

Meeting Minutes Transmittal/Approval
Project Managers' Meeting
200 Area Groundwater and Source Operable Units
May 19, 2016

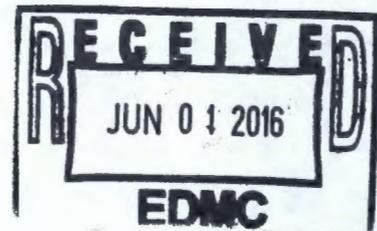
APPROVAL: *Michael Cline* DATE: 5/19/2016
Michael Cline, 200 Area Unit Manager, DOE/RL

APPROVAL: *Al Farabee* DATE: 5/19/2016
Al Farabee, 200 Area Project Manager, DOE/RL

APPROVAL: *Craig Cameron* DATE: 5/19/2016
Emerald Lajja, 200 Area Project Manager, EPA

APPROVAL: *Nina M. Menard* DATE: 5/19/16
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 and 5 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 May 19, 2016 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	Documents for the Administrative Record
Attachment 6	TPA-CN-0718
Attachment 7	TPA-CN-0722
Attachment 8	TPA-CN-0724
Attachment 9	TPA-CN-0725

200 Area Project Managers' Status Meeting
May 19, 2016

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
John Sands	GW	WA-1	372-2282
Kate Amrhein	DOE-RL	UP-1, ZP-1	376-9391
RD Hildebrand	DOE-RL	SU-2 EA-1, IS-1	373-9626
MOSTAFA KAMAL	DOE-RL	ROEA	376-0289
Tim Muhlman	Ecology	ROEA- 200	372-7970
Jane Borgley	PRC	TPA	373 388
Ash Goeman	Ecology	DV-1	372-7902
Bob Long	DOE-RL	PW-1/3/6	376-7754
Marty Dornbus	CHPRC	Director	438-5516
Eis Eberlein	Ecology	PM	372-7906
Wing Meunard	Ecology	actng PM	372-7941
JOE AXTELL	DOE RL	200 ZP-1	373-6687
Debi Goussard	DOE-RL		376-0220
Wade Wooley	DOE RL		372 2889
Keelan Abenith	DOE-RL		376-1876
Sharon Braswell	MSA TPAI	observer	

**200 Area Project Managers' Meeting
Agreements and Issues List
May 19, 2016**

Agreement: None

Issue: None

Announcements: None

Delegations for May 19, 2016 PMM meeting:

EPA Craig Cameron for Emerald Lajja

DOE Wade Woolery for Al Farabee

**200 Area Project Managers' Meeting
May 19, 2016**

CHPRC-1601474
Attachment 3

OPEN ACTION ITEM TRACKING

Action #	Action/Subject	Assigned To	Owed To	Assigned Date	Original Due Date	Adjusted Due Date	Status
170	Set up meeting to discuss PFP scope between EPA, Ecology and RL.	RL/John Sands	EPA and Ecology	3/17/16	4/17/16		Completed
171	Set up meeting to discuss U Canyon scope between EPA, Ecology and RL.	RL/John Sands	EPA and Ecology	3/17/16	5/17/16		Completed
172	P-037-12 milestone? Is it to be deleted	RL/AI Farabee	Ecology	3/17/16	4/17/16		Milestone was Deleted-Completed
173	Set up meeting between all parties to discuss removal actions that are planned	EPA/Craig Cameron	RL and Ecology	3/17/16	4/17/16		Completed
174	Ecology will respond with a path forward for BP-5 PO-1 SAP	Ecology/Nina Menard	RL	5/19/2016	6/10/2016		
175	Draw down data for BP-5 pump test	Marty Doombos	Ecology	5/19/2016	5/31/2016		
176	Provide justification to add 207A SRB to App C	Ecology/Nina Menard	RL	5/19/2016	6/10/2016		
177	Modification of 200PMM Handout to Reflect Milestones Reorganization	Jane Borghese/CHPRC	All	5/19/2016	7/21/2016		

200 AREA PROJECT MANAGERS' MEETING
Milestones and Operation Status by OU (March – April 2016 Status)
May 19, 2016

Deep Vadose Zone 200-DV-1 Ecology Lead (RL –Jim Hanson, CHPRC – Mark Byrnes)

- Requested a 60 day extension to June 13, 2016, for the delivery of the Rev. 0 RI/FS work plan. In a March 29, 2016, meeting, RL and Ecology came to agreement on a path forward for how to address Ecology's comments related to Central Plateau Principals and Parameters. Preparation of the Rev 0 RI/FS Work Plan is underway.
- Drilling began October 1, 2015, at the BY Cribs locations using a Becker-Hammer rig. At this time, casings have successfully been installed from surface to below the high radiological interval in all 22 of the boreholes as indicated by downhole logging. Seven of the 22 borehole locations have completed sonic drilling, which drilled from below the high radiological risk interval to total depth. The drilling of borehole C9507 (219-T-19) is underway. This borehole started with sonic drilling to 32.6 ft bgs, then Becker-Hammer drilled to 48.1 ft bgs. Sonic drilling will resume to a target depth of 230 ft bgs.
- Two of the BY Crib boreholes (C9550 & C9552) have been decommissioned including installation of a flush mount surface vault. The remaining two boreholes (C9549 & C8706) will be decommissioned in May. The other four BY Crib boreholes each have sensor arrays installed in them to support future electrical conductivity geophysical surveys and to facilitate a more thorough interrogation of the extent of the vadose zone contamination.

Primary Borehole ID#	Waste Site	Becker/ Geoprobe Push Depth (ft)	Estimated High RAD Interval (ft)	Current Sonic Rig Depth (ft)	Target Depth of Investigation (ft)	Total Number of Samples Collected	Total Number of Samples To Be Collected
C9550	By Cribs	43.8	15-45	200.5	197	11	11
C9549	By Cribs	45.4	20-45	200.5	197	10	11
C9552	By Cribs	45	10-45	202.2	197	11	14
C8706	By Cribs	45.3	14-45	202.3	197	11	11
C9491	216-B-37	51.2	14-52	227.7	222	3	8
C9487	216-B-7 A&B	33.4	19-33	235.5	237	3	13
C9490	219-B-9	34.2	14-34	TBD	250	3	9
C9489	219-B-9	34.2	12-35	TBD	250	3	9
C9492	216-T-5	40.5	NA	TBD	95	3	8
C9494	216-T-5	40.4	0-35	TBD	95	0	GPL only
C9495	216-T-14	35.8	0-35	TBD	105	0	GPL only
C9496	216-T-15	35.7	0-35	TBD	105	0	GPL only
C9505	216-T-15	43.5	10-34	TBD	105	2	5
C9510	216-T-25	39.0	14-40	TBD	115	2	9
C9511	216-T-23	43.9	14-40	TBD	115	2	9
C9506	216-T-18	33.5	12-34	TBD	100	2	8
C9512	216-S-9	32.6	30-46	TBD	134	3	9
C9514	216-S-21	44.0	15-40	TBD	121	9	9

