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DISTRIBUTION
PROJECT MANAGERS' MEETING,
200 AREA GROUNDWATER SOURCE OPERABLE UNITS
November 18, 2010

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Meeting Minutes Transmittal/Approval
Project Managers' Meeting
200 Area Groundwater and Source Operable Units
November 18, 2010

APPROVAL: _____ DATE: 1/20/11
Al Farabee, 200 Area Project Manager, DOE/RL

APPROVAL: _____ DATE: 1/20/11
Briant Charboneau, 200 Area Unit Manager, DOE/RL

APPROVAL: _____ DATE: 1/5/11
Craig Cameron, 200 Area Project Manager, EPA

APPROVAL: _____ DATE: 1/5/11
Nina Menard, 200 Area Project Manager, Ecology

HFFACO Action Plan Section 4.1 requires signature of agreements and commitments made during the Project Manager Meeting. Approval of these minutes documents approval of agreements and commitments documented in Attachment 4 to these minutes. Approval does not apply to any other attachments, which are included in these minutes for informational purposes.

Minutes of the 200 Area Project Managers' Meeting of November 18, 2010 are attached. Minutes are comprised of the following.

Attachment 1	**Attendance Record**
Attachment 2	**Agreements and Issues List**
Attachment 3	**Action Item List**
Attachment 4	**Operable Units and Facilities Status**
Attachment 5	**TPA-CN-390, *Removal Action Work Plan for 48 Waste Sites in the 200-MG-1 Operable Unit,* DOE/RL-2009-53, Rev. 1**
Attachment 6	**Email from C. Cameron, EPA, regarding acceptance criteria for rubble at U Plant**

CHPRC-1003716
Attachment 1

200 Area Project Managers' Status Meeting
November 18, 2010

Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Wade Weakley	RL	PM	372-2889
Jennifer Ollero	MSA	—	313-0275
JACK CULMER	WDOH		946-0790
Wayne Toebe	CHPRC		372-2359
Greg Sutton	RL		373 7939
Arlene Tortoso	DOE-RL	PM	373-9631
Emy Laija	EPA		
SHELLEY CIMON	ODOE		(541) 963-0853
ELIS EBERLEIN	ECOLOGY		372-7906
Rod Lobos	EPA		376-3249
Nina Menard	Ecology		372-7941
KIM WELSH	ECY		372-7882
Jim Hansen	RL		376 4648
Briant Charboneau	RL	PM	373-6137

CHPRC-1003716
Attachment 1

200 Area Project Managers' Status Meeting
November 18, 2010

Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Doug Chapin	DOE-RL-0040	TPA	373-9396
Al Danielson	WDOH		727-0645
DL Foss	PRC		4382785
Craig Cameron	EPA		376-8665
Cathy Louie	DOE-RL		376-6834
Bryan Foley	DOE-RL		376-7087

200 Area Project Managers' Meeting
Agreements and Issues List
November 18, 2010

Agreement: TPA-CN-390; Change Notice adds 9 waste sites to 200-MG-1 RAWP, DOE/RL-2009-53 (Attachment 5)

Issue: None

Delegations for November 18, 2010 PMM meeting:

None

200 Area Project Managers' Meeting
November 18, 2010

OPEN ACTION ITEM TRACKING

Action #	Action/Subject	Assigned To	Owed To	Assigned Date	Original Due Date	Adjusted Due Date	Status
	No Open Action Items						

200 AREA PROJECT MANAGERS MEETING
PROJECT STATUS UPDATES

November 18, 2010
AGENDA

CENTRAL PLATEAU INNER AREA

200-WA-1
200-EA-1 CMS & FS / CAD & PP
200-PW-1/3/6
SVE
200-CW-5

Inner Area: Central Plateau Burial Grounds

200-SW-2

Inner Area: Central Plateau Canyons & Facilities

U Plant Canyon
B Plant Canyon/Waste Sites

Inner Area: Central Plateau Deep Vadose Zone

200-DV-1 RI/FS
200-DV-1 Uranium
200-DV-1 Tc-99 Desiccation Test

BOTH INNER & OUTER AREAS

200-IS-1CMS & FS / CAD & PP

RCRA Units

Hexone TSD Closure
Other TSD Closures

CENTRAL PLATEAU OUTER AREA

200-OA-1, 200-CW-1, and 200-CW-3 FS/PP
200-SW-1

Field Work

Rail Car Disposition
200-MG-1
200-CW-3
200-BC Control Area
West Lake
Multi-Increment Sampling

Risk Assessment

Central Plateau Ecological Risk

CENTRAL PLATEAU GROUNDWATER

200-ZP-1 Interim Action
200 West P&T
200-UP-1 RI/FS
S/SX Interim Action
200-BP-5 and 200-PO-1 FS
200-BP-5 TTP
Groundwater Plumes – Final Remedy
Well Decommissioning

FUTURE SCOPE (out-year TPA milestones)

PUREX Canyon/Waste Sites
REDOX Canyon/Waste Sites
224B Concentration Facility
224T Transuranic Storage and Assay Facility
EE/CA Report(s)

200 AREA PROJECT MANAGERS MEETING
PROJECT STATUS UPDATES

November 18, 2010

CENTRAL PLATEAU INNER AREA

200-WA-1 *EPA Lead* (RL- Arlene Tortoso, CHPRC – Phil Burke)

M-015-91A, Submit a RI/FS work plan for the 200-WA-1 OU (200 West Inner Area) to EPA, 12/31/2011

M-015-91B, Submit FS Report(s) and PP(s) for the 200-BC-1/200-WA-1 OU (200 West Inner Area) to EPA, 6/30/2013

- A series of Agency meetings were conducted to scope the 200-WA-1 RI/FS Work Plan and a draft work plan annotated outline was provided to the agencies on September 9, 2010. No Agency review comments have been received. RI/FS Work Plan development is proceeding in accordance with the Annotated Outline.
- Field preparation activities continued for the boreholes associated with the U-8 and U-12 cribs. Field preparation for the characterization boreholes and drive points associated with the Supplemental RI/FS Work Plan (DOE/RL-2007-02, Rev 0) continued. Borehole drilling is anticipated to start first quarter calendar 2011.
- A Decisional Draft document which details the analytical and numerical modeling schemes that derive soil cleanup levels protective of groundwater is under development and scheduled for completion January 2011.

Schedule Status: Planning for the Central Plateau decision documents to achieve the new TPA milestones is underway.

Regulator Comments: EPA signed the 216-U-8 & 216-U-12 Crib SAP on 11/18/2010.

200-EA-1 *Ecology Lead* (RL- Doug Hildebrand, CHPRC – Phil Burke)

M-015-92A, Submit a RFI/CMS & RI/FS work plan for the 200-EA-1 OU (200East Inner Area) to Ecology, 12/31/2012

200-EA-1 & **200-IS-1** *Ecology Lead* (RL- Doug Hildebrand, CHPRC – Phil Burke)

M-015-92B, Submit CMS & FS Report(s) & Proposed CA Decision(s)/PP(s) for the 200-EA-1 and 200- IS-1 OUs (Central Plateau 200 East Inner Area) to Ecology, 6/30/2014

- Evaluation of the pipelines continued using decision logic to determine the alignment between IS-1 and 200-WA-1. Results are of the evaluation are anticipated to be presented to the regulatory agencies in November.
- Activities related to the preparation of the Work Plan continued.

Schedule Status: Planning for the Central Plateau decision documents to achieve the milestones is underway.

Regulator Comments: Decision logic is not agreed to; however, it is still under discussion.

200-PW-1/3/6 *EPA Lead* (RL- Arlene Tortoso, CHPRC – Phil Burke)

- It is anticipated that the Draft C Feasibility study will be transmitted to EPA by the end of November 2010.
- Draft A of the Decisional Draft Proposed Plan for combined CW-5 and PW-1/3/6 is in preparation. It is anticipated the Draft A PP will be submitted to EPA at the end of November 2010.

Soil Vapor Extraction System (SVE): (RL- Arlene Tortoso, CHPRC –Mark Byrnes)

- The soil vapor extraction units (PW-1 and PW-2) continued to operate throughout the month of October. Additional wells around the 216-Z-9 crib were added to the vapor feed to support treatability testing.
- The treatability test was not able to start at the beginning of October as was planned due to a sampling stop work. The stop-work was not lifted until the end of October, at which time it was decided that cold weather would prevent adequate time to complete this project. It has been decided to reschedule the test for late summer of 2011.
- During enhanced extraction from wells at the 216-Z-9 crib, excessive buildup of moisture was reported at the GAC canisters. Also, GAC canister replacement was accelerated to keep up with the enhanced production. A large part of the problem encountered with the GAC was attributed to the cooler temperatures that promote moisture condensation in the canister.
- The soil vapor extraction system at 216-Z-1A was also operating at normal capacity throughout October until it was also shutdown on November 1, 2010.
- Routine monitoring of the active vapor extraction system for October is forth coming. No sampling occurred at the monitoring wells or at the passive vapor extraction wells during October.
- The soil vapor extraction operations at 200-PW-1 are now concluded for this year and the system has been put into standby until start of operations next year.

Schedule Status: on schedule

Regulator Comments: Based on the last issued schedule, EPA expected to receive the Draft C RI/FS and PP at the end of October, not in the November/December timeframe. EPA still expects DOE to meet the SCAP date to issue the ROD by September 2011.

200-CW-5 *EPA Lead* (RL- Greg Sinton, CHPRC – Phil Burke)

- EPA provided review comments on the Draft C feasibility on October 19, 2010. RL responded on November 16, 2010 with a plan to address the comments and update the document to provide a "Revision 0" document to EPA for approval in January, 2011. Comment resolution meetings have been held and redlines will be discussed with EPA to support preparation of the Rev 0 FS.
- Draft A of the combined CW-5 and PW-1/3/6 Decisional Draft Proposed Plan is in preparation. It is anticipated the Draft A PP will be submitted to EPA at the end of November 2010

Schedule Status: on schedule

Regulator Comments:

Inner Area: Central Plateau Burial Grounds

200-SW-2 *Ecology Lead* (RL – Doug Hildebrand, CHPRC – Phil Burke)

M-015-93A, Submit Revised RFI/CMS & RI/FS work plan for the 200-SW-2 OU to Ecology, 12/31/2011

M-015-93B, Submit RFI/CMS & RI/FS Report & Proposed CA Decision/PP for 200-SW-2 to Ecology, 12/31/2016

- DOE, Ecology and EPA held public meetings for the HAB Committee of the Whole and other public stakeholders on the solid waste burial grounds in Richland, Hood River, Portland and Seattle.

Schedule Status: Planning for the Central Plateau decision documents to achieve the milestones is underway.

Regulator Comments:

Inner Area: Central Plateau Canyons and Facilities

U Plant Canyon *EPA Lead* (RL – Wade Woolery, CHPRC – Dottie Norman)

M-016-200A, Complete U Plant Canyon (221-U) demolition in accordance with the RD/RAWP, 9/30/2017

M-016-200B, Complete U Plant Canyon (221-U) barrier construction in accordance with the RD/RAWP, 9/30/2021

- Transfer rubble from K-Basins/100K to U Plant to begin in late December 2010 or early January 2011.

Regulatory Documents *EPA Lead* (RL- Wade Woolery, CHPRC – Dottie Norman / Curt Walker)

- The decisional draft combined 30%/60% design package for grout was emailed to EPA for review November 1, 2010; EPA has requested a formal transmittal.
- The 90% decisional draft design package for grout is being drafted by CHPRC.
- The 90% decisional draft design package for TK-D-10 is being drafted by CHPRC.

Schedule Status: On schedule

Regulator Comments: Wade Woolery to provide U Plant rubble acceptance criteria to incorporate into minutes.

B Plant Canyon/Waste Sites *Ecology Lead* (RL – Naomi Bland, CHPRC – Mike Hickey)

M-85-10A, Submit RI/FS work plan for the 200-CB-1OU (B Plant Canyon/associated past practice waste sites) to Ecology, 12/31/2011

- Planning of the Central Plateau decision documents to align with the new TPA is ongoing.
- Work Plan Scoping discussions are planned for the month of November.

