

Office of River Protection Consent Decree Monthly Report

Monthly Reporting Period July 1–July 31, 2020¹

Consent Decree, *State of Washington v. Dept. of Energy*,
No: 08-5085-FVS (October 25, 2010)

Amended Consent Decree, *State of Washington v. Dept. of Energy*,
No: 2:08-CV-5085-RMP (March 11, 2016)

Second Amended Consent Decree, *State of Washington v. Dept. of Energy*,
No: 2:08-CV-5085-RMP (April 12, 2016)

Third Amended Consent Decree, *State of Washington v. Dept. of Energy*,
No: 2:08-CV-5085-RMP (October 12, 2018)²

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 June 2020.

² The consent decrees listed above are between the State of Washington and U.S. Department of Energy. For the first three of these decrees, there are similar separate decrees with the State of Oregon.

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Acronyms and Abbreviations

AoA	analysis of alternatives
BNI	Bechtel National, Inc.
BOF	Balance of Facilities
COVID-19	coronavirus disease 2019
DFLAW	direct-feed low-activity waste
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EMF	Effluent Management Facility
HIHTL	hose-in-hose transfer line
HLW	High-Level Waste (Facility)
LAB	Analytical Laboratory
LAW	Low-Activity Waste (Facility)
LBL	Low-Activity Waste Facility, Balance of Facilities, and Analytical Laboratory
ORP	U.S. Department of Energy, Office of River Protection
PPR	Project Peer Review
PT	Pretreatment (Facility)
SV	schedule variance
WTP	Waste Treatment and Immobilization Plant

Consent Decree Milestone Statistics/Status

Milestone	Title	Due Date	Completion Date	Status
Fiscal Year 2021				
D-00A-07 Interim	LAW Facility Construction Substantially Complete	12/31/2020		Amendment Proposed ⁴
D-16B-03	Of the 12 SSTs referred to in B-1 and B-2, complete retrieval of tank waste in at least 5	06/30/2021 ¹		Amendment Proposed ⁴
Fiscal Year 2023				
D-00A-08 Interim	Start LAW Facility Cold Commissioning	12/31/2022		Amendment Proposed ⁴
Fiscal Year 2024				
D-00A-09 Interim	LAW Facility Hot Commissioning Complete	12/31/2023		Amendment Proposed ⁴
Fiscal Year 2026				
D-16B-02	Complete retrieval of tank wastes from the following SSTs in Tank Farms A and AX: A-101, A-102, A-104, A-105, A-106. AX-101, AX-102, AX-103, and AX-104. Subject to the requirements of Section IV-B-3 DOE may substitute any of the identified 9 SSTs and advise Ecology accordingly	09/30/2026 ¹		Under Analysis ² / Amendment Proposed ⁴
Fiscal Year 2031				
D-00A-02 Interim	HLW Facility Construction Substantially Complete	12/31/2030		At Risk ³
Fiscal Year 2032				
D-00A-13 Interim	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-O0001A/1B	12/31/2031		At Risk ³
D-00A-14 Interim	PT Facility Construction Substantially Complete	12/31/2031		At Risk ³
D-00A-19 Interim	Complete Elevation 98 feet Concrete Floor Slab Placements in PT Facility	12/31/2031		At Risk ³
D-00A-03 Interim	Start HLW Facility Cold Commissioning	06/30/2032		At Risk ³

Milestone	Title	Due Date	Completion Date	Status
D-00A-06 Interim	Complete Methods Validations	06/30/2032		On Schedule
Fiscal Year 2033				
D-00A-15 Interim	Start PT Facility Cold Commissioning	12/31/2032		At Risk ³
Fiscal Year 2034				
D-00A-04 Interim	HLW Facility Hot Commissioning Complete	12/31/2033		At Risk ³
D-00A-16 Interim	PT Facility Hot Commissioning Complete	12/31/2033		At Risk ³
D-00A-17	Hot Start of WTP	12/31/2033		At Risk ³
Fiscal Year 2037				
D-00A-01	Achieve Initial Plant Operations for the WTP	12/31/2036		At Risk ³

¹ Third Amended Consent Decree, *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (October 12, 2018).

² As discussed in the joint motion to amend the Consent Decree filed on October 1, 2018, DOE is engaged in ongoing analysis of non-vapors-related retrieval challenges and tank condition issues associated with Tanks A-104 and A-105 (i.e., two of the nine tanks currently specified for retrieval under the B-2 Milestone). These issues are under analysis, and could require issuance of a “serious risk” notice or another request for amendment of the Consent Decree (including the B-2 Milestone). DOE met with Ecology and attorneys from the Washington State Office of the Attorney General on August 30, 2018, to discuss the retrieval challenges and issues with the condition of tanks A-104 and A-105. Since August 2018, DOE has had several discussions with Ecology on this topic.

³ 19-ORP-0007, 2019, “Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085).”

⁴ Certain Consent Decree-related work at the Hanford Site has been interrupted since March 23, 2020, due to the COVID-19 pandemic. On May 21, 2020, the U.S. Department of Justice, on behalf of DOE, submitted a proposal to the State of Washington to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.) due to a Force Majeure event. ENV_DEFENSE-#919846, 2020, “Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to Force Majeure Event,” external letter to A.A. Fitz, Office of the Attorney General, Ecology Division from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

COVID-19 = coronavirus disease 2019.

LAW = low-activity waste.

DOE = U.S. Department of Energy.

PT = pretreatment.

Ecology = Washington State Department of Ecology.

SST = single-shell tank.

HLW = high-level waste.

WTP = Waste Treatment and Immobilization Plant.

Consent Decree Reports/Reviews

D-16C-03 series, Submit to State of Washington and State of Oregon Quarterly Report

Due: Forty-five days following each calendar year quarter
(February 14, May 15, August 14, and November 14).

Status: On Schedule.

D-00C-02 series, Submit to State of Washington and State of Oregon Monthly Summary Reports

Due: End of each month.

Status: On Schedule.

D-006-00-B1, Provide State of Oregon notice of meetings in D-006-00-B, etc. no less than 30 days before they are scheduled

Due: See below.

Status: On Schedule.

D-006-00-B, Meet Approximately Every Three Years after Entry of Decree to review requirements of the Consent Decree

Due: Approximately 3 years from March 16, 2017.

Status: Coronavirus disease 2019 (COVID-19)-affected – scheduling discussions ongoing.

D-16E-01, DOE must purchase by December 31, 2016 a spare E-A-1 reboiler for the 242-A Evaporator

Due: December 31, 2016.

Status: Complete (November 15, 2016).

D-16E-02, Have available spare E-A-1 reboiler for the 242-A Evaporator

Due: December 31, 2018.

Status: Complete (May 8, 2018).

Single-Shell Tank Retrieval Program

Tank Farms Assistant Manager: Rob Hastings

Technical Lead: Jeff Rambo

Milestone	Title	Due Date	Status
D-16B-03	Of the 12 SSTs referred to in B-1 and B-2, complete retrieval of tank waste in at least five	06/30/2021 ¹	Amendment Proposed ³
D-16B-01	Complete retrieval of tank waste from the following remaining SSTs in WMA-C: C-102, C-105, and C-111	03/31/2024	Complete
D-16B-02	Complete retrieval of tank wastes from the following SSTs in Tank Farms A and AX: A-101, A-102, A-104, A-105, A-106, AX-101, AX-102, AX-103, and AX-104. Subject to the requirements of Section IV-B-3 DOE may substitute any of the identified 9 SSTs and advise Ecology accordingly	09/30/2026 ¹	Under Analysis ² / Amendment Proposed ³

¹ Third Amended Consent Decree, *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (October 12, 2018).

² As discussed in the joint motion to amend the Consent Decree filed on October 1, 2018, DOE is engaged in ongoing analysis of non-vapors-related retrieval challenges and tank condition issues associated with Tanks A-104 and A-105 (i.e., two of the nine tanks currently specified for retrieval under the B-2 Milestone). These issues are under analysis, and could require issuance of a “serious risk” notice or another request for amendment of the Consent Decree (including the B-2 Milestone). DOE met with Ecology and attorneys from the Washington State Office of the Attorney General on August 30, 2018, to discuss the retrieval challenges and issues with the condition of tanks A-104 and A-105. Since August 2018, DOE has had several discussions with Ecology on this topic.

³ Certain Consent Decree-related work at the Hanford Site has been interrupted since March 23, 2020, due to the COVID-19 pandemic. On May 21, 2020, the U.S. Department of Justice, on behalf of DOE, submitted a proposal to the State of Washington to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.) due to a Force Majeure event. ENV_DEFENSE-#919846, 2020, “Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to Force Majeure Event,” external letter to A.A. Fitz, Office of the Attorney General, Ecology Division from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

COVID-19 = coronavirus disease 2019.

SST = single-shell tank.

DOE = U.S. Department of Energy.

WMA-C = C Tank Farm waste management area.

Ecology = Washington State Department of Ecology.

On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. While the majority of the Hanford Site workforce continues to telework, there are a limited number of workers reporting to the site to perform activities necessary to maintain the site in a safe condition, continuing to protect the community, region, and the environment. Additional work on planning for remobilization, engineering analysis, permitting documentation development, etc. by both the U.S. Department of Energy (DOE) and site contractors progresses as conditions allow.

