TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 1101	TPA CHANGE NOTICE FORM	Date: September 29, 2020
Document Number, Title, and Revision: DOE/RL-2009-115, *Performance Monitoring Plan for the 200-ZP-1 Groundwater Operable Unit Remedial Action*, Rev. 3		Date Document Last Issued: March 17, 2020
Approved Change Notices Against this Document: N/A		
Originator Mark E. Byrnes		Phone: 509 373-3996

Description of Change:
DOE/RL-2009-115, Rev. 3 is revised to add Appendix H, *Fiscal Year 2021 Sampling for the 200-ZP-1 Operable Unit Optimization Study*. Appendix H contains the sampling locations and schedule to implement the groundwater monitoring during FY2021. This appendix will be superseded by DOE/RL-2019-76, *200-ZP-1 Operable Unit Optimization Study Sampling and Analysis Plan*, as soon as it is approved and issued.

M. W. Cline (**DOE**) and E. Laija (**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*.

Appendix H, *Fiscal Year 2021 Sampling for the 200-ZP-1 Operable Unit Optimization Study*, was added.

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

Note: Include affected page number(s): vi, H-i through H-6

Justification and Impacts of Change:

DOE/RL-2019-76, *200-ZP-1 Operable Unit Optimization Study Sampling and Analysis Plan*, is being prepared to provide the analytical, QA, and field implementation requirements for the fiscal year (FY) 2021 through FY2025 groundwater monitoring component of the 200-ZP-1 Operable Unit Optimization Study. However, the document has not been finalized and will not be issued in time to implement groundwater monitoring at the beginning of FY2021. Appendix H is being added to DOE/RL-2009-115, Rev 3 to enable collection of groundwater monitoring samples required to support the 200-ZP-1 Optimization Study Plan (DOE/RL 2019 38) scheduled to begin at the start of FY2021. Appendix H contains the sampling locations and schedule for implementing the groundwater monitoring during FY2021 and uses the specific analytical, QA, methods, and sampling requirements contained in Appendix B of DOE/RL-2009-115. This appendix will be superseded by DOE/RL-2019-76 as soon as it is approved and issued.

Approvals:

Michael W. Cline Digitally signed by Michael W. Cline Date: 2020.09.29 15:55:00 -07'00'		[X] Approved [ ] Disapproved
DOE Project Manager	Date	
EMERALD LAIJA Digitally signed by EMERALD LAIJA Date: 2020.09.30 09:20:48 -04'00'		[X] Approved [ ] Disapproved
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Fiscal Year 2021 Sampling for the 200-ZP-1 Operable Unit Optimization Study

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Terms

FY	fiscal year
OU	operable unit
QA	quality assurance

H1 Introduction

This appendix contains the sampling locations and schedule to implement the groundwater monitoring 200-ZP-1 Operable Unit (OU) Optimization Study during fiscal year (FY) 2021.

DOE/RL-2019-76, *200-ZP-1 Operable Unit Optimization Study Sampling and Analysis Plan*, is being prepared to provide the analytical, quality assurance (QA), and field implementation requirements for the 200-ZP-1 OU Optimization Study long-term groundwater monitoring (fiscal years [FY] 2021 through 2025). At this time the document has not been finalized and may not be issued in time to implement groundwater monitoring at the beginning of FY2021. Appendix H is being added to DOE/RL-2009-115, Rev 3 to enable collection of groundwater monitoring samples required to support the 200-ZP-1 Optimization Study Plan (DOE/RL-2019-38) scheduled to begin at the start of FY2021. This appendix contains sampling locations, schedule, and quality assurance requirements for implementing the groundwater monitoring during FY2021 and uses the specific analytical, QA, methods, and sampling requirements contained in Appendix B of this document. This appendix will be superseded by DOE/RL-2019-76 as soon as it is approved and issued.

