

FINAL

Office of River Protection
Consent Decree
Monthly Report

Monthly Reporting Period
January 01–January 31 2019¹

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 of December 2018.

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

BNI	Bechtel National, Inc.
BOF	Balance of Facilities
CV	cost variance
DFLAW	direct-feed low-activity waste
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EMF	Effluent Management Facility
FY	fiscal year
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
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		On Schedule
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		On Schedule
Fiscal Year 2023				
D-00A-08 Interim	Start LAW Facility Cold Commissioning	12/31/2022		On Schedule
Fiscal Year 2024				
D-00A-09 Interim	LAW Facility Hot Commissioning Complete	12/31/2023		On Schedule
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
Fiscal Year 2031				
D-00A-02 Interim	HLW Facility Construction Substantially Complete	12/31/2030		Under Analysis ³
Fiscal Year 2032				
D-00A-13 Interim	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-OOOO1A/1B	12/31/2031		Under Analysis ³
D-00A-14 Interim	PT Facility Construction Substantially Complete	12/31/2031		Under Analysis ³
D-00A-19 Interim	Complete Elevation 98 feet Concrete Floor Slab Placements in PT Facility	12/31/2031		Under Analysis ³

Milestone	Title	Due Date	Completion Date	Status
D-00A-03 Interim	Start HLW Facility Cold Commissioning	06/30/2032		Under Analysis ³
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		Under Analysis ³
Fiscal Year 2034				
D-00A-04 Interim	HLW Facility Hot Commissioning Complete	12/31/2033		Under Analysis ³
D-00A-16 Interim	PT Facility Hot Commissioning Complete	12/31/2033		Under Analysis ³
D-00A-17	Hot Start of WTP	12/31/2033		Under Analysis ³
Fiscal Year 2037				
D-00A-01	Achieve Initial Plant Operations for the WTP	12/31/2036		Under Analysis 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 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 tanks’ condition with A-104 and A-105. DOE has had several discussions with Ecology on this topic since August 2018.

³ The U.S. Army Corps of Engineers’ final report on its parametric analysis of certain options and funding scenarios indicated there is a low probability that DOE can meet the milestones for constructing and commissioning the PT and HLW facilities in the Amended Consent Decree under the current funding profile. Based on the results of this analysis, DOE considers the milestones for the HLW and PT facilities as “Under Analysis.” DOE also considers milestones A-1 and A-17 as being “Under Analysis” because the definition of Hot Start in Section IV-A-2 states: “‘Hot Start of Waste Treatment Plant’ means the initiation of simultaneous operation of the Pretreatment (PT) Facility, High-Level Waste (HLW) Facility and Low-Activity Waste (LAW) Facility (including as needed the operations of the Analytical Laboratory (LAB) and the Balance of Facilities) treating Hanford tank wastes and producing a waste glass product.”

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

HLW = high-level waste.

LAW = low-activity waste.

PT = pretreatment.

SST = single-shell tank.

WMA-C = C Tank Farm waste management area.

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: 45 days following each calendar year quarter (February 14, May 15, August 14, 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: On Schedule.

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

Federal Program Manager: 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 5	06/30/2021 ¹	On Schedule
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

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 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 tanks’ condition with A-104 and A-105. DOE has had several discussions with Ecology on this topic since August 2018.

DOE = U.S. Department of Energy.

SST = single-shell tank.

Ecology = Washington State Department of Ecology.

WMA-C = C Tank Farm waste management area.

Significant Accomplishments during the Prior Month:

Completed Accomplishments:

- Completed A Tank Farm POR518 and POR519 portable exhauster installation
- Completed fabrication and delivery of A Tank Farm ventilation exhauster manifold
- Completed removal of Tank AX-103-09B thermocouple (previously incorrectly identified as the riser 07D thermocouple)
- Completed installation of the A Tank Farm ventilation system demisters
- Completed excavation and hose-in-hose transfer line installation from AX Tank Farm diversion box to Tank AX-102 pits 02C and 02D
- Completed Tank AX-101 01A Pit cleanout

- Completed Tank AX-102 02A pit pump installation
- Completed In Service Leak Test for AX-102/104 diversion box to AX drop leg
- Completed placement of Tank AX-102 hydraulic power units and manifolds.

Ongoing Activities:

- Continue installation of the electrical infrastructure (power and control systems) in the AX Tank Farm
- Continue field activities for long-length equipment removals at Tank AX-103
 - Removal of Tank AX-103 R7C thermocouple
- Continue installation of retrieval equipment at Tank AX-102
- Continue direct-push sampling of soil near Tanks A-104 and A-105 (installation of two additional boreholes)
- Continue installation of caustic and water system piping from POR496 to the AX Tank Farm
- Continue Phase II of the AX-102/AX-104 tanks control trailer installation (POR471 and POR498)
- Continue installation of A Tank Farm ventilation system:
 - Install ventilation exhaust manifold
 - Install ventilation manifold supports
 - Remove cover blocks, clean pits, and remove thermocouple trees from risers (to connect the ventilation system)
 - Removal of Tank A-101 riser 2 thermocouple
- Continue high-resolution resistance leak detection monitoring fabrication and installation.

Significant Planned Activities in the Next Month:

- Complete excavation and hose-in-hose transfer line installation from AX Tank Farm diversion box to Tank AX-102 pits 02A and 02B
- Complete installation of Tank AX-102 pits A, B, and C hose-in-hose transfer line shield plates and hose barns
- Complete engineering evaluation for the removal of the shield plug in AX-102 02B pit and attempt shield plug removal
- Complete north/south electrical backbone conduct installation and backfill
- Complete installation of cathodic protection system
- Complete removal of the A-104 thermocouple (ventilation system tie in point).

Issues:

- Reduced worker efficiencies associated with mandatory use of supplied air continues to impact work in the tank farms.
- The U.S. Department of Energy (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).³ 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 Tank Farm has impacted DOE’s ability to efficiently remove the equipment and is impacting the cost and schedule.
- On December 3, 2018, the Washington State Department of Ecology (Ecology) sent the DOE Office of River Protection (ORP) and Richland Operations Office a letter (18-NWP-177) regarding the Hanford Site ambient air boundary. Ecology expressed its belief that the ambient air boundary appears to have changed as a result of increased public access to parts of the Hanford Site. Ecology asked DOE to participate in an evaluation of the ambient air boundary. DOE accepted Ecology’s offer to discuss Ecology’s concerns (19-ESQ-0023). DOE, Ecology, and the Washington State Department of Health held a kick-off meeting on January 31, 2019.