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 continued and targeted mobilization and low-risk work scope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.

On May 21, 2020, the Department of Justice, on behalf of DOE, sent a letter to the Washington State Office of the Attorney General with a proposal to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.). The proposal included schedule extensions due to *force majeure* events associated with the COVID-19 pandemic.³ DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information and COVID-19 potential impacts on the Consent Decree, and if other actions may be necessary.

Since March 24, 2020, when the site moved to the essential mission-critical operations posture due to COVID-19 concerns, the site has experienced numerous impacts related to COVID-19 based restrictions or requirements. The impacts generally fall within the following three categories: 1) work interrupted or not done due to COVID-19 restrictions; 2) additional work undertaken due to COVID-19 requirements; and 3) work inefficiencies related to COVID-19. The following highlights some examples of impacts related to each category that has occurred at the site between March 24, 2020, through July 2020:

- 1) Installation and testing of waste retrieval equipment in Tank AX-104 were unable to be performed due to COVID-19-related restrictions and requirements. Installation of electrical and support infrastructure for Tank AX-103 retrieval was unable to be performed due to COVID-19-related restrictions and requirements. Removal of long-length equipment from Tanks AX-101 and A-101 was unable to be performed due to COVID-19-related restrictions and requirements.
- 2) Equipment sitting in the tanks in a radiation field during the COVID-19 delays has resulted in equipment damage. Several pieces of previously installed retrieval equipment need to be replaced or retested before resuming retrieval operations.
- 3) Limited A and AX Farms facility ingress/egress capacity. Change trailers that had historical occupancies of 25 to 30 workers were limited to 8 workers to meet the social distancing requirements.

Quarantines due to COVID-19 testing and potential exposures have resulted in approximately 50 to 70 workers at any one time being quarantined.

Due to the restrictions, workers have not been able to attend required training and medical exams. For example, in mid-June, Washington River Protection Solutions LLC had a peak of over 200 employees who were delinquent on medical clearances required to conduct fieldwork.

³ ENV_DEFENSE-#919846, 2020, "Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to *Force Majeure* Event," external letter to A.A. Fitz, Office of the Attorney General, Ecology Division from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

Significant Accomplishments during the Prior Month:Completed Accomplishments:

- Mobilized equipment to start removal of AY Farm to AP Farm hose-in-hose transfer line (HIHTL) in support of future A Tank Farm HIHTL installation.
- Completed small HIHTL Hose Barn and shield plate removal between AX Farm and AP Farm.

Ongoing Activities:

- Continued the preparation of the practicability evaluation in support of the request to forego the third retrieval technology for Tank AX-102.
- Continued the procurement of the residual volume measurement system. The residual volume measurement system and camera / Computer Aided Design modeling system will be deployed to calculate the Tank AX-102 residual waste volume.
- Continued removal of AY Farm to AP Farm HIHTL removal in support of future A Tank Farm HIHTL installation.

Significant Planned Activities in the Next Month:

- Complete Tank AX-104 D Pit extended reach sluicer system installation into tank, and initiate system connections in preparation for integrated system leak testing.
- Complete A Tank Farm exhaust ventilation system and turnover to Operations
- Complete removal of large concrete shielding of HIHTL between AY to AP Tank Farms.

Issues:

- DOE is engaged in ongoing analysis of retrieval challenges and condition issues associated with Tanks A-104 and A-105 (i.e., two of the nine tanks currently specified for retrieval under the B-2 Milestone).⁴ These issues are under analysis and could require issuance of a “serious risk” notice or another request for amendment of the Consent Decree (including the B-2 Milestone).
- The as-found condition of existing abandoned equipment in AX and A Tank Farms has affected DOE’s ability to remove the equipment efficiently and is affecting the cost and schedule.
 - Removal of Tank A-103 Riser 2 thermocouple required a duration of 209 days to complete. The lower section of the thermocouple was damaged and could not be

⁴ The U.S. Department of Energy met with the Washington State Department of Ecology and attorneys from the Washington State Office of the Attorney General on August 30, 2018, to discuss the retrieval challenges and issues with the condition of Tanks A-104 and A-105. The U.S. Department of Energy has had several discussions with the Washington State Department of Ecology on this topic since August 2018.

- removed. Unique tooling was required to lower the remaining section to the tank bottom.
- Removal of Tank A-101 Riser 2 thermocouple required the top sections to be removed in two sections and the remaining third section was lowered to the tank bottom.
 - Removal of Tank A-106 Riser 2 thermocouple was removed in sections, with the lower section left in the tank.
 - A stuck shield plug in Tank A-101 01C Pit required an alternative method (core drilling) to tie in the ventilation system.
 - A stuck shield plug in Tank AX-102 02B Pit prevented the installation of the planned third extended reach sluicer.
- On December 3, 2018, the Washington State Department of Ecology (Ecology) sent the DOE Office of River Protection (ORP) and DOE Richland Operations Office a letter (18-NWP-177) regarding the Hanford Site ambient air boundary. Ecology expressed its concern that the ambient air boundary appears to have changed because of increased public access to parts of the Hanford Site. DOE, Ecology, and the Washington State Department of Health met several times to attempt to develop a shared understanding of existing conditions and a path forward. DOE and Ecology engaged in mediation to try to resolve the issue. On May 8, 2020, DOE and Ecology reached a mediated agreement to resolve Ecology’s concerns about the Hanford Site ambient air boundary. The parties signed a Memorandum of Agreement resolving the ambient air boundary issue in July 2020.
 - On January 28, 2019, ORP received a Washington River Protection Solutions LLC letter (WRPS-1900243), outlining potential impacts to tank retrievals at A and AX Tank Farms, due to a lack of Ecology regulatory approval associated with exhausters in the 241-A and 241-AX Tank Farms. On March 4, 2019, DOE transmitted WRPS-1900243 to ensure Ecology was aware of potential impacts to A and AX Tank Farm retrievals and possibly associated Consent Decree milestones, if Ecology does not approve a pending notice of construction application in the near future. DOE is continuing to evaluate the information in the letter, as well as whether amendment of the Consent Decree (including potential invocation of “force majeure” provisions) or other actions may be necessary. Retrieval of Tank AX-102 began on August 31, 2019, with the exhausters running at 1,000 standard cubic feet per minute. DOE will continue to assess retrieval performance at this airflow rate due to the potential for fogging at various stages of the retrieval process that may affect schedule.
 - On April 18, 2019, Ecology provided a notice of incompleteness determination for the A and AX Tank Farms (19-NWP-063). ORP provided a response on May 14, 2019 (19-ECD-0038), which set forth how the original application met the regulations and asked Ecology to continue processing the application. ORP submitted a revised application on October 31, 2019 (19-ECD-0080), to provide supplemental information to address Ecology’s comments.

Tank Waste Retrieval Work Plan Status

Tank Farms Assistant Manager: Rob Hastings

Federal Program Manager: Jeff Rambo

Tank	TWRWP	Expected Revisions	Retrieval Technology		
			First	Second	Third
AX-101	RPP-RPT-58932, Rev. 1	Complete	Sluicing with ERSS	High-pressure water deployed with ERSS	–
AX-102	RPP-RPT-58933, Rev. 1	Complete	Sluicing with ERSS	High-pressure water deployed with ERSS	–
AX-103	RPP-RPT-58934, Rev. 1	Complete	Sluicing with ERSS	High-pressure water deployed with ERSS	–
AX-104	RPP-RPT-58935, Rev. 1	Complete	Sluicing with ERSS	High-pressure water deployed with ERSS	–

ERSS = extended reach sluicer system.

TWRWP = tank waste retrieval work plan.

Significant Accomplishments during the Prior Month:

- None.

Significant Planned Activities in the Next Month:

- None.

Issues:

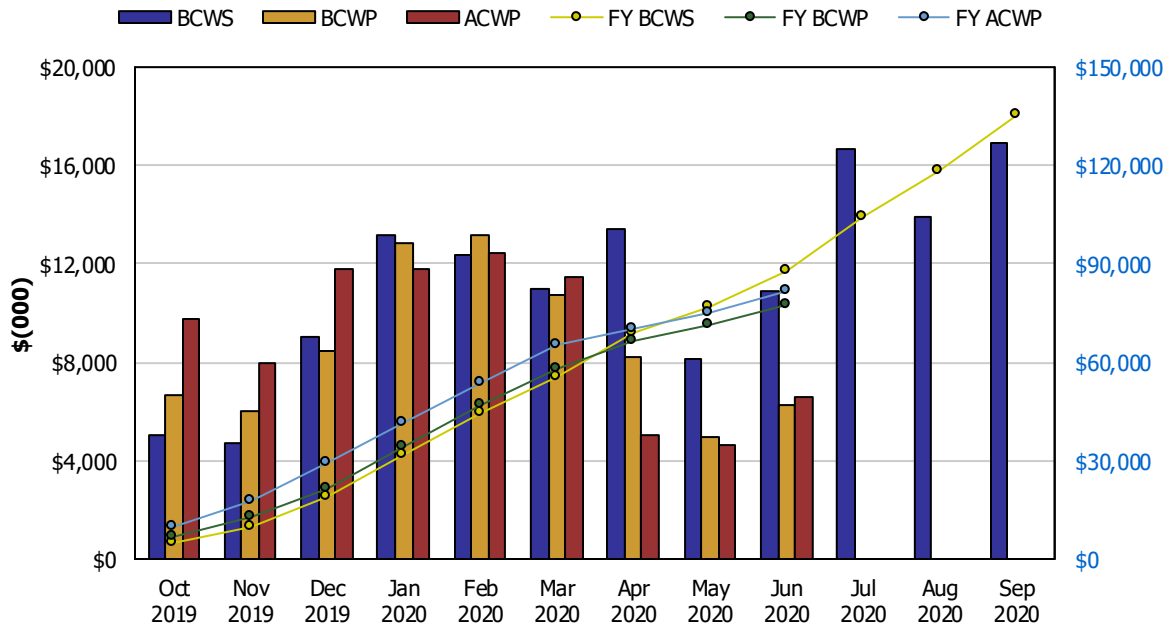
- None.

