TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 1106	TPA CHANGE NOTICE FORM	Date: June 14, 2021
Document Number, Title, and Revision: DOE/RL-2009-115, *Performance Monitoring Plan for the 200-ZP-1 Groundwater Operable Unit Remedial Action*, Revision 3		Date Document Last Issued: March 17, 2020
Approved Change Notices Against this Document: TPA-CN-1101, TPA-CN-1103		
Originator Mark E. Byrnes		Phone: 509 373-3996

Description of Change:
DOE/RL-2009-115, Revision 3, is revised to correct table numbers that were inadvertently changed in TPA-CN-1103.

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

The table numbers for Tables B-6, B-14, C-3, F-2, and G-4 are corrected. When TPA-CN-1103 was published the table numbers were printed incorrectly.

Additions are shown using double underline. Deletions are shown using ~~strikeout~~.

Note: Include affected page number(s): B-24, B-55, B-56, B-57, B-58, C-7, C-8, C-9, C-10, F-2, G-17

Justification and Impacts of Change:

In TPA-CN-1103, due to automatic table numbering issues, Table B-6 was incorrectly numbered B-1, Table B-14 was incorrectly numbered B-2 through B-3, Table C-3 was incorrectly numbered C-1 through C-4, Table F-2 was incorrectly numbered F-1, and Table G-4 was incorrectly numbered G-1. This TPA-CN corrects these errors.

Approvals:

Michael W. Cline Digitally signed by Michael W. Cline Date: 2021.06.14 13:58:03 -07'00'		[X] Approved [ ] Disapproved
DOE Project Manager	Date	
Digitally signed by GEOFF SCHRAMM Date: 2021.06.14 14:04:27 -07'00'		[X] Approved [ ] Disapproved
EPA Project Manager	Date	
N/A		[ ] Approved [ ] Disapproved
Ecology Project Manager	Date	

Table B-~~1~~6. Analytes for 200-ZP-1 OU Groundwater Monitoring

Constituent	CAS Number	Data Use
Total organic carbon	TOC	Evaluate natural attenuation, optimization study near-term monitoring
Vinyl chloride	75-01-4	Evaluate trichloroethene natural attenuation
Field Screening Parameters[b]		
Dissolved oxygen	N/A	Evaluate natural attenuation and well purge for sampling
Oxidation-reduction potential	N/A	Evaluate natural attenuation
pH	N/A	Evaluate well purge for sampling
Specific conductance	N/A	Evaluate well purge for sampling
Temperature	N/A	Evaluate well purge for sampling
Turbidity	N/A	Evaluate well purge for sampling

a. Collect filtered and unfiltered samples for metals except for hexavalent chromium. A filtered sample will be collected for hexavalent chromium. An unfiltered sample will be collected for total and free cyanide.

b. Field screening parameters to be collected in accordance with DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Document*, *Vol. 3, Field Analytical Technical Requirements*.

CAS = Chemical Abstracts Service
N/A = not applicable
OU = operable unit
P&T = pump and treat
TDS = total dissolved solids
TOC = total organic carbon
WMA = waste management area

B2 Quality Assurance Project Plan

A QAPjP establishes the quality requirements for environmental data collection. It includes planning; implementing; and assessing sampling tasks, field measurements, laboratory analysis, and data review. This section describes the applicable environmental data collection requirements and controls based on the QA elements found in EPA/240/B-01/003, *EPA Requirements for Quality Assurance Project Plans* (EPA QA/R-5); and DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Document* (HASQARD). Sections 6.5 and 7.8 of Ecology et al., 1989b, *Hanford Federal Facility Agreement and Consent Order Action Plan* (Tri-Party Agreement Action Plan), require that QA/quality control (QC) and sampling and analysis activities specify the QA requirements for treatment, storage, and disposal units, as well as for past-practice processes. This QAPjP also describes the applicable requirements and controls based on guidance found in Ecology Publication No. 04-03-030, *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies*; and EPA/240/R-02/009, *Guidance for Quality Assurance Project Plans* (EPA QA/G-5). This QAPjP is intended to supplement the contractor's environmental QA program plan.

This QAPjP is divided into the following four sections, which describe the quality requirements and controls applicable to Hanford Site OU groundwater monitoring activities:

- Section B2.1, Project Management
- Section B2.2, Data Generation and Acquisition

Table B-214. Sampling and Analysis Schedule for 200-ZP-1 Groundwater OU Well Network

