

DISTRIBUTION
100 & 300 AREA UNIT MANAGERS MEETING
May 16, 2019

FINAL MEETING MINUTES

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**100/300 AREA UNIT MANAGERS MEETING
Attachments List
May 16, 2019**

**Minutes of the 100/300 Area Unit Managers Meeting of May 16, 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	Presentation – KW Groundwater Soil Remediation – <i>Brief History and Soil Flushing</i>
Attachment 6	100K Area Report, March - April Data
Attachment 7	300 Area Report, March - April Data
Attachment 8	Groundwater Summary by O.U., March - April Data
Attachment 9	Documents to the AR, Approved TPA CNs March - April Data
Attachment 10	100-OL-1 Orchard Lands, March - April Data
Attachment 11	Action Items

**100/300 AREA UNIT MANAGERS MEETING
AGENDA
May 16, 2019**

Presentation – KW Groundwater Remediation-Brief History and Soil Flushing (Jason Hulstrom)

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 (Lorna Dittmer/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)
- Documents for the Administrative Record and Approved TPA Change Notices

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

Action Items

Closing Comments

- Sign concurrence to “Groundwater Summary by O.U.” and “Action Item List” if applicable
- EPA and ECY are reminding DOE that project documents are to be sent to the Project Managers.

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

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

100/300 Area Unit Managers Status Meeting
May 16, 2019

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Bill Faugstad	CHPRC	100 N CAM	376-3139
Leonard Habel	CHPRC	EDI	376-6592
Jason Hulstrom	CHPRC	GW Scientist	376-9575
Stuart Luttrell	ECY	ER Hydrogeology	372-7883
Sara Austin	CHPRC	TPA coord.	376-4339
Laura DiMarco	CHPRC	Admin	373-9763
Brian Steffer	DOE	Project Eng	373-3535
HELENE CIMON	ODOE		(541) 240-0161
Barry Lawrence	CHPRC	ECO	460-8653
Craig Cameron	FPA	Proj. Mgr.	376-8665
Lorna Dittmer	CHPRC	Env Mgr	376-7017
Deberch Singleton	CHPRC	Env. Mgr	373-7689
Shannan Johnson	DOH		9
Theresa Howell	Ecology	Proj. Mgr.	372-7955
Nina Menard	ECY	Proj. Mgr.	372-7941
John Sands	DOE	OU Manager	372-2282
Glossbrenner, Elizabeth	DOE	14A-BC 12D-K	376-5828
Alicia Boyd	Ecology	100 Areas	372-7934
Scott Davis	MSA	TPA	376-8757
BRIAN JOHNSON	Ecology	100 Areas	372-7908
Ben Vannah	DOE	324 bld	376-9623
Gretchen M. Hanson	CHPRC		373-7553

100/300 Area Unit Managers Meeting
Meeting Minutes Approval
May 16, 2019

APPROVAL:  DATE: 5/16/19
Mark French, River Corridor Project Manager, DOE/RL

APPROVAL:  DATE: 5/16/19
Mike Cline, Groundwater Project Manager, DOE/RL

APPROVAL:  DATE: 5/16/2019
Nina Menard, Environmental Restoration Project Manager, Ecology

APPROVAL:  DATE: 5/16/2019
Laura Buelow, 100 Area Project Manager, EPA

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 – March - April Data
May 16, 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 3,220 sample trips scheduled for collection. Prior to March 2019 the program had successfully completed 3,199 of the FY 2018 sample trips. 1 additional FY 2018 sample trips was collected in March 2019. None were collected in April 2019.

FY 2019 Sample Trip Status by Month Scheduled (March and April 2019)

For Fiscal Year 2019 Hanford's overall Site groundwater monitoring program has 3,137 sample trips scheduled for collection.

During March 2019 (FY 2019, month six) the program successfully completed 5 sample trips scheduled for January 2019, 58 sample trips scheduled for February 2019, and 120 sample trips scheduled for March 2019. This brings the total of January 2019 sample trips completed to 197 of 215 scheduled, the total of February 2019 sample trips completed to 150 of 177 scheduled, and the total of March 2019 sample trips completed to 120 of 149 scheduled.

During April 2019 (FY 2019, month seven) the program successfully completed 12 sample trips scheduled for January 2019, 12 samples trip scheduled for February 2019, 15 sample trips scheduled for March 2019, 143 sample trips scheduled for April 2019 and 23 sample trips scheduled for May 2019. This brings the total of January 2019 sample trips completed to 209 of 215 scheduled, the total of February 2019 sample trips completed to 162 of 177 scheduled, the total of March 2019 sample trips completed to 135 of 149 scheduled, the total of April 2019 sample trips completed to 143 of 160 scheduled, and the total of May 2019 sample trips completed to 23 of 330 scheduled.

The total number of Fiscal Year 2019 sample trips completed at the end of April 2019 is 1,637.

FY 2019 Sample Trip Status by Month Collected (March and April 2019)

During March 2019, 183 Fiscal Year 2019 sample trips were successfully completed of which 5 were scheduled for January 2019, 58 were scheduled for February 2019 and 120 were scheduled for March 2019.

During April 2019, 205 Fiscal Year 2019 sample trips were successfully completed of which 12 were scheduled for January 2019, 12 were scheduled for February 2019, 15 were scheduled for March 2019, 143 were scheduled for April 2019 and 23 were scheduled for May 2019.

**100/300 Area Project Managers Meeting
Summary of Hanford Sampling Program – March - April Data
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The specific wells, aquifer tubes, and springs sampled in the river corridor areas during March 2019 are listed in Table 1. The specific wells, aquifer tubes, and springs sampled in the river corridor areas during April 2019 are listed in Table 2.

Awaiting Sample Trips

Of the Fiscal Year 2018 and 2019 sample trips scheduled for April 2019 and prior, there are 95 that are awaiting collection. Of these, 47 could not be accessed (including buried by snow) or were awaiting access to be granted, 10 were dry, 6 required maintenance or had equipment issues, 3 could not be sampled because the pump and treat system was not running, 3 were unsuccessful, 1 was being reviewed for cancellation, and 25 are awaiting collection at the month end.

Table 3 presents the sample trips for only the river corridor that were not successfully completed as of April. Sample trips in Table 3 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.

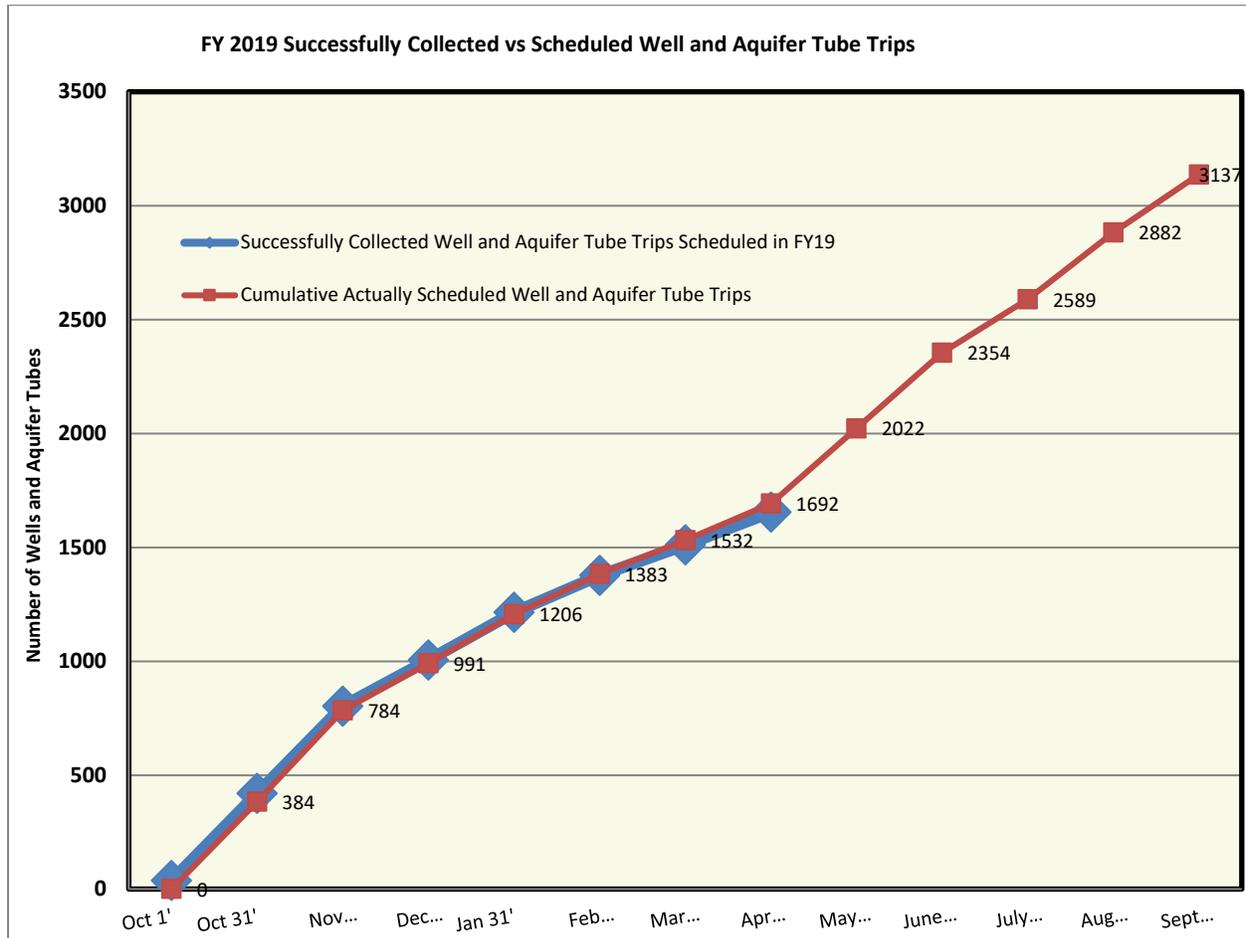
Upcoming Sample Trips

Sample trips for the river corridor only, scheduled for collection in May 2019 and June 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.ri.gov/eda/> or from the internet at <https://ehs.hanford.gov/eda/>.

**100/300 Area Project Managers Meeting
Summary of Hanford Sampling Program – March - April Data
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Table 1 Wells, Aquifer Tubes, and Springs in the River Corridor Areas Successfully Sampled In March 2019

100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
	699-67-26	199-D4-85	199-H1-34	199-K-13	199-N-105A		399-1-12
	699-71-34	199-D5-150	199-H1-36	22-D	199-N-2		399-1-155
	699-75-28	199-D5-151	199-H1-43	22-M	199-N-28		399-1-156
	699-75-31	199-D5-42	199-H1-45		199-N-3		399-1-157
	699-75-34B	199-D8-102	199-H1-49		199-N-32		399-1-158
		199-D8-4	199-H3-26		199-N-34		399-1-159
		199-D8-89	199-H3-28		199-N-371		399-1-160
		199-D8-93	199-H3-29		199-N-372		399-1-161
		199-D8-94	199-H3-2C		199-N-373		399-1-162
		199-D8-99	199-H4-69		199-N-374		399-1-164
		199-H4-82	199-H4-70		199-N-376		399-1-165
		699-97-48C	199-H4-75		199-N-377		399-1-166
		699-98-51	199-H4-77		199-N-41		399-1-16A
			199-H4-83		199-N-57		399-1-17A
			199-H4-84		199-N-74		399-1-2
			199-H4-85		199-N-81		399-1-23
			199-H4-87				399-1-55
			199-H4-88				399-1-62
			199-H4-89				399-1-7
			199-H4-90				399-1-72
			199-H4-91				399-2-2
			699-97-60				399-3-12
			699-98-46				399-3-19
			699-99-42B				399-3-6
							399-4-14
							399-6-3
							399-6-5

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

100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
AT-B-5-S		199-D4-15	199-H1-1	199-K-11	199-K-150		399-1-12
AT-B-7-M		199-D4-96	199-H1-2	199-K-110A			399-1-155
AT-B-7-S		199-D5-101	199-H3-30	199-K-119A			399-1-156
C8860		199-D5-103	199-H4-76	199-K-13			399-1-157
C8861		199-D5-104	199-H4-92	199-K-132			399-1-158
		199-D5-127	199-H4-93	199-K-138			399-1-159

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100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
		199-D5-131		199-K-139			399-1-160
		199-D5-159		199-K-140			399-1-161
		199-D5-32		199-K-168			399-1-162
		199-D8-95		199-K-183			399-1-164
		199-D8-96		199-K-185			399-1-165
		199-D8-97		199-K-186			399-1-166
		199-D8-98		199-K-188			399-1-16A
				199-K-19			399-1-17A
				199-K-20			399-1-2
				199-K-200			399-1-23
				199-K-205			399-1-55
				199-K-223			399-1-62
				199-K-224			399-1-7
				199-K-227			399-1-72
				199-K-228			399-1-73
				199-K-229			399-2-2
				199-K-230			699-10-E12
				199-K-231			699-12-4D
				199-K-235			699-9-E2
				199-K-236			699-S11-E12AP
				199-K-31			699-S19-E14
				199-K-36			699-S6-E14A
				22-D			
				22-M			
				AT-K-3-D			
				AT-K-3-M			
				AT-K-3-S			