Schedule Status: As above.

Regulator Comments:

Inner Area: Central Plateau Deep Vadose Zone

200-DV-1 *Ecology Lead* (RL – John Morse, CHPRC – Marty Doornbos)

M-015-110A, Submit RFI/CMS & RI/FS work plan for the 200-DV-1 OU to Ecology. The work plan shall include technology screening that identifies technologies applicable for characterization, treatment, and monitoring of deep vadose zone contaminants, 9/30/2012

M-015-110B, Submit CMS & FS and PP/Proposed CA Decision for the 200-DV-1 OU to Ecology, 9/30/2015

- Completed PMB planning for the 200-DV-1 OU as part of the new TPA milestones.
- Began RFI/CMS & RI/FS Work Plan scoping with the Agencies on November 15, 2010 with the second session scheduled for December 20, 2010.
- Prepared the Deep Vadose Zone Information Sheet that describes the Deep Vadose Zone Project, including the interaction between the Applied Deep Vadose Zone Center and the 200-DV-1 OU.
- Provided the status of the Deep Vadose Zone Project to the RAP on November 17, 2010.

Schedule Status: Submittal of the RFI/CMS & RI/FS Work Plan is on schedule.

Regulator Comments: Further scoping meetings will be postponed until the scope of the Deep Vadose Zone has been clarified.

200-DV-1 *Ecology Lead* (RL – John Morse, CHPRC – Glen Chronister)

M-015-110C, Submit uranium treatment technology field test plan as an element of the RFI and RI for the 200-DV-1 OU to Ecology, 12/31/2010

Uranium Sequestration Pilot Test:

- The Uranium Sequestration Field Test Plan and Sample Analysis Plan is in final tech editing. Draft A submittal to Ecology is scheduled for December 16, 2010.

Schedule Status: On schedule

Regulator Comments:

200-BC-1 *EPA Lead* (RL – John Morse, CHPRC – Glen Chronister)

M-015-110D, Submit technetium-99 pilot scale treatability study test report(s) as an element of the RI for the 200-BC-1/200-WA-1 OUs to EPA6/30/2012

Desiccation Test

- The Desiccation Pilot Test was initiated on November 8, 2010 and will continue field work for the next six months. The data collection from this field work will be used to write the report that will be used to complete the objectives in milestone M-015-110D.

Schedule Status: On schedule

Regulator Comments: EPA would like a site visit/tour set up.

BOTH INNER & OUTER AREAS

200-IS-1 *Ecology Lead* (RL- Doug Hildebrand, CHPRC – Greg Berlin)

M-015-90, Submit Revised RFI/CMS & RI/FS work plan for 200-IS-1 to Ecology, 6/30/2011

- Continued scoping meetings with Ecology and EPA.

Schedule Status: Planning for the Central Plateau decision documents to achieve the milestones is underway.

Regulator Comments:

RCRA Units

Hexone TSD Closure *Ecology Lead* (RL- Kevin Leary, CHPRC – Greg Berlin)

M-037-01, Submit Revised Closure Plan to support TSD closure of the Hexone Storage and Treatment Facility (276-S-141/142) TSD unit, 12/30/2010

- The Hexone Storage and Treatment Facility Closure Plan and SAP was transmitted to Ecology for review on July 16, 2010. Comments were received from Ecology on October 15, 2010. Comment responses are currently under development.

Schedule Status: Ahead of schedule.

Regulator Comments:

Other TSD Closures

M-037-02, submit Revised Closure Plans to support TSD closure for five (5) TSD Units: 207-A South Retention Basin, 216-A-29 Ditch, 216-A-36B Crib, 216-A-37-1 Crib, and 216-B-63 Trench, 06/30/2014

M-037-03, Submit Revised Closure Plans to support TSD closure for two (2) TSD Units: 216-B-3 Main Pond system, and 216-S-10 Pond and Ditch, 4/30/2012

M-037-10, Complete Unit-Specific Closure Requirements According To The Closure Plan(s) For seven (7) TSD Units: 207-A South Retention Basin, 216-A-29 Ditch, 216-A36B Crib, 216-A-37-1 Crib, 216-B-63 Trench, Hexone Storage and Treatment Facility (276-S-141/142), and 241-CX Tank System (241-CX-70/71/72), 9/30/2020

M-037-11, Complete unit-specific closure requirements for two (2) TSD Units; 216-B-3 Main and Pond system and 216-S-10 Pond and Ditch, 9/30/2016

CENTRAL PLATEAU OUTER AREA

200-CW-1, 200-CW-3, 200-OA-1 *EPA Lead* (RL – Greg Sinton, CHPRC – Tina Crane)

M-015-38B, Submit a revised FS Report and revised PP(s) for 200-CW-1, 200-CW-3, and 200-OA-1 OUs for Waste Sites in the Outer Area of the Central Plateau to EPA, 4/30/2012

- EPA and RL meetings are continuing. Discussions have included status of the annotated outline for the RI/FS work plan, selection of COPCs for Outer Area waste sites, baseline risk assessment and evaluation of the data that has been accumulated for Outer Area waste sites. Recent focus has been on the development of the Outer Area SAP and Outer Area Ecological SAP.
- The West Lake Draft A SAP comment resolution meeting was held, and a redline/strikeout Rev. 0 of the West Lake SAP was delivered to Ecology on October 7, 2010. Ecology has concurred on the redline changes and the document is being prepared for signature.

Schedule Status: On Schedule

Regulator Comments:

200-SW-1 *Ecology Lead* (RL: Kevin Leary, CHPRC – Tina Crane)

- The NRDWL/SWL Closure/Post-closure Plan, Rev. 2 has been finalized and is expected to be transmitted prior to December 1, 2010. In addition, the Groundwater Monitoring Plan, Rev. 1 has also been finalized and will be transmitted along with the Closure Plan.
- The revised draft interim EA, originally issued in May will be re-issued to best address all public comments and obtain full SEPA support. Ecology has accepted RL's invitation to participate as a cooperating agency to support the draft interim EA revisions. The EA is tentatively planned to be re-issued to public no later than January
- The draft Memorandum of Understanding for the use of Borrow Area C is under revision based on initial tribal parties input. Further input from the tribes will be sought on whether to extend the MOA for all of Area C (> 2000 acres) or for just the NRDWL/SWL requirements (45 acres). Once the coverage is determined, the MOU will be revised and resubmitted to the SHPO and ACHP for final signatures.

Schedule Status: The schedule for the draft Interim EA re-issue has been drafted by the IPT. Completion of the initial Public Comment/Response matrix was completed by November 8, 2010. The review of revised EA is anticipated prior to December 7, 2010 and the EA is anticipated to be re-issued for Public Comment in January 2011. Finalizing the interim EA is critical to fulfilling the SEPA process requirements needed for Ecology's final approval of the Closure Plans and Groundwater Monitoring Plan.

Regulator Comments:

Field Work

Railcars Disposition *EPA Lead* (RL: Frank Roddy, CHPRC – Dottie Norman)

- CHPRC continued revision of the Action Memorandum addendum (Draft A) to the 212-N, -P, and –R Facilities EE/CA, based on comments received from EPA on November 08, 2010, and a review meeting held with RL and EPA on November 16, 2010.
- CHPRC continued preparation of the RAWP (Draft A), incorporating RL comments received on the RAWP (decisional draft).
- CHPRC continued preparation of the SAP (Draft A).
- CHPRC is finalizing a cost estimate differential to potentially display one locomotive and two well cars at B Reactor, and plans to provide the estimate to RL by November 19, 2010. On November 17, 2010, a meeting was held between RL and CHPRC to discuss planning and required documents to support transportation of the railcars to ERDF for disposal during a window beginning in early April 2011.

*The 16 railcars consist of two diesel locomotives, 11 fuel cask railcars, two tank railcars, and one flat railcar.

Schedule Status: On schedule

Regulator Comments: EPA requests that cost detail of removal actions be entered into the AR.

200-MG-1 *EPA/Ecology Lead* (RL: Frank Roddy, CHPRC – Curt Walker)

- TPA-CN-390, adding 9 waste sites to the RAWP, was approved by RL and Ecology in October.
- Field work continues on waste sites in the Outer Area (e.g., 216-S-19, 600-40, 600-220, 600-222, 600-226, 600-228, 600-275, 600-282, OCSA).
- On June 10, 2010, RL provided Ecology, predecisional drafts of the WIDS reclassification forms and RAR for the 200-E-110 and the UPR-600-21 Waste Sites. On July 27, 2010, informal comments were received from Ecology; further modification were made to RAR to include the actual remediation costs, as a result of August 05, 2010, RL/EPA/Ecology/CHPRC meeting that discussed general use of a WIDS Reclassification Form and a CERCLA NTCRA RAR; comment resolution continues and is anticipated to be complete by the end of the end of November 2010.
- Ecology continues review of the predecisional draft of the 600-262 Waste Site's WIDS Reclassification Form and RAR, which RL provided on October 11, 2010. Ecology has a letter in process and is expected before Thanksgiving.

Schedule Status: On schedule

Regulator Comments:

200-CW-3 *EPA Lead* (RL: Frank Roddy, CHPRC – Tina Crane)

- RTD excavation of the 216-N-1 Pond Waste Site and the filling of its excavation hole have been completed. Predecisional drafts of the waste site's WIDS reclassification form and the RSVP documentation were submitted for regulatory agency review on September 14, 2010. EPA comments have been received on these documents and comment resolution continues, anticipated to be complete in mid-to-late November 2010.
- RTD excavations of the 216-N-4 and 216-N-6 Pond Waste Sites have been completed, and preparations of predecisional drafts of the sites' WIDS reclassification forms and RSVP documentation have begun.

Schedule Status: On schedule

Regulator Comments:

200-BC Control Area (BCCA) *Ecology Lead* (RL – Doug Chapin, CHPRC – Bo Wier)

- BCCA North Zone A (~ 140 acres): The RTD cleanup of Zone A was continued. As of the week of November 15, 2010, ~267,000 tons over ~94 acres, cumulative, have been disposed of at ERDF. CHPRC also awarded a contract for the interim stabilization/revegetation of the remediated portion of Zone A. That work will be aligned with the Hanford site-wide re-vegetation guidance plan, pending its issuance.
- BCCA North Zone B (~3,660 acres): Approximately 10,000 tons (over ~8 acres, cumulative) of ~19,500 tons (~15 acres) of excavated hot spots (RTD) to date have been disposed of at ERDF. Approximately 1,683 acres, cumulative, have been radiologically downposted to date. CHPRC has suspended their work in Zone B due to the additional extent of hot spot contamination potentially to be cleaned up and funding issues to be resolved with RL. However, radiological down posting activities will continue until the exterior area of Zone B (outside the firebreak roads) has been properly posted to accurately reflect the extent of contamination.
- BCCA South Zone C: Radiological contamination has been characterized, an ecological survey has been completed, and a cultural survey has been completed to conclude preparation activities prior to the performing the potential cleanup of Zone C. Discussion between RL and CHPRC continues regarding a proposed regulatory approach for the potential cleanup of the zone that, along with any additional CERCLA and other regulatory documents, will be required. However, the approach has not been finalized and the timing to bring this forward to the regulators for approval has not been established.
- TPA Change Notice: Ecology continues to review a predecisional draft TPA-CN-386 provided by RL on October 22, 2010. The CN proposes addition of an appendix to the previously approved BCCA SAP to address post-removal action verification sampling for hot spot contamination areas in the BCCA North.

Schedule Status: On schedule

Regulator Comments:

Multi-Increment Sampling *Ecology Lead* (RL – Frank Roddy, CHPRC – Dave Chojnacki)

- MIS verification sampling is complete. All samples have been delivered to Ecology. Discussion of a second site (heterogeneous) is continuing.