³ 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 tanks’ conditions with Tanks A-104 and A-105. DOE has had several discussions with Ecology on this topic since August 2018.

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:

- RPP-RPT-58933 modification to update schedule and vapor monitoring sections.

Issues:

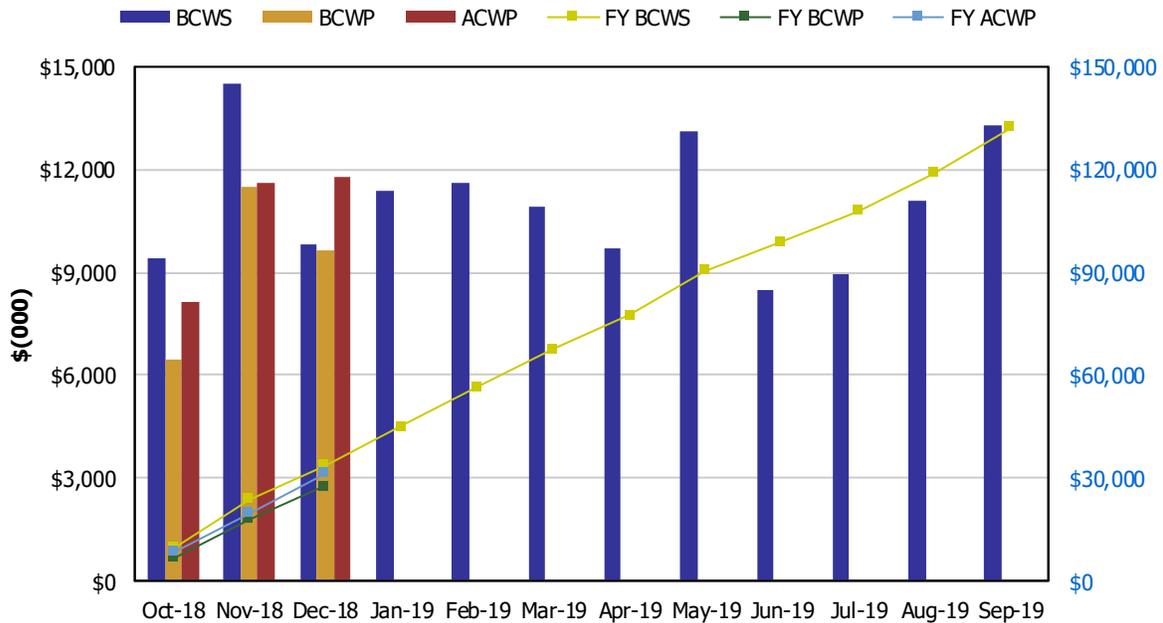
- None.

Earned Value Data: Fiscal Year 2019

December-18

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 2018	\$9,402	\$6,448	\$8,124	0.69	0.79	\$9,402	\$6,448	\$8,124	0.69	0.79
Nov 2018	\$14,501	\$11,516	\$11,634	0.79	0.99	\$23,902	\$17,964	\$19,757	0.75	0.91
Dec 2018	\$9,824	\$9,620	\$11,762	0.98	0.82	\$33,726	\$27,585	\$31,519	0.82	0.88
Jan 2019	\$11,377					\$45,103				
Feb 2019	\$11,583					\$56,686				
Mar 2019	\$10,925					\$67,611				
Apr 2019	\$9,671					\$77,283				
May 2019	\$13,104					\$90,387				
Jun 2019	\$8,502					\$98,889				
Jul 2019	\$8,968					\$107,858				
Aug 2019	\$11,103					\$118,961				
Sep 2019	\$13,262					\$132,223				

CTD	\$974,466	\$958,315	\$1,010,017	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.
- CTD = contract to date.
- EVMS = earned value management system.
- FY = fiscal year.
- SPI = schedule performance index.

Retrieve and Close Single-Shell Tanks (5.02)⁴

The December 2018 **unfavorable** schedule variance (SV) of (\$203,700) was due to:

- A shortage of site-qualified and trained electricians that continued to impact the subcontractor's work on installing the AX Tank Farm electrical system. Additional electricians have been hired and have completed required site training.

The December 2018 **unfavorable** cost variance (CV) of (\$2,141,700) was due to:

- Additional work crews and the use of overtime in attempting to recover schedule for the installation of infrastructure equipment in support of AX Tank Farm retrievals. This work continues to be impacted by inefficiencies associated with self-contained breathing apparatus use.
- Installation of the A Tank Farm exhausters structural steel was more time consuming than planned, therefore taking longer to complete.

⁴ "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	Under Analysis ¹
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2036	Under Analysis ¹

¹ The U.S. Army Corps of Engineers' final report on its parametric analysis of certain options and funding scenarios indicated there is a low probability that DOE can meet the milestones for constructing and commissioning the HLW and PT facilities in the Amended Consent Decree under the current funding profile. Based on the results of this analysis, DOE considers the milestones for the HLW and PT facilities as "Under Analysis." DOE also considers milestones A-1 and A-17 as being "Under Analysis" because the definition of Hot Start in Section IV-A-2 states: "'Hot Start of Waste Treatment Plant' means the initiation of simultaneous operation of the Pretreatment (PT) Facility, High-Level Waste (HLW) Facility and Low-Activity Waste (LAW) Facility (including as needed the operations of the Analytical Laboratory (LAB) and the Balance of Facilities) treating Hanford tank wastes and producing a waste glass product."

DOE = U.S. Department of Energy.
 HLW = high-level waste.
 PT = pretreatment.
 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 December 2018, DFLAW modifications for the WTP Project were 60 percent complete, engineering design was 89 percent complete, procurement was 67 percent complete, and construction was 44 percent complete. As of December 2018, total LBL facilities were 70 percent complete, engineering design was 93 percent complete, procurement was 86 percent complete, construction was 86 percent complete, and startup and commissioning was 31 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. 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.

