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**Hanford Facility RCRA Permit Change Notice**

**Part III, Operating Unit Group 3**

**Liquid Effluent Retention Facility & 200 Area Effluent Treatment Facility**

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Submitted by WRPS Co-Operator:

Reviewed by DOE-ORP Program Office:

**Monica Kembel** Digitally signed by Monica Kembel  
Date: 2020.10.05 12:57:32 -07'00'

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Harkins  
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Monica R. Kembel

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Date

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Rob G. Hastings

\_\_\_\_\_  
Date

**Hanford Facility RCRA Permit Change Notice**

Unit: <b>Liquid Effluent Retention Facility &amp; 200 Area Effluent Treatment Facility</b>	Permit Part <b>Part III, Operating Unit Group 3</b>
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Description of Modification:  
**Permit Conditions:**  
 Update the following List of Addenda Specific to Operating Unit Group 3 with modification approval date:  
 Addendum C Process Information, dated TBD June 25, 2020

WAC 173-303-830 Modification Class	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1  
 Enter wording of WAC 173-303-830, Appendix I Modification citation: General Permit Provisions, Administrative and informational changes.

Modification Concurrence: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (state reason) Reason for Non-concurrence:	Reviewed by Ecology: Schleif, Stephanie (ECY)
	Digitally signed by Schleif, Stephanie (ECY) Date: 2020.10.20 12:03:11 -07'00'
	Stephanie Schleif                      Date

<b>Hanford Facility RCRA Permit Change Notice</b>				
Unit: <b>Liquid Effluent Retention Facility &amp; 200 Area Effluent Treatment Facility</b>	Permit Part <b>Part III, Operating Unit Group 3</b>			
<p><u>Description of Modification:</u></p> <p><b>Addendum C, Process Information:</b></p> <p>Section C.5.5, corrected valve number from “80W-006” to “80W-005”, to reflect first isolation valve as boundary between the tank system and the surface impoundment for transfer line from WTP-EMF to LERF Catch Basin 242AL-42.</p> <p>Reference drawing H-2-88766, Sheet 2.</p>				
WAC 173-303-830 Modification Class	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			
<p>Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1</p> <p>Enter wording of WAC 173-303-830, Appendix I Modification citation: General Permit Provisions, Administrative and informational changes.</p>				
<p style="color: red;">Concurrence</p> <p>Modification <del>Approved</del>: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (state reason)</p> <p><u>Reason for Non-concurrence:</u></p>		<p style="text-align: right;">Reviewed by Ecology:</p> <p>Schleif, Stephanie (ECY)</p> <p style="font-size: small;">Digitally signed by Schleif, Stephanie (ECY) Date: 2020.10.20 12:03:47 -07'00'</p>		
		Stephanie Schleif		Date

**Replace the Following:**

- Permit Conditions
- Addendum C, Process Information

**Reference Drawing**

- H-2-88766, Sheet 2 Rev. 17, P&ID LERF Basin & ETF Influent Evaporator

1                   **PART III, OPERATING UNIT GROUP 3 UNIT-SPECIFIC PERMIT CONDITIONS**  
 2                                   **LIQUID EFFLUENT RETENTION FACILITY &**  
 3                                   **200 AREA EFFLUENT TREATMENT FACILITY**

4  
 5  
 6                   **UNIT DESCRIPTION**

7                   The Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (200 Area ETF)  
 8                   consists of an aqueous waste treatment system that provides treatment, storage integral to the treatment  
 9                   process, and storage of secondary wastes from the treatment process for a variety of aqueous mixed  
 10                  waste. The 200 Area ETF is located in the 200 East Area. Aqueous wastes managed by the 200 Area  
 11                  ETF include process condensate from the LERF and 200 Area ETF and other aqueous waste generated  
 12                  from onsite remediation and waste management activities.

13                The LERF consists of three lined surface impoundments, or basins. Aqueous waste from LERF is  
 14                pumped to the 200 Area ETF for treatment in a series of process units, or systems, that remove or destroy  
 15                essentially all of the dangerous waste constituents. The treated effluent is discharged to a State-Approved  
 16                Land Disposal Site (SALDS) north of the 200 West Area, under the authority of a Washington State Waste  
 17                Discharge Permit Number ST0004500 (Ecology 2014) and 200 Area ETF Delisting (40 Code of Federal  
 18                Regulations [CFR] 261, Appendix IX, Table 2). Construction of the LERF began in 1990. Waste  
 19                management operations began at LERF in April 1994. Construction of the 200 Area ETF began in 1992.  
 20                Waste management operations began at 200 Area ETF in November of 1995.

21                This Chapter provides unit-specific Permit conditions applicable to the dangerous waste management  
 22                units for LERF and 200 Area ETF.

23                **LIST OF ADDENDA SPECIFIC TO OPERATING UNIT GROUP 3**

- 24                Addendum A   Part A Form, dated May 19, 2020  
 25                Addendum B   Waste Analysis Plan, dated May 19, 2020  
 26                Addendum C   Process Information, dated ~~TBD~~ ~~June 25, 2020~~  
 27                Addendum D   Groundwater Monitoring, dated January 23, 2018  
 28                Addendum E   Security Requirements, dated June 30, 2011  
 29                Addendum F   Preparedness and Prevention, dated May 19, 2020  
 30                Addendum G   Personnel Training, dated June 30, 2015  
 31                Addendum H   Closure Plan, dated May 19, 2020  
 32                Addendum I   Inspection Requirements, dated May 19, 2020  
 33                Addendum J   Contingency Plan, dated June 24, 2020

34                **DEFINITIONS**

35                **Flow Equalization:** Flow equalization is the process by which concentrations of constituents are  
 36                homogenized through blending of the wastewater in the LERF Basins, resulting in a more uniform  
 37                loading of constituents prior to entering the appropriate treatment train.

