

**Part III, Operating Units****Operating Unit 10****Waste Treatment and Immobilization Plant**

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The Waste Treatment and Immobilization Plant (WTP) is the unit designed to treat the mixed (radioactive and dangerous) waste stored in underground tanks at the Hanford Site. The waste will be separated into High-level and Low-level waste streams in a Pretreatment Building. The waste streams are mixed with glass forming additives, heated to 950-1250 °C in melters, and poured into containers. The waste is immobilized in the glass matrix. The immobilized waste is transported from the WTP Unit for disposal.

**III.10.A. COMPLIANCE WITH APPROVED PERMIT**

The Permittees will comply with all requirements set forth in Operating Unit 10, including the conditions specified in Permit Conditions [III.10.B](#) through [III.10.K](#). Enforceable portions of the application have been incorporated in Operating Unit 10 and are identified as follows. All sections, figures, and tables included in these portions are also enforceable, unless stated otherwise.

Where information regarding treatment, management, and disposal of the radioactive source, byproduct material, special nuclear material (as defined by the Atomic Energy Act of 1954, as amended) and/or the radionuclide component of mixed waste has been incorporated into this permit, it is not incorporated for the purpose of regulating the radiation hazards of such components under the authority of this permit chapter 70.105 RCW. In the event of any conflict between Permit Condition [III.10.A](#) and any statement relating to the regulation of source, special nuclear, and byproduct material contained in portions of the permit application that are incorporated into this permit, Permit Condition [III.10.A](#) will prevail.

**OPERATING UNIT 10:**

- Chapter 1.0 Part A, Form 3 Permit Application, Revision 1 (December 6, 2001)
- Chapter 2.0 Facility Description (Topographic Map)
- Chapter 3.0 Waste Analysis Plan
  - Appendix 3A Waste Treatment Plant Waste Analysis Plan
  - Appendix 3B Quality Assurance Project Plan for Waste Analysis Plan
- Chapter 4.0 Process Information
  - Appendix 4A Engineering Figures
  - Supplement 1 RPP-WTP Compliance with Uniform Building Code Seismic Design
- Chapter 6.0 Procedures to Prevent Hazards
  - Appendix 6A Inspection Schedule
- Chapter 7.0 Contingency Plan
  - Appendix 7A Emergency Response Plan
- Chapter 8.0 Personnel Training
- Chapter 11.0 Closure
- Chapter 12.0 Reporting and Recordkeeping
- Appendix 1.0 Compliance Schedule

- 1 Appendix 2.0 Critical Systems
- 2 Appendix 3.0 Drawing Category Table
- 3 Appendix 4.0 Piping Material Index Table
- 4 Appendix 5.0 Legends for Process Flow Diagrams and Piping and Instrumentation Diagrams
- 5 Appendix 6.0 Risk Assessment
  - 6 6.1 Environmental Risk Assessment Work Plan
    - 7 6.1.1 Previously Submitted Preliminary Risk Assessment Work Plan
    - 8 6.1.2 Documentation of Revisions to Preliminary Risk Assessment Work Plan
  - 9 6.2 Risk Assessment Work Plan (RESERVED)
  - 10 6.3 Pre-Demonstration Test Risk Assessment Report (RESERVED)
    - 11 6.3.1 Basis and Assumptions (RESERVED)
  - 12 6.4 Final Risk Assessment Report (RESERVED)
    - 13 6.4.1 Basis and Assumptions (RESERVED)
- 14 Appendix 7.0 WTP Documents Applicable to All Regulated Areas
  - 15 7.1 Process Flow Diagrams
  - 16 7.2 Piping and Instrumentation Diagrams
  - 17 7.3 System Description Documentation (RESERVED)
  - 18 7.4 General Arrangement Drawings (RESERVED)
  - 19 7.5 Civil, Structural, and Architectural Criteria and Typical Design Details
  - 20 7.6 Mechanical Drawings (RESERVED)
  - 21 7.7 Specifications
  - 22 7.8 Engineering Calculations (RESERVED)
  - 23 7.9 Material Selection Documentation
  - 24 7.10 Critical Systems Equipment/Instrument List (RESERVED)
  - 25 7.11 IQRPE Reports
  - 26 7.12 Installation Plans
  - 27 7.13 Instrument Control Logic and Narrative Description (RESERVED)
  - 28 7.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
  - 29 7.15 Operating Documents
- 30 Appendix 8.0 Pretreatment Building
  - 31 8.1 Process Flow Diagrams
  - 32 8.2 Piping and Instrumentation Diagrams
  - 33 8.3 System Description Documentation (RESERVED)
  - 34 8.4 General Arrangement Drawings

1	8.5	Civil, Structural, and Architectural Criteria and Typical Design Details
2	8.6	Mechanical Drawings
3	8.7	Specifications
4	8.8	Engineering Calculations
5	8.9	Material Selection Documentation
6	8.10	Critical Systems Equipment/Instrument List
7	8.11	IQRPE Reports
8	8.12	Installation Plans (RESERVED)
9	8.13	Instrument Control Logic and Narrative Description
10	8.14	Descriptions of Instrument Installation and Testing Procedures (RESERVED)
11	8.15	Operating Documents (RESERVED)
12	Appendix 9.0	LAW Building
13	9.1	Process Flow Diagrams
14	9.2	Piping and Instrumentation Diagrams
15	9.3	System Description Documentation (RESERVED)
16	9.4	General Arrangement Drawings
17	9.5	Civil, Structural, and Architectural Criteria and Typical Design Details
18	9.6	Mechanical Drawings
19	9.7	Specifications
20	9.8	Engineering Calculations
21	9.9	Material Selection Documentation
22	9.10	Critical Systems Equipment /Instrument List
23	9.11	IQRPE Reports
24	9.12	Installation Plans (RESERVED)
25	9.13	Instrument Control Logic, and Narrative Description
26	9.14	Descriptions of Instrument Installation and Testing Procedures (RESERVED)
27	9.15	Demonstration Test Plan (RESERVED)
28	9.16	Demonstration Test Report (RESERVED)
29	9.17	Treatment Effectiveness Report (RESERVED)
30	9.18	Operating Documents
31	Appendix 10.0	HLW Building
32	10.1	Process Flow Diagrams
33	10.2	Piping and Instrumentation Diagrams
34	10.3	System Description Documentation (RESERVED)

1	10.4	General Arrangement Drawings
2	10.5	Civil, Structural, and Architectural Criteria and Typical Design Details
3	10.6	Mechanical Drawings
4	10.7	Specifications
5	10.8	Engineering Calculations
6	10.9	Material Selection Documentation
7	10.10	Critical Systems Equipment/Instrument List
8	10.11	IQRPE Reports
9	10.12	Installation Plans (RESERVED)
10	10.13	Instrument Control Logic and Narrative Description
11	10.14	Descriptions of Instrument Installation and Testing Procedures (RESERVED)
12	10.15	Demonstration Test Plan (RESERVED)
13	10.16	Demonstration Test Report (RESERVED)
14	10.17	Treatment Effectiveness Report (RESERVED)
15	10.18	Operating Documents
16	Appendix 11.0 Laboratory Building	
17	11.1	Process Flow Diagrams
18	11.2	Piping and Instrumentation Diagrams
19	11.3	System Description Documentation (RESERVED)
20	11.4	General Arrangement Drawings
21	11.5	Civil, Structural, and Architectural Criteria and Typical Design Details
22	11.6	Mechanical Drawings
23	11.7	Specifications (RESERVED)
24	11.8	Engineering Calculations
25	11.9	Material Selection Documentation
26	11.10	Critical Systems Equipment/Instrument List
27	11.11	IQRPE Reports
28	11.12	Installation Plans (RESERVED)
29	11.13	Instrument Control Logic and Narrative Description
30	11.14	Descriptions of Instrument Installation and Testing Procedures (RESERVED)
31	11.15	Operating Documents (RESERVED)
32	Appendix 12.0 Balance of Facilities	
33	12.1	Process Flow Diagrams (RESERVED)
34	12.2	Piping and Instrumentation Diagrams (RESERVED)

- 1 12.3 System Description Documentation (RESERVED)
- 2 12.4 General Arrangement Drawings (RESERVED)
- 3 12.5 Civil, Structural, and Architectural Criteria and Typical Design Details (RESERVED)
- 4 12.6 Mechanical Drawings (RESERVED)
- 5 12.7 Specifications (RESERVED)
- 6 12.8 Engineering Calculations (RESERVED)
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- 8 12.10 Critical Systems Equipment/Instrument List (RESERVED)
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- 10 12.12 Installation Plans (RESERVED)
- 11 12.13 Instrument Control Logic and Narrative Description (RESERVED)
- 12 12.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
- 13 12.15 Operating Documents (RESERVED)

#### 14 **III.10.B STANDARD CONDITIONS AND GENERAL FACILITY CONDITIONS**

15 In addition to the conditions in this chapter, the Permittees must comply with all the applicable portions  
16 of the Dangerous Waste Portion and EPA portion of the Resource Conservation and Recovery Act  
17 (RCRA) Permit for the Hanford Facility. In the event that a Unit-Specific Condition for the WTP Unit in  
18 Permit Conditions [III.10.C](#) through [III.10.K](#), conflicts with a general condition in Permit Conditions I  
19 and II of this permit, the Unit-Specific Condition will apply to the WTP Unit.

#### 20 **III.10.C. UNIT-SPECIFIC CONDITIONS FOR THE WTP UNIT**

##### 21 III.10.C.1 Facility-Specific Definitions and Acronyms

22 The following definitions are specific to the WTP Unit:

23 **Ash:** means a measure of the contribution of particulate matter from the melter feeds to the melter off-  
24 gas, as determined by representative sampling and analysis of the melter feed using ASTM Method D-  
25 482, or an equivalent method.

26 **Batch:** refers to waste staged in one DST designated as mixed waste for transfer to the WTP Unit for  
27 treatment.

28 **Continuous monitoring system:** means using a device which continuously samples the regulated  
29 parameter specified on Permit Tables [III.10.H.F](#), [III.10.I.F](#), [III.10.J.F](#), and [III.10.K.F](#), with the exception  
30 of pressure, without interruption, evaluates the detector response at least once every fifteen (15) seconds  
31 and computes and records the average value at least every sixty (60) seconds, except during allowable  
32 periods of calibration and except as defined otherwise by the CEMS Performance Specifications in 4B  
33 and 8A in Appendix B, 40 CFR Part 60. For the parameter pressure, the term “continuous monitoring  
34 system” means using a device that continuously samples the pressure without interruption and evaluates  
35 the detector response without averaging at least once each second and records the value at least every  
36 sixty (60) seconds. In addition, if the AWFCO is engaged due to a pressure exceedence, the pressure  
37 value must be recorded.

38 **Cascade event:** means when additional waste feed cut-off parameter set points deviate outside the limits  
39 specified in Permit Tables [III.10.H.F](#), [III.10.I.F](#), [III.10.J.F](#), and [III.10.K.F](#) after waste feed is cut-off, but  
40 while waste or waste residues are being managed in HLW and LAW.

- 1 **Dangerous and/or mixed waste management unit:** means dangerous and/or mixed waste management  
2 units, areas, systems, and sub-systems as defined in Permit Tables [III.10.D.A](#), [III.10.E.A](#) through [D](#),  
3 [III.10.F.A](#), [III.10.G.A](#), [III.10.H.A](#), [III.10.I.A](#), [III.10.J.A](#), and [III.10.K.A](#).
- 4 **Dioxin/furan” and “dioxins and furans:** means tetra-, penta-, hexa-, hepta-, and octa-chlorinated  
5 dibenzo dioxins and furans.
- 6 **HLW Vitrification System:** is defined as specified on Permit Tables [III.10.J.A](#) and [B](#), and [III.10.K.A](#)  
7 and [B](#).
- 8 **Hourly rolling average or HRA:** will mean the arithmetic mean of the sixty (60) most recent one-  
9 minute readings recorded by the continuous monitoring system.
- 10 **LAW Vitrification System:** is defined as specified on Permit Tables [III.10.H.A](#) and [B](#), and [III.10.I.A](#)  
11 and [B](#).
- 12 **Mode of operation:** means operation of the LAW Vitrification System or the HLW Vitrification System  
13 within set limits for each operating parameter specified in Permit Tables [III.10.H.D](#) and [F](#) (for LAW) and  
14 Permit Tables [III.10.I.D](#) and [F](#) (for HLW).
- 15 **One-minute average:** means the average of detector responses calculated at least every sixty (60)  
16 seconds from responses obtained at least every fifteen (15) seconds.
- 17 **Permittees:** means the United States Department of Energy (owner/operator) and Bechtel National, Inc.  
18 (Co-operator).
- 19 **Pretreatment Plant Miscellaneous Unit Systems:** is defined as specified on Permit Tables [III.10.G.A](#)  
20 and [B](#).
- 21 **Primary sump:** means any pit or reservoir that meets the WAC 173-303-040 definition of “tank,” and  
22 those troughs/trenches connected to it, that serve to collect dangerous/hazardous waste, deliberately  
23 introduced (e.g., from decontamination or treatment activities), for transport to TSD facilities.
- 24 **Rolling average:** means the average of all one-minute averages over the averaging period.
- 25 **Secondary sump:** means any pit or reservoir that meets the WAC 173-303-040 definition of “tank,” and  
26 those troughs/trenches connected to it, that serve to collect dangerous/hazardous waste, not deliberately  
27 introduced (e.g., from spills, leaks, or overflows), for transport to TSD facilities.
- 28 **Standard operating procedure or SOP:** will mean a written description of the procedures by which a  
29 process, equipment, etc. will be operated. An SOP may be written by the manufacturer and/or the  
30 Permittees.
- 31 **Successful completion of the demonstration test:** will mean operations including a minimum of three  
32 test runs without significant interruptions (i.e., each test run was completed on the same day initiated and  
33 the samples have been preserved and maintained intact, and one in which sampling of exhaust gas was  
34 representative of the LAW Vitrification System or HLW Vitrification System Operations, whichever is  
35 applicable, and adequate to achieve evaluation of PODCs destruction and removal efficiency (DRE) to  
36 99.99%).
- 37 **TEQ:** means toxicity equivalence, the international method of relating the toxicity of various  
38 dioxin/furan congeners to the toxicity of 2,3,7,8- tetrachlorodibenzo-p-dioxin.
- 39 **Pre-process:** means prior to introduction into a dangerous or mixed waste management unit at the WTP  
40 Unit.
- 41 **In-process:** means duration of a waste in a dangerous or mixed waste management unit at the WTP Unit.
- 42 **Post-process:** means prior to the introduction into a subsequent dangerous or mixed waste management  
43 unit at the WTP Unit or prior to shipment from the WTP Unit.

1 **Vendor information:** means documentation prepared by a vendor (e.g., catalog cut sheets) for plant  
 2 items that are routinely manufactured and stocked by vendors (i.e., items that are considered "off the  
 3 shelf") and are not being procured in accordance with Permittee's engineering drawings and  
 4 specifications. Documentation such as catalog cut sheets will be annotated to specify selected items  
 5 which meet Permittee's procurement requirements equipment specification. Documentation associated  
 6 with "one of a kind", custom items, and commercial grade items (e.g., bulk pipe, valves) that will be  
 7 procured in accordance with the Permittees engineering drawings and specifications is not considered  
 8 vendor information. Changes to the drawings and specifications may require a permit modification.

9 The following acronyms are specific to the WTP Unit:

10	AWFCO	Automatic Waste Feed Cut-off
11	CDR	Construction Deficiency Report
12	CEMS	Continuous Emissions Monitoring System
13	CMS	Continuous Monitoring System
14	CNP	Cesium Nitric Acid Recovery Process System
15	CRP	Cesium Resin Addition Process System
16	CPE	Cathodic Protection Electrical System
17	CXP	Cesium Ion Exchange Process System
18	DFETP	Dioxin and Furan Emission Test Plan
19	DRE	Destruction and Removal Efficiency
20	Dscf	Dry standard cubic feet
21	ERP	Emergency Response Plan
22	FEP	Waste Feed Evaporation Process System
23	FRP	Waste Feed Receipt Process System
24	HCP	HLW Concentrate Receipt Process System
25	HDH	HLW Canister Decontamination Handling System
26	HEH	HLW Canister Export Handling System
27	HEME	High Efficiency Mist Eliminator
28	HEPA	High Efficiency Particulate Air Filter
29	HFH	HLW Filter Cave Handling System
30	HFP	HLW Melter Feed Process System
31	HLP	HLW Lag Storage and Feed Blending Process System
32	HLW	High-level Waste
33	HMH	HLW Melter Handling System
34	HMP	HLW Melter Process System
35	HOP	HLW Vit Primary Offgas Treatment System
36	HPH	HLW Canister Pour Handling System
37	HSH	HLW Melter Cave Support Handling System
38	IHLW	Immobilized High-Level Waste (Glass)
39	ILAW	Immobilized Low-Activity Waste (Glass)
40	IQRPE	Independent, qualified, registered, professional engineer
41	LAB	WTP Laboratory Building
42	LAW	Low Activity Waste
43	LCP	LAW Concentrate Receipt Process System
44	LEH	LAW Container Export Handling System
45	LFH	LAW Canister Finishing Handling System
46	LFP	LAW Melter Feed Process System
47	LMH	LAW Melter Handling System
48	LMP	LAW Melter Process System
49	LOP	LAW Primary Offgas Process System
50	LPH	LAW Container Pour Handling System

1	LSH	LAW Melter Equipment Support Handling System
2	LSM	Locally Shielded Melter
3	LVP	LAW Secondary Offgas/Vessel Vent Process System
4	NCR	Nonconformance Report
5	PFH	Pretreatment Filter Cave Handling System
6	PIH	Pretreatment In-Cell Handling System
7	PJV	Pulse Jet Ventilation System
8	PODC	Principal Organic Dangerous Constituents
9	PTF	Pretreatment Building
10	PVP	Pretreatment Vessel Vent Process System
11	PVV	Process Vessel Vent System
12	PWD	Plant Wash and Disposal System
13	RDP	Spent Resin and Dewatering Process System
14	RDTP	Revised Demonstration Test Plan
15	RLD	Radioactive Liquid Waste Disposal System
16	RPP-WTP	River Protection Project-Waste Treatment Plant
17	RWH	Radioactive Solid Waste Handling System
18	SBS	Submerged Bed Scrubber
19	TCP	Treated LAW Evaporation Process System
20	TLP	Treated LAW Evaporation System
21	TOC	Total Organic Carbon
22	TXP	Technetium Ion Exchange Process System
23	TEP	Technetium Eluant Recovery Process System
24	UFP	Ultrafiltration Process System
25	WESP	Wet Electrostatic Precipitator
26	WTP	River Protection Project – Waste Treatment and Immobilization Project (also known as
27		the Waste Treatment Plant and Vitrification Plant)
28	6Mo	Six Percent Molybdenum Alloy
29	304L	ASTM A240 Grade 304L Stainless Steel
30	316L	ASTM A240 Grade 316L Stainless Steel
31	III.10.C.2.	General Waste Management
32	III.10.C.2.a.	The Permittees may not commence treatment or storage of dangerous waste or mixed
33		waste in any new or modified portion of the facility until the Permittees have received a
34		Permit modification approval pursuant to Permit Conditions <a href="#">III.10.C.2.e.</a> and
35		<a href="#">III.10.C.2.f.</a> , or <a href="#">III.10.C.2.g.</a> , and submitted to Ecology, by certified mail, express mail, or
36		hand delivery, a letter signed by the Permittees and a Registered Professional Engineer
37		stating that the facility has been constructed or modified in compliance with the Permit in
38		accordance with WAC 173-303-810(14)(a); and
39	III.10.C.2.a.i.	Ecology has inspected the modified or newly constructed facility and finds it is in
40		compliance with the conditions of the Permit, or
41	III.10.C.2.a.ii.	Ecology has either waived the inspection or has not, within fifteen business days, after
42		receipt of the Permittees' letter, notified the Permittees of an intent to inspect.
43	III.10.C.2.b.	The Permittees are authorized to accept the dangerous and/or mixed waste specified in
44		Operating Unit 10, Chapter 1.0 (Part A Form 3) except for those wastes outside the waste
45		acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this Permit
46		as long as the generator has a valid State/EPA identification number.

- 1 III.10.C.2.c. All dangerous and/or mixed waste must be managed only in areas authorized for  
2 dangerous and/or mixed waste management under the conditions of this Permit, except as  
3 allowed under WAC 173-303-200. The authorized dangerous and/or mixed waste  
4 management areas of the WTP Unit are specified in Conditions [III.10.D](#) through [III.10.K](#),  
5 of this Permit.
- 6 III.10.C.2.d. Dangerous and/or mixed waste may be transferred from the WTP TSD unit to a permitted  
7 TSD only, in accordance with the receiving TSD unit's waste acceptance criteria.
- 8 III.10.C.2.e. Permit modifications pursuant to this Permit for dangerous and/or mixed waste at the  
9 request of the Permittees must be done according to the three tiered modification system  
10 specified in WAC 173-303-830(4) and Condition I.C.3. The Permit modification request  
11 must include page changes to the Permit, attachments, and permit application supporting  
12 documentation necessary to incorporate the proposed permit modification.
- 13 III.10.C.2.f. In addition to other requirements in WAC 173-303-830, within forty-five (45) days of a  
14 permit change (i.e., permit modification) being put into effect or approved, the Permittees  
15 will retype the relevant portions of the Permit and attachments, to incorporate the change  
16 (if not already reflected in the change pages submitted in the original permit modification  
17 request), reprint the documents, and submit them to Ecology. This submittal does not  
18 require certification described in WAC 173-303-810(13).
- 19 III.10.C.2.g. For permit modifications pursuant to Operating Unit 10, Appendix 1.0 of this Permit, a  
20 draft permit will be prepared and issued by Ecology pursuant to WAC 173-303-  
21 830(3)(a)(ii) and WAC 173-303-840. A final permit decision will be issued by Ecology  
22 pursuant to WAC 173-303-840.
- 23 III.10.C.2.h. The Permittees must complete at least one Compliance Schedule interim requirement  
24 every 12 months, as specified in Operating Unit 10, Appendix 1.0 of this Permit. If no  
25 interim requirement will be completed within a 12 month period, the Permittees will  
26 submit progress reports to Ecology for incorporation into the Administrative Record.  
27 Progress report Compliance Schedule dates will be submitted to Ecology as a Class <sup>1</sup>  
28 permit modification, for incorporation into Operating Unit 10, Appendix 1.0 of this  
29 Permit. Progress reports will contain at a minimum, the following information:
- 30 III.10.C.2.h.i. A description of the portion of the interim requirement completed;
- 31 III.10.C.2.h.ii. Summaries of any problems affecting timely completion of the interim requirement;
- 32 III.10.C.2.h.iii. A description of the plans for completing the remaining portion of the interim  
33 requirement, including any alternatives;
- 34 III.10.C.2.h.iv. Projected interim requirement completion date.
- 35 III.10.C.2.i. The Permittees will submit a Part A, Form 3 Permit Application revision for Ecology  
36 approval as a permit modification pursuant to Permit Conditions [III.10.C.2.e](#), and  
37 [III.10.C.2.f](#)., or [III.10.C.2.g](#)., in accordance with the schedule in Operating Unit 10,  
38 Appendix 1.0 of this Permit to incorporate changes to Tables [III.10.D.A](#), [III.10.E.A](#)  
39 through [D](#), [III.10.F.A](#), [III.10.G.A](#), [III.10.H.A](#), [III.10.I.A](#), [III.10.J.A](#), and [III.10.K.A](#), as  
40 modified pursuant to the compliance schedule in Operating Unit 10, Appendix 1.0 of this  
41 Permit.
- 42 III.10.C.2.j. The Permittees will submit to Ecology the potential disposal path(s), including the  
43 potential authorized TSD facilities, for each waste stream generated at the WTP Unit in  
44 accordance with the schedule in Operating Unit 10, Appendix 1.0 of this Permit for  
45 incorporation into the Administrative Record.

- 1 III.10.C.2.k. The Permittees will submit to Ecology, traffic information at the WTP Unit pursuant to  
2 WAC 173-303-806(4)(a)(x), in accordance with the schedule in Operating Unit 10,  
3 Appendix 1.0 of this Permit for incorporation into the Administrative Record.
- 4 III.10.C.2.l. During operations of the LAW Vitrification System and HLW Vitrification System,  
5 pursuant to Permit Sections [III.10.H.](#) and [J.](#), processing of materials in the LAW and  
6 HLW Vitrification Systems that would designate as dangerous waste are fully subject to  
7 the requirements of this Permit, excluding the melter feed system as identified in Tables  
8 [III.10.H.A.](#) and [III.10.J.A.](#), respectively. This exclusion does not apply to mixed waste.
- 9 III.10.C.2.m. The Facility Owner shall ensure all waste streams generated at the WTP, when combined  
10 with the related impacts from other waste forms disposed of on the Hanford Facility, will  
11 not contribute to an exceedence of environmental standards promulgated in federal and  
12 state environmental laws and regulations if disposed of, or intended to be disposed of, at  
13 the Hanford Facility.
- 14 III.10.C.3. Waste Analysis
- 15 III.10.C.3.a. The Permittees will maintain adequate knowledge of any waste to be managed properly  
16 by the WTP Unit before acceptance, after receipt, and during treatment and storage of  
17 these waste. The Permittees will ensure this knowledge through compliance with the  
18 requirements of WAC-173-303-300 and with the provisions of the WAP, Operating Unit  
19 10, Chapter 3.0 of this Permit [WAC 173-303-806(4)(a)(ii), WAC 173-303-300(1)].
- 20 III.10.C.3.b. When laboratory analytical methods are required to confirm the Permittees knowledge of  
21 the waste, the Permittees must ensure that the sampling and test procedures listed as  
22 acceptable by WAC 173-303-110, Appendices II and III to 40 CFR Part 261, the current  
23 revision of SW-846, or equivalent methods approved in writing by Ecology are used.
- 24 III.10.C.3.c. The Permittees are responsible for obtaining accurate information for each waste stream.  
25 Inaccurate waste analysis information provided by the generating site (or unit) is not a  
26 defense for noncompliance by the Permittees with the waste management requirements  
27 and conditions of this Permit, WAC 173-303, and the LDR in 40 CFR Part 268, as  
28 incorporated by reference in Chapter 173-303.
- 29 III.10.C.3.d. Records and results of waste analyses described in Conditions II.D.3 or [III.10.C.3.e.](#) will  
30 be maintained as described in Condition II.I.1 of this Permit. The WTP Unit operating  
31 record will include, but not be limited to, information requirements for waste analysis in  
32 Conditions I.E.10 and II.I of this Permit.
- 33 III.10.C.3.e. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the  
34 Permittees will submit to Ecology for review and approval a revised WAP and QAPP in  
35 Operating Unit 10, Chapter 3.0 of this Permit as a permit modification pursuant to  
36 Conditions [III.10.C.2.e](#) and [III.10.C.2.f](#), and Compliance Schedule in Operating Unit 10,  
37 Appendix 1.0. The revised WAP and QAPP will include:
- 38 III.10.C.3.e.i. All the elements listed in WAC 173-303-300(5), Condition II.D.3 of this Permit (Waste  
39 Analysis), and in compliance with Condition II.E of this Permit (Quality  
40 Assurance/Quality Control).
- 41 III.10.C.3.e.ii. Requirements that characterization will be performed on the waste feed prior to transfer  
42 to the WTP Unit in conformance with the regulatory data quality objectives identified in  
43 the Regulatory DQO Optimization Report (24590-WTP-RPT-MGT-04-001, Rev 0 ).  
44 Requirements that the following analyses, at a minimum, will be conducted on each new  
45 batch prior to waste transfer to the WTP Unit, in accordance with the methods under  
46 WAC 173-303-110: Ammonia, pH, metals, organic acids, mercury, cyanide, volatiles,

- 1 semi-volatiles, PCBs/pesticides, anions, TOC, and compatibility (ASTM Method D5058-  
2 90). For the purposes of this Permit Condition, a “new batch” is one that has been  
3 sampled and analyzed in accordance with the Regulatory DQO Optimization Report  
4 (24590-WTP-RPT-MGT-04-001, Rev 0 ), and has received no further additions. Further  
5 additions require the Permittees to resample and reanalyze, unless an exception is  
6 approved by Ecology on a case-by-case basis. Only mixed waste meeting the definition  
7 of “new batch”, or granted an exception as discussed above, are authorized for transfer to  
8 the WTP Unit. Water additions for the purposes of waste transfer are not considered  
9 additions for the purposes of this Permit Condition.
- 10 III.10.C.3.e.iii. Identify and include operating parameters to be monitored/controlled and limitations for  
11 these parameters for pre-process, in-process, and post-process operations addressing on a  
12 unit specific basis treatment effectiveness, as specified in Tables [III.10.E.E](#) through [H](#),  
13 [III.10.G.C](#), [III.10.H.C](#), [III.10.I.C](#), [III.10.J.C](#), and [III.10.K.C](#), waste compatibility, safe  
14 operation, and compatibility with unit materials of construction. Amend the sampling,  
15 analysis, and QA/QC procedures to include these parameters and the monitoring  
16 frequency.
- 17 III.10.C.3.e.iv. Requirements that the Permittees will, for Type I sumps if liquids are detected, and for  
18 Type II sumps, as defined in Operating Unit 10, Chapter 4.0 of this Permit, if liquid  
19 levels are outside normal operating parameters, either collect the liquid and return to the  
20 treatment process, or designate the sump contents for proper management and disposal  
21 prior to removal.
- 22 III.10.C.3.e.v. For ILAW and IHLW containers, a description of procedures used to verify exterior  
23 container surfaces are visually free of mixed waste.
- 24 III.10.C.3.e.vi. Requirement that wastes generated at the WTP Unit meet the receiving authorized TSD  
25 facility waste acceptance criteria prior to a waste stream transfer.
- 26 III.10.C.3.e.vii. Requirements and criteria for reevaluation of sampling and analysis frequency for all  
27 waste streams.
- 28 III.10.C.3.e.viii. Documentation demonstrating methods for obtaining samples of wastes are  
29 representative as discussed in WAC 173-303-110(2).
- 30 III.10.C.4. Recordkeeping
- 31 III.10.C.4.a. The unit specific portion of the Hanford Facility Operating Record will include the  
32 documentation specified in Operating Unit 10, Chapter 12.0, Permit Condition II.I,  
33 applicable to the WTP Unit and other documentation specified in Operating Unit 10. The  
34 facility and unit specific record keeping requirements are distinguished in Table 12-1 of  
35 the General Information portion, Attachment 33 to the Sitewide Permit, and tied to the  
36 associated Sitewide Permit Conditions.
- 37 III.10.C.5 Procedure to Prevent Hazards
- 38 III.10.C.5.a. The Permittees will design, construct, and operate the WTP Unit in compliance with  
39 Operating Unit 10, Chapter 6.0, Section 6.1.
- 40 III.10.C.5.b. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the  
41 Permittees will update and resubmit for approval Operating Unit 10, Chapter 6.0,  
42 Sections 6.3, 6.4, and 6.5 as a permit modification pursuant to Permit Conditions  
43 [III.10.C.2.e](#) and [III.10.C.2.f](#), to be consistent with design details and schedule described  
44 in Operating Unit 10, Appendix 1.0. The WTP Unit fire protection systems will be  
45 constructed to the applicable codes listed in Operating Unit 10, Chapter 6.0, Section

- 1 6.3.1.4. Updated Section 6.4.4. will include descriptions of the essential loads and  
2 critical systems supplied with back-up, un-interruptible, and standby power.
- 3 III.10.C.5.c. The Permittees will inspect the WTP Unit to prevent malfunctions and deterioration,  
4 operator errors, and discharges that may cause or lead to the release of dangerous waste  
5 constituents to the environment, or a threat to human health. Inspections must be  
6 conducted in accordance with the WTP Unit Inspection Schedule, Operating Unit 10,  
7 Chapter 6.0, Section 6.2. Prior to the receipt of dangerous and/or mixed waste in the  
8 WTP Unit, the Permittees will update and resubmit to Ecology for review and approval  
9 the Inspection Schedule in Operating Unit 10, Chapter 6.0 of this Permit as a permit  
10 modification pursuant to Permit Conditions [III.10.C.2.e](#) and [III.10.C.2.f](#), and Compliance  
11 Schedule in Operating Unit 10, Appendix 1.0. The revised schedule will include, but not  
12 be limited to, [III.10.C.5.i](#) through [v](#). below. In addition, the Permittees will submit to  
13 Ecology for incorporation into the Administrative Record, the basis for developing  
14 Inspection Schedule frequencies:
- 15 III.10.C.5.c.i. Detailed dangerous and/or mixed waste management unit specific and general inspection  
16 schedules and description of procedures (not examples) pursuant to WAC 173-303-  
17 395(1)(d), 173-303-630(6), 173-303-640(4)(a)(i) and (6), 173-303-670(7)(b) in  
18 accordance with 173-303-680(3), 40 CFR, 264.1101(c)(4). The inspection schedule will  
19 be presented in the form of a table that includes a description of the inspection  
20 requirement, inspection frequency, and types of problems to look for during the  
21 inspections.
- 22 III.10.C.5.c.ii. The proposed locations (scaled drawing with layout) and capabilities of camera(s) (i.e.,  
23 zoom angles, field of view, etc.) to be used for remote inspections.
- 24 III.10.C.5.c.iii. Schedule and program description for performing integrity assessments as specified in  
25 Permit Conditions [III.10.E.9.e.i.](#), [III.10.G.10.e.i.](#), [III.10.H.5.e.i.](#), [III.10.I.1.a.v.](#),  
26 [III.10.J.5.e.i.](#), and [III.10.K.1.a.v.](#)
- 27 III.10.C.5.c.iv. Inspection schedules for leak detection system and control instrumentation to include, but  
28 not limited to, valves pressure devices, flow devices, measuring devices, as specified in  
29 Permit Conditions [III.10.E.9.e.xi](#), [III.10.F.3.c.](#), and [III.10.G.10.e.xii](#), and Permit  
30 Conditions [III.10.H.5.f.xvi](#), and [III.10.J.5.f.xvi](#).
- 31 III.10.C.5.c.v. Inspection schedule will include inspections for all dangerous and/or mixed waste  
32 management units specified in Permit Sections [III.10.D](#), [E](#), [F](#), [G](#), [H](#), [I](#), [J](#), and [K](#).
- 33 III.10.C.5.d. The Permittees will equip the WTP Unit with the equipment specified in Operating Unit  
34 10, Chapter 6.0, as required by WAC 173-303-340(1), and Condition II.B.1 of this  
35 Permit.
- 36 III.10.C.5.e. The Permittees will test and maintain the equipment specified in Operating Unit 10,  
37 Chapter 6.0, as necessary, to assure proper operation in the event of emergency as  
38 required by Condition II.B.2 of this Permit.
- 39 III.10.C.5.f. The Permittees will maintain access to communications or alarms pursuant to WAC 173-  
40 303-340(2), as provided in the *RPP-WTP Emergency Response Plan*, Operating Unit 10,  
41 Chapter 7.0 and Condition II.B.3 of this Permit.
- 42 III.10.C.6. Contingency Plan
- 43 III.10.C.6.a. The Permittees will immediately carry out applicable provisions of the *RPP-WTP*  
44 *Emergency Response Plan*, Operating Unit 10, Chapter 7.0 of this Permit, pursuant to  
45 WAC 173-303-360(2), whenever there is a release of dangerous and/or mixed waste or

- 1 dangerous waste constituents, or other emergency circumstance, any of which threatens  
2 human health or the environment.
- 3 III.10.C.6.b. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the  
4 Permittees will update and resubmit the Contingency Plan in compliance with Operating  
5 Unit 10, Chapter 7.0, and pursuant to WAC 173-303-350(5), as a permit modification  
6 pursuant to Permit Conditions [III.10.C.2.e](#) and [III.10.C.2.f](#), to be consistent with design  
7 details and schedule described in Operating Unit 10, Appendix 1.0.
- 8 III.10.C.6.c. After initial receipt of dangerous and/or mixed waste, the Permittees will review and  
9 amend, if necessary, the applicable portions of the Contingency Plan, Operating Unit 10,  
10 Chapter 7.0 of this Permit, and in accordance with the provisions of WAC 173-303-  
11 350(5) and WAC 173-303-830(4). The Contingency Plan will be amended as a permit  
12 modification pursuant to Permit Conditions [III.10.C.2.e](#) and [III.10.C.2.f](#).
- 13 III.10.C.6.d. RESERVED.
- 14 III.10.C.6.e. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the  
15 Permittees will comply with the requirements of WAC 173-303-350(3) and -360(1)  
16 concerning the emergency coordinator specific to the WTP Unit in compliance with  
17 Permit Condition II.A.4.
- 18 III.10.C.7. Personnel Training
- 19 III.10.C.7.a. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the  
20 Permittees will update and resubmit, to Ecology for review and approval, the Training  
21 Program description in Operating Unit 10, Chapter 8.0 of this Permit as a permit  
22 modification pursuant to Permit Conditions [III.10.C.2.e](#) and [III.10.C.2.f](#), and Compliance  
23 Schedule in Operating Unit 10, Appendix 1.0. The revised Training Program description  
24 will include but not be limited to:
- 25 III.10.C.7.a.i. Detailed unit specific and general Training Program descriptions (not typical) consistent  
26 with WAC 173-303-806(4)(a)(xii).
- 27 III.10.C.7.a.ii. Sufficient detail to document that the training and qualification program for all categories  
28 of personnel whose activities may reasonably be expected to directly affect emissions  
29 from the LAW and HLW Systems, except control room operators, is appropriately  
30 consistent with 40 CFR 63.1206(c)(6)(ii), and for control room operators, is appropriately  
31 consistent with 40 CFR 63.1206(c)(6)(i) and 63.1206(c)(6)(iii) through 63.1206(c)(6)(vi)  
32 [WAC 173-303-680(2)].
- 33 III.10.C.7.b. The Permittees will ensure that the LAW and HLW Systems are operated and  
34 maintained, at all times, by persons who are trained and qualified to perform these and  
35 any other duties that may reasonably be expected to directly affect emissions from the  
36 LAW and HLW Systems [WAC 173-303-680(2)].
- 37 III.10.C.7.c. The Permittees will conduct personnel training in accordance with the approved  
38 description of the WTP Unit Training Plan, Operating Unit 10, Chapter 8.0 of this Permit,  
39 pursuant to WAC 173-303-330. The Permittees will maintain documents in accordance  
40 with Condition II.C.1 of this Permit and WAC 173-303-330(2) and (3).
- 41 III.10.C.7.d. RESERVED.
- 42 III.10.C.7.e. The Permittees will submit, under separate cover, the actual detailed WTP Unit  
43 Dangerous Waste Training Plan in accordance with the Compliance Schedule in  
44 Operating Unit 10, Appendix 1.0. The WTP Unit Dangerous Waste Training Plan will be  
45 reviewed for compliance with the outline of the training program in Operating Unit 10,

- 1 Chapter 8.0 and requirements of WAC 173-303-330. The Training Plan will be  
2 incorporated into the Administrative Record.
- 3 III.10.C.8. Closure
- 4 III.10.C.8.a. The Permittees must conduct closure of the WTP Unit according to the Closure Plan in  
5 Operating Unit 10, Chapter 11.0, and Conditions II.J (Facility Closure), II.K  
6 (Soil/Ground Water Closure Performance Standards), and [III.10.C.8.](#) of this Permit. The  
7 closure plan will be modified according to provisions of WAC 173-303-610(3)(b)(ii).
- 8 III.10.C.8.b. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees  
9 will update and resubmit the Closure Plan, Operating Unit 10, Chapter 11.0 of this  
10 Permit, for approval as a permit modification pursuant to Permit Condition [III.10.C.2.g.](#),  
11 to be consistent with design details and schedule described in Operating Unit 10,  
12 Appendix 1.0. The updated Closure Plan must be consistent with the closure  
13 performance standards specified in Condition II.K, WAC 173-340 and, in addition for  
14 Containment Buildings, consistent with 40 CFR 264.1102(b) as referenced by WAC 173-  
15 303-695.
- 16 III.10.C.8.c. The Permittees will submit, for Ecology review and approval, an update to the Closure  
17 Plan, Operating Unit 10, Chapter 11.0 within one hundred eighty (180) days prior to  
18 commencing partial closure, as a permit modification pursuant to Permit Conditions  
19 [III.10.C.2.e](#) and [III.10.C.2.f](#).
- 20 III.10.C.8.d. One hundred eighty (180) days prior to commencing closure, the Permittees must submit  
21 to Ecology, for review and approval, a Sampling and Analysis Plan and a revised Closure  
22 Plan as a permit modification pursuant to Permit Conditions [III.10.C.2.e](#) and [III.10.C.2.f](#).
- 23 III.10.C.8.e. At least forty-five (45) days before initiating closure, the Permittees must provide  
24 Notification of Closure pursuant to WAC 173-303-610(3)(c).
- 25 III.10.C.8.f. Ecology may require additional sampling and/or investigation after the Permittees  
26 implement the approved Sampling and Analysis Plan if Ecology determines that the  
27 sampling and analyses have not adequately demonstrated whether clean closure has been  
28 achieved. Such a requirement will be implemented pursuant to WAC 173-303-830(3).  
29 Additional sampling and analysis may be required for the following reasons:
- 30 III.10.C.8.f.i. Specialized sample collection or analytical techniques are required to ensure adequate  
31 quantitation limits for chemical constituents; or
- 32 III.10.C.8.f.ii. Results indicate the need to analyze for additional constituents at certain locations; or
- 33 III.10.C.8.f.iii. Results indicate additional soil or groundwater sampling is required in certain locations;  
34 or
- 35 III.10.C.8.f.iv. Other reasons indicate the Sampling and Analysis Plan has not adequately demonstrated  
36 whether clean closure has been achieved.
- 37 III.10.C.8.g. RESERVED.
- 38 III.10.C.8.h. Documentation supporting the independent registered professional engineer's  
39 certification of closure must be submitted to Ecology with the closure certification  
40 required by WAC 173-303-610(6). In addition to the items in Operating Unit 10, Chapter  
41 11.0, the documentation must include the following and other information Ecology may  
42 request. The Permittees are required to furnish documentation supporting the  
43 independent registered professional engineer's certification to Ecology upon request,

- 1 until Ecology has notified the Permittees in writing that Ecology agrees with and has  
2 accepted the Permittees' closure certification:
- 3 III.10.C.8.h.i. Sampling procedures that were followed;
- 4 III.10.C.8.h.ii. soil and concrete locations that were sampled;
- 5 III.10.C.8.h.iii. Sample labeling and handling procedures that were followed, including chain of custody  
6 procedures;
- 7 III.10.C.8.h.iv. Description of procedures that were followed to decontaminate concrete or metal to meet  
8 the clean closure standards as set by Ecology, on a case by case basis, in accordance with  
9 the closure performance standards of WAC 173-303-610(2)(a)(ii) and in a manner that  
10 minimizes or eliminates post-closure escape of dangerous waste constituents, or to  
11 achieve a "clean debris surface" as specified in 40 CFR 268.45, Table 1, concrete  
12 surfaces, as incorporated by reference in WAC 173-303-140. [WAC 173-303-  
13 610(2)(b)(ii)].
- 14 III.10.C.8.h.v. Laboratory and field data, including supporting QA/QC summary;
- 15 III.10.C.8.h.vi. Report that summarizes closure activities;
- 16 III.10.C.8.h.vii. Copy of all field notes taken by the independent registered professional engineer; and
- 17 III.10.C.8.h.viii. Copy of all contamination survey results.
- 18 III.10.C.9. Critical Systems
- 19 III.10.C.9.a. The WTP Unit critical systems, as defined in the Hanford Site-wide Permit definition  
20 section, are identified in Operating Unit 10, Appendix 2.0.
- 21 III.10.C.9.b. As the design proceeds, Ecology reserves the right to modify this Permit for reasons  
22 described in the WAC 173-303-830(3) to add additional systems to the Critical Systems  
23 in Operating Unit 10, Appendix 2.0.
- 24 III.10.C.9.c. The Permittees will conduct all construction subject to this Permit in accordance with the  
25 approved designs, plans, and specifications that are required by this Permit, except as  
26 specified in Conditions [III.10.C.9.d.](#) or [III.10.C.9.e.](#) For purposes of Conditions  
27 [III.10.C.9.d.](#) and [III.10.C.9.e.](#), the Ecology representative will be an Ecology construction  
28 inspector, project manager, or other designated representative of Ecology.
- 29 III.10.C.9.d. The Permittees will submit a nonconformance report (NCR) or construction deficiency  
30 report (CDR) to the Ecology representative (s), as applicable, within five (5) calendar  
31 days of the Permittees becoming aware of incorporation of minor nonconformance or  
32 construction deficiency from the approved designs, plans, and specifications into the  
33 construction of critical systems, as defined in the Hanford Site-wide Permit definition  
34 section. Such minor nonconformance or construction deficiency will be defined, for the  
35 purposes of this Permit Condition, as nonconformance or construction deficiency that is  
36 necessary to accommodate proper construction and the substitution or the use of  
37 equivalent or superior materials or equipment that do not substantially alter the Permit  
38 conditions or reduce the capacity of the facility to protect human health or the  
39 environment. Such minor nonconformance or construction deficiency will not be  
40 considered a modification of this Permit. If Ecology determines that the nonconformance  
41 or construction deficiency is not minor, it will notify the Permittees in writing that a  
42 permit modification is required for the deviation and whether prior approval is required  
43 from Ecology before work proceeds which affect the nonconforming or construction  
44 deficiency item.