Well Number	Well ID	Co-Sample	Hydrogeologic Unit	WAC Compliant	Carbon Tetrachloride	Total Chromium[a]	Hexavalent Chromium (Filtered) [a]	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)	Cyanide (free)	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Iron[a]	Manganese[a]	Nickel[a]	Alkalinity	Carbonate Content	Field Parameters
299-W5-2	C9439	—	LU	C/2015	A	A	A	A	A	A	A	A	5	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A
299-W6-3[b]	A4998	—	LU	N/1991	A	5	5	5	A/M[c]	2	A	5	5	A	A	A	5	—	A	A	A/M[c]	A/M[c]	5	5	A/M[c]	5	5	5	5	5	5	A/M[c]
299-W6-6	A5001	AEA, Ringold confined, SALDS	LU	N/1991	A	5	5	5	A	2	A	5	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A
299-W6-11[d]	A5436	AEA, SALDS	NS	C/1992	A	—	—	—	A	—	—	—	—	—	—	—	—	—	—	—	A	A	—	—	A	—	—	—	—	—	—	A
299-W6-12[d]	A6437	SALDS	NS	C/1992	—	—	—	—	A	—	—	—	—	—	—	—	—	—	—	—	A	A	—	—	A	—	—	—	—	—	—	A
299-W6-17	C9738	—	LU	C/2019	A	A	A	A	A	A	A	A	A	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A
299-W7-3[b]	A5009	AEA, Ringold confined, SALDS	LU	N/1987	A	5	5	5	A/SA[c]	5	A	5	5	A	A	A	5	—	A	A	A/SA[c]	A/SA[c]	5	5	A/SA[c]	5	5	5/SA[c]	5/SA[c]	5	5	A/SA[c]
299-W10-1	A7136	RCRA, WMA T	U	N/1947	2	2	2	5	—	5	2	—	—	2	2	2	5	—	2	2	2	—	5	5	2	5	2	5	2	5	5	2
299-W10-14	A4891	—	LU	N/1987	A	—	—	5	A	5	A	—	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	—	5	5	A
299-W10-26	B8548	RCRA, WMA TX-TY	TU	C/1998	—	M	M	—	—	M	—	—	—	—	—	—	M	M	—	—	—	—	—	—	—	—	—	—	—	—	—	M
299-W10-27	C3125	RCRA, WMA TX-TY	TU	C/2001	2	Q	Q	2	—	Q	2	—	—	2	2	2	Q	Q	2	2	2	—	5	5	2	5	5	5	—	5	5	Q
299-W10-29[d]	C4988	AEA and RCRA, LLWMA-3, LLWMA-4	NS	C/2006	SA	—	—	—	SA	—	—	—	—	—	—	—	—	—	—	—	SA	SA	—	—	SA	—	—	—	—	—	—	SA
299-W10-30[b]	C4989	AEA and RCRA, LLWMA-3	TU	C/2006	2/SA[c]	5	5	—	—/SA[c]	5	2	5	—	2	2	2	5	—	2	2	2/SA[c]	—/SA[c]	5	5	2/SA[c]	5	5	5	5	5	5	2/SA[c]
299-W10-31[b]	C5194	AEA and RCRA, LLWMA-3	TU	C/2006	A/Q[c]	5	5	5	2/Q[c]	5	A	5	—	A	A	A	5	—	A	A	A/Q[c]	2/Q[c]	5	5	A/Q[c]	5	5	5	5	5	5	A/Q[c]
299-W10-33	C5855	—	LU	C/2007	A	2	2	5	A	2	A	2	5	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A
299-W11-13	A5465	—	U	N/1961	2	—	—	—	—	—	2	2	—	2	2	2	A	A	2	2	2	—	5	5	2	5	5	5	—	5	5	A
299-W11-18[b]	A7284	—	TU	N/1967	A/Q[c]	2	2	—	A/Q[c]	5	A	2	—	A	A	A	5	—	A	A	A/Q[c]	A/Q[c]	5	5	A/Q[c]	5	2	5	2	5	5	A/Q[c]
299-W11-33Q	B2402	—	TU	N/1994	—	A	A	—	—	2	—	A	—	—	—	—	5	—	—	—	A	—	5	5	A	5	A	5	A	5	5	A
299-W11-41	C3119	RCRA, WMA T	TU	C/2000	—	A	A	—	—	A	—	—	—	—	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A
299-W11-43	C4694	—	LU	C/2005	A	2	2	2	A	2	A	2	5	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A
299-W11-45	C4948	RCRA, WMA T	UU	C/2005	A	—	—	—	—	A	A	2	5	A	A	A	5	—	A	A	A	—	5	5	A	5	5	5	—	5	5	A
299-W11-47	C4990	RCRA, WMA T	U	C/2006	2	—	—	—	2	2	2	2	—	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	—	5	5	2
299-W11-48	C5243	—	LU	C/2006	A	2	2	—	A	2	A	2	—	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A
299-W11-87	C5407	—	LU	C/2007	A	2	2	5	—	—	A	2	—	A	A	A	5	—	A	A	A	—	5	5	A	5	2	5	2	5	5	A
299-W11-88	C5572	AEA, Ringold confined	LU	C/2007	A	2	2	2	A	5	A	2	5	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A
299-W13-1	C4238	—	MU	C/2004	2	5	5	—	—	5	2	5	—	2	2	2	5	—	2	2	2	—	5	5	—	5	5	5	5	5	5	2
299-W13-2	C9440	—	LU	C/2015	A	A	A	A	A	A	A	A	5	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A
299-W14-11	C4668	RCRA, WMA TX-TY	UU	C/2005	A	Q	Q	—	—	Q	A	2	—	A	A	A	Q	Q	A	A	A	—	5	5	A	5	5	5	—	5	5	Q

Table B-214. Sampling and Analysis Schedule for 200-ZP-1 Groundwater OU Well Network

Well Number	Well ID	Co-Sample	Hydrogeologic Unit	WAC Compliant	Carbon Tetrachloride	Total Chromium[a]	Hexavalent Chromium (Filtered) [a]	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)	Cyanide (free)	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Iron[a]	Manganese[a]	Nickel[a]	Alkalinity	Carbonate Content	Field Parameters
299-W14-13	B8549	WDOH and RCRA, WMA TX-TY	TU	C/1998	2	Q	Q	2	2	Q	2	—	—	2	2	2	Q	Q	2	2	A	2	5	5	A	5	2	5	2	5	5	Q
299-W14-14	B8547	RCRA, WMA TX-TY	TU	C/1998	—	2	2	—	—	—	—	2	—	—	—	—	5	—	—	—	2	—	5	5	2	5	2	5	2	5	5	2
299-W14-16	C3120	AEA, RCRA, WMA T	TU	C/2000	—	A	A	—	—	A	—	—	—	—	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A
299-W14-18	C3396	RCRA, WMA TX-TY	TU	C/2001	—	M	M	—	—	M	—	—	—	—	—	—	M	M	—	—	—	—	—	—	—	—	—	—	—	—	—	M