38                **State and Federal Delisting Actions:** The state delisting action pursuant to Washington Administrative  
 39                Code (WAC) 173-303-910(3), August 8, 2005, and the federal delisting action appearing in 40 CFR 261,  
 40                Appendix IX, Table 2 applicable to the United States, Department of Energy, Richland, Washington.

41                **ACRONYMS**

42                LERF and 200 Area ETF                   200-Area Liquids Processing Facility

1 **LERF Basins to/from 200 Area ETF.** Aqueous waste from the LERF basins to the 200 Area ETF surge  
2 tank is transferred through one of two buried fiberglass pipelines interfacing with LERF Catch Basin  
3 242AL-43 or LERF Catch Basin 242AL-44. Leak detection consists of low-point electronic leak  
4 detection elements. The leak detection system alarms in the 200 Area Control Room if a leak develops.  
5 If the electronic leak detection system is not available, visual inspection can be employed by opening a  
6 drain valve in the surge tank secondary containment (200 Area ETF end of the transfer pipelines) to check  
7 for no liquid in the annular space between the inner and outer pipe during waste transfers.

8 **Inter-Basin Transfers.** Within the LERF catch basins, aboveground piping serves to transfer waste from  
9 one basin to another. Inter-basin piping interfaces at each catch basin. Drawing H-2-88766, Sheets 1  
10 through 4, provide schematic diagrams of the piping system at LERF. Inter-basin piping is sloped from  
11 Basin 42 toward Basin 44. Leak detection consists of single-low point electronic leak detection elements  
12 located at the end of the encasement pipe at Basin 43 and Basin 44, which alarm in the 200 Area ETF  
13 Control Room. A catch basin is provided at the northwest corner of each basin where the inlet pipes,  
14 leachate risers, and transfer pipe risers emerge from the basin. The catch basin consists of an 8-inch thick  
15 concrete pad at the top of the dike. The perimeter of the catch basin has an 8-inch-high curb and the  
16 concrete is coated with a chemical resistant epoxy sealant. The concrete pad, which has an electronic leak  
17 detection element, is sloped so that any leaks or spills from the piping or pipe connections will drain into  
18 the basin, which have electronic leak detection elements that alarm in the ETF Control Room. The catch  
19 basin provides an access point for inspecting, servicing, and operating various systems such as transfer  
20 valving, leachate level instrumentation, and leachate pump. Drawing H-2-79593 provides a schematic  
21 diagram of the catch basins.

22 **WTP-EMF to LERF Catch Basin 242AL-42.** The process condensate transfer line (4"-WTP-001-M17)  
23 from WTP-EMF to LERF Catch Basin 242AL-42 is centrifugally cast from LERF Basin 42 to Node 8A  
24 and is stainless steel from Node 8A to WTP-EMF. The piping material is ASTM D-2296, "Filament  
25 Wound Fiberglass Resin Pipe." The 4-inch carrier piping is centered and supported within 8-inch  
26 containment piping. Pipe supports are fabricated of the same material as the pipe, and meet the strength  
27 requirements of ASME B31.3 (ASME 1996) for dead weight, thermal, and seismic loads. The transfer  
28 line (4"-WTP-001-M17) leaving the WTP-EMF tank system is considered ancillary equipment to the  
29 LERF and 200 Area ETF, from the WTP fence line up to LERF Catch Basin 242AL-42, valve  
30 ~~80W-00580W-006~~; after valve ~~80W-00580W-006~~ the components belong to the surface impoundment.

31 The process condensate from WTP-EMF can be transferred to LERF by using a pump located at  
32 WTP-EMF, and approximately 6,340 feet of pipe (from Node 8A to LERF), consisting of a 4-inch carrier  
33 pipe within an 8-inch outer containment pipeline. The encased fiberglass transfer line (4"-WTP-001-  
34 M17) slopes toward LERF Catch Basin 242AL-42, and runs below grade up to the LERF Basins. The  
35 encasement line (8"-ENC-M17) and WTP-EMF transfer line (4"-WTP-001-M17) is equipped with a  
36 single-point electronic leak detection element at Catch Basin 242AL-42, and sight glass (FG-80W-001),  
37 located in close proximity to the electronic leak detection element at LERF Catch Basin 242AL-42.

38 If a leak develops in the primary pipe, fluid will travel down the interior of the secondary containment  
39 pipe to a leak detection system located at LERF Catch Basin 242AL-42. Upon detection of a leak, a  
40 general alarm sounds in the 200 Area ETF Control Room. Any leaked waste into the encasement line is  
41 gravity drained to LERF Basin 42. If the electronic leak detection system is not available, visual  
42 inspection can be employed at the sight glass (FG-80W-001), located in LERF Catch Basin 242AL-42.  
43 Upon verification of a leak, the 200 Area ETF shift manager will direct shutdown of the aqueous waste  
44 through the transfer line(s). The pump located at WTP-EMF is shut down, stopping the flow of aqueous  
45 waste through the transfer pipeline.