Regulator Comments:

Risk Assessment

Central Plateau Ecological Risk Assessment *EPA/Ecology Lead* (RL – Jim Hansen, CHPRC – John Lowe)

- CP ERA Data Package Report is being cleared this week for delivery to DOE.
- Outer Area RI/FS team continuing to develop DQO/SAP for collection of ecological data to support development of PRGs for plants and soil invertebrates.
- Proposed responses to Agency comments have been incorporated into the biointrusion report (CHPRC-00651), and these will be discussed in the PRG/Point of Compliance work group (organized at the request of the SEC).
- Methods for development of ecological PRGs are being discussed as part of the PRG/Point of Compliance work group (organized at the request of the SEC).

Schedule Status:

Regulator Comments:

CENTRAL PLATEAU GROUNDWATER

200-ZP-1 Interim Action *EPA Lead* (RL – Arlene Tortoso, CHPRC – Mark Byrnes)

- 11 of 14 groundwater extraction wells are online pumping water at 430 gpm. One extraction well (#5) is being kept offline due to low flow. Extraction #4 is currently offline supporting pressure pulse testing. Extraction well #6 is offline due to some communication problems between the well and the control room. Work package is scheduled to be worked next week.
- Extraction wells 299-W11-45 and 299-W11-46 are online pumping water to ETF at a pumping rate of ~50 gpm.
- Treatability testing is ongoing for using activated carbon to remove Tc-99. Treatability testing is also ongoing for using various resins to remove Tc-99 and uranium. One other test plan is currently being prepared to support the testing of SMI for removing uranium, Tc-99 and other COCs. This test plan will be issued in November

- Drilling and sampling of 18 permanent extraction/injection wells is now complete. Extraction well EW-6 is now at a depth of 390 ft. Injection well IW-4 is now at a depth of 267 ft. No progress has been made on these wells since last month due to sampling freeze implemented due to safety concerns

Schedule Status: On schedule.

Regulator Comments:

200 West Area GW Treatment Facility *EPA Lead* (RL – Arlene Tortoso, CHPRC – Mark Byrnes)

M-016-124, Submit 200-ZP-1 Remedial Design Report, 8/31/2010

M-016-122, Begin Phase 1 Operation of 200W Pump and Treat System, 12/31/2011

- The week ending November 11, 2010, the project poured approximately 450 cubic yards bringing the project to date to approximately 4,500 cubic yards have been placed.
- Siding activities continue on the RAD building; Slab on grade activities continue for Bio building and pad.
- Construction activities continue for Extraction and Injection buildings, and the extraction transfer building at S/SX.
- Road Crossings:
  - Nine accelerated Phase II road crossings have completed HDPE bonding activities to start upon preparation completion of cold weather bonding.
- Railroad Crossings: Field activities tentatively scheduled for early December. Contract/procurement activities are underway.

Schedule Status: On schedule.

Regulator Comments:

200-UP-1 *EPA Lead* (RL – Naomi Bland, CHPRC – Curt Wittreich)

M-015-17A, Submit a 200-UP-1 RI and FS Report and PP to EPA, 9/30/2010

- The Draft A 200-UP-1 OU RI and FS Report and Proposed Plan was transmitted to the regulators on September 27, 2010 meeting TPA Milestone M-15-17A ahead of schedule. Ecology requested a 30 day extension to 11/29/2010. The PP review will follow the RI/FS review and be completed 30 days later.
- A regulator briefing on the FS and Proposed Plan was held on November 15, 2010.

Schedule Status: M-015-17A completed

Regulator Comments: EPA plans to have comments on the RI/FS by the end of November and comments on the PP by mid-December.

S/SX Tank Farm Interim Action *EPA/Ecology Lead* (RL – John Morse, CHPRC – Curt Wittreich)

M-016-120, GW Treatment System <50 gpm for Tc-99 Plume at S/SX Tank Farm, 12/31/2011

- The WMA S-SX extraction system design was completed and construction is underway. Continued placement of structural fill/foundation for the transfer building.

Schedule Status: Construction of the extraction system is currently ahead of schedule.

Regulator Comments:

200-BP-5, PO-1 *Ecology Lead* (RL – John Morse, CHPRC – Curt Wittreich)

M-015-21A, Submit a 200-BP-5 and 200-PO-1 OU FS Report and PP(s) to Ecology, 12/31/2012

- Preparing the 200-BP-5 RI Report.
- The Draft A 200-PO-1 RI Report was transmitted to the Regulators on June 10, 2010 for review. No comments have been received to date. A meeting has been scheduled for Ecology to discuss their general comments.

Schedule Status: 200-BP-5 and 200-PO-1 FS Report and PP are on schedule.

Regulator Comments

200-BP-5 *Ecology Lead* (RL – John Morse, CHPRC – Curt Wittreich)

M-015-82A, Submit Treatability Test Plan as Amendment of 200-BP-5 WP, 12/31/2010

M-015-82B, Initiate 200-BP-5 Aquifer Tests Within 6 months of TTP Approval, approval of TPP + 6 months

- EPA and Ecology comments on the Draft A 200-BP-5 Treatability Test Plan were received October 26, 2010. Met with EPA on October 19, 2010 to review draft

regulator comments. Comments are currently in the process of being dispositioned.

Schedule Status: M-015-82A completed.

Regulator Comments:

GW Plumes *EPA/Ecology Lead* (RL – John Morse)

M-016-119-T01, Remedy in Place to Contain GW Plumes in 200 NPL Area, 12/31/2020

- Draft Annual Report provided to EPA and Ecology.

Schedule Status: TBD

Regulator Comments:

Well Decommissioning *EPA/Ecology Lead* (RL – John Morse)

	October		Cumulative	
	Planned	**Completed**	**Planned**	**Completed**
Decommissioning Total	10	0	185	176

Schedule Status: Continuing with plans to decommission another 175 wells with ARRA funding.

Regulator Comments:

FUTURE SCOPE (out-year TPA milestones)

PUREX Canyon/Waste Sites *Ecology Lead* (RL – Frank Roddy, CHPRC – Mike Hickey)

M-85-20A, Submit RI/FS Work Plan for 200-CP-1 OU (PUREX Canyon/associated past practice waste sites) to Ecology, 9/30/2015

REDOX Canyon/waste sites *EPA Lead* (RL – Naomi Bland, CHPRC – Mike Hickey)

M-85-30A, Submit RI/FS Work Plan for 200-CR-1 OU (REDOX Canyon/associate past practice waste sites) to EPA, 12/31/2017

224B Concentration Facility *Ecology Lead* (RL- Kevin Leary, CHPRC – Curt Walker)

M-085-50, Submit revised removal action work plan for the 224B Concentration Facility in accordance with the Action Memorandum for the Non-Time Critical Removal Action for the 224-B Plutonium Concentration Facility (DOE/RL-2004-36). A change package with a completion milestone will accompany the submittal of the work plan. 12/31/2015

224T Transuranic Storage and Assay Facility *EPA Lead* (RL- Kevin Leary, CHPRC – Curt Walker)

M-085-51, Submit removal action work plan for the 224T Transuranic Storage and Assay Facility in accordance with the Action Memorandum for the Non-Time-Critical Removal Action for the 224-T Plutonium Concentration Facility (DOE/RL-2004-68). A change package with a completion milestone will accompany the submittal of the work plan. 12/31/2025

EE/CA Report(s) *EPA & Ecology Lead* (RL – Doug Chapin, CHPRC, Dottie Norman)

M-85-60, Complete EE/CA report(s) for all Tier 2 facilities listed in Appendix J, 3/31/2018

- 200 E Tier 2 Facilities EE/CA:
    - The EE/CA (Rev. 0) and its Fact Sheet were finalized the week of November 15, 2010, to support the EE/CA public comment period from November 22, 2010, through December 27, 2010.
- 200 W Tier 2 Facilities EE/CA: In planning; schedule details to follow.

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 390	TPA CHANGE NOTICE FORM	Date:
Document Number, Title, and Revision: DOE/RL-2009-53, Removal Action Work Plan for 48 Waste Sites in the 200-MG-1 Operable Unit, Revision 1		Date Document Last Issued: 10/7/10
Originator: O. Al Farabee		Phone: 376-8089

Description of Change:
This Change Notice adds the following waste sites to the removal action:

1. 200-E-126-PL-A (Radioactive Process Sewer)
2. 200-E-127-PL-A (Radioactive Process Sewer)
3. 200-W-147-PL-A (Radioactive Process Sewer)
4. 200-W-148-PL (Radioactive Process Sewer)
5. 216-U-7 (French Drain)
6. 600-49 (Foundation)
7. 600-227 (Foundation)
8. 600-282 (Dumping Area)
9. UPR-200-W-138 (Unplanned Release)

Affected pages from DOE/RL-2009-53, Revision 1, are attached to this change as follows:

- Pg. 1-1, Section 1.1: Changed number to reflect added waste sites.
- Pg. 1-2, Table 1-2: Added waste sites 200-E-126-PL-A, 200-E-127-PL-A, 200-W-147-PL-A, 200-W-148-PL, 216-U-7, 600-49, 600-227, 600-282, and UPR-200-W-138 to table.
- Pg. 1-7, Section 1.5: Added "pipelines" to waste site descriptions to reflect added waste sites.
- Pg. 4-7, Section 4.3.3: Changed number to reflect added waste sites.
- Pg. 4-9 through 4-15, Table 4-2: Added waste sites 200-E-126-PL-A, 200-E-127-PL-A, 200-W-147-PL-A, 200-W-148-PL, 216-U-7, 600-49, 600-227, 600-282, and UPR-200-W-138, and associated dose calculations to table.
- Pg. 4-16, 1st Paragraph: Changed number to reflect added waste sites.
- Pg. 6-2, Section 6: Change reference to reflect correct status.
- Pg. B-1, Section B2: Change reference to reflect correct status.
- Pg. B-4 through B-9, Table B-2: Added waste sites 200-E-126-PL-A, 200-E-127-PL-A, 200-W-147-PL-A, 200-W-148-PL, 216-U-7, 600-49, 600-227, 600-282, and UPR-200-W-138 to table.

O. Al Farabee (**DOE**) and N. Menard (**Lead Regulatory Agency**) agree that the proposed change modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records,* and not Chapter 12.0, *Changes to the Agreement.*

Justification and Impacts of Change:
DOE/RL-2009-53, Revision 1, Removal Action Work Plan for the 48 Waste Sites in the 200-MG-1 Operable Unit, (Section 2.4) contains the following provision for modification:

"Action memoranda may be modified to include the disposition of waste sites added to this removal action with subsequent modification to the work plan as appropriate. Modifications will be processed in accordance with Ecology, et al., 1989b, *Hanford Facility Agreement and Consent Order Action Plan* (Tri-Party Agreement Action Plan), Section 9.0, *Documentation and Records* through the use of the Tri-Party Agreement Change Notice(s)."

TPA-CN-350 documents approval of the addition of sites 200-E-126-PL-A, 200-E-127-PL-A, 200-W-147-PL-A, 200-W-148-PL, 216-U-7, 600-49, 600-227, 600-282, and UPR-200-W-138 to the DOE/RL-2009-86, Action Memorandum for the Non-Time-Critical Removal Action for 37 Waste Sites in the 200-MG-1 Operable Unit. TPA-CN-350 demonstrated that the sites added are comparable to sites evaluated in the EE/CA (DOE/RL-2008-44) in terms of the waste site type, physical or process attributes, and/or constituents of concern. The addition of sites 200-E-126-PL-A, 200-E-127-PL-A, 200-W-147-PL-A, 200-W-148-PL, 216-U-7, 600-49, 600-227, 600-282, and UPR-200-W-138 under this change notice, to the DOE/RL-2009-53, Revision 1, allows for the implementation of removal action alternatives at these sites in accordance with the Removal Action Work Plan.