Primary Borehole ID#	Waste Site	Becker/ Geoprobe Push Depth (ft)	Estimated High RAD Interval (ft)	Current Sonic Rig Depth (ft)	Target Depth of Investigation (ft)	Total Number of Samples Collected	Total Number of Samples To Be Collected
C9488	216-B-8	43.6	25-42	226.0	224	8	8
C9499	216-T-6	43.4	15-43	TBD	105	3	8
C9554/ C9502	216-T-6	43.4	15-43	TBD	105	0	GPL only
C9507	216-T-19	48.1	20-52	32.6	230	2	12

- The new perched water system is now operational and undergoing three separate hydraulic tests to help determine the extent of the perched water zone. Test #1 and the first two of three studies under Test #2 are now complete.

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

- Status: Tentative Agreement signed on 10/26/15 proposed a due date of 9/30/2023.

Regulatory Agency Comments: ARAR Table will be given to Ecology prior to Rev 0

200-EA-1 and 200-IS-1 Ecology Lead (RL- Doug Hildebrand, CHPRC – Bert Day)

- 200-IS-1 Operable Unit Scope
 - Provided a revised 200-IS-1 change package C-13-01 for Ecology's review on March 8, 2016 incorporating additional TSDs identified through the ongoing scoping development (change package incorporates the TSD agreements between RL and Ecology and describes the criteria used during the workshops for TSD determination).
 - Completed 310 waste unit scoping summaries through RL review and updates.
 - Initiated Chapter 3 – Initial Evaluations text preparation.
 - Received informal Ecology concurrence on Chapter 1 and related Chapter 5 associated with the RCRA/CERCLA integration
 - Conducted three initial evaluation workshops with Ecology on April 12, April 26, and May 5.
 - Continued bi-weekly project meetings with RL, Ecology, and CHPRC project team.
 - Continued discussions regarding early action options associated with 200-IS-1 waste sites with a basis for action.
- 200-EA-1 Operable Unit Scope
 - Conducted scoping summary kick-off meeting for the RI/FS Work Plan with RL and CHPRC

M-015-112: Submit Draft B, 200-IS-1 OU Pipeline System Waste Sites RFI/CMS/RI/FS WP to Ecology, including a schedule of completion dates for major tasks and deliverables, 2/28/2014.

- Status: Dispute resolution. The parties are currently working on identifying the Work Plan scope (i.e., change package C-13-01), TSD identification, and associated revised delivery schedule. The dispute resolution is currently extended to August 1, 2016.

M-015-92A: Submit a RFI/CMS & RI/FS work plan for the 200-EA-1 OU (200 East Inner Area) to Ecology, 6/30/2015

- Status: Tentative Agreement signed on 10/26/15 proposed a due date of 9/30/17.

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, 12/31/2016

- Status: Tentative Agreement signed on 10/26/2015 revised the text to remove the 200-IS-1 OU and proposed a due date for 200-EA-1 to 11/30/2022.

P-015-92C: Submit CMS & FS Report & Proposed CA Decision/PP for the 200-IS-1 OU to Ecology, 03/31/23

- Status: Tentative Agreement signed on 10/26/2015 proposed milestone.

Regulatory Agency Comments: N/A

200-SW-2 Ecology Lead (RL- Doug Hildebrand, CHPRC – Bert Day)

- Work Plan
 - Comment resolution and draft Rev. 1 delivery extended to May 31, 2016. This extension was requested to allow time for agency agreement on the Central Plateau principals and parameters.
 - Conducted work plan text revision comment resolution meeting on April 7, 2016, focusing on the six remaining comments. Proceeding with Rev 1 RI/FS work plan delivery.
 - Continuing discussions with Ecology associated with the Green Islands and associated waste designation determinations
 - Finalized Green Islands containers 6 and 7 legacy waste designation calculations; initiated calculations on the remaining green islands.
- Characterization:
 - Conducting data evaluation and reviews associated with the aerial radiation survey.

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

- Status: Tentative Agreement signed on 10/26/15 proposed a due date of 1/31/2023.

P-015-93C: Initiate characterization of the 200-SW-2 OU unlined landfills, 9/30/2018

- Status: Added milestone based on public comments.

Regulatory Agency Comments: N/A

200-SW-1 Ecology Lead (RL- Doug Hildebrand)

- EA released for public review August 29, 2011. The last of the public comments were received on November 17, 2011. Due to budgetary constraints and priorities, no further action is scheduled for FY2016.

Regulatory Agency Comments: N/A

200-BC-1 and 200-WA-1 EPA Lead (RL- John Sands, CHPRC – Patrick Baynes)

- Due to the nature and extent of the EPA comments on the Draft B RI/FS Work Plan, RL requested an extension for comment resolution through August 15, 2017. Some of the issues are cross-cutting with other Operable Units. DOE and CHPRC are working to ensure consistency in resolving the comments across all Central Plateau Work Plans.
- One of the areas that is being worked includes pipeline segmentation and OU assignment. Some of the pipelines around PFP are being considered for segmentation with some segments being re-assigned from other EPA-lead OUs (200-CW-5, 200-PW-1, and 200-PW-6) to 200-WA-1.

M-015-91B: Submit Feasibility Study Report(s) and Proposed Plan(s) for the 200-BC-1/200-WA-1 operable units (200 West Inner Area) to EPA, 12/31/2015

- Status: Tentative Agreement signed on 10/26/2015 proposed a due date of 7/31/2021.

P-015-98: Complete remedial investigation of U Plant related waste sites located in 200-WA-1 in accordance with the WA-1 RI/FS Work Plan, 6/30/2019

- Status: Tentative Agreement signed on 10/26/2015 proposed milestone.

P-015-99: Complete remedial investigation of PFP related waste sites located in 200-WA-1 in accordance with the WA-1 RI/FS Work Plan, 6/30/2019

- Status: Tentative Agreement signed on 10/26/2015 proposed milestone.

Regulatory Agency Comments: N/A

200-CW-1, 200-CW-3, 200-OA-1 EPA Lead (RL –Ben Vannah, CHPRC – Bert Day)

- Nothing to report

M-015-38B: Submit a FS Report and 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, revised due date to be identified by 10/30/2015

- Status: Tentative Agreement signed on 10/26/2015 proposed text changes (deletion of the word "revised" from original) and a due date of 7/31/2023.

