

# Office of River Protection



## **Monthly Reporting Period** February 1–February 29, 2020<sup>1</sup>

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<sup>1</sup> The narrative descriptions of progress in this report cover the reporting period. Information outside the reporting period may also be included for purposes of providing continuity or useful context. Information may be repeated in multiple sections of this report for continuity and clarity. Earned Value Management System data and descriptions cover the period through January 2020.

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## Acronyms and Abbreviations

CV	cost variance
DFLAW	direct-feed low-activity waste
DST	double-shell tank
Ecology	Washington State Department of Ecology
ETF	Effluent Treatment Facility
FY	fiscal year
HFFACO	<i>Hanford Federal Facility Agreement and Consent Order</i> (HFFACO and TPA are used interchangeably throughout this report)
IQRPE	independent, qualified, registered, professional engineer
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
WRPS	Washington River Protection Solutions LLC
WMA	waste management area
WTP	Waste Treatment and Immobilization Plant

**Administrative Items/Milestone Status**

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>DOE PM</b>	<b>Status</b>
<b>Prior Years</b>				
M-062-45-T01	Complete Negotiations 6-Months After Last Issuance of System Plan	04/30/2015	B. Harkins	In Dispute
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection	04/30/2015	B. Harkins	In Dispute
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones	04/30/2015	B. Harkins	In Dispute
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016	B. Harkins	In Dispute
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements	04/30/2018	B. Harkins	In Dispute
<b>Fiscal Year 2020 (October 1, 2019–September 30, 2020)</b>				
M-062-40G	Select a Minimum of 3 Scenarios	10/31/2019	B. Harkins	Completed
M-045-92V	Complete Construction of Barriers 1 (North) and 2 (South) and Expansion Barrier in 241-SX Farm	10/31/2019	B. Harkins	Completed
M-045-92W	Submit to Ecology Design for Barrier 3 in 241-TX Farm	10/31/2019	B. Harkins	Completed
M-045-92AC	Submit to Ecology for Approval a Maintenance and Performance Monitoring Plan for Interim Barriers	10/31/2019	B. Harkins	Completed
M-045-92X	Barrier 3 in 241-TX Farm Design Approved by Ecology	01/31/2020	B. Harkins	Completed

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>DOE PM</b>	<b>Status</b>
M-062-01AN	Submit Semi-Annual Project Compliance Report to Ecology	01/31/2020	G. Trenchard	Completed
M-045-93	Submit Report for Description, Analysis and Technology for Removing Drainable Liquids from SSTs	06/30/2020	B. Harkins	On Schedule
M-062-54A	Submit Permit Application for AP Tank Farm Mods and Operation Necessary to Support TSCR	07/15/2020	B. Harkins	On Schedule
M-062-01AO	Submit Semi-Annual Project Compliance Report to Ecology	07/31/2020	G. Trenchard	On Schedule
M-045-56P	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2020	B. Harkins	On Schedule
M-045-99	Submit to Ecology the Preliminary Performance Assessment/Closure Analysis ( <i>refers to WMA A/AX</i> )	09/30/2020	B. Harkins	On Schedule
M-045-59	Control Surface Water Infiltration Pathways as Needed	TBD <sup>1</sup>	B. Harkins	On Schedule
M-045-62	Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 CMIP for WMA-C	TBD <sup>1</sup>	B. Harkins	On Schedule
M-045-83	Complete the Closure of WMA-C by Completing Closure Activities Specified in the Tier 2 Closure Plan	TBD <sup>1</sup>	B. Harkins	On Schedule
<b>Fiscal Year 2021 (October 1, 2020 – September 30, 2021)</b>				
M-045-92AD	Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities	10/31/2020	B. Harkins	On Schedule
M-062-40H	Submit System Plan to Ecology	10/31/2020	M. Irwin	On Schedule

Milestone	Title	Due Date	DOE PM	Status
M-062-50	Submit to Ecology as a Secondary Document, a Mass Balance Flow	01/30/2021	B. Harkins	On Schedule
M-062-01AP	Submit Semi-Annual Project Compliance Report to Ecology	01/31/2021	G. Trenchard	On Schedule
M-090-14	Submit CD-1 for Facility to Store Spent Ion Exchange Columns Prior to DFLAW	3/31/2021	B. Harkins	On Schedule
M-062-45-A	Complete Negotiations 6-Months After Last Issuance of System Plan	4/30/2021	B. Harkins	On Schedule
M-062-33-T01	Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements	4/30/2021	B. Harkins	In Dispute
M-062-01AQ	Submit Semi-Annual Project Compliance Report to Ecology	07/31/2021	G. Trenchard	On Schedule
M-045-56Q	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2021	B. Harkins	On Schedule
M-045-91E4	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology	09/30/2021	B. Harkins	On Schedule
M-045-97	Submit to Ecology a WMA Integration Study for WMA A/AX as a Primary Document	09/30/2021	B. Harkins	On Schedule

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

CD	=	critical decision.	RCRA	=	<i>Resource Conservation and Recovery Act.</i>
CMIP	=	corrective measures implementation work plan.	SST	=	single-shell tank.
DFLAW	=	direct-feed low-activity waste.	TBD	=	to be determined.
DOE	=	U.S. Department of Energy.	TSCR	=	tank-side cesium removal.
Ecology	=	Washington State Department of Ecology.	WTP	=	Waste Treatment and Immobilization Plant.
Mod	=	modification.	WMA-C	=	C Tank Farm waste management area.
PM	=	project manager.			

## System Plan

**Responsible Assistant Manager:** Mat Irwin  
**Technical Lead:** Kaylin Burnett  
**Ecology Project Manager:** Dan McDonald, Jeff Lyon

**M-062-40H Submit System Plan to Ecology**

Due: October 31, 2020  
 Status: On schedule.

**M-062-45-A Complete Negotiations 6-Months after Last Issuance of System Plan**

Due: April 30, 2021  
 Status: On schedule.

## Significant Past Accomplishments

The selected scenarios for the *River Protection System Plan* (System Plan), Rev. 9 were agreed upon by U.S. Department of Energy, Office of River Protection (ORP) and Washington State Department of Ecology (Ecology). ORP documented the agreement and transmitted letter 19-MIO-0020, “Request for Concurrence on Selected Scenarios for the River Protection Project System Plan, Revision 9,” dated September 25, 2019, to Ecology for concurrence. Ecology concurred on October 2, 2019, via letter 19-NWP-158, “Re: Transmittal of Signed Concurrence for *Selected Scenarios for the River Protection Project System Plan, Revision 9*, RPP-RPT-61707, Rev. 0.”

## Significant Planned Actions in the Next Six Months

- Discuss disputes with regard to milestone M-062-45 and its associated milestones during “Holistic Negotiations.”
- Ecology and ORP will continue discussions in support of System Plan, Rev. 9 development, due October 31, 2020.

## Issues

- Ecology and ORP have ended negotiations related to the M-062-45 Milestone and have initiated dispute. “Holistic Negotiations” are planned to resolve these disputes.

## Acquisition of New Facilities

**Tank Farms Assistant Manager:** Rob Hastings  
**Technical Lead:** Janet Diediker  
**Ecology Project Manager:** Dan McDonald, Jeff Lyon

**M-090-14      Submit CD-1 for Facility to Store Spent Ion Exchange Columns Prior to DFLAW<sup>2</sup>**

Due: March 31, 2021.  
 Status: On schedule.

**M-090-13      CD-1 for Interim Hanford Storage Project and CR for CD-2 to ECY<sup>3</sup>**

Due: September 30, 2025.  
 Status: On schedule.

**M-090-00      Acquire/Modify Facilities for Storage of First Two Years of IHLW<sup>4</sup> from the WTP<sup>5</sup> Operations**

Due: December 31, 2036.  
 Status: On schedule.

**M-047-00      Completion of Work for Management of Secondary Waste from the WTP**

Due: To be determined.  
 Status: On schedule.

### Significant Past Accomplishments

- None.

### Significant Planned Actions in the Next Six Months

- None.

### Issues

- None.

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<sup>2</sup> DFLAW denotes direct-feed low-activity waste.

<sup>3</sup> ECY denotes Washington State Department of Ecology.

<sup>4</sup> IHLW denotes immobilized high-level waste.

<sup>5</sup> WTP denotes Waste Treatment and Immobilization Plant.

