Comprehensive Legacy Management and Institutional Control Plan (S03496-12.0) Revision 12, January 2019 Variances for Calendar Year 2020

Variance Number	Variance Title	Significant? ^a (Y/N)	Affected Volume/Attachment and Section	Variance Date	Regulatory Approval Date
2020-01	Document Revision	Y	Volume I, Section 1,1, Purpose and Organization of the LMICP and Volume II, Section 1.6, Updates to the Institutional Control Plan	9/18/2019	
2020-02	Prohibited Items	Y	Volume II, Figure 2, Fernald Preserve Prohibited Activities and Items.	9/18/2019	
2020-03	Inspection Timing	Y	Vol II, Section 3.2, Fernald Preserve Inspections and PCCIP, Section 6.2.1.1	9/18/2019	
2020-04	Lidar	Y	PCCIP, Section 3.3 OSDF As-Built	9/18/2019	
2020-05	Leachate Volume	Υ	GWLMP, Section 3.2.2 Leachate Monitoring Compliance Strategy	9/18/2019	-
2020-06	Accumulation Rate	Υ .	GWLMP, Section 4.4.2.1, Flow Monitoring in the LCS and LDS	9/18/2019	
2020-07	Contact List	N	Community Involvement Plan, Appendix A, Contact List	9/18/2019	

^a Per the *Fernald Preserve Quality Assurance Project Plan* (DOE 2014): A **significant variance** is required when activities change the scope of the project and that change must be reviewed by the regulatory agencies. An **informational variance** is used for changes such as providing clarification, incorporating additional information, correcting errors or documenting resampling efforts.

Variance number: 2020-01	Significant: ⊠ Yes ☐ No					
Document number: LMS/FER/S04396-12.0	Page: 1 of 1					
Document title: Fernald Preserve Comprehensive Legacy Management and Institution Controls Plan		_				
Variance	t and the second					
Requirements: Per Volume I, Section 1.1, Purpose and Organization of the LM 1.6, Updates to the Institutional Control Plan (Page 10):	ICP (Page 3) and Volume II, Section					
"The future LMICP schedule will be as follows: • Each June, the annual Site Environmental Report will be submitted. • Each September, an annual review of the LMICP will be submitted. It will ident • Each January, the document will be finalized to correspond with the monitoring						
Variance: "The future LMICP schedule will be as follows:						
•Each June, the annual Site Environmental Report will be submitted.						
•Each September, an annual review of the LMICP will be submitted completed. It will identify updates as necessary. The requirement to complete a full revision of the LMICP will be assessed with the regulators each year and, at a minimum, it is expected that a full revision of the LMICP may be required at least every 5 years. Based on the number and types of changes required each September, either a revised document or Variance for each change required to the existing document will be submitted. The variance process established in the Fernald Preserve Quality Assurance Project Plan (DOE 2014) will be followed.						
 Each January, the revised document or approved variances to the existing document the monitoring and reporting schedule." 	ument will be finalized to correspond					
Justification: With installation of the new wastewater treatment system in 2018 and the major changes in environmental monitoring that occurred in 2015 and 2016, it is expected that fewer changes will be required to the LMICP in the future. For this reason, during the quarterly regulatory meetings held in spring and summer 2019, DOE proposed to EPA and Ohio EPA that the variance process established in the Fernald Preserve Quality Assurance Project Plan, Fernald, Ohio be used to communicate LMICP changes instead of updating the entire document every year. Further discussions took place with EPA and Ohio EPA in July 2019, and both agencies agreed to the proposed change to the LMICP revision process.						
Requested By: Karen Voisard Date: 9/10/19						
Variance Approvals Var	iance Approvals					
Required Required W. Hertel W. Hertel Required Required Yes No M. Sizemore Date Date	Mars Ediner 9-12-19 Then the Compliance Date					
⊠ Project Manager □ ⊠ Enviro.	nmental Sampling Date					
☐ Laboratory Technical Representative Date ☐ ☐ ☐ Aqui	ifer Restoration Date					
Environmental Monitoring, Data Date	Other Date					
Revision Required						
Distribution Records Management EPA Post to Web Page Ohio EPA						

