

Please distribute to the following:

100/300 AREA UNIT MANAGER MEETING ATTENDANCE AND DISTRIBUTION

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Hadley, Karl A	karl.hadley@wch-rcc.com	H4-21	WCH

NOTE FOR ADMIN RECORD:

TPA Milestones

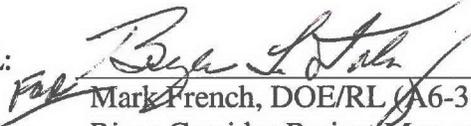
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M-016-186
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M-093-28

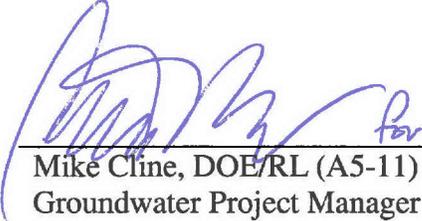
Operable Units

100-BC-1
100-BC-2
100-BC-5
100-FR-3
100-HR-3
100-IU-2
100-IU-6
100-KR-4
100-NR-2
300-FF-5

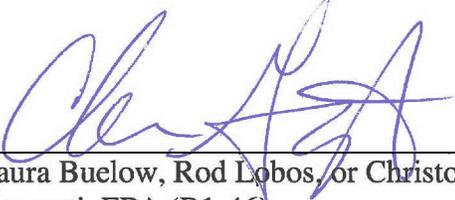
100/300 AREA UNIT MANAGERS MEETING
APPROVAL OF MEETING MINUTES

December 10, 2015

APPROVAL:  Date 1/14/16
Per Mark French, DOE/RL (A6-38)
River Corridor Project Manager

APPROVAL:  Date 1/14/16
Per Mike Cline, DOE/RL (A5-11)
Groundwater Project Manager

APPROVAL:  Date 1/14/16
Nina Menard, Ecology (H0-57)
Environmental Restoration Project
Manager

APPROVAL:  Date  1/14/16
Laura Buelow, Rod Lobos, or Christopher
Guzzetti, EPA (B1-46)
100 Area Project Manager

100 & 300 AREA UNIT MANAGER MEETING MINUTES

Groundwater and Source Operable Units; Facility Deactivation, Decontamination, Decommission, and Demolition (D4); Interim Safe Storage (ISS); Field Remediation (FR); Mission Completion; and 100-K Sludge Treatment Project and 100-K Facility Demolition and Soil Remediation Projects

December 10, 2015

ADMINISTRATIVE

- **Next Unit Manager Meeting (UMM)** – The next meeting will be held January 14, 2016, at the Washington Closure Hanford (WCH) Office Building, 2620 Fermi Avenue, Room C209.
- **Attendees/Delegations** – Attachment A is the list of attendees. Representatives from each agency were present to conduct the business of the UMM.
- **Approval of Minutes** – The November 12, 2015, meeting minutes were approved by the U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and U.S. Department of Energy, Richland Operations Office (RL).
- **Action Item Status** – The status of action items was reviewed and updates were provided (see Attachment B).
- **Agenda** – Attachment C is the Regular Session meeting agenda.

EXECUTIVE SESSION (Tri-Parties Only)

An Executive Session was not held by RL, EPA, and Ecology prior to the December 10, 2015, UMM.

100-K AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides a status of the 100-K Sludge Treatment Project and the 100-K Facility Demolition and Soil Remediation projects. No issues were identified and no agreements or action items were documented.

100-B/C AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 3 provides status and information for Washington Closure Hanford (WCH) Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. Attachment 4 provides the Field Remediation schedule for 100-B, 100-D, 100-H, 100-N, and 100-IU-2/6. No issues were identified and no agreements or action items were documented.

100-N AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 3 provides status and information for WCH Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. Attachment 4 provides the Field Remediation schedule for 100-B, 100-D, 100-H, 100-N, and 100-IU-2/6. No issues were identified and no agreements or action items were documented.

100-D & 100-H AREAS (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 3 provides status and information for WCH Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. Attachment 4 provides the Field Remediation schedule for 100-B, 100-D, 100-H, 100-N, and 100-IU-2/6. No issues were identified and no agreements or action items were documented.

100-F & 100-IU-2/100-IU-6 AREAS (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 3 provides status and information for WCH Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. Attachment 4 provides the Field Remediation schedule for 100-B, 100-D, 100-H, 100-N, and 100-IU-2/6. No issues were identified and no agreements or action items were documented.

300 AREA – 618-10/11 (GROUNDWATER, SOILS)

Attachment 3 provides status and information for WCH Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. No issues were identified and no agreements or action items were documented.

300 AREA - GENERAL (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 3 provides the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. No issues were identified and no action items were documented.

Agreement 1: Attachment 5 provides an EPA and DOE approved Tri-Party Agreement change notice TPA-CN-700 to update the *Remedial Design Report/Remedial Action Work Plan Addendum for the 300 Area Groundwater, DOE/RL-2014-13-ADD2, Revision 0*, by replacing Figure 7-1, Schedule for Groundwater Implementation, with an updated schedule.

ORCHARD LANDS

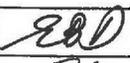
A meeting is scheduled for next week to finalize the work plan. No issues were identified and no agreements or action items were documented.

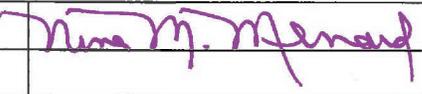
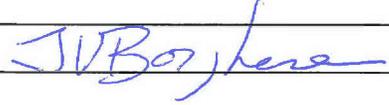
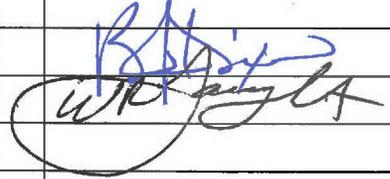
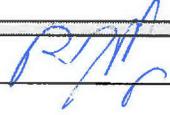
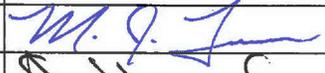
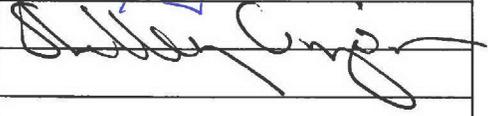
Attachment A

100/300 AREA UNIT MANAGER MEETING

ATTENDANCE

December 10, 2015

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Attachment B

100/300 Area UMM
Action List
December 10, 2015

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status

Attachment C

100/300 Area Unit Manager Meeting
December 10, 2015
Washington Closure Hanford Building
2620 Fermi Avenue, Richland, WA 99354
Room C209; 2:00 p.m.

Administrative:

- Approval and signing of previous meeting minutes
- Update to Action Items List
- Next UMM (1/14/2016, Room C209)

Open Session: Project Area Updates - Groundwater, Field Remediation, D4/ISS:

- 100-K Area (Steve Balone, Roger Quintero)
- 100-B/C Area (Greg Sinton, Tom Post)
- 100-N Area (Greg Sinton, John Neath)
- 100-D & 100-H Areas (Steve Balone, John Neath)
- 100-F & 100-IU-2/6 Areas (Greg Sinton, John Neath)
- 300 Area - 618-10/11 exclusively (Jamie Zeisloft)
- 300 Area (John Sands/Rudy Guercia)
- Orchard Lands (John Sands)

Special Topics/Other

Adjourn

Attachment 1

Unit Managers Meeting – December 2015 (November Data)

Summary Hanford Sampling Program

Hanford's overall Site groundwater monitoring program managed by CHPRC (River Corridor and Central Plateau) coordinates collection of groundwater samples from wells and aquifer tubes, as well as surface water samples from springs. Sample trips are scheduled by target month and prioritized based on project needs. Target sample dates (months) are chosen to minimize the number of sample trips by temporally aligning requests from multiple activities for a single location into a single trip where practical.

For Fiscal Year 2016 Hanford's overall Site groundwater monitoring program has 2,852 sample trips scheduled for collection. We have successfully completed 600 of 846 sample trips scheduled for October 2015 through November 2015.

Sample Trip Status by Month Scheduled and Month Collected

Specifically for November 2015 (FY 2016, month two) the program successfully completed 249 of the 349 groundwater sampling trips scheduled for November 2015, and 351 of the 497 trips scheduled for October 2015. Additionally 89 trips scheduled for Fiscal year 2015 were collected in November which brings the total number of Fiscal Year 2015 trips to be collected to 3,089 of 3,120 scheduled. Eighty of the 89 remaining sample trips are 300 Area special study sample trips.

The specific wells, aquifer tubes, and springs sampled in the river corridor areas during November 2015 are listed in Table 1.

Awaiting Sample Trips

Of the Fiscal Year 2015 and 2016 sample trips scheduled for November 2015 and prior, there are 279 that are awaiting collection. Of these, 3 require maintenance, 7 have access restrictions, 8 are being evaluated for cancelation or rescheduling, 138 are associated with special studies, 1 is awaiting drilling, and 122 are awaiting collection at the month end.

Table 2 presents the sample trips for only the river corridor that were not successfully completed in November. Sample trips in Table 2 are grouped by fiscal month scheduled and groundwater interest area. This table clearly shows that the number of awaiting well trips decreases with time from the schedule date. Reasons for sample trips to be awaiting include, but are not limited to, issues such as well maintenance, weather conditions, access restrictions, and resource limitations.

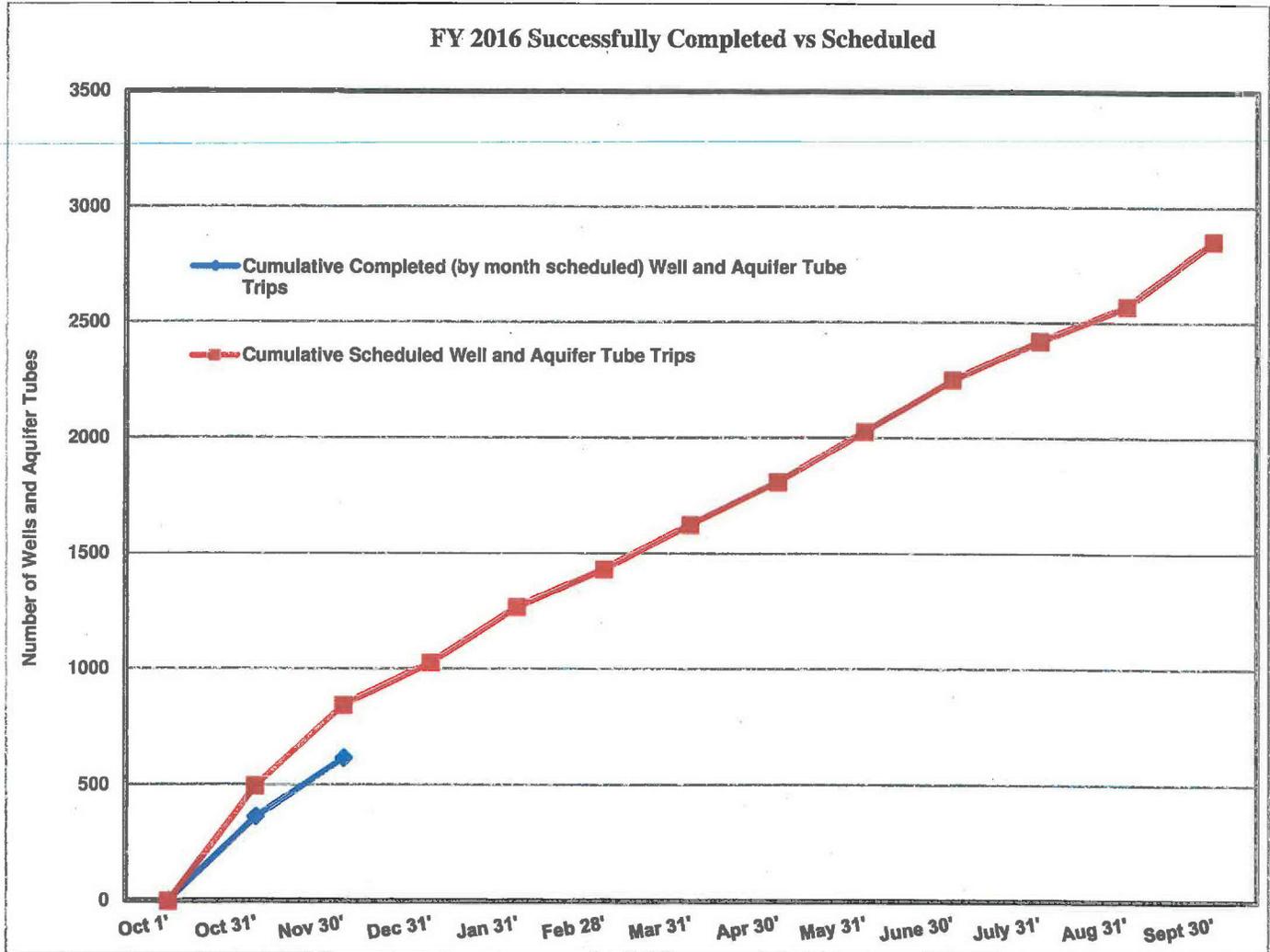
Upcoming Sample Trips

Sample trips for the river corridor only, scheduled for collection in December 2015 (and not collected before the target sample month) are listed in Table 3.

Data Access

The sampling results are available in HEIS and can be accessed from the Environmental Dashboard Application which can be accessed from the HLAN at <https://ehs.chprc.rl.gov/eda/> or from the internet at <https://ehs.hanford.gov/eda/>.

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Operable Unit Specifics

100-KR-4 Groundwater Operable Unit (Mike Drewett/Chuck Miller/Jason Hulstrom)

• CERCLA Process Implementation:

- ✓ The RI/FS and PP documents are on hold pending 100-K East Reactor waste site characterization and modeling (wells 116-KE-3 and UPR-100-K-1). PNNL conducting leach testing with the final report scheduled for completion mid-January 2016.
- ✓ Monitoring Plan: The Draft A documents (Interim O&M Plan, Interim RD/RAWP, and Interim Groundwater Monitoring Plans) are being revised to incorporate applicable 100-HR-3 comments and the pH value engineering evaluation. These documents will be issued in December 2015.

