

1251238
AR-01100

DISTRIBUTION
100 & 300 AREA UNIT MANAGERS MEETING
March 21, 2019

FINAL MEETING MINUTES

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**100/300 AREA UNIT MANAGERS MEETING
Attachments List
March 21, 2019**

**Minutes of the 100/300 Area Unit Managers Meeting of March 21, 2019 are attached.
Minutes are comprised of the following:**

- | | |
|----------------------|--|
| Attachment 1 | Agenda |
| Attachment 2 | Attendees Sign-In Sheets |
| Attachment 3 | Signature Approval Page |
| Attachment 4 | Summary Hanford Sampling Program |
| Attachment 5 | 100K Area Report, November - February Data |
| Attachment 6 | 300 Area Report, November - February Data |
| Attachment 7 | Groundwater Summary by O.U., November - February Data |
| Attachment 8 | 100-OL-1 Orchard Lands, November - February Data |
| Attachment 9 | Documents Entered into the AR and Approved TPA Change Notices November - February Data |
| Attachment 10 | Email – CHPRC to DOE, ECY and EPA, <i>Unfiltered Hexavalent Chromium</i>, SGW-63225, Revision 0 |
| Attachment 11 | Action Items |

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**100/300 AREA UNIT MANAGERS MEETING
AGENDA
March 21, 2018**

Summary of Hanford Sampling Program - (Len Habel/Bill Webber)

100 Area River Corridor Soils and Sludge & K Basin Summary (Deborah Singleton/R. Quintero)

300 Area River Corridor Soils Summary (Bob Cathel/B. Vannah)

Groundwater Summary by O.U.

- 100-K Area Groundwater (Ellwood Glossbrenner)
- 100-BC Area Groundwater (Ellwood Glossbrenner)
- 100-N Area Groundwater (Steve Balone)
- 100-D/H Areas Groundwater (John Sands)
- 100-F Area Groundwater (Steve Balone)
- 300 Area Groundwater (John Sands)
- Unfiltered Hexavalent Chromium

100-OL-1 – Orchard Lands (Johns Sands)

Documents for the Administrative Record and Approved TPA Change Notices

Special Topic – Hexavalent Chromium

- Email - CHPRC to DOE and ECY, *Unfiltered Hexavalent Chromium*, SGW-63225, Revision 0

Action Items

Closing Comments

- Sign concurrence to “Groundwater Summary by O.U.” and “Action Item List” if applicable

All future UMM meetings will be held in 2420 Stevens Room 308 from 1:00-2:30pm as follows:

- March 21
- May 16
- July 18
- September 19
- November 21

100/300 Area Unit Managers Status Meeting
March 21, 2019

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Jason Hulstrom	CHPRC	KR-4 head sci.	367-9575
Bill FAUGAT	CHPRC	CAM	376-3139
Stuart Luttrell	CHPRC ECY	HG support	372-7883
Alicia Boyd	Ecology		372-7934
Benjamin Vannah	DOH-RC	324	376-8000
Katie Hall	ECY	support	372-7885
Stephanie Schleif	Ecology	324 support	372-7929
Shawna Cimpit	ODOE		240-0160
Joel Davis	MSA	TPA	376-8757
Laura Below	EPA		376-5466
Steve Paulone	DOE		376-0236
John Sands	DOE	300-PE-S OL-1	372-2282
Shannan Johnson	DOH		
Kathy Higgers	DOE	ALL	376-3658
Craig Cameron	EPA		376-8665
Leonard Habel	CHPRC		376-6592
Ben Cowin	MSA		372-0116
Gretchen M Hanson	CHPRC		373-7553
Glossbrenner, Zillwood	D-2	ICPA B/C 1000K	376-5828
Stetter Brian	DOE	100K	376-3535
Bob Cathel	CHPRC	324	376-1513

**100/300 Area Unit Managers Meeting
Meeting Minutes Approval
March 21, 2019**

APPROVAL:  DATE: 3/21/19
Mark French, River Corridor Project Manager, DOE/RL

APPROVAL:  DATE: 3/21/19
Mike Cline, Groundwater Project Manager, DOE/RL

APPROVAL:  DATE: 3-21-2019
So Nina Menard, Environmental Restoration Project Manager, Ecology

APPROVAL:  DATE: 3-21-2019
Rod Lobos, 100 Area Project Manager, EPA
Laura Buebow

HFFACO Action Plan Section 4.1 requires signature of agreements and commitments made during the Project Manager Meeting. Approval of these minutes documents agreements and commitments identified in the attached "Groundwater Summary by O.U." and the "Action Item List". Approval does not apply to the minutes themselves or to any other attachments.

100/300 Area Project Managers Meeting
Summary of Hanford Sampling Program – November 2018-February 2019 Data
March 21, 2019

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.

FY 2018 Sample Trip Status by Month Scheduled

For Fiscal Year 2018 Hanford's, overall Site groundwater monitoring program has 3,225 sample trips scheduled for collection. Prior to January 2019, the program had successfully completed 3,198 of the FY 2018 sample trips. One additional FY 2018 sample trip was collected in January 2019. None were collected in February 2019.

FY 2019 Sample Trip Status by Month Scheduled (January and February 2019)

For Fiscal Year 2019 Hanford's, overall Site groundwater monitoring program has 3,266 sample trips scheduled for collection.

During January 2019 (FY 2019, month four), the program successfully completed 2 sample trips scheduled for October 2018, 2 sample trips scheduled for December 2018, 187 trips scheduled for January 2019 and 30 trips scheduled for February 2019. This brings the total for October 2018 to 383 of 387 scheduled, the total for November 2018 to 380 of 401 scheduled, the total for December 2018 to 200 of 228 scheduled, the total for January 2019 to 190 of 220 scheduled and the total for February 2019 to 30 of 227 scheduled.

During February 2019 (FY 2019, month five), the program successfully completed one sample trip scheduled for January 2019 and 62 sample trips scheduled for February. The total for January 2019 sample trips completed is 191 of 220 and the total for February 2019 is 92 of 227 scheduled.

The total number of Fiscal Year 2019 sample trips completed at the end of February 2019 is 1,246.

FY 2019 Sample Trip Status by Month Collected (January and February 2019)

During January 2019, 221 Fiscal Year 2019 sample trips were successfully completed of which 2 were scheduled for October 2018, 2 were scheduled for December 2018, 187 were scheduled for January 2019 and 30 were scheduled for February 2019.

During February 2019, 63 Fiscal Year 2019 sample trips were successfully completed of which one was scheduled for January 2019 and 62 were scheduled for February.

The specific wells, aquifer tubes, and springs sampled during January 2019 are listed in Table 1. The specific wells, aquifer tubes, and springs sampled during February 2019 are listed in Table 2.

Awaiting Sample Trips

Of the Fiscal Year 2018 and 2019 sample trips scheduled for February 2019 and prior, there are 243 that are awaiting collection. Of these, 18 could not be accessed (snow), 8 were unsuccessful, 5 require maintenance, 3 are being reviewed for cancellation by the project scientists and RL, 2 could not be sampled because the P&T system was not running, one was sample dry, and 206 are awaiting collection at the month end.

100/300 Area Project Managers Meeting
Summary of Hanford Sampling Program – November 2018-February 2019 Data
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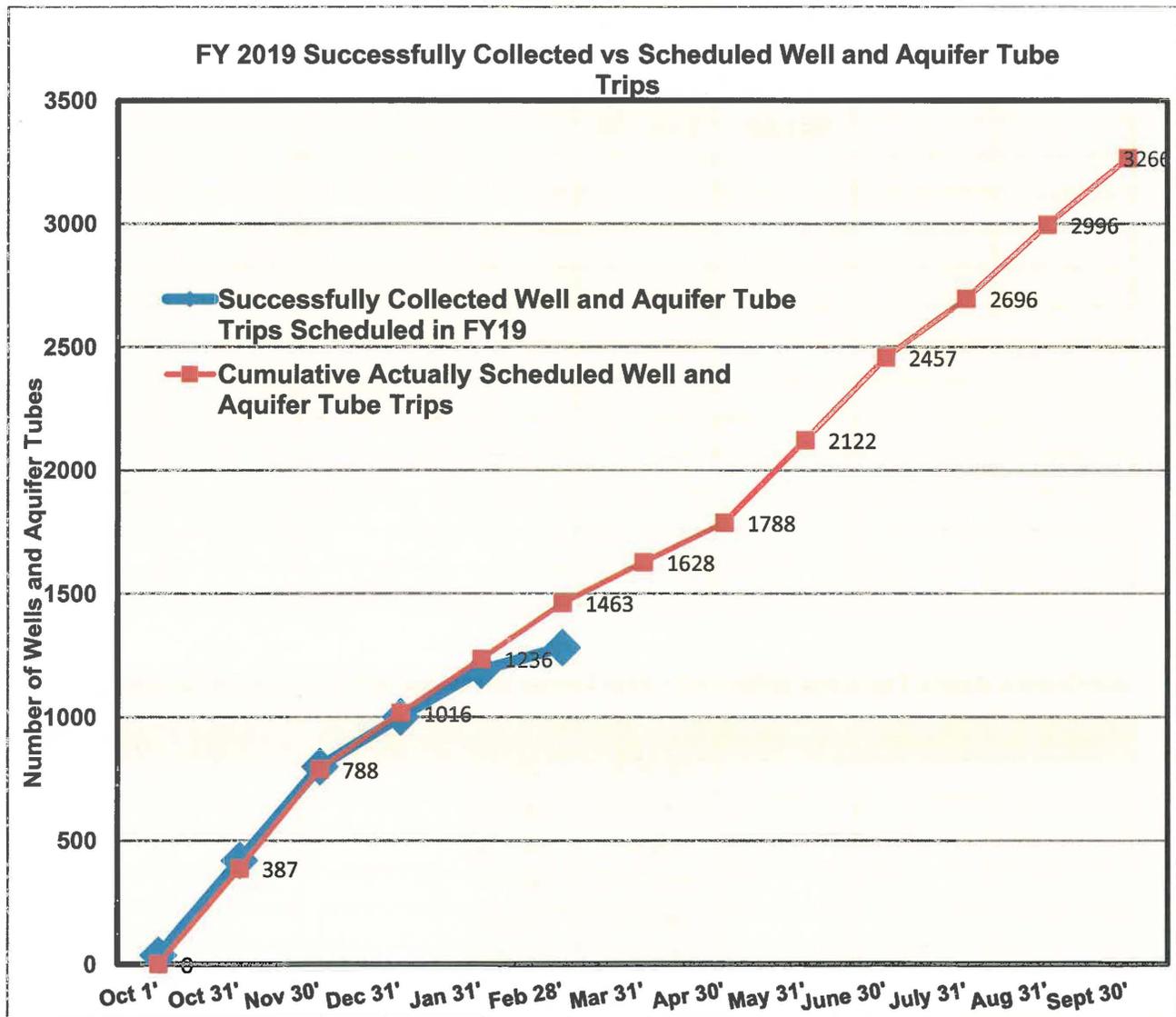
Table 3 presents the sample trips for only the river corridor that were not successfully completed as of February. Sample trips in Table 2 are grouped by fiscal month scheduled and groundwater interest area. This table clearly shows that the number of awaiting well trips decreases with time from the schedule date. Reasons for a sample trips to be awaiting includes, but are not limited to, well maintenance, weather conditions, access restrictions, and resource limitations.

Upcoming Sample Trips

Sample trips for the river corridor only, scheduled for collection in March 2019 and April 2019 (and not collected before the target sample month) are listed in Table 4 and Table 5 respectively.

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/>.



**100/300 Area Project Managers Meeting
Summary of Hanford Sampling Program – November 2018-February 2019 Data
March 21, 2019**

Table 1 Wells, Aquifer Tubes, and Springs in the River Corridor Areas Successfully Sampled In January 2019

100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
199-B4-14	199-F5-4	199-D4-95	199-H1-1	199-K-13			399-1-12
699-71-77	199-F5-45	199-D4-96	199-H1-2	22-D			399-1-155
	199-F5-47	199-D5-101	199-H1-35	699-73-61			399-1-156
	199-F5-48	199-D5-103	199-H3-30				399-1-157
	199-F5-56	199-D5-104	199-H3-4				399-1-158
	199-F8-2	199-D5-127	199-H4-12C				399-1-159
		199-D5-131	199-H4-15A				399-1-160
		199-D5-154	199-H4-63				399-1-161
		199-D5-159	199-H4-86				399-1-162
		199-D5-32	199-H4-92				399-1-164
		199-D8-89	699-97-43B				399-1-165
		199-D8-95	699-97-43C				399-1-166
		199-D8-96	699-97-45B				399-1-16A
		199-D8-97	699-97-47B				399-1-17A
							399-1-2
							399-1-23
							399-1-55
							399-1-62
							399-1-7
							399-1-72
							399-1-73
							399-2-2
							699-S6-E3
							699-S6-E4B
							699-S6-E4E
							699-S6-E4K

Table 2 Wells, Aquifer Tubes, and Springs in the River Corridor Areas Successfully Sampled In February 2019

100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
			199-D2-10	199-H1-7			699-13-1A
			199-D2-12	199-H2-1			
			199-D4-14	199-H3-2A			
			199-D4-34	199-H3-6			
			199-D4-38	199-H4-11			
			199-D4-39	199-H4-12A			
			199-D4-84	199-H4-13			
			199-D4-98				

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Summary of Hanford Sampling Program – November 2018-February 2019 Data
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100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
			199-D4-99				
			199-D5-132				
			199-D5-133				
			199-D5-14				
			199-D5-142				
			199-D5-145				
			199-D5-146				
			199-D5-149				
			199-D5-152				
			199-D5-153				
			199-D5-34				
			199-D5-92				
			199-D5-97				
			199-D7-3				
			199-D8-53				
			199-D8-6				
			199-D8-68				
			199-D8-90				
			199-D8-91				
			199-H1-5				
			199-H4-80				
			199-H4-81				
			699-97-61				

Table 3 Fiscal Year 2018 and 2019 Sample Trips in the River Corridor Areas awaiting at the end of February 2019

Qtr Scheduled	GWIA	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment
FY 2018 Q1	100-FR	699-66-30	10/1/2017	Every Two Years	7		Not on well access list; Will continue trying.
		699-71-26	10/1/2017	Every Two Years	7		Not on well access list; Will continue trying.
FY 2018 Q2	300-FF	699-11-E5A	2/1/2018	Annual	0	Late	Not on well access list; Request to cancel sent to PS
FY 2018 Q4	100-NR	199-N-230	9/1/2018	Every Two Years	18		Unsuccessful 12/11/2018
FY 2019 Q1	100-HR-D	199-D4-52	11/1/2018	Not on schedule			Not on well access list; Will continue trying.
		199-D4-58	11/1/2018	Not on schedule			Not on well access list; Will continue trying.
		199-D4-64	11/1/2018	Not on schedule			Not on well access list; Will continue trying.
		199-D4-70	11/1/2018	Not on schedule			Not on well access list; Will continue trying.
		199-D4-75	11/1/2018	Not on schedule			Not on well access list; Will continue trying.