On December 3, 2018, Ecology sent ORP and Richland Operations Office a letter (18 NWP-177) regarding the Hanford Site ambient air boundary. Ecology expressed its belief that the ambient air boundary appears to have changed as a result of increased public access to parts of the Hanford Site. Ecology asked DOE to participate in an evaluation of the ambient air boundary. DOE accepted Ecology's offer to discuss Ecology's concerns (19-ESQ-0023). DOE, Ecology, and the Washington State Department of Health held a kick-off meeting on January 31, 2019.

The WTP Project has complied with milestones already come due as of the date of this report. There are no missed milestones that may affect compliance with other milestones.

Significant Accomplishments during the Prior Month:

- ORP participated in ongoing meetings with Ecology to discuss the tank waste mission and high-level waste treatment approaches.
- 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:

- ORP expects to meet with Ecology on a regular basis to continue to discuss the tank waste treatment mission and high-level waste treatment approaches.
- Other significant planned activities in the next month are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

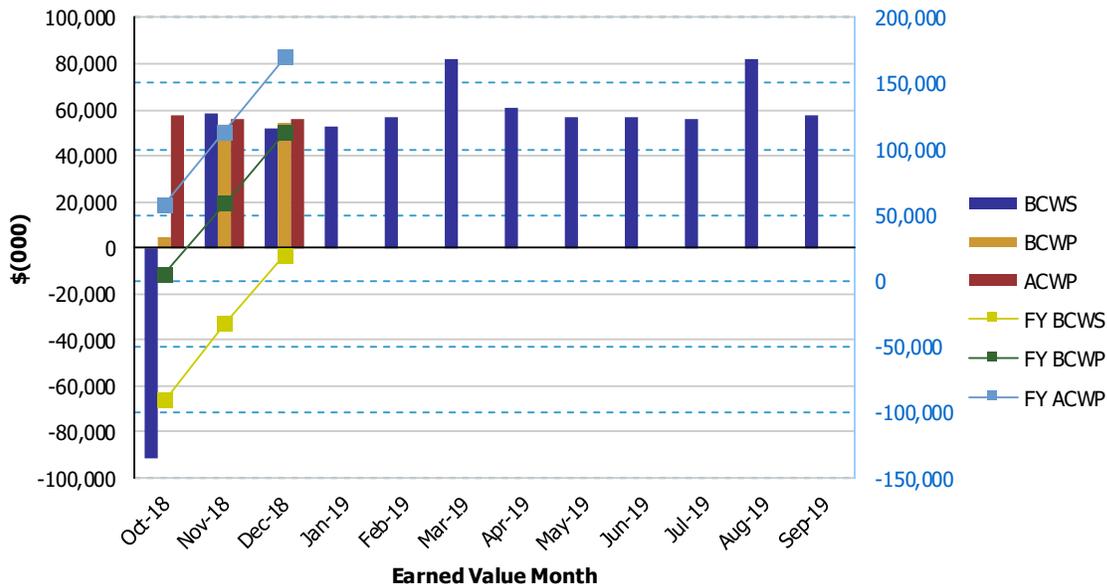
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2019 Earned Value Data

Data as of: December 2018

**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 2018	(\$91,134)	\$4,875	\$57,739	-0.05	0.08	(\$91,134)	\$4,875	\$57,739	-0.05	0.08
Nov 2018	\$58,216	\$53,397	\$55,568	0.92	0.96	(\$32,918)	\$58,273	\$113,307	-1.77	0.51
Dec 2018	\$52,253	\$53,988	\$56,033	1.03	0.96	\$19,336	\$112,261	\$169,340	5.81	0.66
Jan 2019	\$53,000									
Feb 2019	\$56,345									
Mar 2019	\$82,318									
Apr 2019	\$60,620									
May 2019	\$56,608									
Jun 2019	\$56,422									
Jul 2019	\$55,584									
Aug 2019	\$81,635									
Sep 2019	\$57,654									

PTD	\$11,316,129	\$11,267,966	\$11,191,374	1.00	1.01
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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. |

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

Performance Tracking	SV	CV
Current Period (December 2018)	\$1,735	(\$2,045)
Fiscal Year 2019 to-date	\$92,925	(\$57,079)
Cumulative (through December 2018)	(\$48,163)	\$76,592

CV = cost variance.

SV = schedule variance.

For the December 2018 Earned Value Management System reporting period, a net **favorable** SV of approximately \$1.7 million was reported, primarily due to the following:

- Effluent Management Facility (EMF) Plant Equipment reported a favorable SV due to partial schedule recovery of the prefabricated electrical powerhouse and the density, radiation, and flow monitoring system.
- BOF Plant Equipment reported a favorable SV due to partial schedule recovery of programmable protection system scope.
- LAW Facility Commissioning reported an unfavorable SV due to delays in procurement of the mechanical handling lid equipment, delays in defining the cold commissioning simulant part B specifications, delays in purchase of the glass former system spares, and aging equipment replacement.
- LAW Facility Startup reported an unfavorable SV attributed to procedure development, along with component and system testing, which is being delayed by resource availability and failed components.
- BOF Construction reported an unfavorable SV due to required coating repairs of underground radiological waste transfer lines. This delayed excavations, installs, and backfills.
- HLW Facility Engineering reported an unfavorable SV due to delays in obtaining engineering resources from DFLAW/LBL. Areas delayed include process engineering, vessel analysis, civil/structural, mechanical systems, and control systems.

For the December 2018 Earned Value Management System reporting period, a net **unfavorable** CV of approximately (\$2.0 million) was reported, primarily due to the following:

- Facility Services reported an unfavorable CV in construction related to purchases of electrical communications equipment budgeted in prior periods, but paid for in this reporting period. In addition, Facility Services site commissioning reported an unfavorable CV due to higher-than-planned overtime to support weekend work.
- BOF Construction reported an unfavorable CV due to higher-than-planned need for resources in support of the BOF completions and turnover scope, along with sitewide underground scope.

- BOF Startup reported an unfavorable CV due to labor inefficiencies in craft level-of-effort related work scope, component testing, and system testing.
- BOF Commissioning reported an unfavorable CV due to emergent corrective maintenance in support of startup activities.
- EMF Construction reported a favorable CV due to the completion of the stainless steel subcontract under budget.
- BOF Construction Crafts reported an unfavorable CV due to DFLAW transfer pipe coating repairs, higher-than-planned overtime and winterization activities, as well as inefficiencies for EMF pipe installation related to material delays interrupting the continuous flow of work and the availability of trained pipe fitters.