Approvals: A. Farabee FMK DOE Project Manager	10/22/10 Date	[X] Approved [ ] Disapproved
N/A EPA Project Manager	Date	[ ] Approved [ ] Disapproved
N. Menard Ecology Project Manager	10/27/10 Date	[X] Approved [ ] Disapproved

TPA-CN-390, Attachment

Pages from DOE/RL-2009-53, Revision 1, Affected by TPA-CN-390

1 Introduction

This removal action work plan (RAWP) contains the pertinent information to support implementation of DOE/RL-2009-48, *Action Memorandum for Non-Time-Critical Removal Action for 11 Waste Sites in 200-MG-1 Operable Unit* and DOE/RL-2009-86, *Action Memorandum for Non-Time-Critical Removal Action for the 37 Waste Sites in the 200-MG-1 Operable Unit.* These action memoranda authorize performance of the selected alternatives for specified sites from DOE/RL-2008-44, *Engineering Evaluation/Cost Analysis for the 200-MG-1 Operable Unit Waste Sites* with public comments addressed.

As part of this removal action, the U.S. Department of Energy, Richland Operations Office (RL) has designated an on-scene coordinator pursuant to the requirements of 40 CFR 300.120, "On-Scene Coordinators and Remedial Project Managers: General Responsibilities," to ensure compliance with 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan" and Ecology et al., 1989a, *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement).

The removal actions for the 200-MG-1 Operable Unit (OU) will minimize the release or threat of release of hazardous substances that pose a risk to human health and the environment. Completion of the removal actions will protect personnel and provide an end state consistent with commitments of the Tri-Party Agreement.

1.1 Background

The Hanford Site encompasses approximately 1,517 km^2 (586 mi^2) in the Columbia River Basin of south-central Washington State. In 1989, the U.S. Environmental Protection Agency (EPA) placed the 100, 200, 300, and 1100 Areas of the Hanford Site on the National Priorities List (NPL) (40 CFR 300, Appendix B, National Priorities List). The 200 Area NPL site contains the 200 East and 200 West Areas (including waste management facilities and inactive irradiated fuel-reprocessing facilities) and the 200 North Area (formerly used for interim storage and staging of irradiated fuel). The 200 Area NPL also includes the 200-MG-1 OU and its assigned waste sites.

The 200-MG-1 OU consists of 194 waste sites in the 200 and 600 Areas. The waste sites include French drains, trenches, cribs, ditches, and retention basins with shallow contamination (generally less than 4.6 m [15 ft] deep). This OU also includes waste sites where chemical and radioactive contaminants were released during material transfers (i.e., unplanned release [UPR] sites). Some sites were produced by airborne dissemination of radioactive particles, or dispersal through plant or animal fecal matter. The 194 waste sites in the 200-MG-1 OU are being addressed in batches to support strategic goals and priorities. Revision 0 of this work plan addressed the first 11 waste sites as specified in DOE/RL-2009-48. The 37 waste sites authorized by DOE/RL-2009-86 are added to the scope of this work plan in Revision 1. Table 1-1 lists the original 11 waste sites and Figure 1-1 shows the locations of the waste sites and the preferred removal action for each site. Table 1-2 lists the added ~~37~~ 46 waste sites and Figure 1-2 shows the locations of the waste sites and the preferred removal action for each site.

Table 1-1. 11 Waste Sites Considered for Removal Actions Authorized Through DOE/RL-2009-48

Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type
200-E-101	Experiment/Test Site	600-40	Dumping Area	600-275	Foundations
200-E-110	Dumping Area	600-51	Dumping Area	Old Central Shop Area (OCSA)	Foundations
600-36	Burn Pit	600-218	Dumping Area	UPR-600-21	Unplanned Release
600-38	Dumping Area	600-262	Crib	--	--

Table 1-2. ~~37~~ 46 Waste Sites Considered for Removal Actions Authorized Through DOE/RL-2009-86

Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type
200 CP	Depression/Pit (nonspecific)	200-W-148-PL	Radioactive Process Sewer	600-71	Burn Pit
200-E PD	Ditch	216-B-3-1	Ditch	600-220	Dumping Area
200-E-1	Dumping Area	216-B-3-2	Ditch	600-222	Military Compound
200-E-2	Unplanned Release	216-B-3-3	Ditch	600-226	Dumping Area
200-E-7	Septic Tank	216-S-16D	Ditch	600-227	Foundation
200-E-46	Dumping Area	216-S-19	Pond	600-228	Dumping Area
200-E-109	Unplanned Release	216-S-26	Crib	600-281	Dumping Area
200-E-126-PL-A	Radioactive Process Sewer	216-U-7	French Drain	600-282	Dumping Area
200-E-127-PL-A	Radioactive Process Sewer	2607-E1	Septic Tank	CTFN 2703-E	Drain/Tile Field
200-W ADB	Coal Ash Pit	2607-W1	Septic Tank	UPR-200-E-11	Unplanned Release
200-W BP	Burn Pit	2607-WL	Septic Tank	UPR-200-W-58	Unplanned Release
200-W-14	Dumping Area	600 OCL	Sanitary Landfill	UPR-200-W-70	Unplanned Release
200-W-3	Dumping Area	600-37	French Drain	UPR-200-W-138	Unplanned Release
200-W-33	Dumping Area	600-49	Foundation	UPR-600-12	Unplanned Release
200-W-64	Foundation	600-65	Dumping Area	--	--
200-W-147-PL-A	Radioactive Process Sewer	600-66	Dumping Area	--	--

Note:
Sites were added to this removal action documented in TPA-CN-390

Table 1-2. ~~37~~ 46 Waste Sites Considered for Removal Actions Authorized Through DOE/RL-2009-86

Waste Site Code		Waste Site Type	Waste Site Code		Waste Site Type	Waste Site Code		Waste Site Type
ADB	=	Ash Disposal Basin	PD	=	Powerhouse Ditch			
BP	=	Burn Pit	OCL	=	Original Central Landfill			
CP	=	Construction Pit	UPR	=	Unplanned Release			
CTFN	=	Chemical Tile Field North						

lower than background levels or detection limits for waste sites. Attainment of RALs is intended to meet the first three removal action objectives and is expected to satisfy the remedial action objectives established in the final record of decision. More specifically, Removal Action Objective 3 will be achieved by preventing migration and/or leaching of radiological/nonradiological contamination to groundwater by reducing the soil concentration of contaminants to at or below RALs. The fourth removal action objective is met through cultural and ecological reviews performed before starting removal action activities.

Ecological screening values, based on WAC 173-340-900, "Tables," Table 749-3, are included in Appendix A and are for screening purposes only. Ecological screening values are not considered cleanup levels for this removal action. If cleanup verification sampling values exceed the ecological screening values provided, additional analysis will be conducted in the remedial investigation/feasibility study and ecological risk assessment for the Central Plateau in order to make final cleanup decisions.

The removal action closeout documentation will contain information on whether the RALs were attained for each waste site. This information will be used in support of the final record of decision to determine if any additional remediation is needed.

1.5 Facility and Hazard Description

The 200-MG-1 OU contains several different types of waste sites as noted in Appendix B. The majority of the waste sites are small. Generally, the very small area waste sites are associated with an engineered structure (e.g., burn pit, crib, storage yard) or a UPR of very limited extent. The engineered structures that have been in direct contact with process waste streams (i.e., cribs, foundations, pipelines) also may be contaminated, and include materials such as concrete and infiltration gravels.

Larger area sites include ditches, dumping areas, a pond, experiment/test site, and wind-disseminated or railroad-associated UPRs. Dumping areas include many different types of waste materials, such as scrap materials, construction debris (concrete, wood, and metal), used containers, and other miscellaneous items. The contamination at these sites generally is limited to the soil in immediate contact with the waste materials, with little or no migration into the underlying soil.

Sites identified as UPRs consist of areas where a release has been disseminated by wind or liquid was released onto the ground. In other cases, radioactive tumbleweeds and tumbleweed fragments or contaminated fecal material from animals was dispersed over a wide surface area. The majority of the UPR areas have been cleaned up by previous soil removal actions, and/or placement of a 0.3 to 0.6 m (1- to 2-ft) thick soil stabilization cover over the site. Soil stabilization covers are used to prevent or minimize the uncontrolled spread of contamination. Appendix B notes those waste sites with a soil stabilization cover. Twenty-seven of the 48 waste sites had undergone clean-up or stabilization to varying extents prior to implementing removal actions.

Existing site descriptions indicate that potential release locations and lateral extent are poorly defined or undefined at 200-MG-1 OU waste sites. Windblown contaminated materials such as particulates from surface leaks and spills were assumed to result in spotty contamination. The lateral extent of potential contamination for waste sites that received liquid discharges was determined by considering the portion of the site that was in direct contact with the liquid, yielding contaminated soil volume estimates for the cost analyses.

Table 1-3 shows preliminary contaminants of potential concern (COPCs) developed in the EE/CA (DOE/RL-2008-44).Appendix A contains the RALs for these contaminants as well as for contaminants identified in the action memoranda.

Table 4-1 provides estimated emissions and dose information related to the removal activities for the original 11 waste sites. Table 4-2 provides estimated emissions and dose information for the additional ~~37~~ 46 waste sites. The estimates shown for abated emissions very conservatively assume no abatement affect. Therefore, the abated and unabated estimates are listed as the same.

Table 4-2. Dose Calculations for the ~~37~~ 46 Waste Sites Authorized Through DOE/RL-2009-86

Isotope[a]	Assumed Survey Results (dpm)	Contam-inants in matrix (pCi/g)	Matrix Density (g/m^3)	Isotopic Source (pCi/m^3)	Contaminated Soil Excavation Volume (m^3/yr)[f]	Total (Ci/yr)[g]	WAC 246-247-030(21)(a) Release Factor	Release Rate (Ci/yr)	Dose Factor (mrem/Ci)	Unabated PTE (mrem/yr)	Abated PTE (mrem/yr)
200 East - Excavation of soil at high contamination detection level											
200 CP											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.2E+03	5.6E+00	1.0E-03	5.6E-03	2.7E-01	1.5E-03	1.5E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.2E+03	8.1E-01	1.0E-03	8.1E-04	1.5E+01	1.2E-02	1.2E-02
Total										**1.4E-02**	**1.4E-02**
200-E PD											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.0E+03	4.7E+00	1.0E-03	4.7E-03	2.7E-01	1.3E-03	1.3E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.0E+03	6.7E-01	1.0E-03	6.7E-04	1.5E+01	1.0E-02	1.0E-02
Total										**1.1E-02**	**1.1E-02**
200-E-1											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.4E+01	6.2E-02	1.0E-03	6.2E-05	2.7E-01	1.7E-05	1.7E-05
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.4E+01	9.0E-03	1.0E-03	9.0E-06	1.5E+01	1.3E-04	1.3E-04
Total										**1.5E-04**	**1.5E-04**
200-E-109											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	4.4E+02	2.0E+00	1.0E-03	2.0E-03	2.7E-01	5.3E-04	5.3E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	4.4E+02	2.8E-01	1.0E-03	2.8E-04	1.5E+01	4.3E-03	4.3E-03
Total										**4.8E-03**	**4.8E-03**
200-E-126-PL-A											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	3.1E+03	1.39E+01	1.0E-03	1.39E-02	2.7E-01	3.74E-03	3.74E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	3.1E+03	2.00E+00	1.0E-03	2.00E-03	1.5E+01	3.00E-02	3.00E-02
Total										**3.38E-02**	**3.38E-02**
200-E-127-PL-A											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.8E+04	7.87E+01	1.0E-03	7.87E-02	2.7E-01	2.12E-02	2.12E-02
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.8E+04	1.14E+01	1.0E-03	1.14E-02	1.5E+01	1.70E-01	1.70E-01
Total										**1.92E-01**	**1.92E-01**
200-E-2											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.0E+03	4.6E+00	1.0E-03	4.6E-03	2.7E-01	1.2E-03	1.2E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.0E+03	6.7E-01	1.0E-03	6.7E-04	1.5E+01	1.0E-02	1.0E-02
Total										**1.1E-02**	**1.1E-02**

Table 4-2. Dose Calculations for the ~~37~~ 46 Waste Sites Authorized Through DOE/RL-2009-86