• Remedial Actions & System Modifications:

- ✓ The volume of groundwater treated and mass of Cr(VI) removed for the 100-K P&T systems (KX, KR-4, and KW) during November 2015 are:
 - Treated 63.3 million gallons (61.5 October).
 - Removal 3.3 kg of hexavalent chromium (3.5 October)
- ✓ The current influent and effluent Cr(VI) concentrations (measure once weekly) for the three K systems (measured November 30, 2015) are:
 - 100-KR4 – Influent = 9 µg/L; Effluent = less than detection
 - 100-KW – Influent = 14 µg/L; Effluent = less than detection
 - 100-KX – Influent = 19 µg/L; Effluent = 2 µg/L
- ✓ FY 2016 P&T performance to date:

<u>P&T System</u>	<u>Treated (mgal)</u>	<u>Removed (kg)</u>
KR-4	27.0	0.7
KW	28.9	1.9
KX	68.9	4.3
100-KR-4 OU TOTAL	124.8	6.9

- ✓ For November 2015, all three pump and treat systems operated at 100% (fully on-line) and the 30-day average pumping rates were 317 gpm, 329 gpm, and 820 gpm for the KR-4, KW, and KX systems, respectively. A summary of the number of extraction and injection wells in the three systems is shown in Table K-1.

Table K-1. Summary of the Number of Extraction and Injection Wells in the Three Systems

Wells	KR4		KX		KW		TOTAL	
	2014	2015	2014	2015	2014	2015	2015	Current
Number of extraction wells	12	12	18	19	11	11	42	42
Number of injection wells	5	5	9	9	4	4	18	18

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- ✓ All KR-4 system extraction wells and injection wells are currently in service. The KR-4 hexavalent chromium concentration in extracted water continues to be below site cleanup requirements. The system remains in service to provide hydraulic capture of groundwater inland of the river.
- ✓ At the KW system Wells 199-K-132, 199-K-139, and 199-K-166 remain off-line to allow increased pumping along the central axis of the plume. Extraction Well 199-K-205, located at the former 183-KW Head House vicinity, continues operating at an extraction rate of 120 gpm and provides the highest concentration of hexavalent chromium; however, concentrations in this well are exhibiting a consistent decreasing trend.
- ✓ The current concentration in Well 199-K-205 is 23 µg/L. The concentration time series for Well 199-K-205 since the time it was placed in extraction service is shown in Figure K-1
- ✓ All injection wells are in service. Most of the monitoring and extraction wells in the vicinity of KW pump and treat system have exhibited hexavalent chromium concentrations below the interim remedial action target of 20 µg/L during 2015.
- ✓ Figure K-2 illustrates the time series of hexavalent chromium concentrations at other selected wells in the KW vicinity compared to the 20 µg/L target concentration.
- ✓ Figure K-3 shows the location of the wells indicated in Figure K-2.

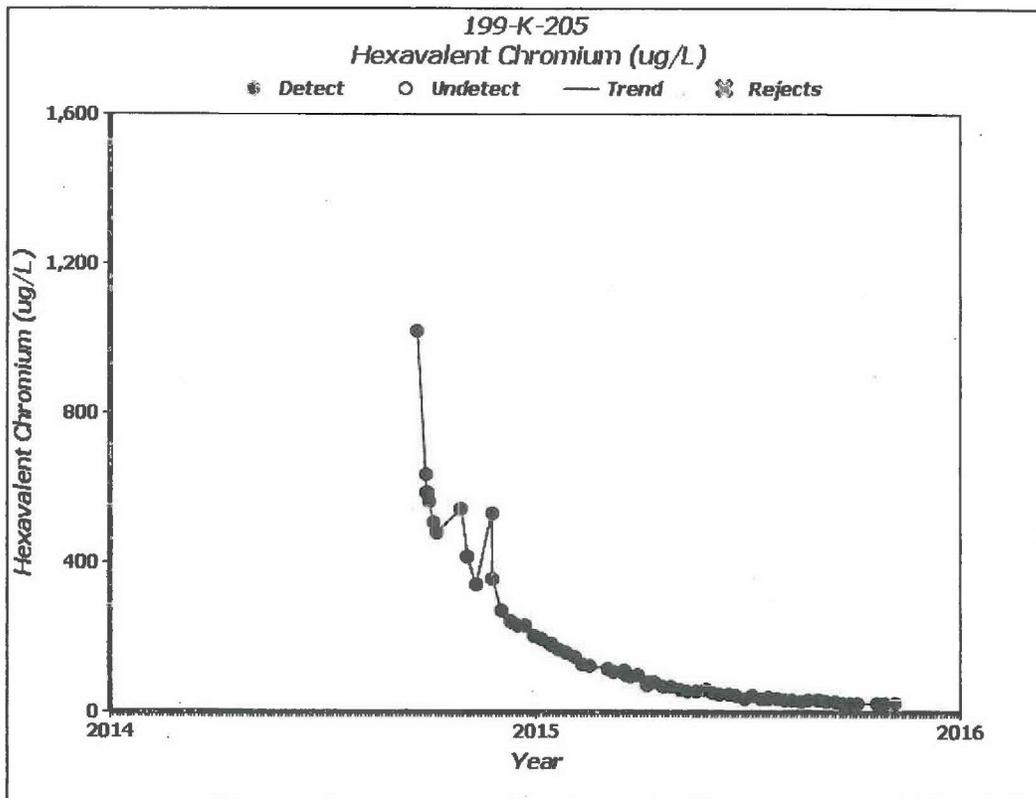


Figure K-1. Well 199-K-205 Hexavalent Chromium Concentration Time Series.

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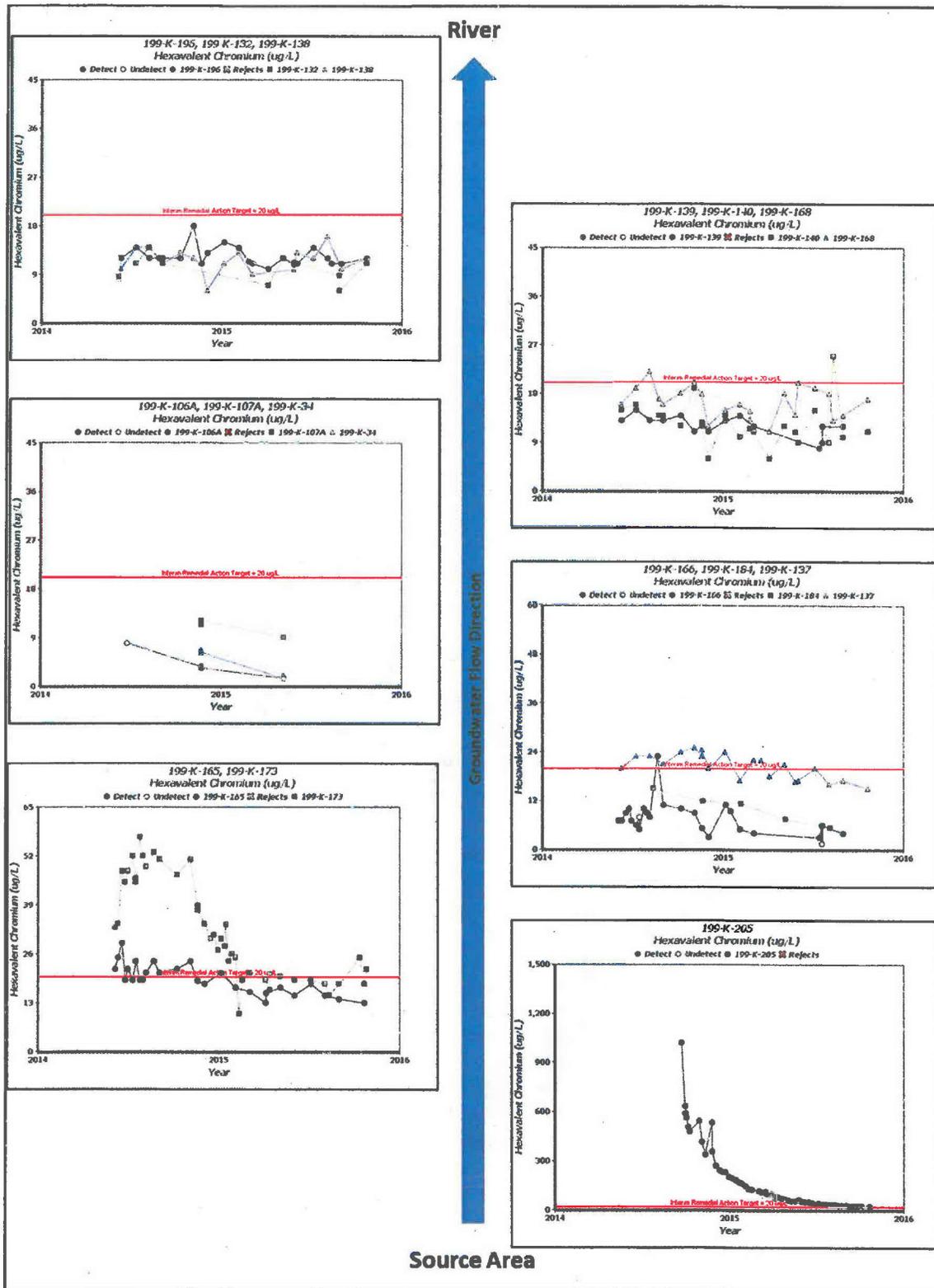


Figure K-2. Comparison of Hexavalent Chromium Concentration in Groundwater Wells along Flow Path from KW Head House to Columbia River during 2014 and 2015.

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- ✓ All KX system extraction wells are in service.
- ✓ Figures K-4 through K-6 present the groundwater treatment rate and hexavalent chromium removal information. As indicated in the curves below, Cr(VI) mass removal at KR-4, KW, and KX have generally decreased in recent months due to continued optimization of remedial performance (e.g., increasing the overall system pumping rates, while extracted groundwater concentrations decrease).
- ✓ Hexavalent chromium concentration at 199-K-205 has declined to 22 µg/L, although this still represents the highest concentration at 100-KW. This single well continues to account for most of the Cr(VI) entering the KW system due to pumping rate and persistent elevated chromium concentration. Pumping is being currently focused on wells along the axis of the Cr(VI) plume where peripheral wells are exhibiting reduced Cr(VI) concentrations.
- **Characterization Activities in Vicinity of 105-KE Reactor**
 - ✓ Evaluation of the soil and groundwater analytical data collected from Well 199-K-222 (the second of two subsurface characterization borings near 105-KE Reactor) continued. Preliminary observations and initial laboratory analyses indicated that radiological contamination is present across the vadose zone thickness. Notably elevated concentrations of cesium-137 and strontium-90 were observed at elevations corresponding with the bottom of the foundation of the former 105-KE Fuel Storage Basin and also within the periodically-rewettered zone above the current water table.
 - ✓ A sample of groundwater collected during drilling from a location just beneath the water table exhibited elevated strontium-90, carbon-14, and low level detects of tritium and technetium-99. These measurements are consistent with the historical release of contaminated water from the fuel storage basin. Elevated strontium-90, carbon-14, and tritium have historically been observed downgradient of 105-KE Reactor, along with periodic detections of low concentrations of technetium-99.
 - ✓ When complete, the results of this characterization activity will be documented in a Field Investigation Report and ultimately incorporated into the 100-KR-4 RI/FS report. The newly-completed Well 199-K-222, along with recently-completed Well 199-K-221 (located adjacent to the former 116-KE-3 Crib and Reverse Well) will be placed in monitoring service.
- **Soil Remediation in Vicinity of 183-KE Head House**
 - ✓ Shallow soil remediation at selected waste sites in the vicinity of 183-KE Head House is underway. These activities include removal of foundation works and shallow soil excavation (i.e., to about 10 feet below grade). Existing groundwater monitoring Wells 199-K-36 and 199-K-188 are remaining in service during the soil excavation.

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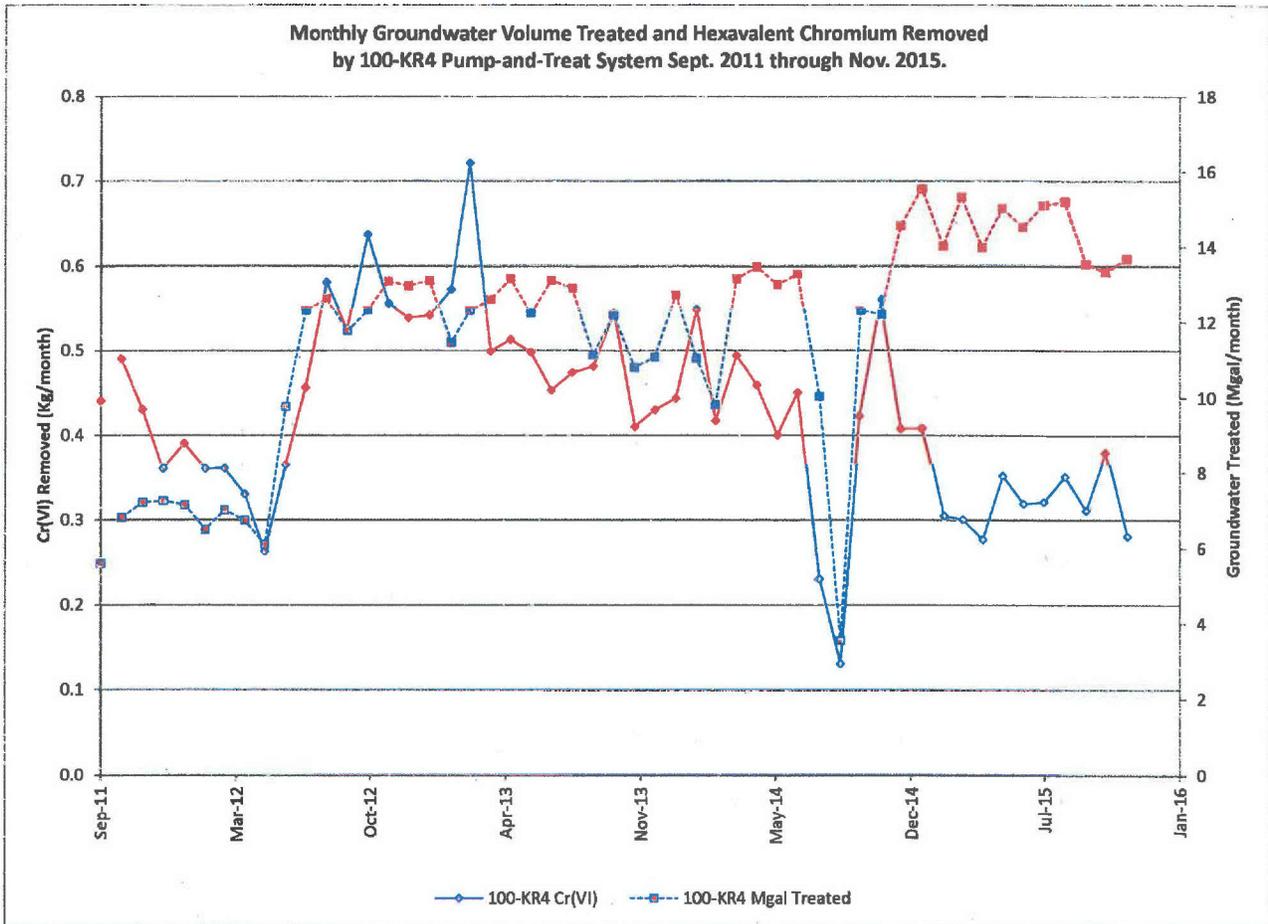


Figure K-4. Monthly Cr(VI) Removed and Groundwater Volume Treated by 100-KR-4 Pump-and-Treat, September 2011 through November 2015.