Table B-314. Sampling and Analysis Schedule for 200-ZP-1 Groundwater OU Well Network

Well Number	Well ID	Co-Sample	Hydrogeologic Unit	WAC Compliant	Carbon Tetrachloride	Total Chromium[a]	Hexavalent Chromium (Filtered) [a]	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)	Cyanide (free)	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Iron[a]	Manganese[a]	Nickel[a]	Alkalinity	Carbonate Content	Field Parameters
299-W14-71	C5102	—	LU	C/2006	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W14-72	C5103	—	LU	C/2006	A	—	—	5	—	5	A	5	5	A	A	A	5	—	A	A	A	—	5	5	A	5	5	5	—	5	5	A
299-W15-7	A5476	—	TU	N/1966	A	—	—	5	A	5	A	—	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	—	5	5	A
299-W15-11[b]	A5474	—	TU	N/1968	A/Q[c]	5	5	5	A/Q[c]	A	A	—	5	A	A	A	5	—	A	A	A/Q[c]	A/Q[c]	5	5	A/Q[c]	5	5	5	5	5	5	A/Q[c]
299-W15-17[b]	A4921	AEA and RCRA, LLWMA-4	LU	C/1987	A	—	—	5	A/Q[c]	5	A	5	5	A	A	A	5	—	A	A	A/Q[c]	A/Q[c]	5	5	A/Q[c]	5	5	5	—	5	5	A/Q[c]
299-W15-30[d]	B2410	AEA and RCRA, LLWMA-4	NS	C/2006	SA	—	—	—	SA	—	—	—	—	—	—	—	—	—	—	—	SA	SA	—	—	SA	—	—	—	—	—	—	SA
299-W15-33	B2643	—	UU	C/1995	2	5	5	—	2	2	2	5	5	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2
299-W15-37	B2753	200-UP-1	UU	C/1996	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W15-42	C3803	—	UU	C/2002	A	5	5	2	A	2	A	—	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A
299-W15-46	C3426	—	UU	C/2003	—	5	5	—	2	2	—	5	—	—	—	—	5	—	—	—	—	—	5	5	2	5	5	5	5	5	5	2
299-W15-49[b]	C4301	—	UU	C/2004	—/Q[c]	-	—	—	2/Q[c]	—	—	5	—	—	—	—	5	—	—	—	2/Q[c]	2/Q[c]	5	5	2/Q[c]	5	5	5	—	5	5	2/Q[c]
299-W15-50	C4302	—	MU	C/2005	A	5	5	5	—	—	A	5	—	A	A	A	5	—	A	A	A	—	5	5	A	5	5	5	5	5	5	A
299-W15-83[b]	C4683	AEA and RCRA, LLWMA-4	TU	C/2005	2/SA[c]	5	5	—	—/SA[c]	5	2	5	—	2	2	2	5	—	2	2	2/SA[c]	—/SA[c]	5	5	2/SA[c]	5	5	5/SA[c]	5/SA[c]	5	5	2/SA[c]
299-W15-94[b]	C4684	AEA and RCRA, LLWMA-4	TU	C/2005	2	5	5	—	—/Q[c]	5	2	5	5	2	2	2	5	—	2	2	2/Q[c]	—/Q[c]	5	5	2/Q[c]	5	5	5	5	5	5	2/Q[c]
299-W15-152[b]	C4685	AEA and RCRA, LLWMA-4	TU	C/2005	2/Q[c]	5	5	—	2/Q[c]	5	2	5	—	2	2	2	5	—	2	2	2/Q[c]	2/Q[c]	5	5	2/Q[c]	5	5	5/Q[c]	5/Q[c]	5	5	2/Q[c]
299-W15-224[d]	C4986	AEA and RCRA, LLWMA-3	NS	C/2006	SA	—	—	—	SA	—	—	—	—	—	—	—	—	—	—	—	SA	SA	—	—	SA	—	—	—	—	—	—	SA
299-W15-763	C3339	RCRA, WMA TX-TY	TU	C/2001	A	—	—	5	A	A	A	2	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	—	5	5	A
299-W15-765	C3397	RCRA, WMA TX-TY	TU	C/2001	2	—	—	—	2	A	2	2	—	2	2	2	5	—	2	2	2	2	5	5	A	5	5	5	—	5	5	A
299-W18-1	A5481	—	U	N/1959	A	5	5	A	A	A	A	5	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A
299-W18-15	A4932	200-UP-1	TU	N/1980	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W18-16	C4303	—	TU	C/2004	2	5	5	5	2	2	2	5	-	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2
299-W18-21[b]	A4933	AEA and RCRA, LLWMA-4, 200-UP-1	TU	C/1987	A/M[c]	—	—	—	—/M[c]	—	A	—	—	A	A	A	—	—	A	A	—/M[c]	—/M[c]	—/M[c]	—	—	—	—	—/M[c]	—/M[c]	—	—	A/M[c]
299-W18-22[b]	A4934	AEA and RCRA, LLWMA-4, 200-UP-1	LU	C/1987	A/M[c]	—	—	—	—/M[c]	—	A	—	—	A	A	A	—	—	A	A	—/M[c]	—/M[c]	—/M[c]	—	—	—	—	—/M[c]	—/M[c]	—	—	A/M[c]
299-W18-40	C3395	AEA and RCRA, WMA U	TU	C/2001	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-4	A4958	200-UP-1	U	N/1960	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-6	A4959	—	MU	N/1968	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-18	A7743	200-UP-1	TU	N/1985	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-34A	A9517	200-UP-1	MU	C/1994	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A