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	Under Analysis ¹
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-OOOO1A/1B	12/31/2031	Under Analysis ¹
D-00A-14	PT Facility Construction Substantially Complete	12/31/2031	Under Analysis ¹
D-00A-15	Start PT Facility Cold Commissioning	12/31/2032	Under Analysis ¹
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2033	Under Analysis ¹

¹ The U.S. Army Corps of Engineers' final report on its parametric analysis of certain options and funding scenarios indicated there is a low probability that DOE can meet the milestones for constructing and commissioning the HLW and PT facilities in the Amended Consent Decree under the current funding profile. Based on the results of this analysis, DOE considers the milestones for the HLW and PT facilities as "Under Analysis." DOE also considers milestones A-1 and A-17 as being "Under Analysis" because the definition of Hot Start in Section IV-A-2 states: "Hot Start of Waste Treatment Plant" means the initiation of simultaneous operation of the Pretreatment (PT) Facility, High-Level Waste (HLW) Facility and Low-Activity Waste (LAW) Facility (including as needed the operations of the Analytical Laboratory (LAB) and the Balance of Facilities) treating Hanford tank wastes and producing a waste glass product."

DOE = U.S. Department of Energy.
 HLW = high-level waste.
 PT = pretreatment.
 WTP = Waste Treatment and Immobilization Plant.

The PT Facility will 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 Bechtel National, Inc. (BNI) continue to work on resolving the remaining technical issues identified in the Third Order Regarding Motions to Modify Consent Decrees⁵, which included, "Ensuring Control of the Pulse Jet Mixers" (i.e., T4 in relation to pulse-jet mixer vessel

⁵ *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (March 11, 2016) (ECF-221).

mixing and control); “Protecting Against Possible Erosion and Corrosion” (i.e., T5 in relation to erosion/corrosion in piping and ancillary vessels); and “Ensuring Ventilation Balancing” (i.e., T8 in relation to facility ventilation/process offgas treatment).⁶

Preliminary engineering work, documented previously in a BNI and ORP study, was completed and demonstrates how the standard high-solids vessel design can be implemented in the PT Facility (i.e., T6 in relation to design redundancy and in-service inspection). The engineering study showed that 16 standard high-solids vessels could be incorporated into the PT Facility, while meeting the PT Facility throughput contract requirements.

A previously documented engineering study provided technical support for a determination that the PT Facility vessel vent process system can support normal and post-design basis event operations of the standard high-solid vessel concept design alternative (i.e., T8).

Testing and assessments for the resolution of remaining PT Facility technical issues are mostly complete. The erosion/corrosion technical issue (T5) is being updated to correct a calculation error. An update of the calculation to support resolution of T5 is expected to be completed in the third quarter of fiscal year (FY) 2019.

A final peer review in December 2018 – addressing vessel mixing concerns associated with pulse-jet mixers (T4) – resulted in the need to develop additional documentation and is expected to be completed in the second quarter of FY 2019.

ORP is expected to submit a letter to the Defense Nuclear Facilities Safety Board in the third quarter of FY 2019 acknowledging resolution of technical issues T4 through T8. This letter will include acknowledging resolution of two technical issues (T6 and T7)⁷ not specifically identified in the Third Order Regarding Motions to Modify Consent Decrees.

Significant Accomplishments during the Prior Month:

- ORP continued to work with BNI on completing final resolution documentation for the remaining open technical issues related to pulse-jet mixer vessel mixing and control (T4) and erosion/corrosion in piping and vessels (T5).
- BNI continued to implement ongoing asset maintenance at the PT Facility to protect equipment and structures and ensure design documents are maintained.

Significant Planned Activities for the Next Month:

- BNI is expected to continue work on the calculation to validate the analytical method for requirements verification of installed low solids pulse-jet mixer vessels (i.e., T4 in relation to pulse-jet mixer vessel mixing and control).

⁶ At the outset of U.S. Department of Energy’s identification of the technical issues, the issues were grouped into eight issues. During the litigation, some issues were combined with others into five groups of issues. Consequently, the descriptions of the issues listed may be both different by number and somewhat different by description.

⁷ Technical issue T6 relates to design redundancy and in-service inspection. Technical issue T7 relates to black cell vessel/equipment structural integrity.

- BNI is expected to continue work on updating the calculation to support resolution of the erosion/corrosion technical issue (i.e., T5 in relation to erosion/corrosion in piping and ancillary vessels).
- ORP intends to submit resolution of technical issues T4 through T8 to the Defense Nuclear Facilities Safety Board in the third quarter of FY 2019. The resolution of the technical issues is likely to require significant design changes to the PT Facility.
- BNI will continue to implement ongoing asset maintenance at the PT Facility to protect equipment and structures and ensure design documents are maintained.

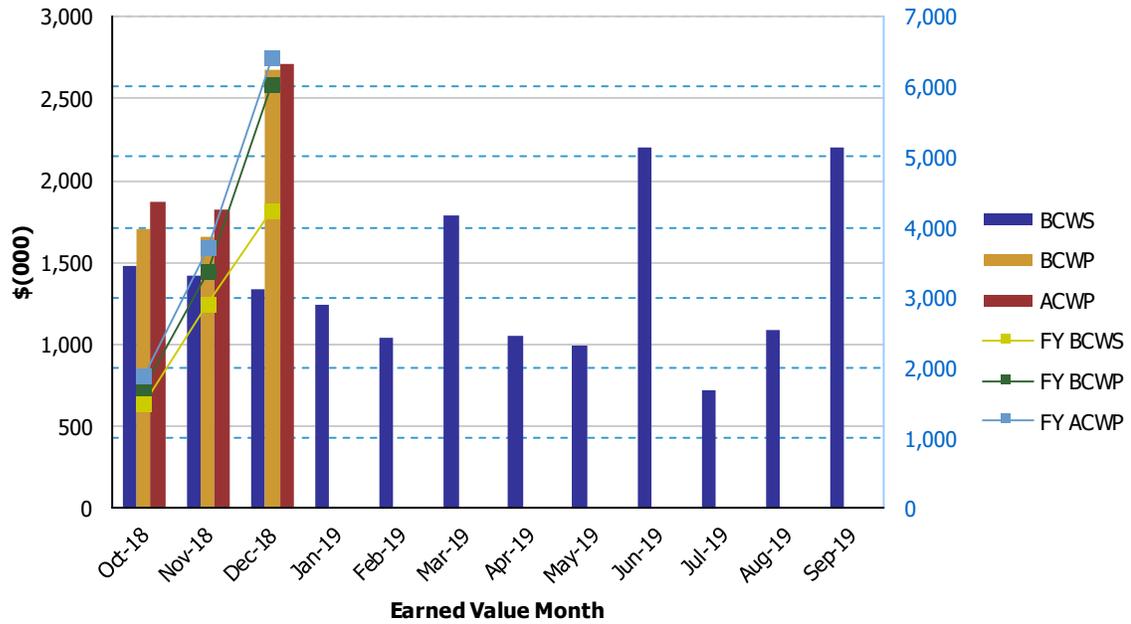
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2019 Earned Value Data