Earned Value Data: Fiscal Year 2020

June-2020

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	\$12,323	\$13,174	\$12,473	1.07	1.06	\$44,326	\$47,245	\$53,834	1.07	0.88
Mar 2020	\$10,984	\$10,744	\$11,497	0.98	0.93	\$55,310	\$57,989	\$65,331	1.05	0.89
Apr 2020	\$13,412	\$8,230	\$5,011	0.61	1.64	\$68,722	\$66,218	\$70,343	0.96	0.94
May 2020	\$8,123	\$4,957	\$4,623	0.61	1.07	\$76,845	\$71,175	\$74,966	0.93	0.95
Jun 2020	\$10,857	\$6,262	\$6,619	0.58	0.95	\$87,702	\$77,437	\$81,585	0.88	0.95
Jul 2020	\$16,641			0.00	0.00	\$104,343			0.00	0.00
Aug 2020	\$13,905			0.00	0.00	\$118,248			0.00	0.00
Sep 2020	\$16,939			0.00	0.00	\$135,187			0.00	0.00

CTD	\$1,171,964	\$1,138,779	\$1,200,368	0.97	0.95
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- CTD = contract to date.
- EVMS = earned value management system.
- FY = fiscal year.
- SPI = schedule performance index.

Retrieve and Close Single-Shell Tanks (5.02)⁵

The June unfavorable schedule variance (SV) of (\$4,595,300) is primarily due to the following:

- Delays in the receipt of procured equipment due to COVID-19-related restrictions that impacted the availability of warehouse personnel on site to green-tag (accept) arriving equipment.
- Delays in installation of the Tank AX-104 retrieval system, due to the COVID-19 partial stop work order, have, in turn, delayed the start of Tank AX-104 retrieval operations.
- Delays in the installation of Tank AX-101 and Tank AX-103 infrastructure equipment due to the COVID-19 partial stop work order.

The June unfavorable cost variance (CV) of (\$356,900) is primarily due to the following:

- Carrying a small retrieval operations crew on payroll during the transition of retrieval operations ending at Tank AX-102 and starting at Tank AX-104, which was scheduled to start in May 2020. The length of the transition period continued due to COVID-19-related restrictions.

⁵ “Closure” activities are expressly excluded from the Consent Decree. See 2010 Consent Decree, Appendix C, first paragraph: “Processes not covered by a TWRWP (e.g., tank closure) are not established under this Consent Decree.”

Waste Treatment and Immobilization Plant Project

Federal Project Director: Tom Fletcher

Deputy Federal Project Director: Mat Irwin

Milestone	Title	Due Date	Status
D-00A-06	Complete Methods Validations	06/30/2032	On Schedule
D-00A-17	Hot Start of Waste Treatment Plant	12/31/2033	At Risk ¹
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2036	At Risk ¹

¹ 19-ORP-0007, 2019, “Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085).”

WTP = Waste Treatment and Immobilization Plant.

The Waste Treatment and Immobilization Plant (WTP) Project continues to focus on completion of the Low-Activity Waste (LAW) Facility, Balance of Facilities (BOF), and Analytical Laboratory (LAB) (collectively known as LBL, including direct-feed low-activity waste [DFLAW] and LBL facility services).

As of June 2020, DFLAW modifications for the WTP Project were 93 percent complete, engineering design was 98 percent complete, procurement was 100 percent complete, and construction was 88 percent complete. As of June 2020, total LBL facilities were 86 percent complete, engineering design was 98 percent complete, procurement was 98 percent complete, construction was 97 percent complete, and startup and commissioning was 61 percent complete.

At the request of DOE, the U.S. Army Corps of Engineers conducted a parametric analysis of certain options and funding scenarios to evaluate the likelihood of achieving certain milestones established by the Amended Consent Decree for the High-Level Waste (HLW) and Pretreatment (PT) facilities. The analysis indicated there is a low probability that DOE can meet the milestones for constructing and commissioning these facilities established by the Amended Consent Decree under the current funding profile.

The DOE Office of Project Management conducted an independent assessment of the U.S. Army Corps of Engineers report. As noted previously, the Office of Project Management’s assessment concluded the U.S. Army Corps of Engineers’ analyses were generally accurate, although not sufficiently detailed for budget purposes, and they potentially understate the funding needed to complete the HLW and PT facilities on the schedule established by the Amended Consent Decree.

As previously noted, Ecology sent ORP and the Richland Operations Office a letter (18-NWP-177) on December 3, 2018, regarding the Hanford Site ambient air boundary. Ecology expressed its concern that the ambient air boundary appears to have changed because of increased public access to parts of the Hanford Site. DOE, 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. DOE and Ecology engaged in mediation to try to resolve the issue. On May 8, 2020, DOE and Ecology reached a mediated agreement to resolve

Ecology's concerns about the Hanford Site ambient air boundary. The parties signed a Memorandum of Agreement resolving the ambient air boundary issue in July 2020.

ORP held initial meetings with the WTP HLW Treatment Analysis of Alternatives (AoA) contractor team in June 2019, with Ecology participation. The purpose of the AoA is to identify and evaluate a broad set of alternatives to meet the mission need; analyze the life-cycle cost, schedule, and risks associated with each alternative; and present the evaluation results to DOE leadership, pursuant to the requirements of DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.

Membership on the DOE AoA Steering Committee was revised in July 2019 to include senior-level representation from DOE's Office of Project Management, Office of Cost Estimating and Program Evaluation, Office of the Chief Financial Officer, Office of Environmental Management, and Acquisition and Project Management for the National Nuclear Security Administration.

ORP approved the *Waste Treatment and Immobilization Plant High-Level Waste Treatment Analysis of Alternatives Study Plan* (Rev. 3). The study plan was updated to incorporate comments from new Steering Committee members to include the method, approach, and schedule to be used in conducting an independent AoA for the identified mission need.

The AoA team drafted the *Waste Treatment and Immobilization Plant High-Level Waste Treatment Analysis of Alternatives Final Report* and submitted it to Ecology for review and comment. Ecology was provided 10 days to review the report; and, rather than provide detailed comments, communicated some "significant" broader concerns via a letter (20-NWP-107, dated June 11, 2020) to Tom Fletcher.

On September 4, 2019, DOE notified Ecology that there is a serious risk DOE may be unable to meet milestones for the HLW and PT facilities in the Amended Consent Decree.⁶ The notification stated:

... it is appropriate, out of an abundance of caution, to provide this notice of serious risk as described in the Amended Consent Decree ... Specifically, the Department is providing notice of a "serious risk ... that DOE may be unable to meet" Milestones A-1 and A-17 (Waste Treatment Plant), Milestones A-2 to A-4 (HLW Facility), and A-13 to A-16 and A-19 (PT Facility) of that Decree. With respect to the "preliminary recovery plan" required by the Amended Consent Decree, completion of the AoA is the first and most critical aspect of that plan. The steps that follow the completion of the AoA will be determined based on the final report's conclusions and the Department's consultations with Ecology.⁷

⁶ 19-ORP-0007, 2019, "Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085)."

⁷ Footnotes 3 and 4 were omitted from this quote.

Pursuant to Section IV-C-3(b) of the Amended Consent Decree⁸, as requested by Ecology in a letter dated September 25, 2019, DOE staff met with Ecology on October 16, 2019, to answer questions Ecology had concerning the serious risk as well as to discuss mitigation options, cooperative solutions, and problem-solving opportunities.

The Office of Project Management conducted a Project Peer Review (PPR) of the WTP Project in late November 2019. The PPR focused on DFLAW programs and projects for delivering waste from tanks, pretreating the waste to remove radioactive cesium and solids, vitrifying the low-activity waste, treating effluent waste from the LAW Facility, and disposing of the treated effluent wastes. The PPR team also reviewed infrastructure projects needed to provide essential services to all facilities that will play a role in the DFLAW Program. The PPR team issued its final report to ORP in December 2019. The PPR team's report concluded that the DFLAW Program is effective, with readiness planning across all contractors and facilities. The report also concluded the WTP Project has made considerable progress to transition from construction to testing and commissioning in anticipation of operations. The report also concluded DOE and WTP contractor Bechtel National, Inc. (BNI) are highly focused on completing the project and are working together to eliminate barriers and realize opportunities for improving costs and schedules. The report included 19 recommendations representing opportunities to continue safe and effective project performance. The recommendations were entered into the Hanford Site integrated issues management tracking system and each will be addressed and tracked to closure.