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Summary of Hanford Sampling Program – November 2018-February 2019 Data
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Qtr Scheduled	GWIA	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment	
		199-D4-81	11/1/2018	Not on schedule			Not on well access list; Will continue trying.	
		199-D7-6	11/1/2018	Annual	8		No Access, snow	
		199-D8-99	12/1/2018	Quarterly	0	Late	P&T Well, not running	
		36-M	11/1/2018	Not on schedule			Request to cancel sent to PS.	
		DD-17-3	11/1/2018	Every Two Years	20			
	100-HR-H	199-H1-50	11/1/2018	Quarterly	0	Late	Not on well access list; Will continue trying.	
		199-H3-21	11/1/2018	Quarterly	0	Late	Not on well access list; Will continue trying.	
		199-H3-22	11/1/2018	Quarterly	0	Late	Not on well access list; Will continue trying.	
		199-H3-32	11/1/2018	Quarterly	0	Late	Not on well access list; Will continue trying.	
		199-H4-4	11/1/2018	Quarterly	0	Late	P&T not running; will be keeping this event and canceling the Feb due to longer analyte list.	
		199-H4-64	11/1/2018	Quarterly	0	Late	P&T not running; will be keeping this event and canceling the Feb due to longer analyte list.	
		699-95-45C	10/1/2018	Quarterly	0	Late	Not on well access list; Request to cancel sent to PS	
		C6293	11/1/2018	Not on schedule			Needs well maintenance; may have to wait for low river stage to fix.	
		C6301	11/1/2018	Not on schedule			Needs well maintenance; may have to wait for low river stage to fix.	
		100-KR	199-K-178	11/1/2018	Every Two Years	20		
	1100-EM	699-S30-E15A	12/1/2018	Every Three Years	33		Need to get PNNL pump removed. No access now due to snow	
	300-FF	399-3-1	12/1/2018	Every Six Years	69		Unsuccessful 12/10/2018	
		699-S6-E4D	12/1/2018	Every Six Years	69		No access	
		AT-3-4-M	12/1/2018	Every Three Years	33			
		AT-3-5-S	12/1/2018	Every Six Years (Begin FY17)	69			
	FY 2019 Q2	100-FR	699-67-26	2/1/2019	Quarterly	3		No Access, snow
			699-71-34	2/1/2019	Quarterly	3		No Access, snow
			699-75-28	2/1/2019	Quarterly	3		No Access, snow
			699-75-31	2/1/2019	Once	3		No Access, snow
			699-75-34B	2/1/2019	Quarterly	3		No Access, snow
		100-HR-D	199-D4-101	2/1/2019	Quarterly	2		P&T Well, not running
			199-D4-15	2/1/2019	River Stage	2		No Access, snow
			199-D4-83	2/1/2019	Quarterly	2		P&T Well, not running
			199-D4-85	2/1/2019	Quarterly	2		P&T Well, not running
			199-D4-97	1/1/2019	Quarterly	1		P&T Well, not running
199-D5-130			1/1/2019	Quarterly	1		P&T Well, not running	
199-D5-150			2/1/2019	Quarterly	2		No Access, snow	
199-D5-151			2/1/2019	River Stage	2		No Access, snow	
199-D5-20			2/1/2019	Quarterly	2		P&T Well, not running	
199-D5-39			2/1/2019	Quarterly	2		P&T Well, not running	
199-D5-42			2/1/2019	River Stage	2		No Access, snow	

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Summary of Hanford Sampling Program – November 2018-February 2019 Data
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Qtr Scheduled	GWIA	Site Name	Schedule Date	Frequency	Months Remain	Status	Comment	
	100-D8	199-D8-102	2/1/2019	Once	2		No Access, snow	
		199-D8-4	2/1/2019	River Stage	2		No Access, snow	
		199-D8-55	2/1/2019	Quarterly	2		P&T Well, not running	
		199-D8-69	2/1/2019	Quarterly	2		P&T Well, not running	
		199-D8-73	2/1/2019	Quarterly	2		P&T Well, not running	
		199-D8-93	2/1/2019	River Stage	2		No Access, snow	
		199-D8-94	2/1/2019	River Stage	2		No Access, snow	
		199-D8-98	1/1/2019	Quarterly	1		P&T Well, not running	
		199-H4-82	2/1/2019	Quarterly	2		No Access, snow	
		699-97-48C	2/1/2019	Once	2		No Access, snow	
		699-98-51	2/1/2019	River Stage	2		No Access, snow	
		100-HR-H	199-H1-32	2/1/2019	Quarterly	2		P&T Well, not running
			199-H1-33	2/1/2019	Quarterly	2		P&T Well, not running
			199-H1-37	2/1/2019	Quarterly	2		P&T Well, not running
			199-H1-38	2/1/2019	Quarterly	2		P&T Well, not running
			199-H1-40	2/1/2019	Quarterly	2		P&T Well, not running
			199-H1-50	2/1/2019	Quarterly	2		Not on WAL
			199-H3-21	2/1/2019	Quarterly	2		Not on WAL
	199-H3-22		2/1/2019	Quarterly	2		Not on WAL	
	199-H3-32		2/1/2019	Quarterly	2		Not on WAL	
	199-H4-4		2/1/2019	Quarterly	2		P&T Well, not running	
	199-H4-64		2/1/2019	Quarterly	2		P&T Well, not running	
	199-H4-83		2/1/2019	Once	2		No Access, snow	
	199-H4-84		2/1/2019	Semi-Annual	5		No Access, snow	
	199-H4-85		2/1/2019	Once	2		No Access, snow	
	199-H4-87		2/1/2019	Quarterly	2		No Access, snow	
	199-H4-88		2/1/2019	Once	2		No Access, snow	
	199-H4-89		2/1/2019	Quarterly	2		No Access, snow	
	199-H4-90		2/1/2019	River Stage	2		No Access, snow	
	199-H4-91		2/1/2019	River Stage	2		No Access, snow	
	199-H7-1		2/1/2019	Quarterly	2		Never heard of this well	
	699-95-45C		1/1/2019	Quarterly	1		No Access, snow	
	699-97-60	2/1/2019	Once	2		No Access, snow		
	699-98-46	2/1/2019	River Stage	2		No Access, snow		
	699-99-42B	2/1/2019	River Stage	2		No Access, snow		
	100-KR	199-K-106A	2/1/2019	Once	2		No Access, snow	
		199-K-107A	2/1/2019	Once	2		No Access, snow	
		199-K-111A	2/1/2019	Once	2		No Access, snow	
		199-K-13	2/1/2019	Monthly	0	Late	No Access, snow	
		199-K-141	2/1/2019	Semi-Annual	5		No Access, snow	
		199-K-202	2/1/2019	River Stage	2		No Access, snow	
		199-K-203	2/1/2019	River Stage	2		No Access, snow	
		199-K-204	2/1/2019	River Stage	2		No Access, snow	
		199-K-221	2/1/2019	River Stage	2		No Access, snow	
		199-K-222	2/1/2019	River Stage	2		No Access, snow	
		199-K-32A	2/1/2019	Quarterly	2		No Access, snow	
		199-K-34	2/1/2019	Semi-Annual	5		No Access, snow	
		22-D	1/1/2019	Quarterly	1			
	22-M	1/1/2019	Quarterly	1				
	300-FF	399-1-12	2/1/2019	Monthly	0	Late	No Access, snow	
		399-1-155	2/1/2019	Monthly	0	Late	No Access, snow	
		399-1-156	2/1/2019	Monthly	0	Late	No Access, snow	
		399-1-157	2/1/2019	Monthly	0	Late	No Access, snow	
		399-1-158	2/1/2019	Monthly	0	Late	No Access, snow	
		399-1-159	2/1/2019	Monthly	0	Late	No Access, snow	
		399-1-160	2/1/2019	Monthly	0	Late	No Access, snow	
		399-1-161	2/1/2019	Monthly	0	Late	No Access, snow	
		399-1-162	2/1/2019	Monthly	0	Late	No Access, snow	
		399-1-164	2/1/2019	Monthly	0	Late	No Access, snow	
	399-1-165	2/1/2019	Monthly	0	Late	No Access, snow		
	399-1-166	2/1/2019	Monthly	0	Late	No Access, snow		

100K Area Report
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RL-0012 Sludge Treatment Project

TPA Milestone M-016-175, Begin sludge removal from 105-KW Fuel Storage Basin

- (9/30/18) – Completed June 12, 2018

TPA Milestone M-016-176, Complete sludge removal from 105-KW Fuel Storage Basin

- (12/31/19) – On Schedule
- As of 3/18/19, ten (10) STSCs have been loaded and shipped to T Plant.
- Sludge loading into STSC #11 is forecast to commence on 3/21/19 and expected to ship to T Plant by 4/8/19.
- An EPA Project Manager Meeting was conducted 2/12/19 with CHPRC personnel presenting the following to DOE-RL and EPA with respect to Engineered Container (EC) sludge removal:
 - An update on current sludge removal progress, and
 - A follow-up on a proposed definition for satisfying TPA-M-016-176, *Complete sludge removal from 105-KW Fuel Storage Basin*.
 - CHPRC proposed the completion of sludge removal as, “bulk (>90%) sludge removal” from the Engineered Containers using standard retrieval tools/processes.
 - CHPRC also proposed “bulk (>90%) sludge removal” would meet the intent of DOE/RL-2010-107, *105-K West Basin Qualified Plan to Satisfy End-Point Criteria (Fuel, Sludge, and Below-Water Debris)*.
 - DOE/RL-2010-107, Section 4.3.1.2.3, End-Point Criteria No. 2 for Sludge Removal states: “Retrieve sludge from the engineered containers (ECs) to the sludge transfer and storage containers (STSCs). Remove the STSCs with sludge from the basin, basin building and reactor building to a location that will allow complete basin deactivation. This constitutes sludge removal from the basin.”
 - The completion of final pass sludge removal (requires EC lid removal) would not drive the due date for TPA-M-16-181, *Complete Deactivation, Demolition & Removal of 105-KW FSB*.
 - Further consideration proposed to issue ERDF Compliance Demonstration calculation after bulk material removal. This would inform best path forward regarding further source term removal in the KW Basin. There is opportunity to achieve greater reduction of risk to the Columbia River through staging residual debris in the basin prior to final sludge transfer to STSC’s.
 - The EPA Project manager was open to the proposal that bulk EC sludge removal would meet TPA-M-16-176, *Complete sludge removal from 105-KW Fuel Storage Basin*. EPA would be amenable provided CHPRC issued an “ERDF

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Compliance Demonstration Calculation” demonstrating that the Sum of Fractions (SOF) for K West Basin attributed to sludge residuals in EC’s would be manageable relative to achieving the overall SOF reduction needed to demonstrate that the basin is ready for dewatering, stabilization, and subsequent demolition. Discussions with EPA and DOE-RL regarding completion criteria for satisfying TPA-M-016-176 personnel are ongoing.

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

RL-0041 100K Closure Project

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

100-K Soil Remediation

- Completed excavation and loadout of soil below the crib structure, groomed side slopes, and installed walking ramp at Waste Site 116-KE-2.
- Continued excavation and loadout of Waste Site 100-K-47:1. Excavation is approximately 40percent complete.
- EPA approved the Waste Site Reclassification Form (WSRF) for closure of Waste Site 100-K-94.
- EPA approved the WSRF for closure of waste sites 100-K-13 and 100-K-94. Completed backfill of 100-K-94.

Developed a plan to perform additional remediation at Waste Site 100-K-99, for locations identified through verification sampling and Radiation Control surveys.

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.*

- (9/30/24) - On Schedule for 105-KE, 105-KW TBD

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

- (9/30/24) - On Schedule
- DOE/RL-2005-26, *RAWP for 100K Reactor and Ancillary Facilities* and DD-62526, *Air Monitoring Plan for 105-KE/KW Interim Safe Storage and D4 of 100K Ancillary Buildings* are ready for EPA and DOE-RL approval.

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TPA Milestone M-016-178, *Initiate deactivation of 105-KW Fuel Storage Basin.*

- (12/31/19) – On Schedule
- K West Basin characterization work is progressing.
 - The revision to DOE/RL-2010-52, *Remedial Design and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K West Basin Deactivation* (Deactivation RAWP) is in final technical editing and review prior to submittal to EPA.
 - Planning commence for deactivation of the 105-KW Basin Recirculation Cooling (BRC) System. Final deactivation of this system will serve as objective evidence supporting milestone completion.
 - PNNL continued analysis of K West Basin floor concrete and paint samples.
 - Completed gamma camera characterization surveys of high dose debris bins.
 - Completed dose-to-curie modeling of previously collected HDM.
 - Completed formal Safeguards termination of current holdings of found fuel specimens, thereby enabling subsequent management of the material as RH-TRU waste. A separate Defense Determination request has been prepared for CBFO approval that will formally establish WIPP Program acceptance of the waste.
- Garnet and sand filter media removal system work is progressing.
 - Started developing the design for the Skimmer System Sand Filter Media Removal System.
 - Developed the draft operating procedure for removing filter media from garnet filter number one.

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

- (9/30/23) – On Schedule
- Planning for 105-K West Fuel Storage Basin deactivation and demolition continue.
- (TPA-M-016-178 and TPA-M-016-181).
 - Continued preparation of the 105-K West Basin Characterization and Waste Disposition Plan. This plan recognizes the technical approach updated in the Deactivation RD/RAWP revision and will augment Sampling Analysis Plan and Data Quality Objectives documents supporting disposition of KW debris.

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

- (12/31/23) – On Schedule

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300 Area ROD Scope

TPA Milestone M-016-85A, *Complete remote excavation of the 300-296 waste site in accordance with an approved RD/RA Work Plan, (9/30/19) – At Risk*

The following activities are being conducted in preparation for remote excavation of the highly contaminated soil beneath the 324 Building hot cells, and grout in place in the hot cells for disposal.

324 Building Equipment Installation:

- The main activity in B-cell during February and March was size reduction of large debris with the REA, core drilling for the NE TSA and tool holders, camera installation, and tool holder installation.
- Completed installation of the 2nd and 3rd Remote Excavator Arm (REA) Through Support Assemblies (TSAs) in B-Cell. The TSAs anchor the REAs to B-Cell wall.
 - The last TSA will be installed this summer.
- Reinstalled A-Cell crane door hoist wire rope. (01/17/19)
- Completed instrumentation and controls connections for the control trailer (1/30/19).
- Continued camera installation in the REC. 6 of 12 cameras have been installed.
 - 5 left to install in B-Cell (Mar – Apr) and 1 in the Airlock (May).
 - Delays due to high contamination in B-cell (>950M dpm beta-gamma on contact).
- Completed 3rd tool holder location and set up for the 4th location 2/23/19.

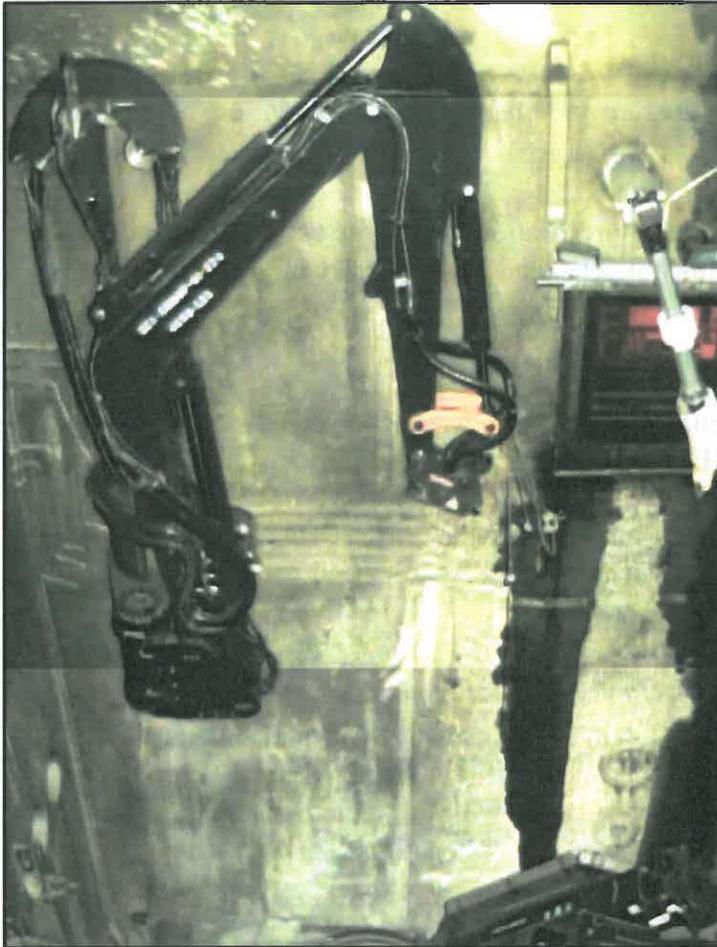
Core Drilling:

- Completed all core drilling in A-, C-, and D-Cell walls. 1 core remains to be drilled in B-cell (by end of March).
 - Cores support installation of cameras, tool holders, lights, etc.. The cores also provide a controlled pathway into the hot-cells for REA hydraulic lines, grout delivery piping, water delivery lines, and electrical lines.