Table B-314. Sampling and Analysis Schedule for 200-ZP-1 Groundwater OU Well Network

Well Number	Well ID	Co-Sample	Hydrogeologic Unit	WAC Compliant	Carbon Tetrachloride	Total Chromium[a]	Hexavalent Chromium (Filtered) [a]	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)	Cyanide (free)	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Iron[a]	Manganese[a]	Nickel[a]	Alkalinity	Carbonate Content	Field Parameters
299-W19-34B	A9513	—	MU	C/1994	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-36	B2461	200-UP-1	UU	C/1995	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-41	B8551	AEA and RCRA, WMA U	TU	C/1998	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-47	C4258	AEA and RCRA, WMA U	TU	C/2004	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-48	C4300	200-UP-1	UU	C/2004	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-49	C4695	200-UP-1	TU	C/2005	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-105	C4968	200-UP-1	TU	C/2005	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W19-107	C5193	200-UP-1	UU	C/2006	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W21-2	C4639	200-UP-1	TU	C/2004	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W22-47	C4667	AEA, WMA S-SX	UU	C/2005	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W22-72	C4970	AEA, WMA S-SX, 200-UP-1	TU	C/2006	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W22-86	C4971	AEA, WMA S-SX, 200-UP-1	TU	C/2006	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W22-87	C4977	200-UP-1	TU	C/2005	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W22-88	C4978	200-UP-1	TU	C/2008	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W23-4	A4987	200-UP-1	U	N/1957	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W23-19	B8809	AEA, WMA S-SX	TU	C/1999	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W26-13	B8817	RCRA, S-10, 200-UP-1	TU	C/1999	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
299-W27-2	A5410	RCRA, S-10	LU	C/1992	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-30-66	C4298	200-UP-1	LU	C/2004	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-32-62	A5128	200-UP-1	TU	N/1960	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-32-72A	A5130	200-UP-1	U	N/1957	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-33-75	C4974	RCRA, S-10, 200-UP-1	TU	C/2008	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-34-61	A5463	200-UP-1	TU	C/1993	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-35-66A	A5139	200-UP-1, ERDF	TU	N/1957	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-35-78A	A5141	200-UP-1	TU	N/1950	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-36-61A	A5144	—	TU	N/1948	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-36-66B	C6219	ERDF, 200-UP-1	TU	C/2007	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-36-70A	A9901	ERDF, WDOH, 200-UP-1	TU	C/1994	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-36-70B	C4299	200-UP-1	TU	C/2004	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A
699-37-66	C5704	ERDF, 200-UP-1	TU	C/2007	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A

Table B-414. Sampling and Analysis Schedule for 200-ZP-1 Groundwater OU Well Network

Well Number	Well ID	Co-Sample	Hydrogeologic Unit	WAC Compliant	Carbon Tetrachloride	Total Chromiuma	Hexavalent Chromium (Filtered) a	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)a	Cyanide (free)a	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Irona	Manganesea	Nickela	Alkalinity	Carbonate Content	Field Parameters
699-38-61	A5464	200-UP-1	TU	C/1993	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	A
699-38-65	A5148	200-UP-1	TU	N/1959	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	A
699-38-68A	A9516	200-UP-1	TU	C/1994	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	A
699-38-70B	C4236	200-UP-1	MU	C/2004	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	A
699-38-70C	C4256	200-UP-1	LU	C/2004	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	A
699-40-62	A5158	200-UP-1	TU	N/1949	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	A
699-40-65	C4235	200-UP-1	TU	C/2004	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	A
699-43-69	C5573	AEA, Ringold confined	CR	C/2007	A	2	2	5	A	5	A	5	5	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A
699-44-64	A5188	—	TU	N/1960	2	5	5	5	2	2	2	5	5	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2
699-44-70B	C9740	—	CR	C/2019	A	A	A	A	A	A	A	A	A	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A
699-45-69A	A5196	—	TU	N/1948	2	—	—	—	—	5	2	5	—	2	2	2	5	—	2	2	2	—	5	5	2	5	5	5	—	5	5	2
699-45-69C	C5574	AEA, Ringold confined	MU	C/2007	A	5	5	5	A	5	A	5	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A
699-46-61	C9936	—	LU	C/2019	A	A	A	A	A	A	A	A	A	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A
699-47-60	A5202	200-BP-5, AEA, Ringold confined	TU	N/1948	2	5	5	5	2	5	2	5	—	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2
699-48-71	A5214	SALDS	TU	N/1956	A	2	2	2	—	2	A	A	—	A	A	A	5	—	A	A	A	—	5	5	A	5	2	5	2	5	5	A
699-50-74	C4697	—	TU	C/2005	A	5	5	5	A	5	A	5	—	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A
699-51-63	A5231	—	TU	N/1956	2	5	5	5	2	5	2	5	5	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2

Notes:

Field parameters include temperature, dissolved oxygen, pH, turbidity, and oxidation-reduction measurements.

Sampling frequency:

2 = sample biennially (every 2 years, as recommended by SGW-60527, *CR-2016-1543 – Redundancy Analysis for the 200-ZP-1 Groundwater Monitoring Network*)

5 = sample every 5 years (to coincide with preparation of the next *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* 5-year review)

A = sample annually

M = sample monthly

Q = sample quarterly

SA = sample semiannually

a. Collect filtered and unfiltered samples for metals, except for hexavalent chromium. A filtered sample will be collected for hexavalent chromium. An unfiltered sample will be collected for total and free cyanide.

b. Well to be sampled as part of 200-ZP-1 OU optimization study near-term monitoring (FY 2020).

c. Second frequency listed is applicable to 200-ZP-1 OU optimization study near-term monitoring (FY 2020). The first frequency listed applies to the 200-ZP-1 OU monitoring program.

d. Well added for 200-ZP-1 OU optimization study near-term monitoring (FY 2020) and is not considered part of the 200-ZP-1 OU contaminant monitoring well network.