On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. While the majority of the Hanford Site workforce continues to telework, there are a limited number of workers reporting to the site to perform activities necessary to maintain the site in a safe condition, continuing to protect the community, region, and the environment. Additional work on planning for remobilization, engineering analysis, permitting documentation development, etc. by both DOE and site contractors progresses as conditions allow.

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 continued and targeted mobilization and low-risk work scope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.

On May 21, 2020, the Department of Justice, on behalf of DOE, sent a letter to the Washington State Office of the Attorney General with a proposal to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.). The proposal included schedule extensions due to *force majeure* events associated with the COVID-19 pandemic.⁹ DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing

⁸ *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (March 11, 2016).

⁹ ENV_DEFENSE-#919846, 2020, "Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to *Force Majeure* Event," external letter to A.A. Fitz, Office of the Attorney General, Ecology Division from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

to evaluate the information and COVID-19 potential impacts on the Consent Decree, and if other actions may be necessary.

Since March 24, 2020, when the site moved to the essential mission-critical operations posture due to COVID-19 concerns, the site has experienced numerous impacts related to COVID-19 based restrictions or requirements. The impacts generally fall within the following three categories: 1) work interrupted or not done due to COVID-19 restrictions; 2) additional work undertaken due to COVID-19 requirements; and 3) work inefficiencies related to COVID-19. The following highlights some examples of impacts related to each category that has occurred at the site between March 24, 2020, through July 2020:

- 1) All fieldwork, with the exception of minimum monitoring of plant systems, was stopped beginning on March 24, 2020. All systems were placed in a safe shutdown configuration. Beginning on May 26, 2020, systems were inspected and slowly returned to functionality to systematically resume construction and testing. No critical path work was performed between March 24, 2020, and June 2020. Through the end of July, field staff increased up to 950 with a steady increase in construction activity, including resumption of steam plant and glass former testing and initial resumption of limited testing. Systems were not restored to a level to allow for consistent progress on the critical path, although some individual tasks were completed that allowed for a few days of critical path work credit.
- 2) To support return to work in May 2020, training was provided to all staff for social distancing and use of face coverings, facilities were configured to promote social distancing (conference rooms, bathrooms, common areas, etc.), increased disinfecting of high touch areas (e.g., door handles) was established, and installation of hand-washing stations completed. Prior to returning to fieldwork, staff continue to receive remobilization training, and the controls established for initial remobilization are maintained, which limits work progress where high density is required to perform work in parallel.
- 3) Social distancing requires reduced density of workers and more serial performance of fieldwork. The use of face coverings has a negative impact on communications and overall efficiency. Finally, the facilities have been reconfigured to reduce density and coordinate communications through remote means, such as the use of meeting software and electronic devices. Most of the work (e.g., LAW 304G) during July was performed with limited staff and in a serial nature to control worker density. In addition, a crew was established, up to 30 percent, to perform work during back shift to support reduced density and allow for continued work progress. Approximately 25 percent of the normal craft work hours were logged for the month of July, compared to what was performed immediately prior to the partial stop work. In spite of these challenges, construction was resumed, testing was increased (safety software, lab methods evaluation), and twelve turnovers and two handovers were completed. Full field staffing is planned to occur during Phase 2 of the remobilization plan.

Significant Accomplishments during the Prior Month:

- Other significant accomplishments during the prior month are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

Significant Planned Activities for the Next Month:

- Significant planned activities in the reporting period are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

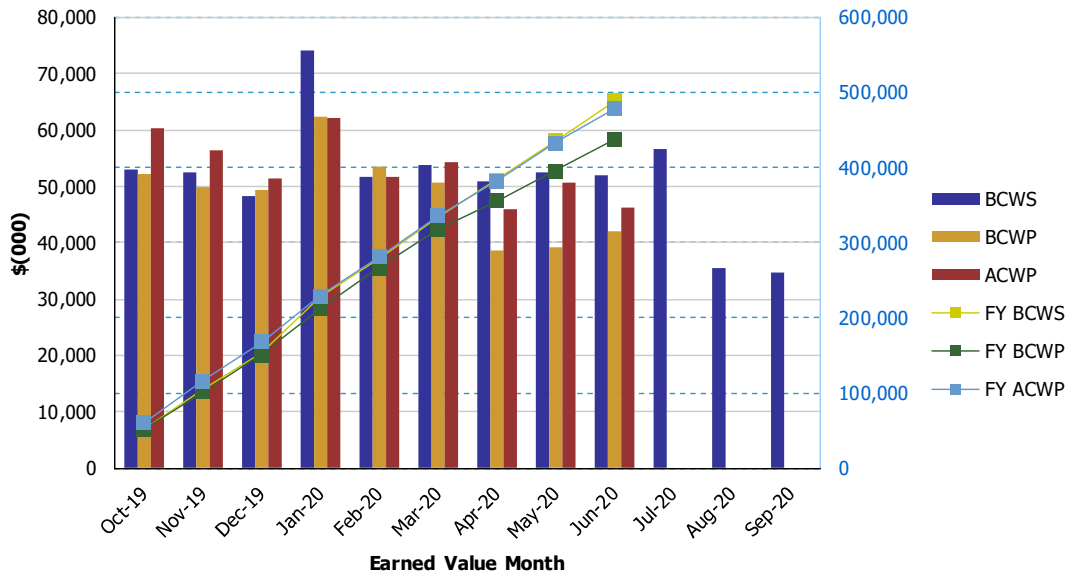
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: June 2020

**River Protection Project
Waste Treatment Plant (WTP) Project**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$52,863	\$52,079	\$60,216	0.99	0.86	\$52,863	\$52,079	\$60,216	0.99	0.86
Nov 2019	\$52,457	\$49,780	\$56,387	0.95	0.88	\$105,320	\$101,859	\$116,603	0.97	0.87
Dec 2019	\$48,219	\$49,369	\$51,429	1.02	0.96	\$153,538	\$151,228	\$168,032	0.98	0.90
Jan 2020	\$74,007	\$62,261	\$62,070	0.84	1.00	\$227,545	\$213,489	\$230,102	0.94	0.93
Feb 2020	\$51,722	\$53,420	\$51,766	1.03	1.03	\$279,267	\$266,908	\$281,867	0.96	0.95
Mar 2020	\$53,763	\$50,732	\$54,238	0.94	0.94	\$333,030	\$317,640	\$336,106	0.95	0.95
Apr 2020	\$50,878	\$38,578	\$45,969	0.76	0.84	\$383,908	\$356,218	\$382,075	0.93	0.93
May 2020	\$52,452	\$39,269	\$50,645	0.75	0.78	\$436,360	\$395,487	\$432,720	0.91	0.91
Jun 2020	\$52,019	\$42,059	\$46,219	0.81	0.91	\$488,379	\$437,546	\$478,940	0.90	0.91
Jul 2020	\$56,535									
Aug 2020	\$35,507									
Sep 2020	\$34,773									

PTD	\$12,366,607	\$12,215,607	\$12,228,670	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.
- EVMS = earned value management system.
- FY = fiscal year.
- PTD = project to date.
- SPI = schedule performance index.

Project Schedule and Cost Variance Performance (\$x1,000)

Performance Tracking	SV	CV
Current Period (June 2020)	(\$9,960)	(\$4,160)
Fiscal Year 2020 to-date	(\$50,832)	(\$41,393)
Cumulative (through June 2020)	(\$151,000)	(\$13,063)

CV = cost variance.

SV = schedule variance.

For the June 2020 earned value management system reporting period, a net unfavorable SV of approximately (\$10.0 million) was reported, primarily due to the following:

- LAW Facility Plant Management reported an unfavorable SV due to the delay in award and subsequent receipt of several procurements, as well as changes in training execution and activities that were not in alignment with current testing strategy. Additionally, LAW Startup reported an unfavorable SV due to delays in testing/turnover resulting from COVID-19-related restrictions that required reducing the number of personnel allowed on site to complete scheduled activities.
- BOF Construction reported an unfavorable SV due to direct hire craft continuing to mostly support essential mission-critical operations only and reduced subcontractor installations.
- HLW Engineering reported an unfavorable SV due to multiple factors, including, completion of some documents ahead of time and diversion of resources to support emerging changes, as well as taking a longer time to confirm calculations and performing melter structural and thermal analysis.

For the June 2020 earned value management system reporting period, a net unfavorable CV of approximately (\$4.2 million) was reported, primarily due to the following:

- Project Services (which is a level-of-effort account) reported significant unfavorable CV due to COVID-19-related restrictions. Some of this was offset by LAW Facility Plant Management reporting a favorable CV due to maintenance and commissioning technician underruns caused by work being paused because of Hanford Site COVID-19 restrictions.