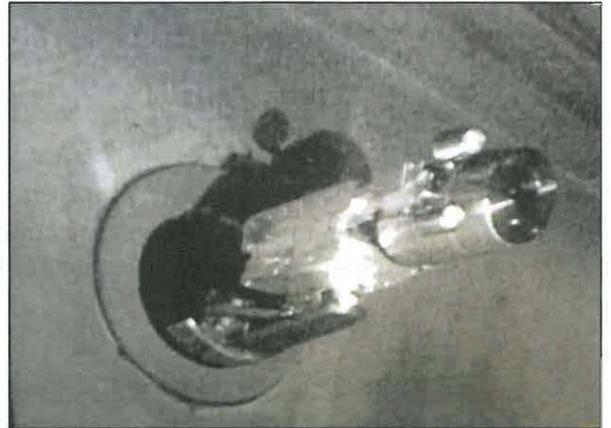
Equipment Procurement & Fabrication:

- Awarded contract to fabricate A- and D-Cell dams (1/16/19).
- The design and fabrication of the following 324 Building systems continues:
 - Shielded probe collimator
 - Rad assay system
 - Waste box shielding
 - Cell dams
 - Water delivery system

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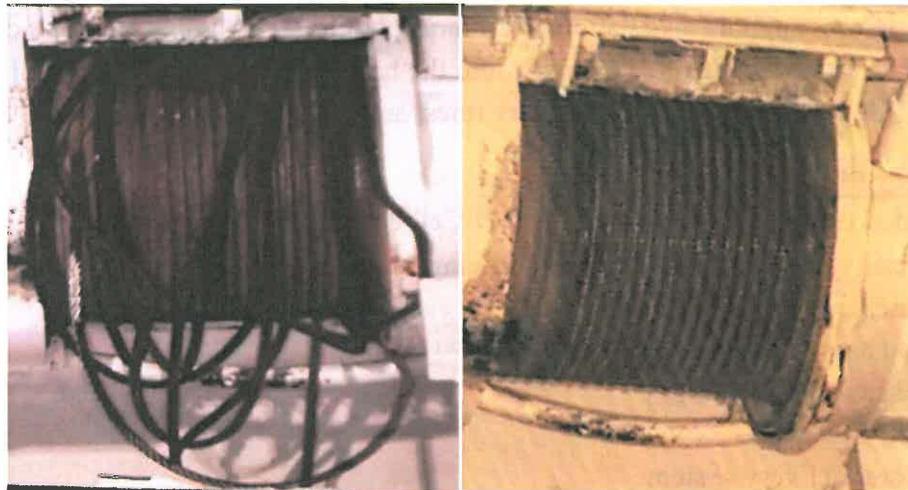
Composite of REA in B-Cell



Camera install on North B-cell wall



Tool holder in B-cell



A-Cell crane door wire rope removal before and after wire rope replacement.

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324 Activities:

- Initiated installation of Remote Operated Impact Device (ROID)/Seal Breaker into D-Cell floor plug, and made the electrical connection. (03/11/19).
- Completed seal break. (03/14/19)
 - This is a significant reduction in project risk (simplified C-Cell door seal and enables use of A/D crane).
 - Had never been removed since facility construction.



Structural Modifications:

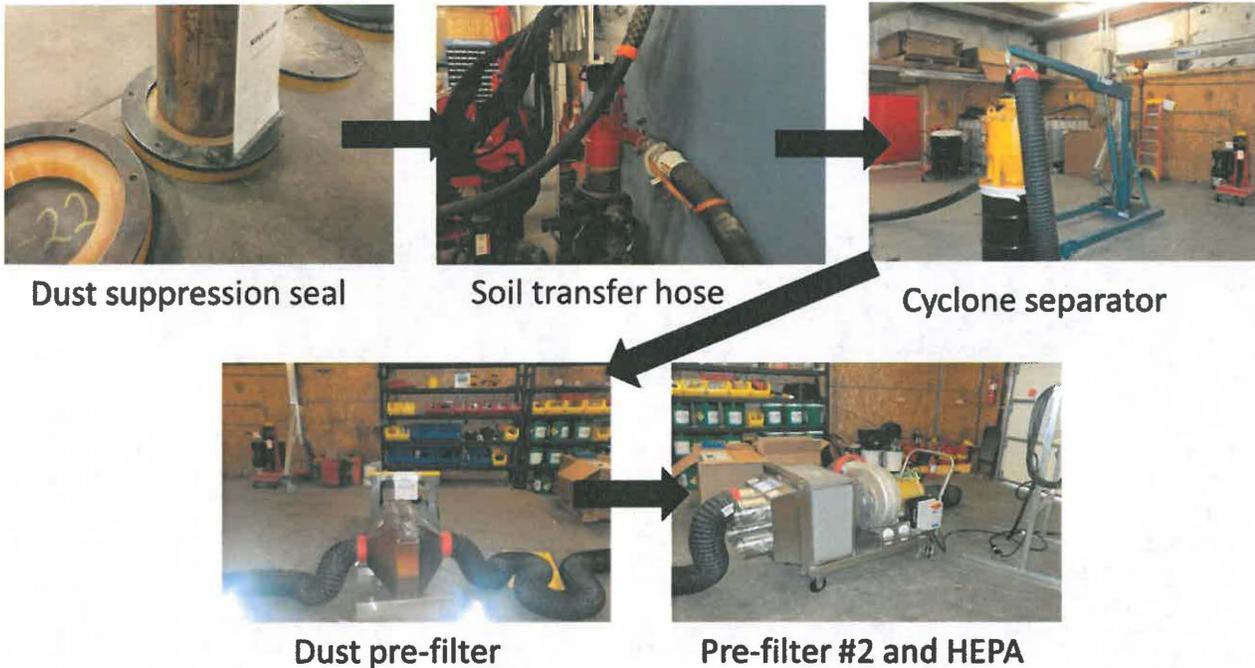
- Continued horizontal drilling, excavations, and chemical grout testing at Pit 6 soil stabilization demonstration and verification site.
 - Drilling was completed on 3/18/19. Moving to 324 for geoprobe removal.
- Room 18/Pilot Hole preparations:
 - Completed Room 18 ventilation flow test to support Pilot Hole testing in support of the 324 structural modification (12/7/18).
 - Completed crew training and final proficiency demonstration for drilling the pilot holes (1/16/19).
 - Began mobilization of micropile equipment to 324 Room 18 (1/29/19).
 - Initiated drilling of first pilot hole (3/13/19).



Pilot hole demonstration at Nicholson (full PPE).

Mobilized drill rig to room 18 in 324.

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Mockup:

- Started HVAC snorkel installation training (1/17/19).
- Completed seal breaker testing (1/31/19).
- Completed Rad Assay System installation and construction acceptance testing (3/18/19).
 - Next step, 324 REC airlock to support A- and B-Cell cleanout.
- Initiated the Rad Assay System Construction Acceptance Testing (CAT) (2/21/19).
- Completed grout pad demolition and debris removal demonstration on 3/4/19.



Mockup floor saw is being setup for testing.

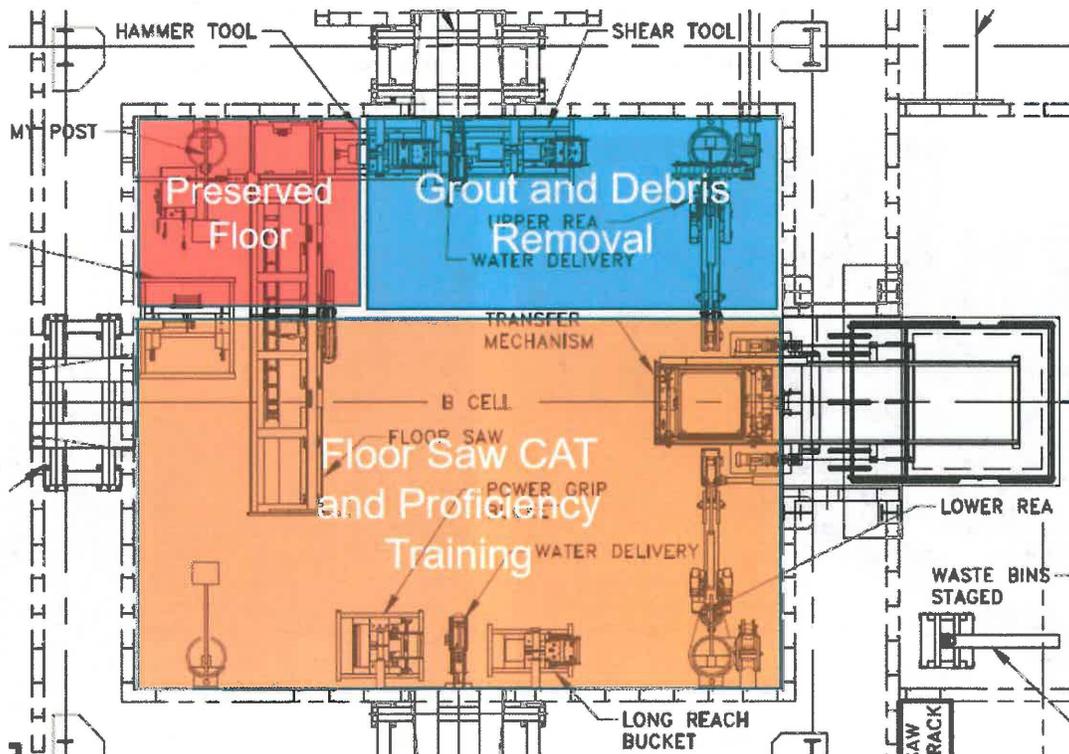


Rad assay system and turntable install.

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Remote equipment operators at the Mockup control trailer successfully demolished the grout pad and removed fixed debris using the REA and punch attachment. The grout for the test was the same mix and compressive strength as the grout layer in B-cell.



Cell Cleanout:

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- Installed shear on REA in B-Cell and initiated size reduction of large debris 12/20/18.
 - Debris size reduction is 85% complete and will finish at the end of March.
 - On 3/19, 4 9x5x5 boxes had 1” to 3” shielding installed to support the loadout of loose debris from A- and B-Cell. This is the next activity after size reduction completes.

Upcoming Activities:

- Complete all REC core drilling by end of March.
- Initiate geoprobe removal by end of March.
 - A geoprobe blocks the drill path for pilot hole #3 and #4.
- Complete Issued For Construction micropile design by mid-April.
- Complete pilot holes on by end of April.
- Initiate micropile installation on in May.
- Initiate chipping grout within B-Cell in May.

TPA Milestone M-016-85, Complete Remedial Actions for 300-296 and Disposition for 324 Bldg and Ancillary Bldgs

- (9/30/21) – At Risk

Milestone Description: Complete remedial actions for 300-296 waste site in accordance with RD/RA Work Plan for 300-FF-2 Soils (DOE/RL-2014-13-ADD1) and disposition for the 324 Building and Ancillary Buildings in accordance with the Removal Action Work Plan (DOE/RL-2004-77). Completion of facility disposition is defined as the completion of deactivation, decontamination, decommissioning, and demolition in accordance with the removal action work plan.

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Groundwater Summary by OU – (November 2018 to February 2019 Data)
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100-K Area Groundwater Operable Unit

EPA Lead (RL – E. Glossbrenner, CHPRC – E. Feist, J. Hulstrom)

- **CERCLA Process Implementation:**
 - Received comments from RL on the Draft B RI on December 14, 2018. On January 7, 2019, CHPRC met with RL to disposition comments on the Draft B RI report.
 - Received comments from EPA on the 100-K draft TI waiver document on November 5, 2018. On November 15, 2018, a meeting was held to discuss in more detail some of the EPAs comments. A follow-up meeting was held on December 12, 2018, and an accepted path forward was defined to resolve EPA comments. A revised document was provided to EPA on February 1, 2019 after which EPA provided additional comments on February 19, 2019.
 - On November 20, 2018 and February 4, 2019, CHPRC presented to RL and EPA, the current proposed FS alternatives and alternative rankings.
- **Monitoring & Reporting:**
 - Well construction activities concluded at well 199-K-235 on December 19, 2018. The 5-in. diameter well liner was successfully installed inside the originally designed 6-in. well.
 - Well construction activities concluded at well 199-K-236 on December 19, 2018.
 - On February 20, 2019, field construction activities started in support of the KW Soil Flushing Treatability Test project. This test will be implemented at the former 183.1KW Head-house chemical storage tank farm, where liquid sodium dichromate
- **Remedial Actions & System Modifications:**
 - In November 2018, the average pumping rates were 249, 288, and 899 gpm for the KR4, KW, and KX systems, respectively.
 - In December 2018, the average pumping rates were 251, 300, and 909 gpm for the KR4, KW, and KX systems, respectively.
 - In January 2019, the average pumping rates were 253, 330, and 916 gpm for the KR4, KW, and KX systems, respectively.
 - In February 2019, the average pumping rates were 252, 252, and 915 gpm for the KR4, KW, and KX systems, respectively.
 - Figure KR-1 illustrates the monthly average pumping rates for operating extraction wells across the 100-KR-4 system.
 - For the month of February, KW extraction well 199-K-205 was disconnected from the system to support fieldwork for the KW Soil Flushing Treatability Test, and KX extraction well 199-K-141 was disconnected to support FY2019 realignment activities.
- **Figures KR-2 through KR-4 present the monthly volume of groundwater treated and mass of hexavalent chromium removed through February 2019.**
 - The volume of groundwater treated and mass of Cr(VI) removed for the 100-K P&T systems (KX, KR4, and KW) during November 2018 through February 2019 are:

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Month	Gallons Treated (in millions)	Hexavalent Chromium Removed (kg)
November	61.4	2.7
December	65.1	2.9
January	65.5	2.9
February	56.0	2.7

- FY 2019 (October 2018 through February 2019) P&T performance to date:

P&T System	Treated (mgal)	Removed (kg)
KR4	54.3	0.6
KW	60.7	2.5
KX	193	11.1
Total	308	14.2

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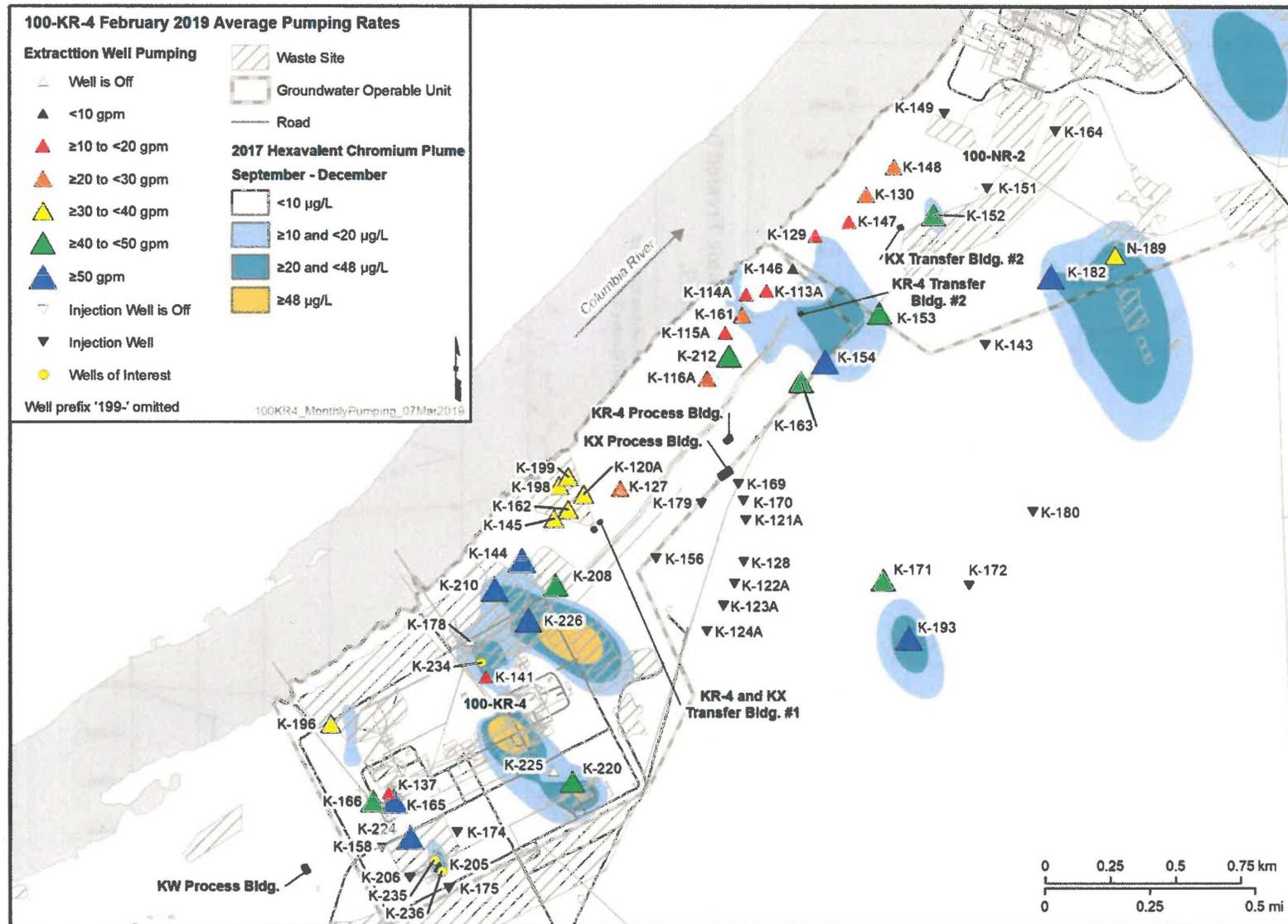