## Supplemental Treatment and Resource Conservation and Recovery Act Part B Permit Applications

**Tank Farms Assistant Manager:** Rob Hastings  
**Technical Lead:** Ricky Bang  
**Ecology Project Manager:** Dan McDonald

The current status for each of the projects listed below, unless noted differently, is:

- In Dispute. Ecology and ORP have ended negotiations related to the M-062-45 Milestone and have initiated dispute. Therefore, the status of the milestones below has changed to “In Dispute.”

<b>M-062-45-T01</b>	<b>Complete Negotiations 6-Months after Last Issuance of System Plan</b>
Due:	April 30, 2015.
<b>M-062-45-ZZ</b>	<b>Negotiate a One-Time Supplemental Treatment Selection</b>
Due:	April 30, 2015.
<b>M-062-45-ZZ-A</b>	<b>Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones</b>
Due:	April 30, 2015.
<b>M-062-31-T01</b>	<b>Complete Final Design and Submit RCRA<sup>6</sup> Part B Permit Modification Request for Enhanced WTP &amp; Supplemental Treatment</b>
Due:	April 30, 2016.
<b>M-062-32-T01</b>	<b>Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements</b>
Due:	April 30, 2018.
<b>M-062-33-T01</b>	<b>Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements</b>
Due:	April 30, 2021.
<b>M-062-45-XX</b>	<b>Complete Negotiations to Resolve Future Disputes M-062-45, Paragraphs 4 and 5</b>
Due:	December 31, 2021.
Status:	On schedule.
<b>M-062-34-T01</b>	<b>Complete Hot Commissioning of Supplemental Treatment Vitrification Facility and/or WTP Enhancements</b>
Due:	December 30, 2022.

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<sup>6</sup> RCRA denotes *Resource Conservation and Recovery Act*.

**M-062-21    Annually Submit Data Which Demonstrates Operation of the WTP at a Rate Sufficient to Meet M-062-00**

Due: February 28, 2023.  
Status: At risk.

**M-062-00    Complete Pretreatment Processing and Vitrification of HLW<sup>7</sup> and LAW<sup>8</sup> Tank Wastes**

Due: December 31, 2047.  
Status: At risk.

**Significant Past Accomplishments**

- None.

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

- See the “System Plan” section above for updates related to the M-062-45 Milestone negotiations.

**Issues**

- Ecology and ORP have ended negotiations related to the M-062-45 Milestone and have initiated dispute. “Holistic Negotiations” are planned to resolve these disputes.

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<sup>7</sup> HLW denotes high-level waste.

<sup>8</sup> LAW denotes low-activity waste.

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

***Tank Farms Assistant Manager:*** Rob Hastings  
***Technical Lead:*** Steve Pfaff  
***Ecology Project Manager:*** Dan McDonald

**M-062-50**    **Submit to Ecology as a Secondary Document, a Mass Balance Flow**  
Due:    January 30, 2021.  
Status:    On schedule.

### **Significant Past Accomplishments**

- None.

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

- None.

### **Issues**

- None.

## Tank-Side Cesium Removal System

**Tank Farms Assistant Manager:** Rob Hastings  
**Technical Lead:** Steve Pfaff  
**Ecology Project Manager:** Dan McDonald

This section only covers the Tank Farms Project scope of the direct-feed low-activity waste (DFLAW) mission. Please refer to the Consent Decree monthly report for the Waste Treatment and Immobilization Plant (WTP) Project scope pertaining to DFLAW.

**M-062-54A      Submit Permit Application for AP Tank Farm Mods and Operation Necessary to Support TSCR<sup>9</sup>**

Due: July 15, 2020.  
Status: On schedule.

### Significant Past Accomplishments

- Tank-side cesium removal system fabrication was completed by AVANTech and inspected by Washington River Protection Solutions LLC (WRPS) in December 2019.

### Significant Planned Actions in the Next Six Months

- Tank-side cesium removal system factory acceptance testing is projected to be completed in the first quarter of calendar year 2020.

### Issues

- On December 3, 2018, Ecology sent ORP and the U.S. Department of Energy, Richland Operations Office letter 18-NWP-177, “Hanford Site Ambient Air Boundary Concerns,” regarding the Hanford Site ambient air boundary. In it, Ecology expressed its belief that the ambient air boundary appears to have changed as a result of increased public access to parts of the Hanford Site. ORP, Ecology, and the Washington State Department of Health have met several times to attempt to develop a shared understanding of existing conditions and a path forward.
- The project was informed on January 29, 2020, that Ecology was not going to issue the agreed upon temporary authorizations to allow pouring of the concrete pad for the tank-side cesium removal unit, the ion exchange column storage pad, and installation of the transfer lines until the draft *Resource Conservation and Recovery Act* permit was completed. This has the potential to impact the project schedule by up to 4 months and several million dollars in cost.

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<sup>9</sup> TSCR denotes tank-side cesium removal.

## 242-A Evaporator Status

**Tank Farms Assistant Manager:** Rob Hastings  
**Technical Lead:** Paul Hernandez  
**Ecology Project Manager:** Jeff Lyon

The 242-A Evaporator campaign strategy for fiscal year (FY) 2020 is in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
2020	EC-11	N/A	N/A	A cold run will be initiated prior to June 25, 2020, at the 242-A Evaporator. This run will occur while fieldwork activities for the new transfer lines from 242-A Evaporator to 241-AW Tank Farm are in progress. This run will maintain 242-A Evaporator readiness, staff proficiency, and cycle idle equipment.

N/A = not applicable.

### Significant Past Accomplishments

- Replaced flow transmitter FT-CA1-1
- Removed supernate jumper 13 – 13A and installed process blanks on exposed nozzles to prepare for EC-11 and upcoming slurry line replacement work
- Completed design for replacement of 242-A Evaporator instrument air dryer
- Received new instrument air dryer
- Completed 90-percent design for 242-A Evaporator transfer line replacement
- Awarded 242-A Evaporator instrument air dryer construction contract.
- Initiated wall nozzle fabrication for the 242-A Evaporator slurry and feed transfer line replacement

### Significant Planned Actions in the Next Six Months

- Complete repairs to PB-1 seal water supply and discharge line
- Initiate campaign EC-11
- Procure new PB-1 replacement pump
- Install 242-A Evaporator instrument air dryer upgrade, remove Tanks E101/E104
- Complete 100-percent design for 242-A Evaporator transfer line replacement
- Replace the sock filter assembly on the filtered raw water system

- Initiate 242-A Evaporator safety systems upgrades engineering design
- Initiate 242-A Evaporator transfer line replacement field work.

### **Issues**

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- Ecology requirement for a class 2 permit is adding an estimated five months to the project schedule, threatening the construction of the 242-A Evaporator slurry and feed transfer line replacement.

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

**Tank Farms Assistant Manager:** Rob Hastings  
**Technical Lead:** Richard Valle  
**Ecology Project Manager:** John Temple, Dan McDonald (for milestones)

**M-062-51-T01     Submit to Ecology, as a Primary Document for Approval a Secondary Liquid Waste Disposition Work Plan**

Due: December 31, 2021.  
Status: On schedule.

**M-062-51-T02     Submit Permit Modification Request for Redesign Upgrades And Operations to Support Volumes of Waste Types Expected**

Due: May 15, 2022.  
Status: On schedule.

**M-062-51     Achieve Substantial Completion of LERF/ETF Construction Upgrades Necessary for LAW Hot Commissioning**

Due: April 15, 2023.  
Status: On schedule.

### Significant Past Accomplishments

- Total FY 2020 processing volume: approximately 1 million gallons
- Completed commissioning for the upgrade of the Effluent Treatment Facility (ETF) evaporator drain valve
- Completed commissioning for the upgrade of the ETF rough filter system
- Continued fieldwork for the upgrade of the ETF uninterruptible power supply unit
- Continued fieldwork for the upgrade of the ETF cooling tower system
- Continued fieldwork for the upgrade of the ETF dilute caustic tank
- Continued fieldwork for the upgrade of the ETF chiller system
- Continued fieldwork for the upgrade of ETF stairs and ladder
- Continued fieldwork for the upgrade of the ETF reverse osmosis system
- Continued fieldwork for the repair of the ETF verification tank (60H-TK-1C)
- Completed the 90-percent design review for Liquid Effluent Retention Facility (LERF) Basin 41 project
- Completed the 60-percent design review for the ETF monitoring and control system upgrade
- Began work package planning for the ETF brine loadout system upgrade
- Began work package planning for the 310/311-PL transfer lines.

