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[0068662H]

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 0793	TPA CHANGE NOTICE FORM	Date: 8/22/2017
Document Number, Title, and Revision: DOE/RL-2014-27, Sampling and Analysis Plan for Remediation Wells in the 200-UP-1 Operable Unit, Rev. 2 1244003		Date Document Last Issued: March 2017

Approved Change Notices Against this Document: N/A

Originator: C. S. Cearlock Phone: 509-373-0799

Description of Change:
Changes to the SAP are required to add 1 additional monitoring Well 699-30-73 that is planned for installation in fiscal year 2017/2018.

M.W. Cline and E. Laija agree that the proposed change
DOE Lead Regulatory Agency
modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*, and not Chapter 12.0, *Changes to the Agreement*.

Changes include the following:

- Table 1-4, page 1-21, Well name, well type, parameter descriptions, and parameter values added to the table for Well 699-30-73.
- Figure 1-7, page 1-25, Well 699-30-73 added to the figure.
- Table 3-1, page 3-32, Well name, sample matrix, depth below water table, allowable variation, analytes, and comments added to the table for Well 699-30-73.
- Chapter 4, page 4-1, 4th Paragraph, text added to identify well 699-30-73 and the well numbers were changed accordingly.

Added text is shown in double underline. Deleted text is shown in ~~single line strike through~~.

Note: Include affected page number(s): 1-21, 1-25, 3-32, and 4-1

Justification and Impacts of Change:
The well identified above is being added to DOE/RL-2014-27, Sampling and Analysis Plan for Remediation Wells in the 200-UP-1 Operable Unit, because sampling will be required during installation.

Well 699-30-73 is needed to further characterize the chromium plume southeast of the 200 West Area.

The updates for the text, tables, and figures made by this change will be reflected in the next revision of the sampling and analysis plan.

Approvals:

	8/30/2017	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
DOE Project Manager	Date	
	8/30/2017	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
EPA Project Manager	Date	
N/A		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
Ecology Project Manager	Date	

Table 1-4. 200-UP-1 Operable Unit Well Specifications

Well Name (Well Identification)	Well Type	Parameter Description ^a	Parameter Value ^a
699-38-64B (C9608) (Planned 2018)	Dual-Use Monitoring/Injection (Nitrate plume and bound iodine-129, and tritium plumes)	Surface elevation (m NAVD88)	229.4
		Water table elevation (m NAVD88)	127.9
		Elevation top of Lower Mud unit (m NAVD88)	110.8
		Elevation bottom of Lower Mud unit (m NAVD88)	98.0
		Elevation basalt (m NAVD88)	68.8
		Depth to water (ft bgs)	333
		Depth to top of Lower Mud unit (ft bgs)	389
		Depth to bottom of Lower Mud unit (ft bgs)	431
		Depth to basalt (ft bgs)	527
		Planned screen length (ft)	80
		Planned depth to top of 8 in. SS screen (ft bgs)	275
		Planned depth to bottom of 8 in. SS screen (ft bgs)	385
		Planned total depth (ft bgs)	399
		<u>699-30-73</u> (C9636)	<u>Monitoring (Southeast chromium plume characterization)</u>
<u>Water table elevation (m NAVD88)</u>	<u>132.0</u>		
<u>Elevation top of Lower Mud unit (m NAVD88)</u>	<u>78.2</u>		
<u>Elevation bottom of Lower Mud unit (m NAVD88)</u>	<u>62.4</u>		
<u>Elevation basalt (m NAVD88)</u>	<u>27.9</u>		
<u>Depth to water (ft bgs)</u>	<u>220</u>		
<u>Depth to top of Lower Mud unit (ft bgs)</u>	<u>397</u>		
<u>Depth to bottom of Lower Mud unit (ft bgs)</u>	<u>449</u>		
<u>Depth to basalt (ft bgs)</u>	<u>562</u>		
<u>Planned screen length (ft)</u>	<u>35</u>		
<u>Planned depth to top of 4 in. SS screen (ft bgs)</u>	<u>220</u>		
<u>Planned depth to bottom of 4 in. SS screen (ft bgs)</u>	<u>255</u>		
<u>Planned total depth (ft bgs)</u>	<u>407</u>		

Reference: NAVD88, *North American Vertical Datum of 1988*.

a. Elevations and depths are based on either information from nearby wells or surveys of the staked new well locations or are estimated using the latest version of the Central Plateau three-dimensional solid model.