Figure KR-1. February 2019 Average Pumping Rates for the 100-KR-4 P&T System

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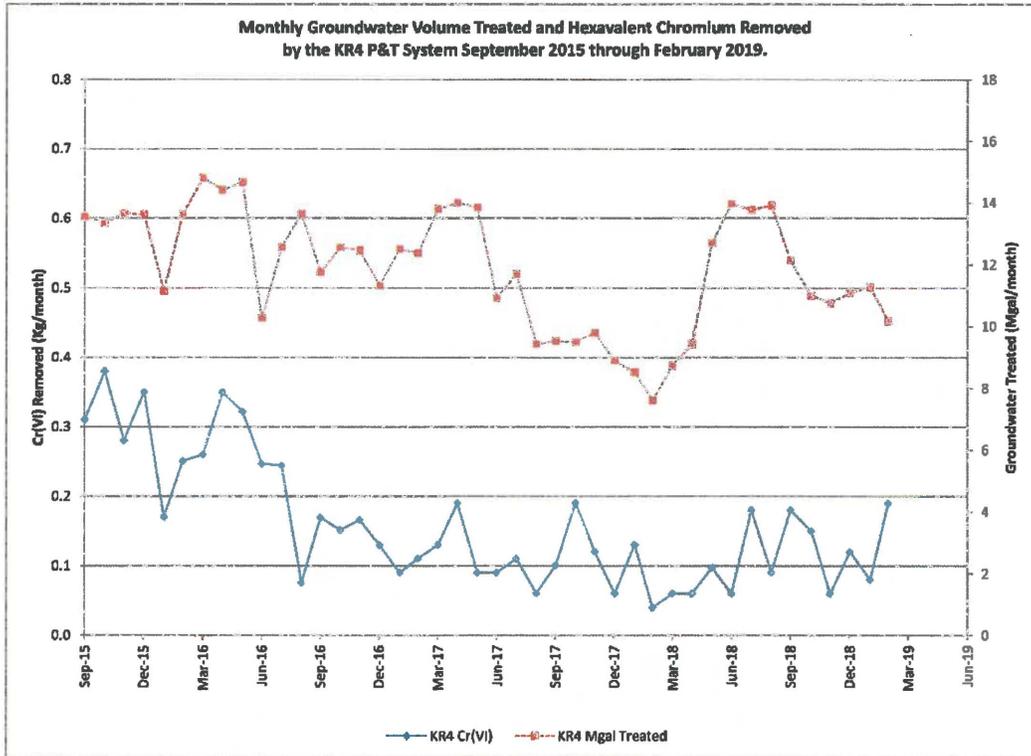


Figure KR-2. Monthly Cr(VI) Removed and Groundwater Volume Treated by KR4 P&T September 2015 through February 2019.

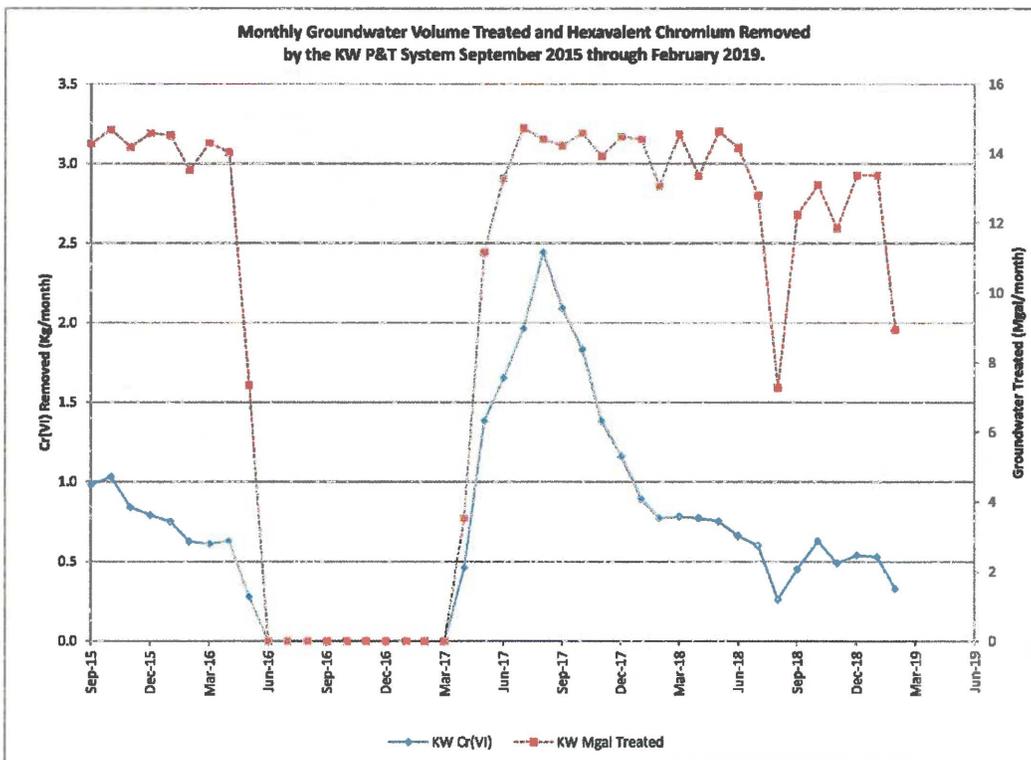


Figure KR-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by KW P&T September 2015 through February 2019.

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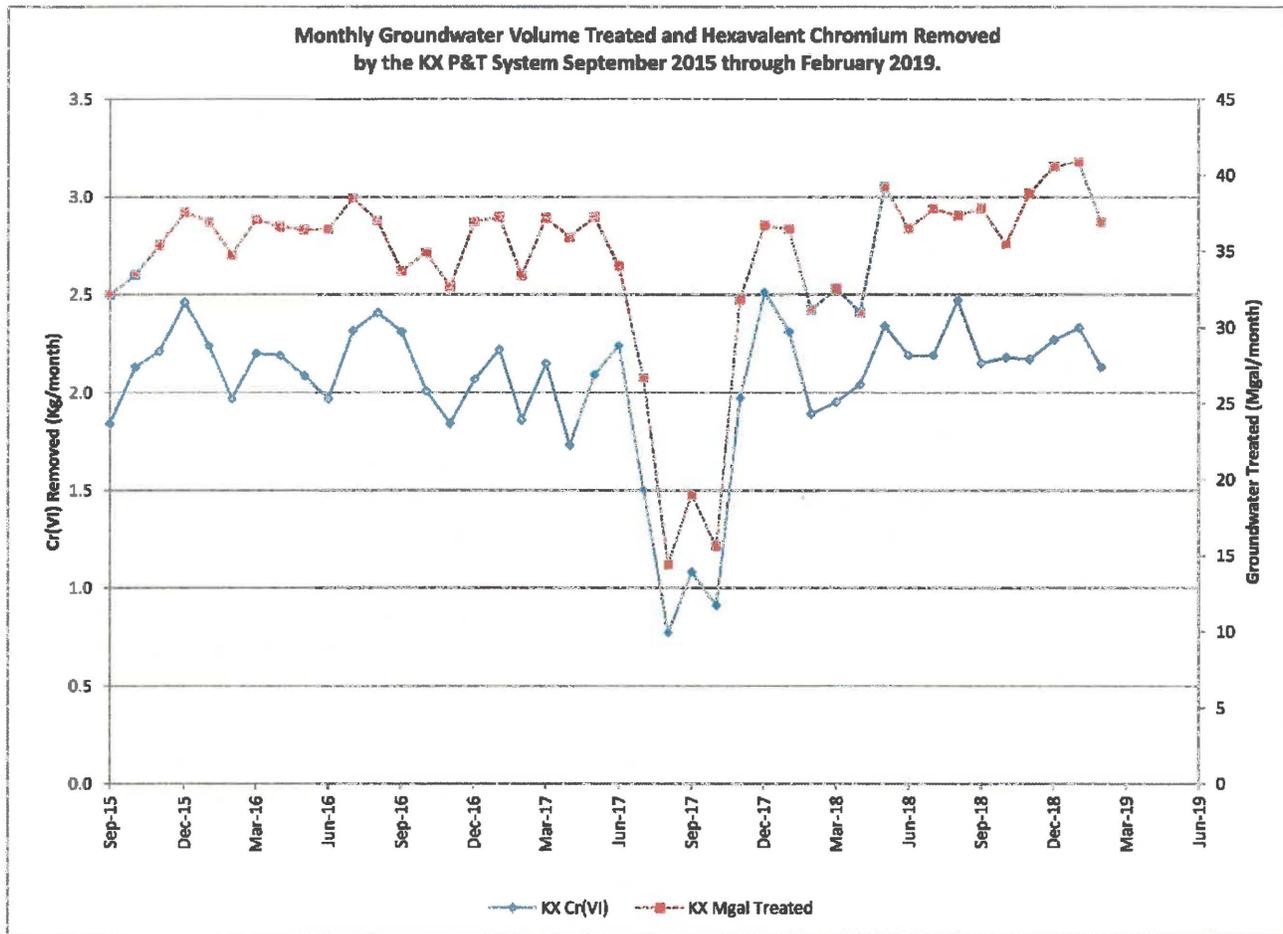


Figure KR-4. Monthly Cr(VI) removed and groundwater volume treated by KX P&T September 2015 through February 2019.

Regulatory Agency Comments: None

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Groundwater Summary by OU – (November 2018 to February 2019 Data)
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100-BC Area Groundwater Operable Unit

EPA Lead (RL – E. Glossbrenner, CHPRC – R. Evans, M. Hartman)

- CERCLA Process Implementation:
 - CHPRC continued dispositioning review comments received from EPA on the Draft Rev 0, RI/FS Report and Proposed Plan for 100-BC-1, 100-BC-2 and 100-BC-5.

- Monitoring & Reporting:
 - Hyporheic sampling point (HSP) C8861, two other HSPs, five nearby aquifer tubes, and one monitoring well (Figures BC-1 and BC-2) were sampled in December 2018 to follow-up on previous Cr(VI) increases. Samples were analyzed for Cr(VI), other metals, and potential indicators of nearby former waste sites (strontium-90, total petroleum hydrocarbons [TPH], and PCBs).
 - The Cr(VI) concentration in C8861 decreased to 26 µg/L in December 2018. Concentrations in adjacent, shallower HSP C9446 and shallow aquifer tube AT-B-7-S were similar to those in C8861 (Figure BC-3). River stage was higher in December 2018 than in September and October 2018. However, previous studies showed that Cr(VI) concentrations in the 100-BC HSPs did not respond to moderate increases in river stage.
 - The mid-depth and deep aquifer tubes in the AT-B-7 cluster had lower concentrations than the shallow tube (Figure BC-4). AT-B-7-S had not been sampled since 2007, when concentrations were lower (18.5 µg/L).
 - Cr(VI) concentrations in C8860 (upstream) and well 199-B3-46 (inland) continued to decline gradually (Figure BC-5).
 - Strontium-90 and PCB results were all non-detects. TPH-gas and TPH-diesel results to date were also below or near detection limits (flagged U or J). Total chromium was consistent with Cr(VI). The other metals evaluated indicated no corrosion.
 - DOE met with EPA on January 31, 2019 to discuss the December 2018 sampling results and offered the following responses to their comments:
 - Is the Cr(VI) from 128-B-3 or 116-C-1 waste sites? The co-contaminants from these remediated waste sites were not detected above quantitation limits in water samples collected in December, indicating there is not a major source of ongoing contamination. However, strontium-90, TPH, PCBs, copper, and lead all have low solubility/mobility, so their absence does not necessarily indicate a complete lack of residual contamination from the former waste sites.
 - Did the Cr(VI) originate with corrosion of the stainless steel HSP? No; the near-absence of iron and nickel rule out this possibility.
 - Is the Cr(VI) connected to the known plumes in the aquifer? The small zone of higher Cr(VI) concentrations around HSP C8861 is distinct from the main Cr(VI) plume and is delimited by surrounding HSPs and aquifer tubes. However, its presence only at the top of the aquifer and its transient nature are similar to patterns of Cr(VI) migration previously seen as the 100-C-7 “hot spot” migrated northward through 100-BC groundwater. It is possible that the contamination migrated along a preferential flow path and was missed by the other monitoring points. After eliminating study questions 1 and 2, this seems the most likely explanation.

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- Is the problem persistent, and what are trends? The Cr(VI) concentration in HSP C8861 declined in December. Additional sampling of C8861 and nearby sites for Cr(VI) has been scheduled for April, July, and September 2019 to monitor trends.
- Sampling of well 699-71-77, located east of 100-BC Area, was delayed from October 2018 until January 2019 because of a faulty pump. Results were consistent with previous data.
- Well 199-B4-14 was sampled as scheduled in January. Cr(VI) concentrations continued to be <10 µg/L.
- Selected wells are scheduled for sampling in June.