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

- Commissioning of the ETF peroxide decomposer system upgrade in preparation for the WTP DFLAW effluent
- Complete the ETF uninterruptible power supply upgrade due to age and the occurrence of faults
- Complete the ETF cooling tower and pump upgrade, which is subject to shut down due to the degraded condition
- Complete the ETF dilute caustic tank upgrade with a tank of compatible material to the system piping
- Complete the ETF chiller system upgrade to improve reliability and reduce system maintenance
- Complete the ETF stairs and ladder upgrade to improve personnel safety and ergonomics
- Complete the ETF reverse osmosis system upgrade to replace leak prone valves and obsolete system pumps
- Complete the ETF verification tank repair to replace the interior protective epoxy coating
- Perform ETF processing campaign to reduce LERF backlog
- Perform repair or replacement of the LERF Basin 44 floating cover
- Perform ETF brine loadout upgrade to manage secondary waste
- Perform physical tie-in of transfer lines 200-E-310-PL (primary) and 200-E-311-PL (backup) at the interface points in preparation for the WTP DFLAW effluent
- Perform ETF load-in station drain and filter system upgrade to install a new sump tank system
- Design ETF ultraviolet/oxidation (UV/OX) system upgrade since the existing system is no longer supported by the manufacturer
- Design ETF monitoring and control system upgrade because it is currently operating on outdated systems
- Design LERF Basin 41 installation for additional capacity
- Design ETF redundant filtration upgrade to reduce processing down time
- Design ETF load-in station building expansion to support enhanced facility operation
- Design ETF vessel offgas demister housing upgrade to repair degraded condition
- Design ETF supplemental organic treatment system in preparation for the WTP DFLAW effluent.

## Issue

- Work has paused on the LERF Basin 44 cover replacement project while nuclear safety evaluations are performed by WRPS. Evaluations are being performed due to visual indication of solid material in the basin and sample results from that material.

## Liquid Effluent Retention Facility Volumes

LERF liquid levels, inventory, and received waste are shown in the table below. Volumes in the table are estimated.<sup>10</sup> Tanker shipment volumes are estimated by multiplying the number of shipments by the capacity of the tanker being used.

Description	242AL-42 (Basin 42)	242AL-43 (Basin 43)	242AL-44 (Basin 44)
AZ-301 Condensate	-	-	-
Mixed Waste Trench 31 and 34	+13,300	-	-
Other (SWLL, ETF ST)	+21,000	-	-
Processing Campaign(s)	-	-	-
<b>Total Volume</b>	<b>2,867,000</b>	<b>6,472,000</b>	<b>615,000</b>

Data Date: February 29, 2020.  
Values shown in gallons.

ETF ST = Effluent Treatment Facility surge tank.  
SWLL = Solid waste landfill lysimeter.

<sup>10</sup> The volume in each Liquid Effluent Retention Facility basin is calculated from liquid level sensor readings. Therefore, based on sensor fluctuations and/or environmental effects (e.g., precipitation, temperature), values for basin volumes may vary slightly from the net inputs and outputs shown for the basin.

## Tank System Update

**Tank Farms Assistant Manager:** Rob Hastings  
**Technical Lead:** Dustin Stewart  
**Ecology Project Manager:** Jeff Lyon, Nina Menard

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

**M-045-91E4 Provide SST<sup>11</sup> Farms Dome Deflection Surveys Every 2 Years to Ecology**

Due: September 30, 2021.  
 Status: On schedule.

**M-045-91K Complete Initial Baseline Visual Inspections of all SSTs**

Due: September 30, 2023.  
 Status: On schedule.

**M-045-91K-T01 Submit Report of the Initial Baseline Visual Inspection of all SSTs Remaining to be Inspected**

Due: March 31, 2024.  
 Status: On schedule.

**M-045-91L Obtain Assessment Reviewed/Certified by an IQRPE Attesting to SST Structural Integrity**

Due: September 30, 2034.  
 Status: On schedule.

### Double-Shell Tank Integrity

#### Significant Past Accomplishments

- Received and installed a retractable corrosion monitoring probe in Tank AY-101
- Ultrasonic testing inspections were completed for the following tanks in FY 2019:
  - 241-AP-107
  - 241-AP-108
  - 241-AN-102
  - 241-AP-106 (limited scope supplementary wall scans; rescanning in FY 2020)
  - 241-AP-102 (annulus floor ultrasonic testing only; air slot inspection)
- Ultrasonic testing inspections have been completed for the following tanks in FY 2020:
  - 241-AW-102
  - 241-AW-101
  - First of a kind primary tank bottom ultrasonic testing of Tank AW-101 was completed on February 12, 2020, through small accessible air slots (2.5 inches x

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<sup>11</sup> SST denotes single-shell tank.

2.5 inches) in the refractory pad under the tank. This inspection utilized a newly developed system comprised of a remotely operated magnetic wall crawler and a magnetic inspection sensor cart inserted into the air slots beneath the tank to a radial depth of approximately 14 feet. The sensor cart provides a 1-inch-wide scan of the plate thickness when coupled and pulled along the tank bottom surface. Deployment of this tank bottom inspection system is the first of three complementary technologies being developed.

- Completed enhanced annulus visual inspection in FY 2019:
  - 241-AN-101
  - 241-AN-102
  - 241-AN-103
  - 241-AN-104
  - 241-AN-105
  - 241-AN-106
  - 241-AN-107
  - 241-AZ-101
  - 241-AZ-102
- Completed enhanced annulus visual inspection as of January of FY 2020:
  - 241-AW-101
  - 241-AW-102
  - 241-AW-103
  - 241-AW-104
  - 241-AW-105
  - 241-AW-106
  - 241-SY-101
  - 241-SY-102
  - 241-SY-103
- Completed annulus visual inspection of Tank AY-102 through risers 88 and 89 in January 2020
- Released revision of RPP-RPT-31599, *Double-Shell Tank Integrity Inspection Report for 241-AN Tank Farm*, which includes FY 2019 visual inspection results. The revised report was released in February 2020.

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

- Issue a contract to fabricate, test, and deliver a primary tank bottom volumetric inspection system to be deployed into the annulus of double-shell tanks (DST) and used to characterize regions of the primary tank bottom.
- Fabricate two retractable corrosion monitoring probes for installation in the following tanks:
  - 241-AZ-101
  - 241-AP-102.

- Award a competitive procurement contract to a vendor to design and fabricate a tertiary leak detection inspection tool for deployment beneath the secondary liner of a DST.
- Complete ultrasonic testing of the following tanks:
  - 241-AW-106.
- Deploy a primary tank bottom volumetric inspection system through tank annulus into tank air slots to characterize regions of the primary tank bottom and issue report (deployed February 2020, report due March 2020).

### **Ultrasonic Testing Report Status**

- FY 2019 issued ultrasonic testing reports:
  - 241-AP-107 (RPP-RPT-61361, *Ultrasonic Inspection Results for Double-Shell Tank 241-AP-107 – FY 2019*, Rev. 0)
  - 241-AP-108 (RPP-RPT-61460, *Ultrasonic Inspection Results for Double-Shell Tank 241-AP-108 – FY 2019*, Rev. 0)
  - 241-AN-102 (RPP-RPT-61685, *Ultrasonic Inspection and Air Slot Visual Inspection Results for Double-Shell Tank 241-AN-102 – FY 2019*, Rev. 0)
- Draft ultrasonic testing reports:
  - 241-AP-102 (estimated completion March 2020)
  - 241-AW-102 (estimated completion April 2020).

### **Issues**

- None.

### **Single-Shell Tank Integrity**

#### **Significant Past Accomplishments**

- Performed TFC-ENG-CHEM-D-42, *Tank Leak Assessment Process*, on the following tanks in FY 2019:
  - 241-T-101
  - 241-T-103.
- Completed TFC-ENG-CHEM-D-42 leak assessment final report and recommendations for Tank 241-SX-104.
- Visual inspections were completed for the following tanks in FY 2020:
  - 241-TX-101 (Completed December 2019)
  - 241-TX-102 (Completed December 2019)
  - 241-TX-104 (Completed January 2020)
  - 241-TX-107 (Completed January 2020)

- 241-S-103 (Completed January 2020)
- 241-S-110 (Completed January 2020)
- 241-BX-112 (Completed February 2020)
- 241-BY-107 (Completed February 2020)
- 241-SX-112 (Completed February 2020)
- 241-TY-104 (Completed February 2020)
- 241-TX-110 (Completed February 2020)
- 241-BX-109 (Completed February 2020).