Table 3 Fiscal Year 2018 and 2019 Sample Trips in the River Corridor Areas awaiting at the end of April 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	5		Not on well access list
		699-71-26	10/1/2017	Every Two Years	5		Not on well access list
	100-HR-D	199-D4-52	11/1/2018	Not on schedule	0	Late	Not on well access list
		199-D4-58	11/1/2018	Not on schedule	0	Late	Not on well access list
		199-D4-64	11/1/2018	Not on schedule	0	Late	Not on well access list

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		199-D4-70	11/1/2018	Not on schedule	0	Late	Not on well access list
		199-D4-75	11/1/2018	Not on schedule	0	Late	Not on well access list
		199-D4-81	11/1/2018	Not on schedule	0	Late	Not on well access list
		199-D7-6	11/1/2018	Annual	6		Pump & Treat not running
		199-D8-99	12/1/2018	Quarterly	0	Late	
		36-M	11/1/2018	Not on schedule	0	Late	Request to cancel sent to PS.
		DD-17-3	11/1/2018	Every Six Years (Begin FY21)	18		
	100-HR-H	199-H1-50	11/1/2018	Quarterly	0	Late	Not on well access list
		199-H3-21	11/1/2018	Quarterly	0	Late	Not on well access list
		199-H3-22	11/1/2018	Quarterly	0	Late	Not on well access list
		199-H3-32	11/1/2018	Quarterly	0	Late	Not on well access list
		199-H4-4	11/1/2018	Quarterly	0	Late	Pump & Treat not running
		199-H4-64	11/1/2018	Quarterly	0	Late	Pump & Treat not running
		C6293	11/1/2018	Not on schedule	0	Late	Needs well maintenance; may have to wait for low river stage to fix.
	C6301	11/1/2018	Not on schedule	0	Late	Needs well maintenance; may have to wait for low river stage to fix.	
	100-KR	199-K-178	11/1/2018	Every Six Years (Begin FY21)	18		
	1100-EM	699-S30-E15A	12/1/2018	Every Three Years (Begin FY03)	19		
	300-FF	399-3-1	12/1/2018	Every Six Years (Begin FY18)	55		Unsuccessful 12/10/2018; Maintenance required
		699-S6-E4D	12/1/2018	Every Six Years (Begin FY17)	43		
		AT-3-4-M	12/1/2018	Every Six Years (Begin FY22)	31		
		AT-3-5-M	12/1/2018	Not on schedule	0	Late	Unsuccessful 12/4/2018; Could not locate
FY 2019 Q2	100-HR-H	199-H1-37	2/1/2019	Quarterly	0	Late	
		199-H1-50	2/1/2019	Quarterly	0	Late	Not on well access list
		199-H3-21	2/1/2019	Quarterly	0	Late	Not on well access list
		199-H3-22	2/1/2019	Quarterly	0	Late	Not on well access list
		199-H3-32	2/1/2019	Quarterly	0	Late	Not on well access list
	300-FF	699-11-E4F	2/1/2019	Not on schedule	0	Late	Sampling delayed due to snow
		699-11-E5A	2/1/2019	Annual	0	Late	Not on well access list
FY 2019 Q3	100-HR-D	199-D4-95	4/1/2019	Quarterly	2		
		199-D4-97	4/1/2019	Quarterly	2		
		199-D5-130	4/1/2019	Quarterly	2		
		199-D5-154	4/1/2019	Quarterly	2		
	100-HR-H	699-95-45C	4/1/2019	Quarterly	2		Not on well access list
	100-KR	199-K-205	4/30/2019	River Stage	0	Late	
		199-K-235	4/30/2019	Other	0	Late	
		199-K-236	4/30/2019	Other	0	Late	
	300-FF	699-S29-E16C	4/1/2019	Every Six Years (Begin FY18)	59		

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Table 4 Groundwater Sampling Locations in the River Corridor Areas Scheduled to be sampled in May 2019

100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
		199-D2-10	199-H1-32	199-K-106A	199-K-159		399-1-12
		199-D2-12	199-H1-33	199-K-107A	199-K-160		399-1-158
		199-D4-101	199-H1-35	199-K-108A	199-N-189		399-1-159
		199-D4-102	199-H1-37	199-K-111A			399-1-162
		199-D4-103	199-H1-38	199-K-116A			399-1-16A
		199-D4-14	199-H1-40	199-K-125A			399-1-17A
		199-D4-15	199-H1-50	199-K-127			399-1-2
		199-D4-34	199-H1-7	199-K-13			399-1-23
		199-D4-38	199-H2-1	199-K-137			399-1-55
		199-D4-39	199-H3-12	199-K-141			399-1-62
		199-D4-83	199-H3-21	199-K-142			399-1-7
		199-D4-84	199-H3-22	199-K-144			399-1-72
		199-D4-85	199-H3-29	199-K-157			399-2-2
		199-D4-98	199-H3-2A	199-K-165			699-S6-E3
		199-D4-99	199-H3-32	199-K-166			699-S6-E4B
		199-D5-132	199-H3-4	199-K-181			699-S6-E4E
		199-D5-133	199-H3-6	199-K-184			699-S6-E4K
		199-D5-14	199-H4-11	199-K-189			
		199-D5-142	199-H4-12A	199-K-190			
		199-D5-145	199-H4-12C	199-K-196			
		199-D5-146	199-H4-13	199-K-201			
		199-D5-149	199-H4-15A	199-K-202			
		199-D5-150	199-H4-4	199-K-203			
		199-D5-151	199-H4-63	199-K-204			
		199-D5-152	199-H4-64	199-K-205 (x22)			
		199-D5-153	199-H4-65	199-K-207			
		199-D5-160	199-H4-8	199-K-21			
		199-D5-20	199-H4-83	199-K-22			
		199-D5-34	199-H4-84	199-K-220			
		199-D5-39	199-H4-85	199-K-221			
		199-D5-42	199-H4-86	199-K-222			
		199-D5-92	199-H4-87	199-K-223 (x5)			
		199-D5-97	199-H4-88	199-K-224 (x5)			
		199-D7-3	199-H4-89	199-K-225			
		199-D8-102	199-H4-90	199-K-226			
		199-D8-4	199-H4-91	199-K-232			
		199-D8-53	199-H7-1	199-K-234			

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100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
		199-D8-55	699-97-43B	199-K-235 (x22)			
		199-D8-6	699-97-43C	199-K-236 (x22)			
		199-D8-68	699-97-45B	199-K-32A			
		199-D8-69	699-97-47B	199-K-34			
		199-D8-73	699-97-60	699-78-62			
		199-D8-90	699-98-46				
		199-D8-91	699-99-42B				
		199-D8-93					
		199-D8-94					
		199-H1-5					
		199-H4-80					
		199-H4-81					
		199-H4-82					
		699-97-48C					
		699-97-61					
		699-98-51					

Table 5 Groundwater Sampling Locations in the River Corridor Areas Scheduled to be sampled in June 2019

100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
199-B3-1	199-F5-1	199-D8-88	199-H1-34	199-K-13	199-N-122		399-1-1
199-B3-46	199-F5-4	199-D8-89	199-H1-36	199-K-205 (x20)	199-N-123		399-1-10A
199-B3-47	199-F5-45	199-D8-99	199-H1-39	199-K-223 (x4)	199-N-136		399-1-10B
199-B3-52	199-F5-46		199-H1-4	199-K-224 (x4)	199-N-146		399-1-11
199-B5-2	199-F5-47		199-H1-42	199-K-235 (x20)	199-N-147		399-1-12
	199-F5-48		199-H1-43	199-K-236 (x20)	199-N-167		399-1-146
	199-F5-55		199-H1-45		199-N-169		399-1-147
	199-F5-56		199-H1-46		199-N-171		399-1-148
	199-F5-6		199-H1-47		199-N-172		399-1-149
	199-F8-2		199-H1-48		199-N-173		399-1-150
	199-F8-7		199-H1-49		199-N-18		399-1-152
	699-67-26		199-H3-25		199-N-183		399-1-153
	699-71-34		199-H3-26		199-N-19		399-1-154
	699-75-28		199-H3-28		199-N-200		399-1-155
	699-75-31		199-H3-29		199-N-210		399-1-156
	699-75-34B		199-H3-2C		199-N-229		399-1-157
			199-H3-9		199-N-247		399-1-158
			199-H4-69		199-N-268		399-1-159

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100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
			199-H4-70		199-N-280		399-1-160
			199-H4-74		199-N-297		399-1-161
			199-H4-75		199-N-3		399-1-162
			199-H4-76		199-N-315		399-1-164
			199-H4-77		199-N-332		399-1-165
			199-H5-16		199-N-342		399-1-166
					199-N-346		399-1-16A
					199-N-347		399-1-16B
					199-N-348		399-1-17A
					199-N-349		399-1-17B
					199-N-350		399-1-18A
					199-N-351		399-1-18B
					199-N-352		399-1-2
					199-N-353		399-1-21A
					199-N-354		399-1-23
					199-N-355		399-1-55
					199-N-356		399-1-62
					199-N-357		399-1-63
					199-N-358		399-1-7
					199-N-359		399-1-72
					199-N-360		399-1-73
					199-N-361		399-2-1
					199-N-362		399-2-2
					199-N-363		399-2-32
					199-N-364		399-3-10
					199-N-365		399-3-12
					199-N-366		399-3-19
					199-N-367		399-3-20
					199-N-371		399-3-33
					199-N-372		399-3-37
					199-N-373		399-3-6
					199-N-374		399-4-10
					199-N-376		399-4-12
					199-N-377		399-4-14
					199-N-56		399-6-3
					199-N-92A		399-6-5
					199-N-96A		399-8-5A
					APT1		399-8-5C
					APT5		

**100/300 Area Project Managers Meeting
Summary of Hanford Sampling Program – March - April Data
May 16, 2019**

100-BC	100-FR	100-HR-D	100-HR-H	100-KR	100-NR	1100-EM	300-FF
					C6132		
					C6135		
					C6317		
					C6318		
					C6319		
					C6320		
					C6324		
					C7881		
					C7934		
					C7935		
					C7936		
					C7937		
					C7938		
					C7939		
					C9586		
					C9587		
					C9588		
					C9589		
					C9590		
					N116mArray-0A		
					N116mArray-10A		
					N116mArray-11A		
					N116mArray-15A		
					N116mArray-2A		
					N116mArray-3A		
					N116mArray-4A		
					N116mArray-6A		
					N116mArray-8A		
					N116mArray-9A		
					NVP2-116.0		

KW Groundwater Remediation - Brief History and Soil Flushing

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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Plateau Remediation Company

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KW Groundwater Remediation - Brief History and Soil Flushing

Date Published
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To be Presented at
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Department of Energy, Richland Office
Richland, WA

05/16/2019

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Date

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KW Groundwater Remediation – Brief History and Soil Flushing



Presented by: Jason Hulstrom, CH2M HILL Plateau Remediation Company (CHPRC)

Presented to: Department of Energy, Richland Office (RL)

Date: May 16, 2019



History of 100-K Area Interim Action and the KW Pump & Treat (P&T) System

- P&T technology was selected by the interim action Record of Decision (ROD) (EPA/ROD/R10-96/134) as the interim remedy for the 100-K Area Cr(VI) groundwater remediation (DOE/RL-2013-33).
- In 1997, P&T operation began at the KR4 P&T system (first of 3 eventual systems).
- As an action item from DOE/RL-2006-20, *The Second CERCLA Five-Year Review Report the Hanford Site*, the KW P&T was designed, constructed, and began operations in January 2007.
 - The third system, the KX P&T system, began operations in late 2008.
- Between 2007 and 2016, the KW P&T system was systematically upgraded and optimized, and significantly reduced groundwater risks by removing 241 kilograms of CrVI from the 105KW Reactor area.