Regulatory Agency Comments: N/A

200-BP-5 and 200-PO-1 Ecology Lead (RL – James Hanson, CHPRC – Curtis Wittreich)

- Completed the Draft A 200-BP-5 Treatability Test Report. Transmitted the report to the regulators on April 25, 2016, for a 45-day review. Groundwater extraction continued to further assess contaminant removal.
- Completed the design of an extension to the 200-BP-5 cross-site pipeline from the current extraction well 299-E33-268 to well 299-E33-360 located on the north side of B-Plant. Procurement of materials and subcontract services was initiated, and construction is expected to start in May.
- Completed the Rev. 0 200-BP-5 EE/CA. Public review of the document was initiated on April 18, 2016 and extend to May 20, 2016.
- The Draft A 200-BP-5 RI Report and Draft A 200-PO-1 RI Report Addendum are under regulator review. Comments are expected by June 9, 2016.
- Completed a Draft 200-BP-5/200 PO-1 FS for RL review.

M-015-21A: Submit 200-BP-5 and 200-PO-1 OU FS Report & PP(s) to Ecology, 6/30/2015

- Status: Tentative Agreement signed on 10/26/2015 proposed a due date of 6/30/2018.

Regulatory Agency Comments: N/A

M-015 Dual Agency Lead

- The major milestone may be impacted by the interim OU milestones stated above.

M-015-00: Complete the RI/FS Process for all Non-Tank Farm OUs, 12/31/2016

- Status: Tentative Agreement signed on 10/26/2015 proposed a due date of 6/30/2026.

Regulatory Agency Comments: N/A

200-PW-1/3/6 and CW-5 EPA Lead (RL- Robert Long, CHPRC – Patrick Baynes)

- Reached agreement with EPA on the responses to all EPA comments on the 200-CW-5 and 200-PW-1/3/6 RD/RAWP and SAP. The documents will be provided for approval in early May 2016.

Regulatory Agency Comments: N/A

200-PW-1 Soil Vapor Extraction Operations EPA Lead (RL – John Sands, CHPRC – Mark Byrnes)

- The Rev. 0 Draft 200-PW-1 SVE Response Action Report has been released to EPA for their final review and approval.

Regulatory Agency Comments: N/A

200-UP-1 EPA Lead (RL – Kate Amrhein, CHPRC – Curtis Wittreich, PNNL-D. Wellman [I-129])

- Completed drilling three of the seven groundwater remedy performance monitoring wells for FY2016.
- Revising the 200-UP-1 Drilling SAP to add opportunistic/supplemental vadose and aquifer samples. The SAP is being revised based on initial EPA feedback and additional RL comments.
- Received EPA approval on the Waste Management Plan for the 200-UP-1 Groundwater Operable Unit, and issued the plan,
- A TPA change notice to the 200-UP-1 RD/RAWP is being drafted to define remedy performance groundwater monitoring wells required to satisfy TPA Milestone M-016-193.

M-016-193: Complete the remedial design investigation of the SE chromium plume, including the installation of new wells and evaluation of the GW monitoring data and install monitoring wells needed for remedy performance monitoring as defined in the UP-1 RD/RA WP, 9/30/2017.

- Status: On schedule.

Regulatory Agency Comments: N/A

200-ZP-1 EPA Lead (RL – James Hanson, CHPRC – Byrnes/Barrett)

- Construction of new monitoring well 299-W13-2 began on February 18, 2016. Well construction was completed and the well accepted as a monitoring well on March 21, 2016.
- The redrill and reconstruction of injection well 299-W7-14 continues. All of the screened intervals have been surged to settle the filter pack and the remaining activities will be completed in May (i.e., well development, monument and bollard installation, and final survey).

Regulatory Agency Comments: N/A

M-016-00: Complete Remedial Actions for all Non-Tank Farms & Non-Canyon OUs, 9/30/2024

- Status: Public Comments modified Tentative Agreement due date to 9/30/2042.

M-016

- Remediation efforts are on-going to meet the target date T01.

M-016-119-T01: DOE will have a remedy in place to contain existing groundwater plumes (except iodine, nitrate, and tritium) in the 200 NPL Area, 12/31/2020

- Status: On schedule.

M-016-250: Submit to Ecology for approval a three year rolling prioritized schedule consistent with site-wide clean-up priorities to implement waste site removal actions per Action Memoranda (DOE/RL-2009-37, DOE/RL-2009-48 and DOE/RL-2009-86), 3/31/2016 and annually thereafter.

- Status: Completed change package with schedule that was signed in April 2016.

P-016-85A: Complete remote excavation for the 300-296 waste site, 9/30/2019.

- Status: Public Comments modified the Tentative Agreement to add this milestone.

Regulatory Agency Comments: N/A

M-024 Ecology Lead (RL-Ben Vannah, CHPRC-Dave Capelle)

M-024-58I: Initiate Discussion of Well Commitments, 6/1/2016

- Status: Completed on 04/25/15 with the transmittal of RL letter 16-AMRP-0163.

M-024-67-T01: Conclude Discussion of Well Commitments, 8/1/2016

- Status: On schedule.

M-024-67: DOE Shall Complete Construction of all CY2016 Wells Identified in M-24-13-01, 12/31/2016

- Status: Completed on 09/14/15 per RL completion letter 16-AMRP-0095 dated 02/03/16.

M-024-68: DOE Shall Complete Construction of all CY2017 Wells and before Identified in M-24-14-01, 12/31/2017

- Status: On schedule.

M-024-00O: Complete Well Installations with RCRA/CERCLA Requirements, TBD - In program planning

- Status: On schedule.

Regulatory Agency Comments: N/A

200 Area RCRA TSD Closures Ecology Lead (RL – Mostafa Kamal, CHPRC – Bert Day)

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

- Status: On Schedule. Tentative Agreement signed on 10/26/2015 proposed moving 241 CX Tank System to a separate, newly created milestone P-037-13 due 09/30/2022.

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

- Status: On schedule. Public comments on Tentative Agreement changed due date to 9/30/2024.

P-037-13: Complete unit-specific closure requirements according to the closure plan 241-CX Tank System (241-CX-70/71/72), 9/30/2022

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

Regulatory Agency Comments: Public comment period ends June 24, 2016 for the class III permit modification for the 207A SRB closure

U Plant Canyon EPA Lead (RL – Wade Woolery, CHPRC – TBD)

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

- Status: Public comments on Tentative Agreement changed due date to 9/30/2024.