Variance number: _2020-02	Significant: ⊠ Yes □ No					
Document number: LMS/FER/S04396-12.0	Page: 1 of 1					
Fernald Preserve Comprehensive Legacy Management and In Controls Plan, Volume II	Date: 9/1/2019					
Variance						
Requirements: Per Volume II, Figure 2, Fernald Preserve Prohibited Items	s (Page 12).					
THE FOLLOWING ACTIVITIES AND ITEMS ARE PROHIBITED:						
 Removing or damaging plants or plant parts (e.g., seed pods, fruit, leaves, firewood). Mushroom gathering Soil excavation Swimming or wading Dumping Fires, open fl Traveling off Using unman Tampering or other property. 	ping, or fishing lames, or smoking public roadways or trails nned aerial systems (drones) r damaging structures, fences, signs, or					
Variance:						
THE FOLLOWING ACTIVITIES AND ITEMS ARE PROHIBITED:						
 Alcohol and illegal drugs Firearms Removing or damaging archaeological-natural or manmade materials Removing or damaging plants or plant parts (e.g., seed pods, fruit, leaves, firewood). Mushroom gathering Soil excavation Pets Camping Hunting, trapping, or fishing Littering Dumping Fires, open flames, or smoking Traveling off public roadways or trails Using unmanned aerial systems (drones) Tampering or damaging structures, fences, signs, or other property. 						
Justification: Simplifying without radically altering the prohibited activities and items will b	e less ambiguous.					
Requested By: _John Homer	Date:					
Variance Approvals	Variance Approvals					
W. Hertel Justin a Hotel 9/18/19	ore Mary Szimors 9-12-19 nvironmental Compliance Date Environmental Sampling Date					
Laboratory Technical Representative Date	Aquifer Restoration Date Other Date					
Environmental Monitoring Data Date	Suita Date					
Revision Required Yes No Document No. and Title:						
Distribution □ Records Management						

Variance number: 2020-03			Significant: X Yes	□No		
Document number: LMS/FER/S04396-	12.0		Page: 1 o	f 1		
Document title: Fernald Preserve Compre Controls Plan, Vol II and		/ Managem	ent and Institutional Date:	3/2019		
	V	/ariance				
Requirements:			-			
Vol II, Section 3.2: Fernald Preserve Inspectio	ns (Page 26):					
"To ensure safe and effective inspections, the cooler months of November through April. Per of site conditions and allows access to more a	forming walkdow	nodified in 2 vns during i	015 to focus on walkdown completion du nonths when less vegetation is present o	ring the dry, ptimizes visibility		
PCCIP, Section 6.2.1.1 (Page 29):						
"the complete cap walkover is conducted an	nually in late fall	or early wi	nter, after warm season grasses have go	ne dormant."		
Variance:						
Vol II, Section 3.2:						
To ensure safe and effective inspections, the smonths of November through April. Performing conditions and allows access to more areas. A completely removed following a burn, so inspec	ı walkdowns duri Additional field w	ing months alkdowns v	when less vegetation is present optimize vill take place following prescribed burns.	s visibility of site		
PCCIP, Section 6.2.1.1:						
These conditions have become more prevalen conducted annually in late fall or early winter, a burned or mowed areas are also possible. will viewing inspection findings, such as erosion rill	after warm-seasc <mark>also be schedul</mark> e	on grasses <mark>ed. Post-b</mark> u	have gone dormant. Additional walkdown rn walkdowns have shown to be an optim	ns of recently		
Justification:			1			
Post-burn walkdowns have proven to be most effective on both the OSDF and the former Production Area. Vegetation is completely removed, so inspection findings such as erosion rills, debris and tree seedlings on the OSDF are readily visible. A spring 2019 walkdown across a burned area in the former production area resulted in the identification and removal of over 700 pieces of debris. All participants agree that post-burn walkdowns are effective.						
Requested By: John Homer		1	Date: 9-/0-20	19		
Variance Approvals		gara Jiliyasa				
Required		Required	Variance Approvals			
Yes No K Fritts K- Jutts Quality Assurance	<u>9/12/19</u> Date	-	M. Sizemore Mars Sacricon Environmentar Sometiance	9-12-/9 Date		
W. Hertel / Sle_ a. Hertel Project Manager	9/18/19 Date		Environmental Sampling	 Date		
☐ ☐ Laboratory Technical Representative			Aquifer Restoration	 Date		
K. Voisard Environmental Monitoring Data Management and Reporting	Date		Other	 Date		
Revision Required						
Distribution	⊠ EPA ⊠ Ohio E	EPA				

