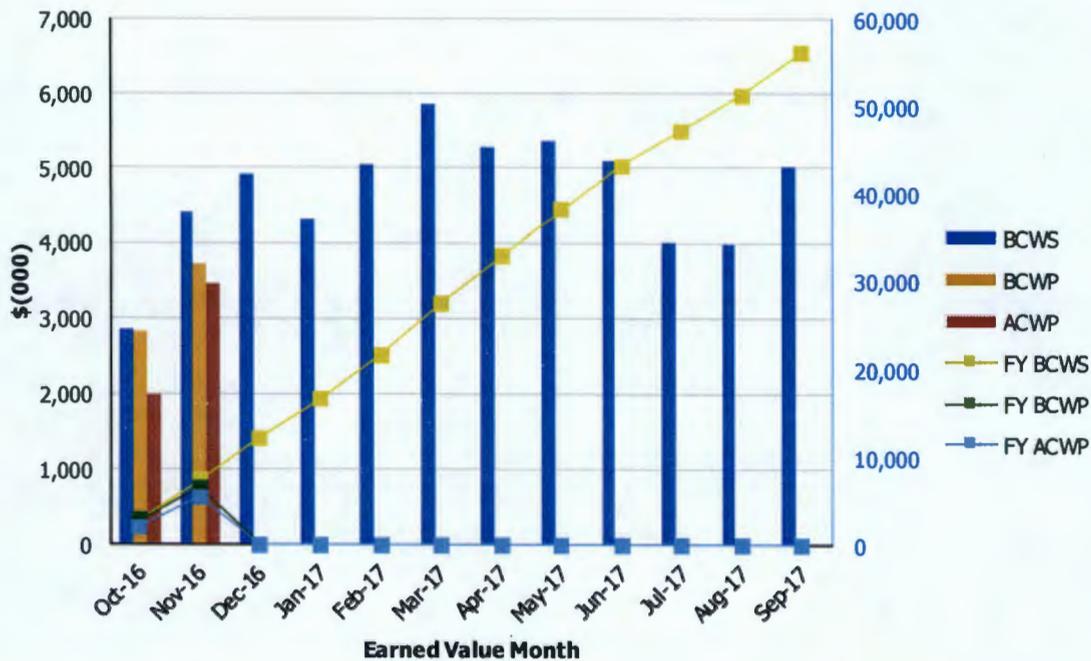
### EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2017

November-16

**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 2016	\$2,840	\$2,829	\$1,990	1.00	1.42	\$2,840	\$2,829	\$1,990	1.00	1.42
Nov 2016	\$4,428	\$3,728	\$3,446	0.84	1.08	\$7,267	\$6,557	\$5,436	0.90	1.21
Dec 2016	\$4,916	\$0	\$0	0.00	0.00	\$12,183	\$0	\$0	0.00	0.00
Jan 2017	\$4,328	\$0	\$0	0.00	0.00	\$16,512	\$0	\$0	0.00	0.00
Feb 2017	\$5,041	\$0	\$0	0.00	0.00	\$21,553	\$0	\$0	0.00	0.00
Mar 2017	\$5,853	\$0	\$0	0.00	0.00	\$27,406	\$0	\$0	0.00	0.00
Apr 2017	\$5,293	\$0	\$0	0.00	0.00	\$32,699	\$0	\$0	0.00	0.00
May 2017	\$5,365	\$0	\$0	0.00	0.00	\$38,064	\$0	\$0	0.00	0.00
Jun 2017	\$5,107	\$0	\$0	0.00	0.00	\$43,172	\$0	\$0	0.00	0.00
Jul 2017	\$4,008	\$0	\$0	0.00	0.00	\$47,180	\$0	\$0	0.00	0.00
Aug 2017	\$3,988	\$0	\$0	0.00	0.00	\$51,167	\$0	\$0	0.00	0.00
Sep 2017	\$5,038	\$0	\$0	0.00	0.00	\$56,206	\$0	\$0	0.00	0.00
<b>CTD</b>	<b>\$379,652</b>	<b>\$377,576</b>	<b>\$350,291</b>	<b>0.99</b>	<b>1.08</b>					

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 (5.03)**

The November variances below have no impacts on the TPA milestones.

The November **unfavorable** schedule variance (SV) of (\$699K) is primarily due to:

- Prolonged procurement strategy discussions and late agreement with procurement on path forward for subcontract resulted in a delay to the initiation of AP-107 Tank Farm Upgrades design.

