THE HANFORD SITE

200-BP-5 and 200-PO-1 Groundwater Operable Units Proposed Plan for Interim Action

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Hanford Site Groundwater and Vadose Zone Contamination

The goals of managing Hanford Site groundwater and vadose zone contamination include:

- Protecting the Columbia River and groundwater from further contamination,
- Following our cleanup decision process, and
- Restoring groundwater to its greatest beneficial use

Hanford Site Groundwater and Vadose Zone Contamination (cont.)

DOE actions already taken to protect the Columbia River and groundwater include:

1. Cessation of discharge of unpermitted liquid effluents
2. Remediation of waste sites near the river to reduce potential future groundwater contamination
3. Containment of groundwater plumes and reduction in contaminant load through remedial actions such as pump-and-treat methodology

The 200 West pump and treat facility is located in the center of the Hanford Site.

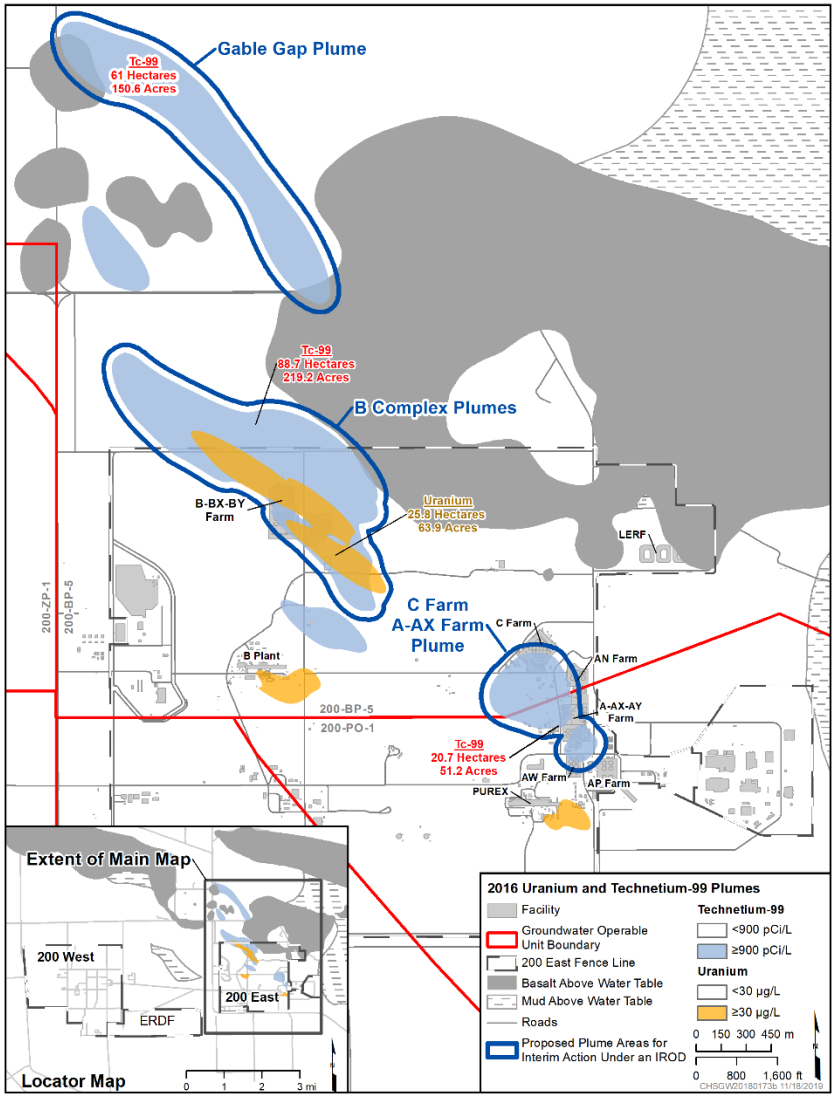
Rationale for Pursuing an Interim Record of Decision:

- Groundwater remedial investigations are complete but source investigations to address future effects are not
- Interim remedial action objectives:
  - Capture and remove target contaminants of concern (COC) from selected groundwater plumes, to prevent further migration
  - Reduce concentrations of target COCs to drinking water standards
  - Prevent exposure and protect human health until compliance with standards is attained
- Final ROD will be developed after overlying source areas are adequately characterized and evaluated

Interim Scope

Scope

- Target remediation areas and COCs
  - B Complex plume area: U and Tc-99
  - C Farm and A/AX Farm plume area: Tc-99
  - Gable Gap plume area: Tc-99
- Co-contaminants may be captured along with the COCs.
- Groundwater monitoring will continue in both operable units using the existing sampling and analysis plans



Remedial Alternatives

Alternative 1 – No Action

- Existing actions discontinued institutional controls (IC) suspended
- Any attenuation through natural processes

Alternative 2 – Groundwater pump-and-treat (P&T) methods at B Complex, C Farm and A/AX Farm, with ICs

- Up to 25 years P&T for U and 10 years of P&T for Tc-99 in B Complex
- Up to 10 years of P&T for Tc-99 in C Farm and A/AX Farm
- Extracted groundwater conveyed to the 200 West Pump and Treat Facility (200W P&T)
- Reinjection of treated water in the 200 West Area
- ICs maintained until preliminary remediation goals are achieved