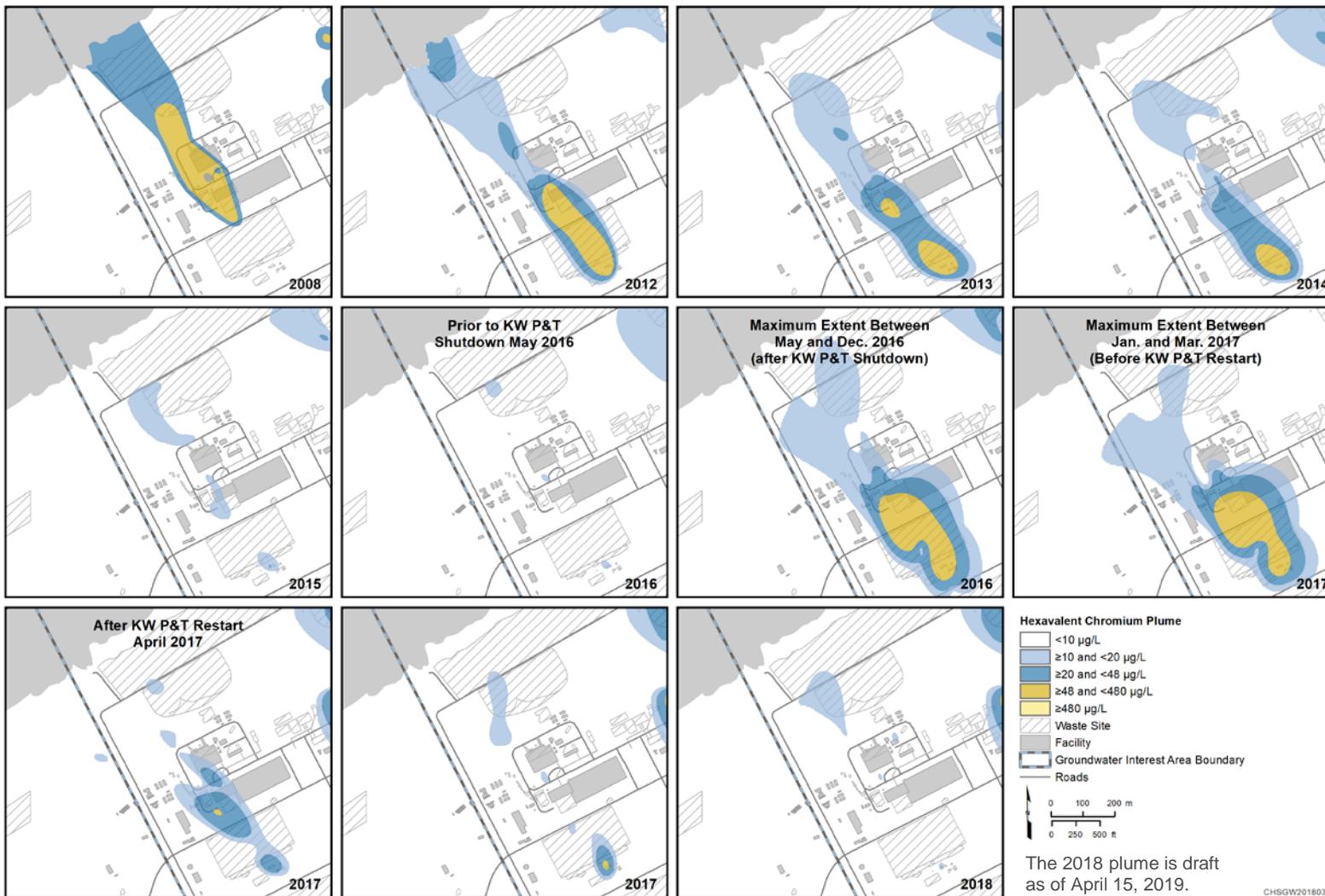
- EPA guidance
- Interim Action ROD and the Remedial Design/Remedial Action Work Plan (RD/RAWP) requirements
- Declining Cr(VI) concentrations at, and downgradient from, the known original source of contamination at the 183.1KW Headhouse
- Strong suspicion of continuing vadose zone/periodically rewetted zone (PRZ) source based on:
 - Plume behavior during P&T history
 - Knowledge of past operational practices in 100-K Area
 - Knowledge gained during removal, treatment, and disposal (RTD) of 183.1KW Headhouse Area sites



- January 1, 2016 – 11 extraction wells, 9 monitoring wells, and numerous aquifer tubes, were below the groundwater remediation target for hexavalent chromium [Cr(VI)] of 20 µg/L.
- May 16, 2016 - KW P&T System shut off to initiate rebound study (DOE/RL-2016-42 – sampling and analysis plan [SAP]).
- By the end of 2016, the Cr(VI) concentrations had rebounded between the 105KW Reactor and the 183.1KW Headhouse.
 - Between May and November 2016, well 199-K-205 increased from 12 to 180 µg/L.
- Towards the end of March 2017, it was recommend to RL and EPA that the KW P&T system be restarted
- The KW P&T System was restarted by April 2017.
- A conclusion from the KW rebound study (SGW-62061), was that a source of Cr(VI) contamination is located in the deep vadose zone near well 199-K-205. This source continues to produce groundwater contamination above 48 µg/L near the 183.1KW Headhouse.



Hexavalent Chromium Groundwater Plumes (2008 through 2018)



Proposed action to address continuing source at the 183.1KW Headhouse

- In 2018, a soil flushing treatability test plan (DOE/RL-2017-30, *KW Soil Flushing/Infiltration Treatability Test Plan*), was approved.
- The goal of soil flushing is to remove Cr(VI) from the deep portions of the vadose zone by flushing the contaminant material into the groundwater, and then capture it with the active P&T system to remove it from the groundwater.
 - Plan proposed using an underground leach field design to apply treated P&T effluent to the soil column beneath the former 183.1KW Headhouse.
 - The effluent will be pH adjusted to between 5.0 and 5.5 to increase the solubility of the suspected chromium-substituted calcite, thereby mobilizing the residual contamination into groundwater.
 - Use existing P&T systems to extract and treat the groundwater.



Soil Flushing Treatability Test General Schedule

- 02/06/2019 – Completed disconnect of KW P&T Extraction well 199-K-205
- 04/1/2019 – Completed installation of leach field laterals and performed initial test of the field.
- May 2019 – Complete Operations Acceptance Testing and Official start of Soil Flushing Treatability Test
 - Phase 1 of the treatability test includes putting about 8.6 Million gallons of water through the soil column. Estimated to take about 23 days at 265 gpm. to saturate the vadose zone.
- August 2019 – Provide RL with Draft Effectiveness Assessment and Recommendation



Soil Flushing Treatability Test Photos – Digging of trenches and installation of distribution pipes



Soil Flushing Treatability Test Photos – Various Components of the Leach Field

Distribution pipes and coverings



Valve box separating quadrants



Distribution lateral over encountered obstruction



Injection well and leach field manifold



Soil Flushing Treatability Test Photos – Pressure test of laterals

Pressure test of laterals with raw water



Soil Flushing Treatability Test Photos – Covering of laterals

Distribution pipes hanging in covering



Covering pipe over obstruction



**Covered distribution
lateral**



Soil Flushing Treatability Test Photos – Current Condition



Potential Future Applications of Soil Flushing at 100-K to address Cr(VI)

- 183.1KE Headhouse
- Northeast end of 116-K-2 Trench
- Near 190KW Pump House



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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 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.

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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.

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.

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- 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*

Performing the following activities 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 March and April was camera installation, and tool holder installation and debris load out.
- Placed REA bucket in B-Cell and installed on REA. (3/26/19)
- Installed two C-Cell snorkels. (4/1/19)
- Completed camera installation in the REC. (4/10/19)
- Completed Installation of tool hangers. (4/1/19)
- Completed 324 Building ventilation test. (4/26/19)

Core Drilling:

- Completed all 324 core drilling. (3/27/19)
 - 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:

- Completed waste box shielding installation for A-Cell grout container loadout. (3/21/19)
- Completed the Factory Acceptance Test on the shielded probe collimator. (4/3/19)
- Completed the proof of concept on the grout system for the cell dams. (4/8/19)
 - Technical issues and path forward:
 - Validating that grout will work as an inflation media for the seals.
 - Designing redundant inflation systems into the limited space of the cell dams
 - Assuring that the inflation umbilical (hoses for air operated valves and grout fill lines) can be remotely separated from the dams after inflation.
 - Preparing to load out through C and D-Cells until A-Cell is available.
- The design and fabrication of the following 324 Building systems continues:
 - Waste box shielding
 - Transfer mechanism modification for 324
 - Cell dams

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REA in B-Cell with Bucket



C-Cell Snorkel



Lower A-Cell Dam



Lower A-Cell Dam

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324 Activities:

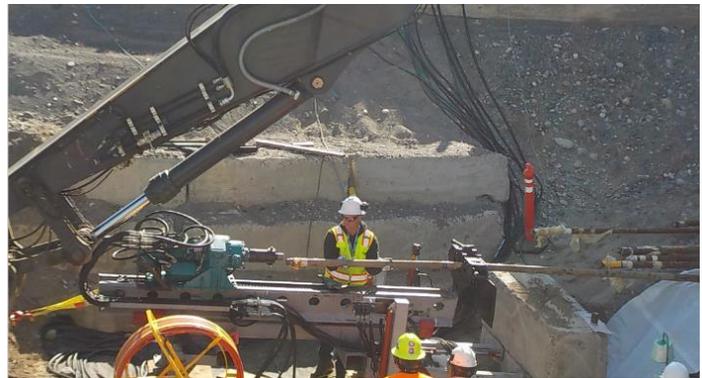
- Re-initiated C-Cell external sealing. (4/16/19)
- Initiated D-Cell external sealing. (4/22/19)
- Combined C and D-Cells external sealing are 34% complete.

Structural Modifications:

- Initiated geoprobe removal.
 - Of 16 geoprobes, 5 have been removed (2 separated downhole, 5' sections remain)
 - Of the 2 HHUs, 1 removal was attempted and separated downhole.
 - Challenges encountered during removal:
 - Probes cross two building footings and have been in the ground for an extended period of time.
 - Extracting corroded casings at threaded 5' connections.
- Initiated and completed dune sand direct injection testing inside the 324 fence (4/15/19)
- Room 18/Pilot Hole preparations:
 - Built a new containment collar to place around base of the rig which exhausted to a HEPA filter to prevent contamination release during drilling. During 5/15 drilling event, the collar was used effectively, and no readings were noted.
 - Continued drilling first pilot hole;
 - 9 ft. deep as of 5/15. Scheduled to complete in May.



Containment Collar

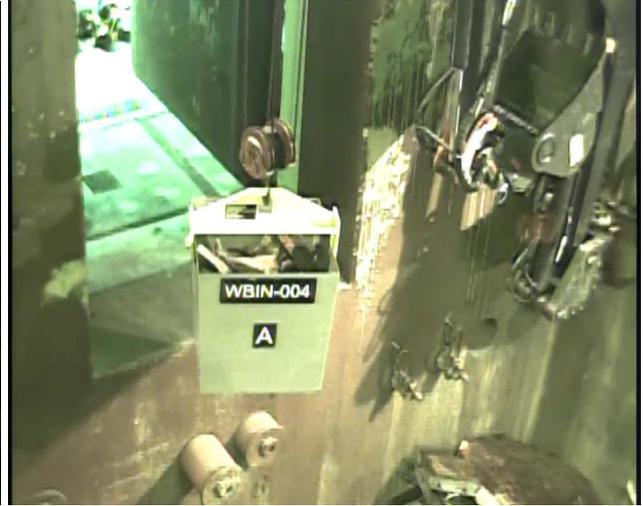


Geoprobe Removal

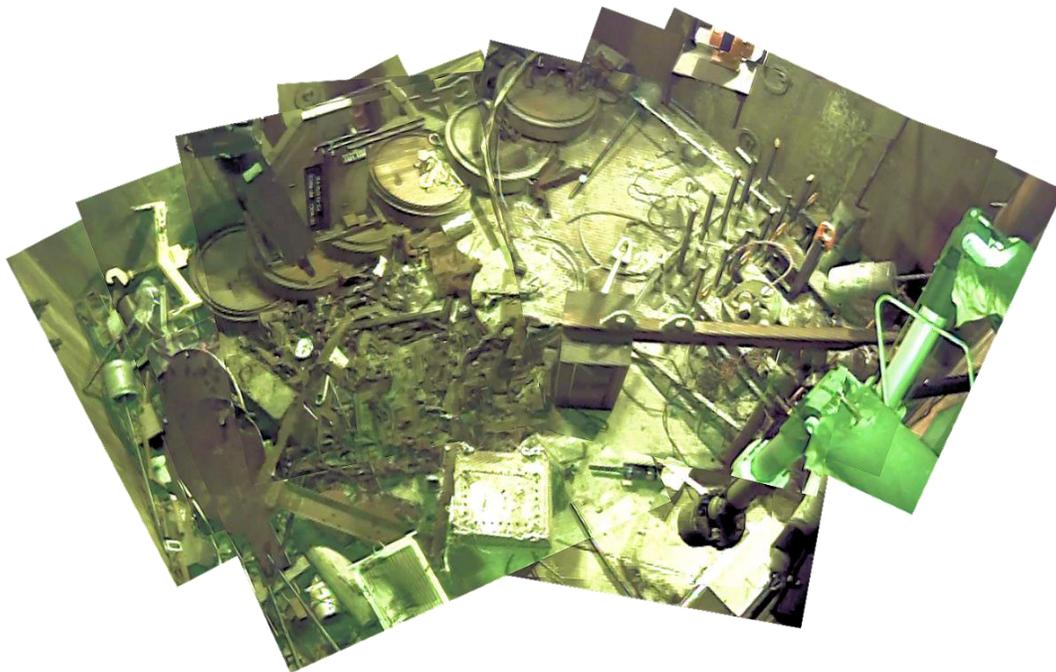
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B-Cell Debris load out