The November **favorable** cost variance (CV) of \$283K is primarily due to:

- To labor efficiencies resulting from not filling vacancies within the One System Support Program

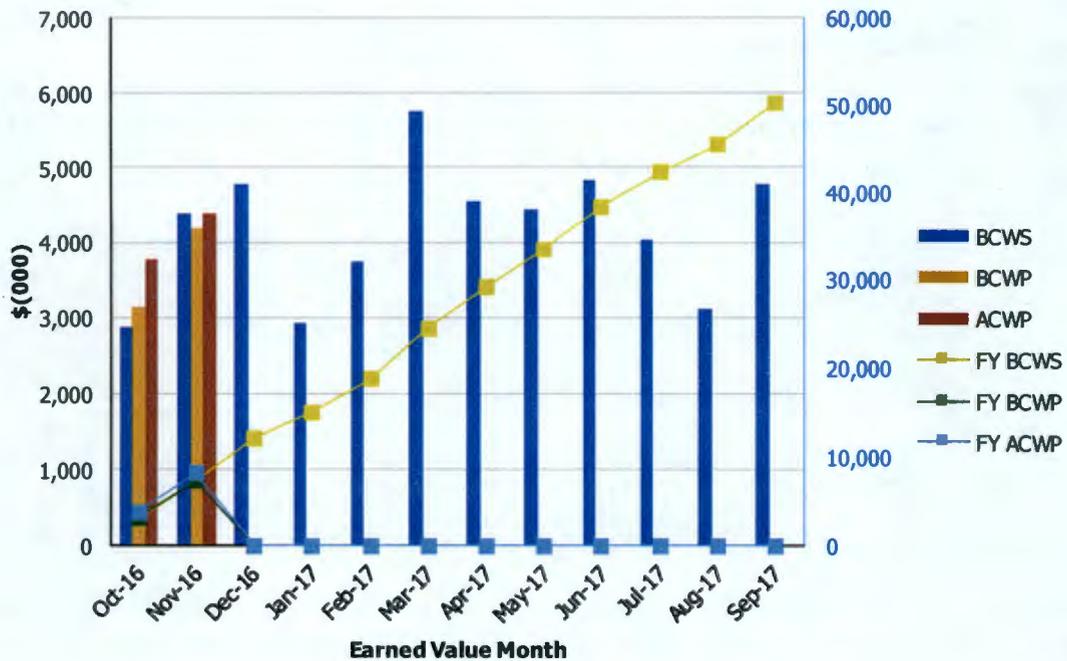
**EXC-01a: Fiscal Year Cost and Schedule Report**

Earned Value Data: Fiscal Year 2017

November-16

**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 2016	\$2,889	\$3,131	\$3,770	1.08	0.83	\$2,889	\$3,131	\$3,770	1.08	0.83
Nov 2016	\$4,391	\$4,193	\$4,400	0.95	0.95	\$7,280	\$7,324	\$8,170	1.01	0.90
Dec 2016	\$4,796	\$0	\$0	0.00	0.00	\$12,076	\$0	\$0	0.00	0.00
Jan 2017	\$2,928	\$0	\$0	0.00	0.00	\$15,004	\$0	\$0	0.00	0.00
Feb 2017	\$3,741	\$0	\$0	0.00	0.00	\$18,745	\$0	\$0	0.00	0.00
Mar 2017	\$5,758	\$0	\$0	0.00	0.00	\$24,503	\$0	\$0	0.00	0.00
Apr 2017	\$4,563	\$0	\$0	0.00	0.00	\$29,066	\$0	\$0	0.00	0.00
May 2017	\$4,458	\$0	\$0	0.00	0.00	\$33,524	\$0	\$0	0.00	0.00
Jun 2017	\$4,847	\$0	\$0	0.00	0.00	\$38,371	\$0	\$0	0.00	0.00
Jul 2017	\$4,017	\$0	\$0	0.00	0.00	\$42,388	\$0	\$0	0.00	0.00
Aug 2017	\$3,107	\$0	\$0	0.00	0.00	\$45,496	\$0	\$0	0.00	0.00
Sep 2017	\$4,795	\$0	\$0	0.00	0.00	\$50,290	\$0	\$0	0.00	0.00
<b>CTD</b>	<b>\$62,888</b>	<b>\$60,958</b>	<b>\$64,918</b>	<b>0.97</b>	<b>0.94</b>					

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 (5.5)**

The November variances below have no impacts on TPA milestones.

The current month **unfavorable** schedule variance (SV) of (\$198K) is due to:

- Delays in Gas Retention and Release testing due to availability of subcontractor (PNNL) resources. Although testing has now started, the vendor is experiencing longer than anticipated durations due to the late start and continuing resource limitations.

The current month **unfavorable** cost variance (CV) of (\$207K) is due to:

- Additional resources were on-boarded and overtime hours were worked throughout November to ensure delivery of a comprehensive and detailed 60 percent package in January with alignment to the facility design.