Table C-13. 200-ZP-1 OU Monitoring Well Schedule for Analyses

Well Name	Well ID	Carbon Tetrachloride	Total Chromium[a]	Hexavalent Chromium (Filtered)	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)[a]	Cyanide (free)[a]	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Iron[a]	Manganese[a]	Nickel[a]	Alkalinity	Carbonate Content	Temperature	pH	Specific Conductance	Turbidity	Dissolved Oxygen	Redox Potential
299-W5-2	C9439	A	A	A	A	A	A	A	A	5	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A	A	A	A	A	A
299-W6-3[b]	A4998	A	5	5	5	A/M[c]	2	A	5	5	A	A	A	5	—	A	A	A/M[c]	A/M[c]	5	5	A/M[c]	5	5	5	5	5	5	A/M[c]	A/M[c]	A/M[c]	A/M[c]	A/M[c]	A/M[c]
299-W6-6	A5001	A	5	5	5	A	2	A	5	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A	A	A	A	A	A
299-W6-11[d]	A5436	A	—	—	—	A	—	—	—	—	—	—	—	—	—	—	—	A	A	—	—	A	—	—	—	—	—	—	A	A	A	A	A	A
299-W6-12[d]	A5437	—	—	—	—	A	—	—	—	—	—	—	—	—	—	—	—	A	A	—	—	A	—	—	—	—	—	—	A	A	A	A	A	A
299-W6-17	C9738	A	A	A	A	A	A	A	A	A	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A	A	A	A	A	A
299-W7-3[b]	A5009	A	5	5	5	A/SA[c]	5	A	5	5	A	A	A	5	—	A	A	A/SA[c]	A/SA[c]	5	5	A/SA[c]	5	5	5	5	5	5	A/SA[c]	A/SA[c]	A/SA[c]	A/SA[c]	A/SA[c]	A/SA[c]
299-W10-1	A7136	2	2	2	5	—	5	2	—	—	2	2	2	5	—	2	2	2	—	5	5	2	5	2	5	2	5	5	2	2	2	2	2	2
299-W10-14	A4891	A	—	—	5	A	5	A	—	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	—	5	5	A	A	A	A	A	A
299-W10-26	B8548	—	M	M	—	—	M	—	—	—	—	—	—	M	M	—	—	—	—	—	—	—	—	—	—	—	—	—	M	M	M	M	M	M
299-W10-27	C3125	2	Q	Q	2	—	Q	2	—	—	2	2	2	Q	Q	2	2	2	—	5	5	2	5	5	5	—	5	5	Q	Q	Q	Q	Q	Q
299-W10-29[d]	C4988	SA	—	—	—	SA	—	—	—	—	—	—	—	—	—	—	—	SA	SA	—	—	SA	—	—	—	—	—	—	SA	SA	SA	SA	SA	SA
299-W10-30[b]	C4989	2/SA[c]	5	5	—	—/SA[c]	5	2	5	—	2	2	2	5	—	2	2	2/SA[c]	—/SA[c]	5	5	2/SA[c]	5	5	5	5	5	5	2/SA[c]	2/SA[c]	2/SA[c]	2/SA[c]	2/SA[c]	2/SA[c]
299-W10-31[b]	C5194	A/Q[c]	5	5	5	2/Q[c]	5	A	5	—	A	A	A	5	—	A	A	A/Q[c]	2/Q[c]	5	5	A/Q[c]	5	5	5	5	5	5	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]
299-W10-33	C5855	A	2	2	5	A	2	A	2	5	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A	A	A	A	A	A
299-W11-13	A5465	2	—	—	—	—	—	2	2	—	2	2	2	A	A	2	2	2	—	5	5	2	5	5	5	—	5	5	A	A	A	A	A	2
299-W11-18[b]	A7284	A/Q[c]	2	2	—	A/Q[c]	5	A	2	—	A	A	A	5	—	A	A	A/Q[c]	A/Q[c]	5	5	A/Q[c]	5	2	5	2	5	5	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]
299-W11-33Q	B2402	—	A	A	—	—	2	—	A	—	—	—	—	5	—	—	—	A	—	5	5	A	5	A	5	A	5	5	A	A	A	A	A	A
299-W11-41	C3119	—	A	A	—	—	A	—	—	—	—	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W11-43	C4694	A	2	2	2	A	2	A	2	5	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A	A	A	A	A	A
299-W11-45	C4948	A	—	—	—	—	A	A	2	5	A	A	A	5	—	A	A	A	—	5	5	A	5	5	5	—	5	5	A	A	A	A	A	A
299-W11-47	C4990	2	—	—	—	2	2	2	2	—	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	—	5	5	2	2	2	2	2	2
299-W11-48	C5243	A	2	2	—	A	2	A	2	—	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A	A	A	A	A	A
299-W11-87	C5407	A	2	2	5	—	—	A	2	—	A	A	A	5	—	A	A	A	—	5	5	A	5	2	5	2	5	5	A	A	A	A	A	A
299-W11-88	C5572	A	2	2	2	A	5	A	2	5	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A	A	A	A	A	A
299-W13-1	C4238	2	5	5	—	—	5	2	5	—	2	2	2	5	—	2	2	2	—	5	5	2	5	5	5	5	5	5	2	2	2	2	2	2
299-W13-2	C9440	A	A	A	A	A	A	A	A	5	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A	A	A	A	A	A
299-W14-11	C4668	A	Q	Q	—	—	Q	A	2	—	A	A	A	Q	Q	A	A	A	—	5	5	A	5	5	5	—	5	5	Q	Q	Q	Q	Q	Q
299-W14-13	B8549	2	Q	Q	2	2	Q	2	—	—	2	2	2	Q	Q	2	2	A	2	5	5	A	5	2	5	2	5	5	Q	Q	Q	Q	Q	Q
299-W14-14	C8547	—	2	2	—	—	—	—	2	—	—	—	—	5	—	—	—	2	—	5	5	2	5	2	5	2	5	5	2	2	2	2	2	2