Pretreatment Facility

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Wahed Abdul

Milestone	Title	Due Date	Status
D-00A-18	Complete Structural Steel Erection Below Elevation 56' in PT Facility	12/31/2009	Complete
D-00A-19	Complete Elevation 98' Concrete Floor Slab Placements in PT Facility	12/31/2031	At Risk ¹
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-OOOO1A/1B	12/31/2031	At Risk ¹
D-00A-14	PT Facility Construction Substantially Complete	12/31/2031	At Risk ¹
D-00A-15	Start PT Facility Cold Commissioning	12/31/2032	At Risk ¹
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2033	At Risk ¹

¹ 19-ORP-0007, 2019, "Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085)."

PT = pretreatment.

The PT Facility is intended to separate radioactive tank waste into high-level waste and low-activity waste fractions and transfer each waste type to the respective facility for immobilization. As of September 2012, the PT Facility was 56 percent complete overall, engineering design was 85 percent complete, procurement was 56 percent complete, construction was 43 percent complete, and startup and commissioning was 3 percent complete. The physical percent complete analysis for the PT Facility was frozen in September 2012, pending development of a revised baseline to address technical and design issues.

ORP and BNI completed resolution of all the technical issues identified in the Third Order Regarding Motions to Modify Consent Decrees¹⁰.

In addition, ORP and BNI completed resolution of technical issues not included in the Third Order Regarding Motions to Modify Consent Decrees (i.e., T6 in relation to design redundancy and in-service inspection, and T7 in relation to seismic ground motion criteria changes in 2005). ORP notified BNI in July 2019 that it concurred with BNI's determination that the PT Facility's technical issues have been resolved.¹¹

¹⁰ *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (March 11, 2016) (ECF-221).

¹¹ 19-WTP-0078, "Contract No. DE-AC27-01RV14136 – Concurrence on the Resolution of Technical Issues (T1 – T8) for the Waste Treatment and Immobilization Plant Pretreatment Facility," July 16, 2019.

Significant Accomplishments during the Prior Month:

- BNI continued to manage suspended plant equipment purchase orders to reduce storage and suspension costs, and evaluated ways to reduce project procurement liability.
- BNI continued to implement ongoing asset maintenance at the PT Facility to protect equipment and structures, and ensure design documents were maintained.

Significant Planned Activities for the Next Month:

- BNI is expected to continue to manage suspended plant equipment purchase orders to reduce storage and suspension costs and evaluate ways to reduce project procurement liability.
- BNI will continue to implement asset maintenance at the PT Facility to protect equipment and structures and to ensure design documents are maintained.

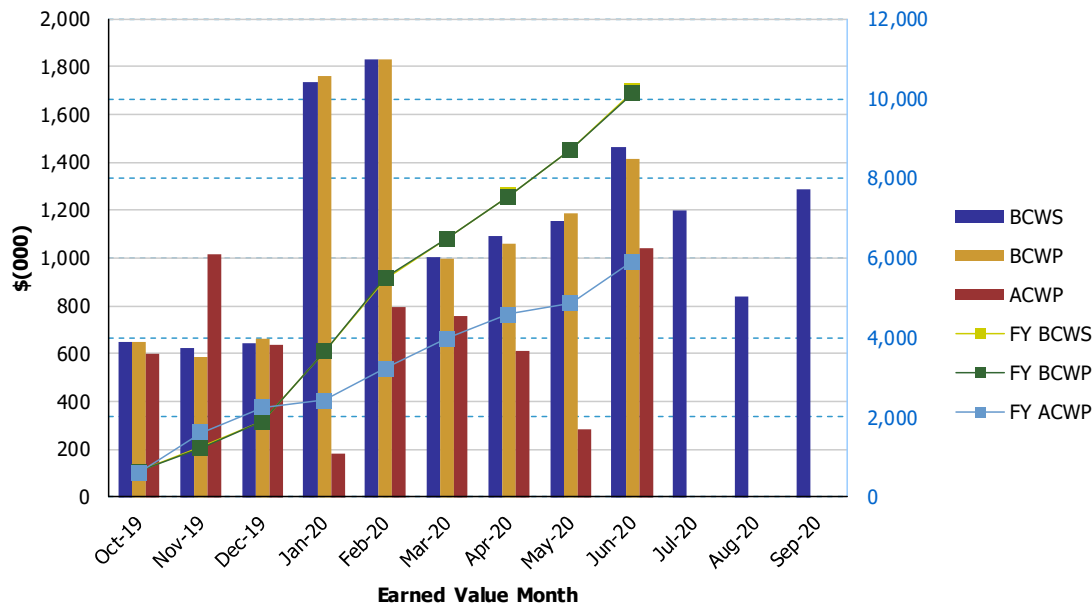
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: June 2020

**River Protection Project
Pretreatment Facility (WBS 1.01)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$647	\$651	\$597	1.01	1.09	\$647	\$651	\$597	1.01	1.09
Nov 2019	\$622	\$584	\$1,015	0.94	0.58	\$1,270	\$1,235	\$1,612	0.97	0.77
Dec 2019	\$640	\$663	\$636	1.04	1.04	\$1,910	\$1,898	\$2,249	0.99	0.84
Jan 2020	\$1,739	\$1,763	\$179	1.01	9.87	\$3,648	\$3,661	\$2,427	1.00	1.51
Feb 2020	\$1,830	\$1,830	\$792	1.00	2.31	\$5,479	\$5,491	\$3,220	1.00	1.71
Mar 2020	\$1,000	\$994	\$758	0.99	1.31	\$6,479	\$6,485	\$3,978	1.00	1.63
Apr 2020	\$1,091	\$1,059	\$614	0.97	1.72	\$7,569	\$7,543	\$4,592	1.00	1.64
May 2020	\$1,155	\$1,187	\$283	1.03	4.20	\$8,725	\$8,730	\$4,875	1.00	1.79
Jun 2020	\$1,463	\$1,416	\$1,042	0.97	1.36	\$10,188	\$10,146	\$5,917	1.00	1.71
Jul 2020	\$1,197									
Aug 2020	\$836									
Sep 2020	\$1,286									

PTD	\$3,523,268	\$3,521,286	\$3,453,821	1.00	1.02
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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.
- EVMS = earned value management system.
- FY = fiscal year.
- PTD = project to date.
- SPI = schedule performance index.

High-Level Waste Facility

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Wahed Abdul

Milestone	Title	Due Date	Status
D-00A-20	Complete Construction of Structural Steel to Elevation 14' in HLW Facility	12/31/2010	Complete
D-00A-21	Complete Construction of Structural Steel to Elevation 37' in HLW Facility	12/31/2012	Complete
D-00A-02	HLW Facility Construction Substantially Complete	12/31/2030	At Risk ¹
D-00A-03	Start HLW Facility Cold Commissioning	06/30/2032	At Risk ¹
D-00A-04	HLW Facility Hot Commissioning Complete	12/31/2033	At Risk ¹

¹ 19-ORP-0007, 2019, "Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085)."

HLW = high-level waste.

The HLW Facility is intended to receive the separated high-level waste concentrate from the PT Facility. This concentrate would then be blended with glass formers, converted into molten glass in one of the two HLW Facility melters and then poured into cylindrical stainless steel canisters. After cooling, the canisters would then be sealed and decontaminated before shipping to interim storage.

As of September 2012, the HLW Facility was 62 percent complete overall, engineering design was 89 percent complete, procurement was 81 percent complete, construction was 43 percent complete, and startup and commissioning was 4 percent complete. The physical percent complete analysis for the HLW Facility was frozen in September 2012, pending development of a revised baseline to address technical and design issues.

Work on the HLW Facility was performed in accordance with the fiscal year 2017 through fiscal year 2021 Interim Work Plan, which was primarily for work associated with asset maintenance and key ongoing procurement activities. Since 2019, HLW Facility design activities have been ramping up as the engineering staff have been transitioning from DFLAW/LBL activities based on the availability of funds.

In March 2019, DOE awarded the AoA contract for the high-level waste treatment mission. The purpose of the AoA is to identify all viable options to meet mission needs and reduce risk, while providing decision-quality analysis and results to inform the acquisition authority and other stakeholders of all the alternatives to meet both Headquarters and DOE Office of Environmental Management policy requirements. Additional information regarding the AoA process is included in the WTP section at the beginning of this report.

Significant Accomplishments during the Prior Month:

- BNI continued to perform engineering design activities and hazard analysis for the key mechanical and process systems (melter feed process and the primary offgas process systems).
- BNI completed 60 percent design review of the HLW Melter Offgas System (which includes HLW Offgas Treatment Process System, Process Vessel Vent Exhaust System, and Pulse Jet Ventilation System) in July 2020.
- BNI continued to manage suspended plant equipment purchase orders to reduce storage and suspension costs and evaluate ways to reduce project procurement liability.
- BNI continued to implement asset maintenance at the HLW Facility to protect equipment and structures and to ensure design documents were maintained.