- 1 III.10.C.9.e. The Permittees will formally document, with a nonconformance report (NCR) or  
2 construction deficiency report (CDR), as applicable, incorporation of minor  
3 nonconformance or construction deficiency from the approved designs, plans, and  
4 specifications into the construction of non-critical systems subject to this Permit. Such  
5 minor nonconformance or construction deficiency will not be considered a modification  
6 of this Permit. All NCR's and CDR's will be maintained in the WTP Unit Operating  
7 Record and will be made available to Ecology upon request or during the course of an  
8 inspection. If Ecology determines that the nonconformance or construction deficiency is  
9 not minor, it will notify the Permittees in writing that a permit modification is required  
10 for the deviation and whether prior approval is required from Ecology before work  
11 proceeds which affect the nonconforming or construction deficiency item.
- 12 III.10.C.9.f. For each Critical System identified in Operating Unit 10, Appendix 2.0 or meets the  
13 definition of Critical System as defined in this Permit, the Permittees will submit to  
14 Ecology for review and approval, following the schedule in Operating Unit 10, Appendix  
15 1.0 of this Permit, the information identified in Permit Conditions [III.10.C.16.](#),  
16 [III.10.D.10.](#), [III.10.E.9.](#), [III.10.F.7.](#), [III.10.G.10.](#), [III.10.H.5.](#), and [III.10.J.5.](#) Information  
17 Ecology determines to incorporate into the Permit will follow the Permit Condition  
18 [III.10.C.2.g.](#) process, unless stated otherwise within the specific permit condition.  
19 Information Ecology determines necessary to support design basis will be incorporated  
20 into the Administrative Record.
- 21 III.10.C.9.g. Upon completion of the WTP Unit construction subject to this Permit, the Permittees  
22 will produce as-built drawings of the project which incorporate the design and  
23 construction modifications resulting from all change documentation as well as  
24 modifications made pursuant to Permit Conditions [III.10.C.2.e.](#), [III.10.C.2.f.](#), and  
25 [III.10.C.2.g.](#) The Permittees will place the as-built drawings into the operating record  
26 within twelve (12) months of completing construction.
- 27 III.10.C.9.h. The Permittees will formally document changes to approved designs, plans, and  
28 specifications with design change documentation [e.g., Design Change Notice (DCN),  
29 Field Change Request (FCR), Field Change Notice (FCN), Specification Change Notice  
30 (SCN), and Supplier Deviation Disposition Request (SDDR)]. All design change  
31 documentation will be maintained in the WTP Unit-specific Operating Record and will  
32 be made available to Ecology upon request or during the course of an inspection. For any  
33 design change documentation affecting any critical systems, the Permittees will provide  
34 copies to Ecology within five (5) working days. Identification of critical systems will be  
35 included by the Permittees in each WTP Unit-specific dangerous waste permit  
36 application, closure plan, or permit modification, as appropriate. If Ecology determines  
37 that the design change is not minor, it will notify the Permittees in writing that a permit  
38 modification is required for the design change and whether prior approval is required  
39 from Ecology before work affected by the design change may proceed.
- 40 III.10.C.9.i. Ventilation system duct work is not required to be doubly contained within the WTP  
41 Unit. However, upon discovery of accumulation of liquids, a compliance plan will be  
42 submitted within sixty (60) days of discovery to correct the problem.
- 43 III.10.C.10 Equivalent Materials
- 44 III.10.C.10.a. If certain equipment, materials, and administrative information (such as names, phone  
45 numbers, addresses) are specified in this Permit, the Permittees may use equivalent or  
46 superior substitutes. Use of such equivalent or superior items within the limits (e.g.,  
47 ranges, tolerances, and alternatives) already clearly specified in sufficient detail in  
48 Operating Unit 10 of this Permit, are not considered a modification of this Permit.

1 However, the Permittees must place documentation of the substitution, accompanied by a  
2 narrative explanation and the date the substitution became effective in the operating  
3 record within seven (7) days of putting the substitution into effect, and submit  
4 documentation of the substitution to Ecology. Upon review of the documentation of the  
5 substitution, if deemed necessary, Ecology may require the Permittees to submit a permit  
6 modification in accordance with Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#)

7 Note: The format of tables and forms contained in Operating Unit 10 of this Permit are  
8 not subject to the requirements of this Permit, and may be revised at the Permittees'  
9 discretion.

10 III.10.C.10.b. If Ecology determines that a substitution was not equivalent to the original, they will  
11 notify the Permittees that the Permittees' claim of equivalency has been denied, of the  
12 reasons for the denial, and that the original material or equipment must be used. If the  
13 product substitution is denied, the Permittees will comply with the original approved  
14 product specification, find an acceptable substitution, or apply for a permit modification  
15 in accordance with Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#)

16 III.10.C.11. Risk Assessment

17 III.10.C.11.a. The Permittees will submit, in accordance with Operating Unit 10, Appendix 1.0 of this  
18 Permit to Ecology for approval, the "Previously Submitted Risk Assessment Workplan,"  
19 Operating Unit 10, Appendix 6.1.1. of this Permit, revised in consultation with Ecology  
20 to address the revisions (NOD/responses) documented in Operating Unit 10, Appendix  
21 6.1.2 and updated to address the following, as a permit modification pursuant to Permit  
22 Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#) The updated previously submitted Risk  
23 Assessment Work Plan will be added to Operating Unit 10 as Appendix 6.2 (Risk  
24 Assessment Work Plan).

25 III.10.C.11.a.i. EPA guidance for performance of Human Health and Ecological Risk Assessments for  
26 Hazardous Waste Combustion Facilities current at the time of the submittal;

27 III.10.C.11.a.ii. Toxicity data current at the time of the submittal;

28 III.10.C.11.a.iii. Compounds newly identified or updated emissions data from current waste  
29 characterization and emission testing;

30 III.10.C.11.a.iv. Air modeling updated to include stack gas parameters based on most current emissions  
31 testing and WTP Unit design;

32 III.10.C.11.a.v. Physical/transport properties of constituents current at the time of the submittal;

33 III.10.C.11.a.vi. Process Description based on most current WTP Unit design;

34 III.10.C.11.a.vii. Emissions data and all supporting calculations based on most current WTP Unit; and

35 III.10.C.11.a.viii. Update of receptor locations based on land use or land use zoning changes, if any.

36 III.10.C.11.b. The Permittees will submit for Ecology approval, prior to initial receipt of dangerous  
37 and/or mixed waste in the WTP Unit, a Pre-Demonstration Test Risk Assessment Report  
38 as Operating Unit 10, Appendix 6.3 addressing direct and indirect human health and  
39 ecological risks performed pursuant to Ecology approved work plan under Permit  
40 Condition [III.10.C.11.a.](#) This report will also include submittal of projected stack  
41 emissions data in Tables [III.10.G.D.](#), [III.10.H.E.](#), and [III.10.J.E.](#) of this Permit and  
42 Operating Unit 10, Appendix 6.3.1 (Basis and Assumptions), completed and updated  
43 which details the basis and assumptions for these emissions, including but not limited to,  
44 projected operating conditions, feed-rates, and treatment effectiveness, consistent with

- 1 information provided and approved pursuant to Permit Conditions [III.10.G.6.](#),  
2 [III.10.G.10.](#), [III.10.H.5.](#), and [III.10.J.5.](#) as a permit modification pursuant to Permit  
3 Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#)
- 4 III.10.C.11.c. Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted  
5 pursuant to Permit Condition [III.10.H.3.d.i.](#), the Permittees will submit a Final Risk  
6 Assessment Report as Operating Unit 10, Appendix 6.4, incorporating the emission test  
7 results from the Demonstration Report(s). The Final Risk Assessment Report will be  
8 prepared in accordance with the Risk Assessment Work Plan, as approved by Ecology  
9 pursuant to Permit Condition [III.10.C.11.a.](#), except the following updates are hereby  
10 incorporated. The Permittees will also submit with this Final Risk Assessment Report,  
11 Tables [III.10.G.D.](#) and [III.10.I.E.](#) of this Permit and Operating Unit 10, Appendix 6.4.1  
12 (Basis and Assumptions) updated to incorporate the emissions data from this Final Risk  
13 Assessment Report(s), as a permit modification pursuant to Permit Conditions  
14 [III.10.C.2.e.](#) and [III.10.C.2.f.](#)
- 15 III.10.C.11.c.i. Toxicity data current at the time of the submittal;
- 16 III.10.C.11.c.ii. Compounds newly identified or updated emissions data from current waste  
17 characterization and emission testing;
- 18 III.10.C.11.c.iii. Air modeling updated to include stack gas parameters based on most current emissions  
19 testing;
- 20 III.10.C.11.c.iv. Physical/transport properties of constituents current at the time of the submittal;
- 21 III.10.C.11.c.v. Update of receptor locations based on land use or land use zoning changes, if any;
- 22 III.10.C.11.c.vi. Process description based on current WTP Unit design;
- 23 III.10.C.11.c.vii. Emissions data and all supporting calculations based on current WTP Unit; and
- 24 III.10.C.11.c.viii. Data from final risk assessment report pursuant to Permit Condition [III.10.C.11.d.](#), if  
25 available first, or simultaneously.
- 26 III.10.C.11.d. Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted  
27 pursuant to Permit Condition [III.10.J.3.d.i.](#), the Permittees will submit a Final Risk  
28 Assessment Report as Operating Unit 10, Appendix 6.4, incorporating the emission test  
29 results from the Demonstration Report(s). The Final Risk Assessment Report will be  
30 prepared in accordance with the Risk Assessment Work Plan, as approved by Ecology  
31 pursuant to Permit Condition [III.10.C.11.a.](#), except the following updates are hereby  
32 incorporated. The Permittees will also submit with this Final Risk Assessment Report,  
33 Tables [III.10.G.D.](#) and [III.10.K.E.](#) of this Permit and Operating Unit 10, Appendix 6.4.1  
34 (Basis and Assumptions) updated to incorporate the emissions data from this Final Risk  
35 Assessment Report, as a permit modification pursuant to Permit Conditions [III.10.C.2.e.](#)  
36 and [III.10.C.2.f.](#)
- 37 III.10.C.11.d.i. Toxicity data current at the time of the submittal;
- 38 III.10.C.11.d.ii. Compounds newly identified or updated emissions data from current waste  
39 characterization and emission testing;
- 40 III.10.C.11.d.iii. Air modeling updated to include stack gas parameters based on most current emissions  
41 testing;
- 42 III.10.C.11.d.iv. Physical/transport properties of constituents current at the time of the submittal;
- 43 III.10.C.11.d.v. Update of receptor locations based on land use or land use zoning changes, if any;

- 1 III.10.C.11.d.vi.Process description based on current WTP Unit design;  
2 III.10.C.11.d.vii.Emissions data and all supporting calculations based on current WTP Unit; and  
3 III.10.C.11.d.viii.Data from final risk assessment report pursuant to Permit Condition [III.10.C.11.c](#), if  
4 available first, or simultaneously.
- 5 III.10.C.11.e. The Final Risk Assessment Report(s) required by Permit Conditions [III.10.C.11.c](#) and  
6 [III.10.C.11.d](#). may be combined, or provided separately, as appropriate.
- 7 III.10.C.12 Air Emissions
- 8 III.10.C.12.a Prior to installing or using any equipment subject to the requirements of WAC 173-303-  
9 690, the Permittees will obtain a Permit Modification following the Permit Condition  
10 [III.10.C.2.g](#). process to incorporate WAC 173-303-690 standards into the permit  
11 application and this Permit prior to generation/receipt of dangerous and/or mixed waste in  
12 the WTP Unit.
- 13 III.10.C.12.b Prior to installing or using any equipment subject to the requirements of WAC 173-303-  
14 691, the Permittees will obtain a Permit Modification following the Permit Condition  
15 [III.10.C.2.g](#). process to incorporate WAC 173-303-691 standards into the permit  
16 application and this Permit prior to generation/receipt of dangerous and/or mixed waste in  
17 the WTP Unit.
- 18 III.10.C.12.c The Permittees will comply with the organic air emission standards as set forth in WAC  
19 173-303-692. The Permittees will obtain a permit modification following the Permit  
20 Condition [III.10.C.2.g](#). process to incorporate WAC 173-303-692 standards into the  
21 permit application and this Permit prior to generation/receipt of dangerous waste in the  
22 WTP Unit.
- 23 III.10.C.13 Remote Data Access
- 24 Onsite, unrestricted, twenty-four (24) hour access to key WTP Unit operating data and  
25 emissions monitoring data will be provided to Ecology. This onsite, unrestricted access  
26 will include providing and maintaining for Ecology only use a computer terminal and  
27 printer linked to key WTP Unit operating data and emissions monitoring data. This  
28 terminal will be equipped with all necessary software and hardware to monitor, retrieve,  
29 and trend this data. Additional remote access will be provided on Ecology request if  
30 security concerns can be addressed.
- 31 III.10.C.14 Interim Period of Operation during Post Demonstration Test Period prior to receiving  
32 Ecology approval of the complete Demonstration Test Reports and the Final Risk  
33 Assessment Report.
- 34 III.10.C.14.a. During this Interim Period of Operation, the Permittees will be able to treat dangerous  
35 waste and mixed waste feed subject to the following conditions:
- 36 III.10.C.14.a.i. Obtain receipt of Ecology's approval for the LAW Vitrification System, Permit condition  
37 [III.10.H.3.d.iii.](#), prior to receiving dangerous or mixed waste feed into the LAW  
38 Vitrification System
- 39 III.10.C.14.a.ii. Obtain receipt of Ecology's approval for the HLW Vitrification System, Permit condition  
40 [III.10.J.3.d.iii.](#), prior to receiving dangerous or mixed waste feed into the HLW  
41 Vitrification System
- 42 III.10.C.14.a.iii. Accept and treat up to 3 million gallons of Hanford tank waste feed in  
43 WTP.

- 1 III.10.C.14.a.iv. Accepting and treating more than 3 million gallons of Hanford tank waste feed in WTP  
2 during this Interim Period will require a permit modification in accordance with WAC  
3 173-303-830, Appendix 1, 5a.
- 4 III.10.C.15 Support Systems
- 5 III.10.C.15.a. Mechanical Handling Systems
- 6 III.10.C.15.a.i. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), in  
7 accordance with the Compliance Schedule, as specified in Operating Unit 10, Appendix  
8 1.0 of this Permit, engineering information as specified below, for incorporation into  
9 Attachment 51, Appendices 9.6, 9.10, 10.6, and 10.10 of this Permit, or into the  
10 Administrative Record where noted.
- 11 A. System Descriptions for each Mechanical Handling system identified in  
12 Permit Table [III.10.C.A](#), for incorporation into the Administrative Record  
13 (Compliance Schedule Item 36).
- 14 B. Mechanical Handling Diagrams and Mechanical Handling Data Sheets for the  
15 following pieces of equipment (Compliance Schedule Item 37):
- 16 a. HDH-CRN-00005  
17 b. HEH-CRN-00003  
18 c. HPH-CRN-00001  
19 d. HPH-CRN-00002  
20 e. HSH-CRN-00001  
21 f. HSH-CRN-00014  
22 g. LEH-CRN-00003  
23 h. LPH-CRN-00002  
24 i. HEH-CRN-00001
- 25 C. Permit condition III.10.C.15.a. does not require:
- 26 a. Additional submittals beyond those described in permit condition  
27 III.10.C.15.a.;
- 28 b. IQRPE reports for equipment identified in III.10.C.15.a.i (B);
- 29 c. Installation inspections for equipment identified in  
30 III.10.C.15.a.i(B); and
- 31 d. Other inspection, verification, operability, maintenance, or records  
32 management beyond that which is specified elsewhere in this  
33 permit, for equipment identified in III.10.C.15.a.i (B), or by  
34 conditions III.10.C.15.a.ii and III.10.C.15.a.iii.
- 35 III.10.C.15.a.ii. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), prior  
36 to initial receipt of dangerous waste and/or mixed waste in the WTP Unit, engineering  
37 information as identified below for incorporation into Attachment 51, Appendices 9.13,  
38 9.18, 10.13, and 10.18 of this Permit.
- 39 A. Equipment instrument logic narrative description related to safe operation of  
40 equipment covered by [III.10.C.15.a.i.B](#), including but not limited to allowed

1 travel path for bridge and trolley, upper and lower hook travel limits, two-  
2 blocking prevention, hook load limits, wire rope misreeling, and overspeed  
3 protection (Compliance Schedule Item 38).

- 4 B. Descriptions of operational procedures demonstrating appropriate controls and  
5 practices are in place to ensure equipment covered by [III.10.C.15.a.i.B](#) will be  
6 operated in a safe and reliable manner that will not result in damage to regulated  
7 tank systems, miscellaneous unit systems, or canisters of vitrified waste  
8 (Compliance Schedule Item 39).

9  
10 III.10.C.15.a.iii Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees  
11 will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), the following for  
12 incorporation into Attachment 51, Chapter 4.0: Updated Narrative Description and  
13 figures for all Mechanical Handling Systems identified in Permit Table [III.10.C.A.](#), to  
14 include but not limited to travel path, fail safe conditions, fail safe logic control, safety  
15 features and controls that minimize the potential for release of dangerous/mixed waste  
16 during normal operations, and lifting and/or load capabilities of each crane specified in  
17 [III.10.C.15.a.i.B](#).

Tables III.10.C.A – Mechanical Handling Systems		
Pretreatment Building		
	Pretreatment Filter Cave Handling System	PFH
	Pretreatment In-Cell Handling System	PIH
	Radioactive Solid Waste Handling System	RWH
Low-Activity Waste Building		
	Radioactive Solid Waste Handling System	RWH
	LAW Melter Equipment Support Handling System	LSH
	LAW Container Pour Handling System	LPH
	LAW Container Finishing Handling System	LFH
	LAW Melter Handling System	LMH
	LAW Canister Export Handling System	LEH
High-Level Waste Building		
	HLW Melter Cave Support Handling System	HSH
	HLW Canister Export Handling System	HEH
	HLW Filter Cave Handling System	HFH
	HLW Canister Pour Handling System	HPH
	HLW Canister Decontamination Handling System	HDH
	HLW Melter Handling System	HMH
	Radioactive Solid Waste Handling System	RWH

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Waste Treatment and Immobilization Plant

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2

- 1 **III.10.D. CONTAINERS**
- 2 III.10.D.1. Container Storage Areas and Storage Limits
- 3 III.10.D.1.a. The Permittees may store, in containers, all dangerous and/or mixed waste listed in the  
4 Part A, Forms Operating Unit 10, Chapter 1.0 of this Permit, in accordance with the  
5 WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved pursuant to Permit  
6 Conditions [III.10.C.3.](#) and [III.10.C.2.](#) Total containerized dangerous and/or mixed waste  
7 storage at the Facility will not exceed 2,780,000 gallons (372,520 cubic feet) pursuant to  
8 requirements in Permit Condition [III.10.D.1.b.](#)
- 9 III.10.D.1.b. The Permittees may place and store dangerous and mixed waste only in approved  
10 container storage areas and containment systems listed in Permit Tables [III.10.D.A.](#),  
11 [III.10.D.B.](#), and [III.10.D.C](#) (as approved/modified pursuant to Permit Condition  
12 [III.10.D.10.](#)), in accordance with Permit Section III.10.D, and in accordance with  
13 Operating Unit 10, Chapters 1.0 and 4.0, and Operating Unit 10, Appendices 9.4, 9.5, 9.7,  
14 9.8, 9.9, 9.18, 10.4, 10.5, 10.7, 10.8, 10.9, 10.18, 12.4, 12.5, 12.7, 12.8, 12.9, and 12.15  
15 of this Permit, as approved pursuant to Permit Conditions [III.10.D.10.b.](#) through [d.](#) The  
16 Permittees will limit the total volume of waste to quantities specified for the individual  
17 container storage areas listed in Permit Table [III.10.D.A.](#)
- 18 III.10.D.1.c. The Permittees must maintain a free volume (i.e., free volume = total capacity of  
19 containment system minus volume occupied by equipment and containers within  
20 containment systems) within containment systems identified in Permit Tables [III.10.D.B](#)  
21 and [III.10.D.C](#) (as approved/modified pursuant to Permit Condition [III.10.D.10.](#)), equal to  
22 ten percent (10%) of the total volume of dangerous and mixed waste stored within the  
23 containment system, or the volume of the largest container stored within the containment  
24 system, whichever is greater.
- 25 III.10.D.1.d. The Permittees will maintain documentation in the operating record for each container  
26 storage area and containment system listed in Permit Tables [III.10.D.A.](#), [III.10.D.B.](#), and  
27 [III.10.D.C](#) (as approved/modified pursuant to Permit Condition [III.10.D.10.](#)), in  
28 accordance with WAC 173-303-380.
- 29 III.10.D.1.e. For the purpose of determining compliance with container storage area capacity limits  
30 and containment system requirements, every waste container will be considered to be  
31 full.
- 32 III.10.D.1.f. If the containers of ILAW and/or IHLW are determined to no longer be dangerous and/or  
33 mixed waste as described in WAC 173-303-070, the ILAW and/or IHLW containers will  
34 no longer be subject to the conditions of this Permit.
- 35 III.10.D.2 Container Storage Areas Design and Construction
- 36 III.10.D.2.a. The Permittees will construct container storage areas identified in Permit Table  
37 [III.10.D.A](#) (as approved/modified pursuant to Permit Condition [III.10.D.10.](#)), as specified  
38 in all applicable drawings and specifications in Operating Unit 10, Appendices 9.4, 9.5,  
39 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 of this Permit, as  
40 approved pursuant to Permit Condition [III.10.D.10.b.](#)
- 41 III.10.D.2.b. The Permittees will construct all permanent containment systems identified in Permit  
42 Table [III.10.D.B](#) (as approved/modified pursuant to Permit Condition [III.10.D.10.](#)), as  
43 specified in all applicable drawings and specifications in Operating Unit 10, Appendices  
44 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 of this  
45 Permit, as approved pursuant to Permit Condition [III.10.D.10.b.](#)

- 1 III.10.D.2.c. All container storage areas and containment systems identified in Permit Tables  
2 [III.10.D.A](#), [III.10.D.B](#), and [III.10.D.C](#) (as approved/modified pursuant to Permit  
3 Condition [III.10.D.10.](#)), must be constructed, or operated to protect containers from  
4 contact with accumulated liquids (e.g., leaks, spills, precipitation, fire water, liquids from  
5 damaged or broken pipes) [WAC 173-303-630(7)(a)(i) and WAC 173-303-630(7)(c)(ii)].
- 6 III.10.D.2.d. Modifications to approved design, plans, and specifications in Operating Unit 10 of this  
7 Permit for the Container Storage Areas and containment systems will be allowed only in  
8 accordance with Permit Conditions [III.10.C.2.e](#) and [f.](#), or [III.10.C.2.g](#), [III.10.C.9.d](#), [e.](#),  
9 and [h](#).
- 10 III.10.D.3. Container Storage Area and Permanent Containment System Installation
- 11 III.10.D.3.a. RESERVED.
- 12 III.10.D.3.b. The Permittees will obtain and place in the WTP Unit operating record, within thirty (30)  
13 days of completion of each container storage area and containment system identified in  
14 Permit Tables [III.10.D.A](#), and [III.10.D.B](#) (as approved/modified pursuant to Permit  
15 Condition [III.10.D.10.](#)), written statements by a qualified, installation inspector or a  
16 qualified registered, professional engineer, attesting that these areas were installed in  
17 compliance with WAC 173-303-630(7)(a), (b), and (c) [WAC 173-303-630(7), WAC  
18 173-303-340].
- 19 III.10.D.4 Container Management Practices
- 20 III.10.D.4.a. No dangerous and/or mixed waste will be managed in the container storage areas unless  
21 the operating conditions specified under Permit Condition [III.10.D.4.](#) are complied with.
- 22 III.10.D.4.b. The Permittees will manage all containerized dangerous and mixed waste for container  
23 storage areas and containment systems identified in Permit Tables [III.10.D.A](#), [III.10.D.B](#),  
24 and [III.10.D.C](#) (as approved/modified pursuant to Permit Condition [III.10.D.10.](#)), in  
25 accordance with procedures described in Operating Unit 10, Chapter 4.0, Appendices  
26 9.18, 10.18, and 12.15 of this Permit, as approved pursuant to Permit Condition  
27 [III.10.D.10.c](#), and the following conditions:
- 28 III.10.D.4.b.i. The operating records and waste tracking procedures will indicate all times at which  
29 containerized dangerous and mixed waste were removed from and returned to designated  
30 staging, storage, segregation, and treatment areas as approved pursuant to Permit  
31 Condition [III.10.D.10.c.vi](#). (WAC 173-303-380).
- 32 III.10.D.4.b.ii. The physical arrangement (i.e., spacing) of dangerous and mixed waste containers will be  
33 as specified in WAC 173-303-630(5)(c), except for the immobilized LAW and HLW  
34 waste containers, which must be as described in Operating Unit 10, Chapter 4.0, Section  
35 4.2.1.2.1. of this Permit, as updated pursuant to Permit Condition [III.10.D.10.c.i](#).
- 36 III.10.D.4.b.iii. All container storage areas and containment systems must be operated to protect  
37 containers from contact with accumulated liquids resulting from leaks, spills, or  
38 precipitation [WAC 173-303-630(7)(a)(i) and (c)(ii)].
- 39 III.10.D.4.b.iv. At all times, the Permittees will place and store ignitable and/or reactive dangerous  
40 and/or mixed waste in accordance with the procedures described in Operating Unit 10,  
41 Appendix 9.18, 10.18, and 12.15, as approved pursuant to Permit Condition  
42 [III.10.D.10.c.xi](#).
- 43 III.10.D.4.b.v. At all times, the Permittees will place and store incompatible dangerous and/or mixed  
44 waste in accordance with the procedures described in Operating Unit 10, Appendix 9.18,  
45 10.18, and 12.15, as approved pursuant to Permit Condition [III.10.D.10.c.xii](#).

- 1 III.10.D.4.b.vi. At all times, storage containers holding dangerous and/or mixed waste that contain free  
2 liquids and/or exhibit either the characteristic of ignitability or reactivity as described in  
3 WAC 173-303-090(5) or (7), must be provided with a containment system in accordance  
4 with WAC 173-303-630(7)(a)(i) through (iii) [WAC 173-303-630(7)(c)].
- 5 III.10.D.4.b.vii. At all times, containers holding dangerous and/or mixed waste in container storage areas  
6 must be closed, except when it is necessary to add or remove waste [WAC 173-303-  
7 630(5)(a)].
- 8 III.10.D.4.b.viii. At all times, containers holding dangerous and/or mixed waste must not be opened,  
9 handled, or stored in a manner which may rupture the container or cause it to leak [WAC  
10 173-303-630(5)(b)].
- 11 III.10.D.4.b.ix. A storage container holding a dangerous and/or mixed waste that is incompatible with  
12 any waste or other materials stored nearby in other containers, piles, open tanks, or  
13 surface impoundments must be separated from the other waste or materials or protected  
14 from them by means of a dike, berm, wall, or other device (as approved by Ecology)  
15 [WAC 173-303-630(9)(c)].
- 16 III.10.D.4.b.x. If a container holding dangerous and/or mixed waste is not in good condition (e.g.,  
17 exhibits severe rusting, apparent structural defects, or any other condition that could lead  
18 to container rupture or leakage) or is leaking, the Permittees will manage the container in  
19 accordance with procedures described in Operating Unit 10, Appendices 9.18, 10.18, and  
20 12.15 of this Permit, as approved pursuant to Permit Condition [III.10.D.10.c.viii](#). [WAC  
21 173-303-630(2)].
- 22 III.10.D.4.b.xi. The Permittees will maintain an adequate inventory of containers and/or over-pack  
23 containers at the WTP Unit for use pursuant to Permit Condition [III.10.D.4.b.x](#).
- 24 III.10.D.4.b.xii. The Permittees will ensure that all containers used for dangerous and/or mixed waste  
25 management, are made of or lined with materials which will not react with and are  
26 otherwise compatible with the waste to be stored [WAC 173-303-630(4)].
- 27 III.10.D.4.b.xiii. Except for lab packs assembled in compliance with WAC 173-303-161 requirements, the  
28 Permittees will not place incompatible wastes, or incompatible wastes and materials, in  
29 the same container, unless WAC 173-303-395(1)(b) is complied with [WAC 173-303-  
30 630(9)(a)].
- 31 III.10.D.4.b.xiv. The Permittees will not place dangerous and/or mixed waste in an unwashed container  
32 that previously held an incompatible waste or material [WAC 173-303-630(9)(b)].
- 33 III.10.D.5. Identification of Containers and Container Storage Areas
- 34 III.10.D.5.a. Pursuant to WAC 173-303-630(3), the Permittees will ensure that all dangerous and/or  
35 mixed waste containers (except as otherwise specified in Operating Unit 10, Chapter 4.0,  
36 Section 4.2.1.3., as updated pursuant to Permit Condition [III.10.D.10.c.i.](#), for containers  
37 of ILAW and IHLW) are labeled in a manner that adequately identifies the major risk(s)  
38 associated with the contents. For purposes of container labeling, major risk(s) could  
39 include but are not limited to the following:
- 40 III.10.D.5.a.i. PERSISTENT (if a WP01 or WP02 waste code);
- 41 III.10.D.5.a.ii. TOXIC (if a WT01, WT02, or D waste code other than D001, D002, or D003);
- 42 III.10.D.5.a.iii. FLAMMABLE (if a D001 and other waste codes);
- 43 III.10.D.5.a.iv. CORROSIVE (if a D002 and other waste codes);

- 1 III.10.D.5.a.v. REACTIVE (if a D003 and other waste codes).
- 2 III.10.D.5.b. For all dangerous and mixed waste containers (except as otherwise specified in Operating  
3 Unit 10, Chapter 4.0, Section 4.2.1.3., as updated pursuant to Permit Condition  
4 [III.10.D.10.c.i.](#), for containers of ILAW and IHLW), the Permittees will ensure that:
- 5 III.10.D.5.b.i. Labels are not obscured or otherwise unreadable;
- 6 III.10.D.5.b.ii. Waste containers are oriented so as to allow inspection of the labels identified in Permit  
7 Conditions [III.10.D.5.a](#) and [III.10.D.5.b](#), the container tracking number, and, to the extent  
8 possible, any labels which the generator placed upon the container; and
- 9 III.10.D.5.b.iii. Empty dangerous and mixed waste containers, as defined by WAC 173-303-160(2), must  
10 have their dangerous and/or mixed waste labels destroyed or otherwise removed  
11 immediately upon being rendered empty.
- 12 III.10.D.5.c. The Permittees will post entrances and access points to all ILAW and IHLW container  
13 storage areas, and any other areas where containers of ILAW and IHLW are handled,  
14 with signs that, in addition to meeting the requirements of WAC 173-303-310(2)(a),  
15 clearly identify the major risk(s) associated with the containers of ILAW and IHLW.
- 16 III.10.D.6. Containment Systems
- 17 III.10.D.6.a. Containerized dangerous and mixed waste, and other materials that are incompatible, will  
18 not be staged, segregated, or stored within the same containment system as identified in  
19 Permit Tables [III.10.D.B.](#) and [III.10.D.C.](#), as approved/modified pursuant to Permit  
20 Condition [III.10.D.10.](#) (e.g., metal pan, concrete berm, portable containment system)  
21 [WAC 173-303-630(9)(c)].
- 22 III.10.D.6.b. The integrity of containment systems identified in Permit Tables [III.10.D.B.](#) and  
23 [III.10.D.C.](#) (as approved/modified pursuant to Permit Condition [III.10.D.10.](#)) must be  
24 maintained in accordance with WAC 173-303-630(7)(a)(i). Cracks, gaps, loss of  
25 integrity, deterioration, corrosion, or erosion of containment pads, joints in containment  
26 pads, berms, curbs, trenches, sumps, and coatings must be repaired in accordance with  
27 Operating Unit 10, Chapter 6.0 of this Permit, as approved/modified pursuant to Permit  
28 Conditions [III.10.D.10.c.vii.](#), [III.10.C.5.b.](#), and [III.10.C.5.c.](#) [WAC 173-303-320, WAC  
29 173-303-630(7)(a)(i)].
- 30 III.10.D.6.c. An impermeable coating, as specified in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8,  
31 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 will be maintained for all  
32 concrete containment systems identified in Permit Table [III.10.D.B.](#) (as  
33 approved/modified pursuant to Permit Condition [III.10.D.10.](#)) and will meet the  
34 following performance standards [WAC 173-303-630(7)(a)]:
- 35 III.10.D.6.c.i. The coating must seal the containment system surface such that no cracks, seams, or  
36 other pathways through which liquid could migrate are present;
- 37 III.10.D.6.c.ii. The coating must be of adequate thickness and strength to withstand the normal operation  
38 of equipment and personnel within the given area such that degradation or physical  
39 damage to the coating or lining can be identified and remedied before waste could  
40 migrate from the containment system; and
- 41 III.10.D.6.c.iii. The coating must be compatible with the waste managed in the containment system.
- 42 III.10.D.6.d. The Permittees must inspect all containment systems specified in Permit Tables  
43 [III.10.D.B.](#) and [III.10.D.C.](#) in accordance with the inspection schedules and requirements  
44 in Operating Unit 10, Chapter 6.0, as approved/modified pursuant to Permit Conditions

- 1 [III.10.D.10.c.vii.](#) and [III.10.C.5.c.](#), and take the following actions if liquid is detected in  
2 these containment systems:
- 3 III.10.D.6.d.i. Remove the liquid from the containment system in accordance with procedures described  
4 in Attachments 51, Chapter 6.0, (as modified pursuant to Permit Conditions [III.10.C.5.b.](#)  
5 and [III.10.C.5.c.](#)), Permit Condition [III.10.C.6.a.](#), and Operating Unit 10, Chapter 7.0 (as  
6 modified pursuant to Permit Condition [III.10.C.6.b.](#)). The liquid removed from  
7 containment systems will be managed as dangerous and/or mixed waste, except for  
8 liquids from the Non-Radioactive Dangerous Waste Container Storage Area which will  
9 be managed as dangerous waste, unless the Permittees demonstrate, to Ecology's  
10 satisfaction, that the liquid is not a dangerous waste.
- 11 III.10.D.6.d.ii. Determine the source of the liquid.
- 12 III.10.D.6.d.iii. If the source of the liquid is determined to be a leak in a container, the Permittees must  
13 follow the procedures specified in Permit Condition [III.10.D.4.b.x.](#)
- 14 III.10.D.6.d.iv. The Permittees must take action to ensure the incident that caused liquid to enter the  
15 containment system will not reoccur.
- 16 III.10.D.6.d.v. The Permittees will document in the WTP Unit operating record actions/procedures taken  
17 to comply with i. through iv. above in accordance with WAC 173-303-630(6).
- 18 III.10.D.6.d.vi. The Permittees will notify and report releases to the environment to Ecology in  
19 accordance with Permit Condition [III.10.C.6.a.](#)
- 20 III.10.D.7 Inspections
- 21 III.10.D.7.a. The Permittees will inspect the container storage areas and containment systems in  
22 accordance with the Inspection Schedules in Operating Unit 10, Chapter 6.0 of this  
23 Permit, as modified pursuant to Permit Condition [III.10.C.5.c.](#)
- 24 III.10.D.7.b. The inspection data for the container storage areas and containment systems will be  
25 recorded, and the records will be placed in the WTP Unit operating record in accordance  
26 with Permit Condition [III.10.C.4.](#)
- 27 III.10.D.8. Recordkeeping (WAC 173-303-380)
- 28 For the container storage areas and containment systems, the Permittees will record and  
29 maintain in the WTP Unit operating record, all monitoring, recording, maintenance,  
30 calibration, test data, and inspection data compiled under the conditions of this Permit, in  
31 accordance with Permit Condition [III.10.C.4.](#) and [III.10.C.5.](#)
- 32 III.10.D.9. Closure
- 33 The Permittees will close the container storage areas and containment systems in  
34 accordance with Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to  
35 Permit Condition [III.10.C.8.](#)
- 36 III.10.D.10. Compliance Schedules
- 37 III.10.D.10.a. All information identified for submittal to Ecology in [III.10.D.10.b.](#) through  
38 [III.10.D.10.d.](#) of this compliance schedule must be signed in accordance with  
39 requirements in WAC 173-303-810(12).
- 40 III.10.D.10.b. The Permittees will submit to Ecology, consistent with the schedule described in  
41 Operating Unit 10, Appendix 1.0, for review and approval, prior to construction of  
42 container storage area and permanent containment systems as identified in Permit Tables  
43 [III.10.D.A](#) and [III.10.D.B](#) respectively, engineering information as specified below, for