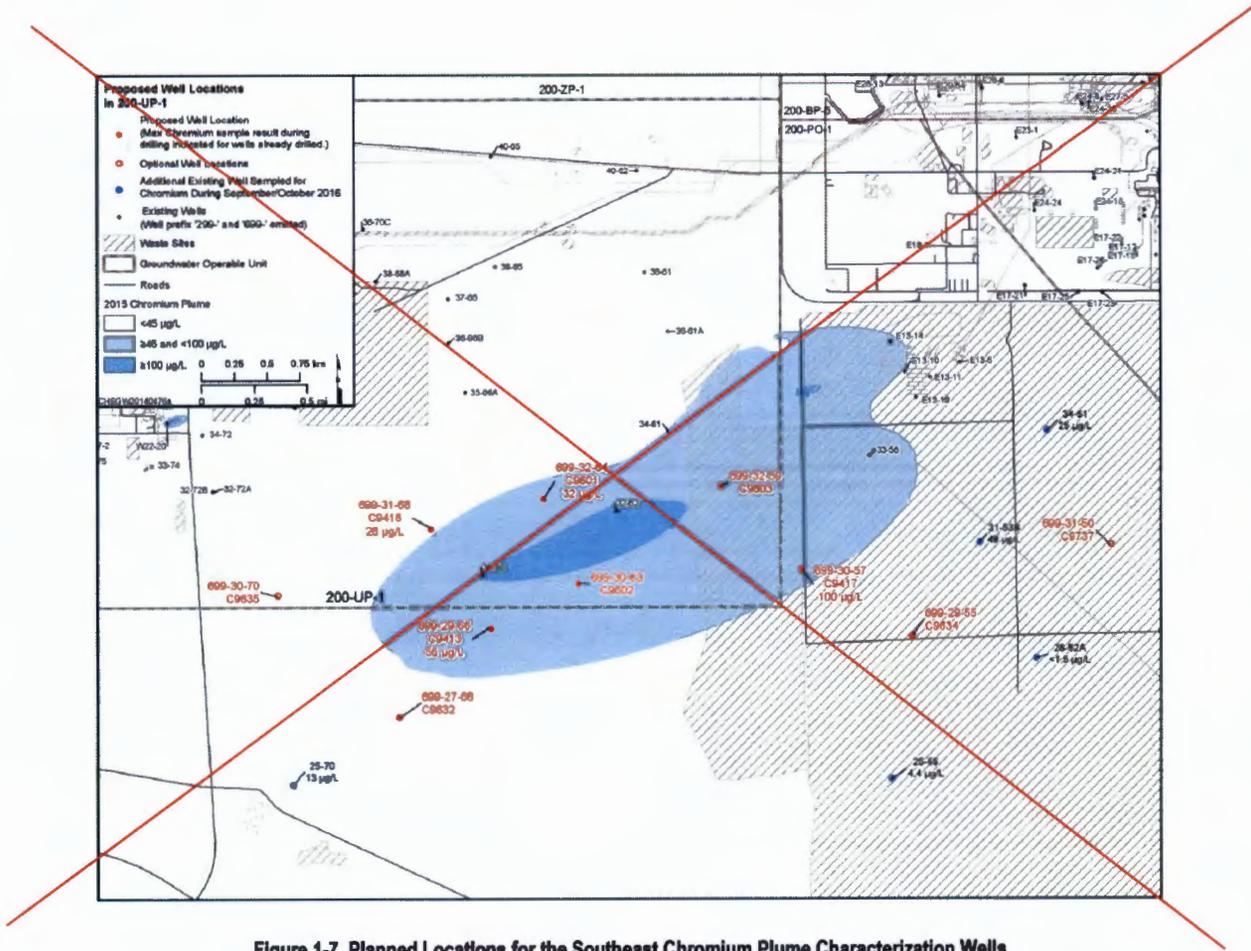


Figure 1-7. Planned Locations for the Southeast Chromium Plume Characterization Wells