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

- Status: Public comments on Tentative Agreement changed due date to 9/30/2027.

Regulatory Agency Comments: ...N/A

Canyon Facilities EPA/Ecology Lead (RL – Ray Corey, CHPRC – Moses Jaraysi)

M-085-01: Submit a Change Package to Establish a Date for Major Milestone M-085-00, 9/30/2022

- Status: On Schedule. Tentative Agreement signed on 10/26/2015 proposed a due date of 06/30/2026.

P-085-70: Submit Remedial Investigation/Feasibility Study Work Plan for 200-CB-1 to Ecology, 09/30/2019

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

P-085-72: Submit Removal Action Work Plan for 224-B to Ecology, 09/30/2020

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

P-085-74: Submit to Ecology for expedited response action(s) for one or more of the Tier 1 and Tier 2 facilities in the B Plant Geographic Area listed in HFFACO Appendix J. 06/30/2018

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

P-085-76: Initiate response actions in accordance with action memorandum for a non-time-critical removal action to address high priority cleanup for B Plant Canyon in the 200-CB-1 operable unit, 09/30/2025

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

P-085-80: Submit Remedial Investigation/Feasibility Study Work Plan for 200-CP-1 to Ecology, 09/30/2020

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

P-085-80A: Submit Preliminary Report on the structural integrity of PUREX Storage Tunnel #1 and #2, 9/30/2018.

- Status: Public comments on Tentative Agreement added this milestone. Text and date of milestone is in discussion with EPA and Ecology.

P-085-82: Submit to Ecology for expedited response action(s) for one or more of the Tier 1 and Tier 2 facilities in the PUREX Geographic Area listed in HFFACO Appendix J., 12/31/2017

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

P-085-84: Initiate response actions in accordance with action memorandum for a non-time-critical removal action to address high priority cleanup for the PUREX Plant in the 200-CP-1 operable unit, 09/30/2025

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

P-085-90: Submit Remedial Investigation/Feasibility Study Work Plan for 200-CR-1 to EPA, 09/30/2021

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

P-085-100: Submit Removal Action Work Plan for 224-T to EPA, 09/30/2020

- Status: Tentative Agreement signed on 10/26/15 proposed milestone.

M-085-00: Complete response actions for the canyon facilities/associated past practice waste sites, other Tier 1 Central Plateau facilities not covered by existing milestones, and Tier 2 Central Plateau facilities. This includes B Plant, PUREX, and REDOX canyons and associated past practice waste sites in 200-CB-1, 200-CP-1, and 200-CR-1 OUs. The milestone does not include U Plant or T Plant canyons, TBD

- Status: In Program Planning.

Regulatory Agency Comments: N/A

Documents for the Administrative Record

OU	Number (Published Year)	Title	Referencing Document
BP-5	GJO-2003-545-TAC, 2004	Hanford 200 Areas Spectral Gamma Baseline Characterization Project: B-BX-BY WMA and Adjacent Waste Sites Summary Report. Sobczyk SM.U.S. Department of Energy, Grand Junction, Colorado.	GW annual report for 2015 Rev. 0
All GW OUs	CHPRC-02867, 2016, Rev. 0	Return on Investment: Replacement of High-Purge Volume Monitoring Well Pumps with Low-Purge Volume Bladder Pumps	
All GW OUs	CHPRC-1504415, 2016, Rev. 0	Implementation Plan for the Installation of Low Purge Volume Bladder Pumps	
BP-5, UP-1, ZP-1, PO-1	CP-47631, 2013, Rev. 1	Model Package Report: Central Plateau Groundwater Model Version 3.4, Rev. 1	DOE/RL-2015-75, Draft A
UP-1, ZP-1	DOE/RL-2009-124, 2016, Rev. 0	200 West Operations and Maintenance Plan	
BP-5	DOE/RL-2015-26, 2016, Rev. 0	Engineering/Cost Evaluation for the 200-BP-5 Operable Unit Groundwater Extraction	
BP-5	DOE/RL-2015-75, 2016, Draft A	AQUIFER TREATABILITY TEST REPORT FOR THE 200-BP-5 GROUNDWATER OPERABLE UNIT	
UP-1	DOE/RL-2016-13, 2016, Rev. 0	Waste Management Plan for the 200-UP-1 Groundwater Operable Unit	
DV-1	DOE/RL-2016-22, 2016, Rev. 0	Waste Management Plan for Perched Water Pumping/Pore Water Extraction, 200-DV-1 Operable Unit	
BP-5	ECF-200BP5-15-0124, 2016, Rev. 0	200-BP-5 Treatability Test: Analysis of the Step Drawdown and Constant Rate Pumping Tests at Well 299-E33-268	
BP-5, PO-1	ECF-200E-15-0037, 2016, Rev. 0	Preparation of 200 East Area Water Table Maps for Calendar Years 2013 and 2014, Rev. 0	
UP-1	ECF-200UP1-12-0055, 2012, Rev. 1	Analysis of Spatial Variability of Specific Conductance in Groundwater at the 216-S-10 Pond & Ditch, Rev. 1, CH2M HILL Plateau Remediation Company, Richland, Washington	ECF-Hanford-16-0015, Rev. 0
ZP-1	ECF-200ZP1-12-0074, 2012, Rev. 0	Presentation & Initial Evaluation of Water-Level & Pumping Data for the Hanford 200-ZP-1 Groundwater Pump-and-Treat Remedy	needed for P&T Annual Report 2015 Rev. 0
UP-1, ZP-1	RHO-HS-VS-4, 1982	Earth Science Investigation of the 216 Z 20 Crib, the UN 216-W-20 Soil Trench, and the Storm Sewer Pond	DOE/RL-2015-23, R0

OU	Number (Published Year)	Title	Referencing Document
ZP-1	RHO-RE-EV-46 P, 1984	The 216-Z-8 French Drain Characterization Study, Rockwell Hanford Operations, Richland, Washington	DOE/RL-2015-23, R0
ZP-1	RHO-ST-21, 1978	Report On Plutonium Mining Activities At 216-Z-9 Enclosed Trench, Rockwell Hanford Operations, Richland, Washington	DOE/RL-2015-23, R0
ZP-1	SGW 47729 VA, 2010, Rev. 0	Low Level Burial Ground 3 Trenches 31 and 34 DQO Process [visual aid]	SGW-59564, Rev. 0
BP-5	SGW-52357, 2012, Rev. 0	Borehole Summary Report for the Installation of Two Wells in the 200-BP-5 Operable Unit, FY2012, Rev. 0	DOE/RL-2015-75, Draft A
PO-1, BP-5	SGW-59669, 2016, Rev. 0	WMA C October through December 2015 Quarterly Groundwater Monitoring Report	

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 718	TPA CHANGE NOTICE FORM	Date: May 12, 2016
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Document Number, Title, and Revision: DOE/RL-2009-69, Interim Status Groundwater Monitoring Plan for the LLBG WMA-4, Revision 2	Date Document Last Issued: September 2012
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Approved Change Notices Against this Document: N/A

Originator: M. E. Byrnes	Phone: 509-373-3996
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Description of Change:
Table 3-1, Table 3-2, and Figure 3-1 need to be revised to add an upgradient monitoring well and reflect sampling requirements for the well. In addition, quad sampling for indicator parameters in 299-W18-22 in Table 3-1 and a footnote added to both tables to indicate data from deep wells will be used for information purposes need to be included.