- 1 incorporation into Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7,  
2 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 of this Permit. In order to incorporate  
3 engineering information specified below into Operating Unit 10, Appendices 9.4, 9.5,  
4 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9, Permit  
5 Condition [III.10.C.2.g.](#) process will be followed. At a minimum, container storage area  
6 and permanent containment system drawings and specifications will show the following  
7 pursuant to WAC 173-303-806(4)(b) and WAC 173-303-630:
- 8 III.10.D.10.b.i. Design drawings (General Arrangement Drawings - in plan and cross sections) and  
9 specifications including references to specific building codes (e.g., UBC, ASCE) for each  
10 container storage areas' foundation and permanent containment systems. These items  
11 should show basic design parameters and dimensions, and location of the container  
12 storage areas and permanent containment systems; how permanent containment system  
13 design promotes positive drainage control (such as a locked drainage valve) to prevent  
14 release of contaminated liquids and so that uncontaminated liquids can be drained  
15 promptly for convenience of operation; capacity of the permanent containment system  
16 relative to the volume of the largest container to be stored; for permanent containment  
17 systems, how the base underlying the containers is sloped (i.e., floor slopes to sumps) or  
18 the containment system is otherwise designed and operated to drain and remove liquids  
19 resulting from leaks, spills, or other liquids, or how containers are kept from contact with  
20 standing liquids in the permanent containment system (i.e., elevated or are otherwise  
21 protected); for container storage areas without permanent containment systems, a  
22 description of how the storage area is designed or operated to drain and remove liquids or  
23 how containers are kept from contact with standing liquids;
- 24 III.10.D.10.b.ii. Permanent containment systems materials selection documentation (including, but not  
25 limited to, materials of construction, coatings and liner materials for concrete portions of  
26 containment systems);
- 27 III.10.D.10.b.iii. Sketches, drawings, or data demonstrating compliance with WAC 173-303-630(8)  
28 (location of buffer zone and containers holding ignitable or reactive waste) and WAC  
29 173-303-630(9)(c) (location of incompatible waste), where applicable;
- 30 III.10.D.10.b.iv. Submit Permit Table [III.10.D.B.](#) completed to provide for all permanent containment  
31 systems, the information as specified in each column heading, consistent with  
32 information to be provided in [III.10.D.10.b.i.](#) through [iii.](#) above.
- 33 III.10.D.10.c. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees  
34 will update and submit to Ecology, consistent with the schedule described in Operating  
35 Unit 10, Appendix 1.0, for review and approval, the following, as specified below, for  
36 incorporation into Operating Unit 10, Chapter 4.0, and Appendices 9.18, 10.18, and 12.15  
37 of this Permit, except Permit Condition [III.10.D.10.c.vii.](#), which will be incorporated into  
38 Operating Unit 10, Chapter 6.0 of this Permit. In order to incorporate the following  
39 information (specified below) into Operating Unit 10, Appendix 9.18, 10.18, and 12.15,  
40 Permit Condition [III.10.C.2.g.](#) will be followed. All information provided under this  
41 permit condition must be consistent with information provided pursuant to Permit  
42 Conditions [III.10.D.10.b.](#), [III.10.D.10.c.](#), and [III.10.D.10.d.](#) as approved by Ecology, and  
43 will include at a minimum, the following information as required pursuant to WAC 173-  
44 303-630 and WAC 173-303-340:
- 45 III.10.D.10.c.i. Operating Unit 10, Chapter 4.0, Narrative Descriptions, updated;
- 46 III.10.D.10.c.ii. Descriptions of procedures for addition and removal of waste from containers;

- 1 III.10.D.10.c.iii. Descriptions of procedures for opening and closing of containers, including any  
2 inspections performed prior to opening;
- 3 III.10.D.10.c.iv. Descriptions of procedures for handling and transport of containers within the WTP Unit;
- 4 III.10.D.10.c.v. Description of the tracking system used to track containers throughout the WTP Unit  
5 pursuant to WAC 173-303-380. The tracking system, at a minimum, will do the  
6 following:
- 7 A. Track the location of containers within the WTP Unit;
- 8 B. Track which containers have been shipped off-facility and/or off-site, and to where  
9 they have been shipped;
- 10 C. For containers intended for transport off-site, include information in accordance with  
11 the requirements specified in WAC 173-303-190(3)(b);
- 12 D. Record the date container is placed in the container storage area;
- 13 E. Record the nature of the waste in any given container, including dangerous waste  
14 designation codes, any associated land disposal restriction treatment requirements, and  
15 the major risk(s) associated with the waste (as described in Permit Conditions  
16 [III.10.D.5.a.](#) and [III.10.D.5.c.](#)).
- 17 III.10.D.10.c.vi. Descriptions of procedures for container spacing, stacking, and labeling pursuant to  
18 WAC 173-303-630(3), WAC 173-303-630(5)(c), WAC 173-303-340(3), WAC 173-303-  
19 630(6);
- 20 III.10.D.10.c.vii. Descriptions of procedures for investigating container storage areas and investigating and  
21 repairing containment systems [WAC 173-303-320, WAC 173-303-630(6)];
- 22 III.10.D.10.c.viii. Descriptions of procedures for responding to damaged (e.g., severe rusting, apparent  
23 structural defects) or leaking containers [WAC 173-303-630(2)];
- 24 III.10.D.10.c.ix. Descriptions of operational procedures demonstrating how accumulated liquids can be  
25 analyzed and removed from permanent and portable containment systems to prevent  
26 overflow [WAC 173-303-806(4)(b)(i)(E)];
- 27 III.10.D.10.c.x. For portable containment systems, vendor information, design drawings, or sketches  
28 showing the following information. These items will include as a minimum basic design  
29 parameters, dimensions, and materials of construction; how the design promotes positive  
30 drainage control (such as a locked drainage valve) to prevent release of contaminated  
31 liquids and so that uncontaminated liquids can be drained promptly for convenience of  
32 operation; how the base underlying the containers is sloped (i.e., floor slopes to sumps) or  
33 the containment system is otherwise designed and operated to drain and remove liquids  
34 resulting from leaks, spills, or other liquids, or how containers are kept from contact with  
35 standing liquids in the containment system (i.e., elevated or are otherwise protected); and  
36 capacity of the containment system relative to the volume of the largest container to be  
37 stored;
- 38 III.10.D.10.c.xi. Where ignitable and reactive waste are stored or otherwise managed in containers, a  
39 description of the procedures used to ensure compliance with WAC 173-303-630(8)(a)  
40 and (b);
- 41 III.10.D.10.c.xii. Where incompatible waste are stored or otherwise managed in containers, a description  
42 of the procedures used to ensure compliance with WAC 173-303-630(9)(a) and (b), and  
43 173-303-395(1)(b) and (c);

- 1 III.10.D.10.c.xiii. Submit Permit Table [III.10.D.C](#) completed to provide for all portable containment  
2 systems, the information as specified in each column heading, consistent with  
3 information to be provided in [III.10.D.10.c.i](#) through [xii](#) above;
- 4 III.10.D.10.c.xiv. Test procedures and results or other documentation or information to show that the  
5 waste do not contain free liquids, as applicable.
- 6 III.10.D.10.d. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees  
7 will submit to Ecology, consistent with the schedule described in Operating Unit 10,  
8 Appendix 1.0, for review and approval, completed Permit Tables [III.10.D.A](#), [III.10.D.B](#),  
9 and [III.10.D.C](#), for incorporation into Operating Unit 10, Chapter 4.0, and Appendices  
10 9.18, 10.18, and 12.15 of this Permit. In order to incorporate the information into  
11 Operating Unit 10, Chapter 4.0, and Appendices 9.18, 10.18, and 12.15 of this Permit,  
12 Permit Condition [III.10.C.2.g](#), process will be followed.
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3**Table III.10.D.A –Container Storage/Containment Building Areas Description**

<b>Dangerous and Mixed Waste Container Storage Areas</b>	<b>Maximum Capacity Gallons (Solids) (ft<sup>3</sup>)<sup>d</sup></b>	<b>Maximum Operating Volume (Liquid<sup>c</sup>)</b>
<b>HLW Vitrification Plant</b>		
IHLW Canister Storage Cave <sup>a</sup> (Room H-0132)	162,589 gal. (21,735 ft <sup>3</sup> )	N/A
HLW East Corridor El. 0' (Rooms HC-0108/09/10)	310,291 gal. (41,480 ft <sup>3</sup> )	NA
HLW Loading Area (Room H-0130)	159,185 gal. (21,280 ft <sup>3</sup> )	NA
<b>Other Areas</b>		
Non-Radioactive Dangerous Waste Container Storage Area <sup>b</sup>	56,104 gal. (6,461 ft <sup>3</sup> )	RESERVED
Failed Melter Storage Facility	403,947	RESERVED
Lab Waste Management Area (Rooms 0-139, 0-139A/B/C/D)	119,613 gal. (16,029 ft <sup>3</sup> )	RESERVED
<b>Containment Buildings/Container Storage</b>	<b>Maximum Capacity Gallons (Solids) (ft<sup>3</sup>)<sup>d</sup></b>	<b>Maximum Operating Volume (Liquid<sup>c</sup>)</b>
<b>Pretreatment Plant</b>		
P-0123 Pretreatment Hot Cell Containment Building	RESERVED	RESERVED
Pretreatment Maintenance Containment Building	RESERVED	RESERVED
PM0124 Hot Cell Crane Maintenance Area	RESERVED	RESERVED
P-0121A Spent Resin Dewatering	RESERVED	RESERVED
P-0421A General Filter Room	RESERVED	RESERVED
P-0122A Waste Packaging Area	RESERVED	RESERVED
P-0123A Remote Decontamination Maintenance Cave	RESERVED	RESERVED
P-0124 C3 Workshop	RESERVED	RESERVED
P-0124A C3 Workshop	RESERVED	RESERVED
P-0125 Filter Cask Airlock	RESERVED	RESERVED
P-0125A Filter Cask Area	RESERVED	RESERVED
P-0128A MSM Repair Area	RESERVED	RESERVED
P-0128 Temporary Storage Room	RESERVED	RESERVED
P-0223 Pretreatment Filter Package Maintenance Containment Building		
P-0335 Pretreatment Filter Cave Room	RESERVED	RESERVED

P-0335A Decon Chamber	RESERVED	RESERVED
<b>LAW Vitrification Plant</b>		
L-0112 LAW LSM Gallery Containment Building	RESERVED	RESERVED
ILAW Container Finishing Containment Building	RESERVED	RESERVED
L-0109B Swabbing Area Line 2	RESERVED	RESERVED
L-0109C Decontamination Area Line 2	RESERVED	RESERVED
L-0109D Inert Fill Area Line 2	RESERVED	RESERVED
L-0115B Swabbing Area Line 1	RESERVED	RESERVED
L-0115C Decontamination Area Line 1	RESERVED	RESERVED
L-0115D Inert Fill Area Line 1	RESERVED	RESERVED
L-0109E Container Monitoring/Export Area	RESERVED	RESERVED
L-0115E Container Monitoring/Export Area	RESERVED	RESERVED
L-0119B LAW Consumable Import/Export Containment Building	RESERVED	RESERVED
L-226A LAW C3 Workshop Containment Building	RESERVED	RESERVED
LAW Pour Cave Containment Building	RESERVED	RESERVED
L-B015A Melter 1 Pour Cave	RESERVED	RESERVED
L-B013C Melter 1 Pour Cave	RESERVED	RESERVED
L-B013B Melter 2 Pour Cave	RESERVED	RESERVED
L-B011C Melter 2 Pour Cave	RESERVED	RESERVED
L-B011B Future Melter 3 Pour Cave	RESERVED	RESERVED
L-B009B Future Melter 3 Pour Cave	RESERVED	RESERVED
<b>ILAW Buffer Container Containment Building</b>	RESERVED	RESERVED
L-B025C Container Buffer Store	RESERVED	RESERVED
L-B025D Container Rework	RESERVED	RESERVED
<b>HLW Vitrification Plant</b>		
H-0117, H-0116B, H-0310A HLW Melter No. 1	RESERVED	RESERVED
H-0106, H-0105B, H-0304A HLW Melter No. 2	RESERVED	RESERVED
H-0136 IHLW Canister Handling Cave Containment Building	RESERVED	RESERVED
H-0133 IHLW Canister Swab and Monitoring Cave Containment Building	RESERVED	RESERVED
H-0311A/B HLW Vitrification Plant C3 Workshop Containment Building	RESERVED	RESERVED
H-0104 HLW Filter Cave	RESERVED	RESERVED
H-B032 HLW Pour Tunnel No. 1 Containment Building	RESERVED	RESERVED
H-B005A HLW Pour Tunnel No. 2 Containment Building	RESERVED	RESERVED
H-0410B, H0411 HLW Waste Handling Area Containment Building	RESERVED	RESERVED
HLW Drum Swabbing and Monitoring Area	RESERVED	RESERVED
H-0126A/B Swabbing and Monitoring Area	RESERVED	RESERVED
H-B028 Cask Transfer Tunnel	RESERVED	RESERVED

**Footnotes:**

<sup>a</sup>Capacity is for immobilized glass waste storage.

<sup>b</sup>Capacity is for dangerous and/or mixed waste storage.

<sup>c</sup>All material within the containment systems will be considered waste for the purposes of calculating free volume, where free volume is the amount of space available in containment systems (i.e., free volume = total capacity of containment systems [which includes total capacity of portable containment systems] minus volume occupied by equipment and containers within containment systems).

<sup>d</sup>Gallons converted to cubic feet using a conversion factor of 1 gallon (liquid) x 0.134 = 1ft<sup>3</sup> (rounded to the nearest whole number).

<sup>e</sup>Location and capacities of containers stored within portable containment systems specified on Table [III.10.D.C](#) are limited to the dangerous and mixed waste container storage areas and capacities specified above.

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**Table III.10.D.B – Container Storage Area Permanent Containment Systems**

Container Storage Areas	Permanent Containment System Description – Drawing #s	Permanent Containment System Sump/Floor Drain ID#	Permanent Containment System Dimensions <sup>a</sup> (ft) & Materials of Construction	Permanent Containment System Capacity (gal) (relative to 10% of the volume of all containers within the container storage area, or 100% of the volume of the largest container, whichever is greater).
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

<sup>a</sup>Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

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**Table III.10.D.C – Container Storage Area Portable Containment Systems<sup>a</sup>**

Portable Containment System Description – Specifications and Vendor Information	Portable Containment System Container Storage Area(s) Location(s)	Portable Containment System Dimensions <sup>b</sup> (ft) & Materials of Construction	Portable Containment System Capacity (gal) (relative to 10% of the volume of all containers managed within the portable containment system, or 100% of the volume of the largest container, whichever is greater).
RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**

<sup>a</sup>Location and capacities of containers stored within portable containment systems specified on this Permit Table are limited to the dangerous and mixed waste container storage areas and capacities specified in Permit Table [III.10.D.A.](#)

<sup>b</sup>Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

- 1    **III.10.E           TANK SYSTEMS**
- 2    III.10.E.1       Approved Waste and Storage Limits
- 3    III.10.E.1.a.     The Permittees may store in tank systems all dangerous and/or mixed waste listed in the  
4                      Part A Forms, Operating Unit 10, Chapter 1.0 of this Permit and in accordance with the  
5                      Waste Analysis Plan, Operating Unit 10, Chapter 3.0 as approved pursuant to Permit  
6                      Condition [III.10.C.3](#). of this Permit. Total tank system dangerous and/or mixed waste  
7                      storage at the Facility will not exceed 4,735,000 gallons pursuant to requirements in  
8                      Permit Condition [III.10.E.1](#).
- 9    III.10.E.1.b.     The Permittees may store and manage dangerous and/or mixed waste only in approved  
10                     tank systems listed in Permit Tables [III.10.E.A](#) through [D](#), [I](#), [K](#), [M](#), and [O](#), as  
11                     approved/modified pursuant to Permit Condition [III.10.E.9](#)., in accordance with Permit  
12                     Section [III.10.E](#) of this Permit, and in accordance with Operating Unit 10, Chapters 1.0  
13                     and 4.0, and Operating Unit 10, Appendices 8.1 through 8.15, 9.1 through 9.14, 9.18,  
14                     10.1 through 10.14, 10.18, and 11.1 through 11.15 of this Permit, as approved pursuant to  
15                     Permit Conditions [III.10.E.9.b](#) through [e](#). The Permittees will limit the total volume of  
16                     waste to quantities specified for the individual units listed in Permit Tables [III.10.E.A](#)  
17                     through [D](#), [I](#), [K](#), [M](#), and [O](#).
- 18   III.10.E.1.c.     The Permittees will manage ignitable and reactive, and incompatible waste in accordance  
19                     with WAC 173-303-395(1). Any tank system specified in Permit Tables [III.10.E.A](#)  
20                     through [D](#) and [III.10.E, I, K, M, and O](#) as approved/modified pursuant to Permit  
21                     Condition [III.10.E.9](#)., in which ignitable, reactive, or incompatible waste are managed  
22                     will meet the requirements specified in WAC 173-303-640(9) and (10).
- 23   III.10.E.1.d.     The Permittees will ensure all certifications required by specialists (e.g., independent,  
24                     qualified, registered professional engineer; independent corrosion expert; independent,  
25                     qualified installation inspector; etc.) use the following statement or equivalent pursuant to  
26                     Permit Condition [III.10.C.10](#) of this Permit:
- 27                     “I, (Insert Name) have (choose one or more of the following: overseen, supervised,  
28                     reviewed, and/or certified) a portion of the design or installation of a new tank system or  
29                     component located at (address), and owned/operated by (name(s)). My duties were:  
30                     (e.g., installation inspector, testing for tightness, etc.), for the following tank system  
31                     components (e.g., the tank, venting piping, etc.), as required by the Dangerous Waste  
32                     Regulations, namely, WAC 173-303-640(3) (applicable paragraphs (i.e., (a) through (g))).
- 33                     “I certify under penalty of law that I have personally examined and am familiar with the  
34                     information submitted in this document and all attachments and that, based on my inquiry  
35                     of those individuals immediately responsible for obtaining the information, I believe that  
36                     the information is true, accurate, and complete. I am aware that there are significant  
37                     penalties for submitting false information, including the possibility of fine and  
38                     imprisonment.”
- 39   III.10.E.1.e.     In all future permit submittals, the Permittees will include tank names with the tank  
40                     designation (e.g., Process Condensate Vessels located in the RLD System are designated  
41                     V45028A and V45028B, respectively).
- 42   III.10.E.2       Tank System Design and Construction
- 43   III.10.E.2.a.     The Permittees will construct the tank systems identified in Permit Tables [III.10.E.A](#)  
44                     through [D](#), [I](#), [K](#), [M](#), and [O](#), as approved/modified pursuant to Permit Condition  
45                     [III.10.E.9](#)., as specified in Operating Unit 10, Appendices 8.1 through 8.14, 9.1 through

- 1 9.14, 10.1 through 10.14, and 11.1 through 11.14 of this Permit, as approved pursuant to  
2 Permit Conditions [III.10.E.9.b.](#), [III.10.E.9.c.](#), and [III.10.E.9.d.](#)
- 3 III.10.E.2.b. The Permittees will construct all secondary containment systems identified in Permit  
4 Tables [III.10.E.A](#) through [D](#), and [I](#) through [P](#), as approved/modified pursuant to Permit  
5 Condition [III.10.E.9.](#), as specified in Operating Unit 10, Appendices 8.2, 8.4 through  
6 8.15, 9.2, 9.4 through 9.14, 9.18, 10.2, 10.4 through 10.14, 10.18 and 11.2, 11.4 through  
7 11.15, 11.15 of this Permit, as approved pursuant to Permit Conditions [III.10.E.9.b.](#),  
8 [III.10.E.9.c.](#), and [III.10.E.9.d.](#)
- 9 III.10.E.2.c. Modifications to approved design, plans, and specifications in Operating Unit 10 of this  
10 Permit for the WTP Unit Tank Systems will be allowed only in accordance with Permit  
11 Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#), [III.10.C.9.d.](#), [e.](#), and [h.](#)
- 12 III.10.E.2.d. The Permittees will maintain construction access to the internal portions of installed tanks  
13 with pulse jet mixers until Ecology has provided written approval of the tank system  
14 designs for wear allowance pursuant to WAC 173-303-640(3)(a).
- 15 III.10.E.2.d.i. The Permittees will not install the following tanks in the WTP Unit until Ecology has  
16 provided written approval of the tank system designs for wear allowance pursuant to  
17 WAC 173-303-640(3)(a):
- 18 • Plant Wash Vessel, PWD-VSL-00044.
  - 19 • Acidic Waste Vessel, RLD-VSL-00007.
  - 20 • Plant Wash and Drains Vessel, RLD-VSL-00008.
  - 21 • HLW Feed Receipt Vessel, HLP-VSL-00022.
  - 22 • HLW Lag Storage Vessels, HLP-VSL-00027A and HLP-VSL-00027B.
  - 23 • HLW Feed Blend Vessel, HLP-VSL-00028.
  - 24 • Ultrafiltration Feed Preparation Vessels, UFP-VSL-00001A and UFP-VSL-00001B.
  - 25 • Ultrafiltration Feed Vessels, UFP-VSL-00002A and UFP-VSL-00002B.
- 26 III.10.E.2.d.ii. Except where exempted in writing by Ecology on the basis that wear allowance  
27 provisions will not be affected, fabrication and assembly of the following tanks and their  
28 internal components will be suspended until Ecology has provided written approval of the  
29 tank system designs for wear allowance pursuant to WAC 173-303-640(3)(a).
- 30 • HLW Feed Receipt Vessel, HLP-VSL-00022.
  - 31 • HLW Lag Storage Vessels, HLP-VSL-00027A and HLP-VSL-00027B.
  - 32 • HLW Feed Blend Vessel, HLP-VSL-00028.
  - 33 • Ultrafiltration Feed Vessels, UFP-VSL-00002A and UFP-VSL-00002B.
- 34 III.10.E.2.e. The Permittees will HLVT any high level fraction of mixed waste which exhibits the  
35 characteristics of corrosivity (D002) and/or toxicity for metals (D004-D011). This ability  
36 will be maintained until: the Permittees have demonstrated they can meet all applicable  
37 LDR standards for supplemental technologies and all WTP secondary waste streams.
- 38 III.10.E.3 Tank System Installation and Certification
- 39 III.10.E.3.a. The Permittees must ensure that proper handling procedures are adhered to in order to  
40 prevent damage to the system during installation. Prior to covering, enclosing, or placing

1 a new tank system or component in use, an independent, qualified, installation inspector  
2 or an independent, qualified, registered professional engineer, either of whom is trained  
3 and experienced in the proper installation of tank systems or components, must inspect  
4 the system for the presence of any of the following items:

5 III.10.E.3.a.i. Weld breaks;

6 III.10.E.3.a.ii. Punctures;

7 III.10.E.3.a.iii. Scrapes of protective coatings;

8 III.10.E.3.a.iv. Cracks;

9 III.10.E.3.a.v. Corrosion;

10 III.10.E.3.a.vi. Other structural damage or inadequate construction/installation.

11 All discrepancies must be remedied before the tank system is covered, enclosed, or  
12 placed in use [WAC 173-303-640(3)(c)].

13 III.10.E.3.b. For tank systems or components that are placed underground and that are back-filled, the  
14 Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous  
15 substance. The backfill must be installed so that it is placed completely around the tank  
16 and compacted to ensure that the tank and piping are fully and uniformly supported  
17 [WAC 173-303-640(3)(d)].

18 III.10.E.3.c. The Permittees must test for tightness all new tanks and ancillary equipment prior to  
19 these components being covered, enclosed, or placed into use. If a tank system is found  
20 not to be tight, all repairs necessary to remedy the leak(s) in the system must be  
21 performed prior to the tank system being covered, enclosed, or placed in use [WAC 173-  
22 303-640(3)(e)].

23 III.10.E.3.d. The Permittees must ensure ancillary equipment is supported and protected against  
24 physical damage and excessive stress due to settlement, vibration, expansion, or  
25 contraction [WAC 173-303-640(3)(f)].

26 III.10.E.3.e. The Permittees must provide the type and degree of corrosion protection recommended  
27 by an independent corrosion expert, based on the information provided in Operating Unit  
28 10, Appendices 8.9, 8.11, 9.9, 9.11, 10.9, 10.11, 11.9, and 11.11 of this Permit, as  
29 approved pursuant to Permit Conditions [III.10.E.9.b.i.](#), [III.10.E.9.b.iv.](#), [III.10.E.9.b.v.](#),  
30 [III.10.E.9.c.i.](#), [III.10.E.9.c.iv.](#), [III.10.E.9.c.v.](#), [III.10.E.9.d.i.](#), [III.10.E.9.d.iv.](#), and  
31 [III.10.E.9.d.v.](#) or other corrosion protection if the Ecology believes other corrosion  
32 protection is necessary to ensure the integrity of the tank system during use of the tank  
33 system. The installation of a corrosion protection system that is field fabricated must be  
34 supervised by an independent corrosion expert to ensure proper installation [WAC 173-  
35 303-640(3)(g)].

36 III.10.E.3.f. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees  
37 will obtain, and keep on file in the WTP Unit operating record, written statements by  
38 those persons required to certify the design of the tank system and supervise the  
39 installation of the tank system in accordance with the requirements of WAC 173-303-  
40 640(3)(b), (c), (d), (e), (f), and (g), attesting that each tank system and corresponding  
41 containment system listed in Permit Tables [III.10.E.A](#) through [D](#) and [III.10.E.I](#) through [P](#),  
42 as approved/modified pursuant to Permit Condition [III.10.E.9.](#), were properly designed  
43 and installed, and that repairs, pursuant to WAC 173-303-640(3)(c) and (e) were  
44 performed [WAC 173-303-640(3)(a) WAC 173-303-640(3)(h)].

- 1 III.10.E.3.g. The independent tank system installation inspection and subsequent written statements  
2 will be certified pursuant to Permit Condition [III.10.E.1.d.](#), comply with all requirements  
3 of WAC 173-303-640(3)(h) and will consider, but not be limited to, the following tank  
4 system installation documentation:
- 5 III.10.E.3.g.i. Field installation report with date of installation;
- 6 III.10.E.3.g.ii. Approved welding procedures;
- 7 III.10.E.3.g.iii. Welder qualifications and certification;
- 8 III.10.E.3.g.iv. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical  
9 Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1, American  
10 Petroleum Institute (API) Standard 620, or Standard 650 as applicable;
- 11 III.10.E.3.g.v. Tester credentials;
- 12 III.10.E.3.g.vi. Field inspector credentials;
- 13 III.10.E.3.g.vii. Field inspector reports;
- 14 III.10.E.3.g.viii. Field waiver reports; and
- 15 III.10.E.3.g.ix. Non-compliance reports and corrective action (including field waiver reports) and repair  
16 reports.
- 17 III.10.E.4 Integrity Assessments
- 18 III.10.E.4.a. The Permittees will ensure periodic integrity assessments are conducted on the WTP Unit  
19 Tank Systems listed in Permit Tables [III.10.E.A](#) through [D](#), [I](#), [K](#), [M](#), and [O](#), as  
20 approved/modified pursuant to Permit Condition [III.10.E.9.](#), over the term of this Permit  
21 as specified in WAC 173-303-640(3)(b), following the description of the integrity  
22 assessment program and schedule in Operating Unit 10, Chapter 6.0 of this Permit, as  
23 approved pursuant to Permit Conditions [III.10.E.9.e.i.](#) and [III.10.C.5.c.](#) Results of the  
24 integrity assessments will be included in the WTP Unit operating record until ten (10)  
25 years after post-closure, or corrective action is complete and certified, whichever is later.
- 26 III.10.E.4.b. The Permittees will address problems detected during the tank integrity assessments  
27 specified in Permit Condition [III.10.E.4.a.](#) following the integrity assessment program in  
28 Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions  
29 [III.10.E.9.e.i.](#) and [III.10.C.5.c.](#)
- 30 III.10.E.4.c. The Permittees must immediately and safely remove from service any Tank System or  
31 secondary containment system which through an integrity assessment is found to be  
32 “unfit for use” as defined in WAC 173-303-040, following Permit Conditions  
33 [III.10.E.5.i.i](#) through [iv.](#), [vi.](#), and [vii.](#) The affected tank system or secondary containment  
34 system must be either repaired or closed in accordance with Permit Condition  
35 [III.10.E.5.i.v.](#) [WAC 173-303-640(7)(e) and (f), WAC 173-303-640(8)].
- 36 III.10.E.5 Tank Management Practices
- 37 III.10.E.5.a. No dangerous and/or mixed waste will be managed in the WTP Unit Tank System unless  
38 the operating conditions, specified under Permit Condition [III.10.E.5](#) are complied with.
- 39 III.10.E.5.b. The Permittees will install and test all process and leak detection system  
40 monitoring/instrumentation, as specified in Permit Tables [III.10.E.E](#) through [H](#), as  
41 approved/modified pursuant to Permit Condition [III.10.E.9.](#), in accordance with  
42 Operating Unit 10, Appendices 8.1, 8.2, 8.14, 9.1, 9.2, 9.14, 10.1, 10.2, 10.14, 11.1, 11.2,

- 1 and 11.14 of this Permit, as approved pursuant to Permit Conditions [III.10.E.9.e.ix.](#) and  
2 [III.10.E.9.d.x.](#)
- 3 III.10.E.5.c. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other  
4 materials in the WTP Unit Tank System if these substances could cause the tank system  
5 to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a)].
- 6 III.10.E.5.d. The Permittees will operate the WTP Unit Tank System to prevent spills and overflows  
7 using the description of controls and practices as required under WAC 173-303-640(5)(b)  
8 described in Permit Condition [III.10.C.5.](#), and Operating Unit 10, Appendices 8.15, 9.18,  
9 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition [III.10.E.9.e.iv.](#)  
10 [WAC 173-303-640(5)(b), WAC 173-303-806(4)(c)(ix)].
- 11 III.10.E.5.e. For routinely non-accessible WTP Unit Tank Systems, as specified in Operating Unit 10,  
12 Chapter 4.0 of this Permit, as updated pursuant to Permit Condition [III.10.E.9.e.vi.](#), the  
13 Permittees will mark all routinely non-accessible tank system access points with labels  
14 or signs to identify the waste contained in the tanks. The label, or sign, must be legible at  
15 a distance of at least fifty (50) feet and must bear a legend that identifies the waste in a  
16 manner which adequately warns employees, emergency response personnel, and the  
17 public of the major risk(s) associated with the waste being stored or treated in the tank  
18 system(s). For the purposes of this Permit condition, “routinely non-accessible” means  
19 personnel are unable to enter these areas while waste is being managed in them [WAC  
20 173-303-640(5)(d)].
- 21 III.10.E.5.f. For all tank systems not addressed in Permit Condition [III.10.E.5.e.](#), the Permittees will  
22 mark all these tank systems holding dangerous and/or mixed waste with labels or signs to  
23 identify the waste contained in the tank. The labels, or sign, must be legible at a distance  
24 of at least fifty (50) feet, and must bear a legend that identifies the waste in a manner  
25 which adequately warns employees, emergency response personnel, and the public of the  
26 major risk(s) associated with the waste being stored or treated in the tank system(s)  
27 [WAC 173-303-640(5)(d)].
- 28 III.10.E.5.g. The Permittees will ensure that the secondary containment systems for the WTP Unit  
29 Tank Systems listed in Permit Tables [III.10.E.A](#) through [D](#), [I](#), [K](#), [M](#), and [O](#), as  
30 approved/modified pursuant to Permit Condition [III.10.E.9.](#), are free of cracks or gaps to  
31 prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the  
32 system to the soil, ground water, or surface water at any time that waste is in the tank  
33 system. Any indication that a crack or gap may exist in the containment systems will be  
34 investigated and repaired in accordance with Operating Unit 10, Appendices 8.15, 9.18,  
35 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition [III.10.E.9.e.v](#)  
36 [WAC 173-303-320, WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), WAC  
37 173-303-640(6), and WAC 173-303-806(4)(c)(vii)].
- 38 III.10.E.5.h. An impermeable coating, as specified in Operating Unit 10, Appendices 8.4, 8.5, 8.7, 8.9,  
39 8.11, 8.12, 9.4, 9.5, 9.7, 9.9, 9.11, 9.12, 10.4, 10.5, 10.7, 10.9, 10.11, 10.12, 11.4, 11.5,  
40 11.7, 11.9, 11.11, and 11.12 of this Permit, as approved pursuant to Permit Condition  
41 [III.10.E.9.b.v.](#), will be maintained for all concrete containment systems and concrete  
42 portions of containment systems for each WTP Unit Tank System listed in Permit Tables  
43 [III.10.E.A](#) through [D](#) and [I](#) through [P](#), as approved/modified pursuant to Permit Condition  
44 [III.10.E.9.](#) Concrete containment systems that do not have a liner and have construction  
45 joints, must meet the requirements of WAC 173-303-640(4)(e)(ii)(C) and -806(4)(c)(vii).  
46 The coating will prevent migration of any dangerous and/or mixed waste into the  
47 concrete. All coatings will meet the following performance standards:

- 1 III.10.E.5.h.i. The coating must seal the containment surface such that no cracks, seams, or other  
2 avenues through which liquid could migrate are present;
- 3 III.10.E.5.h.ii. The coating must be of adequate thickness and strength to withstand the normal operation  
4 of equipment and personnel within the given area such that degradation or physical  
5 damage to the coating or lining can be identified and remedied before dangerous and/or  
6 mixed waste could migrate from the system; and
- 7 III.10.E.5.h.iii. The coating must be compatible with the dangerous and/or mixed waste, treatment  
8 reagents, or other materials managed in the containment system [WAC 173-303-  
9 640(4)(e)(ii)(D), WAC 173-303-806(4)(c)(vii)].
- 10 III.10.E.5.i. The Permittees will inspect all secondary containment systems for WTP Unit Tank  
11 Systems listed in Permit Tables [III.10.E.A](#) through [D](#) and [I](#) through [P](#), as  
12 approved/modified pursuant to Permit Condition [III.10.E.9](#)., in accordance with the  
13 Inspection Schedule specified in Operating Unit 10, Chapter 6.0 of this Permit, as  
14 approved pursuant to Permit Conditions [III.10.E.9.e.v.](#) and [III.10.C.5.](#), and take the  
15 following actions if a leak or spill of dangerous and/or mixed waste is detected in these  
16 containment systems [WAC 173-303-320, WAC 173-303-640(5)(c), WAC 173-303-  
17 640(6), WAC 173-303-640(7), WAC 173-303-806(4)(a)(v)]:
- 18 III.10.E.5.i.i. Immediately and safely stop the flow of dangerous and/or mixed waste into the tank  
19 system or secondary containment system, in accordance with procedures based on all  
20 applicable safety analysis documentation;
- 21 III.10.E.5.i.ii. Determine the source of the dangerous and/or mixed waste;
- 22 III.10.E.5.i.iii. Remove the waste from the secondary containment area pursuant to WAC 173-303-  
23 640(7)(b). The waste removed from containment areas of WTP Unit Tank Systems will  
24 be managed as dangerous and/or mixed waste;
- 25 III.10.E.5.i.iv. If the cause of the release was a spill that has not damaged the integrity of the tank  
26 system, the Permittees may return the tank system to service pursuant to WAC 173-303-  
27 640(7)(e)(ii). In such a case, the Permittees will take action to ensure the incident that  
28 caused liquid to enter the containment systems of these tank systems will not reoccur  
29 [WAC 173-303-320(3);
- 30 III.10.E.5.i.v. If the source of the dangerous waste and/or mixed waste is determined to be a leak from a  
31 primary WTP Unit Tank System, or the system is unfit for use as determined through an  
32 integrity assessment or other inspection, the Permittees must comply with the  
33 requirements of WAC 173-303-640(7) and take the following actions [WAC 173-303-  
34 640(5)(c)]:
- 35 A. Close the tank system according to procedures in WAC 173-303-640(7)(e)(i), and  
36 Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit  
37 Condition [III.10.C.8.](#); or
- 38 B. Repair and re-certify (in accordance with WAC 173-303-810(13)(a) as modified  
39 pursuant to Permit Condition [III.10.E.1.d.](#)) the tank system in accordance with  
40 Operating Unit 10, Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as  
41 approved pursuant to Permit Condition [III.10.E.9.e.v.](#) before the tank system is  
42 placed back into service [WAC 173-303-640(7)(e) and (f), and WAC 173-303-  
43 806(4)(c)(vii)];
- 44 III.10.E.5.i.vi. The Permittees will document in the operating record actions/procedures taken to comply  
45 with [III.10.E.5.i.i.](#) through [v.](#) above in accordance with WAC 173-303-640(6)(d);

- 1 III.10.E.5.i.vii. The Permittees will notify and report releases to the environment to Ecology in  
2 accordance with WAC 173-303-640(7)(d).
- 3 III.10.E.5.j. If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water  
4 liquids from damaged or broken pipes) can not be removed from the secondary  
5 containment system within twenty-four (24) hours, Ecology will be verbally notified  
6 within twenty-four (24) hours of discovery. The notification will provide the information  
7 in A, B, and C listed below. The Permittees will provide Ecology with a written  
8 demonstration within seven (7) business days, identifying at a minimum [WAC 173-303-  
9 640(4)(c)(iv), WAC 173-303-640(7)(b)(ii), WAC 173-303-806(4)(c)(vii)]:
- 10 A. Reasons for delayed removal;
- 11 B. Measures implemented to ensure continued protection of human health and the  
12 environment;
- 13 C. Current actions being taken to remove liquids from secondary containment.
- 14 III.10.E.5.k. The Permittees will operate the WTP Unit Tank System in accordance with Operating  
15 Unit 10, Chapter 4.0 as updated pursuant to Permit Condition [III.10.E.9.e.vi.](#) and  
16 Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit  
17 Condition [III.10.E.9.e.](#), and the following:
- 18 III.10.E.5.k.i. The Permittees will operate the WTP Unit Tank System in order to maintain the systems  
19 and process parameters listed in Permit Tables [III.10.E.E](#) through [H](#), as  
20 approved/modified pursuant to Permit Condition [III.10.E.9.](#), within the operating trips  
21 and operating ranges specified in Permit Tables [III.10.E.E](#) through [H](#), and consistent with  
22 assumptions and basis which are reflected in Operating Unit 10, Appendix, 6.3.1. as  
23 approved pursuant to Permit Condition [III.10.C.11.b.](#) [WAC 173-303-815(2)(b)(ii) and  
24 WAC 173-303-640(5)(b)]. For the purposes of this permit condition, Operating Unit 10,  
25 Appendix 6.3.1 will be superceded by Appendix 6.4.1 upon its approval pursuant to  
26 either Permit Conditions [III.10.C.11.c.](#) or [III.10.C.11.d.](#);
- 27 III.10.E.5.k.ii. The Permittees will calibrate/function test the instruments listed on Permit Tables  
28 [III.10.E.E](#) through [H](#) in accordance with Operating Unit 10, Appendices 8.15, 9.18,  
29 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition [III.10.E.9.e.xi.](#)
- 30 III.10.E.5.l. Tank systems that have the potential for formation and accumulation of hydrogen gases  
31 must be operated to maintain hydrogen levels below the lower explosive limit [WAC  
32 173-303-815(2)(b)(ii)].
- 33 III.10.E.5.m. For each tank system holding dangerous waste which are acutely or chronically toxic by  
34 inhalation, operate the system to prevent escape of vapors, fumes or other emissions into  
35 the air [WAC 173-303-640(5)(e), WAC 173-303-806(4)(c)(xii)].
- 36 III.10.E.6 Inspections [WAC 173-303-640(6)]
- 37 III.10.E.6.a. The Permittees will inspect the WTP Unit Tank Systems in accordance with the  
38 Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified  
39 pursuant to Permit Condition [III.10.C.5.c.](#)
- 40 III.10.E.6.b. The inspection data for the WTP Unit Tank Systems will be recorded, and the records  
41 will be placed in the WTP Unit operating record, in accordance with Permit Condition  
42 [III.10.C.4.](#)
- 43 III.10.E.7 Recordkeeping (WAC 173-303-380)

1 For the WTP Unit Tank Systems, the Permittees will record and maintain in the WTP  
2 Unit operating record, all monitoring, calibration, recording, maintenance, test data, and  
3 inspection data compiled under the conditions of this Permit, in accordance with Permit  
4 Conditions [III.10.C.4.](#) and [III.10.C.5.](#)

5 III.10.E.8 Closure

6 The Permittees will close the WTP Unit Tank Systems in accordance with Operating Unit  
7 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8.](#)

8 III.10.E.9 Compliance Schedule

9 III.10.E.9.a. All information identified for submittal to Ecology in b. through e. of this compliance  
10 schedule must be signed and certified in accordance with requirements in WAC 173-303-  
11 810(12), as modified in accordance with Permit Condition [III.10.E.1.d.](#) [WAC 173-303-  
12 806(4)].