Debris load out from B-Cell to Airlock

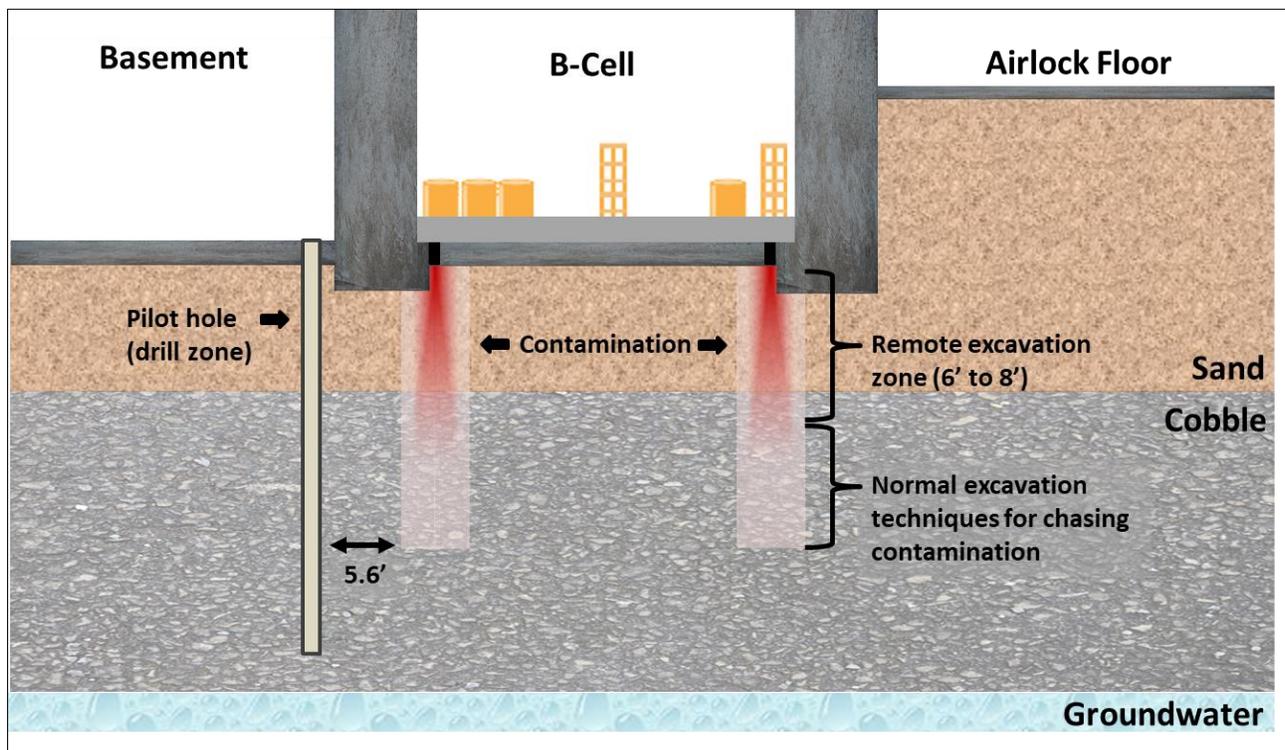


B-Cell Debris Prior to load out 3/4/19

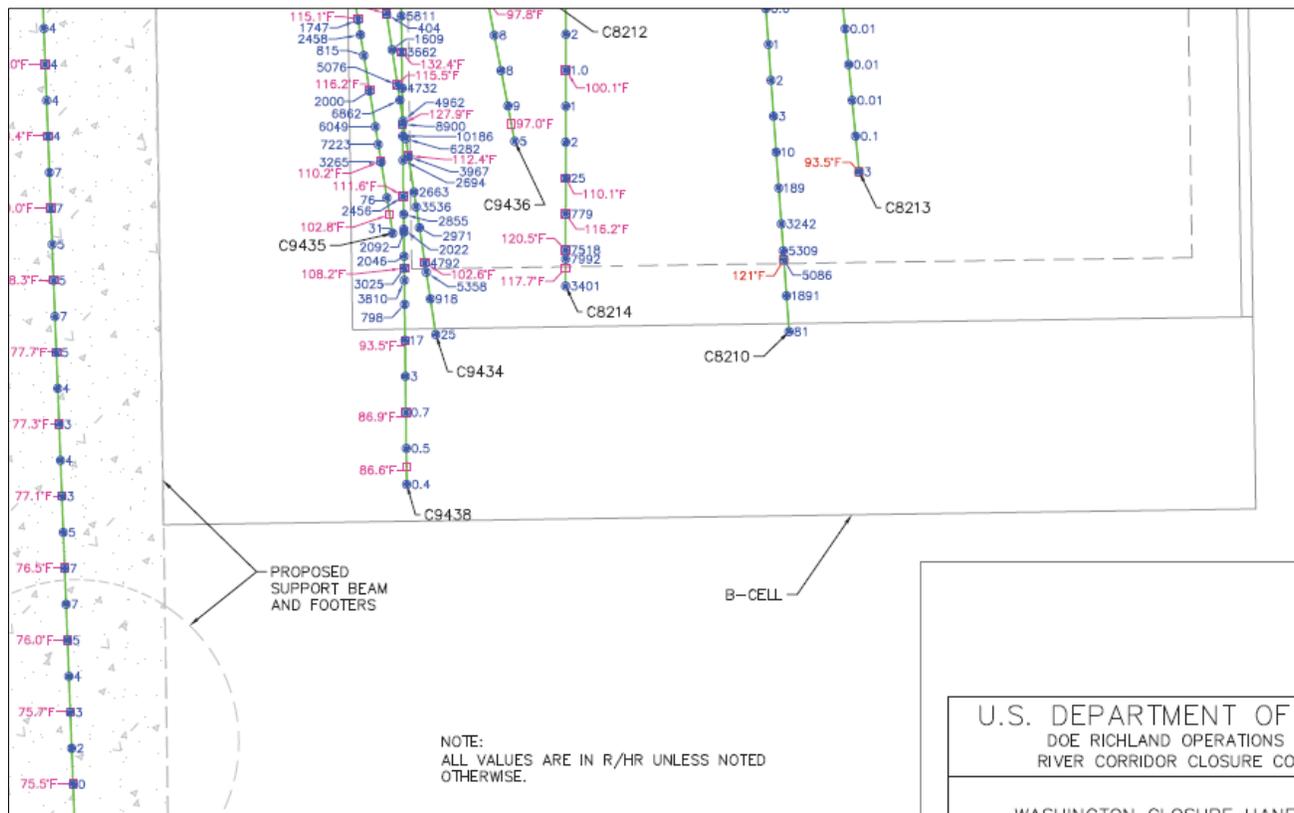
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B-Cell Debris reduction as of 4/18/19



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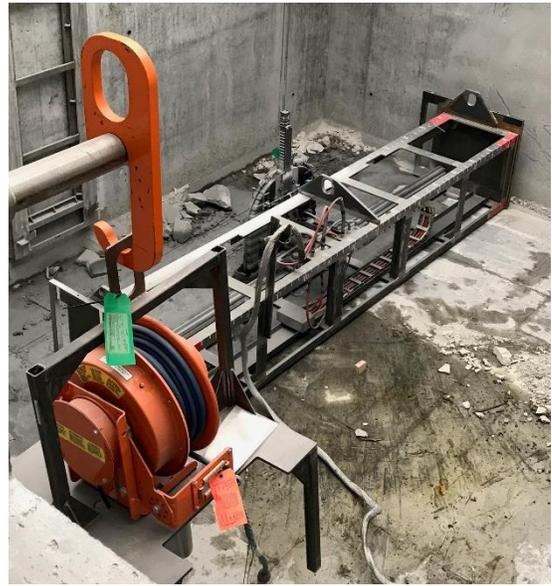
Mockup:

- Floor Saw:
 - Continued floor saw testing, including maneuvering, placing, and performing connection of manipulation by operators.
 - Took delivery of the floor saw split plug. (4/8/19)
 - Installed the spark guard on the floor saw. (4/10/19)
 - Successfully completed Construction Acceptance Testing of the floor saw. (4/23/19)
- Successfully performed adhesive testing for 324 Building cell sealing activities. (3/26/19)
- Completed grout pad demolition and debris removal loadout. (4/10/19)

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Floor saw is being setup for testing at the Mockup



Floor saw testing at the Mockup

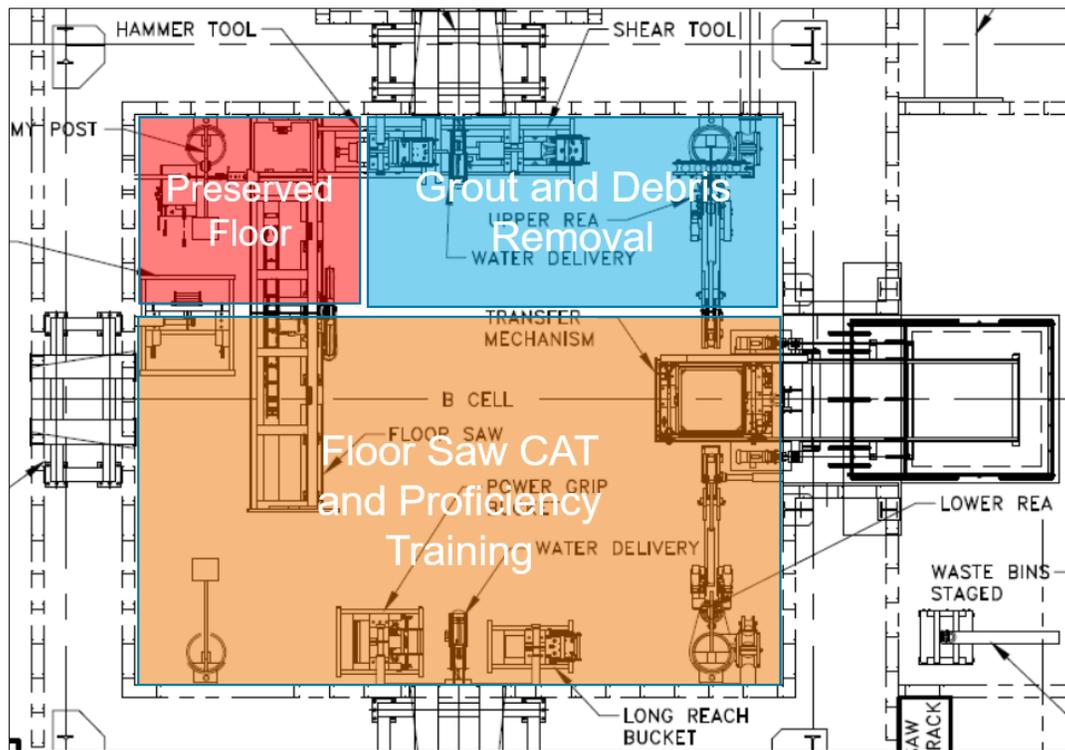


Grout Breakup at the Mockup



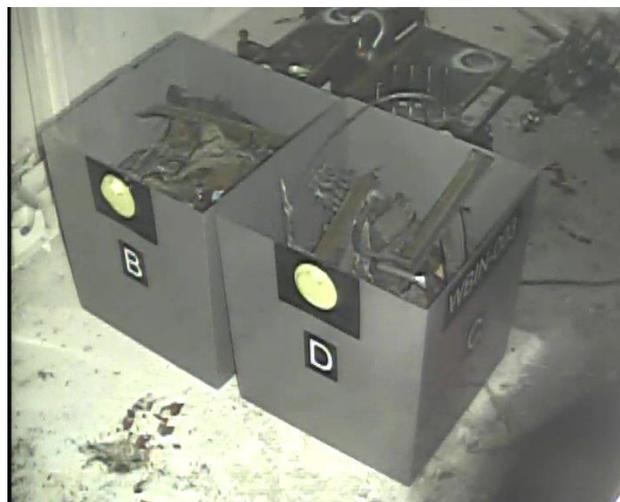
Grout loudout at the Mockup

300 Area Report
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Cell Cleanout:

- Initiated B-Cell debris clean out; 15% complete. The bins removed have dose readings between 60 and 250mR. (4/10/19)
- Initiated chipping grout within B-Cell. (5/13/19)
- Expedited preparation of C and D-Cells to receive waste for staging in advance of A-Cell availability due to dam installation.



Two of Four Bins in D-Cell with B-Cell Debris

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Upcoming Activities:

- Complete first Pilot hole in Room 18 by end of May.
- Conduct floor saw operations demonstration at Mockup by end of June.
- Install Airlock camera by end of June.

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.*

100/300 Area Project Managers Meeting
Groundwater Summary by OU – *(March and April 2019 Data)*
May 16, 2019
100-K Area Groundwater Operable Unit

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

- CERCLA Process Implementation:
 - Completed revision of the technical impracticability (TI) waiver and provided to U.S. Environmental Protection Agency (EPA) on March 7, 2019, for submittal to EPA Region 10 for review.
 - RL provided Draft Revision 1 of the 100-KR-4 RD/RAWP to EPA at the end of March 2019.
 - TPA-CN-0853, which removed the unfiltered hexavalent chromium requirement from the KW Soil Flushing Treatability Test Plan SAP, was approved by RL and EPA on March 28, 2019.
 - Provided RL the 100-KR-4 explanation of signification difference for cost increase in the Interim Action ROD on April 8, 2019.
 - Transmitted the 100-KR-1, 100-KR-2, and 100-KR-4 Operable Units Remedial Investigation, Draft B (DOE/RL-2010-97) to RL on April 17, 2019.
- Monitoring & Reporting:
 - Construction activities supporting implementation of the KW Soil Flushing Treatability Test were completed on April 17, 2019. The operations acceptance testing began on April 24, 2019 with KW extraction well 199-K-205 returning to full extraction operation on April 29, 2019. This test will be implemented at the former 183.1KW Head-house chemical storage tank farm.
- Remedial Actions & System Modifications:
 - In March 2019, the average pumping rates were 255, 250, and 884 gpm for the KR4, KW, and KX systems, respectively.
 - In April 2019, the average pumping rates were 256, 237, and 883 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.
 - Completed 100-KR-4 FY 2019 realignment scope on April 16, 2019 with the completion of the operations acceptance testing of KX P&T extraction well 199-K-234.
- Figures KR-2 through KR-4 present the monthly volume of groundwater treated and mass of hexavalent chromium removed though April 2019.