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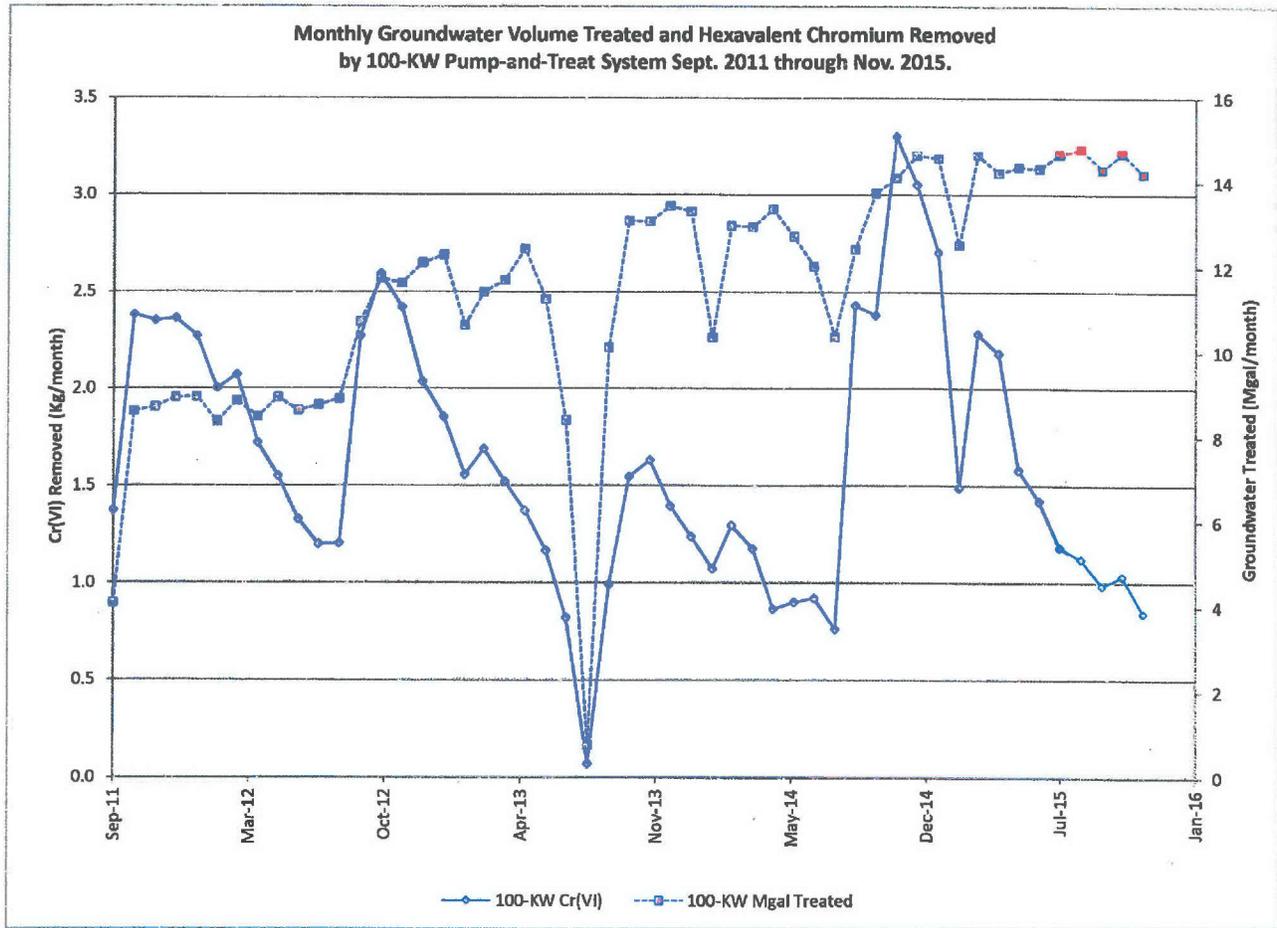


Figure K-5. Monthly Cr(VI) Removed and Groundwater Volume Treated by 100-KW Pump-and-Treat, September 2011 through November 2015.

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December 10, 2015**

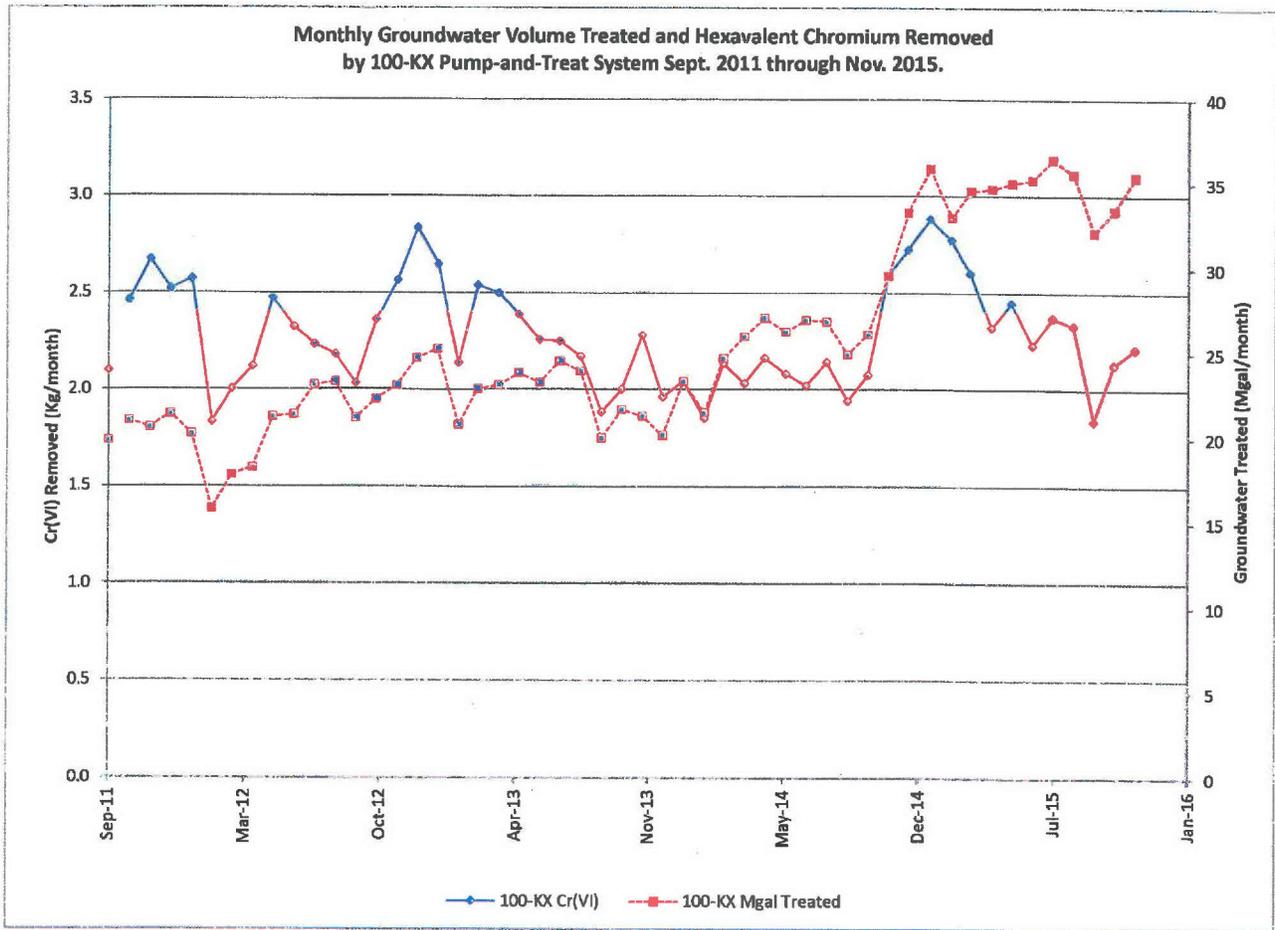


Figure K-6. Monthly Cr(VI) removed and groundwater volume treated by 100-KX pump-and-treat, September 2011 through November 2015.

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100-BC-5 Groundwater Operable Unit – Robert Evans/Mary Hartman

- Milestone M-015-79: Due 12/15/2016 for the CERCLA RI/FS Report and Proposed Plan for the 100-BC-1, 100-BC-2 and 100-BC-5 Operable Units
- CERCLA Process Implementation:
 - ✓ Draft A of the groundwater sampling and analysis plan that will cover the 3-to-5 year period between completion of the RI and groundwater remedy implementation has completed RL review. The plan was submitted to the regulatory agencies on October 1, 2015.
 - ✓ The Project Team held a storyboard workshop to discuss themes for the RI/FS Report.
- Monitoring & Reporting:
 - ✓ Additional analytical results from the monitoring wells and HSPs sampled in October 2015 were received. Results were within previously established ranges.
 - ✓ ~~A field crew removed data loggers from 4 hyporheic sampling points in early December.~~ ^{12/16/15} The data loggers have been recording water level, temperature, and specific conductance at hourly intervals.

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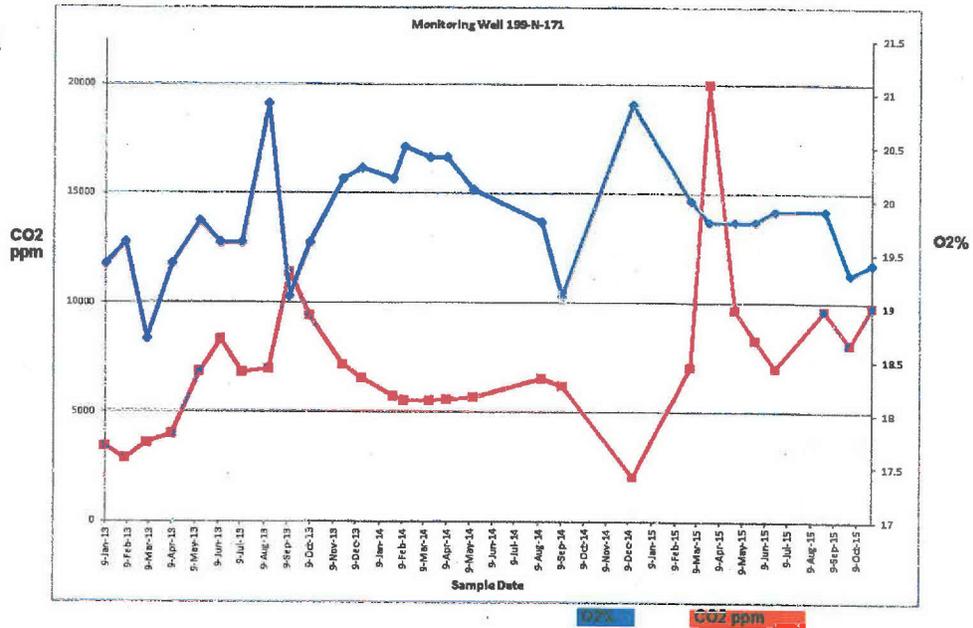
100-NR-2 Groundwater Operable Unit – Bill Faught/Virginia Rohay/Art Lee

- CERCLA Process Implementation
 - ✓ Revised Chapter 6 red-lines and the associated RCR form (incorporating the new waste sites) were provided to Ecology for review on February 9, 2015. Comments on this revised text arrived from Ecology on May 21, 2015. Responses continue to be shared.
 - ✓ Revised Chapter 7 red-lines and the associated RCR form were completed and sent to Ecology February 26, 2015. We anticipate resolving the single remaining comment within the extension period (December 2015).
 - ✓ The numerical modeling performed for Draft A is being revisited.
 - ✓ The project extension for comment response will expire December 31, 2015.
- Remedial Actions
 - Bioventing** –
 - ✓ Figure NR-1 provides a chart showing bioventing well gas sample results for monitoring wells 199-N-171 and 199-N-169. Monthly vapor sample measurements were completed.
 - Product Recovery** –
 - ✓ The revised “smart sponges” configuration will be replaced at the end of December. The assembly was last changed out on September 29, 2015.
 - Aquifer Tubes** –
 - ✓ Tubes C7934, C7935, and C7936 are located adjacent to one another (Figure NR-2), with screens at depths of **14.41 ft. (C7934), 18.75 ft. (C7935), and 29.19 ft. (C7936)**. All three aquifer tubes were sampled on October 26, 2015 and November 19, 2015. Tritium and strontium-90 concentration trends are shown in Figures NR-4 and NR-5, respectively.
 - ✓ The RCRA monitoring wells scheduled for September 2015 were sampled on September 14 through 17, 2015, and September 28, 2015. One RCRA monitoring well (199-N-2) had electrical issues with the pump and could not be sampled. The well will be sampled after the issue has been corrected. The next sampling event is scheduled for March 2016.