Table C-13. 200-ZP-1 OU Monitoring Well Schedule for Analyses

Well Name	Well ID	Carbon Tetrachloride	Total Chromium[a]	Hexavalent Chromium (Filtered)	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)[a]	Cyanide (free)[a]	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Iron[a]	Manganese[a]	Nickel[a]	Alkalinity	Carbonate Content	Temperature	pH	Specific Conductance	Turbidity	Dissolved Oxygen	Redox Potential
299-W14-16	C3120	—	M	M	—	—	M	—	—	—	—	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W14-18	C3396	—	M	M	—	—	M	—	—	—	—	—	—	M	M	—	—	—	—	—	—	—	—	—	—	—	—	—	M	M	M	M	M	M
299-W14-72	C5103	A	—	—	5	—	5	A	5	5	A	A	A	5	—	A	A	A	—	5	5	A	5	5	5	—	5	5	A	A	A	A	A	A
299-W15-11[b]	A5474	A/Q[c]	5	5	5	A/Q[c]	A	A	—	5	A	A	A	5	—	A	A	A/Q[c]	A/Q[c]	5	5	A/Q[c]	5	5	5	5	5	5	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]
299-W15-7	A5476	A	—	—	5	A	5	A	—	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	—	5	5	A	A	A	A	A	A
299-W15-17[b]	A4921	A	—	—	5	A/Q[c]	5	A	5	5	A	A	A	5	—	A	A	A/Q[c]	A/Q[c]	5	5	A/Q[c]	5	5	5	—	5	5	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]	A/Q[c]

Table C-23. 200-ZP-1 OU Monitoring Well Schedule for Analyses

Well Name	Well ID	Carbon Tetrachloride	Total Chromium[a]	Hexavalent Chromium (Filtered)	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)	Cyanide (free)	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Iron[a]	Manganese[a]	Nickel[a]	Alkalinity	Carbonate Content	Temperature	pH	Specific Conductance	Turbidity	Dissolved Oxygen	Redox Potential
299-W15-30[d]	B2410	SA	—	—	—	SA	—	—	—	—	—	—	—	—	—	—	—	SA	SA	—	—	SA	—	—	—	—	—	—	SA	SA	SA	SA	SA	SA
299-W15-33	B2643	2	5	5	—	2	2	2	5	5	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2	2	2	2	2	2
299-W15-42	C3803	A	5	5	2	A	2	A	—	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A	A	A	A	A	A
299-W15-46	C3426	—	5	5	—	2	2	—	5	—	—	—	—	5	—	—	—	2	2	5	5	2	5	5	5	5	5	5	2	2	2	2	2	2
299-W15-49[b]	C4301	—/Q[c]	—	—	—	2/Q[c]	—	—	5	—	—	—	—	5	—	—	—	2/Q[c]	2/Q[c]	5	5	2/Q[c]	5	5	5	—	5	5	2/Q[c]	2/Q[c]	2/Q[c]	2/Q[c]	2/Q[c]	2/Q[c]
299-W15-50	C4302	A	5	5	5	—	—	A	5	—	A	A	A	5	—	A	A	A	—	5	5	A	5	5	5	5	5	5	A	A	A	A	A	A
299-W15-83[b]	C4683	2/SA[c]	5	5	—	—/SA[c]	5	2	5	—	2	2	2	5	—	2	2	2/SA[c]	—/SA[c]	5	5	2/SA[c]	5	5	5/SA[c]	5/SA[c]	5	5	2/SA[c]	2/SA[c]	2/SA[c]	2/SA[c]	2/SA[c]	2/SA[c]
299-W15-94[b]	C4684	2	5	5	—	—/Q[c]	5	2	5	5	2	2	2	5	—	2	2	2/Q[c]	—/Q[c]	5	5	2/Q[c]	5	5	5	5	5	5	2/Q[c]	2/Q[c]	2/Q[c]	2/Q[c]	2/Q[c]	2/Q[c]
299-W15-152[b]	C4685	2	5	5	—	2/Q[c]	5	2	5	—	2	2	2	5	—	2	2	2/Q[c]	2/Q[c]	5	5	2/Q[c]	5	5	5/Q[c]	5/Q[c]	5	5	2/Q[c]	2/Q[c]	2/Q[c]	2/Q[c]	2/Q[c]	2/Q[c]
299-W15-224[d]	C4986	SA	—	—	—	SA	—	—	—	—	—	—	—	—	—	—	—	SA	SA	—	—	SA	—	—	—	—	—	—	SA	SA	SA	SA	SA	SA
299-W15-763	C3339	A	—	—	5	A	A	A	2	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	—	5	5	A	A	A	A	A	A
299-W15-765	C3397	2	—	—	—	2	A	2	2	—	2	2	2	5	—	2	2	2	2	5	5	A	5	5	5	—	5	5	A	A	A	A	A	A
299-W18-1	A5481	A	5	5	A	A	A	A	5	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A	A	A	A	A	A
299-W18-16	C4303	2	5	5	5	2	2	2	5	—	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2	2	2	2	2	2
699-43-69	C5573	A	2	2	5	A	5	A	5	5	A	A	A	5	—	A	A	A	A	5	5	A	5	2	5	2	5	5	A	A	A	A	A	A
699-44-64	A5188	2	5	5	5	2	2	2	5	5	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2	2	2	2	2	2
699-44-70B	C9740	A	A	A	A	A	A	A	A	A	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A	A	A	A	A	A
699-45-69A	A5196	2	—	—	—	—	5	2	5	—	2	2	2	5	—	2	2	2	—	5	5	2	5	5	5	—	5	5	2	2	2	2	2	2
699-45-69C	C5574	A	5	5	5	A	5	A	5	5	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A	A	A	A	A	A
699-46-61	C9936	A	A	A	A	A	A	A	A	A	A	A	A	5	—	A	A	A	A	5	5	A	5	A	5	A	5	5	A	A	A	A	A	A
699-47-60	A5202	2	5	5	5	2	5	2	5	—	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2	2	2	2	2	2
699-48-71	A5214	A	2	2	2	—	2	A	A	—	A	A	A	5	—	A	A	A	—	5	5	A	5	2	5	2	5	5	A	A	A	A	A	A
699-50-74	C4697	A	5	5	5	A	5	A	5	—	A	A	A	5	—	A	A	A	A	5	5	A	5	5	5	5	5	5	A	A	A	A	A	A
699-51-63	A5231	2	5	5	5	2	5	2	5	—	2	2	2	5	—	2	2	2	2	5	5	2	5	5	5	5	5	5	2	2	2	2	2	2
200-ZP-1 OU VOC Wells in the 200-UP-1 OU																																		
299-W14-71	C5102	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W15-37	B2753	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W18-15	A4932	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W18-21[b]	A4933	A/M[c]	—	—	—	—/M[c]	—	A	—	—	A	A	A	—	—	A	A	—/M[c]	—/M[c]	—/M[c]	—	—/M[c]	—	—	—	—/M[c]	—/M[c]	—	A/M[c]	A/M[c]	A/M[c]	A/M[c]	A/M[c]	A/M[c]
299-W18-22[b]	A4934	A/M[c]	—	—	—	—/M[c]	—	A	—	—	A	A	A	—	—	A	A	—/M[c]	—/M[c]	—/M[c]	—	—/M[c]	—	—	—	—/M[c]	—/M[c]	—	A/M[c]	A/M[c]	A/M[c]	A/M[c]	A/M[c]	A/M[c]
299-W18-40	C3395	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A