100/300 Area Project Managers Meeting
Groundwater Summary by OU – (March and April 2019 Data)

May 16, 2019

- The volume of groundwater treated and mass of Cr(VI) removed for the 100-K P&T systems (KX, KR4, and KW) during March and April 2019 are:

Month	Gallons Treated (in millions)	Hexavalent Chromium Removed (kg)
March	61.6	2.2
April	59.3	2.7

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

P&T System	Treated (mgal)	Removed (kg)
KR4	76.7	0.7
KW	81.9	3.1
KX	270	15.2
Total	429	19.0

100/300 Area Project Managers Meeting
Groundwater Summary by OU – (March and April 2019 Data)
 May 16, 2019

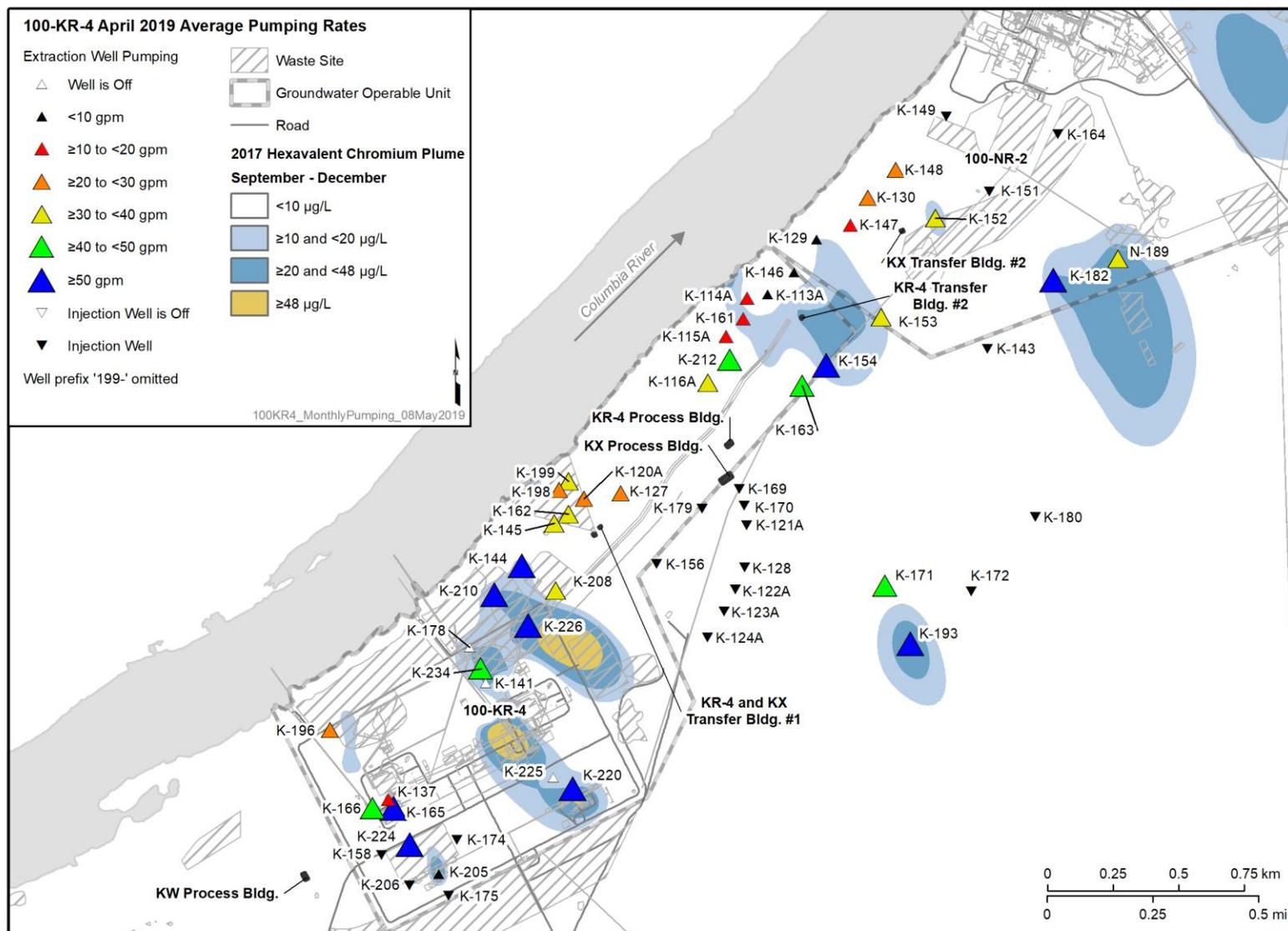


Figure KR-1. April 2019 Average Pumping Rates for the 100-KR-4 P&T System

100/300 Area Project Managers Meeting
Groundwater Summary by OU – (March and April 2019 Data)
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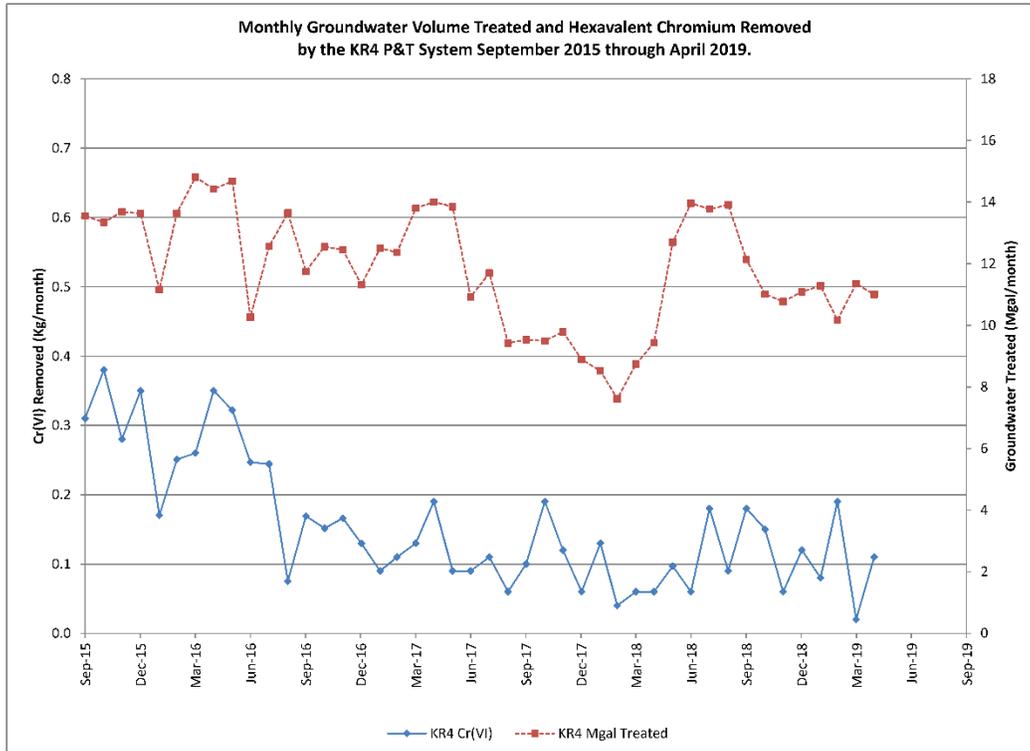


Figure KR-2. Monthly Cr(VI) Removed and Groundwater Volume Treated by KR4 P&T September 2015 through April 2019.

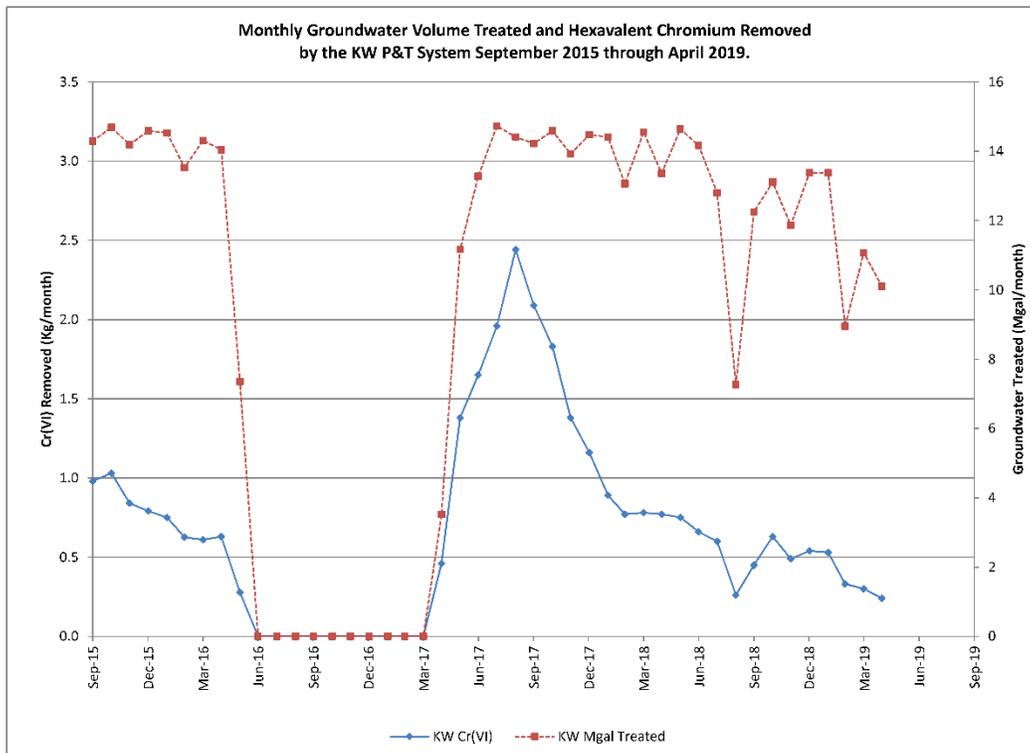


Figure KR-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by KW P&T September 2015 through April 2019.

100/300 Area Project Managers Meeting
Groundwater Summary by OU – (March and April 2019 Data)
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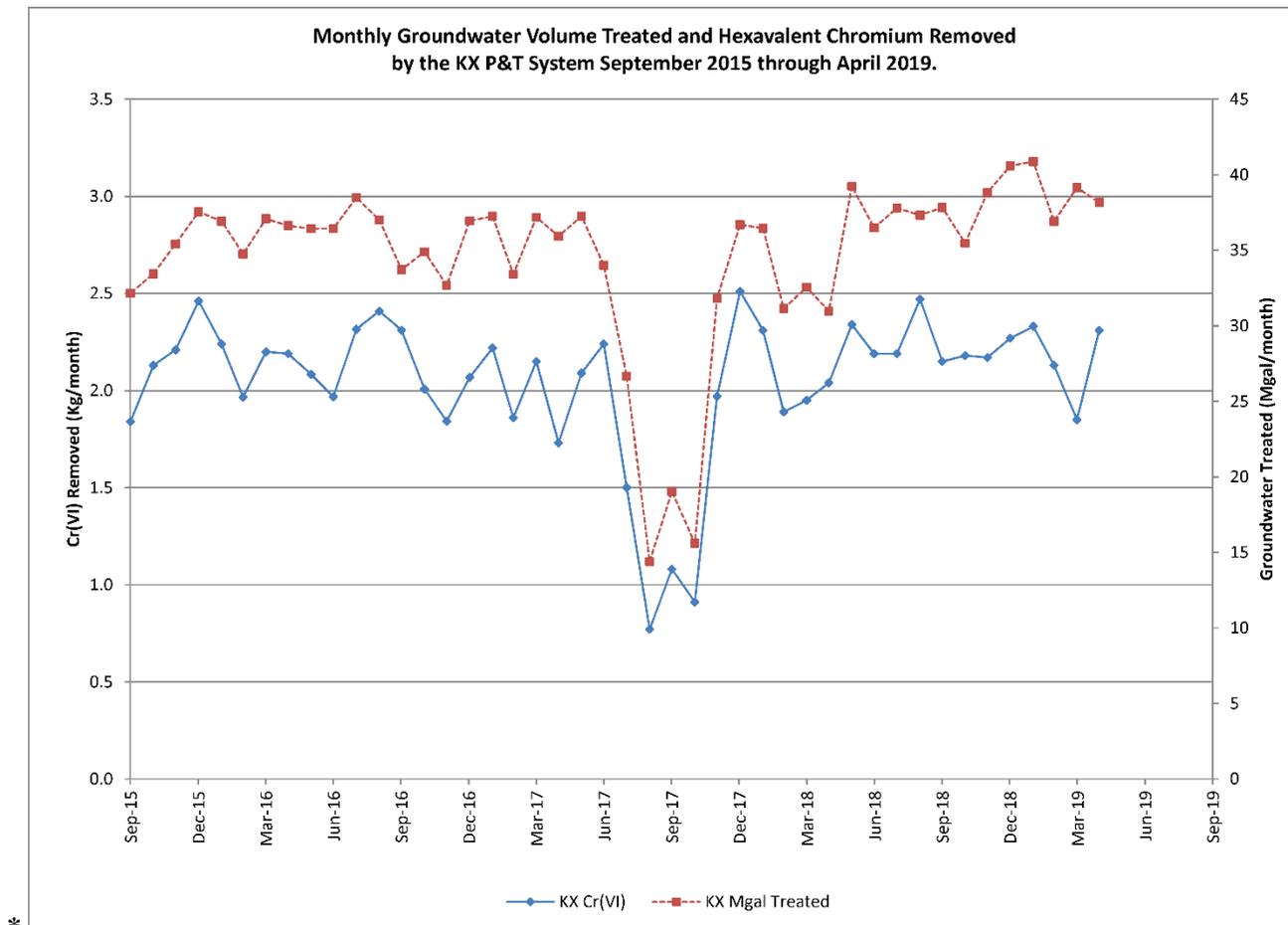


Figure KR-4. Monthly Cr(VI) removed and groundwater volume treated by KX P&T September 2015 through April 2019.