M.W. Cline and D. Singleton agree that the proposed change
DOE **Lead Regulatory Agency**
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*.

Table 3-1, Monitoring Network, Constituent List, and Sampling Frequency for LLWMA-4, modified to add an upgradient monitoring well 299-W18-21. In addition, a footnote has been added to indicate sample data from wells 299-W15-17 and 299-W18-22, which are deep monitoring wells, are used for information purposes only and are not required to satisfy regulatory requirements.

Figure 3-1, Groundwater Monitoring Network for LLWMA-4, is replaced with an updated figure to include well 299-W18-21.

Table 3-2, Attributes for Wells in LLWMA-4 Groundwater Monitoring Network, to add well 299-W18-21. In addition, a footnote has been added to indicate sample data from wells 299-W15-17 and 299-W18-22, which are deep monitoring wells, are used for information purposes only and are not required to satisfy regulatory requirements.

Note: Include affected page number(s) 3-2, 3-4 and 3-5

Justification and Impacts of Change:

Monitoring plan needs to be revised to include an upgradient monitoring well, 299-W18-21 (A4933) to the monitoring network. Sampling requirements for this well will be implemented as described for monitoring wells in the LLBG WMA-4 network.

Approvals:

 _____ DOE Project Manager N/A	<u>5/12/2016</u> Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
 _____ EPA Project Manager	_____ Date	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
 _____ Ecology Project Manager	<u>5/12/2016</u> Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved

Table 3-1. Monitoring Network, Constituent List, and Sampling Frequency for LLWMA-4

Well Name	Purpose	WAC Compliant	RCRA Required ^a Contaminant Indicator Parameters					Groundwater Quality Parameters							Supporting Constituents ^b			
			Water Level ^c	pH ^c	Specific Conductance ^c	TOC	TOX	Anions ^d			Metals (Unfiltered) ^d				Temperature ^c	Turbidity ^c	Dissolved Oxygen ^c	Alkalinity
								Chloride	Nitrate	Sulfate	Sodium	Iron	Manganese	Phenols ^d				
299-W15-17 ^a	Downgradient	Y	S	S	S	S	S	A	A	A	A	A	A	A	S	S	S	A
299-W15-30	Downgradient	Y	S	S4	S4	S4	S4	A	A	A	A	A	A	A	S	S	S	A
299-W15-83	Downgradient	Y	S	S4	S4	S4	S4	A	A	A	A	A	A	A	S	S	S	A
299-W15-94	Downgradient	Y	S	S4	S4	S4	S4	A	A	A	A	A	A	A	S	S	S	A
299-W15-152	Downgradient	Y	S	S4	S4	S4	S4	A	A	A	A	A	A	A	S	S	S	A
299-W15-224	Downgradient	Y	S	S4	S4	S4	S4	A	A	A	A	A	A	A	S	S	S	A
<u>299-W18-21</u>	<u>Upgradient</u>	<u>Y</u>	<u>S</u>	<u>S4</u>	<u>S4</u>	<u>S4</u>	<u>S4</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>S</u>	<u>S</u>	<u>S</u>	<u>A</u>
299-W18-22 ^a	Upgradient	Y	S	S	S	S	S	A	A	A	A	A	A	A	S	S	S	A

a. Constituents and parameters required by 40 CFR 265.92, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," "Sampling and Analysis."

b. Constituents are not required by RCRA but are needed to support interpretation.

c. Field measurement.

d. For anions, analytes include, but are not limited to, chloride, fluoride, nitrate, nitrite, and sulfate. For cations/metals, analytes include, but are not limited to, calcium, chromium, iron, magnesium, manganese, potassium, and sodium.

e. Deep monitoring wells used for information purposes only and not required to satisfy regulatory requirements.