Significant Planned Activities in the Next Month:

- BNI is expected to continue to perform engineering design activities and hazard analysis for key mechanical and process systems. Priority systems for fiscal year 2020 include the design of the HLW Facility melter feed process and the primary offgas process systems.
- BNI is planning to conduct 60 percent design review of the HLW Melter Process System in August 2020.
- BNI is expected to continue to manage suspended plant equipment purchase orders to reduce storage and suspension costs and to evaluate ways to reduce project procurement liability.
- BNI will continue to implement asset maintenance at the HLW Facility to protect equipment and structures and to ensure design documents are maintained.

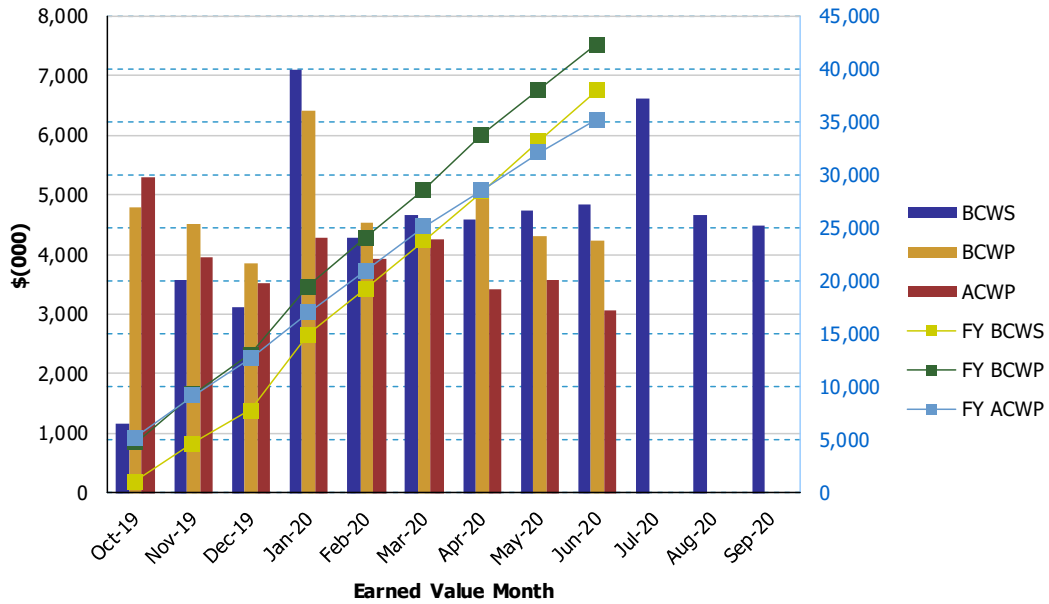
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: June 2020

**River Protection Project
High-Level Waste Facility (WBS 1.03)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$1,158	\$4,792	\$5,293	4.14	0.91	\$1,158	\$4,792	\$5,293	4.14	0.91
Nov 2019	\$3,569	\$4,519	\$3,943	1.27	1.15	\$4,727	\$9,311	\$9,236	1.97	1.01
Dec 2019	\$3,124	\$3,852	\$3,521	1.23	1.09	\$7,851	\$13,163	\$12,757	1.68	1.03
Jan 2020	\$7,103	\$6,418	\$4,276	0.90	1.50	\$14,954	\$19,581	\$17,033	1.31	1.15
Feb 2020	\$4,294	\$4,531	\$3,931	1.06	1.15	\$19,248	\$24,113	\$20,964	1.25	1.15
Mar 2020	\$4,655	\$4,595	\$4,257	0.99	1.08	\$23,903	\$28,707	\$25,221	1.20	1.14
Apr 2020	\$4,595	\$5,126	\$3,414	1.12	1.50	\$28,498	\$33,833	\$28,635	1.19	1.18
May 2020	\$4,735	\$4,309	\$3,573	0.91	1.21	\$33,234	\$38,142	\$32,207	1.15	1.18
Jun 2020	\$4,833	\$4,233	\$3,052	0.88	1.39	\$38,067	\$42,374	\$35,259	1.11	1.20
Jul 2020	\$6,612									
Aug 2020	\$4,661									
Sep 2020	\$4,485									

PTD	\$2,541,817	\$2,540,796	\$2,483,060	1.00	1.02
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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.
- EVMS = earned value management system.
- FY = fiscal year.
- PTD = project to date.
- SPI = schedule performance index.

Low-Activity Waste Facility¹²

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Jason Young

Milestone	Title	Due Date	Status
D-00A-07	LAW Facility Construction Substantially Complete	12/31/2020	Amendment proposed ¹
D-00A-08	Start LAW Facility Cold Commissioning	12/31/2022	Amendment proposed ¹
D-00A-09	LAW Facility Hot Commissioning Complete	12/31/2023	Amendment proposed ¹

¹ Certain Consent Decree-related work at the Hanford Site has been interrupted since March 23, 2020, due to the COVID-19 pandemic. On May 21, 2020, the U.S. Department of Justice, on behalf of DOE, submitted a proposal to the State of Washington to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.) due to a Force Majeure event. ENV_DEFENSE-#919846, 2020, "Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to *Force Majeure* Event," external letter to A.A. Fitz, Office of the Attorney General, Ecology Division from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

COVID-19 = coronavirus disease 2019.

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

LAW = low-activity waste.

The LAW Facility will process concentrated low-activity waste, which will be mixed with silica and other glass-forming materials. The mixture will be fed into the LAW Facility's two melters at a design capacity of 30 metric tons per day, heated to 2,100°F, and vitrified into glass. The 300-ton melters are approximately 20 feet by 30 feet and 16 feet high. The glass mixture will then be poured into stainless steel containers, which are 4 feet in diameter, 7 feet tall, and weigh more than 7 tons. These containers are anticipated to be disposed of on the Hanford Site in the Integrated Disposal Facility.

As of June 2020, the LAW Facility was 86 percent complete overall, with engineering design 98 percent complete, procurement 100 percent complete, construction 99 percent complete, and startup and commissioning 47 percent complete. BNI has completed construction and initiated startup testing for 96 percent of LAW Facility systems. BNI has completed startup testing for 39 percent of LAW Facility systems and custody of these systems has been transferred to Plant Management for operations. BNI is working to resolve outstanding punch list items, progress procedure preparation, and perform planning activities as much as possible via telework. Limited onsite activities are coordinated to maintain systems and perform key work activities.

¹² Discussions about the related Low-Activity Waste Pretreatment System and tank-side cesium removal are included in the monthly reports submitted under the *Hanford Federal Facility Agreement and Consent Order* (also known as the Tri-Party Agreement or TPA). Prior discussions are in reports archived in the Administrative Record.

Significant Accomplishments during the Prior Month:

- BNI continued pressurization of the LAW Facility fire-water service system.
- BNI Construction continued limited completion activities for LAW Facility systems.
- BNI's Startup organization continued limited testing of LAW Facility systems.
- BNI continued limited punch list resolution for LAW Facility system testing.

Significant Planned Activities in the Next Month:

- BNI Construction will continue limited completion activities for LAW Facility systems.
- BNI's Startup organization will continue limited testing of LAW Facility systems.
- BNI will continue limited punch list resolution for LAW Facility system testing.

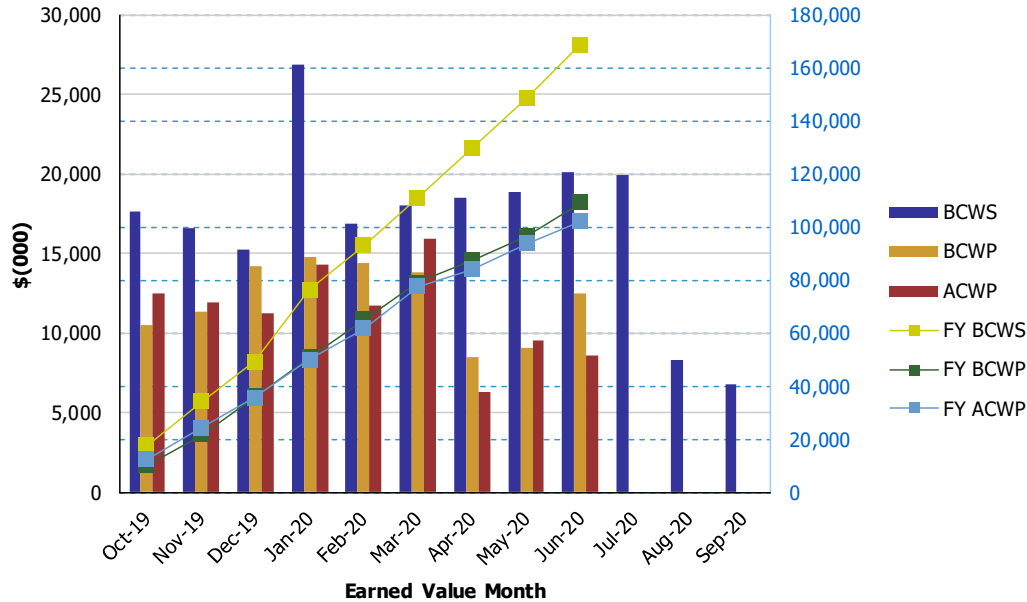
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: June 2020