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

- Perform TFC-ENG-CHEM-D-42 on the following tanks in FY 2020:
  - 241-T-109
  - 241-TX-113
- Perform single-shell tank (SST) visual inspection in FY 2020 on the following tanks:
  - 241-B-107
  - 241-BX-105
  - 241-BX-108
  - 241-SX-108
  - 241-SX-109
  - 241-SX-111
- Perform visual inspection of five inactive miscellaneous underground storage tanks.

### **Issue**

- None.

### **Independent Qualified Registered Professional Engineer Activities**

- DST system:
  - RPP-RPT-58441, *Double-Shell Tank System Integrity Assessment Report (DSTAR)*, Rev. 1, was completed in 2016.
  - The independent, qualified, registered, professional engineer (IQRPE) recommended the next DST system integrity assessment report be completed in 10 years.
- SST system:
  - Completed M-045-9II Milestone report RPP-IQRPE-50028, *Single-Shell Tank System Structural Integrity Assessment Report*, in 2018.
  - The IQRPE recommended the next SST structural integrity assessment be completed in 16 years. Ecology transmitted letter 19-NWP-009, “Single-Shell Tank Structural Integrity Assessment, RPP-IQRPE-50028,” on January 16, 2019. The letter noted Ecology’s agreement with the IQRPE’s 16 year recommendation.

- 242-A Evaporator:
  - Completed RPP-RPT-60098, *242-A Evaporator System Integrity Assessment Report*, Rev. 0 in 2018.
  - The IQRPE recommended the next 242-A Evaporator system integrity assessment be completed in 15 years. Ecology transmitted letter 18-NWP-114, “Department of Ecology’s (Ecology’s) Comment on the 242-A Evaporator System Integrity Assessment Report, RPP-RPT-60098, Revision 0,” on July 19, 2018. The letter noted Ecology’s disagreement with the IQRPE’s 15 year recommendation. The Hanford Sitewide Permit, Rev. 8C currently provides for 242-A Evaporator system integrity assessments at a frequency of 10 years, and ORP will continue to comply with the permit condition.
- ETF:
  - Completed RPP-IQRPE-50043, *Effluent Treatment Facility (ETF) IQRPE Integrity Assessment*, in 2019.
  - The IQRPE recommended the next ETF integrity assessment be completed in 10 years.
- 219-S Tank system:
  - WRPS awarded the contract for the 219-S integrity assessment project to Meier Architecture Engineering (Meier).
  - As part of the 219-S assessment, the 24-hour static leak test was successfully performed on Tank TK-101 and Tank TK-104 on September 13, 2018, and September 5, 2018, respectively. Tank TK-102 was successfully leak tested on May 7, 2019, completing the leak testing work needed for the assessment. Visual inspections were completed at Tank TK-101, Tank TK-102, and Tank TK-104 waste receiver vessels in September 2019.
  - Visual inspections of the sample gallery and room 2B hood 16 were completed on July 17, 2019. Both areas inspected appeared to be clean with little sign of corrosion or degradation.
  - Internal and external visual inspections of the 219-S tank system and their secondary containment were completed on September 25, 2019. Visual inspection of the hot tunnels was completed on October 2, 2019. This activity completes the facility inspections necessary for the integrity assessment.
  - Meier submitted RPP-IQRPE-50029, *219-S Integrity Assessment Report*, Rev. B to WRPS on November 8, 2019.
  - Meier submitted the stamped Rev. 0 of RPP-IQRPE-50029 to WRPS on February 21, 2020. The IQRPE recommended the next 219-S integrity assessment be completed in 20 years.
  - Completed 219-S IQRPE integrity assessment report (February 2020).

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

**Tank Farms Assistant Manager:** Rob Hastings  
**Technical Lead:** Dustin Stewart  
**Ecology Project Manager:** Jeff Lyon

### **Reports Completed or Released**

For February 2020, the following reports were completed (internal access only) or released (external access):

- Completed:
  - RPP-RPT-55192, *Derivation of Best-Basis Inventory for Tank 241-AW-103 as of January 1, 2020*, Rev. 4
  - RPP-RPT-52180, *Derivation of Best-Basis Inventory for Tank 241-SX-106 as of January 1, 2020*, Rev. 3
  - RPP-RPT-44637, *Derivation of Best-Basis Inventory for Tank 241-AZ-101 as of February 1, 2020*, Rev. 16
  - RPP-RPT-62052, *Tank AZ-301 Grab Sampling 2019 Final Report*, Rev. 0
  - RPP-RPT-62069, *Final Analytical Report for Tank 241-AY-101 Core Samples 2019-08*, Rev. 0
- Released:
  - None.

### **Tank Sampling**

#### **Significant Past Accomplishments**

Five grab sampling evolutions were completed during the first quarter of FY 2020:

- AP-106 repurposing (October 2019, December 2019)
- AN-101 (December 2019)
- AP-105 (two in December 2019).

For February 2020, the following tank sampling was conducted:

- Tank 241-AP-102 liquid grab sampling was performed February 13, 2020. Eleven samples were received at the laboratory.

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

Future tank sampling is scheduled to be performed as identified below:

- Tank 241-AN-106 core sampling is planned for April 2020.
- Tank 241-AX-102 post-retrieval grab sampling is planned for March 2020.
- C-301 Catch Tank grab sampling is planned for May 2020.
- Tank A-104 off riser sample system second sample scheduled for September 2020.
- Tank 241-AP-107 tank grab sampling is planned for August 2020.

**Issues**

- None.

**Best-Basis Inventory Updates****Significant Past Accomplishments**

- Best-basis inventory updates for the following tanks were completed in February 2020:
  - 241-AW-103
  - 241-AZ-101
  - 241-SX-106.

**Significant Planned Actions in the Next Month**

- Best-basis inventory updates for the following tanks are currently planned to be completed in March 2020:
  - 241-AN-101
  - 241-AN-102
  - 241-AP-102
  - 241-AP-106
  - 241-AP-108
  - 241-AW-102
  - 241-AX-102
  - 241-AZ-102
  - 241-B-110
  - 241-C-105.

**Issues**

- None.

## Single-Shell Tank Closure Program

**Tank Farms Assistant Manager:** Rob Hastings

**Technical Lead:** Rod Lobos

**Ecology Project Manager:** Jeff Lyon

**M-045-59 Control Surface Water Infiltration Pathways as Needed**

**Due:** To Be Determined. Will be implemented if 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, M-45-58 Milestone, and implementation of other interim corrective measures).

**Status:** On schedule.

**M-045-62 Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 Corrective Measures Implementation Work Plan (CMIP) for WMA-C<sup>12</sup>**

**Due:** To be determined. To be established in accordance with the date identified in the M-45-82 Milestone Tier 2 closure plan.

**Status:** On schedule.

**M-045-83 Complete the Closure of WMA-C by Completing Closure Activities Specified in the Tier 2 Closure Plan**

**Due:** To be determined. To be established in accordance with the date identified in the M-45-82 Milestone Tier 2 closure plan.

**Status:** On schedule.

**M-045-92V Complete Construction of Barriers 1 (South) and 2 (North) and Expansion Barrier in 241-SX Farm**

**Due:** October 31, 2019.

**Status:** Completed.

**Note:** This includes the construction of the SX Tank Farm expansion barrier as well.

**M-045-92W Submit to Ecology Design for Barrier 3 in 241-TX Farm**

**Due:** October 31, 2019.

**Status:** Completed.

**M-045-92AC Submit to Ecology for Approval a Maintenance and Performance Monitoring Plan for Interim Barriers**

**Due:** October 31, 2019.

**Status:** Completed.

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<sup>12</sup> WMA-C denotes C Tank Farm waste management area.

