

Office of River Protection



Monthly Reporting Period December 1–December 31, 2021¹

¹ 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 November 2021.

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Acronyms and Abbreviations

COVID-19	coronavirus disease 2019
CV	cost variance
DFLAW	direct-feed low-activity waste
DOE	U.S. Department of Energy
DST	double-shell tank
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
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
IX	ion exchange
LAW	low-activity waste
LERF	Liquid Effluent Retention Facility
LFRG	Low-level Waste Disposal Facility Federal Review Group
NRC	Nuclear Regulatory Commission
ORP	U.S. Department of Energy, Office of River Protection
PMR	permit modification request
RCRA	<i>Resource Conservation and Recovery Act</i>
SST	single-shell tank
SV	schedule variance
TBI	Test Bed Initiative
TPA	Tri-Party Agreement
TSCR	tank-side cesium removal
WIR	Waste Incidental to Reprocessing
WMA	waste management area
WTP	Waste Treatment and Immobilization Plant

Administrative Items/Milestone Status

Milestone	Title	Due Date	DOE PM	Status
Prior Years				
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
M-045-59	Control Surface Water Infiltration Pathways as Needed	TBD ^a	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 ^a	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 ^a	B. Harkins	On Schedule
M-045-86	Submit Retrieval Data Report to Ecology for 19 Tanks Retrieved Under Consent Decree.	TBD ^b	B. Harkins	On Schedule
M-062-45-A	Complete Negotiations 6-Months After Last Issuance of System Plan	4/30/2021	B. Harkins	In Dispute
M-062-33-T01	Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements	4/30/2021	B. Harkins	In Dispute
Fiscal Year 2022 (October 1, 2021 – September 30, 2022)				
M-045-92Z	Submit to Ecology Design for Barrier 4 in 241-U Farm	10/31/2021	B. Harkins	Complete
M-062-45-XX	Complete Negotiations to Resolve Future Disputes M-062-45 Paragraphs 4 & 5	12/31/2021	B. Harkins	In Abeyance

Milestone	Title	Due Date	DOE PM	Status
M-062-51-T01	Submit to Ecology, as a Primary Document, a Secondary Liquid Waste Disposition Work Plan	12/31/2021	B. Harkins	Complete
M-062-52-T01	Submit to Ecology, as a Primary Document, a Secondary Solid Waste Disposition Work Plan	12/31/2021	B. Harkins	Complete
M-045-85	Initiate Negotiations of HFFACO Interim Milestones for Closure of Remaining WMAs	1/31/2022	B. Harkins	In Abeyance
M-045-92AA	Barrier 4 Design Approved by Ecology	1/31/2022	B. Harkins	On Schedule
M-062-01AR	Submit Semi-Annual Project Compliance Report to Ecology	1/31/2022	B. Trimberger	On Schedule
M-062-53A	Achieve Substantial Completion of EMF Construction	04/30/2022	W. Abdul	Complete
M-062-51-T02	Submit to Ecology, PMR for Redesign Upgrades and Ops to Support Volumes of Waste Types	5/15/2022	B. Harkins	On Schedule
M-062-52-T02	Submit to Ecology, PMR for Ancillary Facilities/Capabilities to Support Treatment of Secondary Waste	5/15/2022	B. Harkins	On Schedule
M-045-56R	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July 2022)	7/31/2022	B. Harkins	On Schedule
M-062-01AS	Submit Semi-Annual Project Compliance Report to Ecology	7/31/2022	B. Trimberger	On Schedule
M-045-86K	Submit Retrieval Data Report (RDR) to Ecology for Tank AX-102	9/13/2022	B. Harkins	On Schedule
M-045-15	Completion of Tank A-103 SST Waste Retrieval	9/30/2022	B. Harkins	At Risk
M-045-98	Submit to Ecology an RFI/CMS Work Plan for WMA A/AX as a Primary Document	9/30/2022	B. Harkins	On Schedule
M-045-102	Submit to Ecology a Performance Assessment Maintenance Plan for the WMA A/AX PA	9/30/2022	B. Harkins	At Risk
M-045-15A	Submit a Retrieval Data Report Pursuant to Agreement Appendix I	9/30/2022	B. Harkins	At Risk
M-045-15D	Submit, if appropriate, an exception to Waste Retrieval Criteria Pursuant to Agreement Appendix H	9/30/2022	B. Harkins	At Risk

Milestone	Title	Due Date	DOE PM	Status
Fiscal Year 2023 (October 1, 2022 – September 30, 2023)				
M-045-92AF	Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities	10/31/2022	B. Harkins	On Schedule
M-062-40I	Select a Minimum of 3 Scenarios	10/31/2022	K. Burnett	On Schedule
M-062-34-T01	Complete Hot Commissioning of Supplemental Treatment Vitrification Facility and/or WTP Enhancements	12/30/2022	B. Harkins	In Dispute
M-042-10-T01	Complete Leak Test/Internal Inspections, or Other Tank Integrity Examination of DST Components	12/31/2022	B. Harkins	On Schedule
M-062-54B	Achieve Substantial Completion of LAW Pretreatment Capability Construction for DFLAW Initial Ops	12/31/2022	B. Harkins	On Schedule
M-062-01AT	Submit Semi-Annual Project Compliance Report to Ecology	1/31/2023	B. Trimberger	On Schedule
M-062-21	Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00	2/28/2023	B. Harkins	At Risk
M-062-51	Achieve Substantial Completion of LERF/ETF Construction Upgrades Necessary for LAW Hot Commissioning	4/15/2023	B. Harkins	On Schedule
M-062-54	Low Activity Waste Pretreatment Capability; Cold Commissioning Complete	4/30/2023	B. Harkins	On Schedule
M-062-52	Achieve Substantial Completion of Secondary Waste Construction Necessary for LAW Hot Commissioning	6/30/2023	B. Harkins	On Schedule
M-045-56S	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July 2023)	7/31/2023	B. Harkins	On Schedule
M-062-01AU	Submit Semi-Annual Project Compliance Report to Ecology	7/31/2023	B. Trimberger	On Schedule
M-062-53	Effluent Management Facility (EMF) Cold Commissioning Start	8/15/2023	J. Young	On Schedule
M-062-55	LAWP Capability Necessary to Feed DFLAW; Hot Commissioning Complete	8/15/2023	B. Harkins	On Schedule

Milestone	Title	Due Date	DOE PM	Status
M-045-91K	Complete Initial Baseline Visual Inspections of All SSTs	9/30/2023	B. Harkins	On Schedule
M-045-91E5	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology	9/30/2023	B. Harkins	On Schedule

^a To be established in accordance with the date identified in the M-045-82 Tier 2 closure plan.

^b To be determined based on tank retrieval completion

CD	=	critical decision.	LERF	=	Liquid Effluent Retention Facility.
CMIP	=	corrective measures implementation work plan.	Mod	=	modification.
CMS	=	Corrective Measure Study.	PA	=	Performance Agreement.
DFLAW	=	Direct-Feed Low-Activity Waste.	PM	=	project manager.
DOE	=	U.S. Department of Energy.	PMR	=	permit modification request.
DST	=	double-shell tank.	RCRA	=	<i>Resource Conservation and Recovery Act.</i>
Ecology	=	Washington State Department of Ecology.	RFI	=	<i>Resource Conservation and Recovery Act Facility Investigation.</i>
EMF	=	Effluent Management Facility.	SST	=	single-shell tank.
ETF	=	Effluent Treatment Facility.	TBD	=	to be determined.
HFFACO	=	<i>Hanford Federal Facility Agreement and Consent Order.</i>	WMA	=	waste management area.
LAW	=	low-activity waste.	WTP	=	Waste Treatment and Immobilization Plant.
LAWP	=	Low-Activity Waste Pretreatment.			