Isotope[a]	Assumed Survey Results (dpm)	Contam-inants in matrix (pCi/g)	Matrix Density (g/m³)	Isotopic Source (pCi/m³)	Contaminated Soil Excavation Volume (m³/yr)[f]	Total (Ci/yr)[g]	WAC 246-247-030(21)(a) Release Factor	Release Rate (Ci/yr)	Dose Factor (mrem/Ci)	Unabated PTE (mrem/yr)	Abated PTE (mrem/yr)
200-E-46											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.2E+03	5.6E+00	1.0E-03	5.6E-03	2.7E-01	1.5E-03	1.5E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.2E+03	8.1E-01	1.0E-03	8.1E-04	1.5E+01	1.2E-02	1.2E-02
Total										**1.4E-02**	**1.4E-02**
200-E-7											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	3.1E+01	1.4E-01	1.0E-03	1.4E-04	2.7E-01	3.7E-05	3.7E-05
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	3.1E+01	2.0E-02	1.0E-03	2.0E-05	1.5E+01	3.0E-04	3.0E-04
Total										**3.4E-04**	**3.4E-04**
216-B-3-1											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.2E+03	9.8E+00	1.0E-03	9.8E-03	2.7E-01	2.6E-03	2.6E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.2E+03	1.4E+00	1.0E-03	1.4E-03	1.5E+01	2.1E-02	2.1E-02
Total										**2.4E-02**	**2.4E-02**
216-B-3-2											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.9E+03	1.3E+01	1.0E-03	1.3E-02	2.7E-01	3.6E-03	3.6E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.9E+03	1.9E+00	1.0E-03	1.9E-03	1.5E+01	2.9E-02	2.9E-02
Total										**3.2E-02**	**3.2E-02**
216-B-3-3											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.3E+03	5.7E+00	1.0E-03	5.7E-03	2.7E-01	1.5E-03	1.5E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.3E+03	8.2E-01	1.0E-03	8.2E-04	1.5E+01	1.2E-02	1.2E-02
Total										**1.4E-02**	**1.4E-02**
2607-E1											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.6E+03	1.2E+01	1.0E-03	1.2E-02	2.7E-01	3.1E-03	3.1E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.6E+03	1.7E+00	1.0E-03	1.7E-03	1.5E+01	2.5E-02	2.5E-02
Total										**2.8E-02**	**2.8E-02**
600 OCL											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	5.1E+03	2.3E+01	1.0E-03	2.3E-02	2.7E-01	6.2E-03	6.2E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	5.1E+03	3.3E+00	1.0E-03	3.3E-03	1.5E+01	5.0E-02	5.0E-02
Total										**5.6E-02**	**5.6E-02**

Table 4-2. Dose Calculations for the ~~37~~ 46 Waste Sites Authorized Through DOE/RL-2009-86

Isotope[a]	Assumed Survey Results (dpm)	Contam-inants in matrix (pCi/g)	Matrix Density (g/m^3)	Isotopic Source (pCi/m^3)	Contaminated Soil Excavation Volume (m^3/yr)[f]	Total (Ci/yr)[g]	WAC 246-247-030(21)(a) Release Factor	Release Rate (Ci/yr)	Dose Factor (mrem/Ci)	Unabated PTE (mrem/yr)	Abated PTE (mrem/yr)
600-49											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.6E+03	8.60E+01	1.0E-03	8.60E-02	2.7E-01	2.32E-02	2.32E-02
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.6E+03	1.24E+01	1.0E-03	1.24E-02	1.5E+01	1.86E-01	1.86E-01
Total										**2.09E-01**	**2.09E-01**
600-226											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.3E+00	1.0E-02	1.0E-03	1.0E-05	2.7E-01	2.8E-06	2.8E-06
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.3E+00	1.5E-03	1.0E-03	1.5E-06	1.5E+01	2.2E-05	2.2E-05
Total										**2.5E-05**	**2.5E-05**
600-227											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.6E+02	8.82E+00	1.0E-03	8.82E-03	2.7E-01	2.38E-03	2.38E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.6E+02	1.27E+00	1.0E-03	1.27E-03	1.5E+01	1.91E-02	1.91E-02
Total										**2.15E-02**	**2.15E-02**
600-228											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	9.1E+01	4.1E-01	1.0E-03	4.1E-04	2.7E-01	1.1E-04	1.1E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	9.1E+01	5.9E-02	1.0E-03	5.9E-05	1.5E+01	8.9E-04	8.9E-04
Total										**1.0E-03**	**1.0E-03**
600-281											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.8E+02	8.1E-01	1.0E-03	8.1E-04	2.7E-01	2.2E-04	2.2E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.8E+02	1.2E-01	1.0E-03	1.2E-04	1.5E+01	1.8E-03	1.8E-03
Total										**2.0E-03**	**2.0E-03**
600-282											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	6.3E+02	2.13E+01	1.0E-03	2.13E-02	2.7E-01	5.76E-03	5.76E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	6.3E+02	3.08E+00	1.0E-03	3.08E-03	1.5E+01	4.63E-02	4.63E-02
Total										**5.20E-02**	**5.20E-02**
600-65											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	8.4E+00	3.8E-02	1.0E-03	3.8E-05	2.7E-01	1.0E-05	1.0E-05
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	8.4E+00	5.5E-03	1.0E-03	5.5E-06	1.5E+01	8.2E-05	8.2E-05
Total										**9.2E-05**	**9.2E-05**

Table 4-2. Dose Calculations for the ~~37~~ 46 Waste Sites Authorized Through DOE/RL-2009-86

Isotope[a]	Assumed Survey Results (dpm)	Contam-inants in matrix (pCi/g)	Matrix Density (g/m^3)	Isotopic Source (pCi/m^3)	Contaminated Soil Excavation Volume (m^3/yr)[f]	Total (Ci/yr)[g]	WAC 246-247-030(21)(a) Release Factor	Release Rate (Ci/yr)	Dose Factor (mrem/Ci)	Unabated PTE (mrem/yr)	Abated PTE (mrem/yr)
600-66											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.3E+00	1.0E-02	1.0E-03	1.0E-05	2.7E-01	2.8E-06	2.8E-06
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.3E+00	1.5E-03	1.0E-03	1.5E-06	1.5E+01	2.2E-05	2.2E-05
Total										**2.5E-05**	**2.5E-05**
600-71											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.3E+02	1.0E+00	1.0E-03	1.0E-03	2.7E-01	2.8E-04	2.8E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.3E+02	1.5E-01	1.0E-03	1.5E-04	1.5E+01	2.2E-03	2.2E-03
Total										**2.5E-03**	**2.5E-03**
CTFN 2703-E											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	6.4E+02	2.9E+00	1.0E-03	2.9E-03	2.7E-01	7.8E-04	7.8E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	6.4E+02	4.2E-01	1.0E-03	4.2E-04	1.5E+01	6.3E-03	6.3E-03
Total										**7.0E-03**	**7.0E-03**
UPR-200-E-11											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.0E+03	4.7E+00	1.0E-03	4.7E-03	2.7E-01	1.3E-03	1.3E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.0E+03	6.8E-01	1.0E-03	6.8E-04	1.5E+01	1.0E-02	1.0E-02
Total										**1.1E-02**	**1.1E-02**
UPR-600-12											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.2E+02	5.5E-01	1.0E-03	5.5E-04	2.7E-01	1.5E-04	1.5E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.2E+02	7.9E-02	1.0E-03	7.9E-05	1.5E+01	1.2E-03	1.2E-03
Total										**1.3E-03**	**1.3E-03**
200 West - Excavation of soil at high contamination detection level											
200-W ADB											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.2E+03	5.6E+00	1.0E-03	5.6E-03	3.1E-01	1.7E-03	1.7E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.2E+03	8.1E-01	1.0E-03	8.1E-04	1.7E+01	1.4E-02	1.4E-02
Total										**1.6E-02**	**1.6E-02**
200-W BP											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.1E+03	5.1E+00	1.0E-03	5.1E-03	3.1E-01	1.6E-03	1.6E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.1E+03	7.4E-01	1.0E-03	7.4E-04	1.7E+01	1.3E-02	1.3E-02
Total										**1.4E-02**	**1.4E-02**

Table 4-2. Dose Calculations for the ~~37~~ 46 Waste Sites Authorized Through DOE/RL-2009-86

Isotope[a]	Assumed Survey Results (dpm)	Contam-inants in matrix (pCi/g)	Matrix Density (g/m^3)	Isotopic Source (pCi/m^3)	Contaminated Soil Excavation Volume (m^3/yr)[f]	Total (Ci/yr)[g]	WAC 246-247-030(21)(a) Release Factor	Release Rate (Ci/yr)	Dose Factor (mrem/Ci)	Unabated PTE (mrem/yr)	Abated PTE (mrem/yr)
200-W-14											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.7E+02	1.2E+00	1.0E-03	1.2E-03	3.1E-01	3.8E-04	3.8E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.7E+02	1.8E-01	1.0E-03	1.8E-04	1.7E+01	3.0E-03	3.0E-03
Total										**3.4E-03**	**3.4E-03**
200-W-3											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.3E+03	5.7E+00	1.0E-03	5.7E-03	3.1E-01	1.8E-03	1.8E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.3E+03	8.3E-01	1.0E-03	8.3E-04	1.7E+01	1.4E-02	1.4E-02
Total										**1.6E-02**	**1.6E-02**
200-W-33											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	4.8E+03	2.2E+01	1.0E-03	2.2E-02	3.1E-01	6.7E-03	6.7E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	4.8E+03	3.1E+00	1.0E-03	3.1E-03	1.7E+01	5.3E-02	5.3E-02
Total										**6.0E-02**	**6.0E-02**
200-W-64											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.0E+03	4.6E+00	1.0E-03	4.6E-03	3.1E-01	1.4E-03	1.4E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.0E+03	6.6E-01	1.0E-03	6.6E-04	1.7E+01	1.1E-02	1.1E-02
Total										**1.3E-02**	**1.3E-02**
200-W-147-PL-A											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	5.8E+02	2.61E+00	1.0E-03	2.61E-03	3.1E-01	8.09E-04	8.09E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	5.8E+02	3.77E-01	1.0E-03	3.77E-04	1.7E+01	6.41E-03	6.41E-03
Total										**7.22E-03**	**7.22E-03**
200-W-148-PL											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	6.0E+00	2.57E-02	1.0E-03	2.57E-05	3.1E-01	7.95E-06	7.95E-06
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	6.0E+00	3.71E-03	1.0E-03	3.71E-06	1.7E+01	6.30E-05	6.30E-05
Total										**7.09E-05**	**7.09E-05**
216-S-19											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.3E+04	5.8E+01	1.0E-03	5.8E-02	3.1E-01	1.8E-02	1.8E-02
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.3E+04	8.4E+00	1.0E-03	8.4E-03	1.7E+01	1.4E-01	1.4E-01
Total										**1.6E-01**	**1.6E-01**

Table 4-2. Dose Calculations for the ~~37~~ 46 Waste Sites Authorized Through DOE/RL-2009-86