Regulatory Agency Comments: None

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Groundwater Summary by OU – (March and April 2019 Data)
May 16, 2019

100-BC Area Groundwater Operable Unit

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

- CERCLA Process Implementation:
 - CHPRC has completed disposition of comments from EPA on the Draft Rev. 0, RI/FS Report and Proposed Plan for 100-BC-1, 100-BC-2 and 100-BC-5 and in final production. Region 10 comments have been resolved but a briefing to the EPA Administrator has yet to be scheduled.
- Monitoring & Reporting:
 - Hyporheic sampling points (HSPs) C8860, C8861, and three nearby aquifer tubes were sampled in April 2019 to follow-up on previous Cr(VI) increases. Data have not yet been received from the lab. The HSPs will be sampled again in July.
 - Selected monitoring wells are scheduled for sampling in June 2019.

Regulatory Agency Comments: None

100-N Area Operable Unit

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 April 25, 2019 to present the current strontium-90 waste inventory, model transport parameters, simulations to support the Draft B RI/FS alternatives, and overview of the alternatives evaluated in the Draft B RI/FS. This information presentation was organized around the February 6, 2019 presentation received from Ecology regarding technical questions and concerns on the TI Waiver. Meeting minutes have been drafted.
 - Discussed the Draft B RI/FS schedule of projected transmittal dates to Ecology during the April 25, 2019 meeting. The RI/FS will be transmitted in two volumes; Volume 1 will contain the RI and Volume 2 will contain the FS. Dates identified in the meeting for providing the RI and FS to Ecology are July 31, 2019 and September 30, 2019, respectively. Ecology suggested a page change to the RI/FS Work Plan to update the RI/FS schedule for Draft B as an alternative to letters to extend the Draft A RI/FS comment resolution period.
- Remedial Actions:
 - Quarterly bioventing vapor samples were taken on March 14, 2019, as scheduled. The next quarterly bioventing vapor samples are scheduled for June 2019.
 - A bioventing soil characterization SAP is being prepared, incorporating the outcome of the February 5, 2019 DQO workshop. Attending was RL, Ecology, and CHPRC, and the intent is to collect characterization soil samples to evaluate the effectiveness of the bioventing system for remediating deep vadose zone TPH contamination. Three boreholes are planned for sample collection.
- Product Recovery:
 - The sponge assemblies in wells 199-N-18 and 199-N-183 were placed in the wells in December 2019 and were allowed to soak through May 8, 2019. A total of 250 grams of product was recovered in this extended test period. There was no more mass removed than from the normal 2 month change-out.

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- Monitoring and Reporting:
 - The high river sampling of aquifer tubes C7934, C7935, and C7936 are scheduled for June 2019.

Regulatory Agency Comments: None

100-D/H Areas Groundwater Operable Unit

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

- CERCLA Process Implementation:
 - Comments from Ecology on the 100-D/H Remedial Design/Remedial Action Work Plan and accompanying Waste Management Plan are being addressed. Comments were received on April 2, 2019.
- Monitoring & Reporting:
 - Well drilling completed on the final well (199-H1-12) on April 29, 2019. Construction activities and well development activities are ongoing.
- Remedial Actions & System Modifications:
 - The volume of groundwater treated and mass of Cr(VI) removed from the 100-HR-3 P&T systems during March and April 2019 are:

Month	Gallons Treated (in millions)	Hexavalent Chromium Removed (kg)
March	42.9	3.9
April	40.9	3.5

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

P&T System	Treated (mgal)	Removed (kg)
DX	181	17.2
HX	153	14.8
Total	334	32.0

- 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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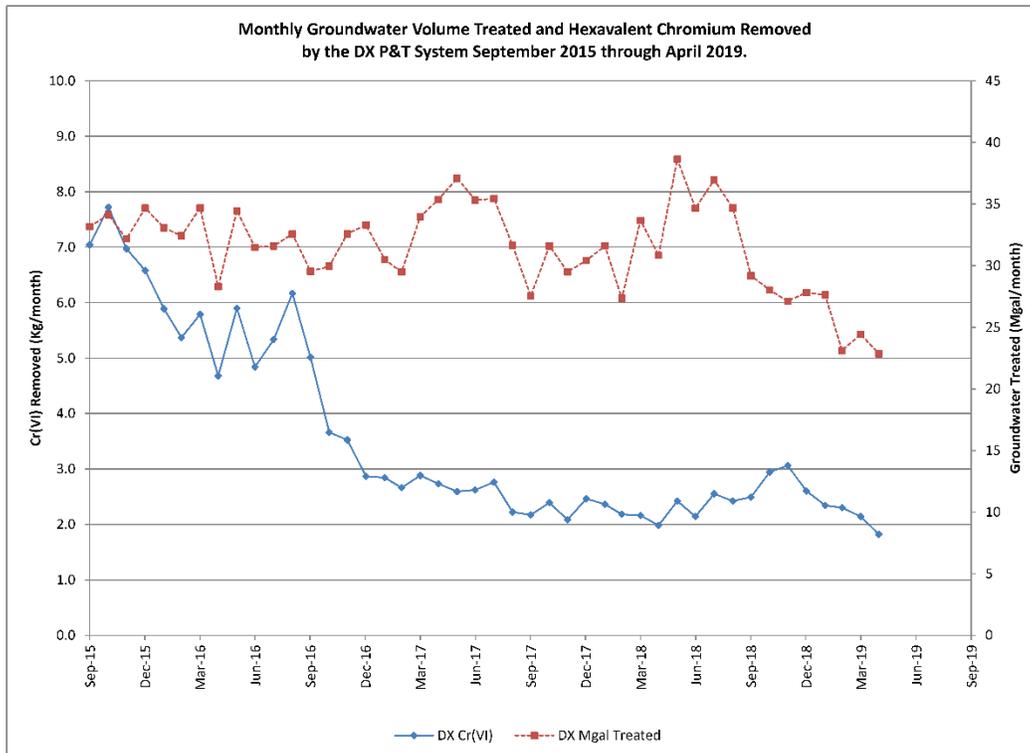


Figure HR-2. Monthly Cr(VI) Removed and Groundwater Volume Treated by DX P&T, September 2015 through April 2019.

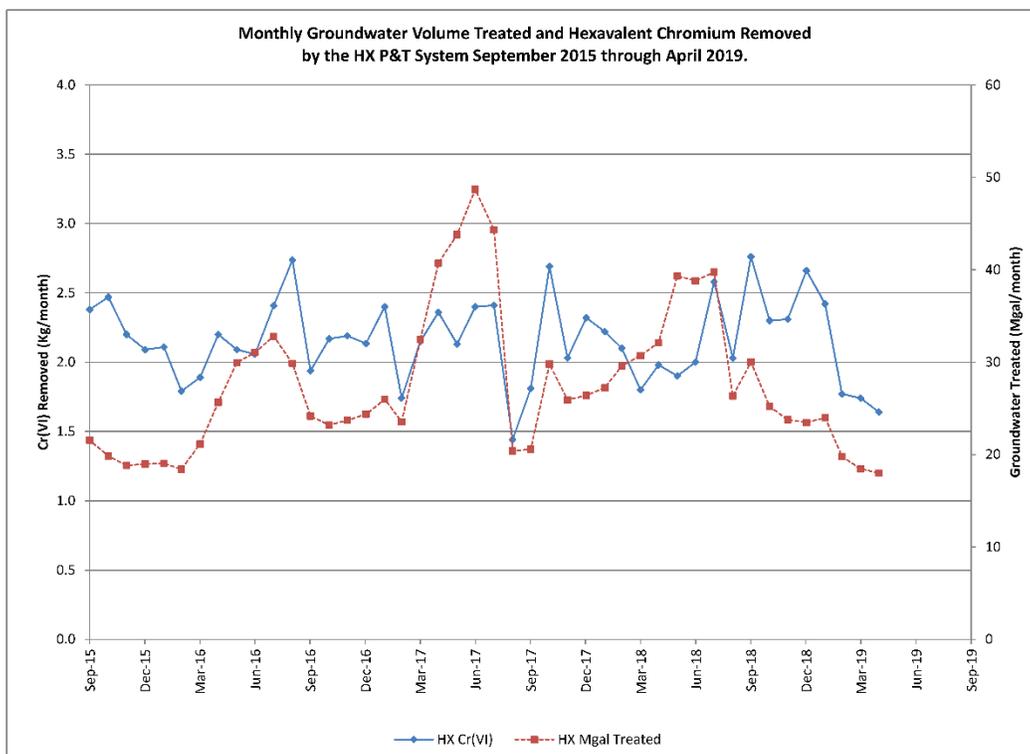


Figure HR-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by HX P&T, September 2015 through April 2019.

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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:
 - Six new monitoring wells planned for installation in 2019 began their 30-day SHPO review period April 17, 2019.
 - Eleven wells were scheduled for sampling in February 2019. Six of them were sampled in late January and the other five were delayed until March because snow and ice prevented access.
 - In well 199-F5-56 (central 100-F Area), nitrate and strontium-90 declined from fall 2018. Figure FR-1 shows the well location and Figure FR-2 shows nitrate and strontium-90 concentrations timeline.
 - In well 699-67-26 (south part 100-FR-3; Figure FR-1), nitrate declined to 0.70 mg/L in March which is an unusually low concentration for unconfined groundwater (Figure FR-3). Specific conductance was also declining and ion charges balanced, so there is no indication of a laboratory error. Nitrate has been variable in this well since installation in 2016 (but never below 1 mg/L). Low nitrate concentrations in this well are associated with low dissolved oxygen. Nitrate and dissolved oxygen vary directly with the water table elevation (Figure FR-4). The well will continue to be sampled quarterly.

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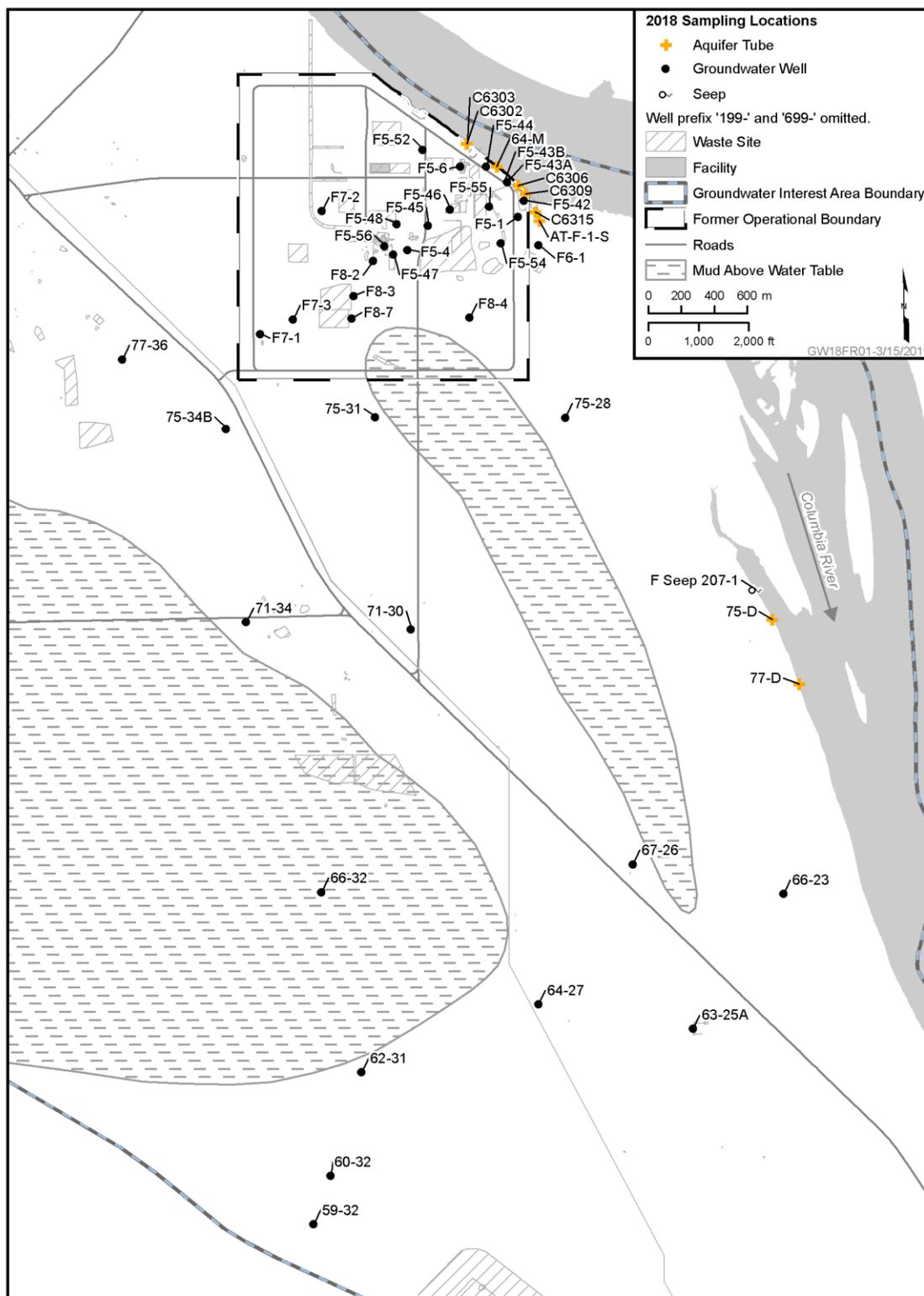