Variance number: 2020-04 Significant: ☑ Yes					
Document number: LMS/FER/S04396-12.0 Page: 1 of 1					
Fernald Preserve Comprehensive Legacy Management and Institutional Controls Plan, PCCIP Date:					
Variance					
Requirements: Per PCCIP, Section 3.3, OSDF As-Built (Page 20).					
"To support each CERCLA Five-Year Review, aerial surveys of the site will be conducted via light detection and ranging (lidar) or equivalent technology every 5 years, beginning in 2019. These aerial surveys will allow for comparison of topography over time to detect changes in the OSDF cap that may not be observable during field walkdowns."					
Variance:					
"To support each CERCLA Five-Year Review, aerial surveys of the site will be conducted via light detection and ranging (lidar) or equivalent technology every 5 years, beginning in 2019-the spring of 2020 after the prescribed burn of the northern half of the cell cap. These aerial surveys will allow for comparison of topography over time to detect changes in the OSDF cap that may not be observable during field walkdowns." Justification: Postponing the lidar survey of the OSDF to support the CERCLA Five-Year Review in spring 2020 after the prescribed burn will allow a better survey to be completed.					
Q	14.				
Requested By: John Homer Date: 9-10-2019					
Variance Approvals Variance Approvals					
Required Required					
Yes No K. Fritts & That I 9/12/19 Yes No M. Sizemore May Aging 9-12-19 Quality Assurance Date Environmental Compliance Date Date	<u>}</u>				
$oxed{W. \ Hertel} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	_				
Laboratory Technical Representative Date Aquifer Restoration Date					
K. Voisard Environmental Monitoring, Data Management and Reporting Date Date	-				
Revision Required					
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Distribution Records Management					

Variance number: 2020-05	Significant: ⊠ Yes ☐ No				
Document number: LMS/FER/S04396-12.0	Page: 1 of 1				
Document title: Fernald Preserve Comprehensive Legacy Management and Institute Controls Plan, GWLMP					
Variance					
Requirements: Per GWLMP, Section 3.2.2, Leachate Monitoring Compliance S	Strategy (Page 26):				
"The monthly volume of leachate collected for treatment and subsequent disposed program in 40 CFR 264.303(c) to determine the flow rates of leachate collected Monitoring the flow rates will provide data for determining the volume of leachate pertinent to the leak detection monitoring program. The flow rates are part of the and are discussed further in Section 4.0. A separate leachate management mor 5.0 to provide information on the method of leachate treatment and disposal, income for leachate treatment."	sal will be obtained based on the in the LCS and water in the LDS. e collected and will also provide data e leak detection monitoring program nitoring strategy is provided as Section				
Variance:	· · · · · · · · · · · · · · · · · · ·				
"The monthly volume of leachate collected from the LCS for treatment and subsobtained based on the program in 40 CFR 264.303(c) to determine the flow rate and water in the LDS. In 2018 LDS flow rates and volumes had diminished such outs occurred in any cell. Beginning in 2019, the volume of leachate collected for from the LDS will be obtained based on periodic pump outs of the LDS. Monitori determining the volume of leachate collected and will also provide data pertinent program. The flow rates are part of the leak detection monitoring program and a separate leachate management monitoring strategy is provided as Section 5.0 to leachate treatment and disposal, including analysis of parameters useful for lead	es of leachate collected in from the LCS in that no LDS automatic tank pump or treatment and subsequent discharge ing the flow rates will provide data for it to the leak detection monitoring re discussed further in Section 4.0. A poprovide information on the method of				
Justification:	mate treatment.				
In 2018 LDS volumes had diminished such that no LDS automatic tank pump out occurred in any cell. LDS tanks for Cells 1,2,3,5, and 7 were too dry to collect semiannual samples so no pump out occurred in these LDS tanks in 2018, resulting in an accumulation rate of 0.0 gpad for Cells 1, 2,3, 5 and 7. The LDS tanks in Cells 4,6, and 8 accumulated enough water to collect routine semiannual samples in 2018; however, the volume of water accumulated in each of those LDS tanks during 2018 was very low, so accumulation rates had to be estimated by tracking the volume of water manually pumped out of each LDS tank and the amount of time between pump outs. This calculation was presented in the Fernald Preserve 2018 Site Environmental Report in Section A.5.1.2.					
Requested By: Ken Broberg	Date: 9/18/2019				
Variance Approvals Var	iance Approvals				
Required Required					
	Many Azimon 9-12-19 mental Compliance Date				
W. Hertel Project Manager 9/18/19 ✓ Date □ ☑ Enviro.	nmental Sampling Date				
☐ Laboratory Technical Representative ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	ifer Restoration Date				
Environmental Monitoring Data Date Management and Reporting	Other Date				
Revision Required Yes No Document No. and Title:					
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Distribution					