Additional information on project scope and objectives, OU background, data quality objectives, groundwater monitoring network, contaminants, and schedule is contained in section B1, "Introduction," of this document.

H1.1 Target Analytes

Target analytes for the 200-ZP-1 Optimization Study long-term groundwater monitoring along with the purpose for inclusion are shown in Table H1-1.

Table H1-1. Analytes for 200-ZP-1 OU Optimization Study Long-Term Groundwater Monitoring

COC	CAS Number	Purpose
COCs		
Carbon tetrachloride	56-23-5	Delineate carbon tetrachloride plume; optimization study monitoring
Nitrate-N	14797-55-8	Delineate nitrate plume; optimization study monitoring
Other Constituents		
Chloride	16887-00-6	Evaluate chlorinated solvent natural attenuation; optimization study monitoring
Manganese [a]	7436-96-5	Evaluate natural attenuation; optimization study monitoring
Nickel [a]	7440-02-0	Evaluate stainless steel corrosion; optimization study monitoring
Nitrite-N	14797-65-0	Evaluate nitrate natural attenuation; optimization study monitoring
Sulfate	14808-79-8	Evaluate natural attenuation; optimization study monitoring
Total organic carbon	TOC	Evaluate natural attenuation; optimization study monitoring

Table H1-1. Analytes for 200-ZP-1 OU Optimization Study Long-Term Groundwater Monitoring

COC	CAS Number	Purpose
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.

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
COC = contaminant of concern
N/A = not applicable
TOC = total organic carbon

H2 Quality Assurance Project Plan

The applicable quality assurance requirements for the 200 ZP 1 Optimization Study groundwater monitoring for FY 2021 are contained in section B2, "Quality Assurance Project Plan," of this document. These requirements are applicable until DOE/RL-2019-76 is approved and issued.

H3 Field Sampling Plan

This section identifies the wells to be monitored, sampling frequencies, and constituents analyzed for the 200 ZP 1 Optimization Study groundwater monitoring for FY 2021. Additional applicable requirements for sampling methods; documentation of field activities; calibration of field equipment; sample handling; management of waste, and health and safety are contained in Section B3, "Field Sampling Plan," of Appendix B of this document. These requirements are applicable until DOE/RL-2019-76 is approved and issued.

H3.1 Sample Locations and Frequency

Table H3-1 the monitoring locations and schedule for the 200-ZP-1 OU Optimization Study long-term groundwater monitoring for FY 2021.

Table H3-1. 200-ZP-1 OU Optimization Study Long-Term Groundwater Monitoring Schedule for FY2021

Well Name	FY 2021 Sampling Frequency [a]	Analytes
299-W10-1	A	Carbon tetrachloride and anions [b]
299-W10-14	Q	Carbon tetrachloride and anions [b]

Table H3-1. 200-ZP-1 OU Optimization Study Long-Term Groundwater Monitoring Schedule for FY2021