13 III.10.E.9.b. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), prior  
14 to construction of each secondary containment and leak detection system for the WTP  
15 Unit Tank System (per level, per WTP Unit building and outside the WTP Unit  
16 buildings) as identified in Permit Tables [III.10.E.A](#) through [D](#), [J](#), [L](#), [N](#), and [P](#), engineering  
17 information as specified below, for incorporation into Operating Unit 10, Appendices 8.4,  
18 8.5, 8.7, 8.8, 8.9, 8.11, 8.12, 9.4, 9.5, 9.7, 9.8, 9.9, 9.11, 9.12, 10.4, 10.5, 10.7, 10.8, 10.9,  
19 10.11, 11.4, 11.5, 11.7, 11.8, 11.9, and 11.11 of this Permit. At a minimum, engineering  
20 information specified below will show the following as required pursuant to WAC 173-  
21 303-640 (the information specified below will include dimensioned engineering drawings  
22 and information on sumps and floor drains):

23 III.10.E.9.b.i. IQRPE Reports (specific to foundation, secondary containment, and leak detection  
24 system) will include review of design drawings, calculations, and other information on  
25 which the certification report is based and will include as applicable, but not limited to,  
26 review of such information described below. Information (drawings, specifications, etc.)  
27 already included in Operating Unit 10, Appendices 8.0 through 11.0 of this Permit, may  
28 be included in the report by reference and should include drawing and document  
29 numbers. IQRPE Reports will be consistent with the information separately provided in  
30 Permit Conditions [III.10.E.9.b.ii.](#) through [ix.](#) below. The IQRPE Report(s) (specific to  
31 foundation, secondary containment and leak detection system) for the LAW and HLW  
32 buildings (-21 foot elevation only) will be submitted with the first IQRPE Report for  
33 tanks, identified in Permit Condition [III.10.E.9.c.i.](#) [WAC 173-303-640(3)(a), WAC 173-  
34 303-806(4)(c)(i)];

35 III.10.E.9.b.ii. Design drawings (General Arrangement Drawings in plan and cross sections) and  
36 specifications for the foundation, secondary containment, including, liner installation  
37 details, and leak detection methodology [Note: leak detection systems for areas where  
38 daily, direct, or remote visual inspection is not feasible, will be continuous in accordance  
39 with WAC 173-303-640(4)(e)(iii)(C)]. These items should show the dimensions, volume  
40 calculations, and location of the secondary containment system, and should include items  
41 such as floor/pipe slopes to sumps, tanks, floor drains [WAC 173-303-640(4)(b) through  
42 (f), WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

43 III.10.E.9.b.iii. The Permittees will provide the design criteria (references to codes and standards, load  
44 definitions, and load combinations, materials of construction, and analysis/design  
45 methodology) and typical design details for the support of the secondary containment  
46 system. This information will demonstrate the foundation will be capable of providing  
47 support to the secondary containment system, resistance to pressure gradients above and

- 1 below the system, and capable of preventing failure due to settlement, compression, or  
2 uplift [WAC 173-303-640(4)(c)(ii), WAC 173-303-806(4)(c)(vii)];
- 3 III.10.E.9.b.iv. A description of materials and equipment used to provide corrosion protection for  
4 external metal components in contact with soil, including factors affecting the potential  
5 for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-  
6 806(4)(c)(v)];
- 7 III.10.E.9.b.v. Secondary containment/foundation and leak detection system materials selection  
8 documentation (including, but not limited to, concrete coatings and water stops, and liner  
9 materials as applicable) [WAC 173-303-806(4)(c)(i)];
- 10 III.10.E.9.b.vi. Detailed description of how the secondary containment for each tank system will be  
11 installed in compliance with WAC 173-303-640(3)(c) [WAC 173-303-806(4)(c)(vi)];
- 12 III.10.E.9.b.vii. Submit Permit Tables [III.10.E.J](#), [L](#), [N](#), and [P](#), completed to provide for all secondary  
13 containment sumps and floor drains, the information as specified in each column heading,  
14 consistent with information to be provided in Permit Conditions [III.10.E.9.b.i](#) through [vi](#).  
15 above;
- 16 III.10.E.9.b.viii. Documentation that secondary containment and leak detection systems will not  
17 accumulate hydrogen gas levels above the lower explosive limit for incorporation into the  
18 Administrative Record [WAC 173-303-340].
- 19 III.10.E.9.b.ix. A detailed description of how tank system design provides access for conducting future  
20 tank integrity assessments [WAC 173-303-640(3)(b), WAC 173-303-806(4)(c)(vi)];
- 21 III.10.E.9.c. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), prior  
22 to installation of each tank as identified in Permit Tables [III.10.E.A](#) through [D](#), and [I](#), [K](#),  
23 [M](#), and [O](#) engineering information as specified below, for incorporation into Operating  
24 Unit 10, Appendices 8.1 through 8.9, 8.11 through 8.14, 9.1 through 9.9, 9.11 through  
25 9.14, 10.1 through 10.9, 10.11 through 10.14, 11.1 through 11.9, and 11.11 through 11.14  
26 of this Permit. Tanks will include primary sumps. At a minimum, engineering  
27 information specified below will show the following as required pursuant to WAC 173-  
28 303-640 (the information specified below will include dimensioned engineering  
29 drawings):
- 30 III.10.E.9.c.i. IQRPE Reports (specific to tanks) will include review of design drawings, calculations,  
31 and other information on which the certification report is based and will include as  
32 applicable, but not limited to, review of such information described below. Information  
33 (drawings, specifications, etc.) already included in Operating Unit 10, Appendices 8.0  
34 through 11.0 of this Permit, may be included in the report by reference and should  
35 include drawing and document numbers. The IQRPE Reports will be consistent with the  
36 information separately provided in Permit Conditions [III.10.E.9.c.ii](#) through [xii](#), below  
37 and the IQRPE Report specified in Permit Condition [III.10.E.9.b.i](#) [WAC 173-303-  
38 640(3)(a), WAC 173-303-806(4)(c)(i)];
- 39 III.10.E.9.c.ii. Design drawings (General Arrangement Drawings in plan and cross sections, Process  
40 Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control  
41 systems], Mechanical Drawings) and specifications, and other information, specific to  
42 tanks (to show location and physical attributes of each tank) [WAC 173-303-640(3)(a),  
43 WAC 173-303-806(4)(c)(i) through (iv)];
- 44 III.10.E.9.c.iii. The Permittees will provide the design criteria (references to codes and standards, load  
45 definitions, and load combinations, materials of construction, and analysis/design  
46 methodology) and typical design details for the support of the tank(s). Structural support

- 1 calculations specific to off-specification, non-standard, and field fabricated tanks will be  
2 submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a),  
3 WAC 173-303-806(4)(c)(i)];
- 4 III.10.E.9.c.iv. A description of materials and equipment used to provide corrosion protection for  
5 external metal components in contact with water, including factors affecting the potential  
6 for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-  
7 806(4)(c)(v)];
- 8 III.10.E.9.c.v. Tank materials selection documentation (e.g., physical and chemical tolerances) [WAC  
9 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];
- 10 III.10.E.9.c.vi. Tank vendor information (including, but not limited to required performance warranties,  
11 as available), consistent with information submitted under ii. above, will be submitted for  
12 incorporation into the Administrative Record [WAC 173-303-640, and WAC 173-303-  
13 806(4)(c)];
- 14 III.10.E.9.c.vii. System Descriptions related to tanks will be submitted for incorporation into the  
15 Administrative Record;
- 16 III.10.E.9.c.viii. Mass balance for each projected operating condition, including assumptions and formulas  
17 used to complete the mass balance, so that they can be independently verified, and will  
18 be submitted for incorporation into the Administrative Record;
- 19 III.10.E.9.c.ix. A detailed description of how the tanks will be installed in compliance with WAC 173-  
20 303-640(3)(c), (d), and (e) [WAC 173-303-806(4)(c)(vi)];
- 21 III.10.E.9.c.x. Submit Permit Tables [III.10.E.I](#), [K](#), [M](#), and [O](#), completed to provide for all primary  
22 containment sumps and floor drains, the information as specified in each column heading,  
23 consistent with information to be provided in Permit Conditions [III.10.E.9.c.i](#) through  
24 [ix](#);
- 25 III.10.E.9.c.xi. Documentation that tanks are designed to prevent the accumulation of hydrogen gas  
26 levels above the lower explosive limit for incorporation into the Administrative Record  
27 [WAC 173-303-340];
- 28 III.10.E.9.c.xii. Documentation that tanks are designed to prevent escape of vapors and emissions of  
29 acutely or chronically toxic (upon inhalation) EHW limit for incorporation into the  
30 Administrative Record [WAC 173-303-640(5)(e), WAC 173-303-806(4)(c)(xii)];
- 31 III.10.E.9.d. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f](#), prior  
32 to installation of ancillary equipment for each tank system, as identified in Permit Tables  
33 [III.10.E.A](#), through [D](#), and [I](#) through [P](#), not addressed in Permit Condition [III.10.E.9.c](#),  
34 engineering information as specified below, for incorporation into Operating Unit 10,  
35 Appendices 8.1 through 8.9, 8.11 through 8.14, 9.1 through 9.9, 9.11 through 9.14, 10.1  
36 through 10.9, 10.11 through 10.14, 11.1 through 11.9, and 11.11 through 11.14 of this  
37 Permit. At a minimum, engineering information specified below will show the following  
38 as required pursuant to WAC 173-303-640 (the information specified below will include  
39 dimensioned engineering drawings):
- 40 III.10.E.9.d.i. IQRPE Reports (specific to ancillary equipment) will include a review of design  
41 drawings, calculations, and other information as applicable, on which the certification  
42 report is based. The reports will include, but not be limited to, review of such  
43 information described below. Information (drawings, specifications, etc.) already  
44 included in Operating Unit 10, Appendix 8.0 through 11.0 of this Permit, may be  
45 included in the report by reference and should include drawing and document numbers.

- 1 The IQRPE Reports will be consistent with the information provided separately in Permit  
2 Conditions [III.10.E.9.d.ii.](#) through [xiii.](#) below and the IQRPE Reports specified in Permit  
3 Conditions [III.10.E.9.b](#) and [III.10.E.9.c.](#) [WAC 173-303-640(3)(a), WAC 173-303-  
4 806(4)(c)(i)];
- 5 III.10.E.9.d.ii. Design drawings (Process Flow Diagrams, Piping and Instrumentation Diagrams  
6 [including pressure control systems], etc.) specifications (including required performance  
7 warranties), and other information specific to ancillary equipment (these drawings should  
8 include all equipment such as pipe, valves, fittings, pumps, instruments, etc.) [WAC 173-  
9 303-640(3)(a), WAC 173-303-806(4)(c)(i), (iii), (iv)];
- 10 III.10.E.9.d.iii. The Permittees will provide the design criteria (references to codes and standards, load  
11 definitions, and load combinations, materials of construction, and analysis/design  
12 methodology) and typical design details for the support of the ancillary equipment [WAC  
13 173-303-640(3)(a), WAC 173-303-640(3)(f), WAC 173-303-806(4)(c)(i)];
- 14 III.10.E.9.d.iv. A description of materials and equipment used to provide corrosion protection for  
15 external metal components in contact with soil and water, including factors affecting the  
16 potential for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-  
17 303-806(4)(c)(v)];
- 18 III.10.E.9.d.v. Materials selection documentation for ancillary equipment (e.g., physical and chemical  
19 tolerances) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];
- 20 III.10.E.9.d.vi. Vendor information, consistent with information submitted under ii. above, will be  
21 submitted for incorporation into the Administrative Record [WAC 173-303-640, and  
22 WAC 173-303-806(4)(c)];
- 23 III.10.E.9.d.vii. Tank, ancillary equipment, and leak detection system instrument control logic narrative  
24 description (e.g., software functional specifications, descriptions of fail-safe conditions,  
25 etc.);
- 26 III.10.E.9.d.viii. System Descriptions related to ancillary equipment and system descriptions related to  
27 leak detection systems, (including instrument control logic and narrative descriptions),  
28 for incorporation into the Administrative Record;
- 29 III.10.E.9.d.ix. A detailed description of how the ancillary equipment will be installed and tested [WAC  
30 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), and WAC 173-303-  
31 806(4)(c)(vi)];
- 32 III.10.E.9.d.x. For process monitoring, control, and leak detection system instrumentation for the WTP  
33 Unit Tank System as identified in Permit Tables [III.10.E.E](#) through [H](#), a detailed  
34 description of how the process monitoring, control, and leak detection system  
35 instrumentation will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC  
36 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi)];
- 37 III.10.E.9.d.xi. Mass balance for projected normal operating condition used in developing the process  
38 and instrumentation diagrams, including assumptions and formulas used to complete the  
39 mass balance, so that they can be independently verified, for incorporation into the  
40 Administrative Record;
- 41 III.10.E.9.d.xii. Documentation that ancillary equipment is designed to prevent the accumulation of  
42 hydrogen gas levels above the lower explosive limit for incorporation into the  
43 Administrative Record [WAC 173-303-340].
- 44 III.10.E.9.d.xiii. Leak detection system documentation (e.g. vendor information, etc.) consistent with  
45 information submitted under Permit Condition [III.10.E.9.c.ii.](#) and Permit Conditions

- 1 [III.10.E.9.d.ii.](#), [vii.](#), [viii.](#) and [x.](#) above, will be submitted for incorporation into the  
2 Administrative Record.
- 3 III.10.E.9.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees  
4 will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), the following as  
5 specified below for incorporation into Operating Unit 10, Appendices 8.15, 9.18, 10.18,  
6 11.15 of this Permit, except Permit Condition [III.10.E.9.e.v.](#), which will be incorporated  
7 into Operating Unit 10, Chapter 6.0 of this Permit. All information provided under this  
8 permit condition must be consistent with information provided pursuant to Permit  
9 Conditions [III.10.E.9.b.](#), [c.](#), [d.](#), and [e.](#), [III.10.C.3.e.](#), and [III.10.C.11.b.](#), as approved by  
10 Ecology.
- 11 III.10.E.9.e.i. Integrity assessment program and schedule for all WTP Unit tanks will address the  
12 conducting of periodic integrity assessments on all WTP Unit tanks over the life of the  
13 tank, in accordance with [III.10.E.9.b.ix.](#) and WAC 173-303-640(3)(b), and descriptions  
14 of procedures for addressing problems detected during integrity assessments. The  
15 schedule must be based on past integrity assessments, age of the tank system, materials of  
16 construction, characteristics of the waste, and any other relevant factors [WAC 173-303-  
17 640(3)(b), WAC 173-303-806(4)(c)(vi)];
- 18 III.10.E.9.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so  
19 that it will detect the failure of either the primary or secondary containment structure or  
20 the presence of any release of dangerous and/or mixed waste, or accumulated liquid in  
21 the secondary containment system within twenty-four (24) hours. Detection of a leak of  
22 at least 0.1 gallons per hour within twenty-four (24) hours is defined as being able to  
23 detect a leak within twenty-four (24) hours. Any exceptions to this criteria must be  
24 approved by Ecology [WAC 173-303-640(4)(c)(iii), WAC 173-303-806(4)(c)(vii)];
- 25 III.10.E.9.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste  
26 and accumulated liquids can be removed from the secondary containment system within  
27 twenty-four (24) hours [WAC 173-303-806(4)(c)(vii)];
- 28 III.10.E.9.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices  
29 are in place to prevent spills and overflows from tanks or containment systems in  
30 compliance with WAC 173-303-640(5)(b)(i) through (iii) [WAC 173-303-640(5)(b),  
31 WAC 173-303-806(4)(c)(ix)];
- 32 III.10.E.9.e.v. Description of procedures for investigation and repair of tank systems [WAC 173-303-  
33 320, WAC 173-303-640(6), WAC 173-303-640(7)(e) and (f), WAC 173-303-  
34 806(4)(a)(v), WAC 173-303-806(4)(c)(vii)];
- 35 III.10.E.9.e.vi. Updated Chapter 4.0, Narrative Descriptions, Tables and Figures as identified in Permit  
36 Tables [III.10.E.A](#) through [D](#) (as modified pursuant to Permit Condition [III.10.E.9.e.xii.](#))  
37 and updated to identify routinely non-accessible tank systems;
- 38 III.10.E.9.e.vii. Description of procedures for management of ignitable and reactive, and incompatible  
39 dangerous and/or mixed waste in accordance with WAC 173-303-640(9) and (10) [WAC  
40 173-303-806(4)(c)(x)].
- 41 III.10.E.9.e.viii. A description of the tracking system used to track dangerous and/or mixed waste  
42 throughout the WTP Unit Tank System, pursuant to WAC 173-303-380.
- 43 III.10.E.9.e.ix. Permit Tables [III.10.E.E](#) through [H](#) will be completed for WTP Unit Tank System  
44 process and leak detection system monitors and instruments (to include but not limited to:  
45 instruments and monitors measuring and/or controlling flow, pressure, temperature,  
46 density, pH, level, humidity, and emission) to provide the information as specified in

1 each column heading. Process and leak detection system monitors and instruments for  
2 critical systems as specified in Operating Unit 10, Appendix 2.0 and as updated pursuant  
3 to Permit Condition [III.10.C.9.b.](#) and for operating parameters as required to comply with  
4 Permit Condition [III.10.C.3.e.iii.](#) will be addressed. Process monitors and instruments for  
5 non-waste management operations (e.g., utilities, raw chemical storage, non-contact  
6 cooling waters, etc.) are excluded from this permit condition.

7 III.10.E.9.e.x. Supporting documentation for operating trips and expected operating range as specified  
8 in Permit Tables [III.10.E.E](#) through [H](#) as approved pursuant to Permit Condition  
9 [III.10.E.9.e.ix.](#)

10 III.10.E.9.e.xi. Documentation of process and leak detection instruments and monitors (as listed in  
11 Permit Tables [III.10.E.E](#) through [H](#)) for the WTP Unit Tank Systems to include but not  
12 be limited to the following:

13 A. Procurement specifications;

14 B. Location used;

15 C. Range, precision, and accuracy;

16 D. Detailed descriptions of Calibration/functionality test procedures (e.g., method  
17 number [ASTM]) or provide a copy of manufacturer's recommended calibration  
18 procedures;

19 E. Calibration/functionality test, inspection, and routine maintenance schedules and  
20 checklists, including justification for calibration, inspection and maintenance  
21 frequencies, criteria for identifying instruments found to be significantly out of  
22 calibration, and corrective action to be taken for instruments found to be significantly  
23 out of calibration (e.g., increasing frequency of calibration, instrument replacement,  
24 etc.);

25 F. Equipment instrument control logic narrative description (e.g., software functional  
26 specifications, descriptions of fail safe conditions, etc.), as identified in Permit Tables  
27 [III.10.E.E](#) through [H](#) not addressed in Permit Condition [III.10.E.9.d.](#)

28 III.10.E.9.e.xii. Permit Tables [III.10.E.A](#) through [D](#) amended as follows:

29 A. Under column 1, update and complete list of dangerous and/or mixed waste tank  
30 systems, including plant items that comprise each system (listed by item number);

31 B. Under column 2, update and complete system designations;

32 C. Under column 3, replace the 'reserved' with the Operating Unit 10, Appendices 8.0,  
33 9.0, 10.0, and 11.0, subsections specific to tank systems as listed in column 1;

34 D. Under column 4, update and complete list of narrative description tables and figures;

35 E. Under column 5, update and complete maximum capacity, for each tank.

36 III.10.E.9.e.xiii. Permit Tables [III.10.E.I](#), [K](#), [M](#), and [O](#) amended as follows:

37 A. Under column 1, replace the 'reserved' with the updated and complete list of sump  
38 numbers and room location;

39 B. Under column 2, replace the 'reserved' with the updated and complete maximum  
40 sump capacities in gallons;

41 C. Under column 3, replace the 'reserved' with the updated and complete sump  
42 dimensions and materials of construction;

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- 1
  - 2
  - 3
- D. Under column 4, replace the 'reserved' with the updated and complete list of engineering descriptions (drawing numbers, specifications, etc.);

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

<b>Dangerous and/or Mixed Waste Tank Systems Name</b>	<b>System Designation</b>	<b>Engineering Description (Drawing Nos., Specifications Nos., etc.)</b>	<b>Narrative Description, Tables &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>
<p><b><u>Waste Feed Receipt Process System</u></b></p> <p>FRP-VSL-00002A (Waste Feed Receipt Vessel)</p> <p>FRP-VSL-00002B (Waste Feed Receipt Vessel)</p> <p>FRP-VSL-00002C (Waste Feed Receipt Vessel)</p> <p>FRP-VSL-00002D (Waste Feed Receipt Vessel)</p>	FRP	<p><b><u>24590-PTF</u></b></p> <p>-M2-FRP-P0001</p> <p>-M2-FRP-P0002</p> <p>-M2-FRP-P0003</p> <p>-M2-FRP-P0004</p> <p>-M5-V17T-P0003</p> <p>-M6-FRP-P0001</p> <p>-M6-FRP-P0002</p> <p>-M6-FRP-P0003</p> <p>-M6-FRP-P0005</p> <p>-M6-FRP-P0006</p> <p>-M6-FRP-P0007</p> <p>-M6-FRP-P0008</p> <p>-M6-FRP-P0009</p> <p>-M6-FRP-P0010</p> <p>-MVD-FRP-P0005</p> <p>-MVD-FRP-P0006</p> <p>-MVD-FRP-P0007</p> <p>-MVD-FRP-P0008</p> <p>-N1D-FRP-P0001</p> <p>-P1-P01T-P0001</p> <p>-P1-P01T-P0002</p> <p><b><u>24590-WTP</u></b></p> <p>-3PS-G000-TP002</p> <p>-3PS-MV00-TP001</p> <p>-3PS-MV00-TP002</p> <p>-3PS-MV00-TP003</p>	Section 4.1.2.1; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	<p>FRP-VSL-00002A = 474,000</p> <p>FRP-VSL-00002B = 474,000</p> <p>FRP-VSL-00002C = 474,000</p> <p>FRP-VSL-00002D = 474,000</p>
<p><b><u>Waste Feed Evaporation Process System</u></b></p>	FEP	<p><b><u>24590-PTF</u></b></p> <p>-3PS-MEVV-TP001</p>	Section 4.1.2.2; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of	FEP-VSL-00005 = 5,022

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

<b>Dangerous and/or Mixed Waste Tank Systems Name</b>	<b>System Designation</b>	<b>Engineering Description (Drawing Nos., Specifications Nos., etc.)</b>	<b>Narrative Description, Tables &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>
<p>FEP-VSL-00005 (Waste Feed Evaporator Condensate Vessel)</p> <p>FEP-VSL-00017A (Waste Feed Evaporator Feed Vessel)</p> <p>FEP-VSL-00017B (Waste Feed Evaporator Feed Vessel)</p>		<p>-M5-V17T-P0004001  -M6-FEP-P0001  -M6-FEP-P0003  -M6-FEP-P0006  -M6-FEP-P0007  -M6-FEP-P0008  -MVD-FEP-P0001  -MVD-FEP-P0002  -MVD-FEP-P0003  -MV-FEP-P0001  -MV-FEP-P0002  -N1D-FEP-P0002  -N1D-FEP-P0003  -P1-P01T-P0001  -P1-P01T-P0002  -P1-P01T-P0007</p> <p><b><u>24590-WTP</u></b>  -3PS-G000-TP002  -3PS-MV00-TP001  -3PS-MV00-TP002  -3PS-MV00-TP003</p>	<p>Operating Unit 10, Chapter 4.0 of this Permit.</p>	<p>FEP-VSL-00017A = 85,496</p> <p>FEP-VSL-00017B = 85,496</p>
<p><b><u>Ultrafiltration Process System</u></b></p> <p>UFP-VSL-00001A (Ultrafiltration Feed Preparation Vessel)</p> <p>UFP-VSL-00001B (Ultrafiltration Feed Preparation Vessel)</p> <p>UFP-VSL-00002A (Ultrafiltration Feed</p>	<p>UFP</p>	<p><b><u>24590-PTF</u></b>  -M5-V17T-P0009  -M5-V17T-P0010  -M5-V17T-P0011  -M6-UFP-P0001  -M6-UFP-P0002  -M6-UFP-P0003  -M6-UFP-P0004  -M6-UFP-P0005</p>	<p>Section 4.1.2.3; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.</p>	<p>UFP-VSL-00001A = 75,593</p> <p>UFP-VSL-00001B = 75,593</p> <p>UFP-VSL-00002A = 40,783</p> <p>UFP-VSL-00002B = 40,783</p> <p>UFP-VSL-00002A = 34,700</p>

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
Vessel)  UFP-VSL-00002B (Ultrafiltration Feed Vessel)  UFP-VSL-00062A (Ultrafilter Permeate Collection Vessel)  UFP-VSL-00062B (Ultrafilter Permeate Collection Vessel)  UFP-VSL-00062C (Ultrafilter Permeate Collection Vessel)  UFP-FILT-00001A (Ultrafilter)  UFP-FILT-00001B (Ultrafilter)  UFP-FILT-00002A (Ultrafilter)  UFP-FILT-00002B (Ultrafilter)  UFP-FILT-00003A (Ultrafilter)  UFP-FILT-00003B (Ultrafilter)		-M6-UFP-P0006 -M6-UFP-P0007 -M6-UFP-P0008 -M6-UFP-P0009 -M6-UFP-P0010 -M6-UFP-P0011 -M6-UFP-P0013 -M6-UFP-P0015 -M6-UFP-P0016 -M6-UFP-P0017 -M6-UFP-P0021 -M6-UFP-P0022 -MLD-UFP-P0007 -MVD-UFP-P0001 -MVD-UFP-P00014 -MVD-UFP-P00015 -MVD-UFP-P0002 -MVD-UFP-P0005 -MVD-UFP-P0006 -MVD-UFP-P0007 -MV-UFP-P0001 -MV-UFP-P0002 -MV-UFP-P0003 -MV-UFP-P0004 -MV-UFP-P0005 -MV-UFP-P0006 -MV-UFP-P0007 -N1D-UFP-P0001 -N1D-UFP-P0002 -N1D-UFP-P0003 -N1D-UFP-P0004 -N1D-UFP-P0005		UFP-VSL-00062B = 34,700  UFP-VSL-00062C = 34,700  UFP-FILT-00001A= 140  UFP- FILT-00001B= 140  UPF-FILT-00002A= 140  UPF-FILT-00002B= 140  UPF-FILT-00003A= 140  UPF-FILT-00003B= 140

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-N1D-UFP-P0008 -N1D-UFP-P0009 -P1-P01T-P0001  <u><b>24590-WTP</b></u> -3PS-G000-TP002 -3PS-MV00-TP002 -3PS-MV00-TP003 -3PS-MV00-TP001		
<u><b>HLW Lag Storage and Feed Blending Process System</b></u>  HLP-VSL-00022 (HLW Feed Receipt Vessel)  HLP-VSL-00027A (HLW Lag Storage Vessel)  HLP-VSL-00027B (HLW Lag Storage Vessel)  HLP-VSL-00028 (HLW Feed Blending Vessel)	HLP	<u><b>24590-PTF-</b></u> -M5-V17T-P0007 -M5-V17T-P0008 -M6-HLP-P0001 -M6-HLP-P0002 -M6-HLP-P0003 -M6-HLP-P0005 -M6-HLP-P0006 -M6-HLP-P0007 -M6-HLP-P0009 -M6-HLP-P0010 -MVD-HLP-P0006 -MVD-HLP-P0007 -MVD-HLP-P0008 -MVD-HLP-P0009 -MV-HLP-P0003 -MV-HLP-P0004 -MV-HLP-P0005 -MV-HLP-P0006 -N1D-HLP-P0001 -N1D-HLP-P0003 -N1D-HLP-P0007	Section 4.1.2.4; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	HLP-VSL-00022 = 270,600  HLP-VSL-00027A = 127,260  HLP-VSL-00027B = 127,260  HLP-VSL-00028 = 142,200

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-N1D-HLP-P0010 -P1-P01T-P0001  <u><b>24590-WTP</b></u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP003 -3PS-MV00-TP003		
<u><b>Cesium Ion Exchange Process System</b></u>  CXP-VSL-00001 (Cesium Ion Exchange Feed Vessel)  CXP-VSL-00004 (Cesium Ion Exchange Caustic Rinse Collection Vessel)  CXP-VSL-00005 (Cesium Reagent Vessel)  CXP-VSL-00026A (Cesium Ion Exchange Treated LAW Collection Vessel)  CXP-VSL-00026B (Cesium Ion Exchange Treated LAW Collection Vessel)  CXP-VSL-00026C (Cesium Ion Exchange Treated LAW Collection Vessel)	CXP	<u><b>24590-PTF</b></u> -M5-V17T-P0012 -M5-V17T-P0013 -M5-V17T-P0025 -M6-CXP-P0001 -M6-CXP-P0002 -M6-CXP-P0003 -M6-CXP-P0005 -M6-CXP-P0007 -M6-CXP-P0010 -M6-CXP-P0011 -M6-CXP-P0012 -M6-CXP-P0013 -MV-CXP-P0001 -MV-CXP-P0002 -MV-CXP-P0003 -MV-CXP-P0008 -MV-CXP-P0009 -MV-CXP-P0010 -MVD-CXP-P0007 -MVD-CXP-P0015 -MVD-CXP-P0016 -MVD-CXP-P0021	Section 4.1.2.5; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	CXP-VSL-00001 = 103,350  CXP-VSL-00004 = 11,085  CXP-VSL-00005 = 1141  CXP-VSL-00026A = 39,000  CXP-VSL-00026B = 39,000  CXP-VSL-00026C = 39,000  CXP-IXC-00001 = 680  CXP-IXC-00002 = 680  CXP-IXC-00003 = 680  CXP-IXC-00004 = 680

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

<b>Dangerous and/or Mixed Waste Tank Systems Name</b>	<b>System Designation</b>	<b>Engineering Description (Drawing Nos., Specifications Nos., etc.)</b>	<b>Narrative Description, Tables &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>
CXP-IXC-00001 (Cesium Ion Exchange Column)  CXP-IXC-00002 (Cesium Ion Exchange Column)  CXP-IXC-00003 (Cesium Ion Exchange Column)  CXP-IXC-00004 (Cesium Ion Exchange Column)		-MVD-CXP-P0022 -MVD-CXP-P0023 -N1D-CXP-P0001 -N1D-CXP-P0003 -N1D-CXP-P0007 -N1D-CXP-P0008 -P1-P01T-P0001 -P1-P01T-P0002  <u><b>24590-WTP</b></u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<u><b>Cesium Nitric Acid Recovery Process System</b></u>  CNP-VSL-00001 (Cesium Evaporator Eluate Lute Pot)  CNP-VSL-00003 (Eluate Contingency Storage Vessel)  CNP-VSL-00004 (Cesium Evaporator Recovered Nitric Acid Vessel)	CNP	<u><b>24590-PTF</b></u> -M5-V17T-P0014 -M6-CNP-P0001 -M6-CNP-P0002 -M6-CNP-P0003 -M6-CNP-P0004 -M6-CNP-P0005 -MV-CNP-P0001 -MV-CNP-P0002 -MV-CNP-P0005 -MVD-CNP-P0003 -MVD-CNP-P0007 -MVD-CNP-P0010 -N1D-CNP-P0006 -N1D-CNP-P0009 -N1D-CNP-P0011 -P1-P01T-P0001	Section 4.1.2.6; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	CNP-VSL-00001 = 109  CNP-VSL-00003 = 21,570  CNP-VSL-00004= 11,115

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

<b>Dangerous and/or Mixed Waste Tank Systems Name</b>	<b>System Designation</b>	<b>Engineering Description (Drawing Nos., Specifications Nos., etc.)</b>	<b>Narrative Description, Tables &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

<b>Dangerous and/or Mixed Waste Tank Systems Name</b>	<b>System Designation</b>	<b>Engineering Description (Drawing Nos., Specifications Nos., etc.)</b>	<b>Narrative Description, Tables &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>
<u><b>Treated LAW Concentrate Storage Process System</b></u>  TCP-VSL-00001 (Treated LAW Concentrate Storage Vessel)	TCP	<u><b>24590-PTF</b></u> -M5-V17T-P0006 -M6-TCP-P0001 -M6-TCP-P0002 -MV-TCP-P0002 -MVD-TCP-P0002 -N1D-TCP-P0001 -P1-P01T-P0001  <u><b>24590-WTP</b></u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	Section 4.2.2.12; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	TCP-VSL-00001 = 146,740
<u><b>Treated LAW Evaporation Process System</b></u>  TLP-VSL-00002 (Treated LAW Evaporator Condensate Vessel)  TLP-VSL-00009A (LAW SBS Condensate Receipt Vessel)  TLP-VSL-00009B (LAW SBS Condensate Receipt Vessel)	TLP	<u><b>24590-PTF</b></u> -3PS-MEVV-TP001 -M5-V17T-P0005 -M6-TLP-P0001 -M6-TLP-P0002 -M6-TLP-P0003 -MVD-TLP-P0001 -MVD-TLP-P0002 -MVD-TLP-P0004 -MV-TLP-P0001 -MV-TLP-P0002 -N1D-TLP-P0001	Section 4.1.2.11; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	TLP-VSL-00002 = 2300  TLP-VSL-00009A = 130,010  TLP-VSL-00009B = 130,010

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-N1D-TLP-P0006 -P1-P01T-P0001 -P1-P01T-P0002  <u><b>24590-WTP</b></u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<u><b>Spent Resin and Dewatering Process System</b></u>  RDP-VSL-00002A (Spent Resin Slurry Vessels)  RDP-VSL-00002B (Spent Resin Slurry Vessels)  RDP-VSL-00002C (Spent Resin Slurry Vessels)  RDP-VSL-00004 (Spent Resin Dewatering Moisture Separation Vessel)	RDP	<u><b>24590-PTF</b></u> -3PS-MWD0-TP003 -M5-V17T-P0020 -M6-RDP-P0001 -M6-RDP-P0002 -M6-RDP-P0006 -MVD-RDP-P0005 -MVD-RDP-P0006 -MVD-RDP-P0007 -MVD-RDP-P0008 -MV-RDP-P0001 -MV-RDP-P0002 -MV-RDP-P0003 -P1-P01T-P0001  <u><b>24590-WTP</b></u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	Section 4.1.2.13; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	RDP-VSL-00002A = 15,230  RDP-VSL-00002B = 15,230  RDP-VSL-00002C = 15,230  RDP-VSL-00004 = 101
<u><b>Pretreatment Plant Radioactive Liquid</b></u>	RLD	<u><b>24590-PTF</b></u>	Section 4.1.2.16; Tables 4-2 and 4-6;	RLD-TK-00006A = 394,000

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p><b><u>Waste Disposal System</u></b></p> <p>RLD-TK-00006A (Process Condensate Tank)</p> <p>RLD-TK-00006B (Process Condensate Tank)</p> <p>RLD-VSL-00017A (Alkaline Effluent Vessel)</p> <p>RLD-VSL-00017B (Alkaline Effluent Vessel)</p>		<p>-M5-V17T-P0022003 -M5-V17T-P0022004 -M6-RLD-P0001 -M6-RLD-P0002 -M6-RLD-P0003 -M6-RLD-P0004 -M6-RLD-P0006 -MVD-RLD-P0005 -MVD-RLD-P0006 -MV-RLD-P0001 -MV-RLD-P0002 -N1D-RLD-P0002 -P1-P01T-P0001</p> <p><b><u>24590-WTP</u></b> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003</p>	<p>and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.</p>	<p>RLD-TK-00006B = 394,000</p> <p>RLD-VSL-00017A = 34,340</p> <p>RLD-VSL-00017B = 34,340</p>
<p><b><u>Pretreatment Plant Wash and Disposal System</u></b></p> <p>PWD-VSL-00015 (Acidic/Alkaline Effluent Vessel)</p> <p>PWD-VSL-00016 (Acidic/Alkaline Effluent Vessel)</p> <p>PWD-VSL-00033 (Ultimate Overflow Vessel)</p>	PWD	<p><b><u>24590-PTF</u></b> -M5-V17T-P0022001 -M5-V17T-P0022002 -M6-PWD-P0001 -M6-PWD-P0002 -M6-PWD-P0003 -M6-PWD-P0005 -M6-PWD-P0006 -M6-PWD-P0007 -M6-PWD-P0008 -M6-PWD-P0009 -M6-PWD-P0010</p>	<p>Section 4.1.2.15; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.</p>	<p>PWD-VSL-00015 = 119,150</p> <p>PWD-VSL-00016 = 119,150</p> <p>PWD-VSL-00033 = 41,650</p> <p>PWD-VSL-00043 = 41,650</p> <p>PWD-VSL-00044 = 103,024</p> <p>PWD-VSL-00046 = 4982</p>

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
PWD-VSL-00043 (HLW Effluent Transfer Vessel)  PWD-VSL-00044 (Plant Wash Vessel)  PWD-VSL-00046 (C3 Floor Drain Collection Vessel)		-M6-PWD-P0011 -M6-PWD-P0012 -M6-PWD-P0014 -M6-PWD-P0018 -M6-PWD-P0019 -M6-PWD-P0020 -M6-PWD-P0021 -M6-PWD-P0023 -M6-PWD-P0024 -M6-PWD-P0025 -M6-PWD-P0026 -M6-PWD-P0029 -M6-PWD-P0033 -M6-PWD-P0041 -M6-PWD-P0043 -M6-PWD-P0044 -M6-PWD-P0046 -M6-PWD-P0050 -M6-PWD-P0051 -M6-PWD-P0057 -M6-PWD-P0058 -MVD-PWD-P0001 -MVD-PWD-P0002 -MVD-PWD-P0003 -MVD-PWD-P0010 -MVD-PWD-P0011 -MVD-PWD-P0012 -MV-PWD-P0001001 -MV-PWD-P0001002 -MV-PWD-P0003001 -MV-PWD-P0003002 -MV-PWD-P0005		

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-MV-PWD-P0006 -MV-PWD-P0007 -MV-PWD-P0010 -N1D-PWD-P0001 -N1D-PWD-P0002 -N1D-PWD-P0003 -N1D-PWD-P0005 -N1D-PWD-P0006 -P1-P01T-P0001 -P1-P01T-P0006		
<b><u>Pretreatment Vessel Vent Process System</u></b>  PVP-VSL-00001 (Vessel Ventilation HEME Drain Collection Vessel)	PVP	<b><u>24590-PTF</u></b> -M5-V17T-P0021001 -M5-V17T-P0021004 -M6-PVP-P0002 -M6-PVP-P0004 -M6-PVP-P0009 -M6-PVP-P0017 -M6-PVP-P0018 -MVD-PVP-P0001 -MV-PVP-P0002 -N1D-PVP-P0002 -P1-P01T-P0001  <b><u>24590-WTP</u></b> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	Section 4.1.2.16; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	PVP-VSL-00001 = 1,969
<b><u>Pulse-Jet Ventilation System</u></b>	PJV	<b><u>24590-PTF</u></b> -M5-V17T-P0021002	Section 4.1.2.17; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A	PJV-VSL-00002 = 8,975

**Table III.10.E.A – Pretreatment Plant Tank Systems Description**

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
PJV-VSL-00002 (PJV Drain Collection Vessel)		-M6-PJV-P0002 -M6-PJV-P0001 -M6-PJV-P0004 -MVD-PJV-P0003 -MV-PJV-P0001 -N1D-PJV-P0001 -P1-P01T-P0001  <b><u>24590-WTP</u></b> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	of Operating Unit 10, Chapter 4.0 of this Permit.	
<b><u>Pretreatment In-Cell Handling System</u></b>  PIH-TK-00001 (Decontamination Soak Tank)	PIH	<b><u>24590-PTF</u></b> -M6-PIH-P0001 -P1-P01T-P0001	Section 4.1.2.14; Tables 4-2 and 4-6; and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	PIH-TK-00001 = RESERVED

**Table III.10.E.B – LAW Vitrification Plant Tank Systems Description**

<b>Dangerous and/or Mixed Waste Tank Systems Name</b>	<b>Unit Designation</b>	<b>Engineering Description (Drawing Nos, Specification Nos, etc.)</b>	<b>Narrative Description, Tables &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>
<p><b><u>LAW Concentrate Receipt Process System</u></b></p> <p>LCP-VSL-00001 (LAW Melter 1 Concentrate Receipt Vessel)</p> <p>LCP-VSL-00002 (LAW Melter 2 Concentrate Receipt Vessel)</p>	LCP	<p><b><u>24590-LAW</u></b></p> <p>-M5-V17T-P0001 -M5-V17T-P0002 -M6-LCP-P0001 -M6-LCP-P0002 -MV-LCP-P0001 -MV-LCP-P0002 -MVD-LCP-P0004 -MVD-LCP-P0005 -N1D-LCP-P0001 -P1-P01T-P0002 -P1-P01T-P0011</p>	Section 4.1.3.1; Tables 4-3 and 4-6; and Figures 4A-1 and 4A-3 of Operating Unit 10, Chapter 4.0 of this Permit.	<p>LCP-VSL-00001 = 18,130</p> <p>LCP-VSL-00002 = 18,130</p>
<p><b><u>LAW Melter Feed Process System</u></b></p> <p>LFP-VSL-00001 (Melter 1 Feed Preparation Vessel)</p> <p>LFP-VSL-00002 (Melter 1 Feed Vessel)</p> <p>LFP-VSL-00003 (Melter 2 Feed Preparation Vessel)</p> <p>LFP-VSL-00004 (Melter 2 Feed Vessel)</p>	LFP	<p><b><u>24590-LAW</u></b></p> <p>-M5-V17T-P0001 -M5-V17T-P0002 -M6-LFP-P0001 -M6-LFP-P0003 -MV-LFP-P0001 -MV-LFP-P0002 -MV-LFP-P0004 -MV-LFP-P0005 -MVD-LFP-P0007 -MVD-LFP-P0008 -MVD-LFP-P0010 -MVD-LFP-P0011 -P1-P01T-P0002 -P1-P01T-P0010 -P1-P01T-P0011</p>	Section 4.1.3.1; Tables 4-3 and 4-6; and Figures 4A-1 and 4A-3 of Operating Unit 10, Chapter 4.0 of this Permit.	<p>LFP-VSL-00001 = 9,123</p> <p>LFP-VSL-00002 = 9,123</p> <p>LFP-VSL-00003 = 9,123</p> <p>LFP-VSL-00004 = 9,123</p>