DOE/RL-2009-69, REV. 2

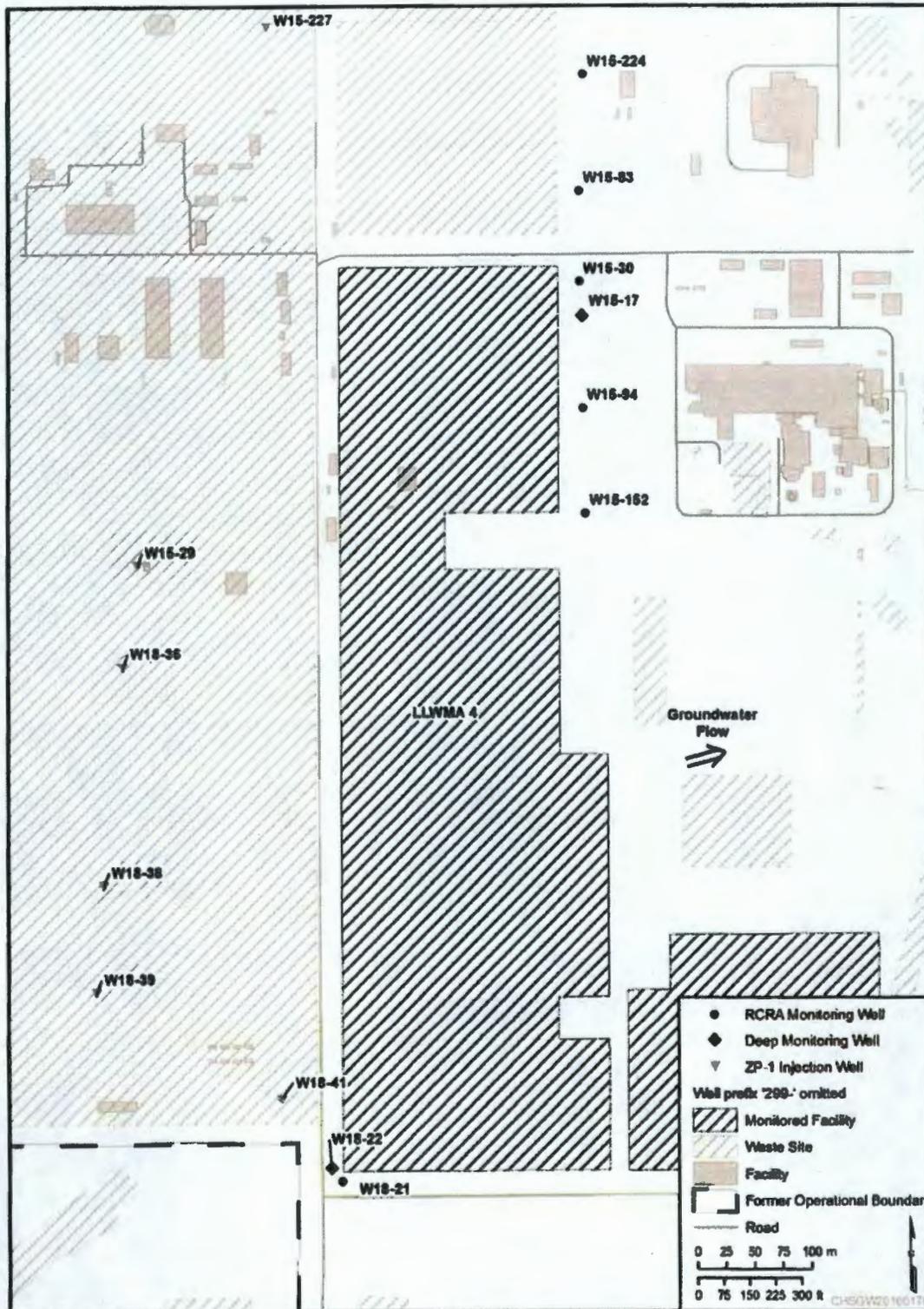


Figure 3-1. Groundwater Monitoring Network for LLWMA-4

Table 3-2. Attributes for Wells in LLWMA-4 Groundwater Monitoring Network

Well Name	Completion Date	Easting (m)	Northing (m)	Top of Casing Elevation (m NAVD88)	Water Table Elevation (m amsl)*	Screened Interval Top (m amsl)	Screened Interval Bottom (m amsl)	Water Remaining (m)
299-W15-17 ^a	October 1987	566306.891	135718.958	209.78	135.14	80.98	77.98	57.16
299-W15-30	May 1995	588304.617	135748.936	210.13	135.08	143.67	131.49	3.59
299-W15-83	September 2005	566304.52	135826.24	209.32	134.88	137.69	127.02	7.86
299-W15-94	September 2005	566307.58	135640.34	209.86	135.26	137.90	126.23	9.03
299-W15-152	September 2005	566309.40	135550.00	209.87	135.39	137.93	126.26	9.13
299-W15-224	April 2006	566307.89	135926.08	209.19	134.64	137.41	126.74	7.90
<u>299-W18-21</u>	<u>July 1987</u>	<u>566097.70</u>	<u>134978.692</u>	<u>204.25</u>	<u>136.67</u>	<u>143.39</u>	<u>134.25</u>	<u>3.18</u>
299-W18-22 ^a	September 1987	566088.632	134990.157	204.86	136.33	77.91	68.46	67.87

* March 2011 water levels.

amsl = above mean sea level

NAVD88 = North American Vertical Datum of 1988

a. Deep monitoring wells used for information purposes only and not required to satisfy regulatory requirements.

TRI-PARTY AGREEMENT		
Change Notice Number TPA-CN- 722	TPA CHANGE NOTICE FORM	Date: 04/25/16
Document Number, Title, and Revision: DOE/RL-2010-102, Rev 0., <i>Action Memorandum for Decontamination, Deactivation, Decommissioning, and Demolition (D4) Activities for 200 East Tier 2 Buildings/Structures</i>		Date Document Last Issued: February 2011
Approved Change Notices Against this Document: N/A		
Originator: W.E. Toebe		Phone: 372-2359
Description of Change: Change to the document is needed to add two structures (276BA and 211A) to the scope of DOE/RL-2010-102 through inclusion on the list in Table A-1. The proposed change will not modify the decision, but will only add the structures to the scope of the removal action as allowed by the Action Memorandum.		
<p style="text-align: center;"> <u> O.A. Farabee </u> and <u> S.N. Schleif </u> agree that the proposed change DOE Lead Regulatory Agency modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, <i>Documentation and Records</i>, and not Chapter 12.0, <i>Changes to the Agreement</i>. </p> <p>Revise Table A-1, see attached Page with additional text denoted by <u>double underline</u>.</p> <p>Note: Include affected page number(s): Pages A-1 and A-2</p>		
Justification and Impacts of Change: In accordance with the Action Memorandum (DOE/RL-2010-102, Rev 0, Section 1), DOE may evaluate other Hanford buildings/structures with similar characteristics, contaminants, and complexity for potential addition to the scope of the action. Buildings/structures determined to qualify as Tier 2 will be added to Appendix J of the TPA Action Plan and DOE/RL-2010-102.		
276BA and 211A: The structures meet the criteria for addition to DOE/RL-2010-102 based on the following: <ul style="list-style-type: none"> • The structures have similar characteristics, contaminants, and complexity to those evaluated and identified in DOE/RL-2010-102, Appendix A as Tier 2 facilities; • The structures are chemically and/or radiologically contaminated and require a CERCLA response action because of potential for substantial threat of release of hazardous substances, but do not qualify as Tier 1 (i.e., they are not large, heavily shielded metal and concrete structures containing tanks, heavily shielded gloveboxes or hot cells, etc.); • The structures qualify for addition to Appendix J of the TPA Action Plan as Tier 2 facilities consistent with Sections 8.1.3 and 8.1.4 of the TPA Action Plan. 		
211A was previously included within the scope of DOE/RL-2010-33 and is being moved to DOE/RL-2010-102, because it includes a treatment, storage, and disposal unit which cannot be dispositioned under DOE/RL-2010-33.		
Approvals:		
<u> O.A. Farabee </u> DOE Project Manager N/A	<u> 4/26/16 </u> Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
<u> S.N. Schleif </u> EPA Project Manager Ecology Project Manager	<u> 4/28/16 </u> Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved

DOE/RL-2010-102, REV. 0

A Building/Structure List

Table A-1 lists those 200 East Area Tier 2 buildings/structures in the scope of this non-time-critical removal action.