System Plan

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

M-062-45-A Complete Negotiations 6-Months after Last Issuance of System Plan
 Due: April 30, 2021.
 Status: In Dispute.

M-062-40I Select a Minimum of 3 Scenarios
 Due: October 31, 2022.
 Status: On Schedule.

Significant Past Accomplishments

- The U.S. Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), and Washington State Department of Ecology (Ecology) met in the first mediated session of the “Holistic Negotiations” on June 25, 2020. One negotiation session was held in December 2021.
- On January 27, 2021, DOE submitted signed change package M-62-21-01 to Ecology for evaluation to extend the M-62-45 Milestone date 90 days, due to “Holistic Negotiations” progress. This change package was not concurred on by Ecology within the 14-day period; therefore, the change package went into dispute on February 10, 2021.

Significant Planned Actions in the Next Six Months

- Discuss disputes regarding Milestone M-062-45 and its associated milestones during “Holistic Negotiations”
- Kick off *System Plan*, Rev. 10, scenario selection discussions in the spring of 2022.

Issues

- Ecology and DOE Office of River Protection (ORP) have ended negotiations related to the M-062-45 Milestone and have initiated dispute. “Holistic Negotiation” mediated sessions began in June 2020 to resolve these disputes.
- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing coronavirus disease 2019 (COVID-19) concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as

implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.

- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the Tri-Party Agreement (TPA), and if other actions may be necessary.

Acquisition of New Facilities

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Janet Diediker
Ecology Project Manager: Dan McDonald, Jeff Lyon

M-090-13 CD-1² for Interim Hanford Storage Project and CR³ for CD-2 to ECY⁴

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

M-090-00 Acquire/Modify Facilities for Storage of First Two Years of IHLW⁵ from the WTP⁶ 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

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.

² CD denotes critical decision.

³ CR denotes change request.

⁴ ECY denotes Washington State Department of Ecology.

⁵ IHLW denotes immobilized high-level waste.

⁶ WTP denotes Waste Treatment and Immobilization Plant.

- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

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

Tank Farms Assistant Manager: Delmar Noyes
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.”

M-062-45-T01	Complete Negotiations 6-Months after Last Issuance of System Plan
Due:	April 30, 2015.
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection
Due:	April 30, 2015.
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones
Due:	April 30, 2015.
M-062-31-T01	Complete Final Design and Submit RCRA⁷ Part B Permit Modification Request for Enhanced WTP & Supplemental Treatment
Due:	April 30, 2016.
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements
Due:	April 30, 2018.
M-062-33-T01	Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements
Due:	April 30, 2021.
M-062-45-XX	Complete Negotiations to Resolve Future Disputes M-062-45, Paragraphs 4 and 5
Due:	December 31, 2021.
Status:	In Abeyance.
M-062-34-T01	Complete Hot Commissioning of Supplemental Treatment Vitrification Facility and/or WTP Enhancements
Due:	December 30, 2022.

⁷ 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 HLW⁸ and LAW⁹ Tank Wastes

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

M-062-52 Achieve Substantial Completion of Secondary Waste Construction Necessary for LAW Hot Commissioning

Due: June 30, 2023.
Status: On Schedule.

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 Negotiation” mediated sessions began in June 2020 to resolve these disputes.
- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.

⁸ HLW denotes high-level waste.

⁹ LAW denotes low-activity waste.

- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Low-Activity Waste Pretreatment System

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Janet Diediker
Ecology Project Manager: Dan McDonald

M-062-60 Submit Disposition Pathways Evaluation for Spent IX¹⁰ Columns as Primary Document to Ecology

Due: June 30, 2026.
 Status: On Schedule.

M-062-61 Submit Updated TSCR¹¹ Closure Plan as a Permit Modification Request to Ecology

Due: April 30, 2029.
 Status: On Schedule.

M-062-62 Complete Negotiations to Establish HFFACO¹² Milestones for Disposition of Spent IX Columns

Due: January 31, 2035.
 Status: On Schedule.

M-062-62-T01 Submit Conceptual Design Package (30% Design) for Facility to Remove/Prepare/Process IX Waste Media

Due: December 30, 2040.
 Status: On Schedule.

M-062-62-T02 Submit Conceptual Design Package (60% Design) for Facility to Remove/Prepare/Process IX Waste Media

Due: June 30, 2042.
 Status: On Schedule.

M-062-63 Submit as PMR¹³, Final Design (90-100% Design) for Facility to Remove/Prepare/Process IX Waste Media

Due: September 30, 2043.
 Status: On Schedule.

Significant Past Accomplishments

- None.

¹⁰ IX denotes ion exchange.

¹¹ TSCR denotes tank-side cesium removal.

¹² HFFACO denotes *Hanford Federal Facility Agreement and Consent Order*.

¹³ PMR denotes permit modification request.

Significant Planned Actions in the Next Six Months

- None.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Tank-Side Cesium Removal System

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Janet Diediker
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 WTP Project scope pertaining to DFLAW.

Significant Past Accomplishments

- Tank-Side Cesium Removal (TSCR) received CD-4a approval from the Energy Systems Acquisition Advisory Board on December 10, 2021
- Received authorization to initiate TSCR operations
- Completed Waste Feed Delivery Construction.

Significant Planned Actions in the Next Six Months

- Initiate TSCR operations in January 2022.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Test Bed Initiative Demonstration

Tank Farms Assistant Manager: Delmar Noyes

Technical Lead: Richard Valle

Ecology Project Manager: TBD

DOE proposed to undertake a Test Bed Initiative Demonstration (TBI Demonstration). If the TBI Demonstration is conducted, approximately 2,000 gallons of waste from Tank 241-SY-101 at the Hanford Site in Washington will be pretreated to remove most key radionuclides, then solidified (grouted) offsite, and subsequently disposed of at a licensed and permitted disposal facility outside of Washington State. DOE issued a Draft Waste Incidental to Reprocessing Evaluation (Draft WIR Evaluation) for the TBI Demonstration in late 2021. Following public comment on the Draft WIR Evaluation and consultation with the Nuclear Regulatory Commission (NRC), DOE may issue a Final WIR Evaluation and a potential WIR Determination. DOE will also complete *National Environmental Policy Act* analysis prior to making a decision about whether to proceed with the TBI Demonstration.

Significant Past Accomplishments

- The Notice of Availability of *Draft Waste Incidental to Reprocessing Evaluation for the Test Bed Initiative Demonstration, U.S. Department of Energy* (Draft WIR Evaluation) was published in the Federal Register on November 5, 2021 (see 86 FR 61200). The Draft WIR Evaluation demonstrates that the pretreated and solidified waste will be incidental to reprocessing of spent nuclear fuel, will not be high-level radioactive waste, and may be managed as low-level radioactive waste.
 - DOE is providing a minimum 90-day public comment period
 - DOE consulted with the NRC concerning the Draft WIR Evaluation. The NRC has found the submittal to be complete and is conducting a technical review
 - A virtual public meeting on the Draft WIR Evaluation was held by DOE and NRC on November 18, 2021.