**Table III.10.E.B – LAW Vitrification Plant Tank Systems Description**

<b>Dangerous and/or Mixed Waste Tank Systems Name</b>	<b>Unit Designation</b>	<b>Engineering Description (Drawing Nos, Specification Nos, etc.)</b>	<b>Narrative Description, Tables &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>
		-N1D-LFP-P0004 -N1D-LFP-P0006		
<b><u>LAW Secondary Off-gas/Vessel Vent Process System</u></b>  LVP-TK-00001 (LAW Caustic Collection Tank)	LVP	<b><u>24590-LAW</u></b> -M5-V17T-P0011 -P1-P01T-P0004 -P1-P01T-P0009 -MT-LVP-P0004 -MTD-LVP-P0001 -N1D-LVP-P0002	Section 4.1.3.3; Tables 4-3 and 4-6; and Figures 4A-1 and 4A-3 of Operating Unit 10, Chapter 4.0 of this Permit.	LVP-TK-00001= 14,232
<b><u>LAW Primary Off-gas Process System</u></b>  LOP-VSL-00001 (LAW Melter 1 SBS Condensate Vessel)  LOP-VSL-00002 (LAW Melter 2 SBS Condensate Vessel)	LOP	<b><u>24590-LAW</u></b> -M5-V17T-P0007 -M5-V17T-P0008 -M6-LOP-P0001 -M6-LOP-P0002 -MV-LOP-P0001 -MV-LOP-P0002 -MVD-LOP-P0004 -MVD-LOP-P0005 -N1D-LOP-P0002 -P1-P01T-P0002 -P1-P01T-P0010	Section 4.1.3.3; Tables 4-3 and 4-6; and Figures 4A-1 and 4A-3 of Operating Unit 10, Chapter 4.0 of this Permit.	LOP-VSL-00001 = 9,056  LOP-VSL-00002 = 9,056
<b><u>LAW Vitrification Plant Radioactive Liquid Waste Disposal System</u></b>  RLD-VSL-00003 (Plant Wash Vessel)	RLD	<b><u>24590-LAW</u></b> -M5-V17T-P0014 -M6-RLD-P0001 -M6-RLD-P0002 -M6-RLD-P0003	Section 4.1.3.4; Tables 4-3 and 4-6; and Figures 4A-1 and 4A-3 of Operating Unit 10, Chapter 4.0 of this Permit.	RLD-VSL-00003 = 25,780  RLD-VSL-00004 = 7696  RLD-VSL-00005 = 25,780

**Table III.10.E.B – LAW Vitrification Plant Tank Systems Description**

<b>Dangerous and/or Mixed Waste Tank Systems Name</b>	<b>Unit Designation</b>	<b>Engineering Description (Drawing Nos, Specification Nos, etc.)</b>	<b>Narrative Description, Tables &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>
RLD-VSL-00004 (C3/C5 Drains/Sump Collection Vessel)  RLD-VSL-00005 (SBS Condensate Collection Vessel)		-MVD-RLD-P0001 -MVD-RLD-P0006 -MVD-RLD-P0007 -MV-RLD-P0001 -MV-RLD-P0002 -MV-RLD-P0003 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0010 -P1-P01T-P0011 -N1D-RLD-P0001 -N1D-RLD-P0002 -N1D-RLD-P0005		

1  
2

**Table III.10.E.C – HLW Vitrification Plant Tank Systems Description**

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p><b><u>HLW Concentrate Receipt Process System</u></b></p> <p>The HCP Tank System has ancillary equipment only.</p>	HCP	<p><b><u>24590-HLW</u></b>                      -M5-V17T-P0001                      -M6-HCP-P0001                      -M6-HCP-P0002</p>	Section 4.1.4.1; Tables 4-4 and 4-6; Figures 4A-1 and 4A-4 of Operating Unit 10, Chapter 4.0 of this Permit.	
<p><b><u>HLW Melter Feed Process System</u></b></p> <p>HFP-VSL-00001 (HLW Melter 1 Feed Preparation Vessel)</p> <p>HFP-VSL-00002 (HLW Melter 1 Feed Vessel)</p> <p>HFP-VSL-00005 (HLW Melter 2 Feed Preparation Vessel)</p> <p>HFP-VSL-00006 (HLW Melter 2 Feed Vessel)</p>	HFP	<p><b><u>24590-HLW</u></b>                      -3YD-HFP-00001<sup>a</sup>                      -M5-V17T-P0001                      -M6-HFP-P0001                      -M6-HFP-P0002                      -M6-HFP-P0007                      -M6-HFP-P0008                      -M6-HFP-P20001                      -M6-HFP-P20002                      -M6-HFP-P20007                      -M6-HFP-P20008                      -MVD-HFP-P0010                      -MVD-HFP-P0011                      -MVD-HFP-P0014                      -MVD-HFP-P0015                      -MV-HFP-P0001                      -MV-HFP-P0002                      -MV-HFP-P0003                      -MV-HFP-P0004                      -MV-HFP-P0006                      -MV-HFP-P0007                      -MV-HFP-P0008                      -MV-HFP-P0009                      -MV-HFP-P0010                      -MV-HFP-P0011</p>	Section 4.1.4.1; Tables 4-4 and 4-6; Figures 4A-1 and 4A-4 of Operating Unit 10, Chapter 4.0 of this Permit.	<p>HFP-VSL-00001 = 8,370</p> <p>HFP-VSL-00002 = 8,370</p> <p>HFP-VSL-00005 = 8370</p> <p>HFP-VSL-00006 = 8,370</p>

**Table III.10.E.C – HLW Vitrification Plant Tank Systems Description**

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-MV-HFP-P0012 -MV-HFP-P0013 -MV-HFP-P0014 -MV-HFP-P0015 -MV-HFP-P0016 -MV-HFP-P0017 -N1D-HFP-P0003 -N1D-HFP-P0004 -P1-P01T-P0002 -P1-P01T-P0009  <u><b>24590-WTP</b></u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<u><b>Melter Off-gas Treatment Process System</b></u>  HOP-VSL-00903 (Melter 1 SBS Condensate Receiver Vessel)  HOP-VSL-00904 (Melter 2 SBS Condensate Receiver Vessel)	HOP	<u><b>24590-HLW</b></u> -3YD-HOP-00001 <sup>a</sup> -M5-V17T-P0003 -M5-V17T-P20003 -M6-HOP-P0004 -M6-HOP-P0006 -M6-HOP-P20004 -M6-HOP-P20006 -MVD-HOP-P0001 -MVD-HOP-P0012 -MV-HOP-P0001 -MV-HOP-P0003 -N1D-HOP-P0009 -P1-P01T-P0001  <u><b>24590-WTP</b></u>	Section 4.1.4.3; Tables 4-4 and 4-6; Figures 4A-1 and 4A-4 of Operating Unit 10, Chapter 4.0 of this Permit.	HOP-VSL-00903 = 9891  HOP-VSL-00904 = 9891

**Table III.10.E.C – HLW Vitrification Plant Tank Systems Description**

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<p><b><u>HLW Canister Decontamination Handling System</u></b></p> <p>HDH-VSL-00001 (Rinse Tunnel Canister Rinse Vessel)</p> <p>HDH-VSL-00002 (Canister Decon Vessel 1)</p> <p>HDH-VSL-00003 (Waste Neutralization Vessel)</p> <p>HDH-VSL-00004 (Canister Decon Vessel 2)</p>	HDH	<p><b><u>24590-HLW</u></b></p> <p>-M5-V17T-P0006                      -M6-HDH-P0001                      -M6-HDH-P0002                      -M6-HDH-P20001                      -M0-HDH-P0012001                      -M0-HDH-P0012002                      -MV-HDH-P0003                      -MV-HDH-P0004                      -MV-HDH-P0005                      -MV-HDH-P0006                      -MV-HDH-P0007                      -MVD-HDH-P0003                      -MVD-HDH-P0006                      -MVD-HDH-P0009                      -MVD-HDH-P0012                      -N1D-HDH-P0003                      -N1D-HDH-P0005                      -N1D-HDH-P0007                      -P1-P01T-P0001                      -P1-P01T-P0002                      -3YD-HDH-00002<sup>a</sup></p> <p><b><u>24590-WTP</u></b></p> <p>-3PS-G000-TP002                      -3PS-MV00-TP001                      -3PS-MV00-TP002</p>	Section 4.1.4.7; Tables 4-4 and 4-6; Figures 4A-1 and 4A-4 of Operating Unit 10, Chapter 4.0 of this Permit.	<p>HDH-VSL-00001= 3314</p> <p>HDH-VSL-00002 =630</p> <p>HDH-VSL-00003 = 5315</p> <p>HDH-VSL-00004 = 630</p>

**Table III.10.E.C – HLW Vitrification Plant Tank Systems Description**

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-3PS-MV00-TP003		
<p><b><u>HLW Melter Cave Support Handling System</u></b></p> <p>HSH-TK-00001 (Decontamination Tank Melter Cave 1)</p> <p>HSH-TK-00002 (Decontamination Tank Melter Cave 2)</p>	HSH	<p><b><u>24590-HLW</u></b></p> <p>-M0-HSH-P0072</p> <p>-M0-HSH-P0075</p> <p>-M6-RLD-P0003</p> <p>-N1D-HSH-P0001</p> <p>-P1-P01T-P0002</p>	Section 4.1.4.7; Tables 4-4 and 4-6; Figures 4A-1 and 4A-4 of Operating Unit 10, Chapter 4.0 of this Permit.	<p>HSH-TK-00001 = 3,718</p> <p>HSH-TK-00002 = 3,718</p>
<p><b><u>HLW Vitrification Plant Radioactive Liquid Waste Disposal System</u></b></p> <p>RLD-VSL-00002 (Off-gas Drains Collection Vessel)</p> <p>RLD-VSL-00007 (Acidic Waste Vessel)</p> <p>RLD-VSL-00008 (Plant Wash &amp; Drain Vessel)</p>	RLD	<p><b><u>24590-HLW</u></b></p> <p>-3YD-RLD-00001<sup>a</sup></p> <p>-M5-V17T-P0007001</p> <p>-M5-V17T-P0007002</p> <p>-M6-RLD-P0001</p> <p>-M6-RLD-P0002</p> <p>-M6-RLD-P0006</p> <p>-M6-RLD-P0007</p> <p>-M6-RLD-P0014</p> <p>-MV-RLD-P0002</p> <p>-MV-RLD-P0003</p> <p>-MVD-RLD-P0005</p> <p>-MVD-RLD-P0007</p> <p>-MVD-RLD-P0008</p> <p>-N1D-RLD-P0001</p> <p>-N1D-RLD-P0006</p> <p>-N1D-RLD-P0013</p>	Section 4.1.5.5; Tables 4-4 and 4-6; Figures 4A-1 and 4A-4 of Operating Unit 10, Chapter 4.0 of this Permit.	<p>RLD-VSL-00002 = 366</p> <p>RLD-VSL-00007 = 18,145</p> <p>RLD-VSL-00008 = 13,774</p>

**Table III.10.E.C – HLW Vitrification Plant Tank Systems Description**

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-P1-P01T-P0001 -P1-P01T-P0002  <u><b>24590-WTP</b></u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<b>Footnotes:</b> <sup>a</sup> System Descriptions are maintained in the Administrative Record, and are listed here for information only.				

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**Table III.10.E.D – Analytical Laboratory Tank Systems Description**

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p><b><u>Radioactive Liquid Waste Disposal System</u></b></p> <p>RLD-VSL-00164 (Lab Area Sink Drain Collection Vessel)</p> <p>RLD-VSL-00165 (Hot Cell Drain Collection Vessel)</p>	<p>RLD</p>	<p><b><u>24590-LAB</u></b></p> <p>-3YD-RLD-00001<sup>a</sup></p> <p>-M5-V17T-P0029</p> <p>-M6-RLD-P0001</p> <p>-M6-RLD-P0002</p> <p>-M6-RLD-P0006</p> <p>-M6-RLD-P0007</p> <p>-M6-RLD-P0008</p> <p>-MVD-RLD-P0164</p> <p>-MVD-RLD-P0165</p> <p>-MV-RLD-P0001</p> <p>-MV-RLD-P0003</p> <p>-N1D-RLD-P0002</p> <p>-N1D-RLD-P0003</p> <p>-P1-60-P0007</p> <p>-P1-60-P0008</p> <p>-P1-60-P0010</p> <p><b><u>24590-WTP</u></b></p> <p>-3PS-G000-TP002</p> <p>-3PS-MV00-TP001</p> <p>-3PS-MV00-TP002</p> <p>-3PS-MV00-TP003</p>	<p>Section 4.1.5.5; Table 4-5 and 4-6 of Operating Unit 10, Chapter 4.0 of this Permit.</p>	<p>RLD-VSL-00164 = 3180</p> <p>RLD-VSL-00165 = 9100</p>
<p><b>Footnotes:</b></p> <p><sup>a</sup>System Descriptions are maintained in the Administrative Record, and are listed here for information only.</p>				

**Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters**

<b>Tank System Name and Locator (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Operating Trips (Description &amp; Numerical Limits)</b>	<b>Instrument Calibration Method No. and Range</b>
PWD-SUMP-00071 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00040 <sup>a</sup>	Not Applicable	Bubbler Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00001 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00001A <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00002 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00002A <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00003 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00004 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00005 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00006 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

**Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters**

<b>Tank System Name and Locator (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Operating Trips (Description &amp; Numerical Limits)</b>	<b>Instrument Calibration Method No. and Range</b>
PWD-SUMP-00007 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00008 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00009 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00010 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00011 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00012 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00013 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00026 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00028 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00029 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

**Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters**

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
PWD-SUMP-00031 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00032 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00033 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00036 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00003 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**  
<sup>a</sup>Locator (including P&ID designator) is located on Permit Table [III.10.E.J](#) – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

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**Table III.10.E.F – LAW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters**

<b>Tank System Name and Locator (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Operating Trips (Description &amp; Numerical Limits)</b>	<b>Instrument Calibration Method No. and Range</b>
RLD-SUMP-00028 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00029 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00030 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00031 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00032 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00035 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00036 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
LVP-FD-00001 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

**Table III.10.E.F – LAW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters**

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
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**Footnotes:**  
<sup>a</sup>Locator (including P&ID designator) is located on Permit Table [III.10.E.L](#) - LAW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

**Table III.10.E.G - HLW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters**

<b>Tank System Name and Locator (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Operating Trips (Description &amp; Numerical Limits)</b>	<b>Instrument Calibration Method No. and Range</b>
HCP-SUMP-00001 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00001 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HOP-SUMP-00003 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HOP-SUMP-00008 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00001 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00002 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00003 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-00001 <sup>a</sup>	Not Applicable	None	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-00002 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-	Not	Radar Leak	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

**Table III.10.E.G - HLW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters**

Tank System Name and Locator (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
00005 <sup>a</sup>	Applicable	Detector							
HFP-SUMP-00004 <sup>a</sup>	Not Applicable	None	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00003 <sup>a</sup>	Not Applicable	Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00007 <sup>a</sup>	Not Applicable	Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00008 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00009 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**

<sup>a</sup>Locator (including P&ID designator) is located on Permit Table [III.10.E.N](#) - HLW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

**Table III.10.E.H – Laboratory Tank System Process and Leak Detection System Instruments and Parameters**

<b>Tank System Name and Locator (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Operating Trips (Description &amp; Numerical Limits)</b>	<b>Instrument Calibration Method No. and Range</b>
RLD-SUMP-00041 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00042 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00043A <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00043B <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00044 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00045 <sup>a</sup>	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00002 <sup>a</sup>	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00004 <sup>a</sup>	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00005 <sup>a</sup>	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00006 <sup>a</sup>	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00007 <sup>a</sup>	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00008 <sup>a</sup>	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00009 <sup>a</sup>	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00011 <sup>a</sup>	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

**Table III.10.E.H – Laboratory Tank System Process and Leak Detection System Instruments and Parameters**

<b>Tank System Name and Locator (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Operating Trips (Description &amp; Numerical Limits)</b>	<b>Instrument Calibration Method No. and Range</b>
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**

<sup>a</sup>Locator (including P&ID designator) is located on Permit Table [III.10.E.P](#) - Laboratory Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

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**Table III.10.E.I – Pretreatment Plant Tank Systems Primary<sup>a</sup> Containment Sump Systems**

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions <sup>b</sup> (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Primary sumps are defined in Permit Section <a href="#">III.10.C</a> , and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640. <sup>b</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

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**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions <sup>a</sup> (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-SUMP-00071 P-B005 (Pit-19, El. -19')	55.1	Dry Sump	30" Dia x 18" Deep Epoxy	<b>24590-PTF</b> -M6-PWD-P0041 -P1-P01T-P0006
PWD-SUMP-00040 P-B002 (Pit-45, El. -45')	233.7	Dry Sump	60"x30"x30" 6Mo	<b>24590-PTF</b> -M6-PWD-P0012 -P1-P01T-P0006
PWD-SUMP-00001 P-0108B (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b>24590-PTF</b> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00001A	73.5	Dry Sump	30" Dia. By ~28" deep	<b>24590-PTF</b>

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
P-0108C (El. 0')			304L	-M6-PWD-P0010 -P1-P01T-P0001
PWD-SUMP-00002 P-0108A (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00002A P-0108 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0010 -P1-P01T-P0001
PWD-SUMP-00003 P-0106 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00004 P-0104 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00005 P-0102A (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00006 P-0102 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00007 P-0109 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0009 -P1-P01T-P0001

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-SUMP-00008 P-0111 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u><b>24590-PTF</b></u> -M6-PWD-P0009 -P1-P01T-P0001
PWD-SUMP-00009 P-0112 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u><b>24590-PTF</b></u> -M6-PWD-P0009 -P1-P01T-P0001
PWD-SUMP-00010 P-0113 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u><b>24590-PTF</b></u> -M6-PWD-P0009 -P1-P01T-P0001
PWD-SUMP-00011 P-0114 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u><b>24590-PTF</b></u> -M6-PWD-P0009 -P1-P01T-P0001
PWD-SUMP-00012 P-0117 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u><b>24590-PTF</b></u> -M6-PWD-P0009 -P1-P01T-P0001
PWD-SUMP-00013 P-0117A (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u><b>24590-PTF</b></u> -M6-PWD-P0014 -P1-P01T-P0001
PWD-SUMP-00026 P-0123 (Hot Cell, El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 316L	<u><b>24590-PTF</b></u> -M6-PWD-P0014 -P1-P01T-P0001

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-SUMP-00028 P-0123 (Hot Cell, El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0014 -P1-P01T-P0001
PWD-SUMP-00029 P-0123 (Hot Cell, El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0014 -P1-P01T-P0001
PWD-SUMP-00031 P-0119 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0010 -P1-P01T-P0001
PWD-SUMP-00032 P-0123A (Maintenance Cave, El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0010 -P1-P01T-P0001
PWD-SUMP-00033 P-0123A (Maintenance Cave, El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0010 -P1-P01T-P0001
PWD-SUMP-00036 P-0118 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0012 -P1-P01T-P0001
PJV-ZF-00027-S11B-02 P-0101 (PJV-BULGE-00001 Drain, El. 0')	60	N/A	2" Dia. 316L	<b><u>24590-PTF</u></b> -M6-PJV-P0002
PWD-ZF-00004-S11B-02 P-0105 (PVP-BULGE-00001 Drain, El. 0')	60	N/A	2" Dia. 316L	<b><u>24590-PTF</u></b> -M6-PVP-P0003

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-ZF-00005-S11B-02 P-0101A (PVP-BULGE-00002 Drain, El. 0')	60	N/A	2" Dia. 316L	<u>24590-PTF</u> -M6-PVP-P0003
RDP-ZF-00016-S11B-02 P-0110A (RDP-BULGE-00010 Drain, El. 0')	60	N/A	2" Dia. 316L	<u>24590-PTF</u> -M6-RDP-P0001
TCP-PH-00032-S11B-02 P-0116 (TCP-BULGE-00004 Drain, El. 0')	60	N/A	2" Dia. 316L	<u>24590-PTF</u> -M6-TCP-P0001
TEP-ZF-02066-S11B-011/2 P-0110A (TEP-BULGE-00006 Drain, El. 0')	40	N/A	1-1/2" Dia. 316L	<u>24590-PTF</u> -M6-TEP-P0001
CNP-ZF-00043-S11B-03 P-0207 (CNP-BULGE-00008 Drain, El. 28')	160	N/A	3" Dia. 316L	<u>24590-PTF</u> -M6-CNP-P0002
PWD-ZF-03000-S11B-06 P-0123 (Hot Cell, El.0')	939	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0011
PWD-ZF-03001-S11B-06 P-0123 (Hot Cell, El.0')	939	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0011
PWD-FD-00432 P-0201 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00452 P-0201 Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00456 P-0201A Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00341 P-0201A Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00351A P-0201A Drain, El. 28'	52	N/A	3" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00451 P-0203 Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00339 P-0203 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00450 P-0203 Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00450A P-0203 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00449A P-0203 Drain, El. 28'	52	N/A	3" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00449 P-0203A Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00338 P-0203A Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00337 P-0203B Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00448 P-0203B Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00447A P-0203B Drain, El. 28'	52	N/A	3" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00447 P-0204 Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00336 P-0204 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00397 P-0206 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00443 P-0206 Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00398A P-0207 Drain, El. 28'	52	N/A	3" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00398 P-0207 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00399 P-0208 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00400 P-0209 Drain, El. 28'	52	N/A	3" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00444 P-0209 Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00401 P-0209 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00402 P-0210 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00445 P-0210 Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00445A P-0212 Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00442 P-0212 Drain, El. 28'	52	N/A	3" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00404 P-0212 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00404A P-0212 Drain, El. 28'	155	N/A	6" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00446 P-0212 Drain, El. 28'	706	N/A	8" Dia. 316L	<u>24590-PTF</u> -M6-PWD-P0043
PVP-ZY-00036-S11B-03 from PVP-BULGE-00002 (Vessel Vent HEME Drain Vessel Pump Bulge)	RESERVED	N/A	RESERVED	<u>24590-PTF</u> -M6-PVP-P00018

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00002 P-0335 Drain, El. 56'	255 (Note 1)	N/A	4" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0011
PWD-FD-00003 P-0335 Drain, El. 56'	255 (Note 1)	N/A	4" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0011
PWD-FD-00313 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00314 P-0303B Drain, El. 56'	655	N/A	8" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00315 P-0303B Drain, El. 56'	655	N/A	8" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00316 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-003117 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00318 P-0303B Drain, El. 56'	655	N/A	8" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00319 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00322 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00323 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00324 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00325 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00326 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00327 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0044

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00328 P-0303 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00329 P-0303 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00333 P-0324 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00334 P-0302 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00335 P-0302 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00384 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00385 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00386 P-0307 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00387 P-0307 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00388 P-0307 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00389 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00390 P-0317 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00391 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00392 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00393 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00394 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00458 P-0324 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00459 P-0324 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00460 P-0324 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00461 P-0302 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00462 P-0302 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00463 P-0302 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00464 P-0301 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00465 P-0301 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00466 P-0301 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00469 P-0336 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00470 P-0336 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00471 P-0336 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00472 P-0336 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00503 P-0332B Drain, El. 56'	104	N/A	4" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0011

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00508 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00509 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00510 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00511 P-0332B Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00512 P-0320 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00513 P-0320 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00514 P-0320 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00515 P-0325 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00516 P-0325 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00517 P-0325 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00518 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00519 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00520 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00521 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043
PWD-FD-00522 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<b>24590-PTF</b> -M6-PWD-P0043

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00523 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00524 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00527 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00528 P-0311 Drain, El. 56'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00286 P-0407 Drain, El. 77'	655	N/A	8" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00287 P-0407 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00288 P-0407 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00289 P-0407 Drain, El. 77'	655	N/A	8" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00290 P-0407 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00291 P-0426 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00292 P-0426 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00293 P-0426 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00298 P-0425 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00309 P-0402 Drain, El. 77'	655	N/A	8" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00310 P-0402 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00311 P-0402 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00312 P-0402 Drain, El. 77'	655	N/A	8" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0044
PWD-FD-00376 P-0415 Drain, El. 77'	655	N/A	8" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00377 P-0415 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00378 P-0415 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00379 P-0415 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00380 P-0415A Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00381 P-0415A Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00382 P-0415A Drain, El. 77'	655	N/A	8" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00383 P-0415A Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00557 P-0430 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00559 P-0430 Drain, El. 77'	665	N/A	8" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00561 P-0430 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00563 P-0411 Drain, El. 77'	665	N/A	8" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043
PWD-FD-00564 P-0411 Drain, El. 77'	140	N/A	6" Dia 304L	<b><u>24590-PTF</u></b> -M6-PWD-P0043

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00565 P-0410 Drain, El. 77'	665	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00566 P-0410 Drain, El. 77'	665	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00571 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00572 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00573 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00574 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00575 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00576 P-0410 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00583 P-0422A Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00584 P-0422A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00585 P-0422A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00586 P-0422A Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00588 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00589 P-0402 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00590 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing No.'s, Specifications No.'s, etc.)</b>
PWD-FD-00591 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00592 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00593 P-0423 Drain, El. 77'	140	N/A	6" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00594 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00595 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00596 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00597 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00598 P-0431A Drain, El. 77'	655	N/A	8" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00599 P-0431A Drain, El. 77'	655	N/A	8" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00600 P-0431A Drain, El. 77'	655	N/A	8" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00604 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00605 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00606 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00607 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044
PWD-FD-00629 P-0425 Drain, El. 77'	655	N/A	8" Dia 304L	<b>24590-PTF</b> -M6-PWD-P0044

**Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions <sup>a</sup> (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-FD-00630 P-0425 Drain, El. 77'	140	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
CRP-BULGE-00001 P-0317, El. 56'	RESERVED	RESERVED	RESERVED	<u>24590-PTF</u> -P1-P01T-P0003
CXP-BULGE-00004 P-0317, El. 56'	RESERVED	RESERVED	RESERVED	<u>24590-PTF</u> -P1-P01T-P0003
UFP-BULGE-00001 P-0301 (Ultra Filter Bulge, El. 56')	RESERVED	N/A	RESERVED	<u>24590-PTF</u> -P1-P01T-P0003
UFP-BULGE-00002 P-0301 (Ultra Filter Bulge, El. 56')	RESERVED	N/A	RESERVED	<u>24590-PTF</u> -P1-P01T-P0003
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**  
<sup>a</sup>Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).  
 Note #1: These are special cases due to their location in equipment berms. The capacity for these drain lines is based on a unique bounding case for liquid spillage.

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**Table III.10.E.K - LAW Vitrification Plant Tank Systems Primary<sup>a</sup> Containment Sump Systems**

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions <sup>b</sup> (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**  
<sup>a</sup> Primary sumps are defined in Permit Section [III.10.C](#), and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640.  
<sup>b</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

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**Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges and Floor Drains**

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions <sup>a</sup> (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RLD-SUMP-00028 L-B001B (C3/C5 Drains/Sump Collection Vessel Cell, El. -21')	59	Dry Sump	24" Dia. By 30" deep 304L or higher grade	<u>24590-LAW</u> -M6-RLD-P0002
RLD-SUMP-00029 L-0123 (Process Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	<u>24590-LAW</u> -M6-RLD-P0003 -P1-P01T-P0002 -P1-P01T-P0010
RLD-SUMP-00030 L-0123 (Process Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	<u>24590-LAW</u> -M6-RLD-P0003 -LAW-P1-P01T-P0002

**Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems  
Including Sumps, Bulges and Floor Drains**

<b>Sump or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing Nos., Specifications Nos., etc.)</b>
				-P1-P01T-P0010
RLD-SUMP-00031 L-0124 Process Cell Sump, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	<u>24590-LAW</u> -M6-RLD-P0003 -P1-P01T-P0002 -P1-P01T-P0010
RLD-SUMP-00032 L-0124 (Process Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	<u>24590-LAW</u> -M6-RLD-P0003 -LAW -P1-P01T-P0010
RLD-SUMP-00033 L-0125 (Process Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	<u>24590-LAW</u> -M6-RLD-P0003
RLD-SUMP-00034 L-0125 (Process Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	<u>24590-LAW</u> -M6-RLD-P0003
RLD-SUMP-00035 L-0126 (Effluent Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	<u>24590-LAW</u> -M6-RLD-P0003 -P1-P01T-P0002 -P1-P01T-P0010
RLD-SUMP-00036 L-0126 (Effluent Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	<u>24590-LAW</u> -M6-RLD-P0003 -P1-P01T-P0002 -LAW -P1-P01T-P0010
Drain Line ID# = RESERVED L-B001B (RLD-BULGE- 00001 Drain, El. -21')	60	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-RLD-P0002

**Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems  
Including Sumps, Bulges and Floor Drains**

<b>Sump or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing Nos., Specifications Nos., etc.)</b>
Drain Line ID# = RESERVED L-B001B (Pump Bulge [RLD-BULGE-00001] Drain/Double-Walled Piping Outer Containment Drain, El. -21')	30	N/A	1" Dia. 316L	<u>24590-LAW</u> -M6-RLD-P0002
Drain Line ID# = RESERVED L-0123 [Primary Offgas (LOP) Melter 1 Valve Bulge Drain, El. +3']	60	N/A	2" Dia. 6 Mo	<u>24590-LAW</u> -M6-LOP-P0001
Drain Line ID# = RESERVED L-0123 (LCP-BULGE- 00001/2 Drain, El. +3')	60	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LCP-P0001
RLD-WS-20037-S11B-01 L-0123 (Melter 1 Encasement Assembly Drain, El. +3')	RESERVED	RESERVED	RESERVED	<u>24590-LAW</u> -M6-RLD-P0003
Drain Line ID# = RESERVED L-0123 (Melter 1 Feed Prep/Feed Vessel Valve Bulge Drain, El. +3')	60	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LFP-P0001
Drain Line ID# = RESERVED L-0124 [Primary Offgas (LOP) Melter 2 Valve Bulge Drain, El. +3']	60	N/A	2" Dia. 6 Mo	<u>24590-LAW</u> -M6-LOP-P0002

**Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems  
 Including Sumps, Bulges and Floor Drains**

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions <sup>a</sup> (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
Drain Line ID# = RESERVED L-0124 (LCP-BULGE-00003 Drain, El. +3')	60	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LCP-P0002
Drain Line ID# = RESERVED L-0124 (Melter 2 Feed Prep/Feed Vessel Valve Bulge Drain, El. +3')	60	N/A	2" Dia. 316L	<u>24590-LAW</u> -M6-LFP-P0003
RLD-WS-20033-S11B-01 L-0124 (Melter 2 Encasement Assembly Drain, El. +3')	RESERVED	RESERVED	RESERVED	<u>24590-LAW</u> -M6-RLD-P0003
Drain Line ID# = RESERVED L-0126 (Plant Wash Vessel/SBS Condensate Collection Vessel Valve Bulge Drain, El. +3')	60	N/A	2" Dia. 6 Mo	<u>24590-LAW</u> -M6-RLD-P0001
LVP-FD-00001 L-0218 (Berm floor drain for LVP-TK-00001, El. 28')	RESERVED	N/A	RESERVED	<u>24590-LAW</u> -M6-LVP-P0002
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD). <sup>b</sup> This sump is routinely accessible for inspections and maintenance.				

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**Table III.10.E.M - HLW Vitrification Plant Tank Systems Primary<sup>a</sup> Containment Sump Systems**

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions <sup>b</sup> (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Primary sumps are defined in Permit Section <a href="#">III.10.C</a> , and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640. <sup>b</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

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**Table III.10.E.N - HLW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges and Floor Drains**

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type	Sump or Drain Line Dimensions <sup>a</sup> (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
HCP-SUMP-00001 H-B014 (Wet Process Cell, El. -21')	70	Dry Sump	30" Dia. x 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P0015 -P1-P01T-P0001 -P1-P01T-P0008
RLD-SUMP-00001 H-B014 (Wet Process Cell, El. -21')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P0015 -P1-P01T-P0001
HOP-SUMP-00003 H-B021 (SBS Drain Collection Cell No. 1, El. -21')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P0015 -P1-P01T-P0001
HOP-SUMP-00008 H-B005 (SBS Drain Collection Cell No. 2, El. -21_)	70	Dry Sump	30" Dia. X 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P20004 -P1-P01T-P0001

**Table III.10.E.N - HLW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges and Floor Drains**

<b>Sump or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type</b>	<b>Sump or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing Nos., Specifications Nos., etc.)</b>
HDH-SUMP-00001 H-B039B (Canister Rinse Tunnel, El. -16.5')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P0016 -P1-P01T-P0001 -P1-P01T-P0009
HDH-SUMP-00002 H-B039A (Bogie Decon/Maint. Tunnel- Canister Rinse, El. -16')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P0016 -P1-P01T-P0001
HDH-SUMP-00003 H-B035 (Canister Decon Cave, El. -16')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P0004 -P1-P01T-P0001
HFP-SUMP-00001 H-0308 (Active Service Cell Melter No.1 El. 37')	70	Gravity Drain	30" Dia. X 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P0015 -P1-P01T-P0004
HFP-SUMP-00002 H-0117 (Melter Cave No. 1, El. 5')	55.6	Dry Sump	31.5" X 25.5" X 16" 6Mo	<u>24590-HLW</u> -M6-RLD-P0008 -P1-P01T-P0002 -P1-P01T-P0009
HFP-SUMP-00004 H-0302 (Active Service Cell Melter No.2 El. 37')	70	Gravity Drain	30" Dia. X 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P20004 -P1-P01T-P0004
HFP-SUMP-00005 H-0106 (Melter Cave No. 2 El. 5')	55.6	Dry Sump	31.5" X 25.5" X 16" 6Mo	<u>24590-HLW</u> -M6-RLD- P20005 -P1-P01T-P0002
HSH-SUMP-00003 H-0117 (Melter Cave No. 1, El. 3')	55.6	Dry Sump	31.5" X 25.5" X 16"  6Mo	<u>24590-HLW</u> -M6-RLD-P0008 -P1-P01T-P0002 -P1-P01T-P0009
HSH-SUMP-00007 H-0106 (Melter Cave No. 2, El. 3')	55.6	Dry Sump	31.5" X 25.5" X 16" 6Mo	<u>24590-HLW</u> -M6-RLD-P20005 -P1-P01T-P0002

**Table III.10.E.N - HLW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges and Floor Drains**

<b>Sump or Drain Line I.D.# &amp; Room Location</b>	<b>Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type</b>	<b>Sump or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing Nos., Specifications Nos., etc.)</b>
HSH-SUMP-00008 H-310A (Melter No. 1 Equip. Decon. Pit Area, El. 0')	55.6	Dry Sump	31.5" X 25.5" X 16" 6Mo	<u><b>24590-HLW</b></u> -M6-RLD-P0003 -P1-P01T-P0002
HSH-SUMP-00009 H-0304A (Melter No. 2 Equip. Decon. Pit Area, El. 0')	55.6	Dry Sump	31.5" 25.5" x 16" 6Mo	<u><b>24590-HLW</b></u> -M6-RLD-P20003 -P1-P01T-P0002
RLD-ZF-00330-S11B-03 H-B021 (SBS Drain Collection Cell No. 1)	20	Floor Drain	Overflow Line Size Pipe Dia 3" 316L Stainless Steel	<u><b>24590-HLW</b></u> -M6-RLD-P0015
RLD-ZF-03447-S11B-03 H-B005 (SBS Drain Collection Cell No. 2)	20	Floor Drain	Overflow Line Size Pipe Dia 3" 316L Stainless Steel	<u><b>24590-HLW</b></u> -M6-RLD-P20004
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

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**Table III.10.E.O – Laboratory Tank Systems Primary<sup>a</sup> Containment Sump Systems**

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions <sup>b</sup> (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Primary sumps are defined in Permit Section <a href="#">III.10.C</a> , and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640. <sup>b</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

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**Table III.10.E.P – Laboratory Tank Systems Secondary Containment Systems Including Sumps, Bulges and Floor Drains**

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Type/Nominal Operating Volume (gallons)	Sump Dimensions <sup>a</sup> (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RLD-SUMP-00041 A-B003 (C3 Effluent Vessel Cell, El. -18'7')	30	Dry	30" Dia. X ~13" Deep 304L or higher grade	<b>24590-LAB</b> -M6-RLD-P0002 -P1-60-P0007 -PER-M-02-002
RLD-SUMP-00042 A-B004 (C5 Effluent Vessel Cell, El. -19'2')	30	Dry	30" Dia. X ~13" Deep 304L or higher grade	<b>24590-LAB</b> -M6-RLD-P0001 -P1-60-P0007 -PER-M-02-002
RLD-SUMP-00045 A-B002 (C3 Pump Pit Sump, EL -6'-81/2" (LP)	1.56	Dry	2'-0" X 2'-6" X 1/2" 304L or higher grade	<b>24590-LAB</b> -M6-RLD-P0002 -P1-60-P0007 -PER-M-02-002
RLD-SUMP-00043A A-B007 (C5 Pump Pit Sump, EL -6'-7" (LP)	1.40	Dry	1'-6" X 3'-0" X 1/2" 304L or higher grade	<b>24590-LAB</b> -M6-RLD-P0001 -P1-60-P0007

**Table III.10.E.P – Laboratory Tank Systems Secondary Containment Systems Including Sumps, Bulges and Floor Drains**

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Type/Nominal Operating Volume (gallons)	Sump Dimensions <sup>a</sup> (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
				-PER-M-02-002
RLD-SUMP-00043B A-B005 (C5 Pump Pit Sump, EL -6'-7" (LP)	1.40	Dry	1'-6" X 3'-0" X 1/2" 304L or higher grade	<b>24590-LAB</b> -M6-RLD-P0001 -P1-60-P0007 -PER-M-02-002
RLD-SUMP-00044 A-B006 (C5 Piping Pit Sump, EL -6'-7" (LP)	1.56	Dry	2'-0" X 2'-6" X 1/2" 304L or higher grade	<b>24590-LAB</b> -M6-RLD-P0001 -P1-60-P0007 -PER-M-02-002
RLD-WU-02207-S11E-04 A-B003, (C3 Effluent Vessel Cell)	86	N/A	4" Dia 316L	<b>24590-LAB</b> -M6-RLD-P0002
RLD-ZN-02203-S11E-04 A-B004, (C5 Effluent Vessel Cell)	86	N/A	4" Dia 316L	<b>24590-LAB</b> -M6-RLD-P0001
RLD-ZN-03393-S11E-04 A-B004, (C5 Effluent Vessel Cell)	86	N/A	4" Dia 316L	<b>24590-LAB</b> -M6-RLD-P0001
RLD-ZN-03394-S11E-04 A-B004, (C5 Effluent Vessel Cell)	86	N/A	4" Dia 316L	<b>24590-LAB</b> -M6-RLD-P0001
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

**III.10.F. CONTAINMENT BUILDING UNITS**

## III.10.F.1. Containment Building Units and Storage Limits

## III.10.F.1.a. Approved Waste and Storage Limits

III.10.F.1.a.i. The Permittees may store and treat, in containment building units listed in Permit Table [III.10.F.A.](#), as modified by Permit Condition [III.10.F.7.d.iv.](#), all dangerous and mixed waste listed in the Part A Forms, Operating Unit 10, Chapter 1.0 of this Permit, except for those wastes outside the waste acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0, as approved pursuant to Permit Condition [III.10.C.3.](#) Total dangerous and mixed waste storage at the containment building units will not exceed the sum of the capacities in column 7 of Permit Table [III.10.F.A.](#), as modified pursuant to Permit Condition [III.10.F.7.d.iv.](#)

III.10.F.1.a.ii. The Permittees may place and store dangerous and mixed waste only in the containment building units listed in Permit Table [III.10.F.A.](#), as modified pursuant to Permit Condition [III.10.F.7.d.iv.](#), in accordance with Permit Condition [III.10.F.](#), and in accordance with Operating Unit 10, Chapters 1.0 and 4.0, and Operating Unit 10, Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this Permit, as approved pursuant to Permit Conditions [III.10.F.7.c.](#) and [III.10.F.7.d.](#) The Permittees will limit the volume of dangerous and mixed waste to quantities specified for the individual areas listed in column 7 of Permit Table [III.10.F.A.](#), as modified pursuant to Permit Condition [III.10.F.7.d.iv.](#)

III.10.F.1.b. The Permittees will manage any ignitable, reactive, or incompatible waste in these units in accordance with WAC 173-303-395(1). Any containment building units specified in Permit Table [III.10.F.A.](#) in which ignitable, reactive, or incompatible waste are managed will meet the requirements specified in WAC 173-303-640(9) and (10), in accordance with WAC 173-303-680(2).

III.10.F.1.c. The Permittees must maintain documentation in the operating record of the description and quantity of dangerous waste in each containment building unit listed in Permit Table [III.10.F.A.](#), as modified pursuant to Permit Condition [III.10.F.7.d.iv.](#), in accordance with WAC 173-303-380.

III.10.F.1.d. The Permittees will ensure all certifications required by specialists (e.g., qualified, registered, professional engineer, etc.) use the following statement or equivalent pursuant to Permit Condition [III.10.C.10.](#):

“I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new containment building unit or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., design engineer, etc.), for the following containment building unit components (e.g., the venting piping, etc.), as required by the Resource Conservation and Recovery Act (RCRA) regulation(s), namely, 40 CFR 264.1101©(2) in accordance with WAC 173-303-695).