Isotope[a]	Assumed Survey Results (dpm)	Contam-inants in matrix (pCi/g)	Matrix Density (g/m^3)	Isotopic Source (pCi/m^3)	Contaminated Soil Excavation Volume (m^3/yr)[f]	Total (Ci/yr)[g]	WAC 246-247-030(21)(a) Release Factor	Release Rate (Ci/yr)	Dose Factor (mrem/Ci)	Unabated PTE (mrem/yr)	Abated PTE (mrem/yr)
216-S-16D											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	5.8E+02	2.6E+00	1.0E-03	2.6E-03	3.1E-01	8.1E-04	8.1E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	5.8E+02	3.8E-01	1.0E-03	3.8E-04	1.7E+01	6.4E-03	6.4E-03
Total										**7.2E-03**	**7.2E-03**
216-S-26											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	9.0E+02	4.1E+00	1.0E-03	4.1E-03	3.1E-01	1.3E-03	1.3E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	9.0E+02	5.9E-01	1.0E-03	5.9E-04	1.7E+01	1.0E-02	1.0E-02
Total										**1.1E-02**	**1.1E-02**
216-U-7											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	3.5E+00	1.35E-02	1.0E-03	1.35E-05	3.1E-01	4.20E-06	4.20E-06
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	3.5E+00	1.96E-03	1.0E-03	1.96E-06	1.7E+01	3.33E-05	3.33E-05
Total										**3.75E-05**	**3.75E-05**
2607-W1											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	1.3E+04	5.8E+01	1.0E-03	5.8E-02	3.1E-01	1.8E-02	1.8E-02
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	1.3E+04	8.3E+00	1.0E-03	8.3E-03	1.7E+01	1.4E-01	1.4E-01
Total										**1.6E-01**	**1.6E-01**
2607-WL											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.2E+03	1.0E+01	1.0E-03	1.0E-02	3.1E-01	3.1E-03	3.1E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.2E+03	1.5E+00	1.0E-03	1.5E-03	1.7E+01	2.5E-02	2.5E-02
Total										**2.8E-02**	**2.8E-02**
600-220											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.7E+03	1.2E+01	1.0E-03	1.2E-02	3.1E-01	3.8E-03	3.8E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.7E+03	1.8E+00	1.0E-03	1.8E-03	1.7E+01	3.0E-02	3.0E-02
Total										**3.4E-02**	**3.4E-02**
600-222											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.5E+03	1.1E+01	1.0E-03	1.1E-02	3.1E-01	3.6E-03	3.6E-03
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.5E+03	1.7E+00	1.0E-03	1.7E-03	1.7E+01	2.8E-02	2.8E-02
Total										**3.2E-02**	**3.2E-02**

Table 4-2. Dose Calculations for the ~~37~~ 46 Waste Sites Authorized Through DOE/RL-2009-86

Isotope[a]	Assumed Survey Results (dpm)	Contam-inants in matrix (pCi/g)	Matrix Density (g/m^3)	Isotopic Source (pCi/m^3)	Contaminated Soil Excavation Volume (m^3/yr)[f]	Total (Ci/yr)[g]	WAC 246-247-030(21)(a) Release Factor	Release Rate (Ci/yr)	Dose Factor (mrem/Ci)	Unabated PTE (mrem/yr)	Abated PTE (mrem/yr)
600-37											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	2.7E+01	1.2E-01	1.0E-03	1.2E-04	3.1E-01	3.7E-05	3.7E-05
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	2.7E+01	1.7E-02	1.0E-03	1.7E-05	1.7E+01	3.0E-04	3.0E-04
Total										**3.3E-04**	**3.3E-04**
UPR-200-W-58											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	4.0E+02	1.8E+00	1.0E-03	1.8E-03	3.1E-01	5.6E-04	5.6E-04
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	4.0E+02	2.6E-01	1.0E-03	2.6E-04	1.7E+01	4.4E-03	4.4E-03
Total										**5.0E-03**	**5.0E-03**
UPR-200-W-70											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	3.0E+01	1.3E-01	1.0E-03	1.3E-04	3.1E-01	4.2E-05	4.2E-05
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	3.0E+01	1.9E-02	1.0E-03	1.9E-05	1.7E+01	3.3E-04	3.3E-04
Total										**3.7E-04**	**3.7E-04**
UPR-200-W-138											
Cs-137+D[e]	1.0E+05	2.8E+04	1.6E+06	4.5E+10	3.7E+00	1.67E-02	1.0E-03	1.67E-05	3.1E-01	5.16E-06	5.16E-06
Am-241	2.0E+03	4.1E+03	1.6E+06	6.5E+09	3.7E+00	2.41E-03	1.0E-03	2.41E-06	1.7E+01	4.09E-05	4.09E-05
Total										**4.60E-05**	**4.60E-05**

a. Assume all beta/gamma is Cs-137+D; all alpha is Am-241.

b. Derived from values in Tables 2, 3, and 4 of HNF-2418, using a factor of 10 to convert disintegrations per minute to counts per minute for GM-P11 instruments (beta/gamma) and a factor of 7 to convert disintegrations per minute to counts per minute for portable alpha meter instruments (alpha).

c. Soil density of 1.6 gm/cc used from HNF-2418 and volumes are based on 480 yd^3 excavated at control levels or higher.

d. DOE/RL-2006-29, *Calculating the Potential-to-Emit Radiological Releases and Doses*, Table 4-9.

e. Many radionuclides decay into other radionuclides, creating a radioactive decay chain consisting of a parent nuclide and its radioactive progeny (i.e., decay products, also called daughters identified with a "+D").

f. Contaminated soil excavation volume is derived from SGW-38383, *Cost Estimate for the 200-MG-1 Operable Unit Engineering Evaluation/Cost Analysis* Removal Actions, Table A-1. Using the "Contaminated Soil Volume (yd^3)" and "contaminated debris (yd^3)" columns and converting to m^3 using the conversion factor of 0.7645.

g. Assumption: A factor of 0.1 is applied to the Total Ci to account for the fraction of inventory exposed to air during excavation and handling activities. This value is considered conservative based on experience that only a small fraction, rather than nearly all inventory, would be exposed to the ambient air and thus subject to air transport during the bulk handling of this material.

PTE = potential-to-emit

The distance to the Laser Interferometer Gravitational Wave Observatory receptor is 16,630 m (10.3 mi) east-southeast of the 200 East Area. This is the nearest public location where the hypothetical maximally exposed individual might be located. Dose factors used specific to this location were taken from DOE/RL-2006-29, *Calculating Potential-to-Emit Radiological Releases and Doses*. The total unabated and abated potential-to-emit to the receptor from the removal action activities for the original 11 waste sites is listed in Table 4-1. The total unabated and abated potential-to-emit to the receptor from the removal action activities for the additional ~~37~~ 46 waste sites is listed in Table 4-2.

4.3.4 Emission Controls

Assessment of best available radiological control technology with regard to potential emissions in this work plan resulted in identification of established and standard airborne controls applicable to the straightforward removal action techniques.

In general, the best available radiological control technology evaluation for an outdoor, shallow, relatively short-term removal action involving minor potential for radiological airborne emissions supports using proven technology on a cost/benefit basis. Based on analysis of the potential emissions and analysis of available control technologies, the following controls have been selected for use during the removal action.

- Water will be applied, as needed, during any excavation and backfilling activities, for suppression of fugitive emissions and dust.
- Fixatives will be applied to contaminated soil and/or debris and equipment, as needed, to minimize airborne contamination during the removal action activities for fugitive emissions and dust. Fixative application techniques may include spraying, brushing on, pouring, or some other method, as necessary.
- Fixatives or cover material (e.g., soil, gravel) will be applied to disturbed contaminated soils, associated with the investigative action, when field activities will be inactive more than 24 hours except as noted in the next bullet.
- If the sustained wind speed is predicted overnight to be greater than 32 km/h (20 mi/h) based on the Hanford Meteorological Station afternoon forecast, fixative or cover material will be applied as needed before occurrence of the predicted winds. This will allow the project enough time to prepare for the application of dust control measures. If a fixative already has been applied and the fixed contaminated items will remain undisturbed, further use of fixatives will not be needed. The fixatives or other controls will not be applied when the contaminated items are frozen, or it is raining, snowing, or other freezing precipitation is falling at the end of work operations.
- Field activities should be temporarily ceased and the area should be placed in a safe configuration if contamination control measures are not adequate, based on site conditions (e.g., excessive wind).
- The waste packages will remain closed, except during packaging and waste inspection activities, once they are staged.

40 CFR 355, "Emergency Planning and Notification," *Code of Federal Regulations*. Available at: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title40/40cfr355_main_02.tpl.

Clean Air Act, 42 USC 7401, et seq. Available at: http://www.epa.gov/air/caa/.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601, et seq. Available at: http://www.epa.gov/superfund/policy/cercla.htm.

DOE/RL-94-02, 1995, *Hanford Emergency Response Plan*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: http://www2.hanford.gov/arpir/?content=findpage&AKey=D198147525.

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B1 Introduction

This appendix presents attributes of each site evaluated to determine the preferred removal action alternative. Table B-1 represents waste site attributes for wastes sites authorized by DOE/RL-2009-48 and is organized by site type. Table B-2 and Table B-3 present waste site attributes for wastes sites authorized by DOE/RL-2009-86 and are organized by site type as well. Table B-3 provides the attributes for four septic system waste sites authorized by DOE/RL-2009-86. The septic system waste sites are presented separately because the waste site attributes are categorically different and costs were estimated differently. Table B-3 was used to evaluate information on each part of the septic system to support selection of the preferred alternative.Ttables B-1, B-2 and B-3 list the attributes of the 200-MG-1 OU waste sites. The following attributes are given in the table:

- Waste site code
- Current status
- Waste site type
- Waste site name
- Facility area
- Physical setting
- Backfill status
- Surface cover status
- Surface cover thickness
- Site area, length, width, depth
- Potential contaminant interval
- Summary of prior cleanup activities
- Release mechanism
- Release type
- Potential constituents (radioactive and nonradioactive)

Waste site descriptions and other information are quoted directly from the Waste Information Data System database and other references. No modifications have been made to maintain consistent format, and references cited in those descriptions are not provided.

B2 References

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Table B-2. Waste Site Attributes for ~~33~~ 42 Waste Sites Authorized Through DOE/RL-2009-86

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Physical Setting	Back-fill[a] (Y/N)	Surface Cover Present[b] (Y/N)	Surface Cover Thickness[c] (ft)	Site Area (ft^2)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Constituents	
																	Radiological	Nonradiological
200-W BP	Active	Burn Pit	200-W BP, 200-W Burning Pit, Pit 34	T Plant Area	Burn Pit	N	N	None	4.0E+4	200	200	Unk.	0-1 (spotty)	None	Dumping Area	Solid	Beta/gamma radiation measuring from 5,000-50,000 cpm.	Unk.
600-71	Inactive	Burn Pit	600-71, 607 Batch Plant Burn Pit	ERDF Area	Burn Pit	N	N	None	8,000	100	80	Unk.	0-1 (spotty)	None	Unk.	Solid	None	Miscellaneous debris, demolition, and inert waste
200-W ADB	Inactive	Coal Ash Pit	200-W ADB, 200-W Ash Disposal Basin	T Plant Area	Coal Ash Pit	N	N	None	4.8E+5	800	600	Unk.	0-1 (spotty)	None	Ash Disposal	Solid	None	Unk.
216-S-26	Inactive	Crib	216-S-26, 216-S-19 Replacement Facility, 216-S-26 Crib	200 West Ponds Area	Crib	Y	N	None	1.5E+4	444	34	12	12-15	Crib was permanently isolated by filling manhole with concrete.	Contaminated Effluent	Liquid	Co-60, Sr-90, Tc-99, H3 and U-238	Arsenic, Fluoride, Hexavalent Chromium, Lead and Xylene
200 CP	Inactive	Depression/ Pit (nonspecific)	200 CP, 200 Area Construction Pit, 200 Area Construction Waste Site, Hanford Site Gravel Pit 29	200 East Admin Area	Depression/ Pit	N	N	None	7.5E+5	1,500	500	20	0-1 (spotty)	Believed that a portion of the old gravel pit has been paved over for the parking lot for the 2704 HV Building.	Construction	Solid	None	Unk.
200-E PD	Active	Ditch	200-E PD 200-E Powerhouse Ditch, 200 East Powerhouse Pond	Semi-Works/ Area, PUREX Area	Ditch	Y	Y	2	1.3E+5	2666	50	6	6-8	The contaminated portion of the ditch was backfilled, surface stabilized, and the stabilized portion of the ditch was replaced with 366 ft of new underground pipeline.	Contaminated Effluent	Liquid	Radiological animal feces and windblown specs from nearby contaminated area.	Unk.
216-B-3-1	Inactive	Ditch	216-B-3-1, B Swamp Ditch, 216-B-2, 216-B-3 Ditch, 216-B-2E	200 E Ponds Area	Ditch	Y	Y	1-2	1.2 E+5	3200	36	6	6-10	The unit was backfilled in 1964. In 1984 the site was covered with sheets of plastic, sand, and gravel to provide a weed barrier.	Contaminated Effluent	Liquid	Cs-137 and a cooling leak in a process cooling tank in PUREX put an estimated 2,500 Ci of fission products into the ditch.	As, Ba, Cd, Pb, Se, Hg, Hex Cr
216-B-3-2	Inactive	Ditch	216-B-3-2, 216-B Ditch, 216-B-1 Ditch, B Swamp Ditch, 216-B-2-2E	200 E Ponds Area	Ditch	Y	Y	1-2	5.6E+4	3700	15	6	6-10	The ditch was surface stabilized in 1984.	Contaminated Effluent	Liquid	Cs-137 and in 1970 a maximum dose rate of 450 mr/h measured at the head of the ditch.	As, Ba, Cd, Pb, Se, Hg , Hex Cr
216-B-3-3	Inactive	Ditch	216-B-3-3, B Swamp Ditch, 216-B-3-3 Ditch	200 E Ponds Area	Ditch	Y	Y	1-2	7.4E+4	3700	20	6	6-10	The site was surface stabilized in 1994. The underground pipeline from the Diverter Station to the 216-B-3-3 ditch was cut and filled with concrete.	Contaminated Effluent	Liquid	Cs-137	As, Ba, Cd, Pb, Se, Hg, Hex Cr