Significant Planned Actions in the Next Six Months

- Closing of the 90-day public comment period for the Draft WIR Evaluation
- Support the NRC in technical review of the Draft WIR Evaluation and respond to any requests for additional information
- Receive an NRC technical evaluation report based on NRC technical review of the Draft WIR Evaluation.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers

reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.

- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

242-A Evaporator Status

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Paul Hernandez
Ecology Project Manager: Jeff Lyon

The 242-A Evaporator campaign strategy is identified in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
2023	EC-11	AW-102	AP-104	EC-11 to be performed after completion of transfer lines replacements in FY 2023.

FY = fiscal year.

Significant Past Accomplishments

- Completed internal inspection of EC-2 and EC-3 condensers with no significant issues noted
- Completed steam condensate sample tank modifications
- Completed K2 system Variable Frequency Drive repairs.

Significant Planned Actions in the Next Six Months

- Receive new PB-1 and PB-2 replacement pumps
- Continue excavation in AW Tank Farm for the 242-A Evaporator slurry and feed transfer line replacement
- Continue pipe in pipe installation in AW Tank Farm for the 242-A Evaporator slurry and feed transfer line replacement
- Initiate testing and calibrate instruments for the 242-A Evaporator Documented Safety Analysis safety system upgrades
- Initiate design for the replacement of U-Joints on the 242-A dump valves.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as

implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.

- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility

Tank Farms Assistant Manager: Delmar Noyes
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: Complete.

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 LERF¹⁴/ETF¹⁵ Construction Upgrades Necessary for LAW Hot Commissioning

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

Significant Past Accomplishments

- Total fiscal year (FY) 2022 processing volume: approximately 0.1 million gallons
- Submitted combined secondary solid and liquid waste disposition workplan for target Milestones M-062-051-T01 and M-062-52-T01 to Ecology on December 16, 2021 as a primary document
- Continued testing and turnover of the ETF monitoring and control system upgrade and the ETF ultraviolet/oxidation upgrade. Initiated ETF operations under test control.
- Continued fieldwork activities for the ETF Load-In Station expansion upgrade
- Continued fieldwork activities for the ETF motor control center upgrade
- Paused fieldwork activities for the LERF Basin 41 installation due to winter conditions.

Significant Planned Actions in the Next Six Months

- Complete ETF processing campaign to treat approximately 1 million gallons from LERF Basin 43
- Complete testing and turnover of the ETF monitoring and control system upgrade, as the previous system is outdated
- Complete testing and turnover of the ETF ultraviolet/oxidation upgrade, as the previous system is no longer supported by the manufacturer

¹⁴ LERF denotes Liquid Effluent Retention Facility.

¹⁵ ETF denotes Effluent Treatment Facility.

- Complete design of ETF brine storage tanks, the acetonitrile distillate storage tanks, and the acetonitrile load out system
- Complete procurements and fabrications for the ETF redundant filtration, carbon dioxide membrane, freeze protection, instrument air, vessel offgas system, Load-In Station expansion, brine and acetonitrile storage tanks, and chiller addition upgrade projects
- Continue fieldwork activities for the ETF Load-In Station expansion upgrade to support enhanced facility operation
- Continue fieldwork activities for the ETF motor control center upgrade to improve electrical infrastructure for enhanced facility operation
- Remobilize fieldwork activities for the LERF Basin 41 installation for additional capacity
- Begin fieldwork activities for the ETF supplemental organic treatment (i.e., steam stripping) system to provide the capability to treat the WTP DFLAW effluent
- Begin fieldwork activities for the ETF redundant filtration system to reduce processing down time
- Begin fieldwork activities for the ETF carbon dioxide membrane system to provide the capability to treat the WTP DFLAW effluent
- Begin fieldwork activities for the ETF chiller addition to provide additional cooling capability for the ETF upgrade projects
- Begin fieldwork activities for the ETF monitoring and control system balance of facility upgrades, as the previous system is outdated
- Begin fieldwork activities for the ETF vessel off gas demister housing upgrade to support enhanced facility operation
- Begin fieldwork activities for the ETF freeze protection upgrade to support enhanced facility operation
- Begin fieldwork activities for the ETF instrument air upgrade to support enhanced facility operation
- Begin fieldwork activities for the enhanced leak detection system installation on the 310/311/PC-5000 transfer lines that convey effluent to LERF.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as

implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.

- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.
- The ETF modular grout project will remain paused until project options are evaluated.
- Accumulated solids were discovered inside the piping system at the LERF Basin 44 catch basin. Nuclear safety evaluations were performed by Washington River Protection Solutions LLC. Operational restrictions have been implemented to isolate the affected area while these evaluations are ongoing.

Liquid Effluent Retention Facility Volumes

LERF liquid levels, inventory, and received waste are shown in the table below. Volumes in the table are estimated.¹⁶

Description	242AL-42 (Basin 42)	242AL-43 (Basin 43)	242AL-44 (Basin 44)
AZ-301 Condensate	-	+ 2,880	-
Mixed Waste Trench 31 and 34	-	-	+ 14,600
Other ^a	-	-	+ 100
Processing Campaign(s)	-	- 111,000	-
Total Volume	506,000	6,510,000	1,350,000

^a 325 Building retention process sewer and solid waste landfill lysimeter.

Data Date: December 30, 2021.

Values shown in gallons.

¹⁶ 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: Delmar Noyes
Technical Lead: Erik Nelson
Ecology Project Manager: Jeff Lyon, Nina Menard

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

M-042-10-T01 Complete Leak Test/Internal Inspections, or Other Tank Integrity Examination of DST¹⁷ Components

Due: December 31, 2022.
 Status: On Schedule.

M-045-91K Complete Initial Baseline Visual Inspections of all SSTs¹⁸

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

M-045-91E5 Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology

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 IQRPE¹⁹ Attesting to SST Structural Integrity

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

Double-Shell Tank Integrity

Significant Past Accomplishments

- Completed DST annulus visual inspections at Tanks 241-AN-106, 241-AN-105, and 241-AN-107, 241-AN-101, 241-AN-102, 241-AN-103, and 241-AN-104
- Initiated DST annulus visual inspection at Tank 241-AZ-101
- Completed ultrasonic testing field work at Tank 241-AN-107
- Initiated ultrasonic testing inspections at Tank 241-AN-101.

¹⁷ DST denotes double-shell tank.

¹⁸ SST denotes single-shell tank.

¹⁹ IQRPE denotes independent qualified registered professional engineer.

Significant Planned Actions in the Next Six Months

- Complete ultrasonic testing inspections at Tanks 241-AN-101, 241-AP-105, and 241-SY-101
- Complete DST annulus visual inspections in Tanks 241-AZ-101 and 241-AZ-102
- Complete report development for the nine DST annulus visual inspections performed in FY 2021
- Complete report development for the nine DST annulus visual inspections performed in FY 2022.

Ultrasonic Testing Report Status

- Began development of ultrasonic testing report for Tank 241-AN-107.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Single-Shell Tank Integrity***Significant Past Accomplishments***

- Completed RPP-RPT-63488, *Structural Assessment of Concrete Damage in the Hanford SX Single-Shell Tanks*, Rev. 0, in November 2021
- Completed follow-up visual and laser inspection at Tank 241-SX-111 (November 2021)

Significant Planned Actions in the Next Six Months

- Release RPP-RPT-63488, *Structural Assessment of Concrete Damage in the Hanford SX Single-Shell Tanks*, Rev. 0

- Initiate FY 2022 SST visual inspections.