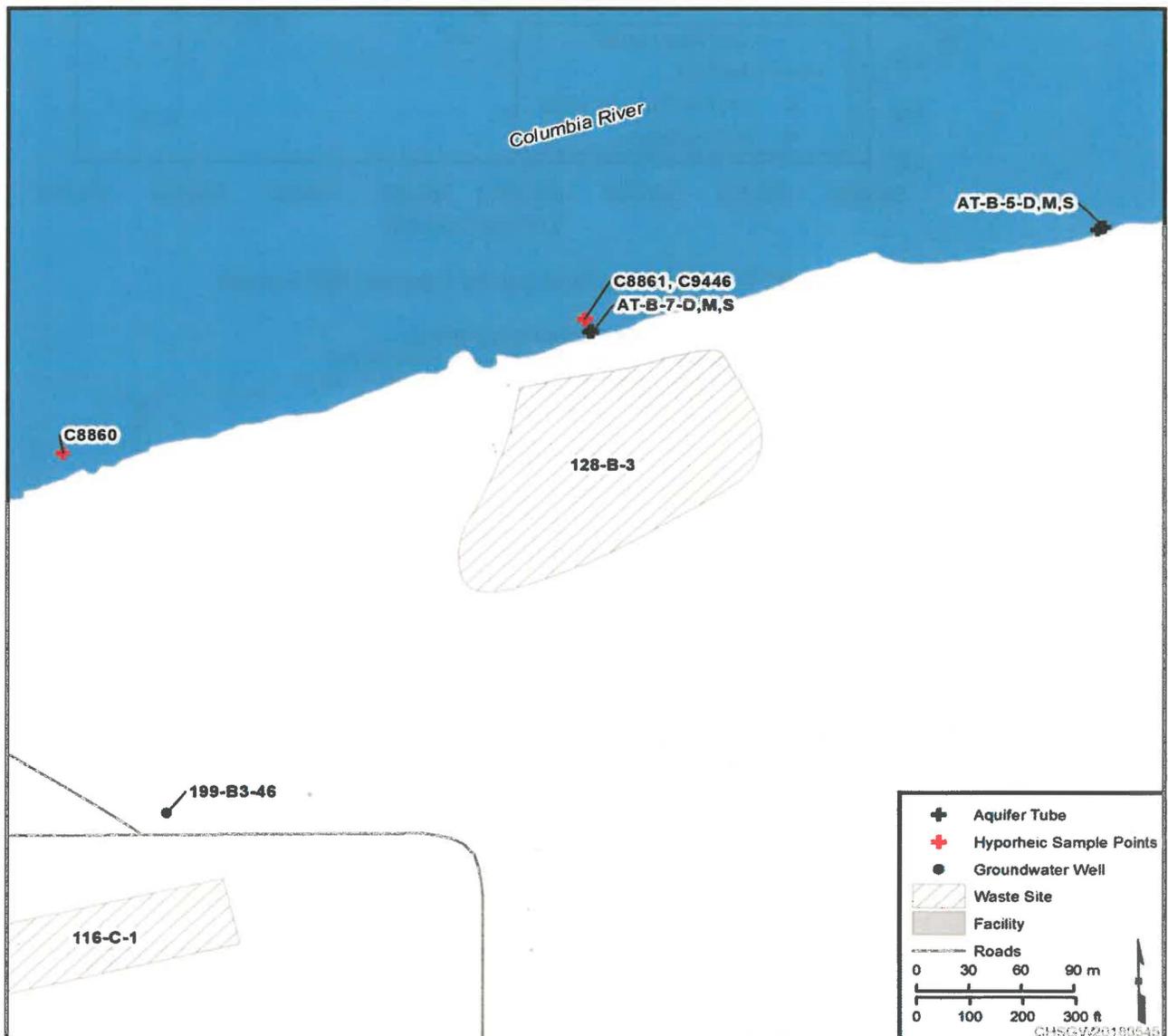


Figure BC-1. HSP C8861 Study Area

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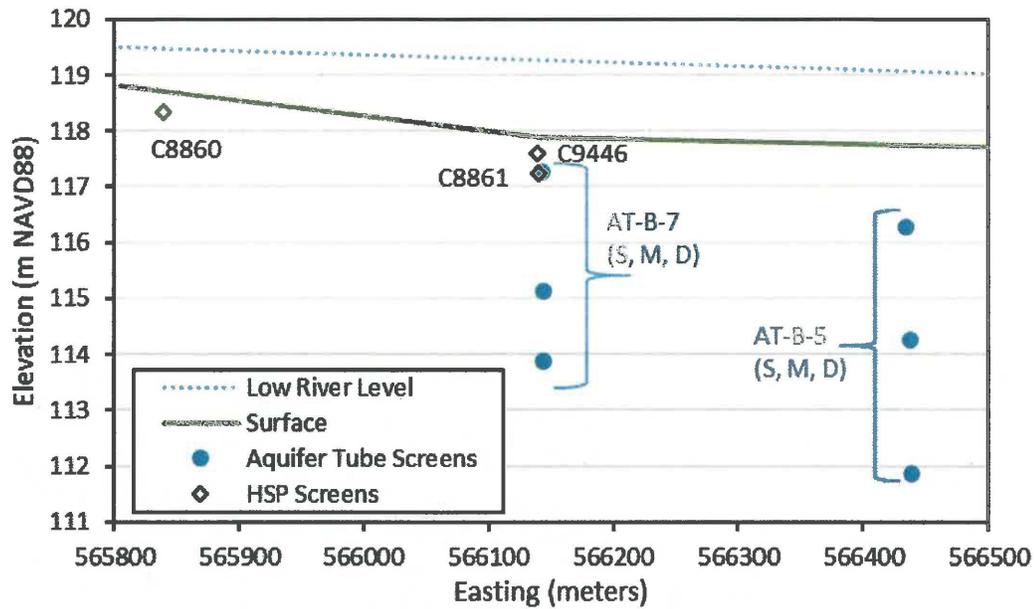


Figure BC-2. Relative Depths of Aquifer Tube and HSP Screens

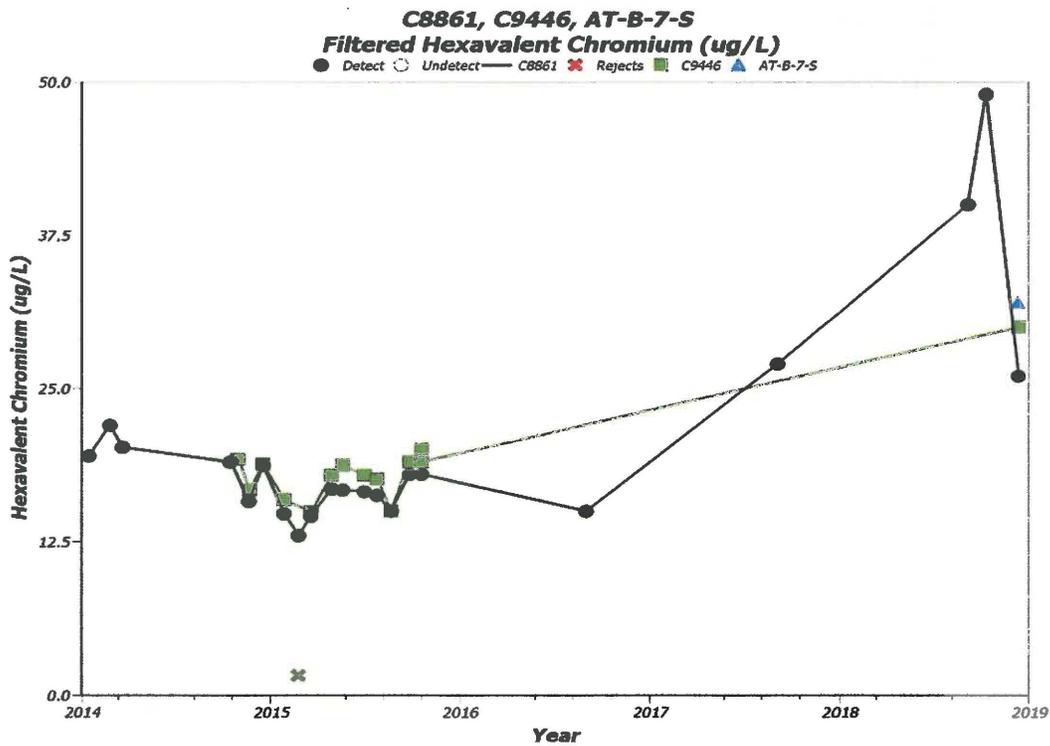


Figure BC-3. Cr(VI) Concentrations in HSPs C8861 and C9446 and Adjacent Aquifer Tube AT-B-7-S

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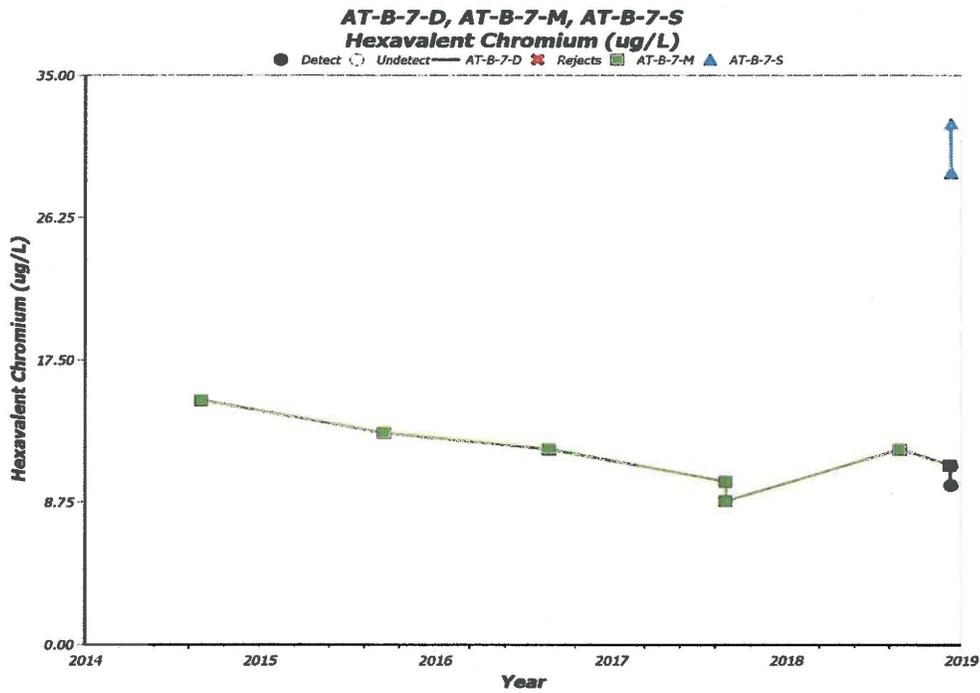


Figure BC-4. Cr(VI) Concentrations in Aquifer Tube Cluster AT-B-7
C8860, 199-B3-46

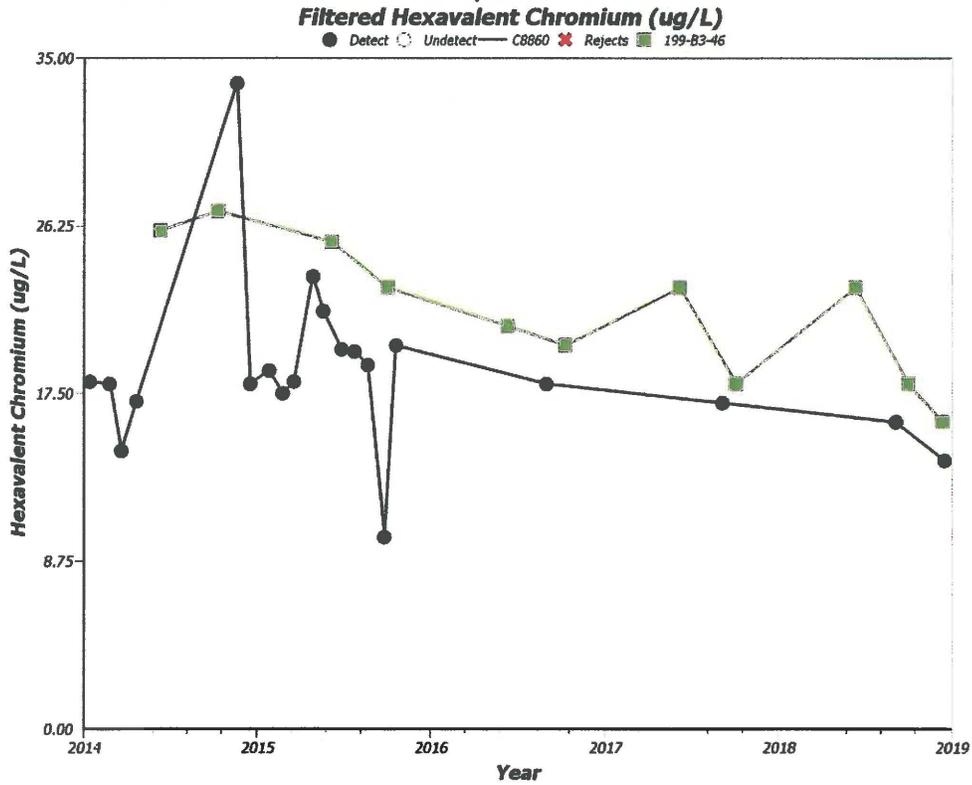


Figure BC-5. Cr(VI) Concentrations in HSP C8860 and Well 199-B3-46

Regulatory Agency Comments: None

100-N Area Operable Unit

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Ecology Lead (RL – S. Balone, CHPRC – B. Faught, V. Rohay, A. Lee)

- CERCLA Process Implementation
 - A TPA CN is undergoing Ecology review for the 100-NR-2 RD/RAWP (DOE/RL-2001-27) which reflects changes in the PRB injection schedule. A draft of the TPA CN was provided to Ecology on June 28, 2018.
 - RL, Ecology, EPA, and CHPRC met on February 6, 2019 to discuss Ecology's technical questions on the 100-N TI Waiver. Ecology provided a presentation with technical questions on current inventory, model transport parameters and potential alternatives for treating strontium-90 in groundwater. Current information that would address the technical questions is provided in the Draft B RI/FS which is under RL review at this time.
 - The Decisional Draft B RI/FS Report was provided to RL on October 31, 2018 and undergoing review at this time. Chapters will be provided to Ecology informally and individually for review as CHPRC dispositions the comments and produces the document final.
- Remedial Actions:
 - Semiannual groundwater sampling of the bioremediation monitoring wells were collected in December 2018. Next quarterly bioventing vapor samples are scheduled for March 2019.
 - A DQO workshop was conducted on February 5, 2019 with RL, Ecology, and CHPRC to discuss data needs for an evaluation of effectiveness of bioventing for 100-N Area TPH deep vadose zone contamination. Three boreholes are planned for sample collection to meet the identified data needs.
- Product Recovery:
 - The sponge assemblies in wells 199-N-18 and 199-N-183 were changed on November 7, and December 10, 2018. A total of 510 grams of product was recovered.
- Monitoring and Reporting:
 - The high river sampling of aquifer tubes C7934, C7935, and C7936 are scheduled for sampling in June 2019.

Regulatory Agency Comments: None

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100-D/H Areas Groundwater Operable Unit

Ecology Lead (RL – J. Sands, CHPRC –R. Evans, K. Ivarson)

- CERCLA Process Implementation:
 - The 100-D/H Remedial Design/Remedial Action Work Plan and accompanying Waste Management Plan are undergoing Ecology review. Comments are due on March 22, 2019.
- Monitoring & Reporting:
 - Well drilling and construction activities are complete at wells 199-H3-21, 199-H3-22, 199-H3-12, 199-H3-13, and 199-H3-32. Well development and collection of the post development sample has been collected at wells 199-H3-21, 199-H3-22, and 199-H3-12.
- Remedial Actions & System Modifications:
 - The volume of groundwater treated and mass of Cr(VI) removed from the 100-HR-3 P&T systems during November 2018 through February 2019 are:

Month	Gallons Treated (in millions)	Hexavalent Chromium Removed (kg)
November	50.9	5.4
December	51.3	5.3
January	51.6	4.8
February	42.9	4.1

- FY 2019 (October 2018 through February 2019) P&T performance to date:

P&T System	Treated (mgal)	Removed (kg)
DX	134	13.2
HX	116	11.5
Total	250	24.7

- Figure HR-1 illustrates the monthly average pumping rates for operating extraction wells across the 100-HR-3 system.
- Summaries of the volume of groundwater treated and Cr(VI) removed for the DX and HX pump and treat systems are shown in Figures HR-2 and HR-3, respectively.

Regulatory Agency Comments: None

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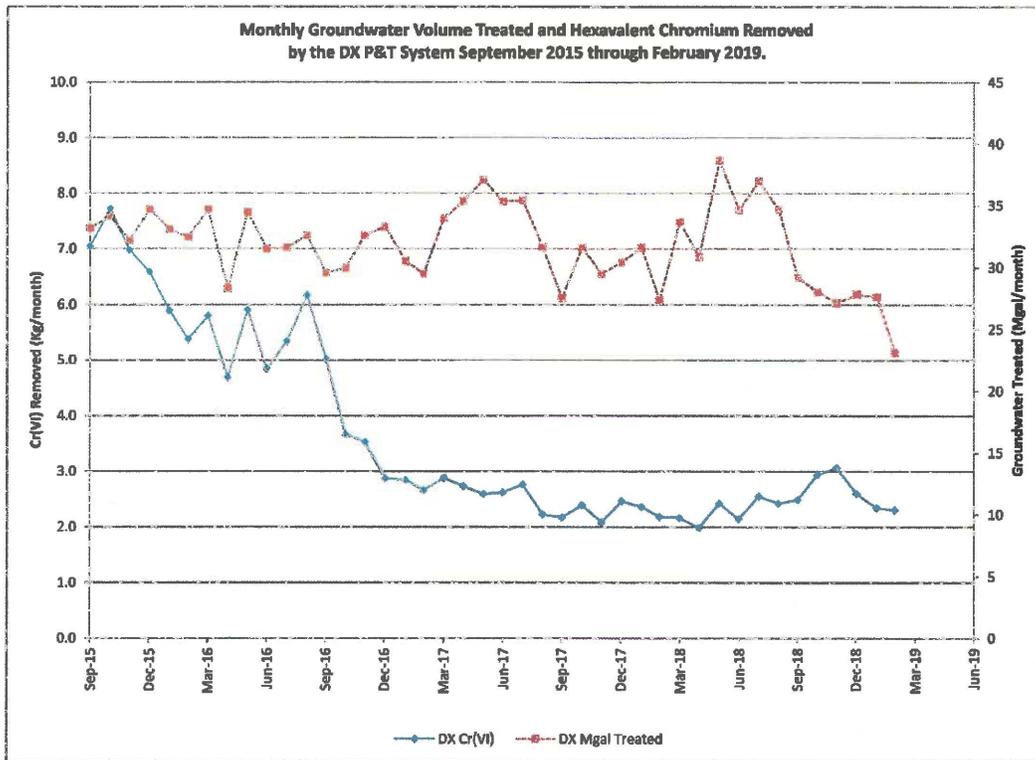


Figure HR-2. Monthly Cr(VI) Removed and Groundwater Volume Treated by DX P&T, September 2015 through February 2019.