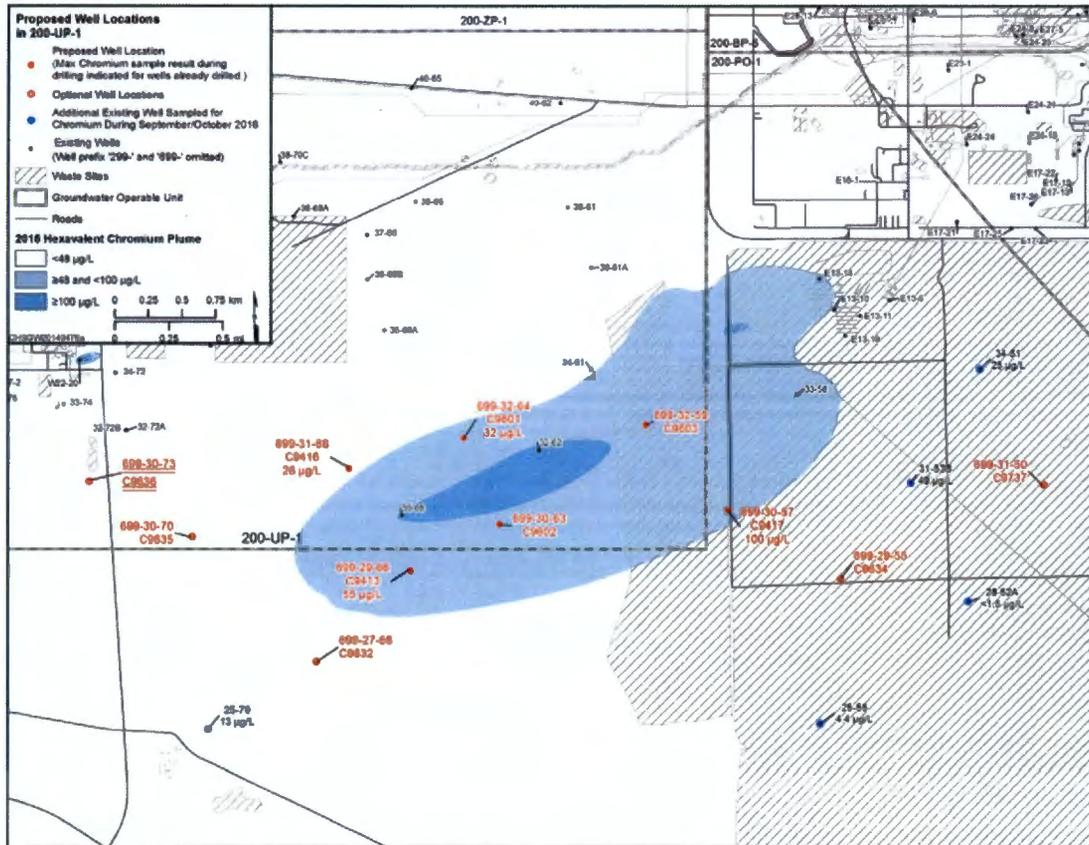


Figure 1-7. Planned Locations for the Southeast Chromium Plume Characterization Wells

Table 3-1. Planned Sampling during Drilling of 200-UP-1 Groundwater Wells

Well Name	Sample Matrix	Depth Below Water Table (Borehole Depth) (ft)	Allowable Variation on Depth	Analytes	Comment
	Water (PNNL research)	10 (343) 30 (363) 50 (383)	±5 ft	See Section 3.2.3	A single, 1 L unfiltered sample collected every 20 ft starting at 10 ft below the water table. If the lower mud unit is not encountered at the estimated depth, water samples will be collected every 20 ft until reaching the mud. Use a polyethylene container, no preservative, and cool to ≤4°C. Samples are to be delivered to the PNNL 331 Building.
<u>699-30-73 (C9636) Monitoring</u>	<u>Saturated Soil (CHPRC)</u>	<u>0 to 177 (220 to 397)</u>	<u>±1 ft</u>	<u>N/A</u>	<u>Grab samples from the drill cuttings at 5 ft intervals from 0 to 177 ft below the water table, composited into several samples for sieve analysis. Results will be used to select well screen slot size.</u>
	<u>Water (CHPRC)</u>	<u>10 (230) 30 (250) 50 (270) 70 (290) 90 (310) 110 (330) 130 (350) 150 (370) 170 (390)</u>	<u>±5 ft</u>	<u>Chromium (Total) Chromium (Hexavalent) Manganese Tritium DO Oxidation-Reduction Potential</u>	<u>Water samples to be collected every 20 ft starting at 10 ft below the water table. If the lower mud unit is not encountered at the estimated depth, water samples will be collected every 20 ft until reaching the mud. Filter the tritium sample, and collect filtered and unfiltered samples for the metals. Purge and pump samples required. Purge the borehole until field readings of DO stabilize at or above 7,000 µg/L and REDOX potential is at least 200 mV.</u>
	<u>Saturated Soil (CHPRC, PNNL research)</u>	<u>10 (226) 70 (286) 130 (346)</u>	<u>±5 ft</u>	<u>See Section 3.2.3</u>	<u>Split-spoon samples to be collected at the upper, middle, and lower part of the unconfined aquifer. Samples are to be delivered to the PNNL 331 Building. If samples cannot be delivered the day they are collected, the samples are to be cooled to ≤4°C until they are delivered.</u>