Variance num	nber: _2020-06				Si	gnificant	⊠ Ye	s 🗌 No
Document nu	mber: LMS/FER/S04396-1	2.0				Page:	1	of 1
Document titl	Fernald Preserve Compre Controls Plan, GWLMP	ehensive Legac	y Mana	agem	ent and Institutiona	Date:		9/18/2019
			Varian	ice				
Requirements	: Per GWLMP, Section 4.4	.2.1, Leachate	e Moni	itorir	g Compliance St	rategy (Pa	ge 41):	
compiled daily (in gpad) is cal	f leachate pumped from the and trended to provide an i culated from the monthly floite (https://www.lm.doe.gov Report."	ndication of c ow rate. Flow	hange data a	s in re a	system performa vailable to EPA a	nce. An av nd Ohio E	erage o	daily LDS flow rate
Variance:								
by tracking the An average da Ohio EPA on the annually in the	"The volume of leachate pumped from the each LCS/LDS tanks is recorded. Flow from each cell's LCS and LDS tanks is compiled daily and trended to provide an indication of changes in system performance. LDS flow rates are estimated by tracking the volume of water manually pumped out of each LDS tank and the amount of time between pump-outs. An average daily LDS flow rate (in gpad) is calculated from the monthly flow rate. Flow data are available to EPA and Ohio EPA on the Fernald Preserve website (https://www.lm.doe.gov/Fernald/Downloads.aspx) and are reported annually in the Site Environmental Report."							
Justification: In 2018 LDS volumes had diminished such that no LDS automatic tank pump out occurred in any cell. LDS tanks for Cells 1,2,3,5, and 7 were too dry to collect semiannual samples so no pump out occurred in these LDS tanks in 2018, resulting in an accumulation rate of 0.0 gpad for Cells 1, 2,3, 5 and 7. The LDS tanks in Cells 4,6, and 8 accumulated enough water to collect routine semiannual samples in 2018; however, the volume of water accumulated in each of those LDS tanks during 2018 was very low, so accumulation rates had to be estimated by tracking the volume of water manually pumped out of each LDS tank and the amount of time between pump outs. This calculation was presented in the Fernald Preserve 2018 Site Environmental Report in Section A.5.1.2.								
Requested By	: Ken Broberg				Dat	e:		5
Required	Variance Approvals				Varian	ce Appro	vals	
res No K. Fritt	Quality Assurance	9/12/19 Date 9/18/19	Requ Yes ⊠		M. Sizemore Ma Environmen	u Sim	ru Ice	9~/J-19 Date
	Project Manager	Date			Environme	ntal Samplin	g	Date
Labora K. Voisa	tory Technical Representative	Date 9 (2 19			Aquifer i	Restoration	c	Date
	ronmental Monitoring, Data anagement and Reporting	Date			C	ther		Date
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		Ohio E	EΡΑ					

Variance number: 2020-07		Significant: 🗌 Yes	⊠ No		
Document number: LMS/FER/S04396-12.0		Page: _1 of _	1		
Document title: Fernald Preserve Comprehensive Legacy Controls Plan, Community Involvement Plan		nal Date:	1112/299		
V	ariance				
Requirements:		*			
Appendix A (Contact List) of the Community Involvement Plan provides contact information for federal, state and local elected officials.					
Variance: Appendix A (Contact List) will be updated followed Contact List will be distributed with this variance prior to		election results. The fi	nal, updated		
Justification: Updates will be based on upcoming November 2019 election results. Requested By: Penny Borgman					
Variance Approvals	Varia	ance Approvals			
Required	Required				
Yes No	Yes No	7			
Quality Assurance Date	☐ ☐ Environm	ental Compliance	Date		
W. Hertel White a. Worth 9/18/19 Project Manager Date	Environr	mental Sampling	 Date		
		,			
☐ ☐ Laboratory Technical Representative ☐ Date	☐ ⊠ Aquife	er Restoration	 Date		
K. Voisard Environmental Monitoring, Data Management and Reporting		Other	Date		
Revision Required Yes No Document Title:					
Distribution □ Records Management	EPA				