Table B-2. Waste Site Attributes for ~~33~~ 42 Waste Sites Authorized Through DOE/RL-2009-86

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Physical Setting	Back-fill[a] (Y/N)	Surface Cover Present[b] (Y/N)	Surface Cover Thickness[c] (ft)	Site Area (ft^2)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Constituents	
																	Radiological	Nonradiological
200-W BP	Active	Burn Pit	200-W BP, 200-W Burning Pit, Pit 34	T Plant Area	Burn Pit	N	N	None	4.0E+4	200	200	Unk.	0-1 (spotty)	None	Dumping Area	Solid	Beta/gamma radiation measuring from 5,000-50,000 cpm.	Unk.
600-71	Inactive	Burn Pit	600-71, 607 Batch Plant Burn Pit	ERDF Area	Burn Pit	N	N	None	8,000	100	80	Unk.	0-1 (spotty)	None	Unk.	Solid	None	Miscellaneous debris, demolition, and inert waste
200-W ADB	Inactive	Coal Ash Pit	200-W ADB, 200-W Ash Disposal Basin	T Plant Area	Coal Ash Pit	N	N	None	4.8E+5	800	600	Unk.	0-1 (spotty)	None	Ash Disposal	Solid	None	Unk.
216-S-26	Inactive	Crib	216-S-26, 216-S-19 Replacement Facility, 216-S-26 Crib	200 West Ponds Area	Crib	Y	N	None	1.5E+4	444	34	12	12-15	Crib was permanently isolated by filling manhole with concrete.	Contaminated Effluent	Liquid	Co-60, Sr-90, Tc-99, H3 and U-238	Arsenic, Fluoride, Hexavalent Chromium, Lead and Xylene
200 CP	Inactive	Depression/ Pit (nonspecific)	200 CP, 200 Area Construction Pit, 200 Area Construction Waste Site, Hanford Site Gravel Pit 29	200 East Admin Area	Depression/ Pit	N	N	None	7.5E+5	1,500	500	20	0-1 (spotty)	Believed that a portion of the old gravel pit has been paved over for the parking lot for the 2704 HV Building.	Construction	Solid	None	Unk.
200-E PD	Active	Ditch	200-E PD 200-E Powerhouse Ditch, 200 East Powerhouse Pond	Semi-Wor ks/ Area, PUREX Area	Ditch	Y	Y	2	1.3E+5	2666	50	6	6-8	The contaminated portion of the ditch was backfilled, surface stabilized, and the stabilized portion of the ditch was replaced with 366 ft of new underground pipeline.	Contaminated Effluent	Liquid	Radiological animal feces and windblown specs from nearby contaminated area.	Unk.
216-B-3-1	Inactive	Ditch	216-B-3-1, B Swamp Ditch, 216-B-2, 216-B-3 Ditch, 216-B-2E	200 E Ponds Area	Ditch	Y	Y	1-2	1.2 E+5	3200	36	6	6-10	The unit was backfilled in 1964. In 1984 the site was covered with sheets of plastic, sand, and gravel to provide a weed barrier.	Contaminated Effluent	Liquid	Cs-137 and a cooling leak in a process cooling tank in PUREX put an estimated 2,500 Ci of fission products into the ditch.	As, Ba, Cd, Pb, Se, Hg, Hex Cr
216-B-3-2	Inactive	Ditch	216-B-3-2, 216-B Ditch, 216-B-1 Ditch, B Swamp Ditch, 216-B-2-2E	200 E Ponds Area	Ditch	Y	Y	1-2	5.6E+4	3700	15	6	6-10	The ditch was surface stabilized in 1984.	Contaminated Effluent	Liquid	Cs-137 and in 1970 a maximum dose rate of 450 mr/h measured at the head of the ditch.	As, Ba, Cd, Pb, Se, Hg , Hex Cr
216-B-3-3	Inactive	Ditch	216-B-3-3, B Swamp Ditch, 216-B-3-3 Ditch	200 E Ponds Area	Ditch	Y	Y	1-2	7.4E+4	3700	20	6	6-10	The site was surface stabilized in 1994. The underground pipeline from the Diverter Station to the 216-B-3-3 ditch was cut and filled with concrete.	Contaminated Effluent	Liquid	Cs-137	As, Ba, Cd, Pb, Se, Hg, Hex Cr

Table B-2. Waste Site Attributes for 33 42 Waste Sites Authorized Through DOE/RL-2009-86

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Physical Setting	Back-fill[a] (Y/N)	Surface Cover Present[b] (Y/N)	Surface Cover Thickness[c] (ft)	Site Area (ft^2)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Constituents	
																	Radiological	Nonradiological
216-S-16D	Inactive	Ditch	216-S-16D, 202-S Swamp (New) and Ditch, 202-S Swamp #1, REDOX Pond #2, 216-2-24 Ditch	200 W Ponds Area	Ditch	Y	Y	1-2	6800	1700	4	3	3-6	The ditch has been backfilled and surface stabilized.	Contaminated Effluent	Liquid	Unk.	Unk.
CTFN 2703-E	Inactive	Drain/Tile field	CTFN 2703-E, 200-E Chemical Drain Field, Chemical Tile Field North of 2703-E	200 E Admin Area	Drain/Tile Field	N	N	None	2.4E+4	155	155	6	6-10	None	Liquid disposal	Liquid	Unk.	Unk.
200-E-1	Inactive	Dumping Area	200-E-1, 284-E Landfill	200 East Admin Area	Dumping Area	N	N	None	Unk.	Irr.	Irr.	Unk.	0-6	None	Landfill	Solid	None	Asbestos
200-E-46	Inactive	Dumping Area	200-E-46, RCRA Permit General Inspection #200EFY96 Item #3	200 East Admin Area	Dumping Area	N	N	None	8.1E+4	492	164	Unk.	0-1 (spotty)	Some wastes have been removed from the site an aerosol can, a transformer core, and a gallon can containing a tar-like substance.	Dumping Area	Solid and Liquid	None	Unk.
200-W-3	Inactive	Dumping Area	200-W-3, 2713-W North Parking Lot, 220-W-1	T Plant Area	Dumping Area	N	N	None	1.5E+5	300	500	Unk.	0-3 (spotty)	None	Unk.	Liquid	None	PCBs, lead, xylene, and petroleum hydrocarbons
200-W-33	Inactive	Dumping Area	200-W-33, Solid Waste Dumping Area, Debris near gate 609	WM Area	Dumping Area	N	N	None	5.7E+5	804	705	Unk.	0-3 (spotty)	None	Dumping Area	Solid and Liquid	None	Oil substance, burn residue
600-220	Inactive	Dumping Area	600-220, H-51 Anti-Aircraft Artillery Site Dumping Area	S.W. 200 West Ponds Area	Dumping Area	N	N	None	3.5E+5	647	545	Unk.	0-1 (spotty)	None	Dumping Area	Solid	None	Asbestos, miscellaneous trash and construction debris
600-226	Inactive	Dumping Area	600-226, Gun Site H-42 Dumping Area	S. NRDWL/ BC Controlled Area	Dumping Area	N	N	None	Unk.	Irr.	Irr.	Unk.	0-1 (spotty)	None	Dumping Area	Solid	None	Miscellaneous construction debris
600-228	Inactive	Dumping Area	600-228, H-40 Gun Site Dumping Area	NRDWL/ BC Controlled Area	Dumping Area	N	N	None	1,552	39	39	Unk.	0-2 (spotty)	None	Dumping Area	Solid and Liquid	None	Miscellaneous construction debris, possible lead paint

Table B-2. Waste Site Attributes for 33 42 Waste Sites Authorized Through DOE/RL-2009-86

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Physical Setting	Back-fill[a] (Y/N)	Surface Cover Present[b] (Y/N)	Surface Cover Thickness[c] (ft)	Site Area (ft^2)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Constituents	
																	Radiological	Nonradiological
600-281	Inactive	Dumping Area	600-281, Scattered Debris South of Army Loop Road	S. NRDWL/ BC Controlled Area	Dumping Area	N	N	None	Unk.	Unk.	Unk.	Unk.	0-1 (spotty)	In February 2007, the three compressed gas cylinders were removed from the area. Cylinders previously contained argon, but were confirmed to be empty.	Dumping Area	Solid	None	Demolition and inert waste, asbestos
600-282	Inactive	Dumping Area	600-282, Wood and Coal Debris Piles	200-E Ponds Area	Dumping Area	N	N	None	11,176	Irr.	Irr.	Unk.	0-1	None	Dumping Area	Solid	None	Coal and wood debris
600-65	Inactive	Dumping Area	600-65, 607 Batch Plant Drum Site	N. ERDF Area	Dumping Area	N	N	None	100	10	10	Unk.	0-3 (spotty)	In 2001, the listed materials were not present at this site.	Dumping Area	Solid and Liquid	None	Miscellaneous debris, petroleum hydro-carbons
600-66	Inactive	Dumping Area	600-66, 607 Batch Plant Orphan Drums	ERDF Area	Dumping Area	N	N	None	25	5	5	Unk.	0-3 (spotty)	None	Dumping Area	Solid and Liquid	None	Unk. liquids
200-W-14	Inactive	Dumping Area	200-W-14, 200 West Heavy Equipment Storage Area	T Plant Area	Storage Yard	N	Y	1-2	2400	80	30	2	0-6 (spotty)	None	Parking Area	Liquid	None	Petroleum
200-W-64	Inactive	Foundation	200-W-64, 2724-W Contaminated Laundry Facility Building Foundation	T Plant Area	Foundation	N	N	None	1.4E+4	138	105	Unk.	0-1	Laundry facility building was demolished in 1995; the foundation remains. A radiological survey of the building foundation is done quarterly.	Contaminated Foundation	Liquid	Radiological contamination from soiled protective work clothing. There was 9,000 dpm beta/ gamma found in the Fixed Contamination Area in March 1998.	None
600-49	Inactive	Foundation	600-49, H-42 Gun Site Building Foundations and Ammunition Storage	S. NRDWL/B C Control Area	Foundations	N	N	None	4.5E+4	Irr.	Irr.	Unk.	0-1	None	Abandoned Military Site	Solid	None	Unk.
600-227	Inactive	Foundation	600-227, H-40 Gun Site Building Foundations	NRDWL/B C Control Area	Foundations	N	N	None	4,618	Irr.	Irr.	Unk.	0-1	All structures associated with site 600-227, except for the bunkers, concrete foundations, and underground pipes, have been removed.	Abandoned Military Site	Solid	None	Unk.
216-U-7	Inactive	French Drain	216-U-7, 221-U Counting Box French Drain, 221-U Vessel Vent Blower Pit French Drain	U Plant Area	French Drain	N	Y	1-2	7.1	None	3	17	17-25	Surface stabilized in 1998. In 1998, the contaminated areas on the east side of the 221-U building were surface stabilized with material from the 200 Area Ash Pit. The area was reposted to URM. (see UPR-200-W-138 and UPR-200-W-162)	Contaminated Effluent	Liquid	U-238 in solution	Nitrate, uranyl nitrate hexahydrate
600-37	Inactive	French Drain	600-37, Brown's Wells, Johnson's Wells	ERDF Area	Tanks and French Drains	N	N	None	70	10	7	16	16-20	None	Unk./ Testing	Liquid	Unk.	Unk.