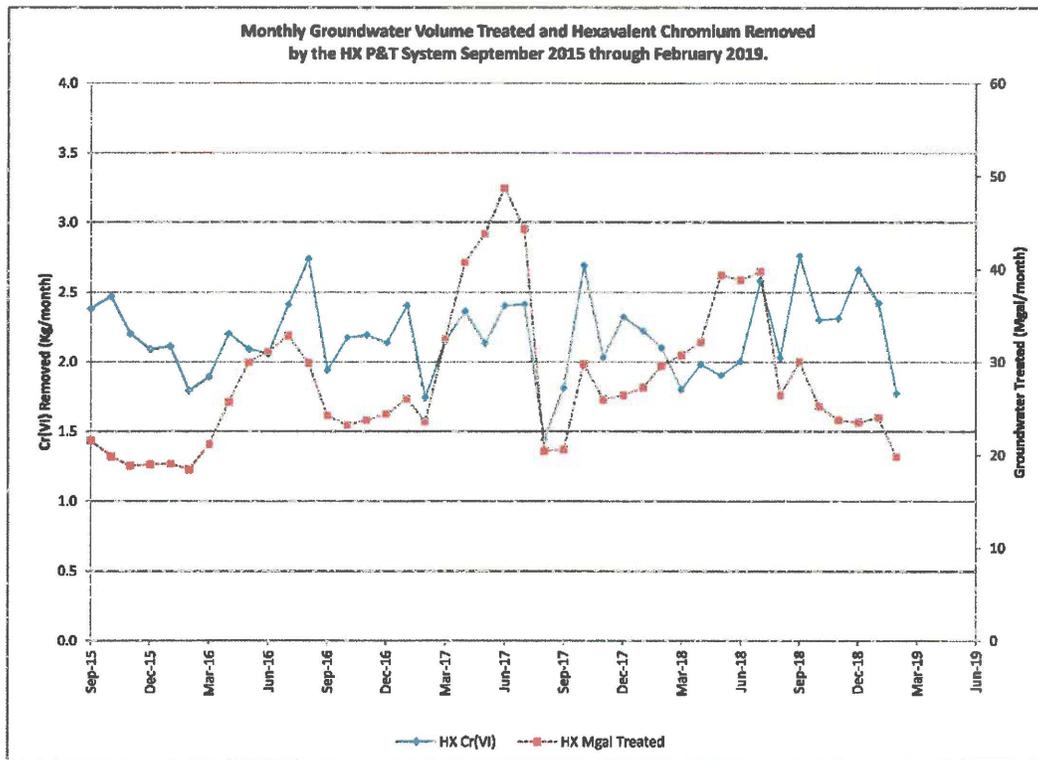


Figure HR-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by HX P&T, September 2015 through February 2019.

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100-F Area Groundwater Operable Unit

EPA Lead (RL – S. Balone, CHRPC – R. Evans, M. Hartman)

- CERCLA Process Implementation:
 - Nothing new to report.
- Monitoring & Reporting:
 - In October 2018, DOE installed packers and dedicated bladder pumps in four existing monitoring wells that have long perforated intervals. Due to some problems with pump fittings, sampling was delayed from October to December 2018. This was beyond the low-river sampling window required in the SAP (September through November). However, the wells are not located adjacent to the river, and December 2018 specific conductance data indicate no significant mixing with river water, so there is no negative impact from the deviation. Data from the samples collected from above the packers are consistent with previous results.
 - Results of the fall 2018 sampling campaign have been loaded in HEIS. Well locations are illustrated in Figures FR-1 and FR-2.
 - Nitrate concentrations rose in several wells compared to 2017. Figure FR-3 shows nitrate trends for three wells in southwestern area. Concentrations in wells 199-F5-54 and 199-F5-55, in the eastern area rose above the 45 mg/L cleanup level (Figure FR-4).
 - Nitrate and other ions continued to be highly variable in well 699-67-26, located in the southern part of the operable unit (Figure FR-5). Concentrations tend to increase with increase water levels.
 - Cr(VI) concentrations declined in wells 199-F5-4 and 199-F5-45 in the central area, dropping back below the 48 µg/L inland cleanup level (Figure FR-6).
 - TCE and strontium-90 results were consistent with previous data.
 - Atomic Energy Act (AEA) sampling of includes total uranium, which is not a COC. The uranium concentration in 199-F5-56 was 27.7 µg/L in October 2018. Uranium in this well has ranged from 14 to 35 µg/L, since the well was installed in 2011.
 - Eleven wells were scheduled sampling in February 2019. Six of them were sampled in late January. The other five are all located in the 600 Area and have not yet been sampled because snow and ice have prevented access.

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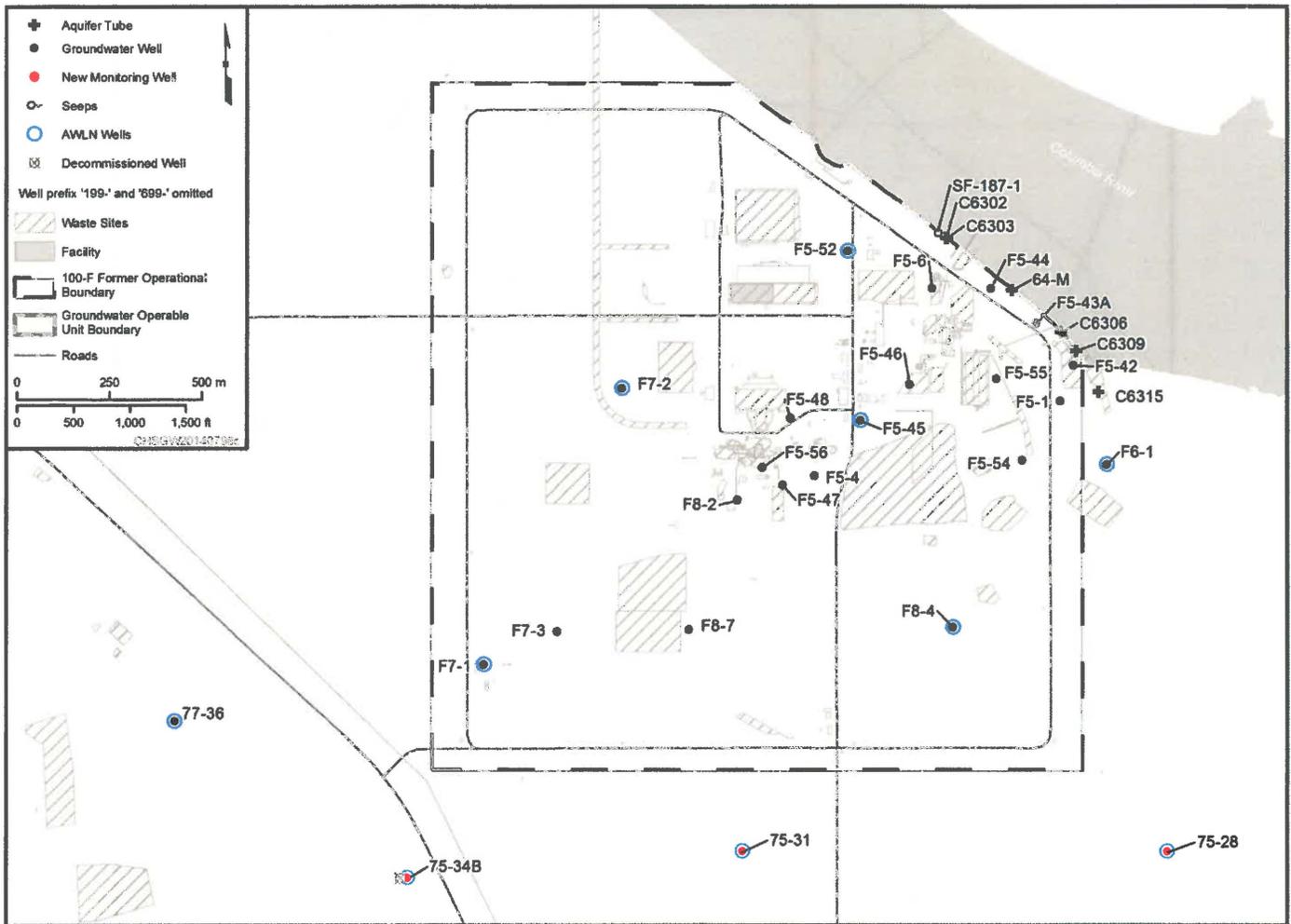


Figure FR-1. Monitoring Well Locations in 100-F Area.

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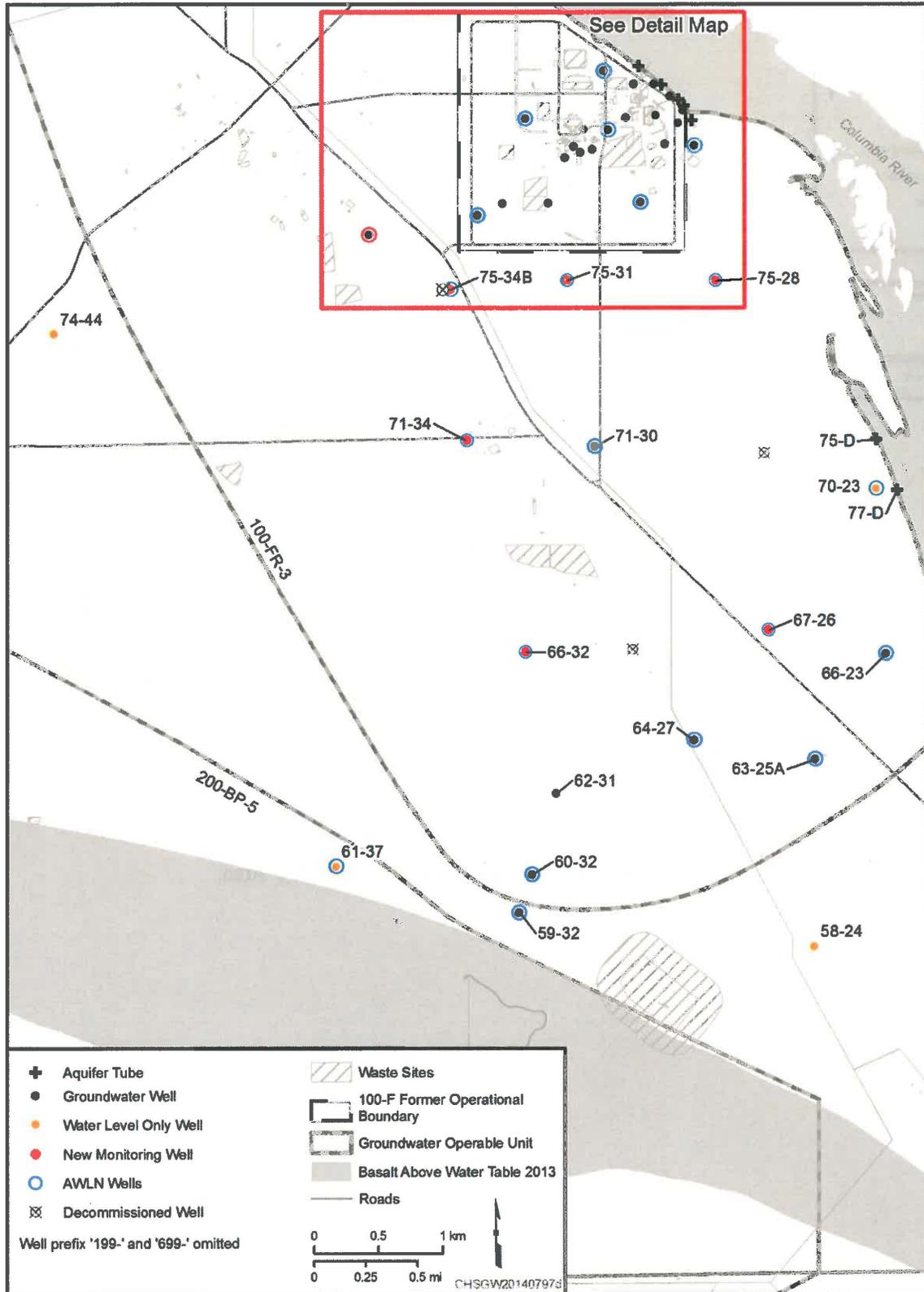


Figure FR-2. Locations of Monitoring Wells In South Part of 100-FR-3 Operable Unit

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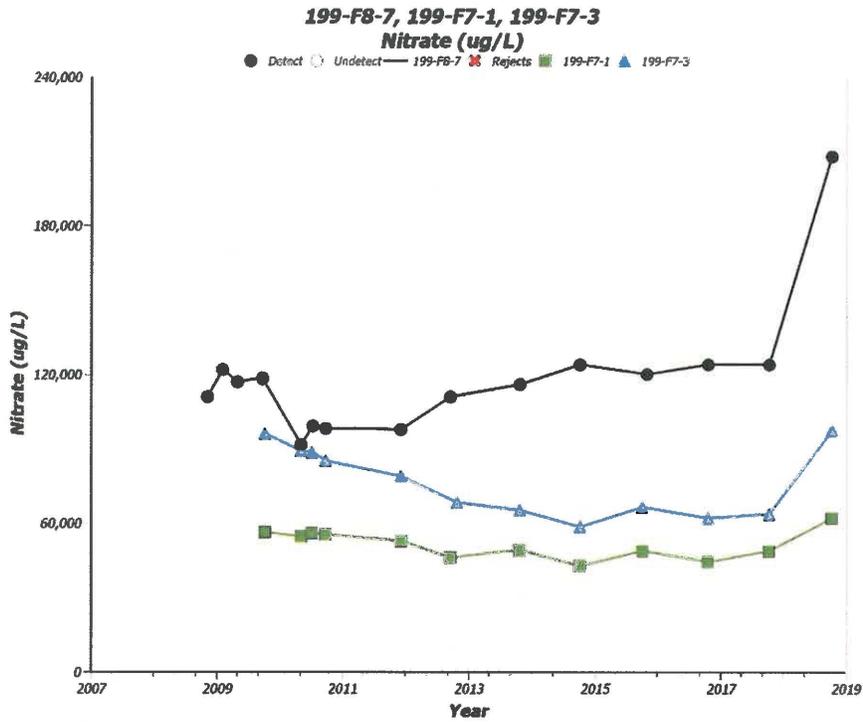