**River Protection Project
Low-Activity Waste Facility (WBS 1.02)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$17,656	\$10,507	\$12,532	0.60	0.84	\$17,656	\$10,507	\$12,532	0.60	0.84
Nov 2019	\$16,594	\$11,356	\$11,977	0.68	0.95	\$34,250	\$21,863	\$24,509	0.64	0.89
Dec 2019	\$15,259	\$14,260	\$11,290	0.93	1.26	\$49,509	\$36,123	\$35,799	0.73	1.01
Jan 2020	\$26,877	\$14,761	\$14,331	0.55	1.03	\$76,386	\$50,884	\$50,130	0.67	1.02
Feb 2020	\$16,880	\$14,419	\$11,727	0.85	1.23	\$93,266	\$65,303	\$61,858	0.70	1.06
Mar 2020	\$18,044	\$13,801	\$15,925	0.76	0.87	\$111,310	\$79,103	\$77,783	0.71	1.02
Apr 2020	\$18,469	\$8,484	\$6,307	0.46	1.35	\$129,779	\$87,588	\$84,090	0.67	1.04
May 2020	\$18,880	\$9,045	\$9,578	0.48	0.94	\$148,659	\$96,632	\$93,668	0.65	1.03
Jun 2020	\$20,112	\$12,537	\$8,592	0.62	1.46	\$168,771	\$109,169	\$102,259	0.65	1.07
Jul 2020	\$19,981									
Aug 2020	\$8,300									
Sep 2020	\$6,818									

PTD	\$2,453,436	\$2,350,985	\$2,345,292	0.96	1.00
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|------|---|----------------------------------|------|---|---------------------------------|
| ACWP | = | actual cost of work performed. | EVMS | = | earned value management system. |
| BCWP | = | budgeted cost of work performed. | FY | = | fiscal year. |
| BCWS | = | budgeted cost of work scheduled. | PTD | = | project to date. |
| CPI | = | cost performance index. | SPI | = | schedule performance index. |

Balance of Facilities

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Jason Young

Milestone	Title	Due Date	Status
D-00A-12	Steam Plant Construction Complete	12/31/2012	Complete

BOF will provide services and utilities to support operation of the main production facilities: PT, HLW, LAW, and LAB. As of June 2020, BOF was 92 percent complete overall, engineering design was 98 percent complete, procurement was 100 percent complete, construction was 95 percent complete, and startup and commissioning was 83 percent complete. Design of Effluent Management Facility (EMF) was 100 percent complete.

BOF has completed construction and initiated startup testing for all systems. BNI has completed startup testing for 93 percent of the BOF systems, and custody of these systems has been transferred to the Plant Management organization for operations. BNI is working to resolve outstanding punch list items, progress procedure preparation, and perform planning activities as much as possible via telework. Limited onsite activities are coordinated to maintain systems and perform key work activities.

Significant Accomplishments during the Prior Month:

- BNI continued site paving.
- BNI operated the Steam Plant to continue system testing and support methods validation efforts in the LAB.
- BNI completed excavating around the EMF for installation of transfer piping.
- BNI completed the connection of waste transfer piping to the piping manifold above the EMF low point drain.
- BNI continued limited system walkdowns to support turnover to the Startup organization.
- BNI returned the majority of BOF systems to operation.
- BNI Engineering continued to provide design support for EMF construction and BOF startup activities.

Significant Planned Activities in the Next Month:

- Complete startup testing for Steam Plant systems.

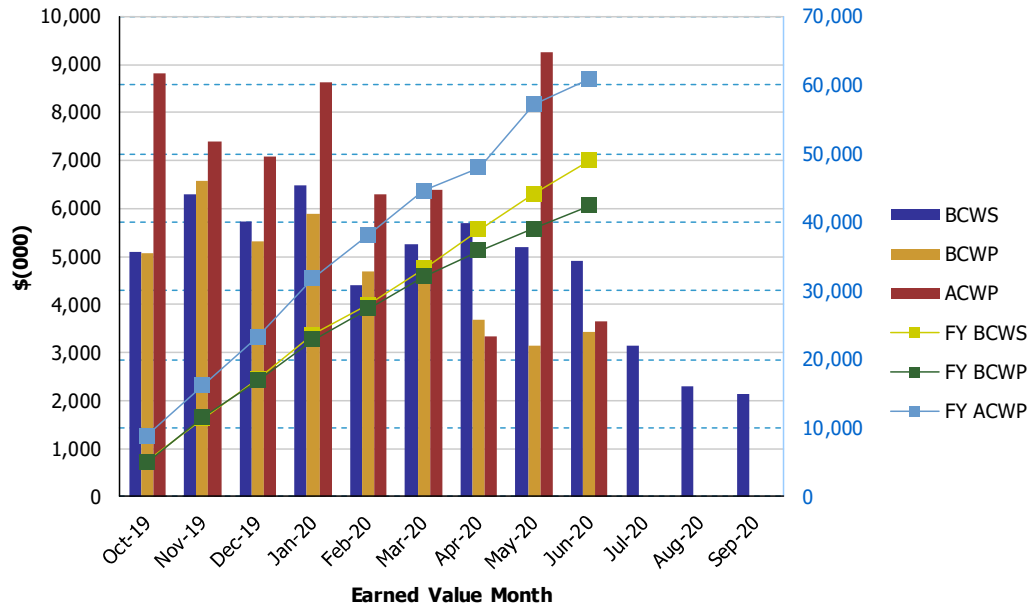
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: June 2020

**River Protection Project
Balance of Facilities (WBS 1.05)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$5,103	\$5,056	\$8,817	0.99	0.57	\$5,103	\$5,056	\$8,817	0.99	0.57
Nov 2019	\$6,296	\$6,582	\$7,383	1.05	0.89	\$11,399	\$11,638	\$16,200	1.02	0.72
Dec 2019	\$5,729	\$5,305	\$7,071	0.93	0.75	\$17,128	\$16,943	\$23,271	0.99	0.73
Jan 2020	\$6,470	\$5,888	\$8,630	0.91	0.68	\$23,598	\$22,831	\$31,901	0.97	0.72
Feb 2020	\$4,392	\$4,689	\$6,304	1.07	0.74	\$27,990	\$27,520	\$38,205	0.98	0.72
Mar 2020	\$5,265	\$4,631	\$6,385	0.88	0.73	\$33,256	\$32,151	\$44,590	0.97	0.72
Apr 2020	\$5,698	\$3,696	\$3,341	0.65	1.11	\$38,954	\$35,847	\$47,931	0.92	0.75
May 2020	\$5,194	\$3,159	\$9,256	0.61	0.34	\$44,148	\$39,006	\$57,188	0.88	0.68
Jun 2020	\$4,909	\$3,424	\$3,657	0.70	0.94	\$49,057	\$42,430	\$60,845	0.86	0.70
Jul 2020	\$3,145									
Aug 2020	\$2,297									
Sep 2020	\$2,143									

PTD	\$964,046	\$945,363	\$997,358	0.98	0.95
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- EVMS = earned value management system.
- FY = fiscal year.
- PTD = project to date.
- SPI = schedule performance index.

Analytical Laboratory

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Jason Young

Milestone	Title	Due Date	Status
D-00A-05	LAB Construction Substantially Complete	12/31/2012	Complete

LAB = analytical laboratory.

The LAB will support WTP operations by analyzing feed, vitrified waste, and effluent streams. As of June 2020, the LAB was 90 percent complete overall, engineering design was 99 percent complete, procurement was 100 percent complete, construction was 100 percent complete, and startup and commissioning was 69 percent complete.

The LAB has completed construction and startup testing for all LAB systems and custody of these systems has been transferred to the Plant Management organization for operations. BNI is working to resolve outstanding punch list items, progress procedure preparation, and perform planning activities as much as possible via telework. Limited onsite activities are coordinated to maintain systems and perform key work activities.

Significant Accomplishments during the Prior Month:

- BNI performed limited method validation activities.
- BNI continued fume hood testing and certification to support methods validation activities.
- BNI recommenced commissioning for the high purity gas systems.
- BNI continued resolution of outstanding punch list activities.
- BNI progressed program implementation activities, where possible, to support LAB readiness for operation.

Significant Planned Activities in the Next Month:

- BNI will continue working toward completion of the commissioning effort for the LAB high purity gas systems.