Table B-2. Waste Site Attributes for ~~33~~ 42 Waste Sites Authorized Through DOE/RL-2009-86

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Physical Setting	Back-fill[a] (Y/N)	Surface Cover Present[b] (Y/N)	Surface Cover Thickness[c] (ft)	Site Area (ft^2)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Constituents	
																	Radiological	Nonradiological
600-222	Inactive	Military Compound	600-222, H-60 Gun Site	200 West Area	Military Compound	N	N	None	3.8E+5	695	548	Unk.	0-1 (spotty)	None	Abandoned Military Site	Solid and Liquid	None	Battery and oil wastes
216-S-19	Inactive	Pond	216-S-19, 222-S Lab Swamp, 216-SL-1, REDOX Lab Swamp, 216-S-19 Pond	200 West Ponds Area	Pond	N	Y	1-2 ft	1.5E+5	Irr.	Irr.	Irr.	0-3	Wastes were rerouted to the 216-S-26 Crib. Over time, the beta/gamma radioactivity has decayed until presently there is no activity detectable with radiation monitoring field instruments.	Liquid Disposal	Liquid	Co-60, Sr-90, Tc-99, H3 and U-238	Arsenic, Fluoride, Hexavalent Chromium, Lead and Xylene
200-E-126-PL-A	Inactive	Radioactive Process Sewer	200-E-126-PL-A, Segments of 200-E-126-PL Pipeline Located in the Outer Area	200-E Ponds Area	Radioactive Process Sewer	Y	N	Varies	7,250	3,421	2.12	Varies	Varies	In April 2007, Diverter Station #2 was demolished and backfilled with clean dirt.	Contaminated Effluent	Liquid	Unk.	Hydrazine, cadmium nitrate, and ammonium flounde/ ammonium nitrate, nitric acid, sulphuric acid, sodium hydroxide, and potassium hydroxide. Have been identified at a discharge point (216-B-3).
200-E-127-PL-A	Inactive	Radioactive Process Sewer	200-E-127-PL-a, Segments of Gable Mountain Pond Pipeline Located in the Outer Area	200-E Ponds Area,	Radioactive Process Sewer	Y	N	Varies	41,184	12,480	3.3	Varies	Varies	The northern portion of this pipeline, from Diverter Station #3 to 216-A-25 Pond was capped when the 216-A-25 Pond was decommissioned. During the 1990's, the underground pipeline from the Diverter Station (eastward) to the 216-B-3-3 ditch was cut and filled with concrete. The pipeline was characterized in 2008 with four DPT pushes (C6695 - C6698). Gamma logging was done in the DPT holes.	Contaminated Effluent	Liquid	Short lived radioactive isotopes have been detected at the point of discharge in 1964 (216-A-25). Cs-137 and Sr-90 have also been detected at the point of discharge.	Unk.
200-W-147-PL	Inactive	Radioactive Process Sewer	200-W-147-PL, Pipeline from 207-SL to 216-S-19 Pond	REDOX Area, 200-W Ponds Area	Radioactive Process Sewer	Yes	No	None	1,365	2,037	0.67	Varies	Varies	None	Contaminated Effluent	Liquid	Co-60, Sr-90, Tc-99, H3 and U-238	Arsenic, Fluoride, Hexavalent Chromium, Lead and Xylene
200-W-148-PL	Inactive	Radioactive Process Sewer	200-W-148-PL, 216-S-26 Crib Pipeline	REDOX Area, 200-W Ponds Area	Radioactive Process Sewer	Yes	No	None	13.5	27	0.5	Varies	Varies	None	Contaminated Effluent	Liquid	Co-60, Sr-90, Tc-99, H3 and U-238	Arsenic, Fluoride, Hexavalent Chromium, Lead and Xylene
600 OCL	Inactive	Sanitary Landfill	600 OCL, 600 Area Original Central Landfill, Original CLF .	NRDWL/ BC Controlled Area	Sanitary Landfill	Y	N	None	1.5E+4	300	50	15	0-15	Site has been backfilled to grade. Radiological surveys are performed on this site.	Dumping Area	Solid	1,500 cpm beta/gamma in test pit on June 5, 1988	Unk.

Table B-2. Waste Site Attributes for ~~33~~ 42 Waste Sites Authorized Through DOE/RL-2009-86

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Physical Setting	Back-fill[a] (Y/N)	Surface Cover Present[b] (Y/N)	Surface Cover Thickness[c] (ft)	Site Area (ft^2)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Constituents	
																	Radiological	Nonradiological
UPR-200-W-70	Inactive	Unplanned Release	UPR-200-W-70 Contamination Found at the 200 West Burning Ground East of Beloit Ave.	T Plant Area	Burn Pit/ Roadway	N	Y	2-3	Unk.	Irr.	Irr.	Unk.	0-1	In 1973, fabro-film was sprayed on contaminated areas and a locked chained gate installed.	Dumping Area	Solid	5,000-50,000 cpm beta/gamma; 20,000 cpm to 30 mrad/h; 100,000 cpm (250 mrad/h); alpha ranging from 5,000 to 200,000 dpm. Americium-plutonium contamination on sample from trench. All in 1973.	Unk.
200-E-2	Inactive	Unplanned Release	200-E-2, Soil Stains at the 2101-M SW Parking Lot, MO-234 Parking Lot	200 East Admin Area	Parking Lot	N	N	None	1.0E+4	100	100	Unk.	0-6	Site soil was taken and tested.	Oil for dust abatement	Liquid	None	PCBs, used oil for dust abatement, heavy metals.
UPR-200-E-11	Inactive	Unplanned Release	UPR-200-E-11, Railroad Track Contamination Spread, UN-200-E-11	Solid Waste Area/ B Plant Area/ 200 E Admin Area/ Semi-Works Area/ PUREX Area	Railroad	N	Y	1-2	1.2E+5	Irr.	Irr.	Unk.	0-2 (spotty)	In 1957 most of contamination was removed.	Leak/Spill	Liquid	Fission product contamination spots	None
UPR-200-W-58	Inactive	Unplanned Release	UPR-200-W-58, Railroad Track Contamination, UN-200-W-58	T Plant Area	Railroad	N	N	None	7.3E+4	Irr.	Irr.	Unk.	0-2 (spotty)	After release was identified (1965), the contaminated equipment was isolated and decontamination initiated. Some contaminated dirt was removed from the railroad bed in 1965.	Leak/Spill	Solid and Liquid	Beta/gamma, 5 Rad/h (end of flat car); 100,000 cpm (railroad bed surface); 20,000 cpm (underside of railcar) on April 26, 1965.	Unk.
UPR-200-W-138	Inactive	Unplanned Release	UPR-200-W-138, 221-U Vessel Vent Blower Pit French Drain, UN-216-W-11, UN-200-W-138, UN-200-W-22, UPR-200-W-22	U Plant Area	French Drain	N	Y	1-2	Unk.	Irr.	Irr.	Irr.	0-6	The site has been surface stabilized. In 1998, the contaminated areas on the east side of 221-U were covered with clean backfill material (see UPR-200-W-162). The area was reposted as "Underground Radioactive Material." The area around the 241-UX-154 Diversion Box was not covered with backfill material.	Leak/Spill	Liquid	Uranium in uranium nitrate hexahydrate solution	Nitrate

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Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Physical Setting	Back-fill[a] (Y/N)	Surface Cover Present[b] (Y/N)	Surface Cover Thickness[c] (ft)	Site Area (ft^2)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Constituents	
																	Radiological	Nonradiological
UPR-600-12	Inactive	Unplanned Release	UPR-600-12, UN-600-12, UNH Spill to Route 4S	NRDWL/ BC Controlled Area	Roadway	N	Y	1-2	175	21	8	Unk.	0-6	In 1971, contamination was dug up and removed to a 200 West Burial Ground; in 1998, contamination on south shoulder of Route 4S near top of hill discovered; and in 1999, area was backfilled with clean material. In January 2006, contaminated (beta/gamma) soil was removed and gravel added to site.	Leak/Spill	Liquid	Uranium, uranium nitrate hexahydrate solution	Unk.
200-E-109	Inactive	Unplanned Release	200-E-109, Contaminated Tumbleweed Accumulation, Contamination Spread in Northeast Corner of 200 East Area	Solid Waste Area	Roadway/ Outlying Area	N	Y	1-2	1.5E+4	249	62	Unk.	0-1 (spotty)	Contaminated vegetation is removed sometimes; tumbleweeds keep accumulating; if not possible to remove, contamination is surrounded with a radiation barrier. Some contaminated fragments and soils were picked up, but reports indicate it keeps accumulating. A single area (75.9 x 18.9 m) was covered with soil.	Vegetation (tumble-weeds)	Solid	Inside 200 East Area perimeter fence: 20,000 to > 100,000 dpm; Outside 200 East Area perimeter fence and around LERF: 2,000 to 800,000 dpm beta/gamma over the years of 1998 through 2000.	None

Note:

Additional sites have been included based on TPA-CN-390

a. Column titled "Backfill" is defined as soil being replaced inside a waste sites to refill it to grade, however this action is not associated with construction (e.g., cribs being backfilled with gravel) of the waste site.

b. Column titled "Surface Cover Present" is defined as soils that were added to a waste site above grade.

c. Column "Surface Cover Thickness" is only used when there is a "Y" in "Surface Cover Present."

Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq. Available at: http://www.epa.gov/epawaste/inforesources/online/index.htm.

ADB = Ash Disposal Basin
CLF = Central Landfill
CP = construction pit
ERDF = Environmental Restoration Disposal Facility
Irr = irregular
LERF = Liquid Effluent Retention Facility
NRDWL = Nonradioactive Dangerous Waste Landfill
OCL = Original Central Landfill
PCB = polychlorinated biphenyl
RCRA = *Resource Conservation and Recovery Act of 1976*
REDOX = Reduction-Oxidation (S Plant)
UNH = uranyl nitrate hexahydrate
Unk. = unknown
WM = waste management
Y/N = Yes/No

Gibson, Gayelyn G

From: Cameron.Craig@epamail.epa.gov
Sent: Tuesday, December 07, 2010 9:37 AM
To: Gibson, Gayelyn G
Cc: Williams, Janice D; Woolery, Wade; Louie, Catherine
Subject: RE:

Gayelyn,

DOE has not produced a draft of the rubble criteria agreement write-up for me to review so we will not be adding anything into the last UMM's minutes.

Craig Cameron
U.S. Environmental Protection Agency
Hanford Project Office
309 Bradley Blvd, Suite 115
Richland, WA 99352
Phone: 509 376-8665
Fax: 509 376-2396
E-mail: cameron.craig@epa.gov

From: "Gibson, Gayelyn G" <Gayelyn G Gibson@RL.gov>
To: "Williams, Janice D" <Janice D Williams@rl.gov>, "Woolery, Wade" <wade.woolery@rl.doe.gov>, Craig Cameron/R10/USEPA/US@EPA
Date: 12/07/2010 08:42 AM
Subject: RE:

Just a reminder that this is still needed to be able to finalize and issue the meeting minutes.

Gayelyn
373-4456

From: Williams, Janice D
Sent: Tuesday, November 30, 2010 9:57 AM
To: Woolery, Wade; 'Cameron.Craig@epamail.epa.gov'
Cc: Gibson, Gayelyn G
Subject:

Wade and Craig,

Do you have text I can add to the 200A PMM minutes prior to seeking signatures for November?

The action is: Wade Woolery to provide documentation on the acceptance criteria for rubble at U Plant - this should be coordinated with Craig Cameron

Thanks,

Janice

Janice Williams
Integration Management
Environmmental Program & Strategic Planning
509.372.3553 - office
509.539.5379 - cell