Data as of: December 2018

**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 2018	\$1,479	\$1,704	\$1,873	1.15	0.91	\$1,479	\$1,704	\$1,873	1.15	0.91
Nov 2018	\$1,425	\$1,654	\$1,817	1.16	0.91	\$2,904	\$3,358	\$3,689	1.16	0.91
Dec 2018	\$1,332	\$2,678	\$2,714	2.01	0.99	\$4,236	\$6,036	\$6,403	1.42	0.94
Jan 2019	\$1,236									
Feb 2019	\$1,038									
Mar 2019	\$1,792									
Apr 2019	\$1,049									
May 2019	\$987									
Jun 2019	\$2,198									
Jul 2019	\$721									
Aug 2019	\$1,083									
Sep 2019	\$2,206									
PTD	\$2,006,496	\$2,004,220	\$1,970,903	1.00	1.02					

- 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	Under Analysis ¹
D-00A-03	Start HLW Facility Cold Commissioning	06/30/2032	Under Analysis ¹
D-00A-04	HLW Facility Hot Commissioning Complete	12/31/2033	Under Analysis ¹

¹ The U.S. Army Corps of Engineers' final report on its parametric analysis of certain options and funding scenarios indicated there is a low probability that DOE can meet the milestones for constructing and commissioning the HLW and PT facilities in the Amended Consent Decree under the current funding profile. Based on the results of this analysis, DOE considers the milestones for the HLW and PT facilities as "Under Analysis." DOE also considers milestones A-1 and A-17 as being "Under Analysis" because the definition of Hot Start in Section IV-A-2 states: "Hot Start of Waste Treatment Plant" means the initiation of simultaneous operation of the Pretreatment (PT) Facility, High-Level Waste (HLW) Facility and Low-Activity Waste (LAW) Facility (including as needed the operations of the Analytical Laboratory (LAB) and the Balance of Facilities) treating Hanford tank wastes and producing a waste glass product."

DOE = U.S. Department of Energy.
 HLW = high-level waste.
 PT = pretreatment.
 WTP = Waste Treatment and Immobilization Plant.

The HLW Facility will receive the separated high-level waste concentrate from the PT Facility. This concentrate will 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 will 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 is being performed in accordance with the FY 2017 through FY 2021 Interim Work Plan, which initially was for work primarily associated with asset maintenance and key ongoing procurement activities. With the receipt of increased funding in FY 2018, additional engineering workscope was performed and is planned for FY 2019 in anticipation of receiving engineering resources from DFLAW/LBL activities.

The planned work on the HLW Facility is being impacted by the delay of engineering staff transitioning from higher priority DFLAW/LBL activities. Engineering staff will continue to transition to HLW Facility activities as they complete their DFLAW/LBL activities. The impact of this delay is expected to continue into the next reporting period.

Significant Accomplishments during the Prior Month:

- BNI continued to update the hydrogen mitigation strategy in support of the safety basis.
- BNI continued to focus on implementing asset maintenance at the HLW Facility to protect equipment and structures and ensure design documents are maintained.
- BNI continued fabrication of RLD-7 and RLD-8 vessels to support expected delivery in FY 2019. These vessels are to be installed in the wet process cell to allow concrete slab placement above the wet cell. This activity supports roof installation and building enclosure.

Significant Planned Activities in the Next Month:

- BNI continues to ramp-up engineering design activities on key mechanical and process systems for the HLW Facility. Engineering staff are being hired and transitioned from DFLAW/LBL modifications, as they become available.
- ORP expects to meet with Ecology on a regular basis to continue to discuss the tank waste treatment mission and high-level waste treatment approaches.
- ORP expects to brief Ecology in the second quarter of FY 2019 on the resolution of Ecology's holds on the radioactive liquid waste disposal system.
- BNI will continue to implement ongoing asset maintenance at the HLW Facility to protect equipment and structures and ensure design documents are maintained.

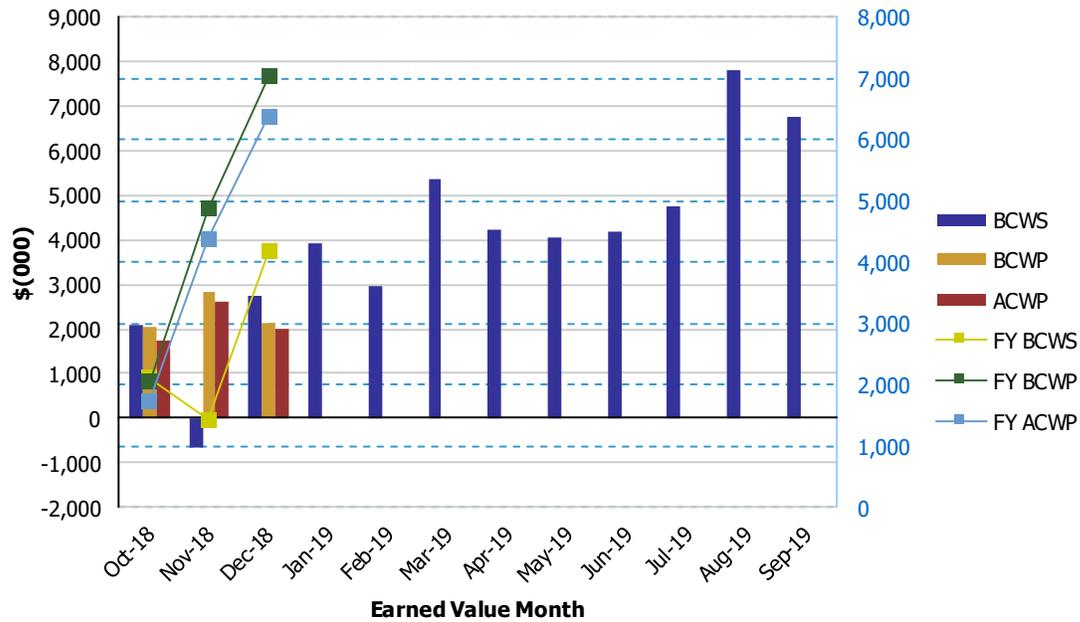
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2019 Earned Value Data