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Well 199-N-171

Date	O2%	CO2 ppm
9-Jan-13	19.4	3400
5-Feb-13	19.6	2840
6-Mar-13	18.7	3570
8-Apr-13	19.4	3960
15-May-13	19.8	8820
12-Jun-13	19.6	8290
10-Jul-13	19.6	8800
14-Aug-13	20.9	6940
11-Sep-13	19.1	11400
8-Oct-13	19.6	9380
21-Nov-13	20.2	7160
16-Dec-13	20.3	6520
27-Jan-14	20.2	5720
11-Feb-14	20.5	5520
17-Mar-14	20.4	5520
9-Apr-14	20.4	5560
14-May-14	20.1	5870
13-Aug-14	19.8	6520
10-Sep-14	19.1	6180
15-Dec-14	20.9	2000
1-Mar-15	20	7020
25-Mar-15	19.8	20000
29-Apr-15	19.8	9650
26-May-15	19.8	8280
22-Jun-15	19.9	7000
27-Aug-15	19.9	9820
30-Sep-15	19.3	8070
29-Oct-15	19.4	9770



Well 199-N-169

Date	O2%	CO2 ppm
9-Jan-13	20.9	0
5-Feb-13	20.9	0
6-Mar-13	20.9	0
8-Apr-13	20.9	0
15-May-13	20.9	900
12-Jun-13	20.9	780
#1 10-Jul-13	20.5	1020
#2 10-Jul-13	20.9	920
14-Aug-13	20.9	530
11-Sep-13	20.9	1250
8-Oct-13	20.9	560
21-Nov-13	21.3	800
16-Dec-13	20.9	530
27-Jan-14	20.9	500
11-Feb-14	20.9	560
17-Mar-14	20.9	470
9-Apr-14	20.9	660
14-May-14	20.9	840
13-Aug-14	20.9	520
10-Sep-14	20.9	410
16-Dec-14	21	100
1-Mar-15	20.9	360
25-Mar-15	20.9	325
29-Apr-15	20.9	410
26-May-15	20.9	460
22-Jun-15	21	0
27-Aug-15	21.4	390
30-Sep-15	20.9	530
29-Oct-15	20.9	360

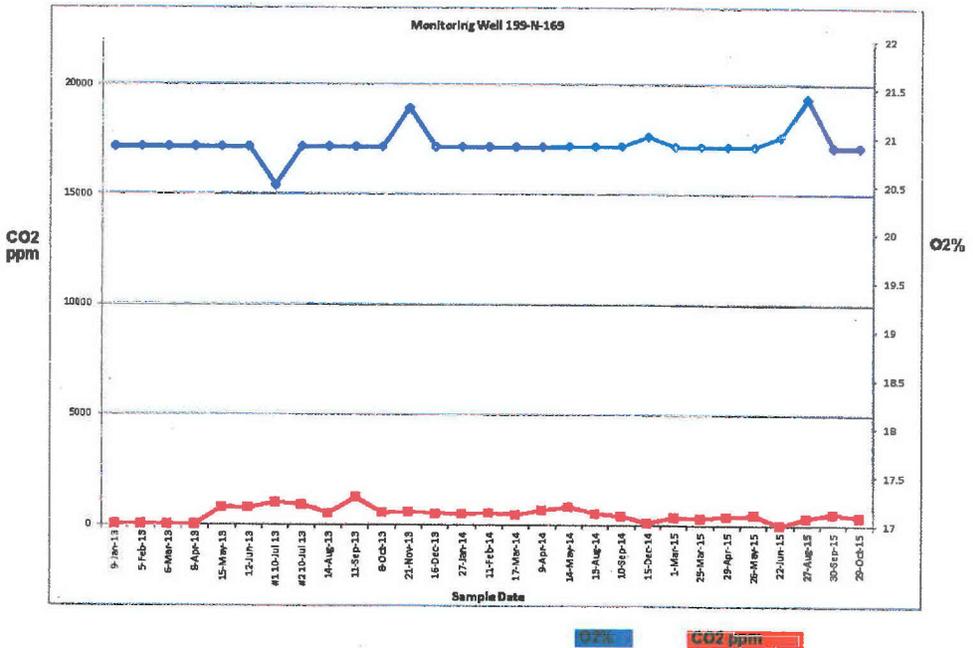


Figure NR-1. Bioventing Wells 199-N-169 and 199-N-171 Monthly Sampling Results.

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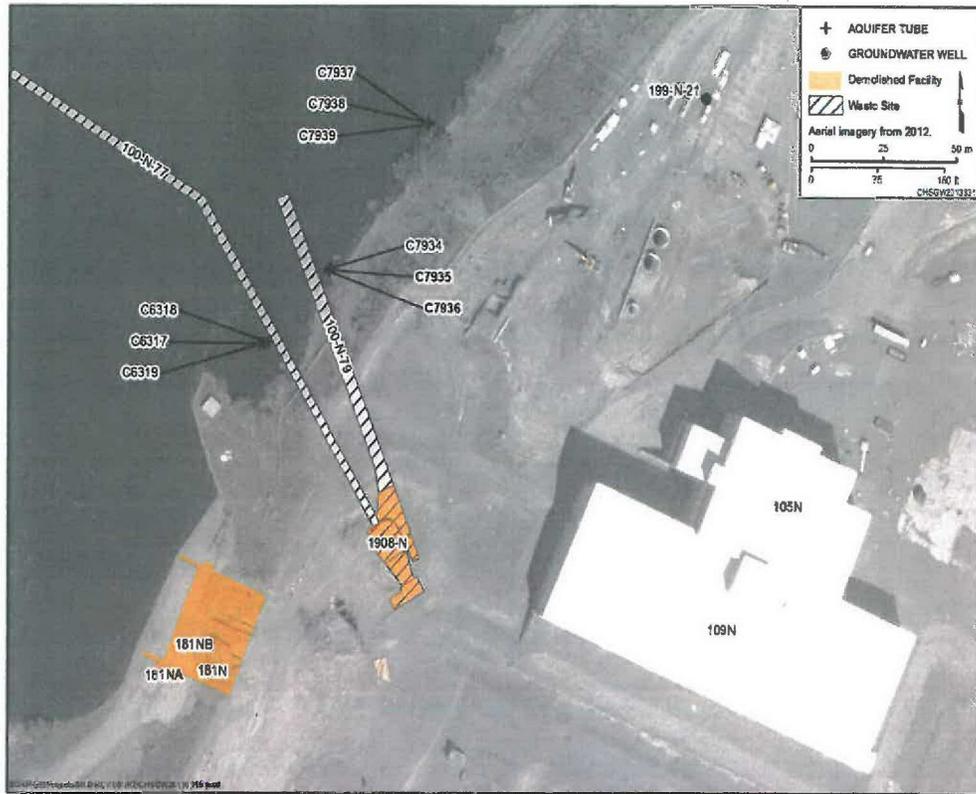


Figure NR-2. Locations of Aquifer Tubes C7934, C7935, and C7936.

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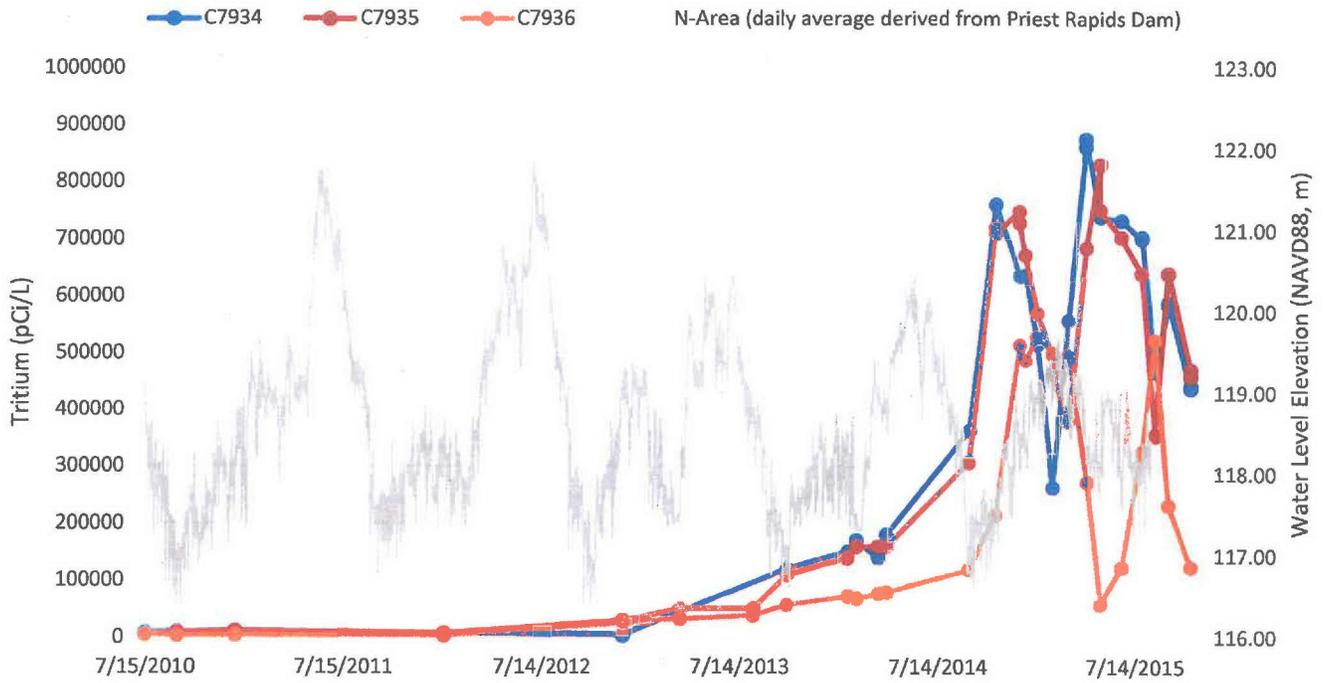


Figure NR-4. Tritium Trends through October 2015 at Aquifer Tubes C7934, C7935, and C7936.

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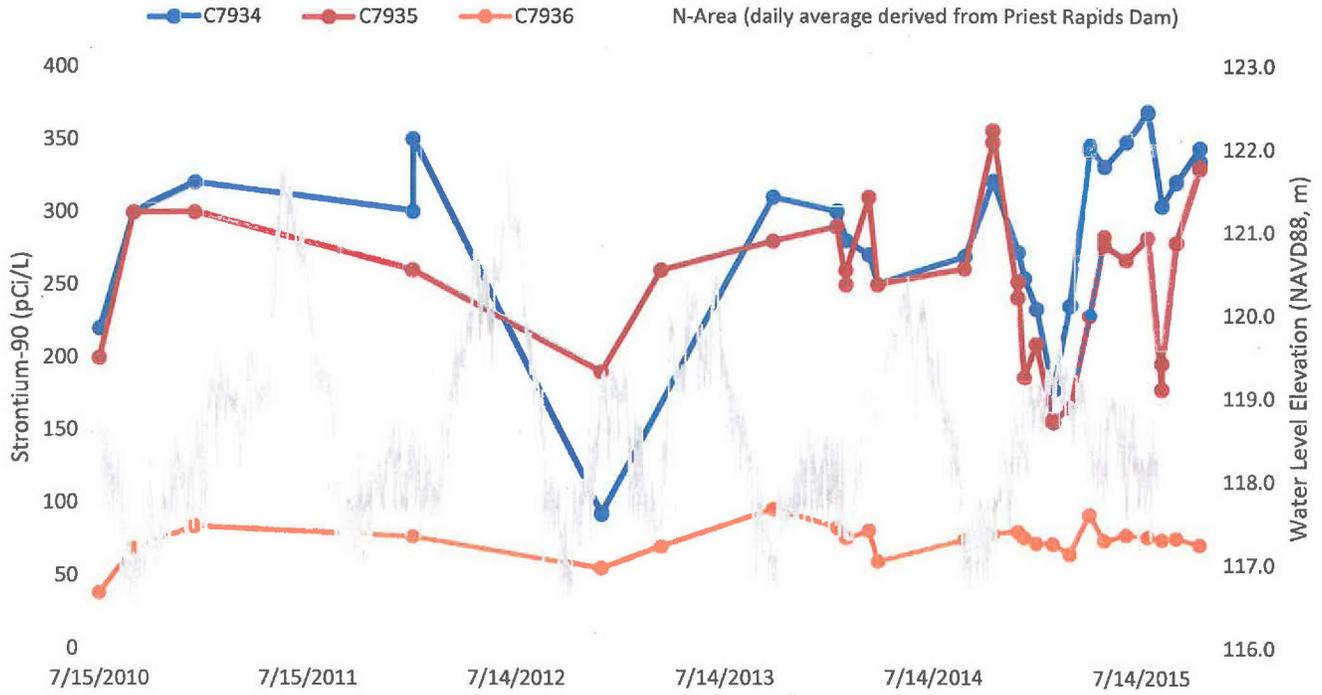


Figure NR-5. Strontium-90 Trends through October 2015 at Aquifer Tubes C7934, C7935, and C7936.

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100-HR-3 Groundwater Operable Unit – Mike Drewett/Kris Ivarson

- CERCLA Process Implementation:
 - ✓ EPA legal comments were received on November 9, 2015. RL reviewing comments for required changes/updates to the PP. Working towards meeting proposed issuance of PP to public by mid-January 2016.
 - ✓ Interim RD/RAWP, Interim Monitoring Plan, and Interim O&M Plan, Draft A plans were transmitted to Ecology on September 30, 2014. All comments have been resolved or conceptual agreement reached. Working towards January 2016 submittal of Rev. 0 for all three documents.
- Remedial Actions & System Modifications
 - ✓ A summary of the number of extraction and injection wells in the DX and HX P&T systems is shown in Table H-1.

Table H-1. Summary of the Number of Extraction and Injection Wells in the 100-HR-3 Systems

Wells	DX		HX		Total
	2014	2015	2014	2015	Current- as of 10/31/2015
Number of extraction wells	44	46	31	34	80
Number of injection wells	14	11	14	16	27

Notes:
 DX system Well 199-D8-55 was not used for injection in 2014, but was operational as an extraction well
 Four injection wells for DX are remain connected, but are not counted in 2015 since they are not operating.