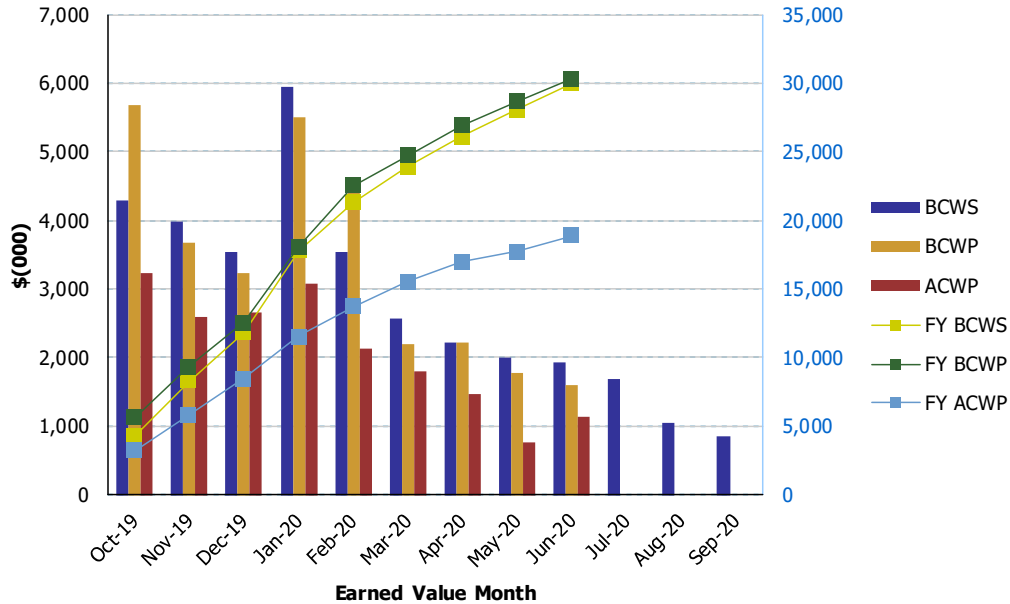
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: June 2020

**River Protection Project
Analytical Laboratory (WBS 1.06)**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2019	\$4,297	\$5,683	\$3,222	1.32	1.76	\$4,297	\$5,683	\$3,222	1.32	1.76
Nov 2019	\$3,984	\$3,669	\$2,604	0.92	1.41	\$8,281	\$9,352	\$5,826	1.13	1.61
Dec 2019	\$3,549	\$3,228	\$2,666	0.91	1.21	\$11,830	\$12,580	\$8,492	1.06	1.48
Jan 2020	\$5,947	\$5,495	\$3,081	0.92	1.78	\$17,778	\$18,076	\$11,573	1.02	1.56
Feb 2020	\$3,548	\$4,446	\$2,136	1.25	2.08	\$21,326	\$22,522	\$13,709	1.06	1.64
Mar 2020	\$2,568	\$2,191	\$1,808	0.85	1.21	\$23,894	\$24,713	\$15,517	1.03	1.59
Apr 2020	\$2,221	\$2,214	\$1,462	1.00	1.51	\$26,114	\$26,928	\$16,979	1.03	1.59
May 2020	\$1,995	\$1,772	\$765	0.89	2.32	\$28,110	\$28,699	\$17,744	1.02	1.62
Jun 2020	\$1,930	\$1,601	\$1,136	0.83	1.41	\$30,040	\$30,301	\$18,880	1.01	1.60
Jul 2020	\$1,679									
Aug 2020	\$1,046									
Sep 2020	\$851									

PTD	\$473,892	\$465,713	\$442,321	0.98	1.05
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|------|---|----------------------------------|------|---|---------------------------------|
| ACWP | = | actual cost of work performed. | EVMS | = | earned value management system. |
| BCWP | = | budgeted cost of work performed. | FY | = | fiscal year. |
| BCWS | = | budgeted cost of work scheduled. | PTD | = | project to date. |
| CPI | = | cost performance index. | SPI | = | schedule performance index. |

Waste Treatment Plant Project Percent Complete Status (Table)

Waste Treatment Plant Project - (LBL/Project Services) Percent Complete Status Through June 2020																		
(Dollars - Millions)	Overall Facility Percent Complete Unallocated Dollars			Design/Engineering Unallocated Dollars			Procurement Unallocated Dollars			Construction Unallocated Dollars			Startup & Plant Operations Unallocated Dollars			Project Management & Shared Services Unallocated Dollars		
	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete
Facilities																		
Low-Activity Waste	2,253.0	1,935.1	86%	590.1	579.1	98%	342.9	342.5	100%	753.5	746.5	99%	554.7	261.5	47%	11.9	5.4	46%
Balance of Facilities	777.7	714.0	92%	157.1	153.3	98%	60.8	60.8	100%	307.5	291.2	95%	251.8	208.3	83%	0.5	0.5	100%
Analytical Lab	468.8	421.2	90%	94.7	93.9	99%	60.5	60.5	100%	166.1	165.7	100%	144.6	100.1	69%	2.9	1.0	36%
Direct Feed LAW	432.2	400.5	93%	110.9	109.2	98%	72.4	72.2	100%	239.4	211.4	88%	0.0	0.0	0%	9.5	7.7	81%
LBL Facility Services	763.3	575.5	75%	0.0	0.0	0%	70.5	61.5	87%	107.2	105.5	98%	333.4	214.5	64%	252.2	194.1	77%
Total LBL	4,695.0	4,046.3	86%	952.8	935.4	98%	607.0	597.4	98%	1,573.7	1,520.4	97%	1,284.5	784.3	61%	277.0	208.7	75%
Project Services	907.9	750.0	83%	92.5	90.3	98%	63.4	55.6	88%	101.0	92.7	92%	7.5	4.8	64%	643.5	506.6	79%
Total Project Services	907.9	750.0	83%	92.5	90.3	98%	63.4	55.6	88%	101.0	92.7	92%	7.5	4.8	64%	643.5	506.6	79%
Total LBL, DFLAW & Project Services	5,602.9	4,796.3	86%	1,045.3	1,025.7	98%	670.4	653.0	97%	1,674.7	1,613.1	96%	1,292.0	789.1	61%	920.5	715.3	78%
PT/HLW/SS Percent Complete Status Frozen as of September 2012 (due to project rebaselining efforts)																		
High-Level Waste	1,478.6	922.1	62%	364.4	325.2	89%	433.9	349.4	81%	561.1	243.2	43%	119.2	4.4	4%	n/a	n/a	n/a
Pretreatment	2,517.3	1,410.5	56%	761.7	645.8	85%	679.9	380.4	56%	890.0	378.6	43%	185.8	5.6	3%	n/a	n/a	n/a
Shared Services	4,726.9	3,632.6	77%	1,047.0	977.9	93%	451.7	395.0	87%	1,436.5	1,143.0	80%	453.5	133.2	29%	1,338.1	983.5	73%
Total HLW/PT/SS	8,722.8	5,965.2	68%	2,173.1	1,948.9	90%	1,565.5	1,124.8	72%	2,887.6	1,764.8	61%	758.5	143.2	19%	1,338.1	983.5	73%
Undistributed Budget	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total WTP	14,325.7	10,761.5	75%	3,218.4	2,974.6	92%	2,235.9	1,777.8	80%	4,562.3	3,377.9	74%	2,050.5	932.3	45%	2,258.6	1,698.8	75%

Source: Preliminary WTP Contract Performance Report - Format 1, Data for June 2020

Note: In September 2012, the LBL Replan was incorporated into the project OTB baseline resulting in increases/decreases to the LBL facility budgets, which correspondingly increased/decreased the facility/function to-date percent complete values. In October 2012, the PT/HLW/SS Interim Work Plan was incorporated into the project OTB baseline resulting in decreases to the PT/HLW/SS facility budgets, this was due to a work scope shift from the Distributed budget to UB. Percent Complete Values shown for PT, HLW and SS have been frozen with the September 2012 values due to the Interim Work Plan and budgets being moved into UB. UB value for the project for PT/HLW/SS is \$2,014M. The percent complete values for the Total WTP are the current total LBL BCWP added to the frozen HLW/PT/SS BCWP values. In March 2014, Project Controls and Project Management work scope was moved out of Shared Services control accounts into the facilities with new control accounts being set up in the facilities. These will now be seen under Project Management/Shared Services by facility. The Shared Services PMB value has not been changed to reflect this change due to the freeze on HLW/PT and SS and the budgets remaining in UB. October 2014 data reflects the incorporation of Direct Feed LAW and the split of Shared Services into LBL Facility Services and Project Services. March 2016 LBL percent complete data is a total of LAW-BOF-LAB-DFLAW and LBL Facility Services. The Project Services Allocation account (zPSA), as shown on the CPR Format 1, is not added to LBL for percent complete purposes.

Table 1 Administrative Record Metadata

Milestone Number or Facility Identification	Title
D-00A-07	LAW Facility Construction Substantially Complete
D-00A-08	Start LAW Facility Cold Commissioning
D-00A-09	LAW Facility Hot Commissioning Complete
D-00B-01D	C-105 Submit Retrieval Completion Certification
D-00B-00-01	Submit Revised TWRWP Prior to Initiating Installation of Equipment
D-00B-00-02	Submit TWRWP to Ecology
D-00C-02DN	Submit to Ecology & State of Oregon Monthly Summary Report
D-16B-03	Of the 12 SSTs Referred to in B-1 and B-2, Complete Retrieval of Tank Wastes in at Least 5
H-0-8	Waste Treatment and Immobilization Plant (WTP)
S-2-3	Double-Shell Tank System (DST) & 204-AR Waste Unloading Station
S-2-4	Single-Shell Tank System (SST)

LAW = Low-Activity Waste (Facility).

TWRWP = tank waste retrieval work plan.