Well Name	FY 2021 Sampling Frequency [a]	Analytes
299-W10-27	Q	Carbon tetrachloride and anions [b]
299-W10-29	SA	Carbon tetrachloride and anions [b]
299-W10-30	SA	Carbon tetrachloride and anions [b]
299-W10-31	Q	Carbon tetrachloride and anions [b]
299-W11-18	Q	Carbon tetrachloride and anions [b]
299-W11-33Q	A	Carbon tetrachloride and anions [b]
299-W11-43	A	Carbon tetrachloride and anions [b]
299-W11-45	SA	Carbon tetrachloride and anions [b]
299-W11-47	SA	Carbon tetrachloride and anions [b]
299-W11-48	SA	Carbon tetrachloride and anions [b]
299-W11-87	Q	Carbon tetrachloride and anions [b]
299-W11-88	A	Carbon tetrachloride and anions [b]
299-W13-1	Q	Carbon tetrachloride and anions [b]
299-W13-2P	SA	Carbon tetrachloride and anions [b]
299-W13-2Q	SA	Carbon tetrachloride and anions [b]
299-W14-11	Q	Carbon tetrachloride and anions [b]
299-W14-14	Q	Carbon tetrachloride and anions [b]
299-W14-17	Q	Carbon tetrachloride and anions [b]
299-W14-71	SA	Carbon tetrachloride and anions [b]
299-W14-72	SA	Carbon tetrachloride and anions [b]
299-W15-11	Q	Carbon tetrachloride and anions [b]
299-W15-152	Q	Carbon tetrachloride, anions,[b] manganese, and nickel [c]
299-W15-17	Q	Carbon tetrachloride and anions [b]
299-W15-224	SA	Carbon tetrachloride and anions [b]
299-W15-30	SA	Carbon tetrachloride and anions [b]
299-W15-37	A	Carbon tetrachloride and anions [b]
299-W15-46	A	Carbon tetrachloride and anions [b]
299-W15-49	Q	Carbon tetrachloride and anions [b]
299-W15-50	A	Carbon tetrachloride and anions [b]
299-W15-763	A	Carbon tetrachloride and anions [b]
299-W15-765	Q	Carbon tetrachloride and anions [b]

Table H3-1. 200-ZP-1 OU Optimization Study Long-Term Groundwater Monitoring Schedule for FY2021

Well Name	FY 2021 Sampling Frequency [a]	Analytes
299-W15-83	SA	Carbon tetrachloride, anions,[b] manganese, and nickel [c]
299-W15-94	Q	Carbon tetrachloride and anions [b]
299-W18-1	A	Carbon tetrachloride and anions [b]
299-W18-16	A	Carbon tetrachloride and anions [b]
299-W18-21	Q	Carbon tetrachloride, anions,[b] manganese, nickel, [c] and TOC
299-W18-22	Q	Carbon tetrachloride, anions,[b] manganese, nickel, [c] and TOC
299-W18-40	Q	Carbon tetrachloride and anions [b]
299-W19-105	A	Carbon tetrachloride and anions [b]
299-W19-107	A	Carbon tetrachloride and anions [b]
299-W19-115	A	Carbon tetrachloride and anions [b]
299-W19-116	SA	Carbon tetrachloride and anions [b]
299-W19-123	SA	Carbon tetrachloride and anions [b]
299-W19-126	Q	Carbon tetrachloride and anions [b]
299-W19-131	Q	Carbon tetrachloride and anions [b]
299-W19-34A	A	Carbon tetrachloride and anions [b]
299-W19-34B	A	Carbon tetrachloride and anions [b]
299-W19-36	SA	Carbon tetrachloride and anions [b]
299-W19-4	Q	Carbon tetrachloride and anions [b]
299-W19-41	Q	Carbon tetrachloride and anions [b]
299-W19-47	Q	Carbon tetrachloride and anions [b]
299-W19-48	A	Carbon tetrachloride and anions [b]
299-W19-49	A	Carbon tetrachloride and anions [b]
299-W19-6	A	Carbon tetrachloride and anions [b]
299-W20-1	Q	Carbon tetrachloride and anions [b]
299-W21-2	A	Carbon tetrachloride and anions [b]
299-W22-113	Q	Carbon tetrachloride and anions [b]
299-W22-47	A	Carbon tetrachloride and anions [b]
299-W22-72	A	Carbon tetrachloride and anions [b]
299-W22-83	A	Carbon tetrachloride and anions [b]
299-W22-86	A	Carbon tetrachloride and anions [b]

Table H3-1. 200-ZP-1 OU Optimization Study Long-Term Groundwater Monitoring Schedule for FY2021