Data as of: December 2018

**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 2018	\$2,104	\$2,048	\$1,746	0.97	1.17	\$2,104	\$2,048	\$1,746	0.97	1.17
Nov 2018	(\$672)	\$2,827	\$2,633	-4.20	1.07	\$1,432	\$4,874	\$4,379	3.40	1.11
Dec 2018	\$2,735	\$2,148	\$1,996	0.79	1.08	\$4,167	\$7,023	\$6,375	1.69	1.10
Jan 2019	\$3,945									
Feb 2019	\$2,944									
Mar 2019	\$5,358									
Apr 2019	\$4,224									
May 2019	\$4,044									
Jun 2019	\$4,184									
Jul 2019	\$4,734									
Aug 2019	\$7,819									
Sep 2019	\$6,741									

PTD	\$1,371,627	\$1,366,743	\$1,338,076	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 Facility⁸

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Wahed Abdul

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

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 December 2018, the LAW Facility was 74 percent complete overall, engineering design was 93 percent complete, procurement was 90 percent complete, construction was 95 percent complete, and startup and commissioning was 18 percent complete.

Recent BNI efforts at the LAW Facility have focused on incorporating design changes, development of safety basis for the design changes, procurement, and construction of the remaining open items from the LAW Facility Documented Safety Analysis changes. Additionally, Construction is walking down completed systems with the Startup organization in support of turnover to Startup for testing and subsequent handover to the Plant Management organization. To date, more than half of the LAW Facility systems have been turned over from Construction to the Startup organization.

Significant Accomplishments during the Prior Month:

- ORP conducted the inaugural DFLAW Operations Leadership Workshop. More than 80 participants representing 14 different organizations, including federal, contractor, regulatory, and labor leadership attended. Discussions focused on the work each

⁸ Please note that 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.

organization will be leading at the Hanford Site to support the startup of DFLAW commissioning.

- BNI awarded a purchase order for the LAW Facility spare melter and received the following procurements from vendors:
 - Input switchgear cabinets for melter power supplies.
 - Refurbished LAW Facility melter No. 2 power supply.
 - Programmable protection system hardware.
- BNI Construction completed the 3-week walkdowns in support of turning the following systems over to the Startup organization:
 - LAW Facility primary offgas process system (LOP-L-02).
 - Radiological personnel monitoring system (RPJ-L-01).
 - Environmental monitoring system (EMJ-L-01).
- BNI's Startup organization accepted turnover of the following system from the Construction organization:
 - Breathing service air system (BSA-L-01).

Significant Planned Activities in the Next Month:

- BNI expects to continue receiving new procurements for the LAW Facility.⁹
- BNI Construction expects to complete the following 3-week walkdowns in support of turning the following systems over to the Startup organization:
 - LAW Facility concentrate receipt process systems 1 and 2 (LCP-L-01, LCP-L-02) (did not complete last month as expected).
- BNI Construction expects to continue completing additional 3-week walkdowns on various systems in support of turning those systems over to the Startup organization.¹⁰
- BNI's Startup organization expects to accept the following system turned over from the Construction organization (originally forecasted for last month):
 - Radioactive solid waste handling system (RWH-L-01).
- Additional system(s) expected to be turned over in the second quarter of FY 2019 include:
 - Process and mechanical handling closed circuit television system (PTJ-L-01).
 - LAW Facility container finishing handling systems 1 and 2 (LFH-L-01, LFH-L-02).

⁹ In future reports, procurements will be noted in the prior month section only, after delivery.

¹⁰ In future reports, new 3-week walkdowns will be noted in the prior month section only, after they occur.

- Turnover of the following systems are now forecast for the third quarter of FY 2019:
 - C2 ventilation system (C2V-L-01).
 - LAW Facility melter equipment support handling system (LSH-L-01).
 - LAW Facility container pour handling system (LPH-L-01).
 - Radioactive liquid waste handling system (RLD-L-01).
 - LAW Facility C3 ventilation system (CV3-L-01).
 - LAW Facility concentrate receipt process systems (LCP-L-01, LCP-L-02).
- BNI's Startup organization expects to continue accepting additional systems turned over from the Construction organization.¹¹
- The LAW Facility annex is expected to begin housing a 12-person crew for 24/7 operations in the second quarter of FY 2019.

¹¹ In future reports, turnover of new systems from Construction to Startup will be noted in the prior month section only, after they occur.

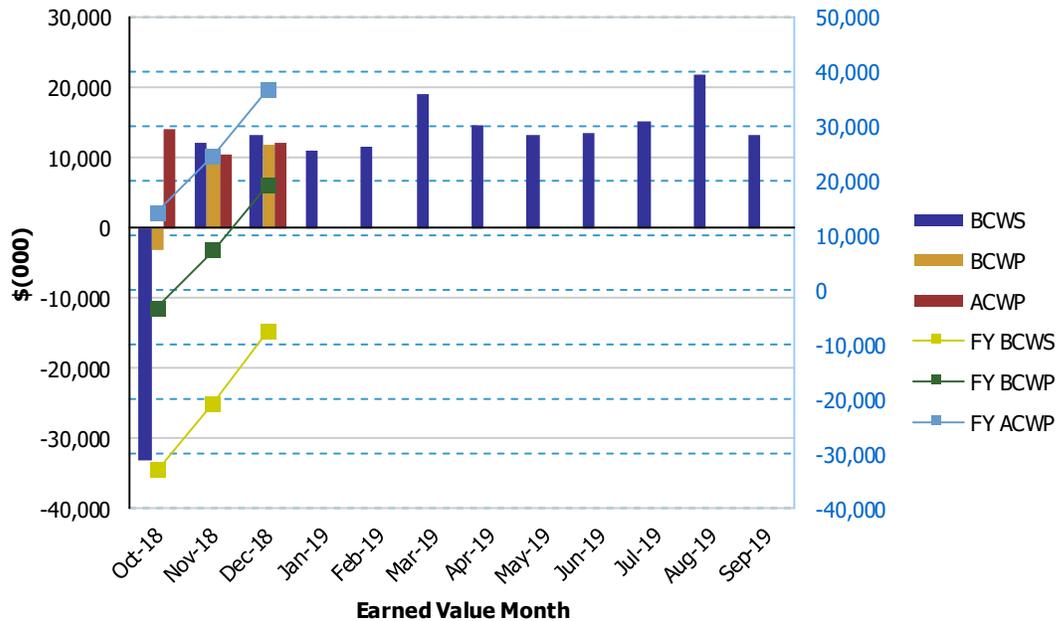
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2019 Earned Value Data