Figure FR-1. Locations of Monitoring Wells in 100-FR-3 Operable Unit

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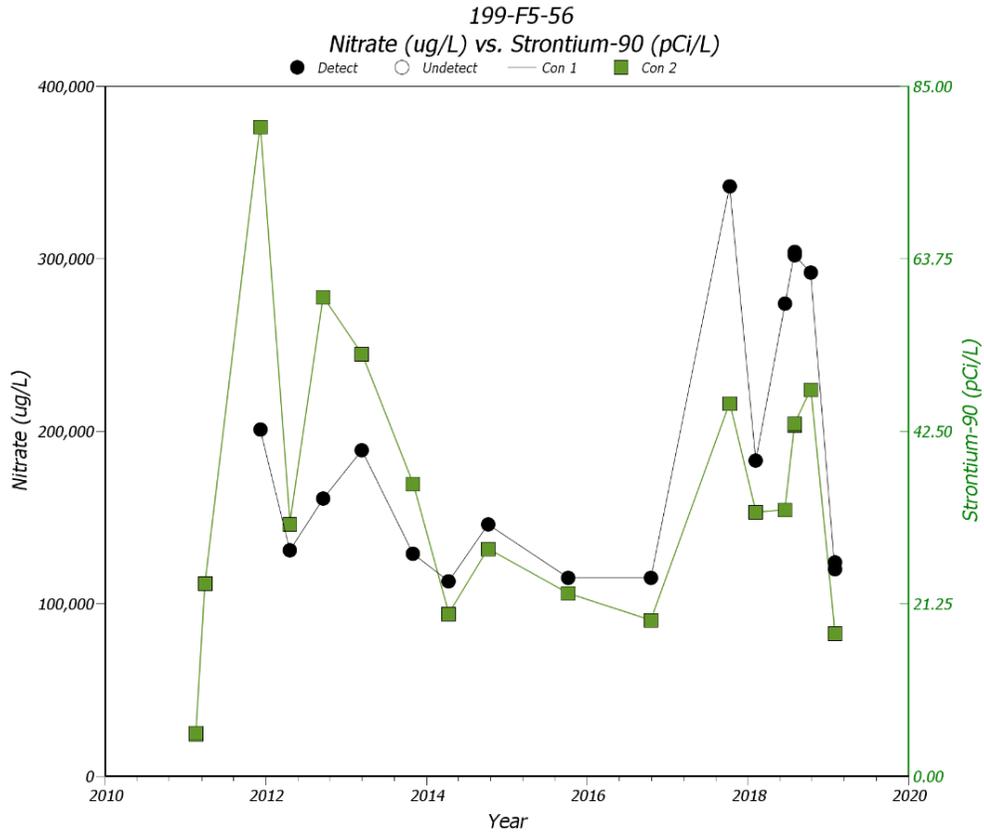


Figure FR-2. Nitrate and Strontium-90 Concentrations in Well 199-F5-56

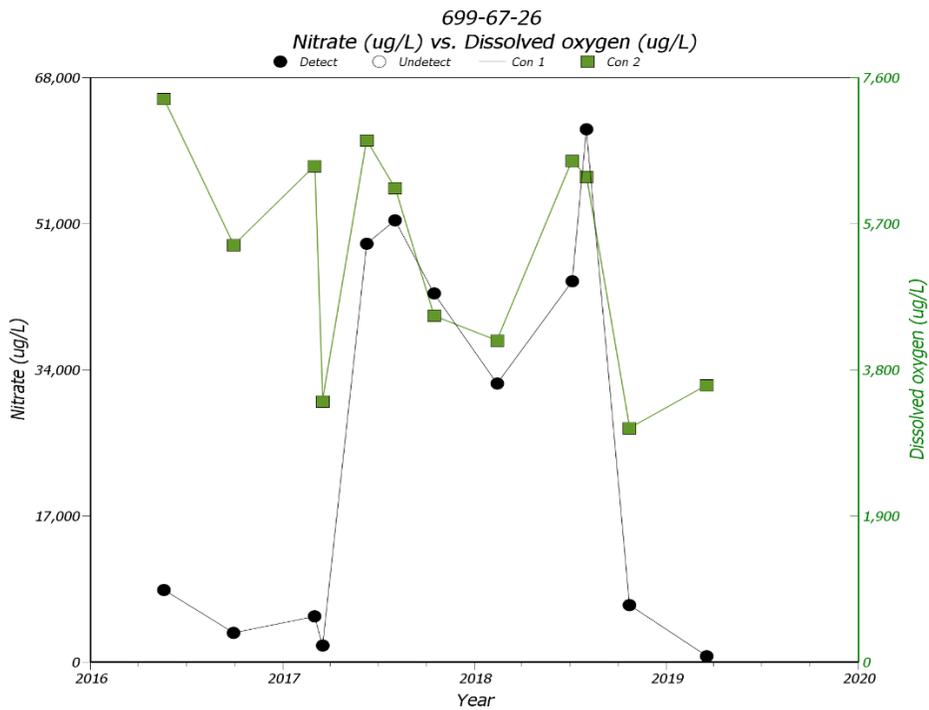


Figure FR-3. Nitrate and Dissolved Oxygen in Well 699-67-26

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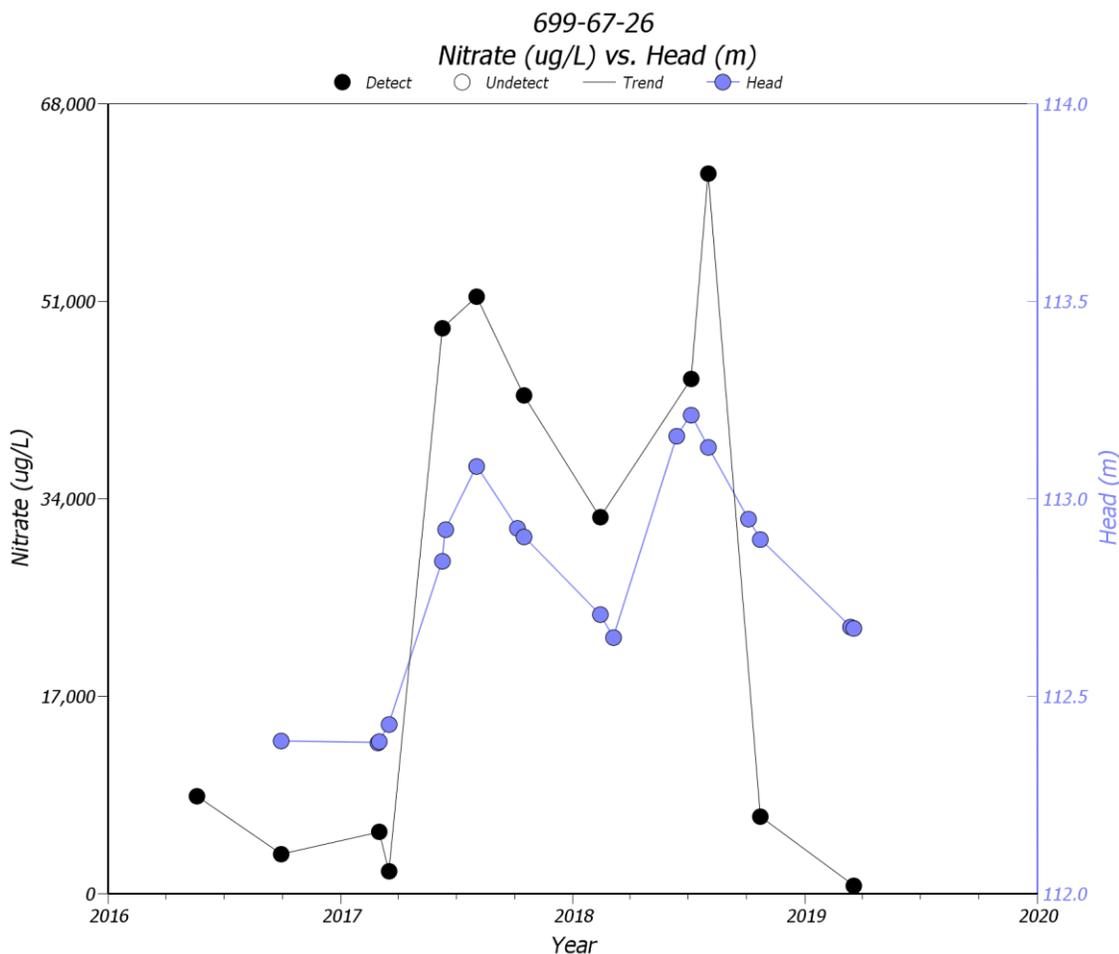


Figure FR-4. Nitrate and Water Level in Well 699-67-26

Regulatory Agency Comments: None

300 Area Groundwater Operable Unit

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

- CERCLA Process Implementation:
 - Nothing new to report.
- Remedial Actions:
 - Stage B of the enhanced uranium attenuation remedy 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 PNNL report on Stage B uranium sequestration monitoring (PNNL-28619) using electrical resistivity tomography (ERT), was completed on April 18, 2019.
 - Nine Stage B post injection boreholes were drilled, sampled, and decommissioned in March 2019.
 - Uranium sequestration Stage B post-injection borehole soil samples were delivered to PNNL in April and May, 2019 for sequential column and extraction testing.

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- The well installation Work Instruction for the new groundwater monitoring well downgradient of the 324 Building (SGW-62784) was issued in January 2019. Driller is onsite and plans to begin work the week of May 6, 2019.
- Monitoring & Reporting:

Uranium Sequestration:

- All 21 wells screened in the aquifer were sampled as planned in March 2019 (Figure FF5-1). Well 399-1-73, which is screened in the PRZ was not successfully sampled in March because the well was seasonally dry (low river).
- All 21 wells screened in the aquifer, plus well 399-1-73 screened in the PRZ, were sampled as planned in April 2019. The April sampling concludes the 6 month sampling period for 9 selected 399-wells in Stage B following injections (1-155, 1-156, 1-157, 1-160, 1-161, 1-164, 1-165, 1-166, and 1-73). Monthly sampling for one year after the Stage B injections will continue at 13 wells until October 2020. A high river stage sampling event at all 21 wells screened in the aquifer, plus 9 wells screened in the PRZ, is scheduled for June 2019.

300 Area Industrial Complex:

- All 6 CERCLA wells were sampled as planned in March 2019. The AEA sampling event scheduled for April will be conducted in May to integrate sampling events with nearby wells. The next CERCLA long-term monitoring event is scheduled for June 2019. The next AEA sampling event is scheduled for June 2019.

618-10 Burial Ground/316-4 Crib:

- The next CERCLA sampling event is scheduled for May 2019. One AEA well scheduled for sampling in December 2018 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. Identified AEA wells that are part of the Energy Northwest groundwater monitoring network will be sampled by Energy Northwest and the data will be shared with the CHPRC Soil and Groundwater project.

300 Area Process Trenches (316-5) RCRA Monitoring:

- The next sampling event for the 8 RCRA wells (Figure FF5-2) is scheduled for June 2019.