Figure FR-3. Nitrate Concentrations in Southwestern 100-F Area

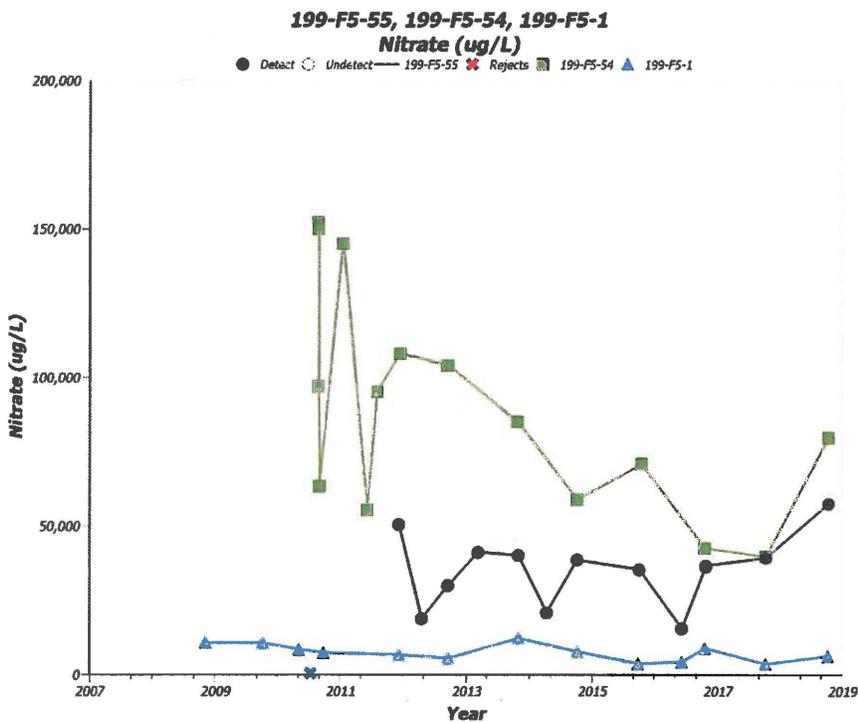


Figure FR-4. Nitrate Concentrations in Eastern 100-F Area

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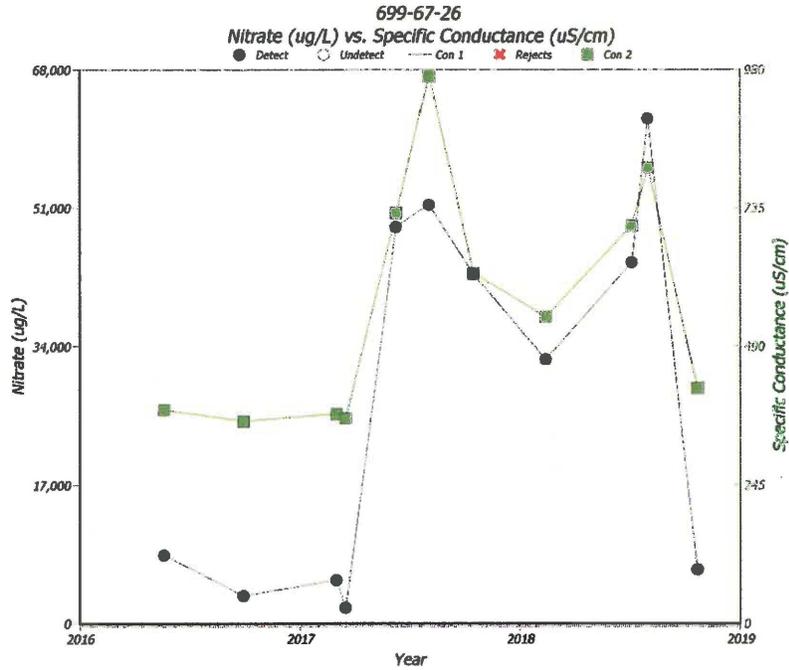


Figure FR-5. Nitrate and Specific Conductance in Well 699-67-26

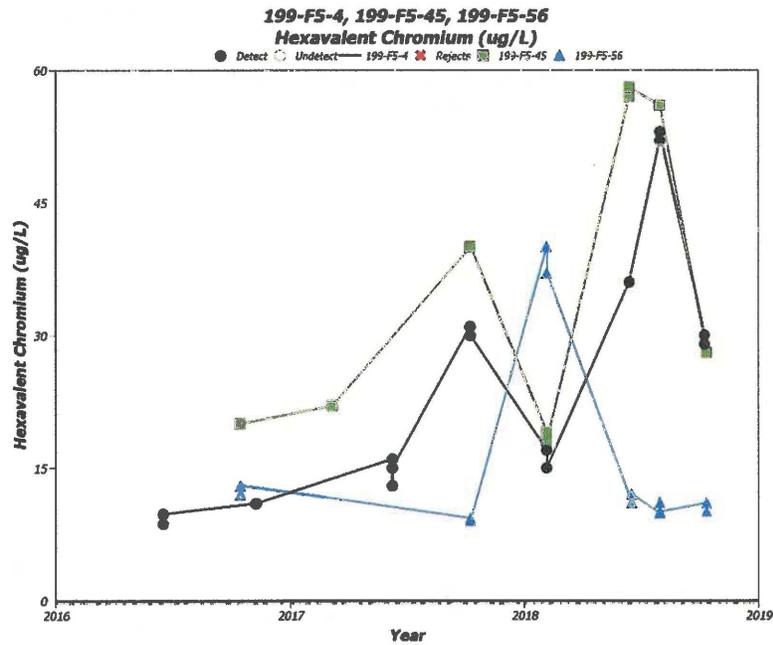


Figure FR-6. Cr(VI) in Wells in Central 100-F Area

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU – (November 2018 to February 2019 Data)
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300 Area Groundwater Operable Unit

EPA Lead (RL – J. Sands, CHPRC – D. St. John, V. Rohay, E. Frohling)

- CERCLA Process Implementation:
 - TPA-CN-0835, approved in February 2019, revised the schedule for the enhanced attenuation uranium sequestration completion report, which is now due at the end of FY2020.
- Remedial Actions:
 - Stage B of the enhanced attenuation remedy for uranium was implemented in September 2018. From September 4, 2018 through September 20, 2018 polyphosphate solutions were injected into the lower vadose zone and periodically rewetted zone through 48 injection wells, each of which has two screened intervals isolated by a packer. The Stage B enhanced attenuation area is 2.25 acres.
 - The equipment and infrastructure (e.g., hoses, chemical tanks, injection skids) used to implement Stage B operations were removed in November 2018.
 - The Stage B uranium sequestration system installation report (SGW-60778) was issued in January 2019.
 - The sampling instruction for uranium sequestration Stage B post-injection boreholes (SGW-62900) was issued in February 2019. Drilling and sampling is scheduled for March 2019.
 - The well installation work instruction for the new groundwater monitoring well downgradient of the 324 Building (SGW-62784) was issued in January 2019. Drilling is scheduled for March 2019.
- Monitoring & Reporting:
 - Uranium Sequestration: All 21 wells screened in the aquifer, plus 9 wells screened in the PRZ, scheduled for sampling in November 2018 were sampled as planned (Figure FF5-1). All 21 wells screened in the aquifer, plus well 399-1-173 screened in the PRZ, scheduled for continued monthly sampling were sampled as planned in December 2018 and January 2019. The wells were not sampled in February 2019 because the accumulated snow prevented access to the wells. The uranium concentration time series for well 399-1-17A is shown in Figure FF5-2. The next uranium sequestration monthly monitoring event is scheduled for March 2019.
 - 300 Area Industrial Complex: One CERCLA well scheduled for sampling in September 2018 could not be sampled because it required electrical maintenance. The well was sampled as planned in December 2018; the September 2018 event was cancelled. All 10 CERCLA wells were sampled as planned in December. As of March 5, 60 of the 62 AEA wells and aquifer tubes scheduled for sampling in December 2018 were sampled. Sampling attempted at one of the 2 remaining AEA wells was unsuccessful due to a tripped breaker, and the well requires electrical maintenance. Well maintenance has been notified. Sampling at one aquifer tube was unsuccessful because water could not be brought to the surface. The next CERCLA long-term monitoring event is scheduled for March 2019. The next AEA sampling event is scheduled for April 2019.
 - 618-10 Burial Ground/316-4 Crib: All 4 CERCLA wells scheduled for sampling in November 2018 and February 2019 were sampled as planned. The next CERCLA sampling event is scheduled for May 2019. Four of the 5 AEA wells scheduled for sampling in November or December were sampled; as of December 27, 1 of the 2 AEA wells scheduled for sampling in December has not been sampled. The next AEA sampling event is scheduled for November 2019.
 - 618-11 Burial Ground: The next CERCLA sampling event is scheduled for October 2019. One AEA well, 699-11-E5A (ENW-MW-32), scheduled for sampling in February 2018 could not be accessed because of the Energy Northwest fence. Access opportunities for well 699-11-E5A are limited to DOE being able to contact the contractor operating the system. The next AEA sampling event is scheduled for October 2019.
 - 300 Area Process Trenches (316-5) RCRA Monitoring: The next sampling event for the 8 RCRA wells

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(Figure FF5-3) is scheduled for June 2019.

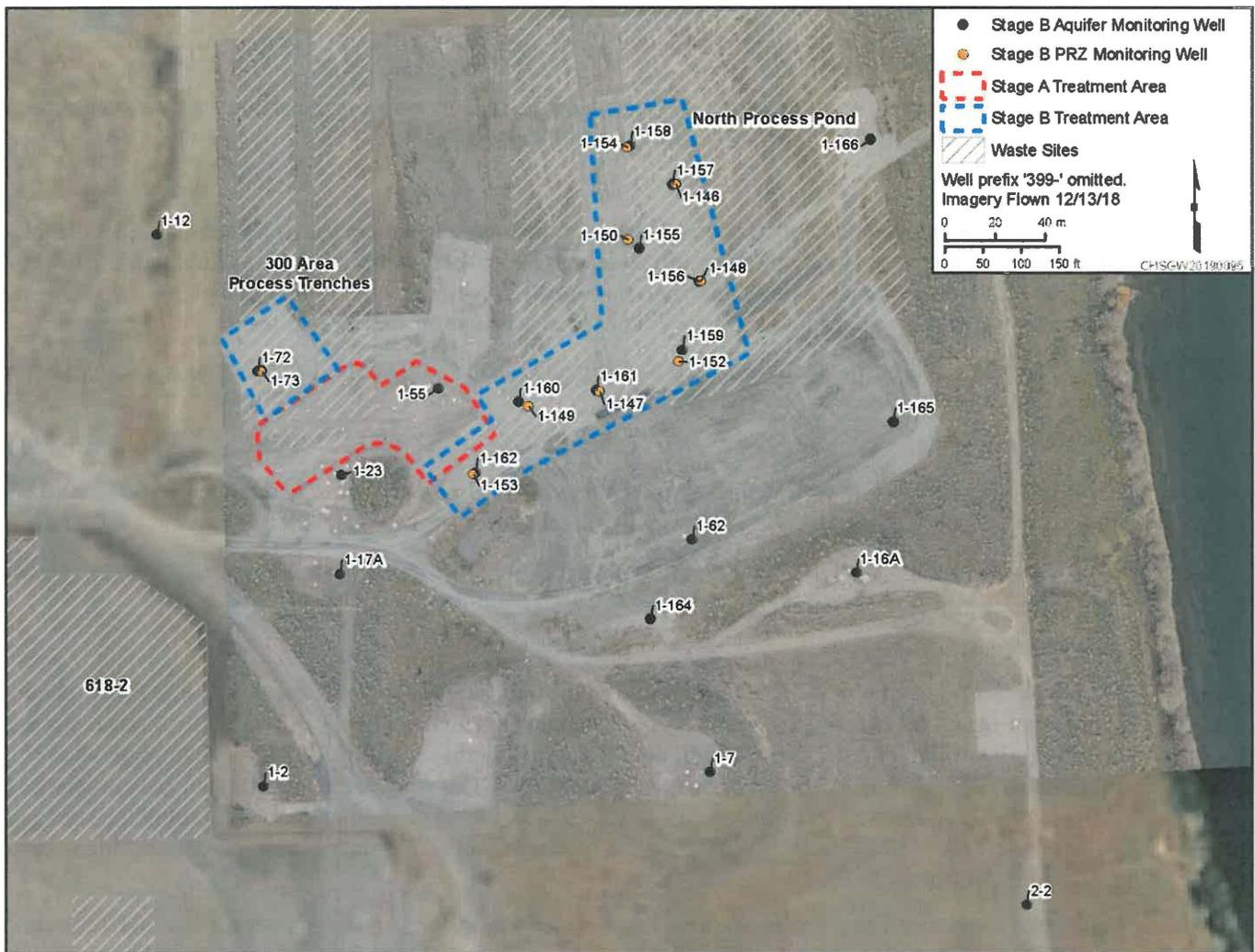


Figure FF5-1. 300 Area Uranium Sequestration Monthly Monitoring Wells

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399-1-17A
Uranium (ug/L) vs. Head (m)

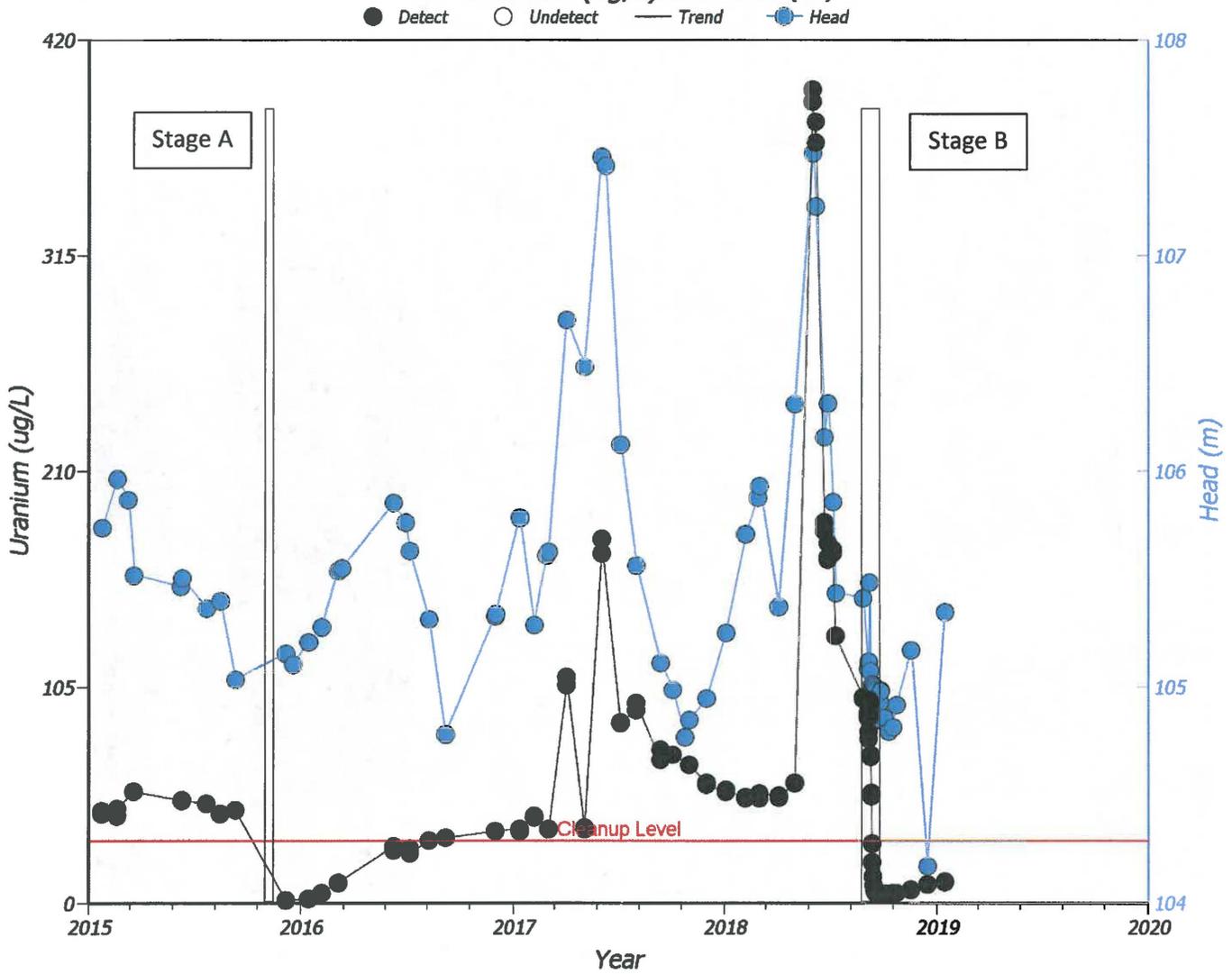


Figure FF5-2. Uranium Time Series for Uranium Sequestration Monitoring Well 399-1-17A

100/300 Area Project Managers Meeting
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Figure FF5-3. 300 Area Process Trenches RCRA Monitoring Wells

Regulatory Agency Comments: None

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Unfiltered Hexavalent Chromium

On March 20, 2019, CHPRC met with RL, Ecology, and EPA to discuss the benefit of collecting unfiltered hexavalent chromium samples (Attachment 10). An agreement was reached that while under remedy performance monitoring, unfiltered hexavalent chromium samples are not required. The following list of documents specifically call out unfiltered hexavalent chromium as a sampling requirement along the River Corridor.