Table C-3. 200-ZP-1 OU Monitoring Well Schedule for Analyses

Well Name	Well ID	Carbon Tetrachloride	Total Chromium[a]	Hexavalent Chromium (Filtered)	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)	Cyanide (free)	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Iron[a]	Manganese[a]	Nickel[a]	Alkalinity	Carbonate Content	Temperature	pH	Specific Conductance	Turbidity	Dissolved Oxygen	Redox Potential
299-W19-4	A4958	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-6	A4959	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-18	A7743	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-34A	A9517	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-34B	A9513	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-36	B2461	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-41	B8551	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-47	C4258	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-48	C4300	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-49	C4695	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-105	C4968	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W19-107	C5193	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W21-2	C4639	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W22-47	C4667	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W22-72	C4970	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W22-86	C4971	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W22-87	C4977	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W22-88	C4978	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W23-4	A4987	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W23-19	B8809	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W26-13	B8817	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
299-W27-2	A5410	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-30-66	C4298	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-32-62	A5128	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-32-72A	A5130	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-33-75	C4974	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-34-61	A5463	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-35-66A	A5139	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-35-78A	A5141	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-36-61A	A5144	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-36-66B	C6219	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-36-70A	A9901	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A

Table C-43. 200-ZP-1 OU Monitoring Well Schedule for Analyses

Well Name	Well ID	Carbon Tetrachloride	Total Chromium[a]	Hexavalent Chromium (Filtered)	Iodine-129	Nitrate	Technetium-99	Trichloroethene	Tritium	Uranium	Chloroform	Dichloromethane	Chloromethane	Cyanide (total)	Cyanide (free)	cis-1,2-Dichloroethene	Vinyl Chloride	Chloride	Nitrite	Total Organic Carbon	Total Dissolved Solids	Sulfate	Sulfide	Iron[a]	Manganese[a]	Nickel[a]	Alkalinity	Carbonate Content	Temperature	pH	Specific Conductance	Turbidity	Dissolved Oxygen	Redox Potential
699-36-70B	C4299	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-37-66	C5704	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-38-61	A5464	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-38-65	A5148	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-38-68A	A9516	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-38-70B	C4236	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-38-70C	C4256	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-40-62	A5158	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A
699-40-65	C4235	A	—	—	—	—	—	A	—	—	A	A	A	—	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	A	A	A	A	A

Note:

Sampling frequency:

2 = sample biennially (every 2 years, as recommended by SGW-60527, *CR-2016-1543 – Redundancy Analysis for the 200-ZP-1 Groundwater Monitoring Network*)

5 = sample every 5 years (to coincide with preparation of the next *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* 5-year review)

A = sample annually

M = sample monthly

Q = sample quarterly

SA = sample semiannually

a. Collect filtered and unfiltered samples for metals, except for hexavalent chromium. A filtered sample will be collected for hexavalent chromium. An unfiltered sample will be collected for total and free cyanide.

b. Well to be sampled as part of the 200-ZP-1 OU optimization study near-term monitoring (FY 2020).

c. Second frequency listed is applicable to the 200-ZP-1 OU optimization study near-term monitoring (FY 2020). The first frequency listed applied to the 200-ZP-1 Groundwater OU monitoring program.

d. Well added for the 200-ZP-1 OU optimization study near-term monitoring (FY 2020).