RPP-9937, Single-Shell Tank System Leak Detection and Monitoring Functions and Requirements Document, Rev. 4 Updates

- Baseline change authorizations implemented:
 - Three Miscellaneous Underground Storage Tank BCAs were implemented due to intrusions (Tanks 241-A-302-B, 244-TX, and 244-A).
- Specification limit exceedance:
 - Two interstitial-liquid levels exceeded their upper specification limit (241-TX-103 and 241-TX-106) and are being reviewed for justifications.

Issues

- Tank 241-SX-112 was inspected visually in late February 2020. The concrete dome was inspected fully and there were three spots of spalled concrete in the dome. While there have been past inspections of the tank, they did not include the full dome and this was the first inspection to reflect the spalling. There was no evidence of structural issues; however, the dome loading continues to be limited to current levels until further analysis is complete. The full structural analysis contract is in place with the PNNL but will not be complete until the end of FY 2022. Tank 241-SX-112 was inspected visually again in late July. The inspection did not identify any changes in the condition of the spalled locations. Concrete was noted on the waste surface under the spalled locations, suggesting that the spalling took place after 1969 when the tank was pumped and taken out of service. On August 17, 2020, a laser scan of Tank 241-SX-112 was performed to assist with analysis of dome spalling. Tank 241-SX-112 was visually inspected again in August 2021 to support the ongoing analysis. A subsequent laser scan was also obtained in September 2021. Review of the August 2021 and September 2021 inspection data did not identify any changes in the condition of the spalled locations. RPP-RPT-63488, Rev. 0, concluded that the levels of spalling identified in the February 2020 through August 2021 inspections of the SX-tank domes do not pose a threat to the structural integrity of the tanks.
- Tank 241-SX-109 was inspected visually in late July 2020. Spalled concrete was identified in the northeast portion of the tank dome next to a rectangular construction manhole. Additional small/shallow spalling locations, similar to those in Tank 241-SX-112, were noted on the tank dome. Concrete was noted on the waste surface, and, comparing to past visual inspections, suggests that the spalling occurred post-1996. In September 2020, a laser scan of Tank 241-SX-109 was also performed to assist with analysis of dome spalling. Tank 241-SX-109 was visually inspected again in August 2021 to support the ongoing analysis. A subsequent laser scan was also obtained in September 2021. Review of the August 2021 and September 2021 inspection data did not identify any changes in the condition of the spalled locations. RPP-RPT-63488, Rev. 0, concluded that the levels of spalling identified in the February 2020 through August 2021 inspections of the SX-tank domes do not pose a threat to the structural integrity of the tanks.

- Tank 241-SX-111 was inspected visually in mid-August 2020. Spalled/Cracked concrete was identified in various locations on the tank dome. Concrete was noted on the waste surface and, when compared to past visual inspections, suggests that the spalling occurred post-1987. On September 1, 2020, a laser scan of Tank 241-SX-111 was performed. Review of the laser scan results identified a new spalling location since the visual inspection. Tank 241-SX-111 was visually inspected in August 2021 to support the ongoing analysis. During the August 2021 visual inspection, additional spalling was observed. A subsequent laser scan was performed in September 2021. RPP-RPT-63488, Rev. 0, concluded that the levels of spalling identified in the February 2020 through August 2021 inspections of the SX-tank domes do not pose a threat to the structural integrity of the tanks. An additional visual inspection and laser scan were performed at Tank 241-SX-111 in November 2021. An analysis of the November 2021 inspection results identified one new area of spalling.
- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

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 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) Comments 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. 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:
 - Completed RPP-IQRPE-50029, *219-S Integrity Assessment Report*, in February 2020
 - The IQRPE recommended the next 219-S Tank system integrity assessment be completed in 20 years.

In-Tank Characterization and Summary

Tank Farms Assistant Manager: Delmar Noyes

Technical Lead: Erik Nelson

Ecology Project Manager: Jeff Lyon

Reports Completed or Released

For December 2021, the following reports were completed (internal access only) or released (external access):

- Completed:
 - RPP-RPT-60574, Derivation of Best-Basis Inventory for Tank 241-U-112 as of December 1, 2021, Rev. 2
 - RPP-RPT-60487, Derivation of Best-Basis Inventory for Tank 241-SX-108 as of December 1, 2021, Rev. 1
 - RPP-RPT-60044, Derivation of Best-Basis Inventory for Tank 241-B-106 as of October 1, 2021, Rev. 01
 - RPP-RPT-44049, Derivation of Best-Basis Inventory for Tank 241-AZ-102 as of October 1, 2021, Rev. 19
 - RPP-RPT-43992, Derivation of Best-Basis Inventory for Tank 241-AN-106 as of October 1, 2021, Rev. 24
 - RPP-RPT-59854, Derivation of Best-Basis Inventory for Tank 241-AX-103 as of October 1, 2021, Rev. 2
 - RPP-PLAN-64916, Tank 241-AZ-101 Grab Sampling and Analysis Plan - Fiscal Year 2022, Rev. 0
 - RPP-PLAN-64866, Tank 241-AP-105 Grab Sampling and Analysis Plan in Support of Second DFLAW Feed Campaign-Fiscal Year 2022, Rev 0
 - RPP-RPT-63482, Corrosion Susceptibility Assessment of Tank 241-AY-102 Annulus Supernatant Sampled in 2021, Rev 0
 - RPP-RPT-60742, Final Report for Tank 241-AP-107 Grab Sampling 2017, Rev 2.
- Released:
 - HNF-EP-0182, Waste Tank Summary Report for Month Ending October 31, 2021, Rev. 406.

Tank Sampling

Significant Past Accomplishments

- For December 2021, the following tank sampling was conducted:

- Completed Tank 241-AN-102 grab sampling. Two (2) samples were received at the 222-S Laboratory.
- Completed Tank 241-AZ-102 grab sampling. Nine (9) samples were received at the 222-S Laboratory.

Significant Planned Actions in the Next Six Months

- Complete grab sampling of Tank 241-AZ-101 grab sampling in March 2022
- Complete grab sampling of Tank 241-AW-105 grab sampling in March 2022
- Complete core sampling of Tank 241-AW-105 in March 2022
- Complete grab sampling of Tank 241-AP-105 in May 2022
- Complete grab sampling of Tank 241-AN-107 in May 2022
- Complete grab sampling of Tank 241-AZ-102A in June 2022
- Complete grab sampling of Tank 241-AX-103 in June 2022.

Issues

- Attempts to penetrate the hard crust on the top of the waste in Tank 241-AN-102 during initial core sampling have been unsuccessful. Engineering and Operations have identified a path forward that requires a tool evaluation and the fabrication of sleeving. While the path forward is being established for Tank 241-AN-102, the team is transitioning from the core sampling at Tank 241-AN-102 to core sampling at Tank 241-AW-105.
- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Best-Basis Inventory Updates

Significant Past Accomplishments

- Best-basis inventory updates for the following tanks were completed in December 2021:
 - Tank 241-AN-106
 - Tank 241-AX-103
 - Tank 241-AZ-102
 - Tank 241-B-106
 - Tank 241-SX-108
 - Tank 241-U-112.

Significant Planned Actions in the Next Month

- Best-basis inventory updates for the following tanks are currently planned to be completed in January 2022:
 - Tank 241-B-108
 - Tank 241-TY-104.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Single-Shell Tank Closure Program

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Becky Blackwell
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 CMIP²⁰ for WMA-C²¹**
 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-045-92AA 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: In Abeyance.
- M-045-56R Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July 2022)**
 Due: July 31, 2022.
 Status: On schedule.
- M-045-98 Submit to Ecology as a Primary Document an RFI/CMS²² 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.