Operable Unit	Document Number, Revision	Document Title
100-HR-3	DOE/RL-2013-30, R0, amended by TPA-CN-0825	Sampling and Analysis Plan for 100-HR-3 Groundwater Operable Unit Monitoring
100-KR-4	DOE/RL-2013-29, R0, amended by TPA-CN-0797	Sampling and Analysis Plan for 100-KR-4 Groundwater Operable Unit Monitoring
100-KR-4	DOE/RL-2018-10, R0	KW Soil Flushing/Infiltration Treatability Test Plan Sampling and Analysis Plan
Hanford Site	DOE/RL-2000-59, R1, as amended by TPA-CN-0741	Sampling and Analysis Plan for the Aquifer Sampling Tubes

With concurrence from Ecology and EPA below, the unfiltered hexavalent chromium requirement in the above list of documents will be suspended, and as applicable, will be changed to filtered hexavalent chromium. At the appropriate time, these documents will have a TPA-CN or revision issued to remove or modify the unfiltered hexavalent chromium sampling requirement.

Regulatory Agency Comments: With signing of the minutes today, ECY, EPA, and RL agree that the unfiltered hexavalent chromium samples required by the above documents are no longer needed. In the event that the above work documents call out for unfiltered hexavalent chromium, filtered will be substituted.

**100-OL-1 Operable Unit Report
100/300 Area Unit Manager Meeting
March 21, 2019**

100-OL-1 OU Scope

Interim Milestone M-015-96, Change Number M-15-18-02, Lead Regulatory Agency:

- Ecology to submit the 100-OL-1 Remedial Investigation report and a change request to establish a date for the Feasibility Study report to Ecology.
- Due Date: 2/28/2019. – COMPLETE

Milestone M-015-97 – Submit to Ecology, the 100-OL-1 Operable Unit Feasibility Study Report, Draft A

Due Date: 08/30/2020

Background

100-OL-1 OU covers 4,995 acres across the River Corridor, incorporating lands where former orchards used lead arsenate pesticide (Figure 1). Lead arsenate was the standard pesticide for controlling codling moths in many fruit trees from the 1890s through 1988. Some waste sites in the 100 Area contain relatively high lead and arsenic concentrations near the soil surface. 100-OL-1 OU was divided into 133 decision units (DUs) for the evaluation of lead and arsenic in the surface soils using a portable x-ray fluorescence (XRF) analyzer. The Remedial Investigation found:

- There are 83 DUs (3,056 acres) that need no further action because the nature and extent of lead and arsenic soil concentrations in the DUs do not meet or exceed any criteria of the “3 part rule” (WAC 173-340-740(7)) for human health or ecological screening levels.
- There are 9 DUs (362 acres) that do not meet or exceed any criteria of the “3 part rule” for the human health screening levels, but exceed ecological screening levels.
- There are 41 DUs (1,578 acres) that meet or exceed some criteria of the “3 part rule” for the human health screening levels.

Status

On-going comment resolution of *Remedial Investigation for the 100-OL-1 Operable Unit Hanford Orchard Lands* (DOE/RL-2016-54, Draft A). Comments from Ecology were received in May 2018.

Path Forward

- Continue to resolve Ecology’s comments. Meetings scheduled for March 21 and April 11.
- Outline Feasibility Study report.

100-OL-1 Operable Unit Report
100/300 Area Unit Manager Meeting
March 21, 2019

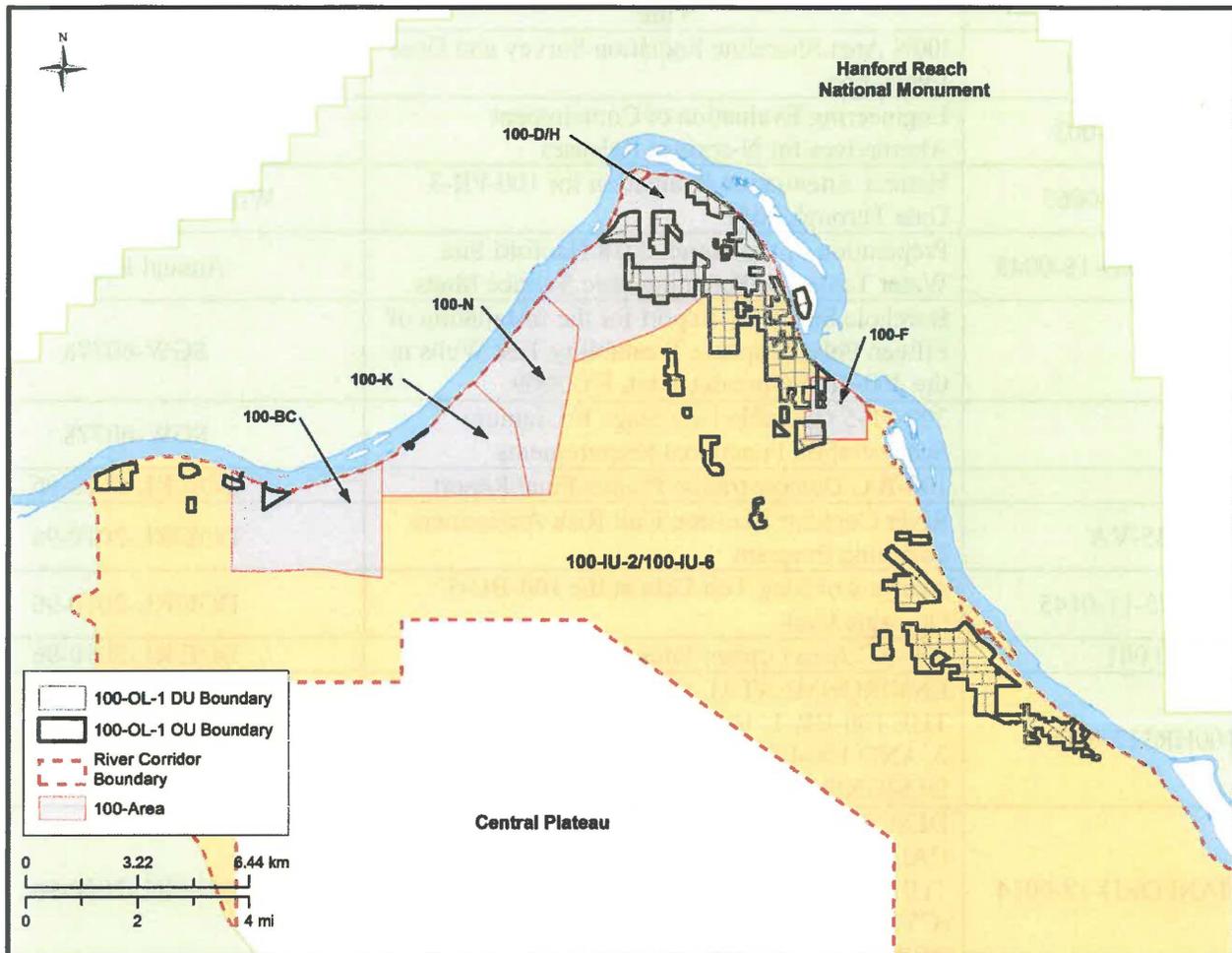


Figure 1. The 100-OL-1 OU and Associated Decision Units across the River Corridor of the Hanford Site.

100/300 Area Project Managers Meeting
Groundwater Summary by OU – (November 2018 to February 2019 Data)
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Documents Submitted to the AR

Number	Title	Referencing Document
WDOH/ERS-95-501	100N Area Shoreline Radiation Survey and Dose Evaluation	DOE/RL-2012-15
WHC-SD-ENEE-003	Engineering Evaluation of Containment Alternatives for N-springs Releases	DOE/RL-2012-15
ECF-100FR3-18-0065	Natural Attenuation Evaluation for 100-FR-3 Data Through 2017	Work Plan Requirement
ECF-HANFORD-18-0048	Preparation of the March 2018 Hanford Site Water Table and Potentiometric Surface Maps	Annual Reports
SGW-41618	Borehole Summary Report for the Installation of Fifteen Polyphosphate Treatability Test Wells in the 300-FF-5 Operable Unit, FY 2009	SGW-60778
SGW-60243	300-FF-5 Operable Unit Stage B Uranium Sequestration Functional Requirements	SGW-60778
BHI-00752	100-B/C Demonstration Project Final Report	DOE/RL-2010-96
CH2M-51535-VA	River Corridor Decision Unit Risk Assessment Sampling Program	DOE/RL-2010-96
ECF-100BC5-11-0145	Analysis of Slug Test Data at the 100-BC-5 Operable Unit	DOE/RL-2010-96
OSR-2007-0 001	100-BC Area Orphan Sites Evaluation Report	DOE/RL-2010-96
ECE-100HR317-00001	ENVIRONMENTAL COST ESTIMATE FOR THE 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, AND 100-HR-3 REMEDIAL DESIGN/REMEDIAL ACTION WORK PLAN	DOE/RL-2017-13
ECF-HANFORD-18-0014	DESCRIPTION OF GROUNDWATER CALCULATIONS AND ASSESSMENTS FOR THE CALENDAR YEAR 2017 (CY2017) 100 AREAS PUMP-AND-TREAT REPORT	DOE/RL-2010-96
WHC-SD-EN-TI-268	100 Area Soil Washing: Bench-Scale Tests on 116-F-4 Pluto Crib Soil	DOE/RL-2017-58
ECF-Hanford-12-0066	Calculation of Radiological Risks for ARCL Sites in the River Corridor in Support of the 100 and 300 Area Remedial Investigation/Feasibility Study (RI/FS) Reports	DOE/RL-2010-96
DOE/RL-2017-39	Remedial Action Waste Management Plan for the 100-DR-1, 100-DR-2, 100-HR- 1, 100-HR-2, and 100-HR-3 Operable Units	DOE/RL-2017-13
DOE/RL-2017-13	Remedial Design/Remedial Action Work Plan for the 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units	TPA
DOE/RL-2013-49	100-HR-3 Pump and Treat System Operations And Maintenance Plan	TPA
ECF-300FF5-18-0076	Calculation of Upper Confidence Limits for RCRA Monitoring at the 300 Area Process Trenches to Support the July - December 2018 Semiannual Report	SGW-62881

100/300 Area Project Managers Meeting
Groundwater Summary by OU – (November 2018 to February 2019 Data)
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CHPRC-03893	Potential for the Presence of Two Federal Threatened Species (White Bluffs Bladderpod and Umtanum Desert Buckwheat) within Hanford Site, 100-N Source Operable Units	DOE/RL-2012-15
SGW-60778	300-FF-5 Operable Unit Stage B Uranium Sequestration System Installation Report	TPA
ECF-100BC1-16-0085	Cost Estimate Inputs for Remedial Investigation/ Feasibility Study Alternatives for 100-BC-1, 100-BC-2, and 100-BC-5 Operable Units	DOE/RL-2010-96
ECF-HANFORD-18-0083	Calculation of Upper Confidence Limits for RCRA Monitoring at the 183-H Solar Evaporation Basins to Support the July - December 2018 RCRA Semiannual Report	Engineering Reports
SGW-62900	Sampling Instruction for Uranium Sequestration Stage B Post Injection Boreholes In The 300-FF-5 Operable Unit	TPA
ECF-100-BC1-11-0014_R1	Ecological Risk Evaluation for the 100-BC Source Operable Units	TPA

Approved Change Notices

Number	Title
TPA-CN-0835	DOE/RL-2014-42-ADD1 is revised to reflect changes to the Stage B project schedule and to include analytes required for sampling discussed in section 3.2.1.
TPA-CN-0852	Appendix A is updated to include 2 new groundwater wells in the 300-FF-5 Operable Unit.

TPA Compliance Note:

The DOE Project Managers have not identified outstanding issues with the preceding month's Environmental Performance Report for this scope.

From: Doornbos, Martin H
Sent: Monday, March 25, 2019 9:51 AM
To: O'Mara, Laura K
Subject: FW: Unfiltered Hexavalent Chromium Briefing
Attachments: SGW-63225-VA_R0.pdf

Please include in the UMM and PMM minutes for the hexavalent chromium reference. Thanks,

Martin H. Doornbos, P.E., P.G., PMP
Director
Soil & Groundwater Remediation Project
509.438.5516 | Martin_H_Doornbos@rl.gov



From: Feist, Ella T <ella_t_feist@rl.gov>
Sent: Wednesday, March 20, 2019 11:08 AM
To: Buelow, Laura (EPA) <buelow.laura@epa.gov>; Doornbos, Martin H <martin_h_doornbos@rl.gov>; Balone, Steven N <steven.balone@rl.doe.gov>; Whitley, Kelly M <kelly_m_whitley@rl.gov>; Hartman, Mary J <mary_j_hartman@rl.gov>; Hulstrom, Jason A <jason_a_hulstrom@rl.gov>; Boyd, Alicia (ECY) <aboy461@ecy.wa.gov>; Glossbrenner, Ellwood T <ellwood.glossbrenner@rl.doe.gov>; Hansen, James A <james.hansen@rl.doe.gov>; Hanson, James P <james.hanson@rl.doe.gov>; Fitzgerald, Scot L <scot_l_fitzgerald@rl.gov>; Yokel, Jerel W <jyok461@ecy.wa.gov>; kiwe@ecy.wa.gov; Smith-Jackson, Noel <nsmi461@ecy.wa.gov>
Subject: Unfiltered Hexavalent Chromium Briefing

All,

Here are the notes from this morning's meeting regarding the Unfiltered vs. Filtered Hex Chrome Samples.

Attendees: Laura Buelow-EPA
Noel Smith-Jackson, Kim Welsch, Jerry Yokel—Ecology
Jim P. Hanson, Jim A. Hansen, Steve Balone, Ellwood Glossbrenner—RL
Marty Doornbos, Kelly Whitley, Mary Hartman, Jason Hulstrom, Scot Fitzgerald, Ella Feist—PRC

Meeting started with introductions. Marty Doornbos started meeting by providing a history which let up to the evaluation of Unfiltered vs. Filtered Hex Chrome Samples, which brings up the question of what is the benefit from sample results from unfiltered samples. The meeting followed the presentation that was handed out (see attached). The presentation guided us with the history/driver of performing unfiltered samples, summarizing the data use of unfiltered Cr+6, and the labs analytical Methods used to measure unfiltered Cr+6 and how they conduct those analyses. Discussions focused on the results of filtered vs. unfiltered Cr+6 in groundwater. At this time the data, the data is showing that there is a low bias with unfiltered samples.

The discussion continued to discuss the recommendation of do we continue to collect unfiltered samples and do they provide additional meaningful data during this time of the sites operations, i.e. remedy performance monitoring.

The agreement reached and will be documented at the next UMM (March 21, 2019) is at this time while in remedy performance monitoring, unfiltered samples are not required.

Actions that were identified to provide additional information to the regulators in support of this decision are:

1. The sections from the Standard Operation Procedures (SOP) for the collection of water samples for Cr+6 along with a copy sample of the chain of custody will be provided to Ecology and EPA.--Actionee Kelly Whitley and Scot Fitzgerald.
2. An evaluation of D/H area filtered and unfiltered data will be conducted and will be provided to Ecology and EPA.-- Actionee Jason Hulstrom.
3. A regulatory memo to be issued clarifying the 2007 letter regarding collection of unfiltered Cr+6 samples-Ecology and EPA.
4. Further discussion to take place regarding compliance monitoring and the requirement of unfiltered Cr+6 samples-PRC in consultation with Ecology, EPA and RL.

Any further questions, please contact Jason Hulstrom.

Ella

Unfiltered Hexavalent Chromium

Date Published
March 2019

To be Presented at
Washington State Department of Ecology

Department of Energy - Richland
Richland, WA

March 2019

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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APPROVED

By Lynn M. Ayers at 3:40 pm, Mar 14, 2019

Release Approval

Date

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