- M-045-92X**     **Barrier 3 in 241-TX Farm Design Approved by Ecology**  
Due: January 31, 2020.  
Status: Completed October 17, 2019.
- M-045-99**     **Submit to Ecology the Preliminary Performance Assessment/Closure Analysis (*refers to WMA A/AX*)**  
Due: September 30, 2020.  
Status: On schedule.
- M-045-92AD**     **Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities**  
Due: October 31, 2020.  
Status: On schedule.
- M-045-97**     **Submit to Ecology as a Primary Document a Waste Management Area Integration Study for WMA A/AX as described in HFFACO Appendix I.2.1.1**  
Due: September 30, 2021.  
Status: On schedule.
- M-045-92Y**     **Complete Construction of Barrier 3 in 241-TX Farm**  
Due: October 31, 2021.  
Status: On schedule.
- M-045-92Z**     **Submit to Ecology Design for Barrier 4 in 241-U Farm**  
Due: October 31, 2021.  
Status: On schedule.
- M-045-92AA**     **Barrier 4 in 241-U Farm Design Approved by Ecology**  
Due: January 31, 2022.  
Status: On schedule.
- M-045-85**     **Initiate Negotiations of HFFACO Interim Milestones for Closure of Remaining WMAs**  
Due: January 31, 2022.  
Status: On schedule.
- M-045-98**     **Submit to Ecology as a Primary Document an RFI/CMS<sup>13</sup> work plan for WMA A/AX including an implementation schedule in accordance with HFFACO Action Plan Section 11.6**  
Due: September 30, 2022.  
Status: On schedule.

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<sup>13</sup> Resource Conservation And Recovery Act Facility Investigation/Corrective Measure Study

**M-045-102     Submit to Ecology a Performance Assessment (PA) Maintenance Plan for WMA A/AX PA**

Due: September 30, 2022.  
Status: On schedule.

**M-045-92AB     Complete Construction of Barrier 4 in 241-U Farm**

Due: October 31, 2023.  
Status: On schedule.

**M-045-103     Submit to Ecology a PMR<sup>14</sup> with Tier 2 RCRA Closure Plan for WMA A/AX and Schedule for Tier 3 Schedule**

Due: September 30, 2026.  
Status: On schedule.

**M-045-104     Submit to Ecology as a PMR the Post-Closure Plan for WMA A/AX**

Due: September 30, 2028.  
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 Milestone.

**Significant Past Accomplishments**

- Submitted revisions and comment responses to Ecology for RPP-RPT-59389, *Tier 2 Resource Conservation and Recovery Act (RCRA) Closure Action Plan for Waste Management Area C*; RPP-RPT-59390, *Tier 3 Resource Conservation and Recovery Act (RCRA) Component Closure Activity Plan for 241-C-200 Series Tanks*; and RPP-RPT-58858, *Tier 1 Closure Plan Single-Shell Tank System*.
- Continued permitting workshops with Ecology for the SST closure plans in the Hanford Site-wide permit.
- Approved DOE/ORP-2014-02, *Clean Closure Practicality Demonstration for the Single-Shell Tanks*, with supplemental information DOE/ORP-201-4-02-SUPP-1 via letter 19-NWP-090, "Transmittal of Supplemental Information to the Clean Closure Practicality Demonstration for the Single-Shell Tanks, DOE/ORP-2014-02-SUPP1, Revision 0," by Ecology on June 12, 2019.
- Submitted design for Barrier 3 in 241-TX Tank Farm to Ecology. This action completes milestone M-045-92W as noted by Administrative Record documentation (AR-03145) signed October 17, 2019.
- Submitted the maintenance and performance monitoring plan for interim barriers to Ecology. This action completes milestone M-045-92AC. ORP letter 19-TPD-0027,

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<sup>14</sup> Permit Modification Request

“Completion of Maintenance Performance and Monitoring Plan Submittal to Meet Hanford Federal Facility Agreement and Consent Order Milestone M-045-92AC,” dated October 31, 2019, documented completion of this milestone. The letter states the *Maintenance and Performance Monitoring Plan* was hand delivered to Ecology for approval on October 10, 2019.

- Ecology approved the design for Barrier 3 in 241-TX Tank Farm to allow the start of construction. This action completes milestone M-045-92X as noted by Administrative Record documentation (AR-03146) signed October 17, 2019.
- Analysis of the Tank C-106 in-tank videos have yielded the Camera/Computer Aided Design Modeling System volume estimate of 285.98 cubic feet, actual volume (calculation) 316.66 cubic feet, and 95 percent upper confidence level 334.92 cubic feet.

### Significant Planned Activities in the Next Six Months

- Resolve Ecology’s comments on RPP-RPT-59389, RPP-RPT-59390, and RPP-RPT-58858.
- Initiate construction of the evapotranspiration basin in TX Tank Farm.

### Issues

- Interagency Management Integration Team decisions for the four issues on RPP-RPT-58329, *Baseline Risk Assessment for Waste Management Area C*, have been stalled since the February 21, 2019, meeting. Interagency Management Integration Team determinations for judgmental sampling and for hazard index were signed November 21, 2019, and November 25, 2019, respectively. The other two issues remain open.
- ORP formally initiated the Tri-Party Agreement (TPA) dispute resolution process with Ecology over Ecology’s “Denial of Request for Waiver for TPA Waste Retrieval Criteria for SST 241-C-106” (C-106). This dispute was extended at the TPA Interagency Management Integration Team level until June 12, 2019. A Director’s Determination by the Director of Ecology was made on June 26, 2019 (19-NWP-101, “Director’s Determination on United States Department of Energy Request for a Waiver of Single-Shell Tank Retrieval Criteria”). ORP appealed the Director of Ecology’s determination to the Pollution Control Hearings Board on July 26, 2019. The parties participated in mediation on October 28, 2019. The parties were unable to successfully negotiate and resolve the appeal on October 28, but have agreed to one additional negotiation meeting in November. The important dates and litigation deadlines are set forth in the Pollution Control Hearings Board’s Second Amended Pre-hearing Order. The hearing in this appeal is scheduled for July 28, 2020. Analysis of the Tank C-106 in-tank videos have yielded the Camera/Computer Aided Design Modeling System volume estimate of 285.98 cubic feet, actual volume calculation of 316.66 cubic feet, and a 95 percent upper confidence limit of 334.92 cubic feet. Due to improvements in technology used to measure residual waste and tank liquid evaporation since ORP’s 2004 residual waste measurement activities for Tank C-106, the above calculated volumes are

more accurate than the calculations resulting from 2004 residual waste measurement activities for Tank C-106. In addition to use of improved technologies, evaporation of the liquid pool has enabled a more accurate measurement of Tank C-106 residual wastes that were not visible in 2004. Due to the improved visibility, the assumption that the entire dish bottom was covered by a 1-inch minimum layer of waste has changed. As a result of Camera/Computer Aided Design Modeling System improvements, using better technologies and evaporation of tank liquids since 2004, the 2019 estimates are believed to be more accurate than the 2004 estimates.

- Delayed TX Tank Farm evapotranspiration basin construction due to differing opinions between the U.S. Department of Energy, Richland Operations Office and ORP on need for a cultural review.

## Single-Shell Tank Retrieval Program

**Tank Farms Assistant Manager:** Rob Hastings

**Technical Lead:** Jeff Rambo

**Ecology Project Manager:** Jeff Lyon

- M-045-93     Submit Report for Description, Analysis and Technology for Removing Drainable Liquids from SSTs**  
 Due: June 30, 2020.  
 Status: On schedule.  
 Note: Change Control Form M-45-19-01 signed July 11, 2019, added this milestone to the TPA.
- M-045-86     Submit Retrieval Data Report (RDR) to Ecology for 19 Tanks Retrieved Under Consent Decree**  
 Due: To be determined (12 months after retrieval certification).  
 Status: No retrieval data reports are currently underway. The next planned retrieval is Tank 241-AX-102.
- M-045-70     Complete Waste Retrieval from all Remaining Single Shell Tanks (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 Milestone.

### Significant Past Accomplishments

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

### Significant Planned Activities in the Next Six Months

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

### Issues

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

## Tank Operations Contract Overview

Earned Value Data: Fiscal Year 2020

January-20

Tank Farms ORP-0014 WBS 5 - River Protection Project (in \$000s)										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	\$63,048	\$59,514	\$57,979	(\$3,534)	\$1,535	0.94	1.03			
FYTD	\$197,401	\$207,128	\$214,059	\$9,726	(\$6,931)	1.05	0.97	\$757,931		
CTD	\$5,719,998	\$5,659,746	\$5,633,162	(\$60,253)	\$26,583	0.99	1.00	\$6,277,669	\$6,251,439	\$26,231

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.