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

- 1 III.10.F.2. Containment Building Unit Design and Construction
- 2 III.10.F.2.a. The Permittees will design and construct the containment building units identified in  
3 Permit Table [III.10.F.A.](#), as modified pursuant to Permit Condition [III.10.F.7.d.iv.](#), as  
4 specified in Operating Unit 10, Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2,  
5 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this  
6 Permit, as approved in accordance with Permit Condition [III.10.F.7.a.](#) and WAC 173-  
7 303-695.
- 8 III.10.F.2.b. The Permittees will design and construct all applicable containment building units'  
9 secondary containment systems for each unit listed in Permit Table [III.10.F.A.](#), as  
10 specified in Operating Unit 10, Appendices 8.4 through 8.9, 8.15, 9.4 through 9.9, 9.18,  
11 10.4 through 10.9, and 10.18 of this Permit, as approved in accordance with Permit  
12 Condition [III.10.F.7.a.](#) and WAC 173-303-695.
- 13 III.10.F.2.c. Modifications to approved design plans and specifications, in Operating Unit 10,  
14 Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18,  
15 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this permit, for the containment  
16 building units will be allowed only in accordance with Permit Conditions [III.10.C.2.e.](#)  
17 and [III.10.C.2.f.](#), or [III.10.C.2.g.](#), [III.10.C.9.d.](#), and [III.10.C.9.e.](#)
- 18 III.10.F.3. Containment Building Unit Management Practices
- 19 III.10.F.3.a. The Permittees will manage all dangerous and mixed waste in containment building units  
20 in accordance with procedures described in Operating Unit 10, Appendices 8.15, 9.18,  
21 10.18 and Chapter 4.0 of this Permit, as approved pursuant to Permit Condition  
22 [III.10.F.7.d.iv.](#) .
- 23 III.10.F.3.b. The Permittees will follow the description of operating procedures described in Operating  
24 Unit 10, Appendices 8.15, 9.18, 10.18 and Chapter 4, of this permit, as approved pursuant  
25 to Permit Condition [III.10.F.7.d.iv.](#) and Permit Condition [III.10.F.3.](#), and as specified  
26 below:
- 27 III.10.F.3.b.i. Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other  
28 deterioration that could cause dangerous and mixed waste to be released from the primary  
29 barrier;
- 30 III.10.F.3.b.ii. Maintain the level of stored/treated dangerous and mixed waste within the containment  
31 building unit walls so that the height of the wall is not exceeded;
- 32 III.10.F.3.b.iii. Take measures to prevent the tracking of dangerous and mixed waste out of the unit by  
33 personnel or by equipment used in handling the waste. An area must be designated to  
34 decontaminate equipment and any rinsate must be collected and properly managed;
- 35 III.10.F.3.b.iv. Maintain the containment building unit at all times to prevent the spread of airborne  
36 dangerous and/or mixed waste contamination into less contaminated or uncontaminated  
37 areas. All air pollution control devices for exhaust from containment building unit must  
38 be properly maintained and operational when storing or treating dangerous and mixed  
39 waste in the containment building units;
- 40 III.10.F.3.b.v. Collect and remove liquids and waste to minimize hydraulic head on the containment  
41 system at the earliest practicable time.
- 42 III.10.F.3.c. The Permittees will inspect the containment building units per requirements in the  
43 Operating Unit 10, Chapter 6.0 of this permit, as approved pursuant to Permit Condition  
44 [III.10.C.5.](#), 40 CFR 264.1101©(4), in accordance with WAC 173-303-695 and WAC 173-  
45 303-320 and record in the Facility's operating record, at least once every seven (7) days,

- 1 data gathered from monitoring equipment and leak detection equipment as well as the  
2 containment building unit and area immediately surrounding the containment building  
3 unit to detect signs of releases of dangerous and mixed waste.
- 4 III.10.F.3.d. Throughout the active life of the containment building unit, if the Permittees detects a  
5 condition that could lead to or has caused a release of dangerous and/or mixed waste, the  
6 Permittees must repair the condition promptly, in accordance with the following  
7 procedures:
- 8 III.10.F.3.d.i. Upon detection of a condition that has lead to the release of dangerous and/or mixed  
9 waste (e.g., upon detection of leakage from the primary barrier) the Permittees must:
- 10 A. Enter a record of the discovery in the facility operating record;
- 11 B. Immediately remove the portion of the containment building unit affected by the  
12 condition from service;
- 13 C. Determine what steps must be taken to repair the containment building unit, remove  
14 any leakage from the secondary collection system, and establish a schedule for  
15 accomplishing the cleanup and repairs; and
- 16 D. Within seven (7) days after the discovery of the condition, notify Ecology of the  
17 condition, and within fourteen (14) working days, provide a written notice to Ecology  
18 with a description of the steps taken to repair the containment building unit, and the  
19 schedule for accomplishing the work.
- 20 III.10.F.3.d.i.ii. Ecology will review the information submitted, make a determination regarding whether  
21 the containment building unit must be removed from service completely or partially until  
22 repairs and cleanup are complete, and notify the Permittees of the determination and  
23 underlying rationale in writing.
- 24 III.10.F.3.d.i.iii. Upon completing all repairs and cleanup the Permittees must notify Ecology in writing  
25 and provide verification, signed by a qualified, registered, professional engineer, that  
26 repairs have been completed according to the written notice submitted in accordance with  
27 Permit Condition [III.10.F.3.d.i.D.](#)
- 28 III.10.F.4 Inspections [WAC 173-303-640(6)]
- 29 III.10.F.4.a. The Permittees will inspect the containment building units in accordance with the  
30 Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified  
31 pursuant to Permit Condition [III.10.C.5.c.](#)
- 32 III.10.E.4.b. The inspection data for the containment building units will be recorded, and the records  
33 will be placed in the WTP Unit operating record, in accordance with Permit Condition  
34 [III.10.C.4.](#)
- 35 III.10.F.5 Recordkeeping (WAC 173-303-380)
- 36 For the containment building units, the Permittees will record and maintain in the WTP  
37 Unit operating record, all monitoring, calibration, recording, maintenance, test data, and  
38 inspection data compiled under the conditions of this Permit, in accordance with Permit  
39 Conditions [III.10.C.4.](#) and [III.10.C.5.](#)
- 40 III.10.F.6. Closure
- 41 The Permittees will close the containment building units in accordance with Operating  
42 Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8.](#)
- 43 III.10.F.7. Compliance Schedule

- 1 III.10.F.7.a. All information identified for submittal to Ecology in Permit Conditions [III.10.F.7.b.](#)  
2 through [e.](#) of this compliance schedule must be signed in accordance with requirements in  
3 WAC 173-303-810(12), as modified in accordance with Permit Condition [III.10.F.1.d.](#)  
4 [WAC 173-303-806(4)].
- 5 III.10.F.7.b. Prior to initial receipt of dangerous and/or mixed waste, the Permittees will submit to  
6 Ecology a certification by a qualified, registered, professional engineer that the  
7 containment building units design meets the requirements of Permit Conditions  
8 [III.10.F.1.](#) and [III.10.F.2.](#) in accordance with Permit Condition [III.10.F.7.a.](#) The  
9 certification will also be stored in the WTP Unit operating record. For containment  
10 buildings units in Permit Table [III.10.F.A.](#), as modified pursuant to Permit Condition  
11 [III.10.F.7.d.iv.](#), identified as allowed to manage free liquids, the certification will include  
12 an additional demonstration that the containment building meets the requirements  
13 specified in 40 CFR 264.1101(b), in accordance with WAC 173-303-695.
- 14 III.10.F.7.c. The Permittees submit to Ecology pursuant to Permit Condition [III.10.C.9.f.](#), prior to  
15 construction of the containment building unit containment system, and as appropriate,  
16 leak detection system for each containment building unit (per level, per WTP Unit  
17 building) as identified in Permit Condition [III.10.F.1.](#), Permit Tables [III.10.F.A.](#),  
18 engineering information as specified below, for incorporation, as appropriate, into  
19 Operating Unit 10, Appendices 8.1, 8.2, 8.3, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4  
20 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this Permit.  
21 At a minimum, engineering information specified below will show the following as  
22 required in accordance with WAC 173-303-695 (the information specified below will  
23 include dimensioned engineering drawings showing floors, walls, and ceilings/roof of the  
24 containment building units and other information on floor drains and sumps):
- 25 III.10.F.7.c.i. Design drawings (General Arrangement Drawings in plan and cross sections) and  
26 specifications for the foundation, containment, including liner/coating installation details  
27 and leak detection methodology, as appropriate [40 CFR 264.1101(a)(1) and (b), in  
28 accordance with WAC 173-303-695].
- 29 III.10.F.7.c.ii. The Permittees provide the design criteria (references to codes and standards, load  
30 definitions and load combinations, materials of construction, and analysis/design  
31 methodology) and typical design details for the support of the containment system. This  
32 information demonstrate the foundation will be capable of providing support to the  
33 secondary containment system, resistance to pressure gradients above and below the  
34 system, and capable of preventing failure due to settlement, compression, or uplift [40  
35 CFR 264.1101(a)(2) in accordance with WAC 173-303-695, in accordance with WAC  
36 173-303-695].
- 37 III.10.F.7.c.iii. The Permittees provide documentation addressing how coatings will withstand the  
38 movement of personnel, waste, and equipment during the operating life of the  
39 containment building per 40 CFR 264.1101(a)(2), (a)(4), and (b) in accordance with  
40 WAC 173-303-695.
- 41 III.10.F.7.c.iv. Containment/foundation and, as appropriate, for leak detection systems, materials  
42 selection documentation (including, but not limited to, concrete coatings and water stops,  
43 and liner materials as applicable [e.g. physical and chemical tolerances]) [40 CFR  
44 264.1101(a)(4) and (b) in accordance with WAC 173-303-695].
- 45 III.10.F.7.c.v. A detailed description of how the containment/foundation and, as appropriate, leak  
46 detection systems, will be installed.

- 1 III.10.F.7.c.vi. Submit Permit Tables [III.10.F.B](#) and [III.10.F.C](#), completed to provide for all secondary  
2 containment sumps and floor drains, the information as specified in each column heading,  
3 consistent with the information to be provided in i. through viii.
- 4 III.10.F.7.c.vii. A detailed description of how fugitive emissions will be controlled such that any  
5 openings (e.g., doors, windows, vents, cracks, etc.) exhibit no visible emissions [40 CFR  
6 264.1101©(1)(iv) in accordance with WAC 173-303-695].
- 7 III.10.F.7.c.viii. Prior to installation, the Permittees will submit coating vendor information specific to  
8 containment buildings for incorporation into the Administrative Record [40 CFR  
9 264.1101(a)(4) and (b) in accordance with WAC 173-303-695].
- 10 III.10.F.7.c.ix. Prior to installation, leak detection system documentation (e.g. vendor information, etc.)  
11 consistent with information submitted under i. above, will be submitted for incorporation  
12 into the Administrative Record; III.10.F.7.c.x. Prior to installation, the Permittees will  
13 submit leak detection system instrumentation control logic narrative description (e.g.,  
14 software functional specifications, descriptions of fail-safe conditions, etc.); <sup>a</sup>
- 15 III.10.F.7.c.xi. Prior to installation, system descriptions related to leak detection systems (including  
16 instrument control logic and narrative descriptions) will be submitted for incorporation  
17 into the Administrative Record; <sup>a</sup>
- 18 III.10.F.7.c.xii. For leak detection system instrumentation for containment buildings as identified in Permit  
19 Tables [III.10.F.D.](#), a detailed description of how the leak detection system  
20 instrumentation will be installed and tested [40 CFR 264.1101(b)(3) in accordance with  
21 WAC 173-303-695] will be submitted prior to installation. <sup>a</sup>
- 22 Information pertaining to leak detection systems in Permit Conditions [III.10.F.7.c.ix.](#)  
23 through [xii](#). Will be submitted pursuant to Permit Conditions [III.10.E.9.d.vii.](#), [viii.](#), [x.](#),  
24 and [xiii](#).
- 25 III.10.F.7.d. Prior to initial receipt of dangerous and mixed waste, in the WTP Unit, the Permittees  
26 will submit the following, as specified below, for incorporation into Operating Unit 10.  
27 The information specified below into Operating Unit 10, and incorporated pursuant to  
28 Permit Condition [III.10.C.2.g.](#) will be followed:
- 29 III.10.F.7.d.i. Registered Professional Engineer certification documentation consistent with the  
30 information provided in [III.10.F.7.b.](#) and [III.10.F.7.c.](#) for incorporation in the  
31 Administrative Record. The certification must be maintained in the WTP Unit Operating  
32 Record [40 CFR 264.1101©(2)];
- 33 III.10.F.7.d.ii. Updated Chapter 4.0, Section 4.2.1., and the figures for containment building units  
34 identified in Permit Table [III.10.F.A.](#) (as modified pursuant to Permit Condition  
35 [III.10.F.7.d.iv.](#), consistent with Operating Unit 10, Appendices 8.1, 8.2, 8.4 through 8.10,  
36 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13,  
37 and 10.18, as approved pursuant Permit Conditions [III.10.F.7.a.](#) through [d.](#));
- 38 III.10.F.7.d.iii. Description of operating procedures demonstrating compliance with 40 CFR 264.1101©  
39 and (d) in accordance with WAC 173-303-695;
- 40 III.10.F.7.d.iv. Permit Table [III.10.F.A.](#), amended as follows:
- 41 A. Under column 1, update and complete list of dangerous and mixed waste containment  
42 building units including room location and number.
- 43 B. Under column 2, update unit dimensions.

- 1 C. Under column 3, replace the ‘Reserved’ with the Operating Unit 10, Appendices 8.0,  
2 9.0, and 10.0, subsections specific to containment building units as listed in column  
3 1.
- 4 D. Under column 4, update and complete list of narrative description, tables, and  
5 figures.
- 6 E. Under column 5, replace the ‘Reserved’ to indicate if container storage is used in  
7 each containment building units (Yes or No) consistent with Permit Table [III.10.D.A.](#)  
8 updated pursuant to Permit Condition [III.10.D.10.d.](#)
- 9 F. Under column 6, replace the ‘Reserved’ to indicate if tank storage is used in each  
10 containment building units (Yes or No) consistent with Permit Tables [III. 10.E.A-D.](#),  
11 updated pursuant to Permit Condition [III.10.E.9.e.vi.](#)
- 12 G. Under column 7, replace the ‘Reserved’ with the maximum operating volume for  
13 each containment building unit, to include the container storage capacity specified in  
14 Permit Table [III.10.D.A.](#), tank capacity specified in Permit Tables [III. 10.E.A-D.](#) and  
15 update the total capacity for the containment building units.
- 16 H. Under column 8, update the status of each containment building unit.
- 17 III.10.F.7.d.v. Permit Table [III.10.F.D.](#) will be completed for Containment Building leak detection  
18 system instrumentation and parameters to provide the information as specified in each  
19 column heading. Leak detection system monitors and instruments for critical systems as  
20 specified in Operating Unit 10, Appendix 2.0 and as updated pursuant to Permit  
21 Condition [III.10.C.9.b.](#) will be addressed.
- 22 III.10.F.7.e. All information provided under Permit Condition [III.10.F.7.d.](#) must be consistent with  
23 information provided pursuant to Permit Conditions [III.10.F.7.a.](#) through [d.](#), as approved  
24 by Ecology.  
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**Table III.10.F.A – Containment Building Unit Description**

Mixed Waste Containment Building Units <sup>a</sup> & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas <sup>b</sup>	Tank Systems <sup>c</sup>	Containment Building Capacity (cu ft)	Manage Free Liquids
<b>Pretreatment Plant</b>							
P-0123 Pretreatment Hot Cell Containment Building	350x51x52	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	Yes
Pretreatment Maintenance Containment Building							
PM0124 Hot Cell Crane Maintenance Area	(54 × 51 × 52)	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0121A Spent Resin Dewatering	28 × 18 × 28	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0122A Waste Packaging Area	26 × 51 × 28	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0123A Remote Decontamination Maintenance Cave	55 × 51 × 28	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0124 C3 Workshop	24 × 24 × 16	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0124A C3 Workshop	(73 + 15 × 15) + (16 × 15 + 13)	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED

**Table III.10.F.A – Containment Building Unit Description**

<b>Mixed Waste Containment Building Units<sup>a</sup> &amp; Systems</b>	<b>Dimensions (LxWxH) (in feet)</b>	<b>Unit Description</b>	<b>Narrative Description and Figures</b>	<b>Container Storage Areas<sup>b</sup></b>	<b>Tank Systems<sup>c</sup></b>	<b>Containment Building Capacity (cu ft)</b>	<b>Manage Free Liquids</b>
P-0125 Filter Cask Airlock	24 × 20 × 28	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0125A Filter Cask Area	28 × 18 × 28	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0128A MSM Repair Area	24 × 18 × 28	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0128 Temporary Storage Room	24 × 17 × 28	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0223 Pretreatment Filter Package Maintenance Containment Building	40x20x28	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	No
P-0335 Pretreatment Air Filter Package Containment Building	118x54x42	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
P-0431A General Filter Rm	RESERVED	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
<b>LAW Vitrification Plant</b>							
L-0112 LAW LSM Gallery Containment Building	151x60x24	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	Yes

**Table III.10.F.A – Containment Building Unit Description**

<b>Mixed Waste Containment Building Units<sup>a</sup> &amp; Systems</b>	<b>Dimensions (LxWxH) (in feet)</b>	<b>Unit Description</b>	<b>Narrative Description and Figures</b>	<b>Container Storage Areas<sup>b</sup></b>	<b>Tank Systems<sup>c</sup></b>	<b>Containment Building Capacity (cu ft)</b>	<b>Manage Free Liquids</b>
ILAW Container Finishing Containment Building		RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	No
L-0109B Swabbing Area Line 2	21×15×24	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0109C Decontamination Area Line 2	18×15×24	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0109D Inert Fill Area Line 2	55×15×24	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0115B Swabbing Area Line 1	21×15×24	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0115C Decontamination Area Line 1	18×15×24	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-0115D Inert Fill Area Line 1	55×15×24	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-109E Container/Monitoring/Export Area	19×18×14	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-115E	19×18×14	RESERVED	Section 4.2.4; Table 4-7; and	RESERVED	RESERVED	RESERVED	RESERVED

**Table III.10.F.A – Containment Building Unit Description**

<b>Mixed Waste Containment Building Units<sup>a</sup> &amp; Systems</b>	<b>Dimensions (LxWxH) (in feet)</b>	<b>Unit Description</b>	<b>Narrative Description and Figures</b>	<b>Container Storage Areas<sup>b</sup></b>	<b>Tank Systems<sup>c</sup></b>	<b>Containment Building Capacity (cu ft)</b>	<b>Manage Free Liquids</b>
Container/Monitoring/Export Area			Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.				
L-0119B LAW Consumable Import/Export Containment Building	35x40x20	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	Yes
L-226A LAW C3 Workshop Containment Building	40x 35x19	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
LAW Pour Cave Containment Building		RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B015A Melter 1 Pour Cave	16.5x20	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B013C Melter 1 Pour Cave	16.5x20	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B013B Melter 2 Pour Cave	16.5x20	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B011C Melter 2 Pour Cave	16.5x20	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B011B Future Melter 3 Pour Cave	16.5x20	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of	RESERVED	RESERVED	RESERVED	RESERVED

**Table III.10.F.A – Containment Building Unit Description**

<b>Mixed Waste Containment Building Units<sup>a</sup> &amp; Systems</b>	<b>Dimensions (LxWxH) (in feet)</b>	<b>Unit Description</b>	<b>Narrative Description and Figures</b>	<b>Container Storage Areas<sup>b</sup></b>	<b>Tank Systems<sup>c</sup></b>	<b>Containment Building Capacity (cu ft)</b>	<b>Manage Free Liquids</b>
			Operating Unit 10, Chapter 4.0 of this Permit.				
L-B009B Future Melter 3 Pour Cave	16.5x20	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
ILAW Buffer Container Containment Building		RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B025C Container Buffer Store	22x22x7.5	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
L-B025D Container Rework	22x14x7.5	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
<b>HLW Vitrification Plant</b>							
H-0117, H-0116B, H-0310A HLW Melter 1	145x35x55	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
H-0106, H-0105B, H-0304A HLW Melter 2	145x35x55	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
H-0136 IHLW Canister Handling Cave Containment Building	140x18x48	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	No
H-0133 IHLW Canister Swab and Monitoring Cave Containment Building	10x80x58	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of	RESERVED	RESERVED	RESERVED	No

**Table III.10.F.A – Containment Building Unit Description**

<b>Mixed Waste Containment Building Units<sup>a</sup> &amp; Systems</b>	<b>Dimensions (LxWxH) (in feet)</b>	<b>Unit Description</b>	<b>Narrative Description and Figures</b>	<b>Container Storage Areas<sup>b</sup></b>	<b>Tank Systems<sup>c</sup></b>	<b>Containment Building Capacity (cu ft)</b>	<b>Manage Free Liquids</b>
			Operating Unit 10, Chapter 4.0 of this Permit.				
H-0311A/B HLW Vitrification Plant C3 Workshop Containment Building	30x27x19 + 33x15x19	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	No
H-0104 HLW Filter Cave	104x38x19	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	No
H-B032 HLW Pour Tunnel No. 1 Containment Building	140x11x21	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	No
H-B005A HLW Pour Tunnel No. 2 Containment Building	140x11x21	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	No
H-0410B, H0411 HLW Waste Handling Area Containment Building	TBD	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
HLW Drum Swabbing and Monitoring Area		RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
H-0126A/B Swabbing and Monitoring Area	52x16x10	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
H-B028 Cask Transfer Tunnel	15x52x10	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED

**Table III.10.F.A – Containment Building Unit Description**

Mixed Waste Containment Building Units <sup>a</sup> & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas <sup>b</sup>	Tank Systems <sup>c</sup>	Containment Building Capacity (cu ft)	Manage Free Liquids
			4.0 of this Permit.				

**Footnotes:**  
<sup>a</sup>Containment Building Units include associated process systems and equipment  
<sup>b</sup>Requirements pertaining to the containers in the Containment Building Units are specified in Section [III.10.D.](#) of this Permit.  
<sup>c</sup>Requirements pertaining to the tanks in the Containment Building Units are specified in Section [III.10.E.](#) of this Permit.

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**Table III.10.F.B – Containment Building Primary<sup>a</sup> Containment Sump Systems**

<b>Sump I.D.# &amp; Room Location</b>	<b>Maximum Capacity (gallons)</b>	<b>Dimensions<sup>a</sup> (feet) &amp; Materials of Construction</b>	<b>Maximum Allowable Liquid Height (inches)</b>	<b>Secondary Containment Volume (gallons)</b>	<b>Unit Description Drawings<sup>#</sup></b>
PWD-SUMP-00034 P-0121A (El. 0')	73.5	30" Dia. By ~28" deep 304L	N/A – This sump does not have secondary containment.	N/A – This sump does not have secondary containment.	<b><u>24590-PTF</u></b> -M6-PWD-P0012 -P1-P01T-P0001
PWD-SUMP-00035 P-0122A (El. 0')	73.5	30" Dia. By ~28" deep 304L	N/A – This sump does not have secondary containment.	N/A – This sump does not have secondary containment.	<b><u>24590-PTF</u></b> -M6-PWD-P0012 -P1-P01T-P0001
HMH-SUMP-0002 H-0116B (Air Lock Melter Room, El. 0')	RESERVED	RESERVED	N/A – This sump does not have secondary containment.	N/A – This sump does not have secondary containment.	<b><u>24590-HLW</u></b> -M6-RLD-P0003 -P1-P01T-P0002
HMH-SUMP-0003 H-0105B (Melter 2 Cave Overpack Room, El. 0')	50	30" X 24" X 16" RESERVED	N/A – This sump does not have secondary containment.	N/A – This sump does not have secondary containment.	<b><u>24590-HLW</u></b> -M6-RLD-P20003 -P1-P01T-P0002
HPH-SUMP-00001 H-0136 (Canister Handling Cave, El. -3')	70	30" Dia. X 18" Deep 6Mo	N/A – This sump does not have secondary containment.	N/A – This sump does not have secondary containment.	<b><u>24590-HLW</u></b> -M6-RLD-P0016 -P1-P01T-P0002
HPH-SUMP-00003 H-B032 (Melter 1 Canister Pour Tunnel, El. -21')	RESERVED	RESERVED	N/A – This sump does not have secondary containment.	N/A – This sump does not have secondary containment.	<b><u>24590-HLW</u></b> -M6-RLD-P0016 -P1-P01T-P0001
HPH-SUMP-00004 H-B005A (Melter 2 Canister Pour Tunnel, El. -21')	RESERVED	30" Dia. X 18" Deep RESERVED	N/A – This sump does not have secondary containment.	N/A – This sump does not have secondary containment.	<b><u>24590-HLW</u></b> -M6-RLD-P20004 -P1-P01T-P0001
HPH-SUMP-00005 H-0136 (Canister Handling Cave, El. -3')	70	30" Dia. X 18" Deep 6Mo	N/A – This sump does not have secondary containment.	N/A – This sump does not have secondary containment.	<b><u>24590-HLW</u></b> -M6-RLD-P0004 -P1-P01T-P0002
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

**Table III.10.F.B – Containment Building Primary<sup>a</sup> Containment Sump Systems**

Sump I.D.# & Room Location	Maximum Capacity (gallons)	Dimensions <sup>a</sup> (feet) & Materials of Construction	Maximum Allowable Liquid Height (inches)	Secondary Containment Volume (gallons)	Unit Description Drawings <sup>#</sup>
<b>Footnotes:</b>					
<sup>a</sup> Primary sumps are defined in Permit Section <a href="#">III.10.C</a> , and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640.					
<sup>b</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).					

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**Table III.10.F.C – Containment Building Secondary Containment Systems Including Sumps and Floor Drains**

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions <sup>a</sup> (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications No.'s, etc.)
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b>				
<sup>a</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

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**Table III.10.F.D – Containment Building Leak Detection System Instrumentation and Parameters**

Containment Building Locator and Name (including P&ID)	Type of Leak Detection Instrument	Location of Leak Detection Instrument (Tag No.)	Leak Detection Instrument Range	Expected Range	Fail States	Leak Detection Instrument Accuracy	Leak Detection Instrument Calibration Method No. and Range
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b>							
<sup>a</sup> Locator (including P&ID designator) is located on Permit Table <a href="#">III.10.F.C</a> – Containment Building Secondary Containment Systems Including Sumps and Floor Drains.							

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Waste Treatment and Immobilization Plant

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**III.10.G PRETREATMENT PLANT MISCELLANEOUS UNIT SYSTEMS**

For purposes of Permit Section [III.10.G.](#), where reference is made to WAC 173-303-640, the following substitutions apply: substitute the terms “Pretreatment Plant Miscellaneous Unit System(s)” for “tank system(s),” “miscellaneous unit(s)” for “tank(s),” “equipment” for “ancillary equipment,” and “miscellaneous unit(s) or equipment of a Pretreatment Plant Miscellaneous Unit System” for “component(s)” in accordance with WAC 173-303-680.

**III.10.G.1 Approved Waste and Storage Limits**

**III.10.G.1.a.** The Permittees may process, in the Pretreatment Plant Miscellaneous Unit Systems listed in Permit Table [III.10.G.A](#), as approved/modified pursuant to Permit Condition [III.10.G.10](#), all dangerous and mixed waste listed in the Part A Forms, Operating Unit 10, Chapter 1.0 of this Permit, and in accordance with in the WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.3](#). Total Pretreatment Plant Miscellaneous Unit dangerous and mixed waste storage at the Facility will not exceed the limits specified in Permit Table [III.10.G.A](#).

**III.10.G.1.b.** The Permittees may process dangerous and mixed waste only in approved Pretreatment Plant Miscellaneous Unit Systems listed in Permit Table [III.10.G.A](#) in accordance with Permit Section [III.10.G](#) and in accordance with Operating Unit 10, Chapters 1.0 and 4.0 of this Permit, and Operating Unit 10, Appendices 8.1 through 8.15 of this Permit, as approved pursuant to Permit Conditions [III.10.G.10.b](#) through [e](#). The Permittees will limit the total volume of wastes to quantities specified for the individual miscellaneous units listed in Permit Table [III.10.G.A](#).

**III.10.G.1.c.** The Permittees will manage ignitable and reactive, and incompatible waste in accordance with WAC 173-303-395(1). Any Pretreatment Plant Miscellaneous Unit System specified in Permit Tables [III.10.G.A](#) and [III.10.G.B](#) in which ignitable, reactive or incompatible waste are managed will meet the requirements specified in WAC 173-303-640(9) and (10), in accordance to WAC 173-303-680.

**III.10.G.1.d.** The Permittees will ensure all certifications required by specialists (e.g., independent, qualified, registered professional engineer; independent corrosion expert; independent, qualified installation inspector; etc.) use the following statement or equivalent pursuant to Permit Condition [III.10.C.10](#):

“I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new miscellaneous unit system or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector, testing for tightness, etc.), for the following miscellaneous unit system components (e.g., the venting piping, etc.), as required by the Dangerous Waste Regulations, namely, WAC 173-303-640(3) (applicable paragraphs (i.e., (a) through (g)) in accordance with WAC 173-303-680).

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

**III.10.G.1.e.** In all future narrative permit submittals, the Permittees will include miscellaneous unit system names with the unit designation (e.g., Waste Feed Evaporator Separator Vessels are designated V11002A and V11002B, respectively).

**III.10.G.2** Miscellaneous Unit Systems Design and Construction [WAC 173-303-640, in accordance with WAC 173-303-680(2) and WAC 173-303-340].

- 1 III.10.G.2.a. The Permittees will construct the Pretreatment Plant Miscellaneous Unit Systems identified in  
2 Permit Table [III.10.G.A](#), as specified in Operating Unit 10, Appendices 8.1 through 8.14 of this  
3 Permit, as approved pursuant to Permit Conditions [III.10.G.10.b.](#), [III.10.G.10.c.](#), and [III.10.G.10.d.](#)
- 4 III.10.G.2.b. The Permittees will construct secondary containment systems for the Pretreatment Plant  
5 Miscellaneous Unit Systems identified in Permit Tables [III.10.G.A](#) and [III.10.G.B](#), as specified in  
6 Operating Unit 10, Appendices 8.2, 8.4 through 8.14 of this Permit, as approved pursuant to Permit  
7 Conditions [III.10.G.10.b.](#), [III.10.G.10.c.](#), and [III.10.G.10.d.](#)
- 8 III.10.G.2.c. Modifications to approved design, plans, and specifications in Operating Unit 10 of this Permit for  
9 the Pretreatment Plant Miscellaneous Unit Systems will be allowed only in accordance with Permit  
10 Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#), [III.10.C.9.d.](#), [e.](#), and [h.](#)
- 11 III.10.G.3 Miscellaneous Unit System Installation and Certification [WAC 173-303-640, in accordance with  
12 WAC 173-303-680(2) and (3), and WAC 173-303-340].
- 13 III.10.G.3.a. The Permittees must ensure that proper handling procedures are adhered to in order to prevent  
14 damage to Pretreatment Plant Miscellaneous Unit Systems during installation. Prior to covering,  
15 enclosing, or placing a new Pretreatment Plant Miscellaneous Unit System(s) or component(s) in  
16 use, an independent, qualified, installation inspector or an independent, qualified, registered  
17 professional engineer, either of whom is trained and experienced in the proper installation of  
18 similar systems or components, must inspect the system for the presence of any of the following  
19 items:
- 20 III.10.G.3.a.i. Weld breaks;
- 21 III.10.G.3.a.ii Punctures;
- 22 III.10.G.3.a.iii. Scrapes of protective coatings;
- 23 III.10.G.3.a.iv. Cracks;
- 24 III.10.G.3.a.v. Corrosion;
- 25 III.10.G.3.a.vi. Other structural damage or inadequate construction/installation;
- 26 III.10.G.3.a.vii. All discrepancies must be remedied before the Pretreatment Plant Miscellaneous Unit Systems are  
27 covered, enclosed, or placed in use [WAC 173-303-640(3)(c) in accordance with WAC 173-303-  
28 680(2) and (3)].
- 29 III.10.G.3.b. For Pretreatment Plant Miscellaneous Unit Systems or components that are placed underground and  
30 that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous,  
31 homogeneous substance. The backfill must be installed so that it is placed completely around the  
32 miscellaneous unit and compacted to ensure that the miscellaneous unit and piping are fully and  
33 uniformly supported [WAC 173-303-640(3)(d), in accordance with WAC 173-303-680(2) and (3)].
- 34 III.10.G.3.c. The Permittees must test for tightness all new Pretreatment Plant miscellaneous units and  
35 equipment, prior to being covered, enclosed, or placed into use. If the Pretreatment Plant  
36 Miscellaneous Unit Systems are found not to be tight, all repairs necessary to remedy the leak(s) in  
37 the system must be performed prior to the Pretreatment Plant Miscellaneous Units Systems being  
38 covered, enclosed, or placed in use [WAC 173-303-640(3)(e), in accordance with WAC 173-303-  
39 680(2) and (3)].
- 40 III.10.G.3.d. The Permittees must ensure Pretreatment Plant Miscellaneous Unit Systems equipment is supported  
41 and protected against physical damage and excessive stress due to settlement, vibration, expansion,  
42 or contraction [WAC 173-303-640(3)(f), in accordance with WAC 173-303-680(2) and (3)].

- 1 III.10.G.3.e. The Permittees must provide the type and degree of corrosion protection recommended by an  
2 independent corrosion expert, based on the information provided in Operating Unit 10, Appendices  
3 8.9 and 8.11 as approved pursuant to Permit Conditions [III.10.G.10.b.i.](#), [III.10.G.10.b.i.v.](#),  
4 [III.10.G.10.b.v.](#), [III.10.G.10.c.i.](#), [III.10.G.10.c.i.v.](#), [III.10.G.10.c.v.](#), and [III.10.G.10.d.i.](#),  
5 [III.10.G.10.d.iv.](#) [III.10.G.10.d.v.](#), or other corrosion protection if Ecology believes other corrosion  
6 protection is necessary to ensure the integrity of the Pretreatment Plant Miscellaneous Unit Systems  
7 during use of the Pretreatment Plant Miscellaneous Unit Systems. The installation of a corrosion  
8 protection system that is field fabricated must be supervised by an independent corrosion expert to  
9 ensure proper installation [WAC 173-303-640(3)(g), in accordance with WAC 173-303-680(2) and  
10 (3)].
- 11 III.10.G.3.f. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will obtain,  
12 and keep on file in the WTP Unit operating record, written statements by those persons required to  
13 certify the design of the Pretreatment Plant Miscellaneous Unit Systems and supervise the  
14 installation of the Pretreatment Plant Miscellaneous Unit Systems, as specified in WAC 173-303-  
15 640(3)(b), (c), (d), (e), (f), and (g), in accordance with WAC 173-303-680, attesting that each  
16 Pretreatment Plant Miscellaneous Unit System and corresponding containment system listed in  
17 Permit Tables [III.10.G.A](#) and [III.10.G.B](#), as approved/modified pursuant to Permit Condition  
18 [III.10.G.10.](#), were properly designed and installed, and that repairs, in accordance with WAC 173-  
19 303-640(3)(c) and (e), were performed [WAC 173-303-640(3)(a), WAC 173-303-640(3)(h), in  
20 accordance with WAC 173-303-680(3)].
- 21 III.10.G.3.g. The independent Pretreatment Plant Miscellaneous Unit System installation inspection and  
22 subsequent written statements will be certified in accordance with WAC 173-303-810(13)(a) as  
23 modified pursuant to Permit Condition [III.10.G.1.d.](#), comply with all requirements of WAC 173-  
24 303-640(3)(h), in accordance with WAC 173-303-680, and will consider, but not be limited to, the  
25 following miscellaneous unit system installation documentation:
- 26 III.10.G.3.g.i. Field installation report with date of installation;
- 27 III.10.G.3.g.ii. Approved welding procedures;
- 28 III.10.G.3.g.iii. Welder qualifications and certification;
- 29 III.10.G.3.g.iv. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical  
30 Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1, American Petroleum Institute  
31 (API) Standard 620, or Standard 650 as applicable;
- 32 III.10.G.3.g.v. Tester credentials;
- 33 III.10.G.3.g.vi. Field inspector credentials;
- 34 III.10.G.3.g.vii. Field inspector reports;
- 35 III.10.G.3.g.viii. Field waiver reports; and
- 36 III.10.G.3.g.ix. Non-compliance reports and corrective action (including field waiver reports) and repair reports.
- 37 III.10.G.4 Integrity Assessments [WAC 173-303-340 and WAC 173-303-640, in accordance with WAC 173-  
38 303-680(2) and (3)].
- 39 III.10.G.4.a. The Permittees will ensure periodic integrity assessments are conducted on the Pretreatment Plant  
40 Miscellaneous Unit Systems listed in Permit Table III.10.G.A, as approved/modified pursuant to  
41 Permit Condition III.10.G.10., over the term of this Permit in accordance with WAC 173-303-  
42 680(2) and (3) as specified in WAC 173-303-640(3)(b), following the description of the integrity  
43 assessment program and schedule in Operating Unit 10, Chapter 6.0 of this Permit, as approved  
44 pursuant to Permit Conditions [III.10.G.10.e.i.](#) and [III.10.C.5.c.](#) Results of the integrity assessments

- 1 will be included in the WTP Unit operating record until ten (10) years after post-closure, or  
2 corrective action is complete and certified, whichever is later.
- 3 III.10.G.4.b. The Permittees will address problems detected during Pretreatment Plant Miscellaneous Unit  
4 Systems integrity assessments specified in Permit Condition [III.10.G.4.a.](#) following the integrity  
5 assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to  
6 Permit Conditions [III.10.G.10.e.i.](#) and [III.10.C.5.c.](#)
- 7 III.10.G.4.c. The Permittees must immediately and safely remove from service any Pretreatment Plant  
8 Miscellaneous Unit System or secondary containment system which through an integrity  
9 assessment is found to be “unfit for use” as defined in WAC 173-303-040, following Permit  
10 Condition [III.10.G.5.j.i.](#) through [iv.](#), and [vi.](#) The affected Pretreatment Plant Miscellaneous Unit or  
11 secondary containment system must be either repaired or closed in accordance with Permit  
12 Condition [III.10.G.5.j.v.](#) [WAC 173-303-640(7)(e) and (f) and WAC 173-303-640(8), in  
13 accordance with WAC 173-303-680(3)].
- 14 III.10.G.5 Miscellaneous Unit Management Practices
- 15 III.10.G.5.a. No dangerous and/or mixed waste will be managed in the Pretreatment Plant Miscellaneous Unit  
16 Systems unless the operating conditions, specified under Permit Condition [III.10.G.5](#), are complied  
17 with.
- 18 III.10.G.5.b. The Permittees will install and test all process and leak detection system  
19 monitoring/instrumentation, as specified in Permit Table [III.10.G.C](#), as approved/modified pursuant  
20 to Permit Condition [III.10.G.10](#), in accordance with Operating Unit 10, Appendices 8.1, 8.2, and  
21 8.14 of this Permit, as approved pursuant to Permit Condition [III.10.G.10.d.x.](#)
- 22 III.10.G.5.c. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other materials  
23 in the Pretreatment Plant Miscellaneous Unit Systems if these substances could cause the systems  
24 to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a), in accordance with WAC 173-  
25 303-680(2)].
- 26 III.10.G.5.d. The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems to prevent spills  
27 and overflows using the description of controls and practices, as required under WAC 173-303-  
28 640(5)(b), described in Permit Condition [III.10.C.5](#), and Operating Unit 10, Appendix 8.15 of this  
29 Permit, as approved pursuant to Permit Condition [III.10.G.10.e.iv.](#) [WAC 173-303-640(5)(b), in  
30 accordance with WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(c)(ix)].
- 31 III.10.G.5.e. For routinely non-accessible Pretreatment Plant Miscellaneous Unit Systems, as specified in  
32 Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition  
33 [III.10.G.10.e.vi.](#), the Permittees will mark all routinely non-accessible Pretreatment Plant  
34 Miscellaneous Unit System access points with labels or signs to identify the waste contained in the  
35 units. The label, or sign, must be legible at a distance of at least fifty (50) feet and must bear a  
36 legend which identifies the waste in a manner which adequately warns employees, emergency  
37 response personnel, and the public of the major risk(s) associated with the waste being stored or  
38 treated in the miscellaneous unit system(s). For the purposes of this Permit condition, “routinely  
39 non-accessible” means personnel are unable to enter these areas while waste is being managed in  
40 them [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].
- 41 III.10.G.5.f. For all Pretreatment Plant Miscellaneous Unit Systems not addressed in Permit Condition  
42 [III.10.G.5.e](#), the Permittees will mark all these miscellaneous unit systems holding dangerous  
43 and/or mixed waste with labels or signs to identify the waste contained in the unit. The labels, or  
44 sign, must be legible at a distance of at least fifty (50) feet, and must bear a legend which identifies  
45 the waste in a manner which adequately warns employees, emergency response personnel, and the