Well Name	FY 2021 Sampling Frequency [a]	Analytes
299-W22-87	Q	Carbon tetrachloride and anions [b]
299-W22-88	A	Carbon tetrachloride and anions [b]
299-W22-94	Q	Carbon tetrachloride and anions [b]
299-W22-95	A	Carbon tetrachloride and anions [b]
299-W23-19	Q	Carbon tetrachloride and anions [b]
299-W23-21	Q	Carbon tetrachloride and anions [b]
299-W5-2P	Q	Carbon tetrachloride and anions [b]
299-W5-2Q	A	Carbon tetrachloride and anions [b]
299-W6-11	A	Carbon tetrachloride and anions [b]
299-W6-12	A	Carbon tetrachloride and anions [b]
299-W6-17	M	Carbon tetrachloride and anions [b]
299-W6-3	Q	Carbon tetrachloride and anions [b]
299-W6-6	Q	Carbon tetrachloride and anions [b]
299-W7-3	SA	Carbon tetrachloride, anions, [b] manganese, and nickel [c]
699-36-61A	A	Carbon tetrachloride and anions [b]
699-36-70B	A	Carbon tetrachloride and anions [b]
699-38-61	SA	Carbon tetrachloride and anions [b]
699-38-68A	A	Carbon tetrachloride and anions [b]
699-38-70B	A	Carbon tetrachloride and anions [b]
699-38-70C	A	Carbon tetrachloride and anions [b]
699-40-65	A	Carbon tetrachloride and anions [b]
699-43-69	A	Carbon tetrachloride and anions [b]
699-44-64	A	Carbon tetrachloride and anions [b]
699-44-70B	Q	Carbon tetrachloride and anions [b]
699-45-69A	A	Carbon tetrachloride and anions [b]
699-45-69C	SA	Carbon tetrachloride and anions [b]
699-48-71	A	Carbon tetrachloride and anions [b]
299-W15-44	Q	Carbon tetrachloride and anions [b]

Table H3-1. 200-ZP-1 OU Optimization Study Long-Term Groundwater Monitoring Schedule for FY2021

Well Name	FY 2021 Sampling Frequency [a]	Analytes
699-48-77C	Q	Carbon tetrachloride and anions [b]
699-49-79	—	Carbon tetrachloride and anions [b]

a. Sampling frequencies are defined as follows: A = annual, M = monthly, SA = semiannual, and Q = quarterly.
b. Anions include nitrate, nitrite, chloride, and sulfate.
c. Collect filtered and unfiltered samples for metals.

FY = fiscal year
TOC = total organic carbon

H4 Management of Waste

Applicable requirements for management of waste for the 200 ZP 1 Optimization Study groundwater monitoring for FY 2021 are contained in section B4, "Management of Waste," of Appendix B of this document. These requirements are applicable until DOE/RL-2019-76 is approved and issued.

H5 Health and Safety

Applicable requirements for health and safety for the 200 ZP 1 Optimization Study groundwater monitoring for FY 2021 are contained in section B5, "Health and Safety," of Appendix B of this document. These requirements are applicable until DOE/RL-2019-76 is approved and issued.

H6 References

DOE/RL-96-68, 2014, *Hanford Analytical Services Quality Assurance Requirements Document*, Rev. 4, *Volume 1, Administrative Requirements*; *Volume 2, Sampling Technical Requirements*; *Volume 3, Field Analytical Technical Requirements*; and *Volume 4, Laboratory Technical Requirements*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: http://www.hanford.gov/files.cfm/DOE-RL-96-68-VOL1-04.pdf. http://www.hanford.gov/files.cfm/DOE-RL-96-68-VOL2-04.pdf. http://www.hanford.gov/files.cfm/DOE-RL-96-68-VOL3-04.pdf. http://www.hanford.gov/files.cfm/DOE-RL-96-68-VOL4-04.pdf.

DOE/RL-2019-38, 2019, *200-ZP-1 Operable Unit Optimization Study Plan*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-03236.

DOE/RL-2019-76, *200-ZP-1 Operable Unit Optimization Study Sampling and Analysis Plan*, Rev. 0 pending, U.S. Department of Energy, Richland Operations Office, Richland, Washington.