Table A-1. 200 East Area Tier 2 Building/Structure List

Building/Structure ID	Building/Structure Title	Estimated Waste Quantity (tons)
203A	Acid Pump House	9,778
206A	Vacuum Acid Fractionator Building	4,148
209E	Critical Mass Laboratory (including the 296P031 Stack)	12,581
<u>211A</u>	<u>Chemical Makeup Tank Farm & Pumphouse</u>	<u>940</u>
212A	Fission Product Loadout Station	2,918
212B	Fission Product Loadout. Cask Transfer Building	25,244
213A	Fission Product Load-in Station	1,792
216A	Valve Control Facility	18
221BB	Process Steam and Condensate Building	878
221BC	SWP Change House	464
221BD	Laundry Storage Building	1,365
221BF	Air Dryer Building	144
221BK	B Plant Canyon Exhaust Instrumentation Building	2,988
222B	Office Building/Laboratory	4,929
225BA	K1 Filter Pit Encapsulation Facility	386
225BB	K3 Filter Pit Encapsulation Facility	39
225BF	WESF Tanker Loadout Station	331
225E	TEDF Pump Station 2	1,583
241C801	Cesium Loadout Facility	3,478
241CR271	Cold Chemical Makeup Building	2,986
241CX40	Grout Removal Building	413
242B	Radioactive Particle Research Laboratory	3,708
242BL	Cask Loading Building	1,400
252AB	Electrical Substation	3,425
252AC	Electrical Substation	126
2707AR	Sludge Vault Change House	1,551

DOE/RL-2010-102, REV. 0

Table A-1. 200 East Area Tier 2 Building/Structure List

Building/Structure ID	Building/Structure Title	Estimated Waste Quantity (tons)
2711A	Air Compressor Building	987
2716B	RM Checkout Station, RR Tunnel	646
271B	B Plant Support Building	76,482
271CR	Control Building	416
276A	Cold Solvent Storage Building, R Cell	294
<u>276BA</u>	<u>Organic Mixed Waste Storage System</u>	<u>53</u>
276C	Solvent Handling Building	27,368
291AB	Exhaust Air Sampler House	10
291AC	Exhaust Air Sampler House	10
291AD	Filter Pit and Stack	415
291AE	Filter Cell No. 4	4,463
291AH	AOG Sample Station	144
291AK	Tunnel Spray Enclosure and Caissons	47
291AR	Exhaust Air Filter Stack Building	79
291B	Exhaust Fan Control House and Sand Filter	212
291BA	Exhaust Air Sample House	8
291BB	Instrument Building, A and B Filters	283
291BC	A and B Filters	3,217
291BD	C Filter and Instrument Building	268
291BF	D Filter	115
291BG	D Filter Instrument Building	283
291BH	Instrument Building, E Filter	20
291BJ	B Plant Instrument Building, F Filter	272
291BK	Instrument Building, E and F Filters	223
292AA	PR Stack Sample House	274
292AB	PUREX Gases Effluent Monitoring Building	8,296
293A	Off Gas Treatment Facility	1,383
294A	Off Gas Treatment and Monitoring Station	194
295A	ASD Sample Station	219

3.6 Management of Waste

All waste (~~including unexpected waste~~) generated by sampling activities will be managed in accordance with the ~~DOE/RL-2012-20, Waste Control Plan for the 200-DV-1 Operable Unit, waste control plan for the applicable process based OU or the waste control plan to be prepared for the 200-DV-1 OU.~~ Pursuant to 40 CFR 300.440, "National Oil and Hazardous Substances Pollution Contingency Plan," "Procedures for Planning and Implementing Off-Site Response Actions," approval from the CERCLA DOE-RL Remedial Project Manager is required before returning unused samples or waste from off-site laboratories. To document and simplify the management of returned samples, the approval is granted with the CERCLA DOE-RL Remedial Project Manager signature on this sampling and analysis plan, such that samples and associated sample waste may be returned to the project site and dispositioned with other wastes from the 200-DV-1 OU. This approval will be communicated to affected laboratories or treatment facilities, as needed.

DOE/RL-2011-104, REV. 0

- DOE/RL-2004-10, 2004, *Proposed Plan for the 200-TW-1 Scavenged Waste Group, the 200-TW-2 Tank Waste Group, and the 200-PW-5 Fission-Product Rich Waste Group Operable Units, Draft A*, Re-issue, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://www5.hanford.gov/arpir/?content=findpage&AKey=D4506687>.
- DOE/RL-2007-02, 2007, *Supplemental Remedial Investigation/Feasibility Study Work Plan for the 200 Areas Central Plateau Operable Units: Volume I: Work Plan and Appendices, Rev. 0, Vol. I*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://www2.hanford.gov/arpir/?content=findpage&AKey=00099914>.
- DOE/RL-2007-02-VOLII-ADD3, 2008, *Site-Specific Field-Sampling Plans for the 216-B-42 Trench, 216-S-13 Crib, 216-S-21 Crib, 216-T-18 Crib and 216-T-19 Crib and Tile Field in the 200-TW-1/200-PW-5 Operable Units, Rev. 0*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://www2.hanford.gov/arpir/?content=findpage&AKey=0807090163>.
- DOE/RL-2007-02-VOL II-ADD 4, 2008, *Site-Specific Field-Sampling Plans for the 216-B-7A&B Crib, 216-B-8 Crib and Tile Field, 216-T-3 Injection/Reverse Well, 216-T-5 Trench, 216-T-6 Crib, 216-T-7 Crib and Tile Field, 216-T-15 Trench, and 216-T-32 Crib in the 200-TW-2 Operable Unit: Addendum 4, Rev. 0*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://www5.hanford.gov/arpir/?content=findpage&AKey=0806160351>.
- DOE/RL-2012-20. 2015. *Waste Control Plan for the 200-DV-1 Operable Unit, Rev. 0*. U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=1506301062>
- Ecology, EPA, and DOE, 1989a, *Hanford Federal Facility Agreement and Consent Order*, (Tri-Party Agreement) 2 vols., as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington. Available at: <http://www.hanford.gov/?page=91&parent=0>.
- Ecology, EPA, and DOE, 1989b, *Hanford Federal Facility Agreement and Consent Order Action Plan*, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington. Available at: <http://www.hanford.gov/?page=117&parent=92>.
- Ecology Publication 94-115, 1994, *Natural Background Soil Metals Concentrations in Washington State, Toxics Cleanup Program*, Washington State Department of Ecology, Olympia, Washington. Available at: <http://www.ecy.wa.gov/pubs/94115.pdf>.
- Ecology Publication 94-145, 2001, *Cleanup Levels and Risk Calculations under the Model Toxics Control Act Cleanup Regulation; CLARC, Version 3.1*, Washington State Department of Ecology, Olympia, Washington. Available at: <http://www.ecy.wa.gov/biblio/94145.html>.
- Ecology Publication ECY 97-602, 1997, *Analytical Methods for Petroleum Hydrocarbons*, Washington State Department of Ecology, Olympia, Washington. Available at: <http://www.ecy.wa.gov/pubs/97602.pdf>.
- EPA/240/B-01/003, 2001, *EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5*, Office of Environmental Information, U.S. Environmental Protection Agency, Washington, D.C. Available at: <http://www.epa.gov/QUALITY/qs-docs/r5-final.pdf>.