²⁰ CMIP denotes corrective measures implementation work plan.

²¹ WMA-C denotes C Tank Farm waste management area.

²² RFI/CMS denotes *Resource Conservation and Recovery Act* Facility Investigation/Corrective Measure Study.

M-045-102	Submit to Ecology a Performance Assessment Maintenance Plan for WMA A/AX PA²³
Due:	September 30, 2022.
Status:	At risk.
M-045-92AB	Complete Construction of Barrier 4 in 241-U Farm
Due:	October 31, 2023.
Status:	On schedule.
M-045-92AF	Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities
Due:	October 31, 2022.
Status:	On schedule.
M-045-56S	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July 2023)
Due:	July 31, 2023.
Status:	On schedule.
M-045-103	Submit to Ecology a PMR 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

- Completed and released the WMA C HFFACO Appendix I Performance Assessment (IPA) to the HFFACO Administrative Record.

Significant Planned Activities in the Next Six Months

- Resolve Ecology's comments on RPP-RPT-58858, *Tier 1 Closure Plan Single-Shell Tank System*; RPP-RPT-59389, *Tier 2 Resource Conservation and Recovery Act (RCRA) Closure Action Plan for Waste Management Area C*; and RPP-RPT-59390, *Tier 3*

²³ PA denotes performance agreement.

Resource Conservation and Recovery Act (RCRA) Component Closure Activity Plan for 241-C-200 Series Tanks

- Begin construction of the U Tank Farm interim surface barrier evapotranspiration basin in support of Milestone M-045-92AB, “Complete Construction of Barrier 4 in 241-U Farm.”

Issues

- Milestone M-045-102 is being listed as “At Risk” as the Performance Assessment Maintenance Plan for WMA A/AX will not be developed by the current due date of September 30, 2022 as it is following a development path necessitated by DOE Order 435.1. Following these requirements, a draft PA Maintenance Plan for WMA A/AX will be reviewed by DOE and submitted with the draft WMA A/AX PA to DOE Headquarters’ Low-level Waste Disposal Facility Federal Review Group (LFRG) as part of their formal review of the WMA A/AX PA. The formal LFRG review of the WMA A/AX PA is scheduled to occur in Fiscal Year 2024. DOE is developing a draft TPA Change Control Form (which will be shared with Ecology) proposing a new due date.
- Milestone M-045-85, due January 31, 2022, has been placed in a 30-day suspension and listed as “In Abeyance” from that date to allow discussions that might affect this milestone to continue in the on-going “Holistic Negotiations” between DOE and Ecology. This milestone deals with final dates for closure of Hanford tanks, which is an assumed primary discussion topic in the “Holistic Negotiations”. Upon conclusion of the “Holistic Negotiations”, DOE and Ecology will discuss the criteria needed for completing Milestone M-045-85.
- Ecology proposed (via an email from Mr. Jeff Lyon on June 17, 2020) to remove the milestone (i.e., M-045-62, “Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 CMIP for WMA-C”) for submittal of the corrective measures’ implementation work plan, with the intent to install a final closure cap, rather than implement the planned interim barrier. Ecology’s proposal to install the final closure cap before most of the closure activities would be completed at Tank Farms 241-A, 241-AN, 241-AP, 241-AW, 241-AX, 241-AY, and 241-AZ is an issue for the following reasons:
 - Could impact retrievals and tank structural stability
 - Could cause runoff issues for adjacent tank farms
 - Is not consistent with the approach analyzed in DOE/EIS-0391, *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington*; the record of decision (i.e., 78 FR 75918, “Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington”); and captured in the approved RPP-RPT-59379, *Waste Management Area C Phase 2 Corrective Measures Study Report*.

DOE plans to develop the corrective measures implementation work plan to submit to Ecology and has followed this path since RPP-RPT-59379 was approved in June 2018. DOE understands that the corrective measures implementation work plan is the vehicle that Ecology will use to meet its TPA/HFFACO obligations in its role as lead agency, as

set forth in paragraph 54 of the HFFACO legal agreement. Paragraph 54 of the HFFACO states:

DOE shall develop and submit its proposed remedial action (or corrective action) alternative following completion and approval of a Remedial Investigation and Feasibility Study (or RCRA Facility Investigation and Corrective Measures Study), in accordance with the requirements and schedules set forth in the Action Plan. If Ecology is the lead regulatory agency, it will recommend the CERCLA remedial action(s) it deems appropriate to EPA. The EPA Administrator, in consultation with the DOE and Ecology, shall make final selection of the CERCLA remedial action(s), which shall not be subject to dispute.

- Ecology and DOE continue to disagree that several TPA secondary documents are TPA primary documents. Ecology has asserted that the TPA Appendix I performance assessment documents for WMA C; RPP-ENV-61497, *Preliminary Performance Assessment of Waste Management Area A-AX, Hanford Site, Washington*, and RPP-ENV-62206, *Analysis of Post-Closure Groundwater Impacts from Hazardous Chemicals in Residual Wastes in Tanks and Ancillary Equipment at Waste Management Area A-AX at the Hanford Site, Southeast Washington*; are primary documents. As set forth in Section 9.1 of the HFFACO Action Plan, primary documents are identified in Table 9-1, “Primary Documents,” and are “those which represent the final documentation of key data and reflect decisions on how to proceed.” Since these documents are neither referenced in the HFFACO as a primary document, nor listed in Table 9-1 of the HFFACO Action Plan, they are secondary documents. DOE considers these documents to be secondary documents that fit in the category of “Supporting studies and analyses” identified in the secondary documents listed in Table 9-2, “Secondary Documents,” of the HFFACO Action Plan.
- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
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- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Single-Shell Tank Retrieval Program

Tank Farms Assistant Manager: Delmar Noyes

Technical Lead: Jim Greene

Ecology Project Manager: Jeff Lyon

M-045-15 Completion of Tank A-103 SST Waste Retrieval

Due: September 30, 2022.

Status: At risk.

M-045-86 Submit Retrieval Data Report to Ecology for 19 Tanks Retrieved Under Consent Decree.

Due: To Be Determined. Ten Retrieval Data Reports have been submitted for Tanks that have been retrieved and Milestones M-045-86A through M-045-86J have been completed. Tank AX-102 currently has a Retrieval Data Report submittal due date of September 13, 2022 (Milestone M-045-86K). Tanks AX-104, AX-103, AX-101, A-101, A-102, A-106, A-104, and A-105 have submittal dates to be determined (Milestones M-045-86L through M-045-86S).

Status: On Schedule.

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.

Significant Planned Activities in the Next Six Months

- Refer to the Consent Decree monthly report.

Issues

- Refer to the Consent Decree monthly report.

Tank Operations Contract Overview

Earned Value Data: Fiscal Year 2022

November-2021

Tank Farms ORP-0014 WBS 5 - River Protection Project (in \$000s)										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	\$52,947	\$53,064	\$52,011	\$117	\$1,053	1.00	1.02			
FYTD	\$87,779	\$89,413	\$86,964	\$1,635	\$2,450	1.02	1.03	\$758,343		
CTD	\$7,039,480	\$7,006,283	\$6,953,147	(\$33,197)	\$53,136	1.00	1.01	\$8,479,772	\$8,408,500	\$71,272

ACWP = actual cost of work performed.

CV = cost variance.

BAC = budget at completion.

EAC = estimate at completion.

BCWP = budgeted cost of work performed.