— = not sampled

FY = fiscal year

ID = identification

OU = operable unit

redox = reduction-oxidation

VOC = volatile organic compound

Table F-~~1~~2. Hydrogeologic Monitoring Unit Classification and Well Network Details

Well Name	Well ID	Hydrogeologic Unit Monitored	Elevation Top of Open Interval (m NAVD88)	Elevation Bottom of Open Interval (m NAVD88)	Open Interval Length (m)
299-W5-2	C9439	LU	111.7	87.4	12.2
299-W6-3	A4998	LU	89.5	86.4	3.1
299-W6-6	A5001	LU	89.9	86.6	3.3
299-W6-17	C9738	LU	92.2	86.1	6.1
299-W7-3	A5009	LU	70.3	61.9	8.4
299-W10-1	A7136	U	149.5	125.2	14.3
299-W10-14	A4891	LU	84.1	78.0	6.1
299-W10-26	B8548	TU	139.3	128.6	10.7
299-W10-27	C3125	TU	138.3	127.6	10.7
299-W10-30	C4989	TU	137.8	127.1	10.7
299-W10-31	C5194	TU	137.3	126.6	10.7
299-W10-33	C5855	LU	87.1	81.0	6.1
299-W11-13	A5465	U	145.5	68.4	77.1
299-W11-18	A7284	TU	147.3	126.6	20.7
299-W11-33Q	B2402	TU	142.8	126.1	16.5
299-W11-41	C3119	TU	138.5	127.8	10.7
299-W11-43	C4694	LU	88.1	83.5	4.6
299-W11-45	C4948	UU	127.9	123.4	4.5
299-W11-47	C4990	U	126.8	117.5	9.3
299-W11-48	C5243	LU	125.1	97.7	27.4
299-W11-87	C5407	LU	107.3	102.7	4.6
299-W11-88	C5572	LU	86.2	74.0	12.2
299-W13-1	C4238	MU	104.4	93.7	10.7
299-W13-2	C9440	LU	128.4	104.3	12.2
299-W14-11	C4668	UU	125.3	122.3	3.0
299-W14-13	B8549	TU	138.7	128.7	10.0
299-W14-14	B8547	TU	139.3	128.6	10.7
299-W14-16	C3120	TU	138.1	127.5	10.7
299-W14-18	C3396	TU	138.6	127.9	10.7
299-W14-71	C5102	LU	94.2	89.7	4.5

Table F-~~1~~2. Hydrogeologic Monitoring Unit Classification and Well Network Details

Well Name	Well ID	Hydrogeologic Unit Monitored	Elevation Top of Open Interval (m NAVD88)	Elevation Bottom of Open Interval (m NAVD88)	Open Interval Length (m)
299-W14-72	C5103	LU	90.2	85.6	4.6
299-W15-7	A5476	TU	148.8	97.6	51.2
299-W15-11	A5474	TU	152.5	117.8	34.7
299-W15-17	A4921	LU	81.0	78.0	3.0

Table G-~~1~~4. Constituents of Interest in Groundwater and Sediments During Drilling and in Groundwater Post-Development

Constituent of Interest	CAS Number
cis-1,2-Dichloromethene	156-59-2
Cyanide (total)[b]	57-12-5
Cyanide (free)[be]	FREE-CN
Dichloromethane	75-09-2
Iodine-129[a]	15046-84-1
Iron[b]	7439-89-6
Manganese[b]	7439-96-5
Nickel[b]	7440-02-0
Nitrate[a]	14797-55-8
Nitrite	14797-65-0
Sulfate	14808-79-8
Sulfide	18496-25-8
Technetium-99[a]	14133-76-7
Total dissolved solids	TDS
Total organic carbon	TOC
Trichloroethene[a]	79-01-6
Tritium[a]	10028-17-8
Uranium, total[c, b]	7440-61-1
Vinyl chloride	75-01-4
Field Screening Parameters[d]	
Dissolved oxygen	N/A
Oxidation-reduction potential	N/A
pH	N/A
Specific conductance	N/A
Temperature	N/A
Turbidity	N/A

a. The COCs are specified in EPA et al., 2008, *Record of Decision Hanford 200 Area 200-ZP-1 Superfund Site, Benton County, Washington*.

b. Both filtered and unfiltered samples will be collected for all metal constituents, except hexavalent chromium. A filtered sample will be collected for hexavalent chromium. An unfiltered sample will be collected for total and free cyanide.

c. Uranium (total) will also be analyzed as a target constituent. While not a COC specified in the 200-ZP-1 OU Record of Decision (EPA et al., 2008), it is a COC for the 200-UP-1 OU to the south.

d. Field screening parameters to be collected in accordance with DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Document, Vol. 3, Field Analytical Technical Requirements*.

e. Free cyanide analysis is only applicable to groundwater samples.

Table G-~~1~~4. Constituents of Interest in Groundwater and Sediments During Drilling and in Groundwater Post-Development

Constituent of Interest	CAS Number

BART = biological activity reaction tests
CAS = Chemical Abstracts Service
COC = contaminant of concern
N/A = not applicable
OU = operable unit
TDS = total dissolved solids
TOC = total organic carbon