- ✓ All FY15 well realignments are completed and operational. Realignments for FY16 are in planning stages.
- ✓ Drilling of the seven (7) WCH replacement wells is anticipated to start in early 2016, possibly as early as February.
- ✓ Well 199-D5-34 (south plume) and Well 199-D8-95 (north plume) currently have the highest levels of Cr(VI) in 100-HR-3 at 306µg/L and 340µg/L, respectively as of November 9, 2015. Concentrations in Well 199-D5-34, located in the southern portion of 100-D have been declining consistently since the connection to the P&T system was completed in July of 2015. In the northern plume area, concentrations in Well 199-D8-95 have stabilized (Figure H-1). A new extraction well is planned for this area to increase mass removal.

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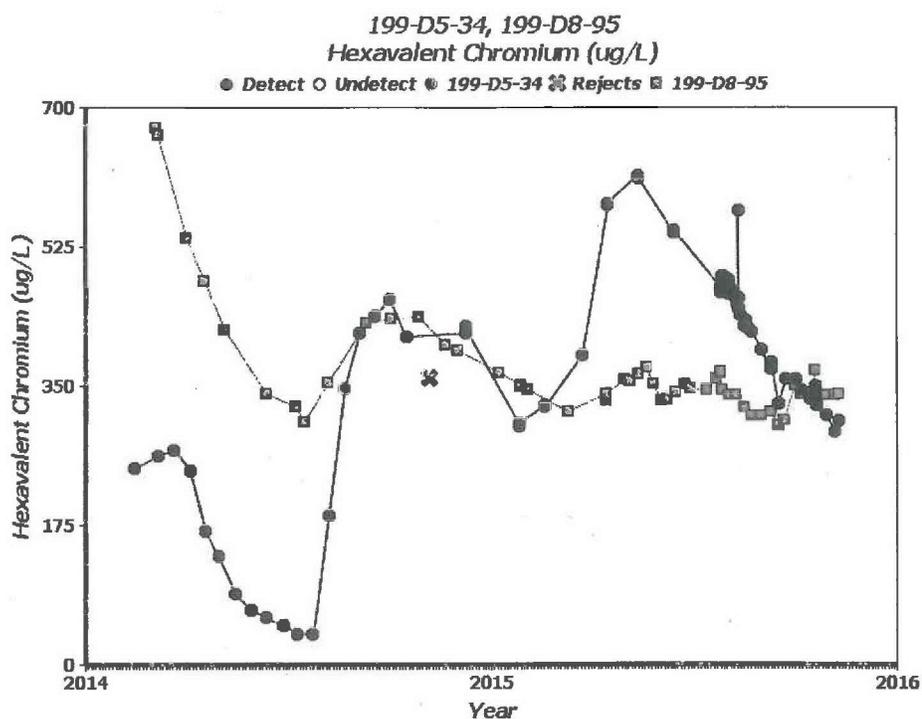


Figure H-1. Hexavalent Chromium Trends in Wells 199-D5-34 and 199-D8-95.

- ✓ The highest concentrations of Cr(VI) at HX are between 60 to 70µg/L, reported in several extraction wells in the Horn. Concentrations have increased from low levels to over 60 µg/L in Wells 199-H1-42 and 199-H1-45 as a result of the well realignments completed in FY15. The movement of the plume to the extraction wells in this area appears to be a result of injection at Well 699-95-45B, located in the Horn, south of the plume mass.
- ✓ November 2015 monthly performance for the combined DX and HX systems:
 - Treated: 51.0 million gallons (54.0 in October)
 - Removed: 9.17 kg of Cr(VI) (10.2 in October)
- ✓ FY 2016 P&T performance to date:

<u>P&T System</u>	<u>Treated (mgal)</u>	<u>Removed (kg)</u>
DX	66.3	14.7
HX	38.6	4.7
TOTAL	104.9	19.4

- ✓ Summaries of the volume of groundwater treated and Cr(VI) removed for the 100-DX and 100-HX pump-and-treat systems are shown in Figures H-2 and H-3, respectively. A general reduction in Cr(VI) mass removal over time, a function of progress of remediation with associated reduction in groundwater contaminant concentration, is exhibited at both DX and HX. The drop in concentrations is more pronounced at DX, where concentrations were previously at very high levels. Influent concentrations at DX continue to decline as remediation progresses.
- ✓ The current influent and effluent Cr(VI) concentrations (measure once weekly) for the two 100-HR-3 systems (as measured on November 24, 2015, for DX and November 30, 2015, for HX) are:

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- DX – Influent = 54 $\mu\text{g/L}$; Effluent = less than detection
- HX – Influent = 32 $\mu\text{g/L}$; Effluent = 4 $\mu\text{g/L}$

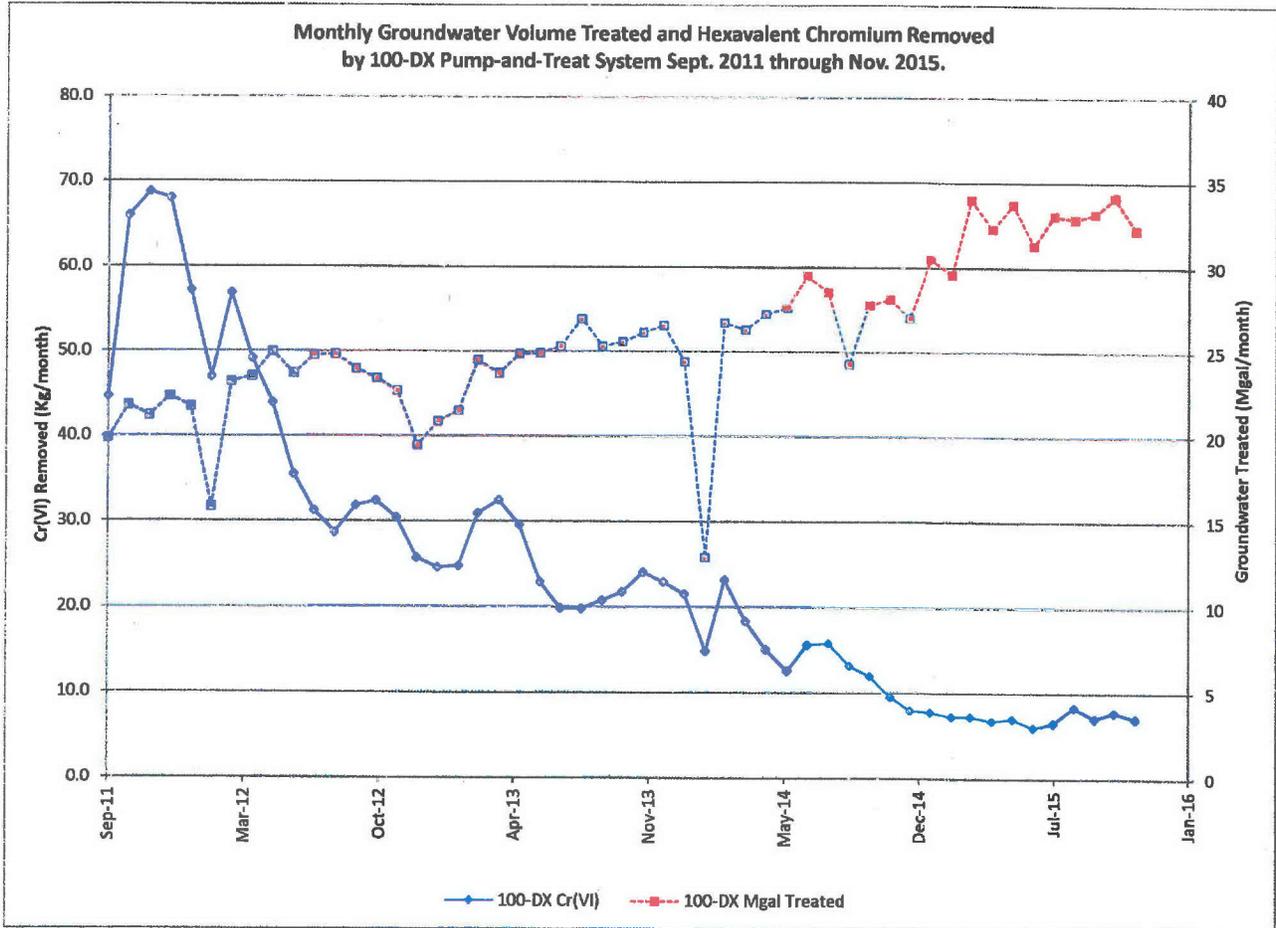


Figure H-2. Monthly Cr(VI) Removed and Groundwater Volume Treated by 100-DX Pump-and-Treat, September 2011 through November 2015.

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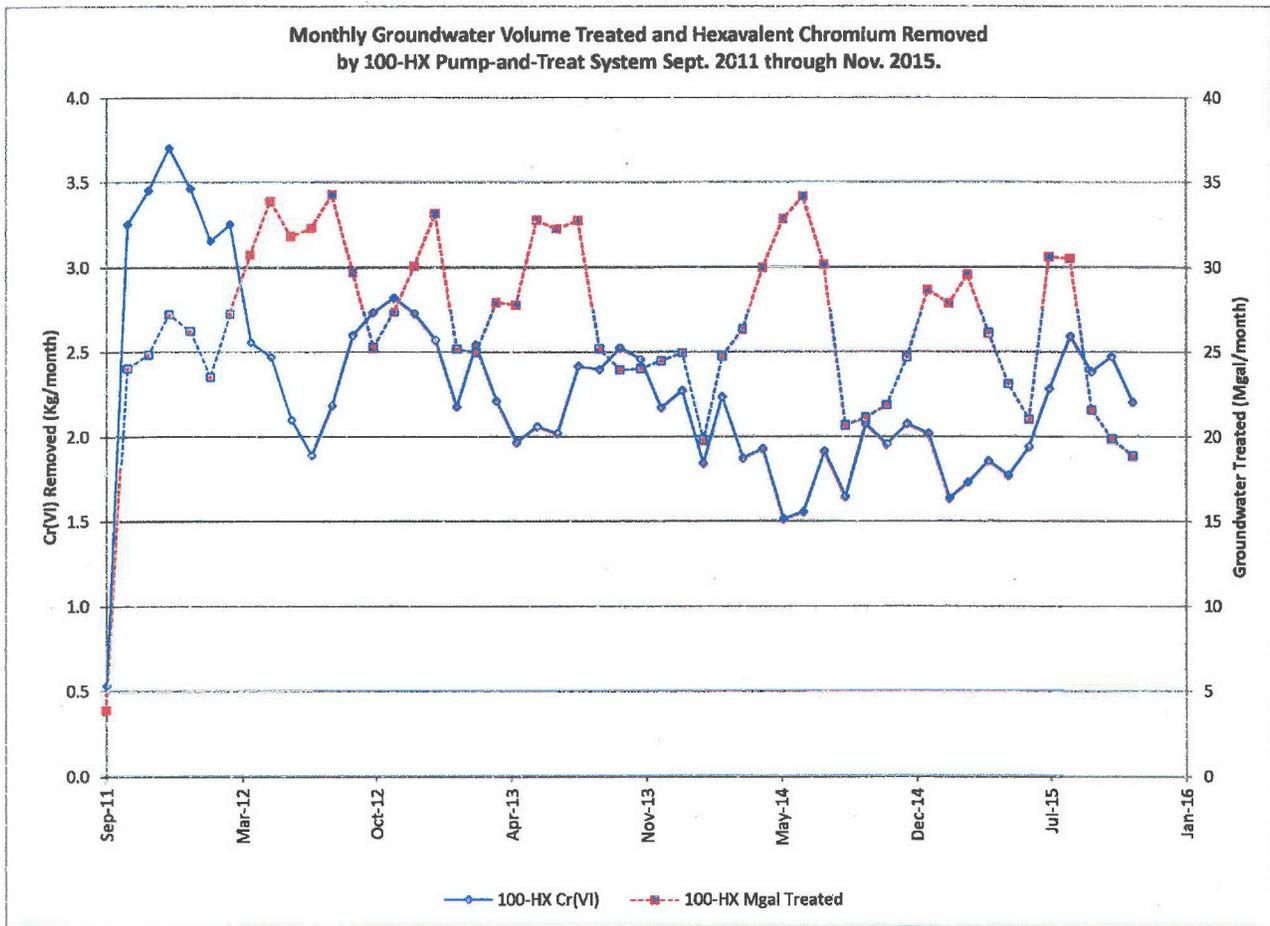


Figure H-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by 100-HX Pump-and-Treat, September 2011 through November 2015.

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100-FR-3 Groundwater Operable Unit – Robert Evans/Mary Hartman

- CERCLA Process Implementation:
 - ✓ Revision 0 of the RDR/RW WP was delivered to EPA on August 18, 2015.
 - ✓ Initiated planning to prepare for mobilization and installation of the monitoring well component of the remedial action. RL, EPA, and CHPRC staked locations for eight new monitoring wells in September.
- Monitoring & Reporting:
 - ✓ Groundwater monitoring wells were sampled as scheduled in November, completing the fall sampling event. Results were within previously established ranges.
- Installation of Monitoring Wells
 - ✓ The installation of the eight (8) monitoring wells is currently scheduled to begin May 2016.

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300-FF-5 Groundwater Operable Unit – Patrick Baynes/Virginia Rohay/Randy Hermann

- CERCLA Process Implementation:
 - ✓ Nothing to report.
- Remedial Actions:
 - ✓ Stage A uranium sequestration activities were initiated on November 6, 2015, and completed on November 18, 2015. Field measurements (e.g., ERT and piezometer conductivity) confirm infiltration reached the aquifer prior to injection into the PRZ. The objectives below have been satisfied:

Design Parameter	INFILTRATION		PRZ INJECTION		AQUIFER INJECTION	
	RI/SAP Design	Stage A Field	RI/SAP Design	Stage A Field	RI/SAP Design	Stage A Field
Average Concentration (mg/L)						
monosodium phosphate	5,699	6,454	9,409	9,742	9,409	9,747
pyrophosphate	665	757	1,097	1,085	1,097	1,109
Volume (gal)	972,000	881,953	432,000	473,565	432,000	444,245

Slightly less than 972,000 gallons was infiltrated but based on field data collected during Stage A operations the chemical distribution goals have been achieved.