FYTD = fiscal year to date.

BCWS = budgeted cost of work scheduled.

SPI = schedule performance index.

CM = current month.

SV = schedule variance.

CPI = cost performance index.

VAC = variance at completion.

CTD = contract to date.

WBS = work breakdown structure.

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.

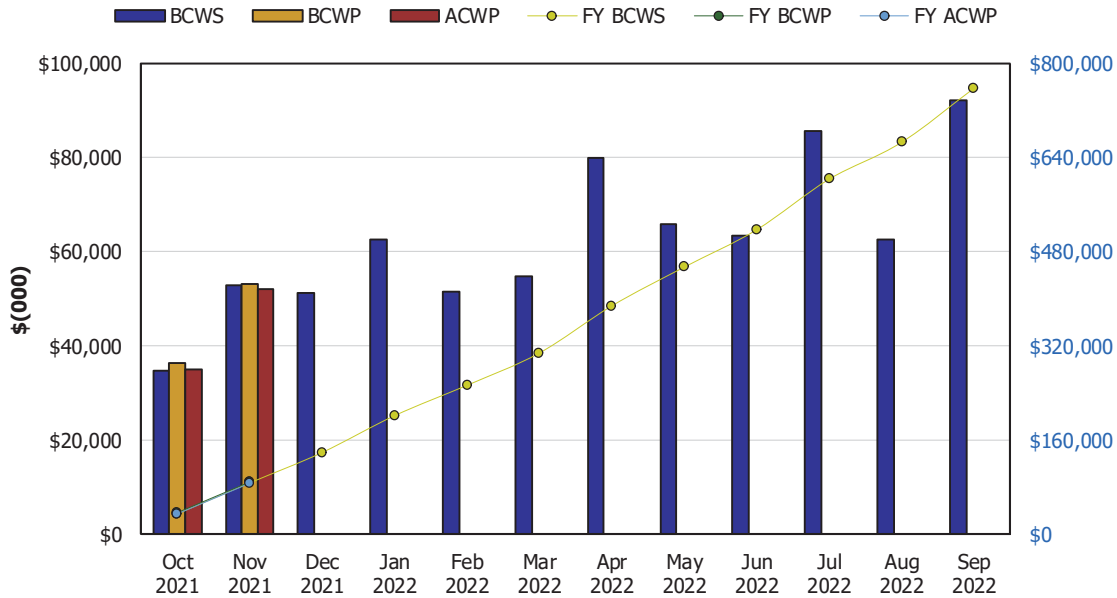
The cost variance (CV) measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10,000 of work was planned to-date, \$8,000 was reported as being performed (earned), at an actual cost of \$9,000. This work would be reported as being \$2,000 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 FY or contract-to-date report provides a better indicator of the overall project completion status and can give a reasonable projection of how the project will finish, based on the progress-to-date.

Earned Value Data: Fiscal Year 2022

November-2021

**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 2021	\$34,832	\$36,349	\$34,953	1.04	1.04	\$34,832	\$36,349	\$34,953	1.04	1.04
Nov 2021	\$52,947	\$53,064	\$52,011	1.00	1.02	\$87,779	\$89,413	\$86,964	1.02	1.03
Dec 2021	\$51,414					\$139,193				
Jan 2022	\$62,658					\$201,851				
Feb 2022	\$51,634					\$253,485				
Mar 2022	\$54,705					\$308,190				
Apr 2022	\$80,073					\$388,263				
May 2022	\$65,969					\$454,232				
Jun 2022	\$63,553					\$517,785				
Jul 2022	\$85,725					\$603,510				
Aug 2022	\$62,533					\$666,044				
Sep 2022	\$92,299					\$758,343				

CTD	\$7,039,480	\$7,006,283	\$6,953,147	1.00	1.01
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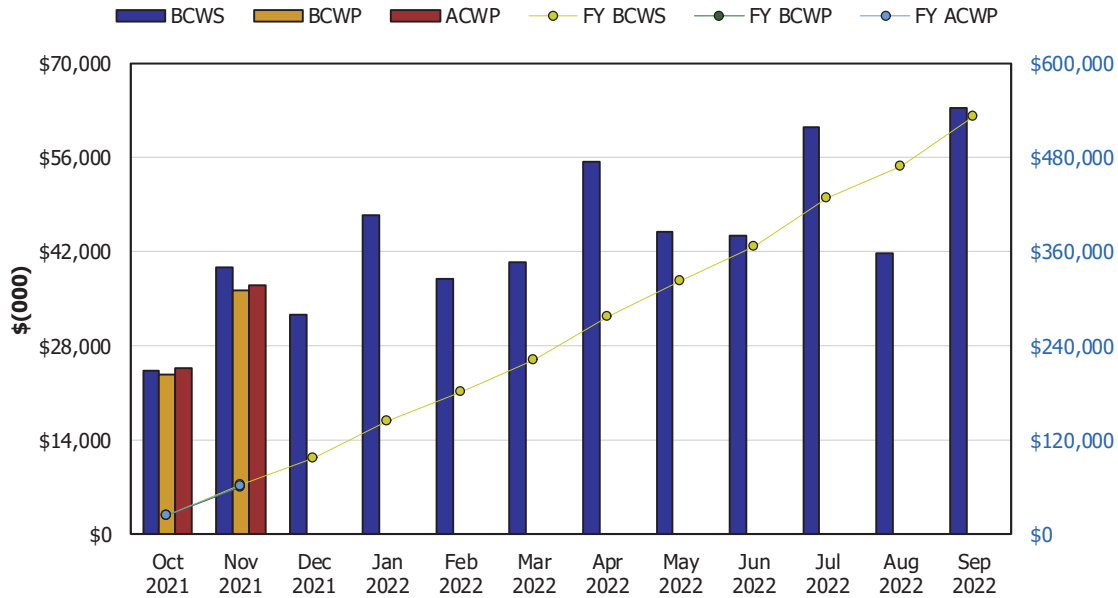
- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- CM = current month.
- CTD = contract to date.
- FY = fiscal year.
- SPI = schedule performance index.

Earned Value Data: Fiscal Year 2022

November-2021

**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 2021	\$24,307	\$23,703	\$24,654	0.98	0.96	\$24,307	\$23,703	\$24,654	0.98	0.96
Nov 2021	\$39,657	\$36,323	\$37,067	0.92	0.98	\$63,964	\$60,026	\$61,720	0.94	0.97
Dec 2021	\$32,716					\$96,680				
Jan 2022	\$47,388					\$144,068				
Feb 2022	\$38,071					\$182,138				
Mar 2022	\$40,521					\$222,659				
Apr 2022	\$55,381					\$278,041				
May 2022	\$45,063					\$323,103				
Jun 2022	\$44,418					\$367,522				
Jul 2022	\$60,558					\$428,079				
Aug 2022	\$41,747					\$469,826				
Sep 2022	\$63,428					\$533,255				

CTD	\$4,668,215	\$4,641,447	\$4,594,785	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: Delmar Noyes
Technical Lead: Ricky Bang

5.01 – Base Operations

The November 2021 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$534,310) was due in part to:

- Operations and Maintenance unfavorable SV due to delays in Operational Acceptance Tests (OAT) for the Monitoring & Control System (MCS) and the UX-Oxidizer (UV-OX) that are subsequently delaying Basin 43 Operations.

