Office of River Protection, State of Washington Department of Ecology
Tank Waste Retrieval Work Plan/Functions and Requirements Change Notice
(Per Hanford Federal Facility Agreement and Consent Order Section 9.3)

1. Document Title and Number: RPP-37739, Rev. 2, 241-C-111 Tank Waste Retrieval Work Plan		
2. Minor Field Change: (Section 12.4 HFFACO Action Plan) ☐ Yes: (WRPS Signature Only – Attach signed form to Primary Document for record purposes) x No: Proceed to Box 3	**3.** Document Issue Date: 9/30/13 **4.** Document Modification Notice Date: 1/5/16	**5.** Notice Number: 2016-02
6. Do proposed changes require schedule changes? (Would this extend completion of retrieval beyond 12 months from date of initiation?) Yes x No	**7.** Do proposed changes include specific additions, deletions, or modification to scope and/or requirements which affect the overall intent of the plan? ☐ Yes x No	**8.** (Check only one box) ☐ Significant Modification (Check if the answer to question in either section 6 or 7 is "yes". Significant modifications require revision of the primary document.) Minor Modification x Requires modification of the document x Can be accomplished with Modification Notice.

9. Description and Justification of Change:

Change Description:
Flexibility is provided to allow draining condensate to a retrieved tank (C-103). Only two tanks need to be retrieved in C-Farm limiting the options for exhauster condensate routing. The POR 008 exhauster that supports C-111 must pump condensate to C-111 rather than gravity draining to a tank in close proximity to the exhauster. The condensate pumping system has recently begun to experience system issues especially during prolonged freezing weather even though winterization systems (heat trace) were operating as designed. C-111 retrieval operations were recently stopped when the exhauster had to be shut down for troubleshooting and repair of the condensate pumping system. This TWRWP change allows for continued retrieval for up to seven days while condensate pumping system repairs are planned and scheduled.

Justifications:

- Section 3.1.1, page 3-2: describes the limited option to drain condensate to C-103 if the exhauster condensate pumping system fails.

See the attached redline strikeout pages.

10. Impact of Change:
Exhauster condensate may be added to tank 241-C-103. Condensate added to single shell tanks is expected to evaporate due to atmospheric tank breathing.

used as the primary sluicing liquid. The WRS will also have the capacity to use raw water for sluicing with minor modifications.

The new slurry pump will be installed in a riser located in the center pit. The slurry pump design for C-111 will allow the pump installation height to be adjusted to facilitate maximum waste removal. The C-111 pump will be installed using a crane so that the inlet will be just under the waste surface to start, as determined by the in-tank camera. Little or no water should be required for this pump installation. This same installation method would be used for replacement pumps. The C-111 pump will be mounted on a system that will allow the pump to be lowered to the bottom of the tank as waste retrieval progresses. Other designs or arrangements may be used to optimize the pump installation or operation.

Double-shell tank 241-AN-101 (AN-101) is planned to be used for both waste receipt and as the source tank for supernate recycle. Tank AN-101 was selected based on its location, available space, and existing equipment.

Camera(s) will be installed in tank C-111 to provide the capability to visually monitor and aid in control of waste retrieval operations. Instrumentation will also be provided to monitor process control data (e.g., pressures and flow rates). This information will be used to support material balance calculations. The existing ENRAF[1] level gauge in tank C-111 will be retracted during waste retrieval operations and will be used periodically to monitor waste levels. The AN-101 ENRAF will be used to monitor the waste level in that tank.

During waste retrieval operations, tank C-111 will be actively ventilated with POR 008 exhauster. The ventilation system will consist of skid-mounted high-efficiency particulate air filtered portable exhauster(s).

Condensate drainage from the exhauster~~(s)~~ will normally be routed back to ~~an SST~~C-111 using a seal pot pump. ~~being retrieved or an SST undergoing equipment installation in preparation for retrieval~~. The POR 008 exhauster condensate pumping system has occasionally failed when temperatures have been below freezing even though freeze protection systems have been installed. Planning and scheduling repairs to the condensate pumping system may take about seven days if there is no significant contamination to the system. In the event of a failure of the condensate pumping system routed to C-111, condensate may be routed to tank C-103 so that retrieval operations will not be disrupted. After seven days of routing condensate to C-103, the pumping system will be repaired or retrieval will be discontinued unless Ecology agrees that continuing retrieval is of more benefit and practicable than stopping retrieval. Any change to this drainage routing will be covered by a change to this TWRWP.

The configuration of tank C-111 includes no concrete pits and only a single central corrugated metal caisson. The drain in this caisson will be closed off and a sump pump used to pump leakage into the tank. The WRS for tank C-111 may require design and construction of riser extensions to support the installation of the sluice nozzles and a slurry pump. Table 3-1 provides the planned riser use for tank C-111. This riser use may change.

[1] ENRAF is a trademark of Enraf, Inc., Enraf B.V., Delft, The Netherlands.

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11. Additional Requirements and/or Provisions

Approvals

Washington River Protection Solutions, LLC ROLAND GREENWELL	Office of River Protection	State of Wash., Dept. of Ecology CDWalker for Jeff Lyon
☐ Provisional Approval[2] Date	☐ Provisional Approval[2] Date	☐ Provisional Approval[2] Date
☒ Final Approval Date 01/07/2016	☒ Final Approval Date 1/7/16	☒ Final Approval CDW for Jeff Lyon Date 1-7-16

Notes

1 - For use by Ecology to identify any additional information needed to make a decision regarding the request for modifications. In addition, Ecology will identify actions, if any, regarding the modification request that DOE may take pending Ecology's final decision

2 – Provisional approval allows DOE and it's contractors to take specific actions identified in section 11, prior to final approval of this modification.