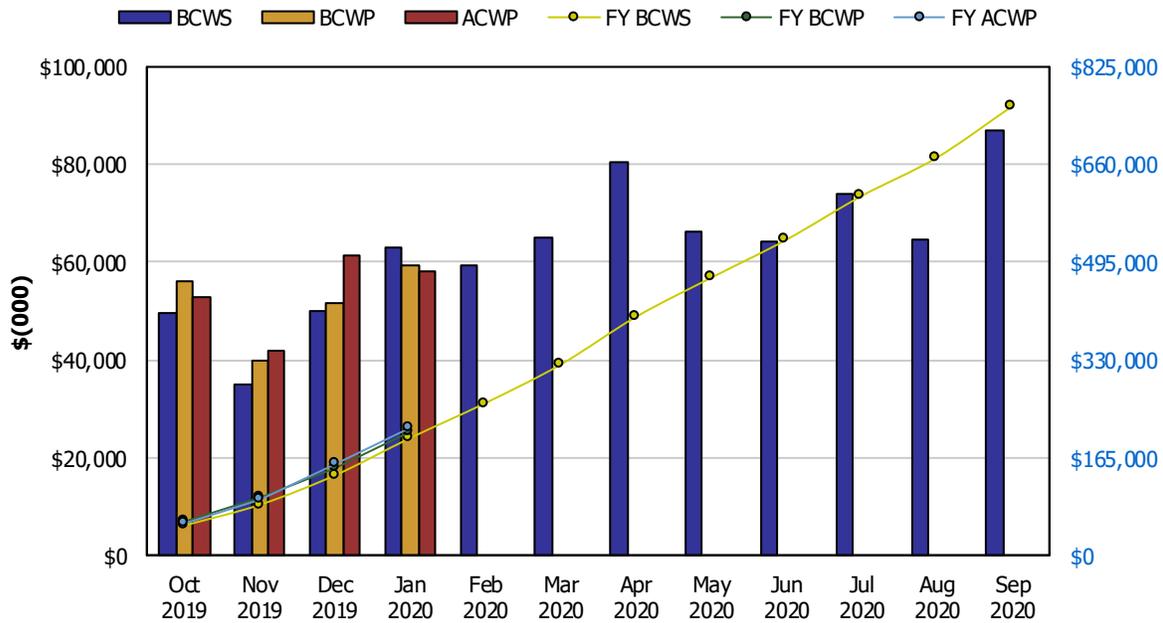
The cost variance (CV) measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10,000 of work was planned to-date, \$8,000 was reported as being performed (earned), at an actual cost of \$9,000. This work would be reported as being \$2,000 behind schedule [a negative or unfavorable SV:  $\$8,000 - \$10,000 = (\$2,000)$ ], and has cost \$1,000 more [a negative or unfavorable CV:  $\$8,000 - \$9,000 = (\$1,000)$ ] 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, fiscal-year-to-date, as well as for the contract-to-date value. The monthly variances can fluctuate significantly (for reasons noted earlier), so the fiscal year 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 2020

January-20

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

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$49,558	\$56,275	\$52,812	1.14	1.07	\$49,558	\$56,275	\$52,812	1.14	1.07
Nov 2019	\$34,954	\$39,741	\$42,066	1.14	0.94	\$84,512	\$96,016	\$94,879	1.14	1.01
Dec 2019	\$49,841	\$51,597	\$61,200	1.04	0.84	\$134,353	\$147,613	\$156,079	1.10	0.95
Jan 2020	\$63,048	\$59,514	\$57,979	0.94	1.03	\$197,401	\$207,128	\$214,059	1.05	0.97
Feb 2020	\$59,164			0.00	0.00	\$256,565			0.00	0.00
Mar 2020	\$64,925			0.00	0.00	\$321,490			0.00	0.00
Apr 2020	\$80,549			0.00	0.00	\$402,039			0.00	0.00
May 2020	\$66,197			0.00	0.00	\$468,237			0.00	0.00
Jun 2020	\$64,274			0.00	0.00	\$532,511			0.00	0.00
Jul 2020	\$73,968			0.00	0.00	\$606,479			0.00	0.00
Aug 2020	\$64,686			0.00	0.00	\$671,165			0.00	0.00
Sep 2020	\$86,765			0.00	0.00	\$757,931			0.00	0.00

CTD	\$5,719,998	\$5,659,746	\$5,633,162	0.99	1.00
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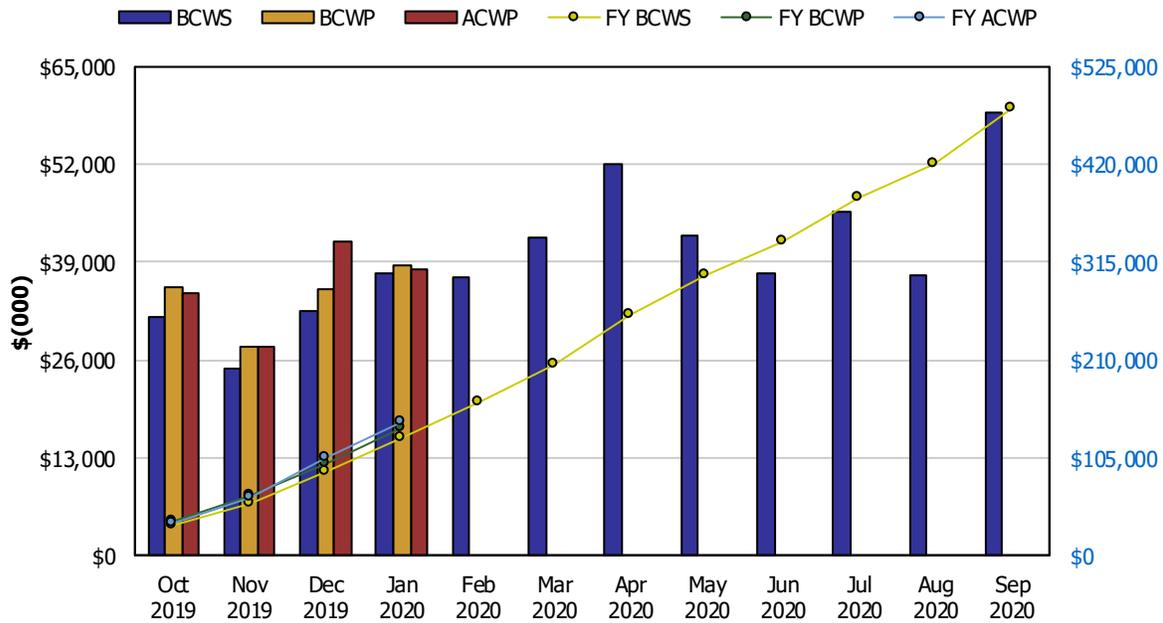
- ACWP    actual cost of work performed.
- BCWP    budgeted cost of work performed.
- BCWS    budgeted cost of work scheduled.
- CPI     cost performance index.
- CM      current month.
- CTD     contract to date.
- FY      fiscal year.
- SPI     schedule performance index.

Earned Value Data: Fiscal Year 2020

January-20

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

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$31,720	\$35,563	\$34,769	1.12	1.02	\$31,720	\$35,563	\$34,769	1.12	1.02
Nov 2019	\$24,924	\$27,726	\$27,829	1.11	1.00	\$56,644	\$63,289	\$62,598	1.12	1.01
Dec 2019	\$32,399	\$35,357	\$41,699	1.09	0.85	\$89,043	\$98,646	\$104,297	1.11	0.95
Jan 2020	\$37,525	\$38,619	\$38,174	1.03	1.01	\$126,568	\$137,265	\$142,471	1.08	0.96
Feb 2020	\$36,948			0.00	0.00	\$163,516			0.00	0.00
Mar 2020	\$42,386			0.00	0.00	\$205,902			0.00	0.00
Apr 2020	\$52,099			0.00	0.00	\$258,001			0.00	0.00
May 2020	\$42,433			0.00	0.00	\$300,433			0.00	0.00
Jun 2020	\$37,587			0.00	0.00	\$338,020			0.00	0.00
Jul 2020	\$45,700			0.00	0.00	\$383,720			0.00	0.00
Aug 2020	\$37,259			0.00	0.00	\$420,979			0.00	0.00
Sep 2020	\$58,969			0.00	0.00	\$479,948			0.00	0.00

CTD	\$3,785,218	\$3,756,843	\$3,711,898	0.99	1.01
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- ACWP actual cost of work performed.
- BCWP budgeted cost of work performed.
- BCWS budgeted cost of work scheduled.
- CPI cost performance index.
- CM current month.
- CTD contract to date.
- FY fiscal year.
- SPI schedule performance index.