Alternative 3 – Groundwater P&T at B Complex, C Farm, A/AX Farm, and Gable Gap, with ICs

Remedial Alternative Descriptions

Alternative 2 (Preferred Alternative)

Area	Description	Number of Wells/Flow Rate
B Complex	Extraction Well (Existing) Extraction Well (New) Total Flow –gallons per minute (gpm)	2 1 200
C Farm and A/AX Farm	Extraction Wells (New) Total Flow (gpm)	3 100
Total to 200W P&T	**(gpm)**	**300**

- Modifications to the 200 West Pump and Treat Facility: New (third) ion-exchange train
- Modifications to the B Complex transfer tank and piping from the extraction wells
- Installation of four extraction wells

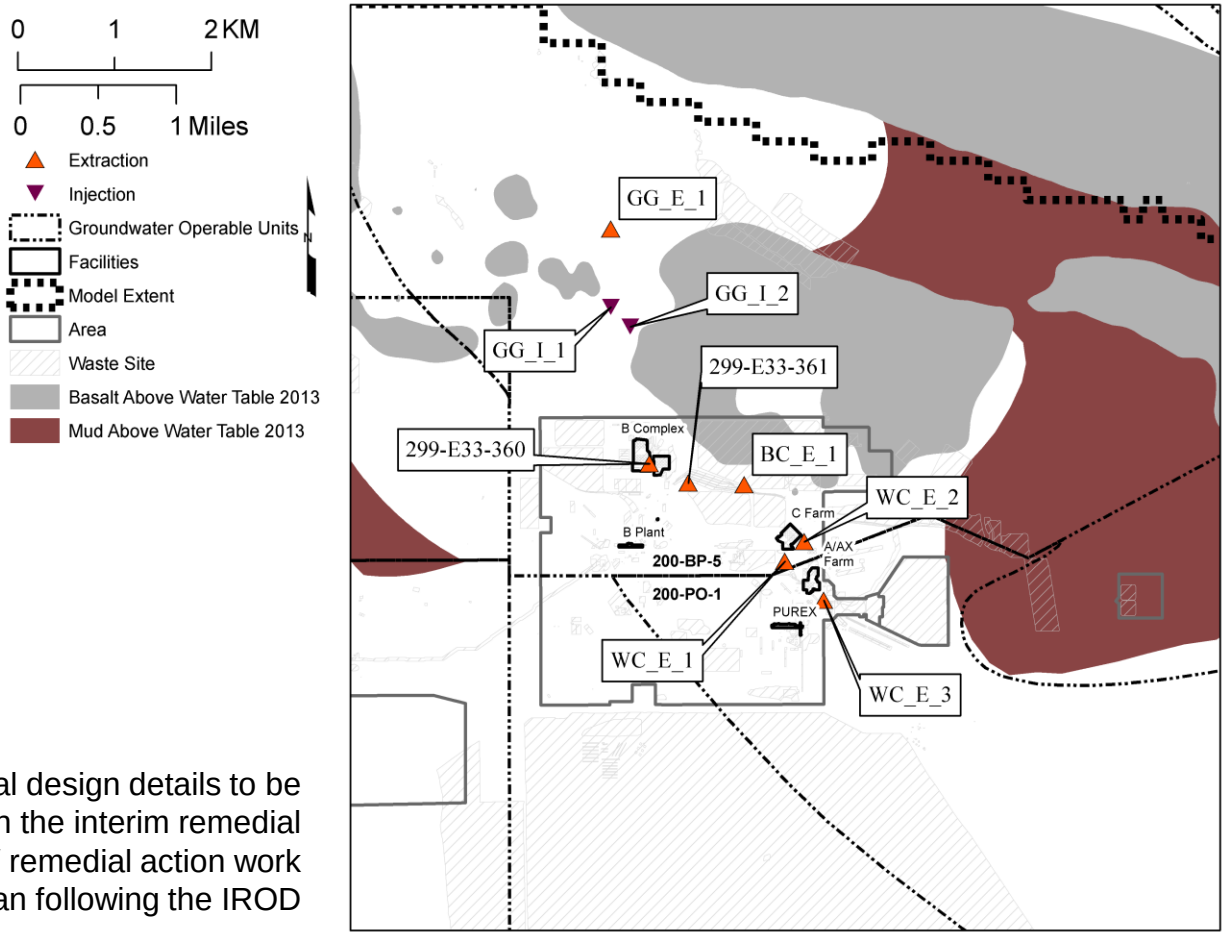
Remedial Alternative Descriptions

Alternative 3

Area	Description	Number of Wells/Flow Rate
B Complex, C Farm and A/AX Farm	See previous slide	See previous slide
Gable Gap	New Extraction Well New Injection Wells Total Flow (gpm)	1 2 100
Total Flow to 200W P&T	**(gpm)**	**400**

- Same modifications as Alternative 2, plus the following:
  - Installation of one extraction well and two injection wells in Gable Gap
  - New transfer station for treated water
  - New cross-site pipeline for treated water

Well Locations from Feasibility Study Modeling



Final design details to be identified in the interim remedial design / remedial action work plan following the IROD

200-BP-5 / 200-PO-1 IROD Plan

- Fiscal year 2020
  - Finalize and issue feasibility study and proposed plan
  - Public review of proposed plan and prepare IROD
  - Procure new ion-exchange treatment train
  - Initiate design for C Farm and A/AX Farm extraction system