Data as of: December 2018

**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 2018	(33,062)	(3,263)	14,198	0.10	-0.23	(33,062)	(3,263)	14,198	0.10	-0.23
Nov 2018	\$12,266	\$10,516	\$10,433	0.86	1.01	(\$20,795)	\$7,253	\$24,631	-0.35	0.29
Dec 2018	13,341	11,936	12,139	0.89	0.98	(\$7,455)	\$19,189	\$36,770	-2.57	0.52
Jan 2019	11,147									
Feb 2019	11,626									
Mar 2019	19,056									
Apr 2019	14,652									
May 2019	13,236									
Jun 2019	13,446									
Jul 2019	15,224									
Aug 2019	21,840									
Sep 2019	13,319									

PTD	\$2,064,936	\$2,043,438	\$2,036,116	0.99	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 December 2018, BOF was 79 percent complete overall, engineering design was 94 percent complete, procurement was 96 percent complete, construction was 87 percent complete, and startup and commissioning was 55 percent complete. Design of EMF was 96 percent complete.

BNI engineering efforts are focused on confirming EMF design, supporting EMF procurement activities, and providing field support for BOF startup activities. Construction efforts are focused on the installation of EMF pipe racks; piping; and heating, ventilation, and air-conditioning ductwork. Startup testing continues for systems in the steam plant and chiller compressor plant.

Significant Accomplishments during the Prior Month:

- BNI completed installation of structural steel to support placement of an elevated slab that will act as a cover over the EMF low-point drain.
- BNI began installation of rebar for the EMF low-point drain elevated slab.
- BNI received structural steel to support construction of the EMF north/south service distribution rack.
- BNI construction continued installation of large- and small-bore piping in the EMF C5 evaporator cell and the C3 secondary reboiler and condenser area.
- BNI construction continued installation of heating, ventilation, and air-conditioning (HVAC) commodities and large- and small-bore piping at the EMF utilities building.
- BNI completed initial startup testing of the rotary screw air compressors in the chiller compressor plant.

Significant Planned Activities in the Next Month:

- BNI Construction expects to continue installation of structural steel and piping, along with HVAC ductwork at EMF.

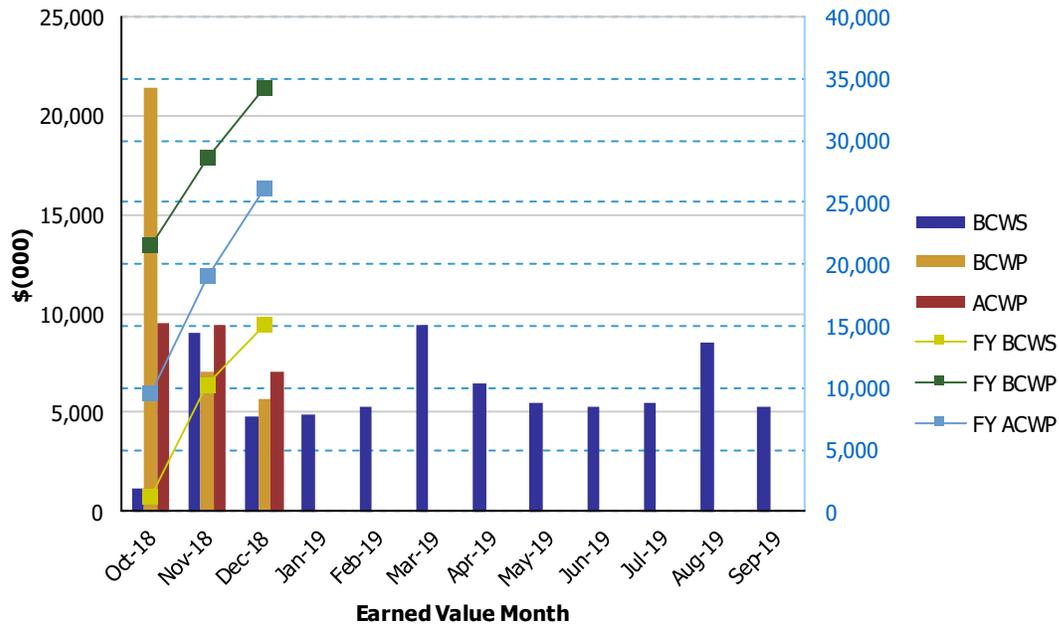
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2019 Earned Value Data

Data as of: December 2018

**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 2018	\$1,198	\$21,463	\$9,553	17.92	2.25	\$1,198	\$21,463	\$9,553	17.92	2.25
Nov 2018	\$9,066	\$7,075	\$9,440	0.78	0.75	\$10,263	\$28,537	\$18,993	2.78	1.50
Dec 2018	\$4,764	\$5,729	\$7,031	1.20	0.81	\$15,028	\$34,266	\$26,024	2.28	1.32
Jan 2019	\$4,908									
Feb 2019	\$5,270									
Mar 2019	\$9,467									
Apr 2019	\$6,493									
May 2019	\$5,532									
Jun 2019	\$5,301									
Jul 2019	\$5,502									
Aug 2019	\$8,490									
Sep 2019	\$5,313									

PTD	\$819,435	\$815,092	\$821,572	0.99	0.99
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
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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 December 2018, the LAB was 75 percent complete overall, engineering design was 91 percent complete, procurement was 98 percent complete, construction was 98 percent complete, and startup and commissioning was 30 percent complete.