***Tank Farms Assistant Manager:*** Rob Hastings  
***Technical Lead:*** Ricky Bang

### **5.01 – Base Operations**

The January 2020 variances below do not impact TPA milestones.

The current month **favorable** SV of \$1,094,300 was primarily due to:

- Repair of the ETF verification tank being ahead of schedule. Early mobilization, scaffold erection and sandblasting of the interior of a second verification tank being 1 month ahead of schedule.
- Schedule recovery of FY 2019 carryover scope related to 2750E Facility modifications and upgrades.

The current month **favorable** CV of \$446,000 was primarily due to:

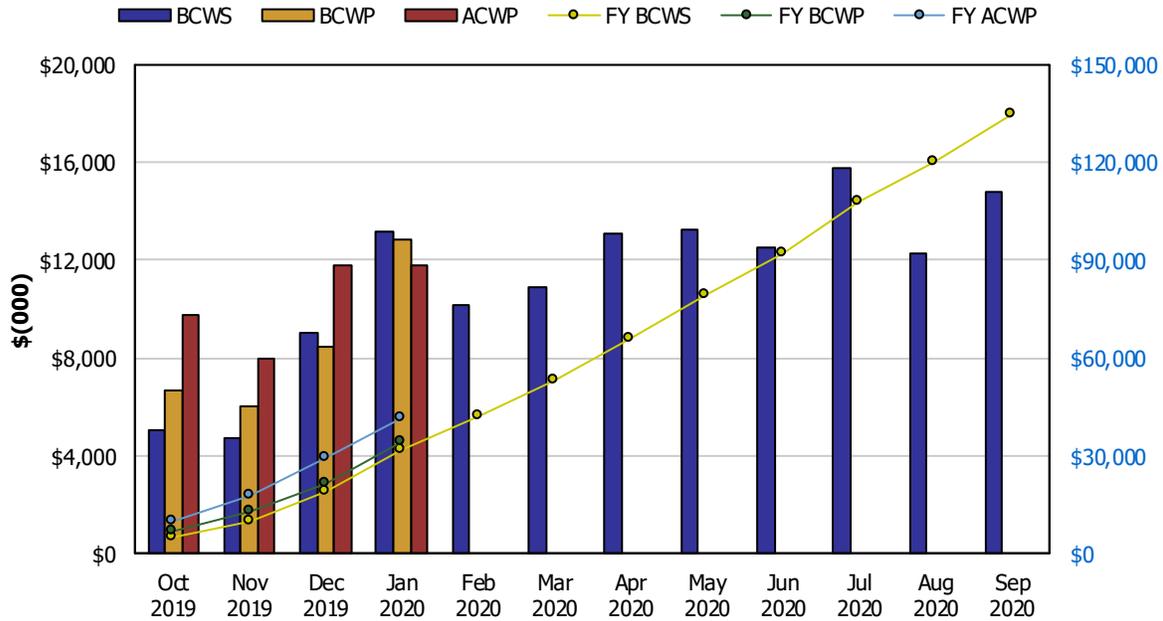
- Cost savings related to the procurement of safety equipment that supports production operations. It was determined that there was enough equipment in stock, so the planned procurement of a powered air purifying respirator filter, scheduled for the current period, was cancelled.

Earned Value Data: Fiscal Year 2020

January-20

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

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$5,039	\$6,662	\$9,772	1.32	0.68	\$5,039	\$6,662	\$9,772	1.32	0.68
Nov 2019	\$4,722	\$6,050	\$7,940	1.28	0.76	\$9,761	\$12,712	\$17,711	1.30	0.72
Dec 2019	\$9,040	\$8,482	\$11,822	0.94	0.72	\$18,801	\$21,193	\$29,534	1.13	0.72
Jan 2020	\$13,201	\$12,877	\$11,828	0.98	1.09	\$32,003	\$34,070	\$41,362	1.06	0.82
Feb 2020	\$10,151			0.00	0.00	\$42,153			0.00	0.00
Mar 2020	\$10,855			0.00	0.00	\$53,008			0.00	0.00
Apr 2020	\$13,093			0.00	0.00	\$66,101			0.00	0.00
May 2020	\$13,247			0.00	0.00	\$79,348			0.00	0.00
Jun 2020	\$12,504			0.00	0.00	\$91,851			0.00	0.00
Jul 2020	\$15,784			0.00	0.00	\$107,636			0.00	0.00
Aug 2020	\$12,238			0.00	0.00	\$119,873			0.00	0.00
Sep 2020	\$14,791			0.00	0.00	\$134,665			0.00	0.00

CTD	\$1,116,264	\$1,095,412	\$1,160,145	0.98	0.94
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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:*** Rob Hastings  
***Technical Lead:*** Jeff Rambo

### **5.02 – Retrieve and Close Single-Shell Tanks**

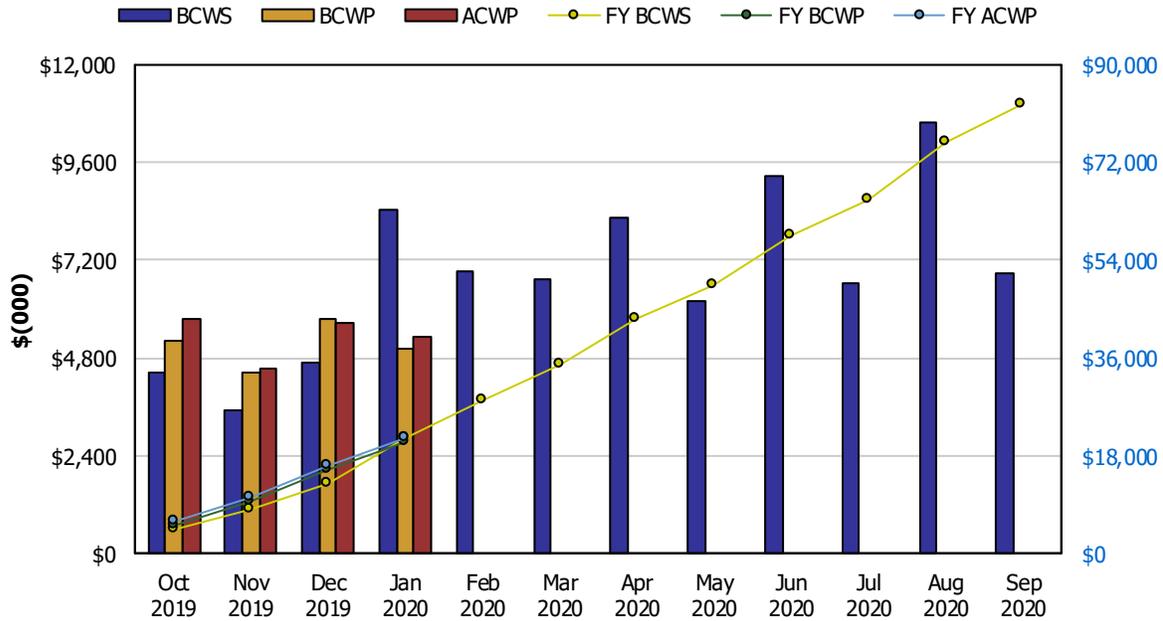
For the retrieval portion see the Consent Decree monthly report for cost and schedule status.