- 1 public of the major risk(s) associated with the waste being stored or treated in the miscellaneous  
2 unit system(s) [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].
- 3 III.10.G.5.g. The Permittees will ensure that the secondary containment systems for Pretreatment Plant  
4 Miscellaneous Unit Systems listed in Permit Tables [III.10.G.A](#) and [III.10.G.B](#), as  
5 approved/modified pursuant to Permit Condition [III.10.G.10](#), are free of cracks or gaps to prevent  
6 any migration of dangerous and/or mixed waste or accumulated liquid out of the system to the soil,  
7 ground water, or surface water at any time waste is in the Pretreatment Plant Miscellaneous Units  
8 System. Any indication that a crack or gap may exist in the containment systems will be  
9 investigated and repaired in accordance with Operating Unit 10, Appendix 8.15 of this Permit, as  
10 approved pursuant to Permit Condition [III.10.G.10.e.v](#). [WAC 173-303-640(4)(b)(i), WAC 173-  
11 303-640(4)(e)(i)(C), and WAC 173-303-640(6) in accordance with WAC 173-303-680(2) and (3),  
12 WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-320].
- 13 III.10.G.5.i. An impermeable coating, as specified in Operating Unit 10, Appendices 8.4, 8.5, 8.7, 8.9, 8.11, and  
14 8.12 of this Permit, as approved pursuant to Permit Condition [III.10.G.10.b.v](#). of this Permit, will be  
15 maintained for all concrete containment systems and concrete portions of containment systems for  
16 each Pretreatment Plant Miscellaneous Unit System listed in Permit Tables [III.10.G.A](#) and  
17 [III.10.G.B](#), as approved/modified pursuant to Permit Condition [III.10.G.10](#) [concrete containment  
18 systems that do not have a liner pursuant to WAC-173-303-640(4)(e)(i), in accordance with WAC  
19 173-303-680(2), and have construction joints, will meet the requirements of WAC 173-303-  
20 640(4)(e)(ii)(C), in accordance with WAC 173-303-680(2)]. The coating will prevent migration of  
21 any dangerous and mixed waste into the concrete. All coatings will meet the following  
22 performance standards:
- 23 III.10.G.5.i.i. The coating must seal the containment surface such that no cracks, seams, or other avenues through  
24 which liquid could migrate are present;
- 25 III.10.G.5.i.ii. The coating must be of adequate thickness and strength to withstand the normal operation of  
26 equipment and personnel within the given area such that degradation or physical damage to the  
27 coating or lining can be identified and remedied before dangerous and mixed waste  
28 [III.10.G.5.i](#). could migrate from the system; and
- 29 III.10.G.5.i.iii. The coating must be compatible with the dangerous and mixed waste, treatment reagents, or other  
30 materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), in accordance with  
31 WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(i)(i)(A)].
- 32 III.10.G.5.j. The Permittees will inspect all secondary containment systems for the Pretreatment Plant  
33 Miscellaneous Unit Systems listed in Permit Tables [III.10.G.A](#) and [III.10.G.B](#)., as  
34 approved/modified pursuant to Permit Condition [III.10.G.10](#)., in accordance with the Inspection  
35 Schedule specified in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit  
36 Conditions [III.10.G.10.e.i](#). and [III.10.C.5.c](#)., and take the following actions if a leak or spill of  
37 dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(5)(c)  
38 and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-320,  
39 and WAC 173-303-806(4)(i)(i)(B)]:
- 40 III.10.G.5.j.i. Immediately and safely stop the flow of dangerous and/or mixed waste into the miscellaneous unit  
41 system or secondary containment system;
- 42 III.10.G.5.j.ii. Determine the source of the dangerous and/or mixed waste;
- 43 III.10.G.5.j.iii. Remove the waste from the containment area in accordance with WAC 173-303-680(2) and (3), as  
44 specified in WAC 173-303-640(7)(b). The dangerous and/or mixed waste removed from  
45 containment areas of miscellaneous unit systems will be, as a minimum, managed as dangerous  
46 and/or mixed waste;

- 1 III.10.G.5.j.iv. If the cause of the release was a spill that has not damaged the integrity of the miscellaneous unit  
2 system, the Permittees may return the miscellaneous unit system to service in accordance with  
3 WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(e)(ii). In such a case, the  
4 Permittees will take action to ensure the incident that caused liquid to enter the containment system  
5 will not reoccur [WAC 173-303-320(3)];
- 6 III.10.G.5.j.v. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary  
7 Pretreatment Plant Miscellaneous Unit System into the secondary containment system, or the  
8 system is unfit for use as determined through an integrity assessment or other inspection, the  
9 Permittees must comply with the requirements of WAC 173-303-640(7), and take the following  
10 actions:
- 11 A. Close the miscellaneous unit following procedures in WAC 173-303-640(7)(e)(i) and in  
12 accordance with WAC 173-303-680, and Operating Unit 10, Chapter 11.0 of this Permit, as  
13 approved pursuant to Permit Condition [III.10.C.8](#); or
- 14 B. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to  
15 Permit Condition [III.10.G.1.d.](#)) the Pretreatment Plant Miscellaneous Unit System in  
16 accordance with Operating Unit 10, Appendix 8.15 of this Permit, as approved pursuant to  
17 Permit Condition [III.10.G.10.e.v.](#) before the Pretreatment Plant Miscellaneous Unit System is  
18 placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in  
19 accordance with WAC 173-303-680].
- 20 III.10.G.5.j.vi. The Permittees will document, in the operating record, actions/procedures taken to comply with i.  
21 through v. above, as specified in WAC 173-303-640(6)(d) and in accordance with WAC 173-303-  
22 680(2) and (3).
- 23 III.10.G.5.j.vii. In accordance with WAC 173-303-680(2) and (3), the Permittees will notify and report releases to  
24 the environment to Ecology as specified in WAC 173-303-640(7)(d).
- 25 III.10.G.5.k. If liquids (e.g., Dangerous and/or mixed waste leaks and spills, precipitation, fire water, liquids  
26 from damaged or broken pipes) cannot be removed from the secondary containment system within  
27 twenty-four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of  
28 discovery. The notification will provide the information in A., B., and C. listed below. The  
29 Permittees will provide Ecology with a written demonstration, within seven (7) business days,  
30 identifying at a minimum [WAC 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in  
31 accordance with WAC 173-303-680(3) and WAC 173-303-806(4)(i)(i)(B)]:
- 32 A. Reasons for delayed removal;
- 33 B. Measures implemented to ensure continued protection of human health and the environment;  
34 and
- 35 C. Current actions being taken to remove liquids from secondary containment.
- 36 III.10.G.5.l. The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems in accordance with  
37 Operating Unit 10, Chapter 4.0 as updated pursuant to Permit Condition [III.10.G.10.e.vi.](#) and  
38 Appendix 8.15 of this Permit, as approved pursuant to Permit Condition [III.10.G.10.e.](#), and the  
39 following:
- 40 III.10.G.5.l.i. The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems in order to maintain  
41 the systems and process parameters listed in Permit Table [III.10.G.C.](#) as approved/modified  
42 pursuant to Permit Condition [III.10.G.10.](#), within the operating trips and operating ranges specified  
43 in Permit Table [III.10.G.C.](#), and consistent with assumptions and basis which are reflected in  
44 Operating Unit 10, Appendix 6.3.1, as approved pursuant to Permit Condition [III.10.C.11.b.](#) [WAC  
45 173-303-815(2)(b)(ii) and WAC 173-303-680(2) and (3)]. For the purposes of this Permit

- 1 Condition, Operating Unit 10, Appendix 6.3.1. will be superceded by Appendix 6.4.1. upon its  
2 approval pursuant to either Permit Conditions [III.10.C.11.c.](#) or [III.10.C.11.d.](#)
- 3 III.10.G.5.l.ii. The Permittees will calibrate/function test the instruments listed in Permit Table [III.10.G.C.](#), in  
4 accordance with Operating Unit 10, Appendix 8.15, as approved pursuant to Permit Condition  
5 [III.10.G.10.e.xii.](#)
- 6 III.10.G.5.m. For any portion of the Pretreatment Plant Miscellaneous Unit Systems which have the potential for  
7 formation and accumulation of hydrogen gases, the Permittees will operate the portion to maintain  
8 hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].
- 9 III.10.G.5.n. For each miscellaneous unit holding dangerous waste which are acutely or chronically toxic by  
10 inhalation, the Permittees will operate the system to prevent escape of vapors, fumes, or other  
11 emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance  
12 with WAC 173-303-680].
- 13 III.10.G.6 Air Emissions
- 14 III.10.G.6.a. Treatment effectiveness, feed-rates, and operating rates for dangerous and mixed waste systems and  
15 sub-systems contained in the Pretreatment Plant (as specified in Permit Tables [III.10.E.A.](#),  
16 [III.10.F.A.](#), and [III.10.G.A.](#), as approved/modified pursuant to Permit Conditions [III.10.E.9.](#),  
17 [III.10.F.5.](#), [III.10.G.10.](#), respectively) will be as specified in Permit Sections [III.10.E.](#), [III.10.F.](#), and  
18 [III.10.G.](#), and consistent with the assumptions and basis reflected in Operating Unit 10, Appendix  
19 6.3.1 of this Permit, as approved pursuant to Permit Condition [III.10.C.11.b.](#) For the purposes of  
20 this permit condition, Operating Unit 10, Appendix 6.3.1 will be superceded by Appendix 6.4.1,  
21 upon its approval, pursuant to either Permit Condition [III.10.C.11.c.](#) or [III.10.C.11.d.](#) [WAC 173-  
22 303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 23 III.10.G.6.b. Compliance with Permit Condition [III.10.G.6.a.](#) of this Permit will be regarded as operating within  
24 the emission limits specified in Permit Table [III.10.G.D.](#), as approved pursuant to Permit  
25 Conditions [III.10.C.11.b.](#), [III.10.C.11.c.](#), or [III.10.C.11.d.](#) of this Permit.
- 26 III.10.G.6.c. All air pollution control devices and capture systems in the Pretreatment Plant Miscellaneous Unit  
27 Systems will be maintained and operated at all times in a manner so as to minimize the emissions of  
28 air contaminants and to minimize process upsets. Procedures for ensuring that the above equipment  
29 is properly operated and maintained so as to minimize the emission of air contaminants and process  
30 upsets will be established.
- 31 III.10.G.6.d. The Permittees will ensure that for all dangerous and/or mixed waste areas, systems, and units  
32 contained in the Pretreatment Plant (as specified in Permit Tables [III.10.E.A.](#), [III.10.F.A.](#), and  
33 [III.10.G.A.](#), as approved pursuant to Permit Conditions [III.10.E.9.e.xii.](#), [III.10.F.7.d.iv.](#), and  
34 [III.10.G.10.e.ix.](#), respectively), the Pretreatment Vessel Vent Process System specified in Permit  
35 Table [III.10.G.A.i](#) will be in operation prior to waste being introduced into these dangerous and/or  
36 mixed waste areas, systems, and units contained in the Pretreatment Building. At any time the  
37 Pretreatment Vessel Vent Process System ceases to operate or produces insufficient vacuum to  
38 recover emissions from the areas, systems, or units, the Permittees will not commence new  
39 treatment activities within the dangerous and mixed waste areas, systems, or units contained in the  
40 Pretreatment Building, and take measures to minimize evolution of emissions from on-going  
41 treatment, and will not receive new dangerous and/or mixed waste shipments into the Pretreatment  
42 Building. The Permittees will not re-commence new treatment activities until the Pretreatment  
43 Vessel Vent Process System is operational and producing sufficient vacuum to recover emissions.
- 44 III.10.G.7 Inspections [WAC 173-303-680(3)]

- 1 III.10.G.7.a. The Permittees will inspect the Pretreatment Plant Miscellaneous Unit Systems in accordance with  
2 the Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in  
3 accordance with Permit Condition [III.10.C.5.c.](#)
- 4 III.10.G.7.b. The inspection data for Pretreatment Plant Miscellaneous Unit Systems will be recorded, and the  
5 records will be placed in the WTP Unit operating record for the Pretreatment Plant Miscellaneous  
6 Unit Systems, in accordance with Permit Condition [III.10.C.4.](#)
- 7 III.10.G.8 Recordkeeping
- 8 The Permittees will record and maintain in the WTP Unit operating record for the Pretreatment  
9 Plant Miscellaneous Unit Systems, all monitoring, calibration, maintenance, test data, and  
10 inspection data compiled under the conditions of this Permit, in accordance with Permit Conditions  
11 [III.10.C.4](#) and [III.10.C.5.](#)
- 12 III.10.G.9 Closure
- 13 The Permittees will close the Pretreatment Plant Miscellaneous Unit Systems in accordance with  
14 Operating Unit 10, Chapter 11.0, as approved pursuant to Permit Condition [III.10.C.8.](#)
- 15 III.10.G.10 Compliance Schedule
- 16 III.10.G.10.a. All information identified for submittal to Ecology in a. through e. of this compliance schedule  
17 must be signed and certified in accordance with requirements in WAC 173-303-810(12), as  
18 modified in accordance with Permit Condition [III.10.G.1.d.](#) [WAC 173-303-806(4)].
- 19 III.10.G.10.b. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), prior to  
20 construction of each secondary containment and leak detection system for the Pretreatment Plant  
21 Miscellaneous Unit Systems (per level) as identified in Permit Tables [III.10.G.A](#) and [III.10.G.B.](#),  
22 engineering information as specified below, for incorporation into Operating Unit 10, Appendices  
23 8.2, 8.4, 8.5, 8.7, 8.8, 8.9, 8.11, and 8.12 of this Permit. At a minimum, engineering information  
24 specified below will show the following as described in WAC 173-303-640, in accordance with  
25 WAC 173-303-680 (the information specified below will include dimensioned engineering  
26 drawings and information on sumps and floor drains):
- 27 III.10.G.10.b.i. IQRPE Reports (specific to foundation, secondary containment, and leak detection system) will  
28 include review of design drawings, calculations, and other information on which the certification  
29 report is based and will include as applicable, but not limited to, review of such information  
30 described below. Information (drawings, specifications, etc.) already included in Operating Unit  
31 10, Appendix 8.0 of this Permit may be included in the report by reference and should include  
32 drawing and document numbers. IQRPE Reports will be consistent with the information separately  
33 provided in ii. through ix. below [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680  
34 and WAC 173-303-806(4)(i)(i)];
- 35 III.10.G.10.b.ii. Design drawings (General Arrangement Drawings, in plan and cross sections) and specifications  
36 for the foundation, secondary containment, including, liner installation details, and leak detection  
37 methodology [Note: leak detection systems for areas where daily, direct, or remote visual  
38 inspection is not feasible, will be continuous in accordance with WAC 173-303-640(4)(e)(iii)(C)].  
39 These items should show the dimensions, volume calculations, and location of the secondary  
40 containment system, and should include items such as floor/pipe slopes to sumps, tanks, floor  
41 drains [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a), in accordance with  
42 WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];
- 43 III.10.G.10.b.iii. The Permittees will provide the design criteria (references to codes and standards, load definitions,  
44 and load combinations, materials of construction, and analysis/design methodology) and typical  
45 design details for the support of the secondary containment system. This information will

- 1 demonstrate the foundation will be capable of providing support to the secondary containment  
2 system, resistance to pressure gradients above and below the system, and capable of preventing  
3 failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), in accordance with  
4 WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];
- 5 III.10.G.10.b.iv. A description of materials and equipment used to provide corrosion protection for external metal  
6 components in contact with soil, including factors affecting the potential for corrosion [WAC 173-  
7 303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A)  
8 through (B)];
- 9 III.10.G.10.b.v. Secondary containment/foundation and leak detection systems materials selection documentation  
10 (including, but not limited to, concrete coatings and water stops, and liner materials), as applicable  
11 [WAC 173-303-806(4)(i)(i)(A) through (B)];
- 12 III.10.G.10.b.vi. Detailed description of how the secondary containment for each miscellaneous unit system will be  
13 installed in compliance with WAC 173-303-640(3)(c), in accordance with WAC 173-303-680 and  
14 WAC 173-303-806(4)(i)(i)(A) through (B);
- 15 III.10.G.10.b.vii. Submit Permit Table [III.10.G.B.](#) completed to provide for all secondary containment sumps and  
16 floor drains, the information as specified in each column heading, consistent with information to be  
17 provided in [i.](#) through [vi.](#) above;
- 18 III.10.G.10.b.viii. Documentation that secondary containment and leak detection systems will not accumulate  
19 hydrogen gas levels above the lower explosive limit for incorporation into the Administrative  
20 Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];
- 21 III.10.G.10.b.ix. A detailed description of how miscellaneous unit design provides access for conducting future  
22 miscellaneous unit integrity assessments [WAC 173-303-640(3)(b) and WAC 173-303-  
23 806(4)(i)(i)(B)].
- 24 III.10.G.10.c. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), prior to  
25 installation of each Pretreatment Plant Miscellaneous Unit System as identified in Permit Tables  
26 [III.10.G.A](#) and [III.10.G.B](#), engineering information as specified below, for incorporation into  
27 Operating Unit 10, Appendix 8.1 through 8.14 of this Permit. At a minimum, engineering  
28 information specified below will show the following as required pursuant to WAC 173-303-640  
29 and in accordance with WAC 173-303-680 (the information specified below will include  
30 dimensioned engineering drawings):
- 31 III.10.G.10.c.i. IQRPE Reports (specific to miscellaneous unit) will include review of design drawings,  
32 calculations, and other information on which the certification report is based and will include as  
33 applicable, but not limited to, review of such information described below. Information (drawings,  
34 specifications, etc.) already included in Operating Unit 10, Appendix 8.0 of this Permit may be  
35 included in the report by reference and should include drawing and document numbers. The  
36 IQRPE Reports will be consistent with the information separately provided in ii. through xi. below  
37 and the IQRPE Report specified in Permit Condition [III.10.G.10.b.i.](#) [WAC 173-303-640(3)(a), in  
38 accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];
- 39 III.10.G.10.c.ii. Design drawings (General Arrangement Drawings in plan and cross sections, Process Flow  
40 Diagrams, Piping and Instrumentation Diagrams [including pressure control systems], and  
41 Mechanical Drawings) and specifications, and other information specific to miscellaneous units (to  
42 show location and physical attributes of each miscellaneous unit), [WAC 173-303-640(3)(a), in  
43 accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];
- 44 III.10.G.10.c.iii. Miscellaneous unit design criteria (references to codes and standards, load definitions, and load  
45 combinations, materials of construction, and analysis/design methodology) and typical design  
46 details for the support of the miscellaneous unit(s). Structural support calculations specific to off-

- 1 specification, non-standard, and field fabricated miscellaneous units will be submitted for  
2 incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC  
3 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];
- 4 III.10.G.10.c.iv. A description of materials and equipment used to provide corrosion protection for external metal  
5 components in contact with water, including factors affecting the potential for corrosion [WAC  
6 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-  
7 806(4)(i)(i)(A) through (B)];
- 8 III.10.G.10.c.v. Miscellaneous unit materials selection documentation (e.g., physical and chemical tolerances)  
9 [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-  
10 806(4)(i)(i)(A)];
- 11 III.10.G.10.c.vi. Miscellaneous unit vendor information (including, but not limited to, required performance  
12 warranties, as available), consistent with information submitted under ii. above, will be submitted  
13 for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with  
14 WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-  
15 806(4)(i)(v)];
- 16 III.10.G.10.c.vii. System Description related to miscellaneous units will be submitted for incorporation into the  
17 Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC  
18 173-303-806(4)(i)(v)].
- 19 III.10.G.10.c.viii. Mass and energy balance for normal projected operating conditions used in developing the Piping  
20 and Instrumentation Diagrams and the Process Flow Diagrams, including assumptions and formulas  
21 used to complete the mass and energy balance, so that they can be independently verified for  
22 incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-  
23 806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];
- 24 III.10.G.10.c.ix. A detailed description of how the miscellaneous unit will be installed in compliance with WAC  
25 173-303-640(3)(c), (d), and (e), in accordance with WAC 173-303-680 and WAC 173-303-  
26 806(4)(i)(i)(B);
- 27 III.10.G.10.c.x. Documentation that miscellaneous units are designed to prevent the accumulation of hydrogen gas  
28 levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-  
29 303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];
- 30 III.10.G.10.c.xi. Documentation that miscellaneous units are designed to prevent escape of vapors and emissions of  
31 acutely or chronically toxic (upon inhalation) EHW, for incorporation into the Administrative  
32 Record [WAC 173-303-640(5)(e), in accordance with WAC 173-303-680(2) and WAC 173-303-  
33 806(4)(i)(i)(B)];
- 34 III.10.G.10.d. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), prior to  
35 installation of equipment as identified in Permit Tables [III.10.G.A](#) and [III.10.G.B](#), not addressed in  
36 Permit Condition [III.10.G.10.c.](#), engineering information as specified below for incorporation into  
37 Operating Unit 10, Appendices 8.1 through 8.14 of this Permit. At a minimum, engineering  
38 information specified below will show the following as required pursuant to WAC 173-303-640, in  
39 accordance with WAC 173-303-680 (the information specified below will include dimensioned  
40 engineering drawings):
- 41 III.10.G.10.d.i. IQRPE Reports (specific to equipment) will include a review of design drawings, calculations, and  
42 other information as applicable, on which the certification report is based. The reports will include,  
43 but not be limited to, review of such information described below. Information (drawings,  
44 specifications, etc.) already included in Operating Unit 10, Appendix 8.0 of this Permit may be  
45 included in the report by reference and should include drawing and document numbers. The  
46 IQRPE Reports will be consistent with the information provided separately in [ii.](#) through [xiii.](#) below

- 1 and the IQRPE Reports specified in Permit Conditions [III.10.G.10.b.](#) and [III.10.G.10.c.](#) [WAC 173-  
2 303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)  
3 through (B)];
- 4 III.10.G.10.d.ii. Design drawings (Process Flow Diagrams, Piping and Instrumentation Diagrams [including  
5 pressure control systems]) specifications and other information specific to equipment (these  
6 drawings should include all equipment such as pipe, valves, fittings, pumps, instruments, etc)  
7 [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-  
8 806(4)(i)(i)(A) through (B)];
- 9 III.10.G.10.d.iii. The Permittees will provide the design criteria (references to codes and standards, load definitions,  
10 and load combinations, materials of construction, and analysis/design methodology) and typical  
11 design details for the support of the equipment [WAC 173-303-640(3)(a) and WAC 173-303-  
12 640(3)(f), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];
- 13 III.10.G.10.d.iv. A description of materials and equipment used to provide corrosion protection for external metal  
14 components in contact with soil and water, including factors affecting the potential for corrosion  
15 [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-  
16 806(4)(i)(i)(A)];
- 17 III.10.G.10.d.v. Materials selection documentation for equipment (e.g., physical and chemical tolerances) [WAC  
18 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];
- 19 III.10.G.10.d.vi. Vendor information (including, but not limited to, required performance warranties, as available),  
20 consistent with information submitted under ii. above, for equipment will be submitted for  
21 incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC  
22 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(iv)];
- 23 III.10.G.10.d.vii. Miscellaneous unit, equipment, and leak detection system instrument control logic narrative  
24 description (e.g., software functional specifications, descriptions of fail-safe conditions, etc.) [WAC  
25 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].
- 26 III.10.G.10.d.viii. System Descriptions related to equipment and system descriptions related to leak detection  
27 systems, (including instrument control logic and narrative descriptions), for incorporation into the  
28 Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC  
29 173-303-806(4)(i)(v)];
- 30 III.10.G.10.d.ix. A detailed description of how the equipment will be installed and tested [WAC 173-303-640(3)(c)  
31 through (e) and WAC 173-303-640(4)(b) and (c), in accordance with WAC 173-303-680 and WAC  
32 173-303-806(4)(i)(i)(B)];
- 33 III.10.G.10.d.x. For process monitoring, control, and leak detection system instrumentation for the WTP Unit  
34 Miscellaneous Unit Systems as identified in Permit Table [III.10.G.C.](#), a detailed description of how  
35 the process monitoring, control, and leak detection system instrumentation will be installed and  
36 tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-  
37 806(4)(c)(vi), and WAC 173-303-806(4)(i)(i)(B)];
- 38 III.10.G.10.d.xi. Mass and energy balance for projected normal operating conditions, used in developing the Piping  
39 and Instrumentation Diagrams and Process Flow Diagrams, including assumptions and formulas  
40 used to complete the mass and energy balance, so that they can be independently verified, for  
41 incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-  
42 806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];
- 43 III.10.G.10.d.xii. Documentation that miscellaneous units are designed to prevent the accumulation of hydrogen gas  
44 levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-  
45 303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)].

- 1 III.10.G.10.d.xiii. Leak detection system documentation (e.g. vendor information, etc.) consistent with information  
2 submitted under Permit Condition [III.10.G.10.c.ii.](#) and Permit Conditions [III.10.G.10.d.ii.](#), [vii.](#),  
3 [viii.](#), and [x.](#) above, will be submitted for incorporation into the Administrative Record.
- 4 III.10.G.10.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit  
5 to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), the following as specified below for  
6 incorporation into Operating Unit 10, Appendix 8.15, except Permit Condition [III.10.G.10.e.i.](#),  
7 which will be incorporated into Operating Unit 10, Chapter 6.0, of this Permit. All information  
8 provided under this permit condition must be consistent with information provided pursuant to  
9 Permit Conditions [III.10.G.10.b.](#), [c.](#), [d.](#), and [e.](#), [III.10.C.3.e.](#), and [III.10.C.11.b.](#), as approved by  
10 Ecology.
- 11 III.10.G.10.e.i. Integrity assessment program and schedule for the Pretreatment Plant Miscellaneous Unit Systems  
12 will address the conducting of periodic integrity assessments on the Pretreatment Plant  
13 Miscellaneous Unit Systems over the life of the systems, as specified in Permit Condition  
14 [III.10.G.10.b.ix.](#) and WAC 173-303-640(3)(b), in accordance with WAC 173-303-680, and  
15 descriptions of procedures for addressing problems detected during integrity assessments. The  
16 schedule must be based on past integrity assessments, age of the system, materials of construction,  
17 characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b), in accordance  
18 with WAC 173-303-680 and WAC 173-303-806(4)(i)(B)];
- 19 III.10.G.10.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so that it will  
20 detect the failure of either the primary or secondary containment structure or the presence of any  
21 release of dangerous and/or mixed waste or accumulated liquid in the secondary containment  
22 system within twenty-four (24) hours WAC 173-303-640(4)(c)(iii). Detection of a leak of at least  
23 0.1 gallons per hour within twenty-four (24) hours is defined as being able to detect a leak within  
24 twenty-four (24) hours. Any exceptions to this criteria must be approved by Ecology in accordance  
25 with WAC 173-303-680, WAC 173-303-640(4)(c)(iii), and WAC 173-303-806(4)(i)(B)];
- 26 III.10.G.10.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and  
27 accumulated liquids can be removed from the secondary containment system within twenty-four  
28 (24) hours [WAC 173-303-806(4)(i)(B)];
- 29 III.10.G.10.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices are in  
30 place to prevent spills and overflows from the Pretreatment Plant Miscellaneous Unit Systems, or  
31 containment systems, in compliance with WAC 173-303-640(5)(b)(i) through (iii), in accordance  
32 with WAC 173-303-680 [WAC 173-303-806(4)(i)(B)];
- 33 III.10.G.10.e.v. Description of procedures for investigation and repair of the Pretreatment Plant Miscellaneous Unit  
34 Systems [WAC 173-303-640(6) and WAC 173-303-640(7)(e) and (f), in accordance with WAC  
35 173-303-680, WAC 173-303-320, WAC 173-303-806(4)(a)(v), and WAC 173-303-806(4)(i)(B)];
- 36 III.10.G.10.e.vi. Updated Chapter 4.0, Narrative Descriptions, Tables and Figures as identified in Permit Tables  
37 [III.10.G.A](#) and [III.10.G.B.](#), as modified pursuant to Permit Condition [III.10.G.10.e.ix.](#), and updated  
38 to identify routinely non-accessible Pretreatment Plant Miscellaneous Unit Systems [WAC 173-  
39 303-680 and WAC 173-303-806(4)(i)(A) through (B)];
- 40 III.10.G.10.e.vii. Descriptions of procedures for management of ignitable and reactive, and incompatible dangerous  
41 and/or mixed waste, in accordance with WAC 173-303-640(9) and (10), in accordance with WAC  
42 173-303-680 and WAC 173-303-806(4)(i)(B).
- 43 III.10.G.10.e.viii. A description of the tracking system used to track dangerous and/or mixed waste generated  
44 throughout the Pretreatment Plant Miscellaneous Unit Systems, pursuant to WAC 173-303-380.
- 45 III.10.G.10.e.ix. Permit Table [III.10.G.A](#), amended as follows [WAC 173-303-680 and WAC 173-303-  
46 806(4)(i)(A) through (B)];

- 1 A. Under column 1, update and complete list of dangerous and mixed waste Pretreatment Plant  
2 Miscellaneous Unit Systems, including plant items which comprise each system (listed by item  
3 number).
- 4 B. Under column 2, update and complete system designations.
- 5 C. Under column 3, replace the 'Reserved' with the Operating Unit 10, Appendix 8.0 subsections  
6 specific to miscellaneous unit systems as listed in column 1.
- 7 D. Under column 4, update and complete list of narrative description tables and figures.
- 8 E. Under column 5, update and complete maximum operating volume for each miscellaneous unit,  
9 as applicable.
- 10 F. Permit Table [III.10.G.A.i.](#), amended as follows:
- 11 1. Under column 1, update and complete list of plant items that comprise the Pretreatment  
12 Plant Vessel Vent System (listed by item number).
- 13 2. Under column 2, update and complete designations.
- 14 3. Under column 3, replace the 'Reserved' with the Operating Unit 10, Appendix 8.0,  
15 subsections (e.g., 9.1, 9.2, etc.) specific to systems as listed in column 1.
- 16 4. Under column 4, update and complete list of narrative description tables and figures.
- 17 III.10.G.10.e.x. Permit Table [III.10.G.C.](#) will be completed for Pretreatment Plant Miscellaneous Unit System  
18 process and leak detection system monitors and instruments (to include, but not be limited to:  
19 instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH,  
20 level, humidity, and emissions) to provide the information as specified in each column heading.  
21 Process and leak detection system monitors and instruments for critical systems as specified in  
22 Operating Unit 10, Appendix 2.0 and as updated pursuant to Permit Condition [III.10.C.9.b.](#) and for  
23 operating parameters as required to comply with Permit Condition [III.10.C.3.e.iii.](#) will be  
24 addressed. Process monitors and instruments for non-waste management operations (e.g., utilities,  
25 raw chemical storage, non-contact cooling waters, etc.) are excluded from this permit condition  
26 [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];
- 27 III.10.G.10.e.xi. Supporting documentation for operating trips and expected operating range as specified in Permit  
28 Table [III.10.G.C.](#), as approved pursuant to Permit Condition [III.10.G.10.e.x.](#) [WAC 173-303-680,  
29 WAC 173-303-806(4)(i)(i)(B), WAC 173-303-806(4)(i)(iv), and WAC 173-303-806(4)(i)(v)];
- 30 III.10.G.10.e.xii. Documentation of process and leak detection instruments and monitors (as listed in Permit Table  
31 [III.10.G.C.](#)) for the Pretreatment Plant Miscellaneous Unit Systems to include, but not be limited to,  
32 the following [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-  
33 806(4)(i)(v)]:
- 34 A. Procurement Specifications
- 35 B. Location used
- 36 C. Range, precision, and accuracy
- 37 D. Detailed descriptions of calibration/functionality test procedures (e.g., method number  
38 [ASTM]) or provide a copy of manufacturer's recommended calibration procedures.
- 39 E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists,  
40 including justification for calibration, inspection and maintenance frequencies, criteria for  
41 identifying instruments found to be significantly out of calibration, and corrective action to be

- 1 taken for instruments found to be significantly out of calibration (e.g., increasing frequency of  
2 calibration, instrument replacement, etc.)
- 3 F. Equipment instrument control logic narrative description (e.g., software functional  
4 specifications, descriptions of fail-safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-  
5 806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].

**Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems**

Miscellaneous Unit System Description <sup>a</sup>	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><b><u>Waste Feed Evaporation Process System</u></b></p> <p>FEP-SEP-00001A (Waste Feed Evaporator Separator Vessel)</p> <p>FEP-SEP-00001B (Waste Feed Evaporator Separator Vessel)</p>	FEP	<p><b><u>24590-PTF</u></b></p> <p>-3PS-MEVV-TP001</p> <p>-M5-V17T-P0004001</p> <p>-M5-V17T-P0004002</p> <p>-M6-FEP-P0001</p> <p>-M6-FEP-P0002</p> <p>-M6-FEP-P0003</p> <p>-M6-FEP-P0004</p> <p>-M6-FEP-P0005</p> <p>-MVD-FEP-P0001</p> <p>-MVD-FEP-P0002</p> <p>-MVD-FEP-P0003</p> <p>-MVD-FEP-P0006</p> <p>-MVD-FEP-P0007</p> <p>-MV-FEP-P0001</p> <p>-MV-FEP-P0002</p> <p>-N1D-FEP-P0002</p> <p>-N1D-FEP-P0003</p> <p>-N1D-FEP-P0004</p> <p>-N1D-FEP-P0005</p> <p>-P1-P01T-P0001</p> <p>-P1-P01T-P0002</p> <p>-P1-P01T-P0007</p>	Section 4.1.2.2.; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.	<p>FEP-SEP-00001A = 13,359</p> <p>FEP-SEP-00001B = 13,359</p>
<p><b><u>Waste Feed Evaporation Process System (Cont.)</u></b></p> <p>FEP-COND-00001A (Waste Evaporator Primary Condenser)</p>	FEP	<p><b><u>24590-PTF</u></b></p> <p>-3PS-MEVV-TP001</p> <p>-M5-V17T-P0004001</p>	Section 4.1.2.2.; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of	N/A

**Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems**

Miscellaneous Unit System Description <sup>a</sup>	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
FEP-COND-00001B (Waste Evaporator Primary Condenser) FEP-COND-00002A (Waste Evaporator Inter-Condenser) FEP-COND-00002B (Waste Evaporator Inter-Condenser) FEP-COND-00003A (Waste Evaporator After-Condenser) FEP-COND-00003B (Waste Evaporator After -ondenser)		-M5-V17T-P0004002 -MED-FEP-P0003 -MED-FEP-P0004 -MED-FEP-P0005 -MED-FEP-P0006 -MED-FEP-P0007 -MED-FEP-P0008 -ME-FEP-COND-00001A/B -ME-FEP-COND-00002A/B -N1D-FEP-P0008 -N1D-FEP-P0009 -N1D-FEP-P0010 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0007	Operating Unit 10, Chapter 4 of this Permit.	
<u><b>Waste Feed Evaporation Process System (Cont.)</b></u> FEP-RBLR-00001A (Reboiler) FEP-RBLR-00001B (Reboiler)	FEP	<u><b>24590-PTF</b></u> -3PS-MEVV-TP001 -M5-V17T-P0004001 -M5-V17T-P0004002 -MED-FEP-P0010 -N1D-FEP-P0007 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0007	Section 4.1.2.2.; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.	N/A

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**Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems**

Miscellaneous Unit System Description <sup>a</sup>	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><b><u>Cesium Nitric Acid Recovery Process System</u></b>             CNP-EVAP-00001 (Cs Evaporator Separator Vessel)</p>	<p>CNP</p>	<p><b><u>24590-PTF</u></b>            -3PS-MEVV-TP002            -M5D-CNP-00001            -M5-V17T-P0014            -M6-CNP-P0001            -M6-CNP-P0002            -M6-CNP-P0008            -ME-CNP-EVAP-00001            -MV-CNP-P0001            -MV-CNP-P0002            -MV-CNP-P0003            -MV-CNP-P0005            -MV-CNP-P0007            -MV-CNP-P0010            -MVD-CNP-P0003            -MVD-CNP-P0010            -MWD-CNP-P0001            -N1D-CNP-P0005            -N1D-CNP-P0006            -N1D-CNP-P0009            -N1D-CNP-P0011            -P1-P01T-P0001            -P1-P01T-P0002            -P1-P01T-P0003            -P1-P01T-P0004</p>	<p>Section 4.1.2.6.; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.</p>	<p>CNP-EVAP-00001 = RESERVED</p>

**Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems**

<b>Miscellaneous Unit System Description<sup>a</sup></b>	<b>Miscellaneous Unit System Designation</b>	<b>Description Drawings</b>	<b>Narrative Description, Tables, &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>
<u><b>Cesium Nitric Acid Recovery Process System (Cont.)</b></u>  Cs Evaporator Concentrate Reboiler (CNP-HX-00001)	CNP	<u><b>24590-PTF</b></u> -3PS-MEVV-TP002 -M5D-CNP-00001 -M5-V17T-P0014 -M6-CNP-P0001 -M6-CNP-P0002 -M6-CNP-P0008 -MB-CNP-HX-00001 -ME-CNP-HX-00002 -ME-CNP-HX-00003 -ME-CNP-HX-00004 -MED-CNP-P0003 -MED-CNP-P0004 -MED-CNP-P0005 -MED-CNP-P0010 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004	Section 4.1.2.6.; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.	N/A
<u><b>Cesium Nitric Acid Recovery Process System (Cont.)</b></u>  CNP-DISTC-00001 (Cs Evaporator Nitric Acid Rectifier Column)	CNP	<u><b>24590-PTF</b></u> -M5-V17T-P0014 -M6-CNP-P0010 -N1D-CNP-P0001 -P1-P01T-P0003 -3PS-MEVV-TP002	Section 4.1.2.6.; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.	RESERVED

**Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems**

<b>Miscellaneous Unit System Description<sup>a</sup></b>	<b>Miscellaneous Unit System Designation</b>	<b>Description Drawings</b>	<b>Narrative Description, Tables, &amp; Figures</b>	<b>Maximum Capacity (gallons)</b>
<p><b><u>Cesium Nitric Acid Recovery Process System (Cont.)</u></b></p> <p>CNP-HX-00002 (Cs Evaporator Primary Condenser)</p> <p>CNP-HX-00003 (Cs Evaporator Inter-Condenser)</p> <p>CNP-HX-00004 (Cs Evaporator After-Condenser)</p>	CNP	<p><b><u>24590-PTF</u></b></p> <p>-M5-V17T-P0014</p> <p>-M5D-CNP-00001</p> <p>-M6-CNP-P0001</p> <p>-M6-CNP-P0002</p> <p>-M6-CNP-P0010</p> <p>-MB-CNP-HX-00001</p> <p>-ME-CNP-EVAP-00001</p> <p>-ME-CNP-HX-00002</p> <p>-ME-CNP-HX-00003</p> <p>-ME-CNP-HX-00004</p> <p>-N1D-CNP-P0002</p> <p>-N1D-CNP-P0003</p> <p>-N1D-CNP-P0012</p> <p>-P1-P01T-P0001</p> <p>-P1-P01T-P0002</p> <p>-P1-P01T-P0003</p> <p>-P1-P01T-P0004</p> <p>-3PS-MEVV-TP002</p>	Section 4.1.2.6.; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.	RESERVED
<p><b><u>Treated LAW Evaporation Process System</u></b></p> <p>TLP-SEP-00001 (Treated LAW Evaporator Separator Vessel)</p>	TLP	<p><b><u>24590-PTF</u></b></p> <p>-3PS-MEVV-TP001</p> <p>-M5-V17T-P0005</p> <p>-M6-TLP-P0001</p> <p>-M6-TLP-P0002</p> <p>-M6-TLP-P0003</p> <p>-MVD-TLP-P0001</p> <p>-MVD-TLP-P0002</p>	Section 4.1.2.11; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.	TLP-SEP-00001=13,359

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**Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems**

Miscellaneous Unit System Description <sup>a</sup>	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
		-MVD-TLP-P0004 -MVD-TLP-P0005 -MV-TLP-P0001 -MV-TLP-P0002 -N1D-TLP-P0001 -N1D-TLP-P0005 -N1D-TLP-P0006 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003		
<u><b>Treated LAW Evaporation Process System (Cont.)</b></u>  TLP-COND-00001 (Primary Condenser)  TLP-COND-00002 (Inter-condenser)  TLP-COND-00003 (After-condenser)	TLP	<u><b>24590-PTF</b></u> -3PS-MEVV-TP001 -M5-V17T-P0005 -M6-TLP-P0001 -M6-TLP-P0002 -M6-TLP-P0003 -MED-TLP-P0001 -MED-TLP-P0002 -MED-TLP-P0003 -MV-TLP-P0001 -MV-TLP-P0002 -N1D-TLP-P0002 -N1D-TLP-P0003 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003	Section 4.1.2.11; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.	N/A

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**Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems**

Miscellaneous Unit System Description <sup>a</sup>	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><b><u>Treated LAW Evaporation Process System (Cont.)</u></b>  TLP-RBLR-00001 (Reboiler)</p>	TLP	<p><b><u>24590-PTF</u></b> -3PS-MEVV-TP001 -M5-V17T-P0005 -MV-TLP-P0001 -MV-TLP-P0002 -N1D-TLP-P0011 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003</p>	Section 4.1.2.11; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.	N/A
<p><b>Footnotes:</b> <sup>a</sup> The Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), Pulse Jet Mixer Exhaust System (PJV), and Pretreatment Treated LAW Evaporator Separator Vessel System (TLP) specified in Permit Table <a href="#">III.10.G.A.i</a> is shared between the Pretreatment Plant Miscellaneous Unit Systems. Any references in this Permit to the individual Pretreatment Plant Miscellaneous Unit Systems are also a reference to the Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), Pulse Jet Mixer Exhaust System (PJV), and Pretreatment Treated LAW Evaporator Separator Vessel System (TLP) Systems. Any reference in this Permit to Permit Table <a href="#">III.10.G.A</a> is also a reference to Permit Table <a href="#">III.10.G.A.i</a>.</p>				

**Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems**

Description	Designation	Description Drawings	Narrative Description, Tables & Figures
<p><b><u>Pretreatment Vessel Vent Process System</u></b></p> <p>PVP-SCB-00002 (Caustic Scrubber )</p>	PVP	<p><b><u>24590-PTF</u></b></p> <p>-M5-V17T-P0021001  -M5-V17T-P0021004  -M6-PVP-P0002  -M6-PVP-P0017  -M6-PWD-P0044  -MKD-PVP-P0002  -MVD-PVP-P0001  -MV-PVP-P0002  -MV-PVP-P0004  -N1D-PVP-P0001  -N1D-PVP-P0003  -N1D-PVP-P0008  -N1D-PVP-P0009  -P1-P01T-P0003  -P1-P01T-P0004</p>	<p>Section 4.1.2.16; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.</p>
<p><b><u>Pretreatment Vessel Vent Process System (Cont.)</u></b></p> <p>PVP-HEME-00001A (HEME Filter)</p> <p>PVP-HEME-00001B (HEME Filter)</p> <p>PVP-HEME-00001C (HEME Filter)</p>	PVP	<p><b><u>24590-PTF</u></b></p> <p>-M5-V17T-P0021001  -M5-V17T-P0021004  -P1-P01T-P0001  -P1-P01T-P0002  -P1-P01T-P0003  -P1-P01T-P0004</p>	<p>Section 4.1.2.16; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.</p>

**Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems**

<b>Description</b>	<b>Designation</b>	<b>Description Drawings</b>	<b>Narrative Description, Tables &amp; Figures</b>
<b><u>Pretreatment Vessel Vent Process System (Cont.)</u></b> PVP-HX-00002 (Vessel Vent Scrubbing Liquid Cooler)	PVP	<b><u>24590-PTF</u></b> -M5-V17T-P0021001 -M6-PVP-P0017 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004	Section 4.1.2.16; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.
<b><u>Pretreatment Vessel Vent Process System (Cont.)</u></b> PVP-OXID-00001 (VOC Oxidizer)	PVP	<b><u>24590-PTF</u></b> -M5-V17T-P0021001 -M5-V17T-P0021004 -M6-PVP-P00017 -M6-PVP-P00018 -MKD-PVP-00001 -N1D-PVP-P0002 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004	Section 4.1.2.16; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.
<b><u>Pretreatment Vessel Vent Process System (Cont.)</u></b> PVP-CLR-00001 (Vessel Vent Scrubbing Liquid Cooler, Aftercooler)	PVP	<b><u>24590-PTF</u></b> -M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004	Section 4.1.2.16; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.