The current month **unfavorable** CV of (\$429,610) was primarily due to:

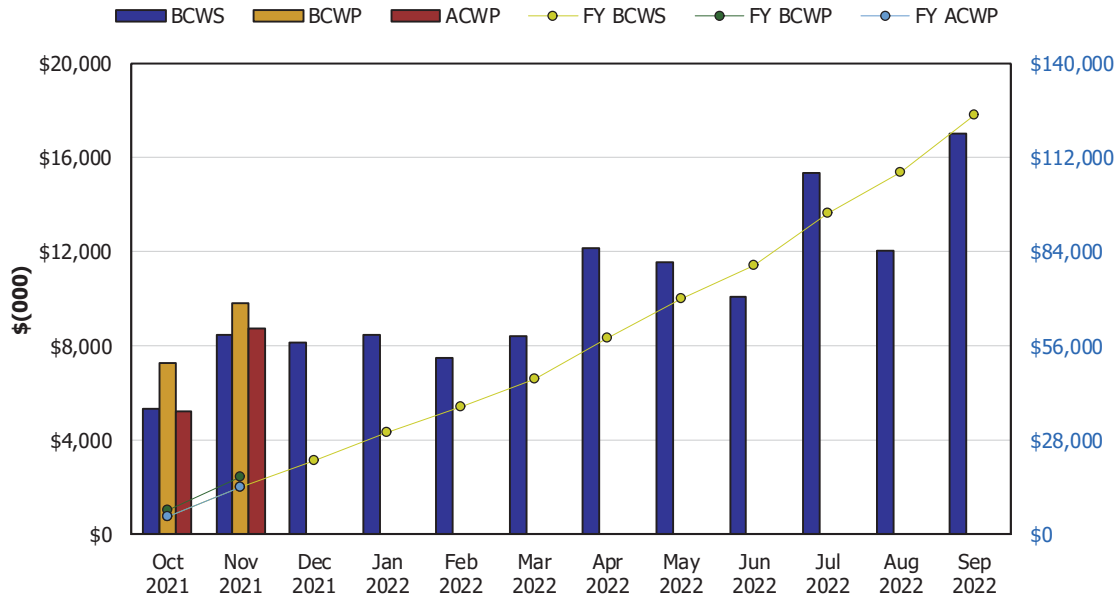
- Waste Management Program unfavorable CV due to solids samples retrieved from Basin 44 as mixed waste, and Permafix is the only waste treatment company capable of treating this waste, resulting in an increase subcontractor utilization and cost.
- Production Ops AP-Farm unfavorable CV due to labor usage and concurrent work inefficiencies.

Earned Value Data: Fiscal Year 2022

November-2021

**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 2021	\$5,352	\$7,278	\$5,214	1.36	1.40	\$5,352	\$7,278	\$5,214	1.36	1.40
Nov 2021	\$8,477	\$9,811	\$8,762	1.16	1.12	\$13,830	\$17,089	\$13,977	1.24	1.22
Dec 2021	\$8,136	\$0	\$0	0.00	0.00	\$21,966				
Jan 2022	\$8,460	\$0	\$0	0.00	0.00	\$30,425				
Feb 2022	\$7,506	\$0	\$0	0.00	0.00	\$37,931				
Mar 2022	\$8,418	\$0	\$0	0.00	0.00	\$46,349				
Apr 2022	\$12,156	\$0	\$0	0.00	0.00	\$58,505				
May 2022	\$11,550	\$0	\$0	0.00	0.00	\$70,055				
Jun 2022	\$10,083	\$0	\$0	0.00	0.00	\$80,139				
Jul 2022	\$15,347	\$0	\$0	0.00	0.00	\$95,485				
Aug 2022	\$12,034	\$0	\$0	0.00	0.00	\$107,519				
Sep 2022	\$17,012	\$0	\$0	0.00	0.00	\$124,532				

CTD	\$1,340,579	\$1,337,695	\$1,379,013	1.00	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.
- CM = current month.
- CTD = contract to date.
- FY = fiscal year.
- SPI = schedule performance index.

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Becky Blackwell
Jim Greene

5.02 – Retrieve and Close Single-Shell Tanks

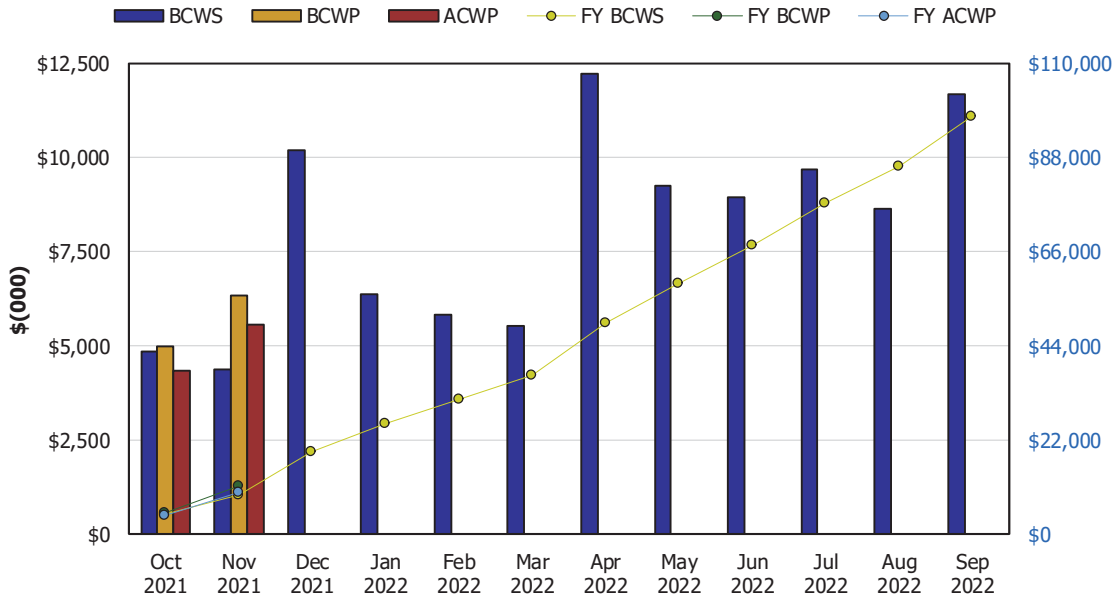
For the retrieval portion, see the Consent Decree monthly report for cost and schedule status.

Earned Value Data: Fiscal Year 2022

November-2021

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 2021	\$4,863	\$5,004	\$4,330	1.03	1.16	\$4,863	\$5,004	\$4,330	1.03	1.16
Nov 2021	\$4,392	\$6,355	\$5,554	1.45	1.14	\$9,255	\$11,359	\$9,884	1.23	1.15
Dec 2021	\$10,200					\$19,455				
Jan 2022	\$6,383					\$25,838				
Feb 2022	\$5,835					\$31,673				
Mar 2022	\$5,546					\$37,220				
Apr 2022	\$12,250					\$49,469				
May 2022	\$9,252					\$58,721				
Jun 2022	\$8,954					\$67,676				
Jul 2022	\$9,695					\$77,370				
Aug 2022	\$8,647					\$86,017				
Sep 2022	\$11,708					\$97,725				

CTD	\$734,137	\$731,611	\$675,014	1.00	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: Delmar Noyes
Federal Program Manager: Brian Harkins

5.03 – Waste Feed Delivery/Treatment

The November 2021 variances below do not impact TPA milestones.