Activities in the LAB are focused on system turnovers and startup testing of LAB systems. To date, BNI has completed the turnover for 34 of 35 systems to the Startup organization. Procedure and methods development continues at the offsite laboratory facility, and BNI is preparing to move a limited amount of analytical equipment onsite to the LAB.

Significant Accomplishments during the Prior Month:

- BNI's Startup organization completed handover of the LAB low-voltage electrical system and plant service air system to Plant Management for operations.
- BNI continued component and system startup testing.
- BNI continued offsite activities to progress LAB procedure development and analytical method validation.

Significant Planned Activities in the Next Month:

- BNI is expected to continue startup testing of LAB systems and handover of systems to operations when startup testing of systems is complete.

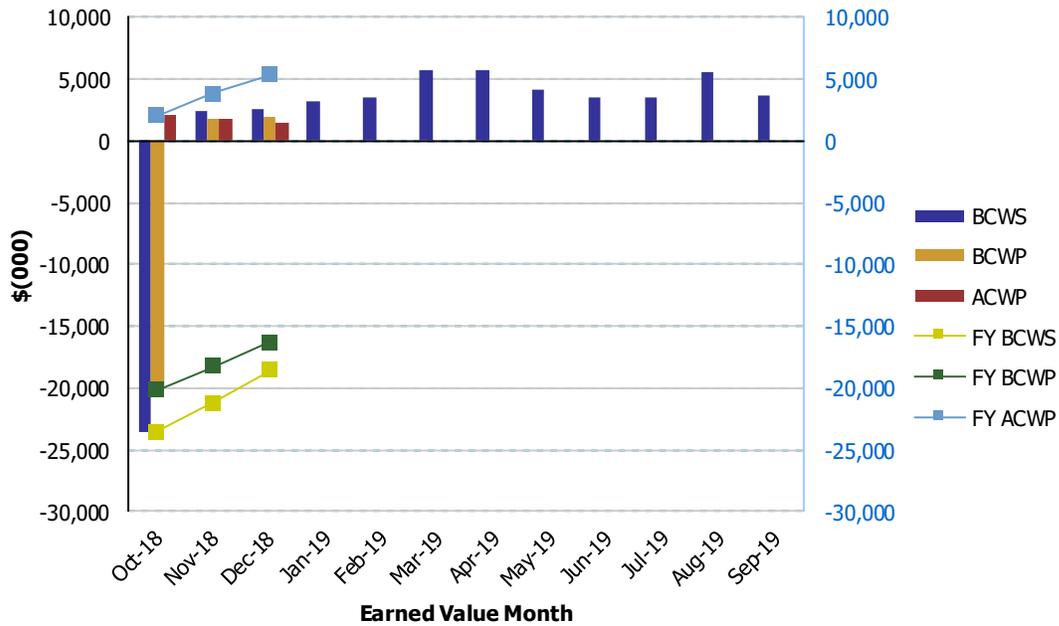
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2019 Earned Value Data

Data as of: December 2018

**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 2018	(\$23,562)	(\$20,137)	\$2,098	0.85	-9.60	(\$23,562)	(\$20,137)	\$2,098	0.85	-9.60
Nov 2018	\$2,402	\$1,870	\$1,755	0.78	1.07	(\$21,161)	(\$18,268)	\$3,853	0.86	-4.74
Dec 2018	\$2,601	\$2,008	\$1,516	0.77	1.32	(\$18,560)	(\$16,260)	\$5,369	0.88	-3.03
Jan 2019	\$3,281									
Feb 2019	\$3,542									
Mar 2019	\$5,681									
Apr 2019	\$5,720									
May 2019	\$4,162									
Jun 2019	\$3,512									
Jul 2019	\$3,464									
Aug 2019	\$5,579									
Sep 2019	\$3,665									

PTD	\$388,539	\$387,518	\$380,888	1.00	1.02
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
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- CPI = cost performance index.
- EVMS = earned value management system.
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Waste Treatment Plant Project Percent Complete Status (Table)

Waste Treatment Plant Project - (LBL/Project Services) Percent Complete Status																		
Through December 2018																		
(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	2,294.8	1,700.6	74%	587.0	547.3	93%	362.1	324.4	90%	751.8	716.0	95%	589.8	108.8	18%	4.0	4.0	100%
Balance of Facilities	794.4	626.1	79%	155.4	146.4	94%	66.3	63.5	96%	313.0	273.8	87%	259.2	141.9	55%	0.5	0.5	100%
Analytical Lab	477.2	357.4	75%	97.4	89.0	91%	60.6	59.3	98%	165.2	161.7	98%	153.6	46.8	30%	0.5	0.5	100%
Direct Feed LAW	428.2	255.8	60%	109.7	97.4	89%	69.1	46.3	67%	239.7	106.2	44%	0.0	0.0	0%	9.8	6.0	61%
LBL Facility Services	755.6	387.4	51%	0.0	0.0	0%	68.3	47.1	69%	106.5	100.8	95%	316.2	114.8	36%	264.6	124.7	47%
Total LBL	4,750.2	3,327.2	70%	949.4	880.1	93%	626.3	540.6	86%	1,576.3	1,358.6	86%	1,318.8	412.2	31%	279.4	135.7	49%
Project Services	935.9	621.9	66%	92.3	83.0	90%	65.6	49.2	75%	106.6	86.9	82%	1.7	1.7	100%	669.7	401.1	60%
Total Project Services	935.9	621.9	66%	92.3	83.0	90%	65.6	49.2	75%	106.6	86.9	82%	1.7	1.7	100%	669.7	401.1	60%
Total LBL, DFLAW & Project Services	5,686.1	3,949.1	69%	1,041.7	963.1	92%	691.9	589.8	85%	1,682.9	1,445.5	86%	1,320.5	413.9	31%	949.1	536.8	57%
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	14,408.9	9,914.3	69%	3,214.8	2,912.0	91%	2,257.4	1,714.6	76%	4,570.5	3,210.3	70%	2,079.0	557.1	27%	2,287.2	1,520.3	66%
<small>Source: Preliminary WTP Contract Performance Report - Format 1, Data for December 2018</small>																		
<small>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.</small>																		