- ✓ Stage A equipment demobilization was initiated on November 18, 2015. Post-infiltration/injection groundwater monitoring was initiated on November 20, 2015.
- Monitoring & Reporting:
 - ✓ 300 Area Industrial Complex: The next sampling event is scheduled for December 2015.
 - ✓ 618-10 Burial Ground/316-4 Crib: Samples have been collected at three of the five wells scheduled for sampling in June. One well (699-S6-E4L) was decommissioned on August 26, 2015. The other well (699-S6-E4B) was sampled on November 13, 2015. The next sampling event is scheduled for December 2015.
 - ✓ 618-11 Burial Ground: All five wells were sampled as scheduled on October 26, 2015. The next sampling event is scheduled for October 2016.
 - ✓ 300 Area Process Trenches (316-5) RCRA Monitoring: The wells were sampled on September 9 and 11, 2015. The next sampling event is scheduled for December 2015.

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Hanford Sampling Program Information

Table 1. Wells, Aquifer Tubes, and Spring in the River Corridor Areas Successfully Sampled In November 2015

100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
	199-F7-2	199-D2-11	100-H SPRING 145-1	199-K-106A	199-K-149		399-1-24
	199-F8-2	199-D4-39	199-H1-35	199-K-107A	199-K-150		399-1-25
	199-F8-4	199-D4-55	199-H2-1	199-K-108A	199-N-2		399-1-36
	199-F8-7	199-D4-65	199-H3-10	199-K-11	C7934		399-1-37
	699-60-32	199-D4-77	199-H3-3	199-K-110A	C7935		399-1-65
	699-62-31	199-D4-83	199-H3-4	199-K-111A	C7936		399-1-65
	699-63-25A	199-D5-103	199-H3-5	199-K-112A			399-1-65
	699-64-27	199-D5-104	199-H3-6	199-K-113A			399-1-65
	699-66-23	199-D5-106	199-H3-7	199-K-114A			399-1-65
		199-D5-132	199-H3-9	199-K-115A			399-1-65
		199-D5-133	199-H4-12C	199-K-116A			399-1-65
		199-D5-142	199-H4-15A	199-K-118A			399-1-65
		199-D5-143	199-H4-16	199-K-119A			399-1-65
		199-D5-145	199-H4-46	199-K-120A			399-1-65
		199-D5-146	199-H4-49	199-K-125A			399-1-65
		199-D5-147	199-H4-84	199-K-127			399-1-65
		199-D5-34	199-H4-85	199-K-129			399-1-66
		199-D5-38	199-H4-86	199-K-13			399-1-67
		199-D5-39	199-H5-1A	199-K-133			399-1-67
		199-D5-41	199-H6-1	199-K-134			399-1-67
		199-D5-92	199-H6-3	199-K-135			399-1-67
		199-D5-97	199-H6-4	199-K-136			399-1-67
		199-D6-3	44-M	199-K-137			399-1-67
		199-D8-71	45-D	199-K-138			399-1-67
		699-93-48A	45-M	199-K-139			399-1-67
		699-95-48	45-S	199-K-140			399-1-67
		699-95-51	47-D	199-K-141			399-1-67
		699-96-52B	47-M	199-K-142			399-1-67
		699-97-51A	50-M	199-K-144			399-1-67
		699-98-49A	52-D	199-K-145			399-1-69
		699-98-51	52-M	199-K-153			399-1-72
		C7645	52-S	199-K-154			399-1-73
		C7646	54-D	199-K-157			399-1-74
		C7647	54-M	199-K-161			399-1-74
		C7648	54-S	199-K-162			399-1-74
		DD-49-1	699-94-41	199-K-163			399-1-74
		DD-49-2	699-94-43	199-K-166			399-1-74

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100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
							399-1-81
							399-1-81
							399-1-81
							399-1-81
							399-1-87
							399-1-87
							399-1-87
							399-1-87
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							699-S3-E12
							699-S6-E4B
							C6374
							C6380

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Table 2. Fiscal Year 2015 and 2016 Sample Trips in the River Corridor Areas awaiting at the end of November 2015

Quarter Scheduled	GWIA	Sample Type	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment
FY 2015 Q1	100-KR	SPRING	SK-077-1	10/1/2014	Annual	0	Late	Review for Cancellation
FY 2015 Q3	100-HR-D	AQUIFER TUBE	DD-39-1	5/1/2015	Biannual	0	Late	Review for Cancellation
FY 2015 Q4	100-HR-D	WELL	199-D8-73	9/1/2015	Quarterly	0	Late	Review for Cancellation
	100-HR-H	WELL	199-H1-39	9/1/2015	Quarterly	0	Late	Review for Cancellation
		WELL	199-H1-40	8/1/2015	Quarterly	0	Late	Review for Cancellation
		WELL	199-H1-6	9/1/2015	Quarterly	0	Late	Review for Cancellation
	100-NR	WELL	199-N-333	9/1/2015	Quarterly	0	Late	Maintenance Required, Unsuccessful 9/18/2015
		WELL	199-N-343	9/1/2015	Annual	9		Maintenance Required, Unsuccessful 9/30/2015
		AQUIFER TUBE	C6134	7/20/2015	Annual	7		Access Restricted
		AQUIFER TUBE	C6331	9/1/2015	Annual	9		
		AQUIFER TUBE	N116mArray-0A	7/20/2015	Quarterly	0	Late	Review for Cancellation
		AQUIFER TUBE	N116mArray-0A	9/1/2015	Quarterly	0	Late	Review for Cancellation
	300-FF	WELL	399-1-65	9/27/2015	Annual	9		Special Study
		WELL	399-1-67	9/27/2015	Annual	9		Special Study
		WELL	399-1-70	9/27/2015	Annual	9		Special Study
		WELL	399-1-71	9/27/2015	Annual	9		Special Study
		WELL	399-1-76	9/27/2015	Annual	9		Special Study
		WELL	399-1-77	9/27/2015	Annual	9		Special Study
		WELL	399-1-78	9/27/2015	Annual	9		Special Study
		WELL	399-1-79	9/27/2015	Annual	9		Special Study
		WELL	399-1-80	9/27/2015	Annual	9		Special Study
		WELL	399-1-81	9/27/2015	Annual	9		Special Study
WELL		399-1-82	9/27/2015	Annual	9		Special Study	
WELL		399-1-83	9/27/2015	Annual	9		Special Study	
WELL		399-1-84	9/27/2015	Annual	9		Special Study	
WELL		399-1-85	9/27/2015	Annual	9		Special Study	
WELL	399-1-86	9/27/2015	Annual	9		Special Study		
WELL	399-1-87	9/27/2015	Annual	9		Special Study		
FY 2016 Q1	100-BC	WELL	199-B2-14	10/1/2015	Annual	10		Access Restricted
	100-FR	AQUIFER TUBE	77-D	10/1/2015	Annual	10		

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Quarter Scheduled	GWIA	Sample Type	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment
	100-HR-D	WELL	199-D5-20	10/1/2015	Quarterly	1		
		AQUIFER TUBE	36-M	11/1/2015	Annual	11		
		AQUIFER TUBE	36-S	11/1/2015	Annual	11		
		AQUIFER TUBE	38-D	11/1/2015	Annual	11		
		AQUIFER TUBE	38-M	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-1-D	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-1-M	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-1-S	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-2-M	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-2-S	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-3-D	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-3-M	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-3-S	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-4-D	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-4-M	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-4-S	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-5-D	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-D-5-M	11/1/2015	Annual	11		
		AQUIFER TUBE	C6266	11/1/2015	Biannual	5		
		AQUIFER TUBE	C6267	11/1/2015	Biannual	5		
		AQUIFER TUBE	C6268	11/1/2015	Biannual	5		
		AQUIFER TUBE	C6269	11/1/2015	Biannual	5		
		AQUIFER TUBE	C6270	11/1/2015	Biannual	5		
		AQUIFER TUBE	C6271	11/1/2015	Biannual	5		
		AQUIFER TUBE	C6272	11/1/2015	Annual	11		
	AQUIFER TUBE	C6275	11/1/2015	Annual	11			
	AQUIFER TUBE	C6278	11/1/2015	Annual	11			

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Quarter Scheduled	GWIA	Sample Type	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment
		AQUIFER TUBE	C6281	11/1/2015	Annual	11		
		AQUIFER TUBE	C6282	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-06-2	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-06-3	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-12-2	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-12-4	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-15-2	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-15-3	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-15-4	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-16-3	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-16-4	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-17-2	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-17-3	11/1/2015	Annual	11		
		AQUIFER TUBE	DD-39-1	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-41-1	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-41-2	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-41-3	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-42-2	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-42-3	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-42-4	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-43-2	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-43-3	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-44-3	11/1/2015	Biannual	5		
		AQUIFER TUBE	DD-44-4	11/1/2015	Biannual	5		
		AQUIFER TUBE	Redox-1-3.3	11/1/2015	Biannual	5		
		AQUIFER TUBE	Redox-1-6.0	11/1/2015	Biannual	5		
		AQUIFER TUBE	Redox-2-6.0	11/1/2015	Biannual	5		

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Quarter Scheduled	GWIA	Sample Type	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment
		AQUIFER TUBE	Redox-3-3.3	11/1/2015	Biannual	5		
		AQUIFER TUBE	Redox-3-4.6	11/1/2015	Biannual	5		
		AQUIFER TUBE	Redox-4-3.0	11/1/2015	Biannual	5		
		AQUIFER TUBE	Redox-4-6.0	11/1/2015	Biannual	5		
	100-HR-H	SPRING	100-H SPRING 150-1	11/1/2015	Annual	11		
		SPRING	100-H SPRING 152-2	11/1/2015	Annual	11		
		SPRING	100-H SPRING 153-1	11/1/2015	Annual	11		
		WELL	199-H1-32	11/1/2015	Quarterly	2		
		WELL	199-H1-33	11/1/2015	Quarterly	2		
		WELL	199-H1-37	11/1/2015	Quarterly	2		
		WELL	199-H1-38	11/1/2015	Quarterly	2		
		WELL	199-H1-40	11/1/2015	Quarterly	2		
		WELL	199-H1-7	11/1/2015	Quarterly	2		
		WELL	199-H1-8	10/1/2015	Quarterly	1		Awaiting Drilling
		WELL	199-H4-11	11/1/2015	Quarterly	2		
		WELL	199-H4-12A	11/1/2015	Quarterly	2		
		WELL	199-H4-4	11/1/2015	Quarterly	2		
		WELL	199-H4-65	11/1/2015	Quarterly	2		
		WELL	199-H4-8	11/1/2015	Annual	11		
		AQUIFER TUBE	48-M	11/1/2015	Annual	11		
		AQUIFER TUBE	48-S	11/1/2015	Annual	11		
		AQUIFER TUBE	49-D	11/1/2015	Annual	11		
		AQUIFER TUBE	50-S	11/1/2015	Annual	11		
		WELL	699-90-34	10/1/2015	Quarterly	1		Access Restricted
		AQUIFER TUBE	AT-H-1-D	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-H-1-M	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-H-1-S	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-H-2-D	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-H-2-M	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-H-2-S	11/1/2015	Annual	11		
		AQUIFER TUBE	AT-H-3-D	11/1/2015	Annual	11		

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Quarter Scheduled	GWIA	Sample Type	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment
		AQUIFER TUBE	AT-H-3-S	11/1/2015	Annual	11		
		AQUIFER TUBE	C5682	11/1/2015	Annual	11		
		AQUIFER TUBE	C6290	11/1/2015	Annual	11		
		AQUIFER TUBE	C6291	11/1/2015	Annual	11		
		AQUIFER TUBE	C6293	11/1/2015	Annual	11		
		AQUIFER TUBE	C6299	11/1/2015	Annual	11		
		AQUIFER TUBE	C6300	11/1/2015	Annual	11		
		AQUIFER TUBE	C6301	11/1/2015	Annual	11		
		AQUIFER TUBE	C7649	11/1/2015	Annual	11		
		AQUIFER TUBE	C7650	11/1/2015	Annual	11		
	100-KR	SPRING	100-K SPRING 68-1	10/1/2015	Annual	10		
		WELL	199-K-124A	11/1/2015	Biannual	5		
		WELL	199-K-188	11/1/2015	Quarterly	2		
		WELL	199-K-23	11/1/2015	Biannual	5		
		WELL	199-K-36	11/1/2015	Biannual	5		
		AQUIFER TUBE	AT-K-4-M	10/1/2015	Annual	10		
	100-NR	AQUIFER TUBE	DK-04-2	10/1/2015	Annual	10		
		RIVER WATER	River water adjacent to C6317/18/19	10/1/2015	Annual	10		
		RIVER WATER	River water adjacent to C7934/35/36	10/1/2015	Annual	10		
	300-FF	RIVER WATER	River water adjacent to C7937/38/39	10/1/2015	Annual	10		
		WELL	399-1-24	10/4/2015	Annual	10		Special Study
		WELL	399-1-24	10/11/2015	Annual	10		Special Study
		WELL	399-1-24	10/18/2015	Annual	10		Special Study
		WELL	399-1-25	10/4/2015	Annual	10		Special Study
		WELL	399-1-25	10/11/2015	Annual	10		Special Study
		WELL	399-1-25	10/18/2015	Annual	10		Special Study
		WELL	399-1-36	10/4/2015	Annual	10		Special Study
		WELL	399-1-36	10/11/2015	Annual	10		Special Study
		WELL	399-1-36	10/18/2015	Annual	10		Special Study
	WELL	399-1-37	10/4/2015	Annual	10		Special Study	
	WELL	399-1-37	10/11/2015	Annual	10		Special Study	