The current month **favorable** SV of \$632,410 was primarily due to:

- Integrated Flowsheet & Maturation favorable SV due to a modeling software license procurement being received earlier than originally planned.
- Waste Feed Delivery Technology favorable SV primarily attributed to schedule recovery from delays in contract release for the non-destructive examination, sampler collector, and new shipping container.

The current month **favorable** CV of \$552,010 was primarily due to:

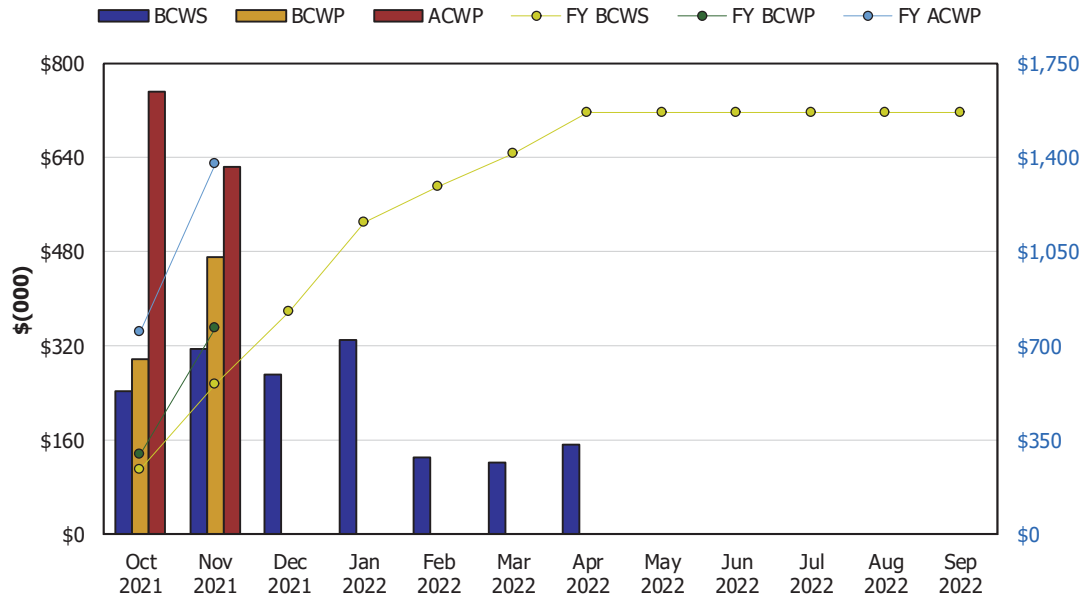
- Integrated Flowsheet & Maturation favorable CV due to a modeling software license procurement being received earlier than originally planned while acceptance is still in progress.

Earned Value Data: Fiscal Year 2022

November-2021

**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 2021	\$243	\$298	\$754	1.23	0.40	\$243	\$298	\$754	1.23	0.40
Nov 2021	\$316	\$470	\$625	1.49	0.75	\$559	\$768	\$1,379	1.37	0.56
Dec 2021	\$272					\$831				
Jan 2022	\$330					\$1,161				
Feb 2022	\$131					\$1,293				
Mar 2022	\$122					\$1,415				
Apr 2022	\$153					\$1,568				
May 2022	\$0					\$1,568				
Jun 2022	\$0					\$1,568				
Jul 2022	\$0					\$1,568				
Aug 2022	\$0					\$1,568				
Sep 2022	\$0					\$1,568				

CTD	\$272,668	\$271,648	\$282,718	1.00	0.96
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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: Delmar Noyes
Federal Program Manager: Brian Harkins

5.05 – Treat Waste

The November 2021 variances below do not impact TPA milestones.

The current month **favorable** SV of \$146,300 is below reportable thresholds.

The current month **unfavorable** CV of (\$98,800) is below reportable thresholds.

Table 1 Administrative Record Metadata

Milestone Number or Facility Identification	Title
M-042-10-T01	Complete Leak Test/Internal Inspections, or Other Tank Integrity Examination of DST Components
M-045-15	Completion of Tank A-103 SST Waste Retrieval
M-045-15A	Submit a Retrieval Data Report Pursuant to Agreement Appendix I
M-045-15D	Exception to Waste Retrieval Criteria Pursuant to Agreement Appendix H
M-045-56R	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)
M-045-56S	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July 2023)
M-045-85	Initiate Negotiations of HFFACO Interim Milestones for Closure of Remaining WMAs
M-045-86	Submit Retrieval Data Report (RDR) to Ecology for 19 Tanks Retrieved Under Consent Decree
M-045-91K	Complete Initial Baseline Visual Inspections of All SSTs
M-045-91E5	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology
M-045-92AA	Barrier 4 Design Approved by Ecology
M-045-92AF	Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities
M-045-98	Submit to Ecology an RFI/CMS Work Plan for WMA A/AX as a Primary Document
M-045-102	Submit to Ecology a Performance Assessment Maintenance Plan for the WMA A/AX PA
M-062-01AT	Submit Semi-Annual Project Compliance Report to Ecology
M-062-01AU	Submit Semi-Annual Project Compliance Report to Ecology
M-062-21	Annually Submit Data Which Demonstrates Operation of WTP at a Rate Sufficient to Meet M-062-00
M-062-31-T01	Complete 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-062-34-T01	Complete Hot Commissioning of Supplemental Treatment Vitrification Facility and/or WTP Enhancements
M-062-40I	Select a Minimum of 3 Scenarios

Milestone Number or Facility Identification	Title
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-XX	Complete Negotiations to Resolve Future Disputes M-062-45 Paragraphs 4 & 5
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones
M-062-51	Achieve Substantial Completion of LERF/ETF Construction Upgrades Necessary for LAW Hot Commissioning
M-062-51-T01	Submit to Ecology, as a Primary Document, a Secondary Liquid Waste Disposition Work Plan
M-062-51-T02	Submit to Ecology, PMR for Redesign Upgrades and Ops to Support Volumes of Waste Types
M-062-52	Achieve Substantial Completion of Secondary Waste Construction Necessary for LAW Hot Commissioning
M-062-52-T01	Submit to Ecology, a Secondary Solid Waste Disposition Work Plan as a Primary Document
M-062-52-T02	Submit to Ecology, PMR for Ancillary Facilities/Capabilities to Support Treatment of Secondary Waste
M-062-53	Effluent Management Facility (EMF) Cold Commissioning Start
M-062-53A	Achieve Substantial Completion of EMF Construction
M-062-54	Low Activity Waste Pretreatment Capability; Cold Commissioning Complete
M-062-55	LAWP Capability Necessary to Feed DFLAW; Hot Commissioning Complete
M-062-54B	Achieve Substantial Completion of LAW Pretreatment Capability Construction for DFLAW Initial Ops
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
T-2-8	Effluent Treatment Facility (ETF)
TS-2-8	Low-Activity Waste Pretreatment System (LAWPS)

CMS = corrective measure study.

LAW = low-activity waste.

DFLAW = direct-feed low-activity waste.

PA = performance agreement.

DOE = U.S. Department of Energy.

PMR = permit modification request.

Milestone Number or Facility Identification	Title
DST = double-shell tank.	RCRA = <i>Resource Conservation and Recovery Act.</i>
Ecology = Washington State Department of Ecology.	RFI = <i>Resource Conservation and Recovery Act Facility Investigation.</i>
EMF = Effluent Management Facility.	SST = single-shell tank.
ETF = Effluent Treatment Facility.	WMA = waste management area.
HFFACO = <i>Hanford Federal Facility Agreement and Consent Order.</i>	WTP = Waste Treatment and Immobilization Plant.