Earned Value Data: Fiscal Year 2020

January-20

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

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$4,444	\$5,240	\$5,748	1.18	0.91	\$4,444	\$5,240	\$5,748	1.18	0.91
Nov 2019	\$3,521	\$4,447	\$4,535	1.26	0.98	\$7,965	\$9,687	\$10,283	1.22	0.94
Dec 2019	\$4,707	\$5,765	\$5,664	1.22	1.02	\$12,672	\$15,452	\$15,947	1.22	0.97
Jan 2020	\$8,446	\$5,009	\$5,307	0.59	0.94	\$21,118	\$20,461	\$21,254	0.97	0.96
Feb 2020	\$6,925			0.00	0.00	\$28,044			0.00	0.00
Mar 2020	\$6,716			0.00	0.00	\$34,760			0.00	0.00
Apr 2020	\$8,254			0.00	0.00	\$43,013			0.00	0.00
May 2020	\$6,193			0.00	0.00	\$49,207			0.00	0.00
Jun 2020	\$9,261			0.00	0.00	\$58,468			0.00	0.00
Jul 2020	\$6,658			0.00	0.00	\$65,126			0.00	0.00
Aug 2020	\$10,604			0.00	0.00	\$75,730			0.00	0.00
Sep 2020	\$6,902			0.00	0.00	\$82,631			0.00	0.00

CTD	\$597,496	\$592,187	\$546,680	0.99	1.08
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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:* Rob Hastings  
*Federal Program Manager:* Brian Harkins

### **5.03 – Waste Feed Delivery/Treatment**

The January 2020 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$3,437,100) was primarily due to:

- Delays in the vendor completion of preassembly and inspection of the Low-Activity Waste Facility refractory that were due to manufacturing process issues, defects in refractory blocks requiring repouring, and additional curing time. Also the Low-Activity Waste Facility melter bubbler plug head material was delayed due to vendor backlog.
- There has been a delay in completion of the waste feed delivery technology mechanical waste gathering system, due to the testing and design enhancements of the umbilical management system. The umbilical management system test structure foundation activities were delayed by 4 weeks due to weather conditions.

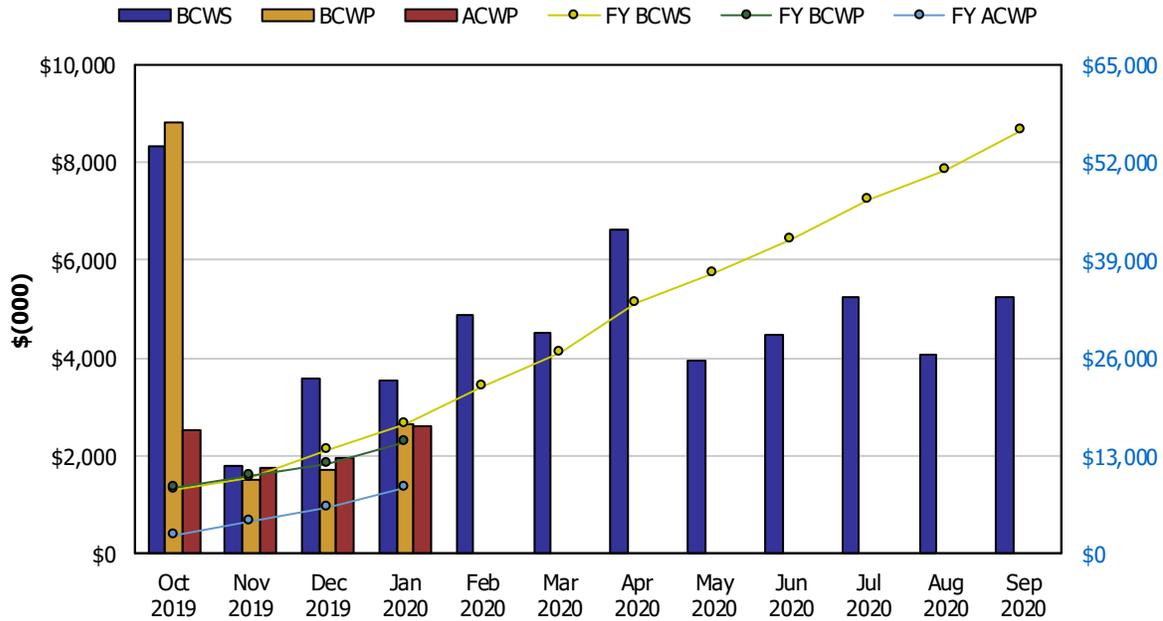
The current month **unfavorable** CV of (\$297,800) was below reportable thresholds.

Earned Value Data: Fiscal Year 2020

January-20

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

EVMS Monthly and Fiscal Year Values



**Earned Value Month**

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$8,344	\$8,802	\$2,523	1.05	3.49	\$8,344	\$8,802	\$2,523	1.05	3.49
Nov 2019	\$1,778	\$1,510	\$1,759	0.85	0.86	\$10,122	\$10,312	\$4,282	1.02	2.41
Dec 2019	\$3,591	\$1,715	\$1,940	0.48	0.88	\$13,713	\$12,027	\$6,223	0.88	1.93
Jan 2020	\$3,546	\$2,663	\$2,588	0.75	1.03	\$17,260	\$14,691	\$8,810	0.85	1.67
Feb 2020	\$4,867			0.00	0.00	\$22,127			0.00	0.00
Mar 2020	\$4,531			0.00	0.00	\$26,658			0.00	0.00
Apr 2020	\$6,606			0.00	0.00	\$33,264			0.00	0.00
May 2020	\$3,939			0.00	0.00	\$37,202			0.00	0.00
Jun 2020	\$4,472			0.00	0.00	\$41,675			0.00	0.00
Jul 2020	\$5,255			0.00	0.00	\$46,930			0.00	0.00
Aug 2020	\$4,082			0.00	0.00	\$51,011			0.00	0.00
Sep 2020	\$5,252			0.00	0.00	\$56,263			0.00	0.00
CTD	\$200,457	\$194,553	\$195,147	0.97	1.00					

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:*** Rob Hastings  
***Federal Program Manager:*** Brian Harkins

### **5.05 – Treat Waste**

The January 2020 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$882,900) was primarily due to:

- Changes to the fabrication execution strategy in order to prioritize vendor resources.
- A number of preconstruction field activities (e.g., water line modification, cut/cap of W-211 transfer lines, AP-108 Riser 15 modification, AP-07F Pit inspection/cleaning, construction training, and the direct corrosion inspection) were originally planned to take place during January 2020, but the start has been delayed due to slower than anticipated work package development and alignment with the preconstruction subcontractor's schedule and resource availability.

The current month **favorable** CV of \$70,300 is below the reporting threshold.

**Table 1 Administrative Record Metadata**

<b>Milestone Number or Facility Identification</b>	<b>Title</b>
M-045-56P	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)
M-045-91E4	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology
M-045-92AD	Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities
M-045-93	Submit Report for Description, Analysis and Technology for Removing Drainable Liquids from SSTs
M-045-97	Submit to Ecology a WMA Integration Study for WMA A/AX as a Primary Document
M-045-99	Submit to Ecology the Preliminary Performance Assessment/Closure Analysis
M-062-31-T01	Comp. Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements
M-062-33-T01	Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements
M-062-40H	Submit System Plan to Ecology
M-062-45	Complete Negotiations 6-Months After Last Issuance of System Plan
M-062-45-A	Complete Negotiations 6-Months After Last Issuance of System Plan
M-062-45-T01	Complete Negotiations 6-Months After Last Issuance of System Plan
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection
M-062-45-ZZ-A	Convert M-062-31-T01 Thru M-062-34-T01 to Interim Milestones
M-062-50	Submit to Ecology as a Secondary Document, a Mass Balance Flow
M-062-54A	Submit Permit Application for AP Tank Farm Mods and Operation Necessary to Support TSCR
M-090-14	Submit CD-1 for Facility to Store Spent Ion Exchange Columns Prior to DFLAW
S-2-3	Double-Shell Tank System (DST)
S-2-4	Single-Shell Tank System (SST)
S-2-8	Liquid Effluent Retention Facility (LERF)
T-2-6	242-A Evaporator

<b>Milestone Number or Facility Identification</b>	<b>Title</b>
T-2-8	Effluent Treatment Facility (ETF)
TS-2-8	Low-Activity Waste Pretreatment System (LAWPS)

CD = critical decision.  
 DFLAW = direct-feed low-activity waste.  
 DOE = U.S. Department of Energy.  
 RCRA = *Resource Conservation and Recovery Act*.  
 TSCR = tank-side cesium removal.  
 WMA = waste management area.  
 WTP = Waste Treatment and Immobilization Plant.