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Quarter Scheduled	GWIA	Sample Type	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment
		WELL	399-1-37	10/18/2015	Annual	10		Special Study
		WELL	399-1-65	10/4/2015	Annual	10		Special Study
		WELL	399-1-65	10/11/2015	Annual	10		Special Study
		WELL	399-1-65	10/18/2015	Annual	10		Special Study
		WELL	399-1-65	10/19/2015	Annual	10		Special Study
		WELL	399-1-65	10/22/2015	Annual	10		Special Study
		WELL	399-1-65	10/23/2015	Annual	10		Special Study
		WELL	399-1-65	10/24/2015	Annual	10		Special Study
		WELL	399-1-65	10/25/2015	Annual	10		Special Study
		WELL	399-1-65	10/26/2015	Annual	10		Special Study
		WELL	399-1-66	10/4/2015	Annual	10		Special Study
		WELL	399-1-66	10/11/2015	Annual	10		Special Study
		WELL	399-1-66	10/18/2015	Annual	10		Special Study
		WELL	399-1-67	10/4/2015	Annual	10		Special Study
		WELL	399-1-67	10/11/2015	Annual	10		Special Study
		WELL	399-1-67	10/18/2015	Annual	10		Special Study
		WELL	399-1-67	10/19/2015	Annual	10		Special Study
		WELL	399-1-67	10/22/2015	Annual	10		Special Study
		WELL	399-1-67	10/23/2015	Annual	10		Special Study
		WELL	399-1-67	10/24/2015	Annual	10		Special Study
		WELL	399-1-67	10/25/2015	Annual	10		Special Study
		WELL	399-1-67	10/26/2015	Annual	10		Special Study
		WELL	399-1-69	10/4/2015	Annual	10		Special Study
		WELL	399-1-69	10/11/2015	Annual	10		Special Study
		WELL	399-1-69	10/18/2015	Annual	10		Special Study
		WELL	399-1-70	10/4/2015	Annual	10		Special Study
		WELL	399-1-70	10/11/2015	Annual	10		Special Study
		WELL	399-1-70	10/18/2015	Annual	10		Special Study
		WELL	399-1-71	10/4/2015	Annual	10		Special Study
		WELL	399-1-71	10/11/2015	Annual	10		Special Study
		WELL	399-1-71	10/18/2015	Annual	10		Special Study
		WELL	399-1-72	10/4/2015	Annual	10		Special Study
		WELL	399-1-72	10/11/2015	Annual	10		Special Study
		WELL	399-1-72	10/18/2015	Annual	10		Special Study
		WELL	399-1-73	10/4/2015	Annual	10		Special Study
		WELL	399-1-73	10/11/2015	Annual	10		Special Study
		WELL	399-1-73	10/18/2015	Annual	10		Special Study
		WELL	399-1-74	10/4/2015	Annual	10		Special Study
		WELL	399-1-74	10/11/2015	Annual	10		Special Study
		WELL	399-1-74	10/18/2015	Annual	10		Special Study
		WELL	399-1-74	10/19/2015	Annual	10		Special Study

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Quarter Scheduled	GWIA	Sample Type	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment
		WELL	399-1-74	10/22/2015	Annual	10		Special Study
		WELL	399-1-74	10/23/2015	Annual	10		Special Study
		WELL	399-1-74	10/24/2015	Annual	10		Special Study
		WELL	399-1-74	10/25/2015	Annual	10		Special Study
		WELL	399-1-74	10/26/2015	Annual	10		Special Study
		WELL	399-1-75	10/4/2015	Annual	10		Special Study
		WELL	399-1-75	10/11/2015	Annual	10		Special Study
		WELL	399-1-75	10/18/2015	Annual	10		Special Study
		WELL	399-1-75	10/19/2015	Annual	10		Special Study
		WELL	399-1-75	10/22/2015	Annual	10		Special Study
		WELL	399-1-75	10/23/2015	Annual	10		Special Study
		WELL	399-1-75	10/24/2015	Annual	10		Special Study
		WELL	399-1-75	10/25/2015	Annual	10		Special Study
		WELL	399-1-75	10/26/2015	Annual	10		Special Study
		WELL	399-1-76	10/4/2015	Annual	10		Special Study
		WELL	399-1-76	10/11/2015	Annual	10		Special Study
		WELL	399-1-76	10/18/2015	Annual	10		Special Study
		WELL	399-1-77	10/4/2015	Annual	10		Special Study
		WELL	399-1-77	10/11/2015	Annual	10		Special Study
		WELL	399-1-77	10/18/2015	Annual	10		Special Study
		WELL	399-1-77	10/22/2015	Annual	10		Special Study
		WELL	399-1-77	10/23/2015	Annual	10		Special Study
		WELL	399-1-77	10/24/2015	Annual	10		Special Study
		WELL	399-1-77	10/25/2015	Annual	10		Special Study
		WELL	399-1-77	10/26/2015	Annual	10		Special Study
		WELL	399-1-78	10/4/2015	Annual	10		Special Study
		WELL	399-1-78	10/11/2015	Annual	10		Special Study
		WELL	399-1-78	10/18/2015	Annual	10		Special Study
		WELL	399-1-79	10/4/2015	Annual	10		Special Study
		WELL	399-1-79	10/11/2015	Annual	10		Special Study
		WELL	399-1-79	10/18/2015	Annual	10		Special Study
		WELL	399-1-80	10/4/2015	Annual	10		Special Study
		WELL	399-1-80	10/11/2015	Annual	10		Special Study
		WELL	399-1-80	10/18/2015	Annual	10		Special Study
		WELL	399-1-81	10/4/2015	Annual	10		Special Study
		WELL	399-1-81	10/11/2015	Annual	10		Special Study
		WELL	399-1-81	10/18/2015	Annual	10		Special Study
		WELL	399-1-81	10/19/2015	Annual	10		Special Study
		WELL	399-1-81	10/22/2015	Annual	10		Special Study
		WELL	399-1-81	10/23/2015	Annual	10		Special Study
		WELL	399-1-81	10/24/2015	Annual	10		Special Study

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Quarter Scheduled	GWIA	Sample Type	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment
		WELL	399-1-81	10/25/2015	Annual	10		Special Study
		WELL	399-1-81	10/26/2015	Annual	10		Special Study
		WELL	399-1-82	10/4/2015	Annual	10		Special Study
		WELL	399-1-82	10/11/2015	Annual	10		Special Study
		WELL	399-1-82	10/18/2015	Annual	10		Special Study
		WELL	399-1-83	10/4/2015	Annual	10		Special Study
		WELL	399-1-83	10/11/2015	Annual	10		Special Study
		WELL	399-1-83	10/18/2015	Annual	10		Special Study
		WELL	399-1-84	10/4/2015	Annual	10		Special Study
		WELL	399-1-84	10/11/2015	Annual	10		Special Study
		WELL	399-1-84	10/18/2015	Annual	10		Special Study
		WELL	399-1-85	10/4/2015	Annual	10		Special Study
		WELL	399-1-85	10/11/2015	Annual	10		Special Study
		WELL	399-1-85	10/18/2015	Annual	10		Special Study
		WELL	399-1-86	10/4/2015	Annual	10		Special Study
		WELL	399-1-86	10/11/2015	Annual	10		Special Study
		WELL	399-1-86	10/18/2015	Annual	10		Special Study
		WELL	399-1-87	10/4/2015	Annual	10		Special Study
		WELL	399-1-87	10/11/2015	Annual	10		Special Study
		WELL	399-1-87	10/18/2015	Annual	10		Special Study
		WELL	399-1-87	10/22/2015	Annual	10		Special Study
		WELL	399-1-87	10/23/2015	Annual	10		Special Study
		WELL	399-1-87	10/24/2015	Annual	10		Special Study
		WELL	399-1-87	10/25/2015	Annual	10		Special Study
		WELL	399-1-87	10/26/2015	Annual	10		Special Study
		AQUIFER TUBE	C6368	10/1/2015	Annual	10		
		AQUIFER TUBE	C6378	10/1/2015	Annual	10		

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Table 3. Groundwater Sampling Locations in the River Corridor Areas Scheduled to be sampled in December 2015

100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM and Richland North	300-FF
		199-D3-2	199-H1-1	199-K-203	199-N-165	699-S30-E15A	399-1-1
		199-D4-1	199-H1-2	199-K-204	199-N-71	699-S31-E10A	399-1-10A
		199-D4-14	199-H1-25		C6132	699-S31-E10C	399-1-10B
		199-D4-22	199-H1-27		C6323	699-S31-E8A	399-1-16A
		199-D4-23	199-H1-3		C7881	699-S36-E13A	399-1-16B
		199-D4-25	199-H1-34		C7934	699-S37-E14	399-1-17A
		199-D4-27	199-H1-36		C7935	699-S41-E12	399-1-17B
		199-D4-31	199-H1-39		C7936	699-S42-E8A	399-1-18A
		199-D4-32	199-H1-4		C7937		399-1-18B
		199-D4-36	199-H1-42		C7938		399-1-7
		199-D4-38	199-H1-43		C7939		399-2-1
		199-D4-4	199-H1-45		N116mArray-0A		399-2-2
		199-D4-48	199-H1-46		N116mArray-10A		399-3-9
		199-D4-62	199-H1-6		N116mArray-11A		399-4-10
		199-D4-7	199-H3-2A		N116mArray-15A		399-4-14
		199-D5-103	199-H3-2C		N116mArray-1A		399-4-7
		199-D5-104	199-H4-10		N116mArray-2A		399-8-1
		199-D5-123	199-H4-13		N116mArray-3A		399-8-5A
		199-D5-125	199-H4-45		N116mArray-4A		699-S19-E13
		199-D5-126	199-H4-5		N116mArray-6A		699-S27-E9A
		199-D5-145	199-H4-63		N116mArray-8A		699-S28-E12
		199-D5-146	199-H4-64		N116mArray-9A		699-S29-E16A
		199-D5-15	199-H4-69		NVP1-1		699-S6-E4A
		199-D5-16	199-H4-70		NVP1-2		699-S6-E4B
		199-D5-34	199-H4-75		NVP1-3		699-S6-E4E
		199-D5-38	199-H4-76		NVP1-4		699-S6-E4K
		199-D5-39	199-H4-77		NVP1-5		
		199-D5-43	199-H4-83		NVP2-115.1		
		199-D8-5	199-H4-90		NVP2-115.4		
		199-D8-53	199-H4-91		NVP2-115.7		
		199-D8-54A			NVP2-116.0		
		199-D8-54B			NVP2-116.3		
		199-D8-68					
		199-D8-69					
		199-D8-70					
		199-D8-72					
		199-D8-73					

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100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM and Richland North	300-FF
		199-D8-88					
		199-H1-5					
		199-H4-80					
		199-H4-81					
		199-H4-82					

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Documents for AR Submission

Number	Title	Referencing Doc/Driver
ECF-300FF5-11-0152, 2012	VOC Modeling in Support of 300 Area FF-5 RI/FS Document, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington.	supports the 2015 GW Monitoring Plan update for the 300 Area
ECF-Hanford-13-0020, Rev. 3, 2015	Process for Constructing a Three-dimensional Geological Framework Model of the Hanford Site 100 Area	SGW-46279, Rev. 3
ECF-Hanford-15-0001, Rev. 0, 2015	Description of Groundwater Calculations and Assessments for the Calendar Year 2014 (CY2014) 100 Areas Pump and Treat Report	cleared Dec. 2015
SGW-34955	KX Pump & Treat System Design Description	referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP
SGW-34556	Description of Work for the Installation of Twenty-three Wells to Support the 100-KR-4 Pump and Treat Expansion	referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP
WMP-30101	Description of Work for the Installation of Four Wells at the 100-KW Pump and Treat System for the 100-KR-4 Groundwater Operable Unit, FY 2006	referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP
WMP-29491, 2006	Design Criteria for the KW Pump and Treat, Rev. 0, Fluor Hanford, Inc.	referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP
WMP-29795	100 K-West Pump & Treat System Design Description	referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP

Attachment 2

100K Area Report
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RL-0012 Sludge Treatment Project

TPA Milestone **M-016-177**, *Complete 105-KW sludge transfer equipment installation.*
(9/30/17) – On Schedule

- Statements of Work for ECRTS equipment procurement have been grouped into 20 separate procurement sets. Twelve sets are in progress, seven have been completed, and one remains to be developed.
- The first of 24 total STCSs has been fabricated and received. Plans are to fabricate 12 STSC Vessels in FY16 with the final 11 STSC Vessels in FY17.
- RL continues review of the updated Preliminary Documented Safety Analysis (PDSA) and Safety Design Strategy (SDS). KW Basin integrated Documented Safety Analysis (DSA) development has begun. The integrated DSA combines the ECRTS PDSA and the KW Basin Final Safety Analysis Report into a single safety basis document.
- K West Basin Annex construction acceptance testing continues.
- The construction subcontractor has mobilized at KW Basin and started Engineered Container re-lidding.

TPA Milestone **M-016-175**, *Begin sludge removal from 105-KW Fuel Storage Basin*
(9/30/18) – On Schedule

- ECRTS tooling and equipment fabrication, testing, and operating procedure and training development continue.
- Specifications are being developed for Pre-operational Acceptance Testing to be performed at MASF.

TPA Milestone **M-016-176**, *Complete sludge removal from 105-KW Fuel Storage Basin*
(12/31/19) – On Schedule

- Initiation of this milestone follows completion of Milestone M-016-175.

TPA Milestone **M-016-178**, *Initiate deactivation of 105-KW Fuel Storage Basin.*
(12/31/19) – On Schedule

- The following pre-deactivation actions are underway:
 - Integrated Water Treatment System garnet filter media removal system design continues.
 - Sand filter backwash solids samples have been consolidated and prepared for analysis by PNNL. Analyses will be performed and a summary letter report will be provided to CHPRC in early January.
 - Dose to curie modeling continues of basin below-water debris utilizing dose rates, buoyant weights, and observations collected by KW Basin Operations. Basin east bay modeling is nearly completed and center bay modeling is approximately 50% complete. This characterization data will become a key input to the calculation to demonstrate compliance with ERDF waste acceptance criteria for 105-KW Basin.

TPA Milestone **M-016-173**, *Select K Basin sludge treatment and packaging technology and propose new interim sludge treatment and packaging milestones.*

(9/30/22) – On Schedule

- The preliminary treatment and packaging site evaluation report and the remedial design/remedial action work plan (DOE/RL-2011-15) for sludge treatment and packaging have been issued.