4 Management of Waste

Waste generated from well drilling, well construction, sampling activities, and well development (e.g., soil, water, and PPE) will be managed in accordance with DOE/RL-2016-13, *Waste Management Plan for the 200-UP-1 Groundwater Operable Unit*, as amended. The waste management plan (DOE/RL-2016-13) establishes the requirements for management and disposal of waste associated with groundwater wells in the 200-UP-1 OU. Waste from these sampling activities will be handled in accordance with CERCLA. Uncontaminated materials will be segregated to minimize radiological waste. Purgewater will be managed in accordance with DOE/RL-2009-80, *Investigation Derived Waste Purgewater Management Work Plan*, and DOE/RL-2011-41, *Hanford Site Strategy for Management of Investigation Derived Waste*.

Disposal of supplemental samples collected for other organizations (i.e., PNNL and 200-WA-1 OU) will be managed in accordance with applicable requirements of the *Code of Federal Regulations* and *Washington Administrative Code*, or as approved by EPA in accordance with applicable procedures and approved plans/documents.

Characterization needs for wastes generated as a result of drilling the U Plant area extraction wells are minimal. Both wells (299-W19-113 [C8927] and 299-W19-114 [C8928]) will not be located within waste sites or unplanned releases (UPRs), and both are located more than 100 m (328 ft) from any liquid waste disposal sites. Therefore, vadose zone soil cuttings are expected to be uncontaminated and will be placed on plastic sheeting for potential return to the environment after drilling is complete. Saturated zone sediments below the historic high water mark, and miscellaneous solid wastes (MSW) associated with these depths, will be segregated from vadose zone soil cuttings and containerized. One soil sample will be collected from each well, 1.5 m (5 ft) below the water table, and analyzed for carbon tetrachloride, trichloroethene, total chromium, hexavalent chromium, manganese, nitrate, uranium, gross alpha, gross beta, iodine-129, tritium, and technetium-99. The results will be used to generate a waste profile for disposing of these sediments and associated MSW at the Environmental Restoration Disposal Facility (ERDF).

Characterization needs for wastes generated as a result of drilling wells 299-E20-1 (C9482), 299-E20-2 (C9483), 299-E11-1 (C9484), 299-W19-115 (C9414), 299-W22-114 (C9411), 299-W21-3 (C9415), 299-W19-116 (C9412), 699-29-66 (C9413), 699-30-57 (C9417), 699-32-64 (C9601), 699-30-63 (C9602), 299-W19-123 (C9567), 299-W19-125 (C9594), 299-W19-126 (C9604), 699-36-63B (C9593), 699-32-59 (C9603), 699-31-68 (C9416), 699-31-50 (C9737), 699-27-68 (C9632), 699-29-55 (C9634), and 699-30-70 (C9635), and 699-30-73 (C9636) are minimal. Of these ~~2122~~ wells, 1415 are sufficiently distant from waste sites where vadose zone contamination is not expected, and vadose zone drill cuttings will be returned to the environment near the wells from which they are taken unless field readings indicate otherwise. These 1415 wells are 299-E20-1 (C9482), 299-E20-2 (C9483), 299-E11-1 (C9484), 299-W22-114 (C9411), 299-W21-3 (C9415), 299-W19-116 (C9412), 699-29-66 (C9413), 699-32-64 (C9601), 699-30-63 (C9602), 299-W19-125 (C9594), 699-36-63B (C9593), 699-31-68 (C9416), 699-27-68 (C9632), and 699-30-70 (C9635), and 699-30-73 (C9636).

Some waste control measures will be needed for the other 11 wells. Well 299-W19-115 (C9414) is located within the boundaries identified in the Waste Information Data System for a UPR site (UPR-200-W-19). This release originated at the 241-U-361 Settling Tank, approximately 77 m (250 ft) west of the proposed drilling location, and was originally limited to an area measuring approximately 12 by 12 m (39 by 39 ft). However, this has since expanded due to contamination detected in vegetation. Well 299-W19-126 (C9604) is located near the 216-U-15 Trench, which received waste liquid in 1957. It is also located near the UPR-200-W-19 unplanned release site and a pipeline (200-W-84-PL) for the U