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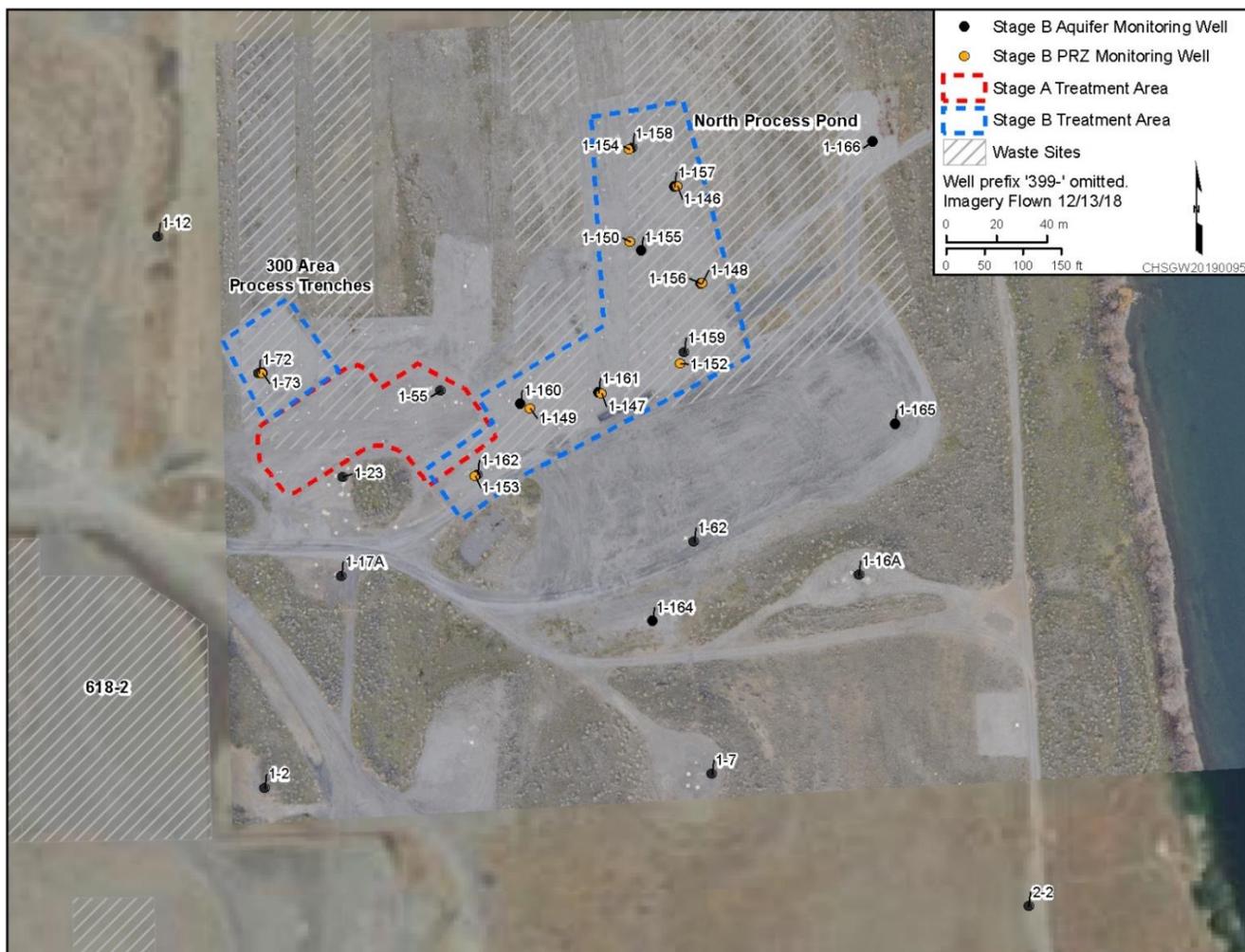


Figure FF5-1. 300 Area Uranium Sequestration Monthly Monitoring Wells

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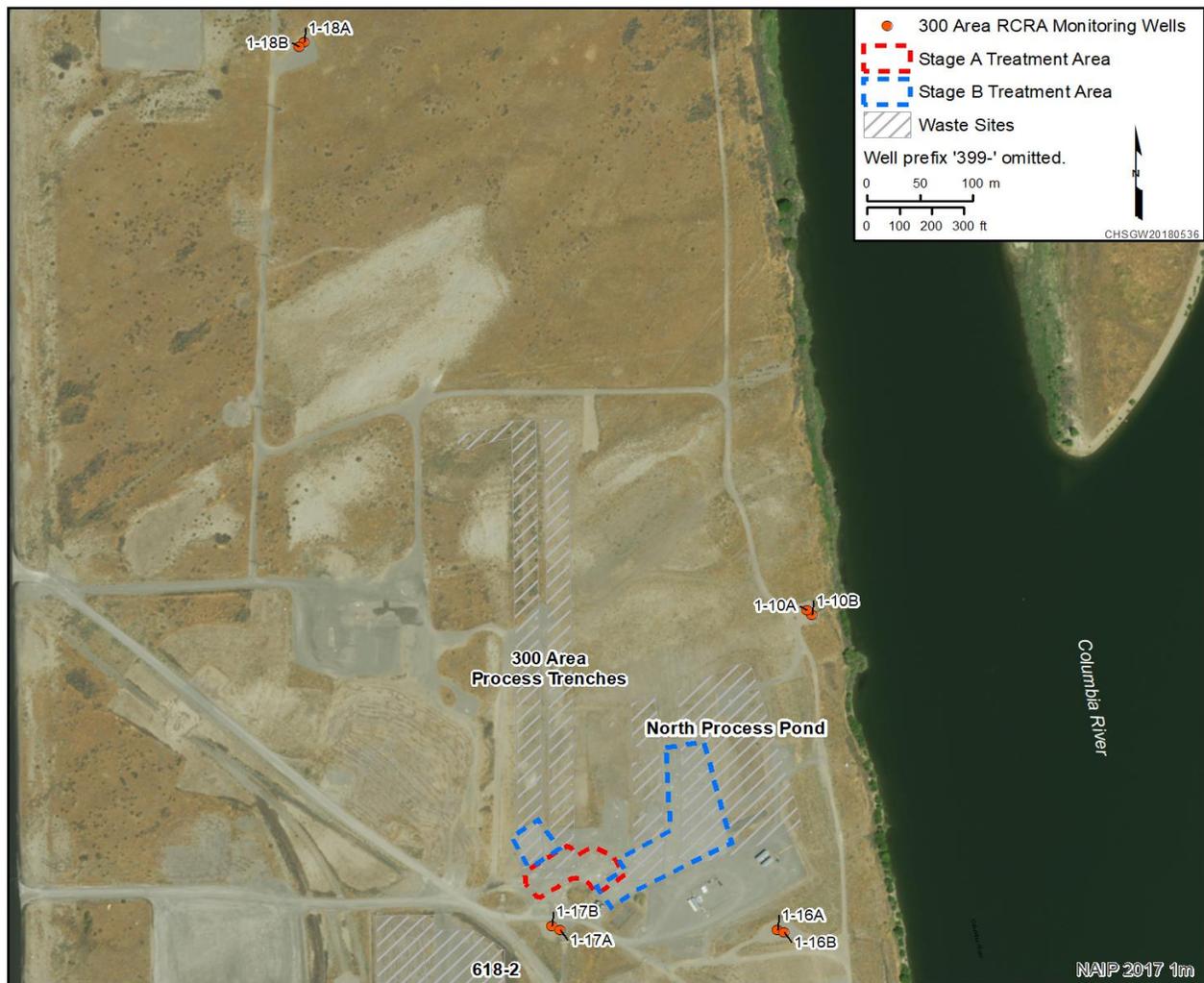


Figure FF5-2. 300 Area Process Trenches RCRA Monitoring Wells

Regulatory Agency Comments: None

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Groundwater Summary by OU – (March and April 2019 Data)
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Documents Submitted to the AR

Document Number	Document Title	Referencing Document
SGW-62854	Post-Closure Corrective Action Groundwater Monitoring Report for the 183-H Solar Evaporation Basins: July - December 2018	Annual Reports all Revision 0
SGW-62881	Post-Closure Corrective Action Groundwater Monitoring Report for the 300 Area Process Trenches: July – December 2018	Annual Reports all Revision 0
ECFHanford-13-0028	Columbia River Stage Correlation for the Hanford Area	Annual Reports all Revision 0
ECF-300FF5-16-0091_R0	Uranium Transport Modeling in Support of the Stage A Enhanced Attenuation Remedy at 300-FF-5 Operable Unit	SGW-63235_R0
SGW-62920_R0	Sampling Instruction for Unplanned Release of Groundwater During Uranium Sequestration Stage B Operations in the 300-FF-5 Operable Unit	SGW-63235_R0
CHPRC-03726_R0	Summary of Calendar Year 2017 Bioremediation at the UPR-100-N-17 Waste Site	Annual Reports all Revision 0
ECF-300FF5-18-0024	Calculation Of Concentration Trends, Means, And Confidence Limits For Cis-1,2-Dichloroethene, Gross Alpha, Nitrate, Trichloroethene, Tritium, And Uranium In The 300-FF-5 Operable Unit Through CY-2017	SGW-62512_R0

Approved Change Notices

Document Number	Document Title
TPA-CN-0853	DOE/RL-2018-10 is amended to update sampling requirements to remove unfiltered hexavalent chromium, add total chromium to the list of metals, and update sample tables as appropriate.

TPA Compliance Note:

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

**100-OL-1 Operable Unit Report
100/300 Area Unit Manager Meeting
May 16, 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.
- Outline Feasibility Study report.

100-OL-1 Operable Unit Report
100/300 Area Unit Manager Meeting
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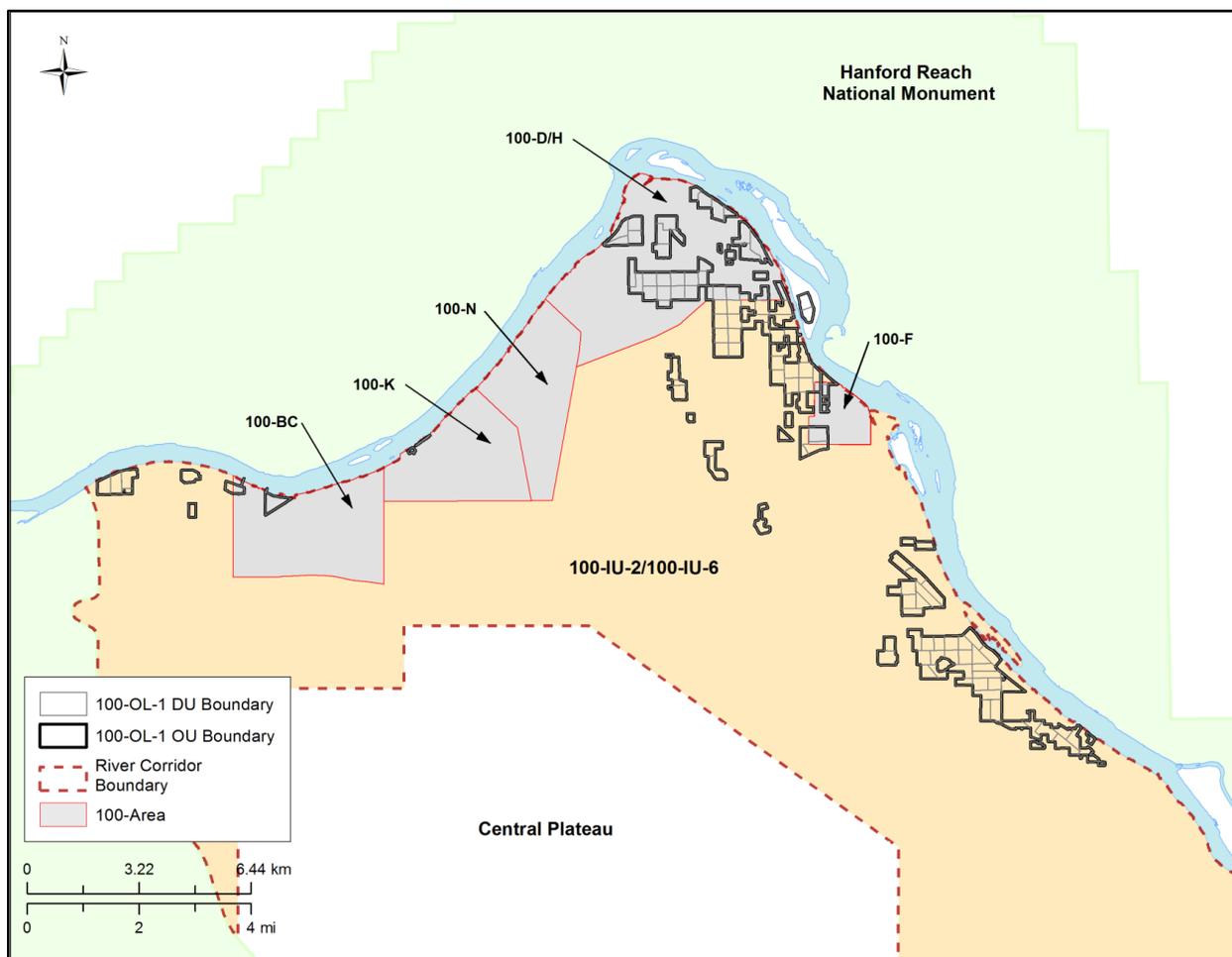


Figure 1. The 100-OL-1 OU and Associated Decision Units across the River Corridor of the Hanford Site.

100/300 Area UMM
Action Items List
May 16, 2019

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
X	179	RL	John Neath/Mark French		Milestone M-016-181 and M-016-178. Laura Buelow to meet with DOE to establish milestone completion criteria	Closed
X	183		Ellwood Glossbrenner/ Bill Faught		Coordinate and share a soil flushing presentation in the next quarter	Closed
O	184		Bill Faught		Set up a meeting to discuss sponge change out frequency in 100-N Bioventing	Jun-19