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 725	TPA CHANGE NOTICE FORM	Date: April 28, 2016
Document Number, Title, and Revision: DOE/RL-2009-124, 200 West Pump and Treat Operations and Maintenance Plan, Revision 5		Date Document Last Issued: April 2016

Approved Change Notices Against this Document: N/A

Originator: W.F. Barrett Phone: 509-373-3985

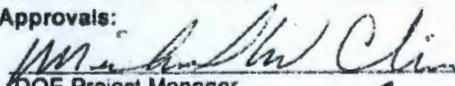
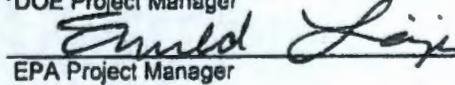
Description of Change:
Deleted the reference and text referring to a 200 West Pump and Treat waste acceptance criteria.

M.W. Cline and E. Laija 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*.
Sections 54.11 ERDF Leachate, D1.5 Untreated Water Quality, and D5 References are revised to delete the reference and text referring to the 200 West Pump and Treat waste acceptance criteria.
Deleted text is shown with ~~strikethrough~~.

Note: Include affected page number(s) B-18, D-6, and D-42

Justification and Impacts of Change:
The reference to a 200 West Pump and Treat waste acceptance criteria is not needed.

Approvals:

 DOE Project Manager	<u>4/28/2016</u> Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
 EPA Project Manager	<u>4/29/2016</u> Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
N/A Ecology Project Manager	_____ Date	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved

DOE/RL-2009-124, REV. 5

waste designation. If waste acceptance criteria cannot be met, the waste will be evaluated for additional treatment at an onsite or offsite facility prior to disposal. If treatment options are not available, the waste may be managed within the Hanford Site Solid Waste Operations Complex.

B4.11 ERDF Leachate

Leachate derived from landfill operations at the ERDF may be managed at the 200 West P&T ~~provided 200 West P&T waste acceptance criteria can be met.~~

D1.4.4 Miscellaneous Waste

Bag filters used to prevent particulates from the well field inflow from entering the IX columns are handled as miscellaneous waste. Bag filters used as resin traps are handled similarly on the assumption that the trapped mass of resin is minimal.

D1.5 Untreated Water Quality

Initial COC concentration estimates for the untreated contaminated water entering the treatment facilities are presented in Table D-2. This information is based on historical groundwater and perched water sampling and analysis from selected monitoring wells in the 200-ZP-1, 200-UP-1, 200-DV-1, and 200-BP-5 OUs as well as historic sample data from ERDF leachate.

Before any additional *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA)-related contaminated water is sent to the 200 West P&T for treatment, the appropriate calculations must be made to ensure that the facility can effectively treat the contaminated water to meet the ~~200 West P&T waste acceptance criteria (SGW 59872)~~ and the cleanup levels identified in each respective ROD or decision document for the 200-ZP-1, 200-UP-1, 200-DV-1, and 200-BP-5 OUs, and ERDF (EPA et al., 2008; EPA et al., 2012; DOE/RL-2014-34, 2014; DOE/RL-2010-74, 2015; and EPA, 2015 respectively).

DOE/RL-2009-124, REV. 5

- Ecology, EPA, and DOE, 1989b, *Hanford Federal Facility Agreement and Consent Order Action Plan*, as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington. Available at: <http://www.hanford.gov/?page=82>.
- EH-231-020/0194, 1994, *The Off-Site Rule*, CERCLA Information Brief, U.S. Department of Energy, Office of Environmental Guidance, Washington, D.C. Available at: <http://homer.ornl.gov/sesa/environment/guidance/cercla/off-site.pdf>.
- EPA, 1999, *U. S. Department of Energy Environmental Restoration Disposal Facility, Hanford Site - 200 Area, Benton County, Washington, Amended Record of Decision, Decision Summary and Responsiveness Summary*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2015, *Explanation of Significant Differences for the U.S. Department of Energy Environmental Restoration Disposal Facility, Hanford Site – 200 Area, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. Available at: <http://pdw.hanford.gov/arpir/pdf.cfm?accession=0079657H>.
- EPA, Ecology, and DOE, 2008, *Record of Decision, Hanford 200 Area, 200-ZP-1 Superfund Site, Benton County, Washington*, U.S. Environmental Protection Agency, Washington State Department of Ecology, and U.S. Department of Energy, Olympia, Washington. Available at: <http://www.epa.gov/superfund/sites/rods/fulltext/r2008100003103.pdf>.
- EPA, Ecology, and DOE, 2012, *Record of Decision for Interim Remedial Action, Hanford 200 Area Superfund Site, 200-UP-1 Operable Unit*, U.S. Environmental Protection Agency, Washington State Department of Ecology, and U.S. Department of Energy, Olympia, Washington. Available at: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0091413>.
- EPA/240/B-01/003, 2001, *EPA Requirements for Quality Assurance Project Plans*, EPA QA/R-5, Office of Environmental Information, U.S. Environmental Protection Agency, Washington, D.C. Available at: <http://www.epa.gov/QUALITY/qs-docs/r5-final.pdf>.
- EPA-505-B-04-900A, 2005, *Intergovernmental Data Quality Task Force, Uniform Federal Policy for Quality Assurance Project Plans, Evaluating, Assessing, and Documenting Environmental Data Collection and Use Programs, Part 1: UFP-QAPP Manual*, U.S. Environmental Protection Agency, Washington, D.C. Available at: http://www.epa.gov/swerffrr/pdf/ufp_qapp_v1_0305.pdf.
- EPA-600/4-79-020, 1983, *Methods for Chemical Analysis of Water and Wastes*, Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency, Cincinnati, Ohio. Available at: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=D196018581>.
- SGW-59872, 2016, *200W Pump and Treat Waste Acceptance Criteria, Rev. 0*, CH2M Hill Plateau Remediation Company, Richland, Washington.
- SW-846, 2007, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update IV-B*, as amended, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C. Available at: <http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm>.
- WAC 173-340, "Model Toxics Control Act—Cleanup," *Washington Administrative Code*, Olympia, Washington. Available at: <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-340>.