TPA Milestone **M-016-181**, *Complete deactivation, demolition and removal of 105-KW Fuel Storage Basin*

(9/30/23) – On Schedule

TPA Milestone **M-016-186**, *Initiate soil remediation under the 105-KW Fuel Storage Basin.*

(12/31/23) – On Schedule

RL-0041 K Facility Demolition and Soil Remediation

TPA Milestone **M-016-143**, *Complete the interim response actions for 100 K Area within the perimeter boundary and to the Columbia River for Phase 2 actions. Phase 2 is defined in the 100 K Area RD/RA Work Plans.*

(9/30/24) – On Schedule

- Excavation of nine waste sites within the AB waste site area near the 100KE head house began in October. After excavation to ten feet, in-process samples taken on November 20, 2015. Sample results were returned on December 1. Additional analysis for metals using the toxicity characteristic leaching procedure (TCLP) is to be performed on samples from two of the waste sites.
- Three more waste sites were added to the subcontract for remedial action (remove, treat, dispose) in the AB area. In-process sampling of the additional sites is scheduled for December 18, 2015.

TPA Milestone **M-093-28**, *Submit a change package for proposed interim milestones for 105-KE and 105-KW Reactor Interim Safe Storage*

(12/31/19) - On Schedule

TPA Milestone **M-093-27**, *Complete 105-KE and 105-KW Reactor Interim Safe Storage in Accordance with the Removal Action Work Plan.*

(9/30/2024) - On Schedule

TPA Milestone **M-016-00C**, *Complete all response actions for the 100 K Area*

(9/30/24) - On Schedule

Attachment 3

December 10, 2015 Unit Manager's Meeting

Closure Operations Status

100 Areas (B/C, D, H, N)

Revegetation is continuing as described below:

- Completed re-contouring of 1607D, 147D, and Area's #1, #2, #3, #4, #5, #6, #9, #10.
- Re-contoured and de-compacted 100-D-31:11, 100-D-31:12, the CTA and Area #8.
- Completed seed bed prep (spring tooting, seeding, ring rolling) at 1607D, 147D, Area's #1, #2, #3, #4 and Area #10.
- Completed planting at 1607D, 147D, Area #1, #2, and continuing to plant area #3.
- Straw delivery is currently at 80% complete.

618-10

Trench Remediation

- Continuing primary/secondary sorting, drum retrieval, and load-out.
- Implementing corrective actions following contamination event on 11/16/15 to return to concrete drum processing.
- WCH activities related to the remediation of the 316-4 waste site have been placed on hold.

VPU Remediation

- Twelve (12) VPUs in Row 2 have been augered and characterized (in-situ) to date.
- Results of the in-situ characterization have, thus far, shown that the ranking calculation has been conservative in regard to radiological contamination. This includes the highest ranked VPU in WCH's scope (VPU #24) which has also met the ERDF Waste Acceptance Criteria.
- A clamshell to retrieve wastes from the VPUs has been purchased and delivered to the site and is currently being tested on a mock up VPU.

300 Area

324 Building

- Continuing S&M (min-safe operations) through FY 16.
- Revising abated and unabated TEDE calculations.
- Began working with DOE and Ecology on RCRA Part A Permit and Closure Plan

300-288:2

- Remediation of Phase I progressing well. Currently estimated to complete in January, 2016.
- Work Instruction for waste site 288:2 was signed by DOE and EPA on 11/16/2015. The instruction includes a placeholder to add the west side (Phase II) once the excavation is complete.
- Remediation of the west side (Phase II) of waste site 288:2 recently added to WCH scope of work.

300 Area Removal Action Work Plan

- EPA comments recently received and being incorporated into RAWP.

WSRFs/CVPs

- 300-277 Pending

Attachment 4

Activity ID	Activity Name	TPA Year	RD	% Cmpl	Start	Finish	SVar 10/5	FVar 10/5	SVar LstWk	FVar LstWk	FY2016													
											D	J	F	M	A	M	J	J	A	S				
Dan Elkins																								
100 B/C																								
100 Area Reveg																								
BB524E10	Reveg 100-B-35:1 (11.5 Acres)	17	3	0%	11-Jan-16*	13-Jan-16	-27	-25	0	0														
100 D																								
100 Area Reveg																								
RD67D51500	Reveg 1607-D5 (0.09 acres)	17	0	100%	05-Nov-15 A	03-Dec-15 A	-2	-16	0	-3														
RD1506500	Reveg 100-D-50:6 (5.22 acres)	16	0	100%	09-Nov-15 A	03-Dec-15 A	33	20	0	-3														
CBB0516J	Reveg 100-D-31:11/12 (21.41 acres)	16	3	26.7%	09-Nov-15 A	09-Dec-15	-4	-16	0	-4														
DRVGDSTR	Reveg 100-D Disturbed Areas (12.0 acres)		10	10%	10-Nov-15 A	22-Dec-15			0	-4														
CBB0556E10	Reveg 147-D ISRM Pond (3.92 acres)	17	0	100%	10-Nov-15 A	03-Dec-15 A	33	22	0	-3														
100D100A432	Reveg 100-D-100 - 54.06 acres (incl stockpiles)	16	8	26%	11-Nov-15 A	17-Dec-15	9	8	0	-4														
CBB0537E	Reveg 100-D-72 (0.83 acres)	16	1	20%	11-Nov-15 A	07-Dec-15	12	0	0	-4														
D104RVGFY16	Reveg 100-D-104 Stockpile (2.75 acres)	16	2	0%	07-Dec-15*	08-Dec-15			0	0														
D30RVGFY16	Reveg 100-D-30 stockpile (2.75 acres)	16	2	0%	07-Dec-15*	08-Dec-15			-2	-2														
RD05509140	Reveg 100-D-50:9 (1.32 acres)	16	1	0%	10-Dec-15	10-Dec-15	22	22	-4	-4														
CBC0604E	Reveg 118-D-1 (2.51 acres)	17	1	0%	14-Dec-15	14-Dec-15	-21	-17	-4	-4														
CBC0507E	Reveg 100-D-28:1 (0.33 acres) (tied to D-50:6)	17	1	0%	14-Dec-15	14-Dec-15	-21	-21	-4	-4														
RD05507140	Reveg 100-D-50:7 (5.74 acres)	16	2	0%	15-Dec-15	16-Dec-15	-22	-22	-4	-4														
CBC0608E	Reveg 118-D-5 (0.25 acres)	17	1	0%	17-Dec-15	17-Dec-15	13	13	-4	-4														
CBC0609E	Reveg 118-DR-1 (1.0 acres)	17	1	0%	17-Dec-15	17-Dec-15	13	13	-4	-4														
CBC0518E	Reveg 100-D-106 (1.37 Acres)	16	1	0%	17-Dec-15	17-Dec-15	-17	-17	-4	-4														
CBB0404E	Reveg 120-D-2 (0.5 acres)	16	1	0%	17-Dec-15	17-Dec-15	13	13	-4	-4														
CBB0546E	Reveg 100-D-86:3 (4.33 acres)	16	1	0%	17-Dec-15	17-Dec-15	-18	-18	-4	-4														
CBB0535E	Reveg 100-D-69 (2.82 Acres)	16	1	0%	17-Dec-15	17-Dec-15	12	12	-4	-4														
DRVGCTA	Reveg 100-D CTA (10.76 acres)		3	0%	21-Dec-15	28-Dec-15			-4	-4														
CBB0550E	Reveg 100-D-99 (0.37 Acres)	16	1	0%	21-Dec-15	21-Dec-15	13	13	-4	-4														
CBB0548E	Reveg 100-D-97 (0.37 acres)	16	1	0%	21-Dec-15	21-Dec-15	-12	-12	-4	-4														
CBB0544E	Reveg 100-D-85:2 (5.79 acres)	16	2	0%	21-Dec-15	22-Dec-15	-7	-8	-4	-4														
CBB0558E	Reveg 100-D-75:1 (6.11 acres)	16	1	0%	22-Dec-15	22-Dec-15	-19	-19	-4	-4														
DRVGTRLR	Reveg 100-D Trailer Village (2.95 acres)		1	0%	28-Dec-15	28-Dec-15			-4	-4														
CBB0545E	Reveg 100-D-86:1 (4.96 acres)	16	2	0%	28-Dec-15	29-Dec-15	-8	-9	-4	-4														
Well Replacements																								
100D100A408	Well Replacement @ 100-D (REA-184) 4 wells	16	31	0%	04-Jan-16*	25-Feb-16	0	1	0	0														
100 H																								
100 Area Reveg																								
HB404E20	Reveg 116-H-9 (0.40 acre)	17	1	0%	30-Dec-15	30-Dec-15	62	62	-4	-4														
HB900F1	Reveg 100-H-3 (0.3 acres) (tied with H-43)	17	1	0%	30-Dec-15	30-Dec-15	-29	-29	-4	-4														

◆ Milestone % Complete
 [White Box] Actual Work [White Box] Remaining Work
 [Black Box] Actual Critical [Black Box] Critical Remaining Work

Field Remediation
1 of 6

Print date: 08-Dec-15. Data date: 07-Dec-15. TASK filters: POW, POW Format.

Activity ID	Activity Name	TPA Year	RD	% Cmpl	Start	Finish	SVar 10/5	FVar 10/5	SVar .stWk	FVar .stWk	FY2016												
											D	J	F	M	A	M	J	J	A	S			
Misc. Restoration																							
MRNSS100N1	MR Re-mob to 100-N	N	16	0%	21-Mar-16	14-Apr-16			-4	-4													
M513NF031	100-N Culturally Sensitive MR Debris and Fence Removal	N	17	0%	18-Apr-16	16-May-16	-1	-1	-4	-4													
M516N02	100-N removal report revision	N	16	0%	17-May-16	14-Jun-16	-1	-1	-4	-4													

◆ Milestone ■ % Complete
 □ Actual Work □ Remaining Work
 ■ Actual Critical ■ Critical Remaining Work

Field Remediation
 6 of 6

Print date: 08-Dec-15. Data date: 07-Dec-15. TASK filters: POW, POW Format.

Attachment 5

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 700	TPA CHANGE NOTICE FORM	Date: 11/17/15
Document Number, Title, and Revision: DOE/RL-2014-13-ADD2, Remedial Design Report/Remedial Action Work Plan Addendum for the 300 Area Groundwater, REV. 0		Date Document Last Issued: June 2015
Originator: Patrick A. Baynes		Phone: 509-372-3583

Description of Change:
Figure 7-1, Schedule for Groundwater Remedy Implementation, is being replaced with an updated schedule.

M.W. Cline and B.W. Simes agree that the proposed change
DOE **Lead Regulatory Agency**
 modifies an approved work plan/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*.

Figure 7-1 on Page 7-2 is being replaced with a new figure to reflect the following changes:

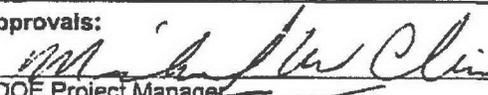
- Stage A Uranium Sequestration System Installation Report - the effort to prepare and issue this report is expanded from a 3 month effort to be finished in the first quarter of FY 2016 to a 9 month effort to be finished in the third quarter of FY 2016.
- Stage A Delivery Performance Report - the effort to prepare and issue this report is expanded from a 4 month effort to be finished in the first quarter of FY 2016 to a 16 month effort to be finished in the first quarter of FY 2017.
- Stage B Piezometer/Well Installation - the Stage B uranium sequestration implementation is delayed from FY 2016 until FY 2017.
- Stage B Uranium Sequestration System Installation Report - the effort to prepare and issue this report is expanded from a 5 month effort to be finished in the first quarter of FY 2017 to a 14 month effort to be finished in the second quarter of FY 2018.
- Stage B Infiltration/Injection - the Stage B uranium sequestration implementation is delayed from FY 2016 until FY 2017. This activity also includes demobilization.
- Uranium Sequestration Completion Report - this report is delayed from the fourth quarter of FY 2017 to the fourth quarter of FY 2018.

Note: Include affected page number(s): 7-2.

Justification and Impacts of Change:

The schedule duration for preparation and issuance of the Stage A Delivery Performance Report is being changed to better reflect the time required to obtain the necessary data for the report. Three (3) boreholes will be drilled and sampled 4 weeks after the final injection. The samples will be analyzed for uranium and leachability. The leachability testing takes ~110 days. The analysis results will be used to generate the final 3-D STOMP model which will take ~ 20 days. The 3-D STOMP model will be used to support preparation of the report. The report will then go through the typical document review and approval process which takes ~ 90 days. The Stage B uranium sequestration implementation is being deferred until FY 2017 due to site priorities. The schedule duration for preparation and issuance of the Uranium Sequestration Completion Report is being changed consistent with the discussion above.

Approvals:

	11/17/2015	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
DOE Project Manager	Date	
	11/30/2015	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
EPA Project Manager	Date	
N/A		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
Ecology Project Manager	Date	

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TASK	FY14		FY15				FY16				FY17		FY18
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	
RDR/RAWP													
Regulatory Review of Integrated RDR/RAWP and Addenda													
Final Approval of Integrated RDR/RAWP and Addenda													
Remedy Implementation SAP													
Remedy Implementation SAP													
M-016-110-T05													
Stage A													
Supplemental Post-ROD Field Investigation													
Supplemental Post-ROD Field Investigation Summary													
Stage A Piezometer/Well Installation													
Stage A Uranium Sequestration System Installation Report													
Stage A Infiltration/Injection													
Stage A Delivery Performance Report													
Stage B													
Stage B Piezometer/Well Installation													
Stage B Uranium Sequestration System Installation Report													
Stage B Infiltration/Injection													
Uranium Sequestration Completion Reporting													
Groundwater Monitoring and Reporting													

DOERL-2014-13-ADD2 REV. 0

Figure 7-1. Schedule for Groundwater Remedy Implementation

Task	FY14		FY15				FY16				FY17				FY18				FY19	
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	
RDR/RAWP																				
Regulatory Review of Integrated RDR/RAWP and Addenda																				
Final Approval of Integrated RDR/RAWP and Addenda																				
Remedy Implementation SAP																				
Remedy Implementation SAP																				
M-016-110-T05																				
Stage A																				
Supplemental Post-ROD Field Investigation																				
Supplemental Post-ROD Field Investigation Summary																				
Stage A Piezometer/Well Installation																				
Stage A Uranium Sequestration System Installation Report																				
Stage A Infiltration/Injection																				
Stage A Delivery Performance Report																				
Stage B																				
Stage B Piezometer/Well Installation																				
Stage B Uranium Sequestration System Installation Report																				
Stage B Infiltration/Injection																				
Uranium Sequestration Completion Reporting																				
Groundwater Monitoring and Reporting																				

▲ = Target date

Figure 7-1. Schedule for Groundwater Remedy Implementation