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**Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems**

Description	Designation	Description Drawings	Narrative Description, Tables & Figures
<p><b><u>Pretreatment Vessel Vent Process System (Cont.)</u></b></p> <p>PVP-ADBR-00001A (Vessel Vent Carbon Bed Absorber)</p> <p>PVP-ADBR-00001B (Vessel Vent Carbon Bed Absorber)</p>	PVP	<p><b><u>24590-PTF</u></b></p> <p>-M5-V17T-P0021001</p> <p>-M5-V17T-P0021004</p> <p>-P1-P01T-P0001</p> <p>-P1-P01T-P0002</p> <p>-P1-P01T-P0003</p> <p>-P1-P01T-P0004</p>	Section 4.1.2.16; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.
<p><b><u>Pretreatment Vessel Vent Process System (Cont.)</u></b></p> <p>PVP-FILT-00001 (Vessel Vent Adsorber Outlet Filter)</p>	PVP	<p><b><u>24590-PTF</u></b></p> <p>-M5-V17T-P0021001</p> <p>-M5-V17T-P0021004</p> <p>-P1-P01T-P0002</p> <p>-P1-P01T-P0003</p> <p>-P1-P01T-P0004</p>	Section 4.1.2.16; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.
<p><b><u>Process Vessel Vent System</u></b></p> <p>PVV-HEPA-00001A (Primary HEPA Filter)</p> <p>PVV-HEPA-00001B (Primary HEPA Filter)</p> <p>PVV-HEPA-00002A (Secondary HEPA Filter)</p> <p>PVV-HEPA-00002B (Secondary HEPA Filter)</p>	PVV	<p><b><u>24590-PTF</u></b></p> <p>-M5-V17T-P0021001</p> <p>-P1-P01T-P00002</p>	Section 4.1.2.16; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.
<p><b><u>Process Vessel Vent System (Cont.)</u></b></p>	PVV	<p><b><u>24590-PTF</u></b></p>	Section 4.1.2.16; Table 4-8; and Figures 4A-1,

**Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems**

<b>Description</b>	<b>Designation</b>	<b>Description Drawings</b>	<b>Narrative Description, Tables &amp; Figures</b>
PVV-FAN-00001A (Vessel Vent Exhaust Fan)  PVV-FAN-00001B (Vessel Vent Exhaust Fan)		M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004	4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.
<u><b>Process Vessel Vent System (Cont.)</b></u>  PVV Stack and associated equipment	PVV	<u><b>24590-PTF</b></u> -M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004	Section 4.1.2.16; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.
<u><b>Pretreatment Pulse Jet Mixer Exhaust Vent System</b></u>  PJV-HEPA-00001A (Primary HEPA Filter)  PJV-HEPA-00001B (Primary HEPA Filter)  PJV-HEPA-00001C (Primary HEPA Filter)  PJV-HEPA-00001D (Primary HEPA Filter)  PJV-HEPA-00001E (Primary HEPA Filter)  PJV-HEPA-00001F (Primary HEPA Filter)	PJV	<u><b>24590-PTF</b></u> -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004 -MVD-PJV-P0003 -N1D-PJV-P0001 -P1-P01T-P0001	Section 4.1.2.17; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.

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**Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems**

Description	Designation	Description Drawings	Narrative Description, Tables & Figures
PJV-HEPA-00001G (Primary HEPA Filter)			
PJV-HEPA-00002A (Secondary HEPA Filter)			
PJV-HEPA-00002B (Secondary HEPA Filter)			
PJV-HEPA-00002C (Secondary HEPA Filter)			
PJV-HEPA-00002D (Secondary HEPA Filter)			
PJV-HEPA-00002E (Secondary HEPA Filter)			
PJV-HEPA-00002F (Secondary HEPA Filter)			
<b><u>Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)</u></b>	PJV	<b><u>24590-PTF</u></b> -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004 -MVD-PJV-P0003 -N1D-PJV-P0001 -P1-P01T-P0001	Section 4.1.2.17; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.
PJV-FAN-00001A (Exhaust Fan)			
PJV-FAN-00001B (Exhaust Fan)			
PJV-FAN-00001C (Exhaust Fan)			
<b><u>Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)</u></b>	PJV	<b><u>24590-PTF</u></b> -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004 -MVD-PJV-P0003 -N1D-PJV-P0001 -P1-P01T-P0001	Section 4.1.2.17; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.
PJV-DMST-00002A (Demister)			
PJV-DMST-00002B (Demister)			
PJV-DMST-00002C (Demisters)			

**Table III.10.G.A.i – Pretreatment Plant Vessel Vent Systems Associated with Pretreatment Plant Miscellaneous Unit Systems**

<b>Description</b>	<b>Designation</b>	<b>Description Drawings</b>	<b>Narrative Description, Tables &amp; Figures</b>
<p><b><u>Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)</u></b></p> <p>PJV Stack and associated equipment</p>	PJV	<p><b>24590-PTF</b></p> <p>-M5-V17T-P0021002</p> <p>-M6-PJV-P0001</p> <p>-M6-PJV-P0002</p> <p>-M6-PJV-P0004</p> <p>-MVD-PJV-P0003</p> <p>-N1D-PJV-P0001</p> <p>-P1-P01T-P0001</p>	<p>Section 4.1.2.17; Table 4-8; and Figures 4A-1, 4A-2 and 4A-02A of Operating Unit 10, Chapter 4 of this Permit.</p>
<p><b>Footnotes:</b></p> <p><sup>a</sup> The Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), and Pulse Jet Mixer Exhaust System (PJV) specified in Permit Table <a href="#">III.10.G.A.i</a> are shared between the Pretreatment Plant Miscellaneous Unit Systems. Any references in this Permit to the individual Pretreatment Plant Miscellaneous Unit Systems are also a reference to the Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), and Pulse Jet Mixer Exhaust System (PJV) Systems. Any reference in this Permit to Permit Table <a href="#">III.10.G.A</a> is also a reference to Permit Table <a href="#">III.10.G.A.i</a>.</p>			

**Table III.10.G.B – Pretreatment Plant Miscellaneous Unit Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

<b>Sump, Bulge or Floor Drain I.D.# &amp; Room Location</b>	<b>Maximum Sump/Bulge (gallons), or Drain Line (gallons per minute) Capacity</b>	<b>Sump Type/Nominal Operating Volume (gallons)</b>	<b>Sump, Bulge or Drain Line Dimensions<sup>a</sup> (inches) &amp; Materials of Construction</b>	<b>Engineering Description (Drawings No.'s, Specification No.'s etc.)</b>
PVP-BULGE-00001 P-0105 (Vessel Vent Caustic Scrubber Transfer Pump Bulge, El. 0')	RESERVED	Dry Sump	RESERVED	<b>24590-PTF</b> -M6-PVP-P0017 -P1-P01T-P0001
PVP-BULGE-00014 P-0302(Vessel Vent Heat Exchanger Bulge, El. 56')	RESERVED	RESERVED	RESERVED	<b>24590-PTF</b> -M6-PVP-P0017
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

**Table III.10.G.C. – Pretreatment Plant Miscellaneous Unit System Process and Leak Detection Instruments and Parameters**

<b>Miscellaneous Unit System Locator and Name (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Failure State</b>	<b>Expected Range</b>	<b>Instrument Accuracy</b>	<b>Operating Trips (Description &amp; Numerical Limits)</b>	<b>Instrument Calibration Method No. and Range</b>
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**Table III.10.G.C. – Pretreatment Plant Miscellaneous Unit System Process and Leak Detection Instruments and Parameters**

Miscellaneous Unit System Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Failure State	Expected Range	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
PVP-BULGE-00001 <sup>a</sup>	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
PVP-BULGE-00014 <sup>a</sup>	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**  
<sup>a</sup>Sump locator (including P&ID designator) is located on Permit Table III.10.G.B – Pretreatment Plant Miscellaneous Unit Secondary Containment Systems Including Sumps, Bulges, and Floor Drains.

**Table III.10.G.D. – Pretreatment Plant Miscellaneous Unit Systems Estimated Emission Rates**

Chemicals	CAS Number	Emission Rates (grams /second)
RESERVED	RESERVED	RESERVED

1  
2  
3  
4

5

- 1 III.10.H LAW Vitrification System – Short Term Miscellaneous Thermal Treatment Unit-Shakedown,  
2 Demonstration Test, and Post Demonstration Test
- 3 For purposes of Permit Section [III.10.H](#), where reference is made to WAC 173-303-640, the  
4 following substitutions apply: substituting the terms “LAW Vitrification System” for “tank  
5 system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and  
6 “sub-system(s) or sub-system equipment of a LAW Vitrification System” for “component(s)” in  
7 accordance with WAC 173-303-680.
- 8 III.10.H.1. General Conditions During Shakedown, Demonstration Test, and Post-Demonstration Test for LAW  
9 Vitrification System
- 10 III.10.H.1.a. Construction and Maintenance [WAC 173-303-640, in accordance with WAC 173-303-680(2) and  
11 (3), and WAC 173-303-340].
- 12 III.10.H.1.a.i. The Permittees will construct the LAW Vitrification System (listed in Permit Tables [III.10.H.A](#) and  
13 [B.](#), as approved/modified pursuant to Permit Condition [III.10.H.5.](#)) as specified in Permit Condition  
14 [III.10.H.1.](#) and Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 9.1  
15 through 9.15 and 9.17 of this Permit, as approved pursuant to Permit Conditions [III.10.H.5.a.](#)  
16 through [d.](#), and [III.10.H.5.f.](#)
- 17 III.10.H.1.a.ii. The Permittees will construct all containment systems for the LAW Vitrification System as specified  
18 in Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 9.2 and 9.4  
19 through 9.14 of this Permit, as approved pursuant to Permit Conditions [III.10.H.5.a.](#) through [d.](#)
- 20 III.10.H.1.a.iii. The Permittees will ensure all certifications required by specialists (e.g., independent, qualified  
21 registered professional engineer, independent corrosion expert, independent, qualified installation  
22 inspector, etc.) use the following statement or equivalent pursuant to Permit Condition [III.10.C.10.](#):
- 23 “I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or  
24 certified) a portion of the design or installation of a new LAW Vitrification System or component  
25 located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector,  
26 testing for tightness, etc.), for the following LAW Vitrification System components (e.g., the venting  
27 piping, etc.), as required by the Dangerous Waste Regulations, namely, WAC 173-303-640(3)  
28 (applicable paragraphs (i.e., (a) through (g)) in accordance with WAC 173-303-680).
- 29 “I certify under penalty of law that I have personally examined and am familiar with the information  
30 submitted in this document and all attachments and that, based on my inquiry of those individuals  
31 immediately responsible for obtaining the information, I believe that the information is true,  
32 accurate, and complete. I am aware that there are significant penalties for submitting false  
33 information, including the possibility of fine and imprisonment.”
- 34 III.10.H.1.a.iv. The Permittees must ensure that proper handling procedures are adhered to in order to prevent  
35 damage to the LAW Vitrification System during installation. Prior to covering, enclosing, or placing  
36 the new LAW Vitrification System or component in use, an independent, qualified, installation  
37 inspector or an independent, qualified, registered professional engineer, either of whom is trained  
38 and experienced in the proper installation of similar systems or components, must inspect the system  
39 for the presence of any of the following items:
- 40 A. Weld breaks;

- 1 B. Punctures;
- 2 C. Scrapes of protective coatings;
- 3 D. Cracks;
- 4 E. Corrosion;
- 5 F. Other structural damage or inadequate construction/installation.

6 All discrepancies must be remedied before the LAW Vitrification System is covered, enclosed,  
7 or placed in use [WAC 173-303-640(3)(c), in accordance with WAC 173-303-680(2) and (3)].

8 III.10.H.1.a.v. For the LAW Vitrification System or components that are placed underground and that are back-  
9 filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous  
10 substance. The backfill must be installed so that it is placed completely around the LAW  
11 Vitrification System and compacted to ensure that the LAW Vitrification System is fully and  
12 uniformly supported [WAC 173-303-640(3)(d), in accordance with WAC 173-303-680(2) and (3)].

13 III.10.H.1.a.vi. The Permittees must test for tightness the LAW Vitrification System or components, prior to being  
14 covered, enclosed, or placed into use. If the LAW Vitrification System or components are found not  
15 to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the  
16 LAW Vitrification System being covered, enclosed, or placed in use [WAC 173-303-640(3)(e), in  
17 accordance with WAC 173-303-680(2) and (3)].

18 III.10.H.1.a.vii. The Permittees must ensure the LAW Vitrification System equipment is supported and protected  
19 against physical damage and excessive stress due to settlement, vibration, expansion, or contraction  
20 [WAC 173-303-640(3)(f), in accordance with WAC 173-303-680(2) and (3)].

21 III.10.H.1.a.viii. The Permittees must provide the type and degree of corrosion protection recommended by an  
22 independent corrosion expert, based on the information provided in Operating Unit 10, Appendices  
23 9.9 and 9.11 of this Permit, as approved pursuant to Permit Conditions [III.10.H.5.b.i.](#),  
24 [III.10.H.5.b.iv.](#), [III.10.H.5.b.v.](#), [III.10.H.5.c.i.](#), [III.10.H.5.c.iv.](#), [III.10.H.5.c.v.](#), [III.10.H.5.d.i.](#),  
25 [III.10.H.5.d.iv.](#), and [III.10.H.5.d.v.](#), or other corrosion protection if Ecology believes other corrosion  
26 protection is necessary to ensure the integrity of the LAW Vitrification System during use of the  
27 LAW Vitrification System. The installation of a corrosion protection system that is field fabricated  
28 must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-  
29 640(3)(g), in accordance with WAC 173-303-680(2) and (3)].

30 III.10.H.1.a.ix. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will obtain  
31 and keep on file in the WTP Unit operating record, written statements by those persons required to  
32 certify the design of the LAW Vitrification System and supervise the installation of the LAW  
33 Vitrification System, as specified in WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), in accordance  
34 with WAC 173-303-680, attesting that the LAW Vitrification System and corresponding  
35 containment system listed in Permit Tables [III.10.H.A](#) and [III.10.H.B](#), as approved/modified  
36 pursuant to Permit Condition [III.10.H.5.](#), were properly designed and installed, and that repairs, in  
37 accordance with WAC 173-303-640(3)(c) and (e) were performed [WAC 173-303-640(3)(a) and  
38 WAC 173-303-640(3)(h), in accordance with WAC 173-303-680(3)].

39 III.10.H.1.a.x. The independent LAW Vitrification System installation inspection and subsequent written  
40 statements will be certified in accordance with WAC 173-303-810(13)(a), as modified pursuant to

- 1 Permit Condition [III.10.H.1.a.iii.](#), comply with all requirements of WAC 173-303-640(3)(h) in  
2 accordance with WAC 173-303-680, and will consider, but not be limited to, the following LAW  
3 Vitrification System installation documentation:
- 4 A. Field installation report with date of installation;
  - 5 B. Approved welding procedures;
  - 6 C. Welder qualification and certifications;
  - 7 D. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical  
8 Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1; American Petroleum  
9 Institute (API) Standard 620, or Standard 650, as applicable;
  - 10 E. Tester credentials;
  - 11 F. Field inspector credentials;
  - 12 G. Field inspector reports;
  - 13 H. Field waiver reports; and
  - 14 I. Non-compliance reports and corrective action (including field waiver reports) and repair reports.
- 15 III.10.H.1.a.xi. The Permittees will ensure periodic integrity assessments are conducted on the LAW Vitrification  
16 System, listed in Permit Table [III.10.H.A](#), as approved/modified pursuant to Permit Condition  
17 [III.10.H.5.](#), over the term of this Permit in accordance with WAC 173-303-680(2) and (3) as  
18 specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program  
19 and schedule in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit  
20 Conditions [III.10.H.5.e.i.](#) and [III.10.C.5.c.](#) Results of the integrity assessments will be included in  
21 the WTP Unit operating record until ten (10) years after post-closure, or corrective action is  
22 complete and certified, whichever is later.
- 23 III.10.H.1.a.xii. The Permittees will address problems detected during the LAW Vitrification System integrity  
24 assessments specified in Permit Condition [III.10.H.1.a.xi.](#) following the integrity assessment  
25 program in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions  
26 [III.10.H.5.e.i.](#) and [III.10.C.5.c.](#)
- 27 III.10.H.1.a.xiii. All process monitors/instruments, as specified in Permit Table [III.10.H.F](#), as approved/modified  
28 pursuant to Permit Condition [III.10.H.5.](#), will be equipped with operational alarms to warn of  
29 deviation, or imminent deviation from the limits specified in Permit Table [III.10.H.F](#).
- 30 III.10.H.1.a.xiv. The Permittees will install and test all process and leak detection system monitors/instrumentation as  
31 specified in Permit Tables [III.10.H.C](#) and [III.10.H.F](#), as approved/modified pursuant to Permit  
32 Condition [III.10.H.5](#), in accordance with Operating Unit 10, Appendices 9.1, 9.2, and 9.14 of this  
33 Permit, as approved pursuant to Permit Conditions [III.10.H.5.d.x.](#) and [III.10.H.5.f.xvi.](#)
- 34 III.10.H.1.a.xv. No dangerous and/or mixed waste will be treated in the LAW Vitrification System unless the  
35 operating conditions, specified under Permit Condition [III.10.H.1.c.](#) are complied with.
- 36 III.10.H.1.a.xvi. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other materials  
37 in the LAW Vitrification System if these substances could cause the subsystem, subsystem  
38 equipment, or the containment system to rupture, leak, corrode, or otherwise fail [WAC 173-303-

- 1 640(5)(a), in accordance with WAC 173-303-680(2)]. This condition is not applicable to corrosion  
2 of LAW Vitrification System sub-system or sub-system equipment that are expected to be replaced  
3 as part of normal operations (e.g., melters).
- 4 III.10.H.1.a.xvii. The Permittees will operate the LAW Vitrification System to prevent spills and overflows using  
5 controls and practices as required under WAC 173-303-640(5)(b) described in Permit Condition  
6 [III.10.C.5](#) and Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit  
7 Condition [III.10.H.5.e.](#) [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2) and (3),  
8 and WAC 173-303-806(4)(c)(ix)].
- 9 III.10.H.1.a.xviii. For routinely non-accessible LAW Vitrification System sub-systems, as specified in Operating Unit  
10 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition [III.10.H.5.e.vi.](#), the  
11 Permittees will mark all routinely non-accessible LAW Vitrification System sub-systems access  
12 points with labels, or signs, to identify the waste contained in each LAW Vitrification System sub-  
13 system. The label, or sign, must be legible at a distance of at least fifty (50) feet, and must bear a  
14 legend which identifies the waste in a manner which adequately warns employees, emergency  
15 response personnel, and the public of the major risk(s) associated with the waste being stored or  
16 treated in the LAW Vitrification System sub-systems. For the purposes of this permit condition,  
17 “routinely non-accessible” means personnel are unable to enter these areas while waste is being  
18 managed in them [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].
- 19 III.10.H.1.a.xix. For all LAW Vitrification System sub-systems not addressed in Permit Condition [III.10.H.1.a.xviii.](#),  
20 the Permittees will mark all these LAW Vitrification System sub-systems holding dangerous and/or  
21 mixed waste with labels, or signs, to identify the waste contained in the LAW Vitrification System  
22 sub-systems. The labels, or signs, must be legible at a distance of at least fifty (50) feet, and must  
23 bear a legend which identifies the waste in a manner which adequately warns employees, emergency  
24 response personnel, and the public of the major risk(s) associated with the waste being stored or  
25 treated in the LAW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with  
26 WAC 173-303-680(2)].
- 27 III.10.H.1.a.xx. The Permittees will ensure that the secondary containment systems for the LAW Vitrification  
28 System sub-systems listed in Permit Tables [III.10.H.A.](#) and [III.10.H.B.](#), as approved/modified  
29 pursuant to Permit Condition [III.10.H.5.](#), are free of cracks or gaps to prevent any migration of  
30 dangerous and/or mixed waste or accumulated liquid out of the system to the soil, groundwater, or  
31 surface water at any time during use of the LAW Vitrification System sub-systems. Any indication  
32 that a crack or gap may exist in the containment systems will be investigated and repaired in  
33 accordance with Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit  
34 Condition [III.10.H.5.e.v.](#) [WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC  
35 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-806(4)(i)(i)(B),  
36 and WAC 173-303-320].
- 37 III.10.H.1.a.xxi. The Permittees must immediately, and safely, remove from service any LAW Vitrification System or  
38 secondary containment system which through an integrity assessment is found to be “unfit for use”  
39 as defined in WAC 173-303-040, following Permit Conditions [III.10.H.1.a.xxiii.](#), [A.](#) through [D.](#), and  
40 [F.](#) The affected LAW Vitrification System or secondary containment system must be either repaired  
41 or closed in accordance with Permit Condition [III.10.H.1.a.xxiii.E.](#) [WAC 173-303-640(7)(e) and (f),  
42 WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

1 III.10.H.1.a.xxii. An impermeable coating, as specified in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.9, 9.11, and  
2 9.12 of this Permit, as approved pursuant to Permit Condition [III.10.H.5.b.v.](#) will be maintained for  
3 all concrete containment systems and concrete portions of containment systems for each LAW  
4 Vitrification System sub-systems listed in Permit Tables [III.10.H.A](#) and [III.10.H.B](#), as  
5 approved/modified pursuant to Permit Condition [III.10.H.5](#) (concrete containment systems that do  
6 not have a liner, pursuant to WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2),  
7 and have construction joints, will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in  
8 accordance with WAC 173-303-680(2). The coating will prevent migration of any dangerous and  
9 mixed waste into the concrete. All coatings will meet the following performance standards:

- 10 A. The coating must seal the containment surface such that no cracks, seams, or other avenues  
11 through which liquid could migrate are present;
- 12 B. The coating must be of adequate thickness and strength to withstand the normal operation of  
13 equipment and personnel within the given area such that degradation or physical damage to the  
14 coating or lining can be identified and remedied before dangerous and mixed waste could  
15 migrate from the system; and
- 16 C. The coating must be compatible with the dangerous and mixed waste, treatment reagents, or  
17 other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), in  
18 accordance with WAC 173-303-680(2) and (3), and WAC 173-303-806(4)(i)(i)(A)].

19 III.10.H.1.a.xxiii. The Permittees will inspect all secondary containment systems for the LAW Vitrification System  
20 sub-systems listed in Permit Tables [III.10.H.A](#) and [III.10.H.B](#), as approved/modified pursuant to  
21 Permit Condition [III.10.H.5](#), in accordance with the Inspection Schedule specified in Operating Unit  
22 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions [III.10.H.5.e.i.](#) and  
23 [III.10.C.5.c.](#), and take the following actions if a leak or spill of dangerous and/or mixed waste is  
24 detected in these containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in  
25 accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-  
26 806(4)(i)(i)(B)]:

- 27 A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the LAW  
28 Vitrification System sub-systems or secondary containment system.
- 29 B. Determine the source of the dangerous and/or mixed waste.
- 30 C. Remove the dangerous and/or mixed waste from the containment area in accordance with WAC  
31 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed  
32 waste removed from containment areas of the LAW Vitrification System sub-systems will be, as  
33 a minimum, managed as mixed waste.
- 34 D. If the cause of the release was a spill that has not damaged the integrity of the LAW Vitrification  
35 System sub-system, the Permittees may return the LAW Vitrification System sub-system to  
36 service in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-  
37 640(7)(e)(ii). In such case, the Permittees will take action to insure the incident that caused the  
38 dangerous and/or mixed waste to enter the containment system will not reoccur [WAC 173-303-  
39 320(3)].
- 40 E. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary  
41 LAW Vitrification System into the secondary containment system, or the system is unfit for use

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1 as determined through an integrity assessment or other inspection, the Permittees will comply  
2 with the requirements of WAC 173-303-640(7) and take the following actions:

- 3 1. Close the LAW Vitrification System sub-system following procedures in WAC 173-  
4 303-640(7)(e)(i), in accordance with WAC 173-303-680 and Operating Unit 10,  
5 Chapter 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8.](#), or
- 6 2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified  
7 pursuant to Permit Condition [III.10.H.1.a.iii.](#)) the LAW Vitrification System, in  
8 accordance with Operating Unit 10, Appendix 9.18 of this Permit, as approved  
9 pursuant to Permit Condition [III.10.H.5.e.v.](#), before the LAW Vitrification System is  
10 placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f),  
11 in accordance with WAC 173-303-680].

12 F. The Permittees will document in the operating record actions/procedures taken to comply with  
13 A. through E. above as specified in WAC 173-303-640(6)(d), in accordance with WAC 173-303-  
14 680(2) and (3).

15 G. In accordance with WAC 173-303-680(2) and WAC 173-303-680 (3), the Permittees will notify  
16 and report releases to the environment to Ecology as specified in WAC 173-303-640(7)(d).

17 III.10.H.1.a.xxiv.If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water, liquids from  
18 damaged or broken pipes) cannot be removed from the secondary containment system within twenty-  
19 four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of discovery. The  
20 notification will provide the information in A, B, and C, listed below. The Permittees will provide  
21 Ecology with a written demonstration within seven (7) business days, identifying at a minimum  
22 [WAC 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-  
23 680(3) and WAC 173-303-806(4)(i)(i)(B)]:

- 24 A. Reasons for delayed removal;
- 25 B. Measures implemented to ensure continued protection of human health and the environment;
- 26 C. Current actions being taken to remove liquids from secondary containment.

27 III.10.H.1.a.xxv.All air pollution control devices and capture systems in the LAW Vitrification System will be  
28 maintained and operated at all times in a manner so as to minimize the emissions of air contaminants  
29 and to minimize process upsets. Procedures for ensuring that the air pollution control devices and  
30 capture systems in the LAW Vitrification System are properly operated and maintained so as to  
31 minimize the emission of air contaminants and process upsets will be established.

32 III.10.H.1.a.xxvi.In all future narrative permit submittals, the Permittees will include LAW Vitrification sub-system  
33 names with the sub-system designation.

34 III.10.H.1.a.xxvii.Modifications to approved design, plans, and specifications in Operating Unit 10 of this Permit for  
35 the LAW Vitrification System will be allowed only in accordance with Permit Conditions  
36 [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#), [III.10.C.9.d.](#), [III.10.C.9.e.](#), and [III.10.C.9.h.](#)

37 III.10.H.1.a.xxviii.For any portion of the LAW Vitrification System which has the potential for formation and  
38 accumulation of hydrogen gases, the Permittees will operate the portion to maintain hydrogen levels  
39 below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

- 1 III.10.H.1.a.xxix. For each LAW Vitrification System sub-system holding dangerous waste which are acutely or  
2 chronically toxic by inhalation, the Permittees will operate the system to prevent escape of vapors,  
3 fumes or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in  
4 accordance with WAC 173-303-680].
- 5 III.10.H.1.b. Performance Standards
- 6 III.10.H.1.b.i. The LAW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99%  
7 for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1),  
8 40CFR 63.1203(c)(2), in accordance with WAC 173-303-680(2)]:
- 9 RESERVED
- 10 DRE in this permit condition will be calculated in accordance with the formula given below:  
11 
$$\text{DRE} = [1 - (W_{\text{out}}/W_{\text{in}})] \times 100\%$$
  
12 Where:  
13  $W_{\text{in}}$  = mass feed-rate of one principal organic dangerous constituent (PODC) in a waste feedstream;  
14 and  
15  $W_{\text{out}}$  = mass emission rate of the same PODC present in exhaust emissions prior to release to the  
16 atmosphere.
- 17 III.10.H.1.b.ii. Particulate matter emissions from the LAW Vitrification System will not exceed 34 mg/dscm (0.015  
18 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with WAC 173-303-680(2)].
- 19 III.10.H.1.b.iii. Hydrochloric acid and chlorine gas emissions from the LAW Vitrification System will not exceed 21  
20 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-303-680(2)].
- 21 III.10.H.1.b.iv. Dioxin and Furan TEQ emissions from the LAW Vitrification System will not exceed 0.2 nanograms  
22 (ng)/dscm [40 CFR §63.1203(b)(1), in accordance with WAC 173-303-680(2)].
- 23 III.10.H.1.b.v. Mercury emissions from the LAW Vitrification System will not exceed 45 µg/dscm [40 CFR  
24 §63.1203(b)(2), in accordance with WAC 173-303-680(2)].
- 25 III.10.H.1.b.vi. Lead and cadmium emissions from the LAW Vitrification System will not exceed 120 µg/dscm,  
26 combined [40 CFR §63.1203(b)(3), in accordance with WAC 173-303-680(2)].
- 27 III.10.H.1.b.vii. Arsenic, beryllium, and chromium emissions from the LAW Vitrification System will not exceed 97  
28 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with WAC 173-303-680(2)].
- 29 III.10.H.1.b.viii. Carbon monoxide (CO) emission from the LAW Vitrification System will not exceed 100 parts per  
30 million (ppm) by volume, over an hourly rolling average (as measured and recorded by the  
31 continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-  
32 303-680(2)].
- 33 III.10.H.1.b.ix. Hydrocarbon emission from the LAW Vitrification System will not exceed 10 parts per million  
34 (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous  
35 monitoring system during demonstration testing required by this Permit), dry basis, and reported as  
36 propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC 173-303-680(2)].

- 1 III.10.H.1.b.x. If the emissions from the LAW Vitrification System exceed the emission rates listed in Permit Table  
2 [III.10.H.E](#), as approved pursuant to Permit Condition [III.10.C.11.b.](#), the Permittees will notify  
3 Ecology in accordance with Permit Condition [III.10.H.3.d.vii.](#) [WAC 173-303-680(2) and (3), and  
4 WAC 173-303-815(2)(b)(ii)].
- 5 The emission limits specified in Permit Conditions [III.10.H.1.b.i.](#) through [III.10.H.1.b.x.](#) above,  
6 will be met for the LAW Vitrification System by limiting feed-rates as specified in Permit Tables  
7 [III.10.H.D.](#) and [III.10.H.F.](#), as approved/modified pursuant to Permit Condition [III.10.H.5.](#),  
8 compliance with operating conditions specified in Permit Condition [III.10.H.1.c.](#) (except as  
9 specified in Permit Condition [III.10.H.1.b.xii.](#)), and compliance with Permit Condition  
10 [III.10.H.1.b.xi.](#)
- 11 III.10.H.1.b.xi. Treatment effectiveness, feed-rates and operating rates for dangerous and mixed waste management  
12 units contained in the LAW Building, but not included in Permit Table [III.10.H.A](#), as  
13 approved/modified pursuant to Permit Condition [III.10.H.5.](#), will be as specified in Permit Sections  
14 [III.10.D](#), [III.10.E](#), [III.10.F](#) and consistent with assumptions and basis which are reflected in  
15 Operating Unit 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition  
16 [III.10.C.11.b.](#) For the purposes of this permit condition, Operating Unit 10, Appendix 6.3.1 will be  
17 superceded by Appendix 6.4.1 upon its approval pursuant to either Permit Conditions [III.10.C.11.c.](#)  
18 or [III.10.C.11.d.](#) [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 19 III.10.H.1.b.xii. Compliance with the operating conditions specified in Permit Condition [III.10.H.1.c.](#), will be  
20 regarded as compliance with the required performance standards identified in Permit Conditions  
21 [III.10.H.1.b.i.](#) through [x.](#) However, if it is determined that during the effective period of this Permit  
22 that compliance with the operating conditions in Permit Condition [III.10.H.1.c.](#) is not sufficient to  
23 ensure compliance with the performance standards specified in Permit Conditions [III.10.H.1.b.i.](#)  
24 through [x.](#), the Permit may be modified, revoked, or reissued pursuant to Permit Conditions  
25 [III.10.C.2.e.](#) and [III.10.C.2.f.](#), or [III.10.C.2.g.](#)
- 26 III.10.H.1.c. Operating Conditions [WAC-303-670(6), in accordance with WAC 173-303-680(2) and (3)].
- 27 The Permittees will operate the LAW Vitrification System in accordance with Operating Unit 10,  
28 Chapter 4.0 of this Permit, as updated pursuant to Permit Condition [III.10.H.5.e.vi.](#), Operating Unit  
29 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition [III.10.H.5.e.](#), and  
30 Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition  
31 [III.10.H.5.f.](#), except as modified pursuant to Permit Conditions [III.10.H.1.b.xii.](#), [III.10.H.2.](#),  
32 [III.10.H.3.](#), [III.10.H.4.](#), and in accordance with the following:
- 33 III.10.H.1.c.i. The Permittees will operate the LAW Vitrification System in order to maintain the systems and  
34 process parameters listed in Permit Tables [III.10.H.C](#) and [III.10.H.F](#), as approved/modified pursuant  
35 to Permit Condition [III.10.H.5.](#), within the set-points specified in Permit Table [III.10.H.F](#).
- 36 III.10.H.1.c.ii. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.H.F](#), as  
37 approved/modified pursuant to Permit Condition [III.10.H.5.](#), to automatically cut-off and/or lock-out  
38 the dangerous and mixed waste feed to the LAW Vitrification System when the monitored operating  
39 conditions deviate from the set-points specified in Permit Table [III.10.H.F](#).
- 40 III.10.H.1.c.iii. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.H.F](#), as  
41 approved/modified pursuant to Permit Condition [III.10.H.5.](#), to automatically cut-off and/or lock-out

- 1 the dangerous and mixed waste feed to the LAW Vitrification System when all instruments specified  
2 on Permit Table [III.10.H.F](#) for measuring the monitored parameter fail or exceed its span value.
- 3 III.10.H.1.c.iv. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.H.F](#), as  
4 approved/modified pursuant to Permit Condition [III.10.H.5.](#), to automatically cut-off and/or lock out  
5 the dangerous and/or mixed waste feed to the LAW Vitrification System when any portion of the  
6 LAW Vitrification System is bypassed. The terms “bypassed” and “bypass event” as used in Permit  
7 Sections [III.10.H](#) and [III.10.I](#) will mean if any portion of the LAW Vitrification System is bypassed  
8 so that gases are not treated as during the Demonstration Test.
- 9 III.10.H.1.c.v. In the event of a malfunction of the AWFCO systems listed in Permit Table [III.10.H.F](#), as  
10 approved/modified pursuant to Permit Condition [III.10.H.5.](#), the Permittees will immediately,  
11 manually cut-off the dangerous and mixed waste feed to the LAW Vitrification System. The  
12 Permittees will not restart the dangerous and/or mixed waste feed until the problem causing the  
13 malfunction has been identified and corrected.
- 14 III.10.H.1.c.vi. The Permittees will manually cut-off the dangerous and mixed waste feed to the LAW Vitrification  
15 System when the operating conditions deviate from the limits specified in Permit Condition  
16 [III.10.H.1.c.i.](#), unless the deviation automatically activates the waste feed cut-off sequence specified  
17 in Permit Conditions [III.10.H.1.c.ii.](#), [III.10.H.1.c.iii.](#), and/or [III.10.H.1.c.iv.](#)
- 18 III.10.H.1.c.vii. If greater than thirty (30) dangerous and mixed waste feed cut-off, combined, to the LAW  
19 Vitrification System occur due to deviations from Permit Table [III.10.H.F](#), as approved/modified  
20 pursuant to Permit Condition [III.10.H.5.](#), within a sixty (60) day period, the Permittees will submit a  
21 written report to Ecology within five (5) calendar days of the thirty-first exceedence including the  
22 information specified below. These dangerous and mixed waste feed cut-offs to the LAW  
23 Vitrification System, whether automatically or manually activated, are counted if the specified set  
24 points are deviated from while dangerous waste, mixed waste, and waste residues continue to be  
25 processed in the LAW Vitrification System. A cascade event is counted at a frequency of one (1)  
26 towards the first waste feed cut-off parameter, specified on Permit Table [III.10.H.F](#), from which the  
27 set-point is deviated:
- 28 A. The parameter(s) that deviated from the set-point(s) in Permit Table [III.10.H.F](#);
- 29 B. The magnitude, dates, and duration of the deviations;
- 30 C. Results of the investigation of the cause of the deviations; and
- 31 D. Corrective measures taken to minimize future occurrences of the deviations.
- 32 III.10.H.1.c.viii. If any portion of the LAW Vitrification System is bypassed while treating dangerous and/or mixed  
33 waste it will be regarded as non-compliance with the operating conditions specified in Permit  
34 Condition [III.10.H.1.c.](#) and the performance standards specified in Permit Condition [III.10.H.1.b.](#)  
35 After such a bypass event, the Permittees will perform the following actions:
- 36 A. Investigate the cause of the bypass event;
- 37 B. Take appropriate corrective measures to minimize future bypasses;
- 38 C. Record the investigation findings and corrective measures in the operating record; and

- 1 D. Submit a written report to Ecology within five (5) days of the bypass event documenting the  
2 result of the investigation and corrective measures.
- 3 III.10.H.1.c.ix. The Permittees will control fugitive emissions from the LAW Vitrification System by maintaining  
4 the melters under negative pressure.
- 5 III.10.H.1.c.x. Compliance with the operating conditions specified in Permit Condition [III.10.H.1.c.](#) will be  
6 regarded as compliance with the required performance standards identified in Permit Condition  
7 [III.10.H.1.b.](#) However, evidence that compliance with these operating conditions is insufficient to  
8 ensure compliance with the performance standards, will justify modification, revocation, or re-  
9 issuance of this Permit, in accordance with Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#), or  
10 [III.10.C.2.g.](#)
- 11 III.10.H.1.d. Inspection Requirements [WAC 173-303-680(3)]
- 12 III.10.H.1.d.i. The Permittees will inspect the LAW Vitrification System in accordance with the Inspection  
13 Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in accordance with Permit  
14 Condition [III.10.C.5.c.](#)
- 15 III.10.H.1.d.ii. The inspection data for LAW Vitrification System will be recorded, and the records will be placed in  
16 the WTP Unit operating record for the LAW Vitrification System, in accordance with Permit  
17 Condition [III.10.C.4.](#)
- 18 III.10.H.1.d.iii. The Permittees will comply with the inspection requirements specified in Operating Unit 10,  
19 Appendix 9.15 of this Permit, as approved pursuant to Permit Condition [III.10.H.5.f.](#), and as  
20 modified by Permit Conditions [III.10.H.1.b.xii.](#), [III.10.H.2.](#), [III.10.H.3.](#), and [III.10.H.4.](#)
- 21 III.10.H.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-670(7)  
22 and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]
- 23 III.10.H.1.e.i. Upon receipt of a written request from Ecology, the Permittees will perform sampling and analysis  
24 of the dangerous and mixed waste and exhaust emissions to verify that the operating requirements  
25 established in the Permit achieve the performance standards delineated in this Permit.
- 26 III.10.H.1.e.ii. The Permittees will comply with the monitoring requirements specified in Operating Unit 10,  
27 Appendices 9.2, 9.3, 9.7, 9.13, 9.15 and 9.18 of this Permit, as approved pursuant to Permit  
28 Conditions [III.10.H.5.c.](#), [III.10.H.5.d.](#), [III.10.H.5.e.](#), and [III.10.H.5.f.](#), as modified by Permit  
29 Conditions [III.10.H.1.b.xii.](#), [III.10.H.2.](#), [III.10.H.3.](#), and [III.10.H.4.](#)
- 30 III.10.H.1.e.iii. The Permittees will operate, calibrate, and maintain the carbon monoxide and hydrocarbon  
31 continuous emission monitors (CEM) specified in this Permit in accordance with Performance  
32 Specification 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart  
33 EEE of 40 CFR Part 63, and Operating Unit 10 Appendix 9.15 of this Permit, as approved pursuant  
34 to Permit Condition [III.10.H.5.f.](#), and as modified by Permit Conditions [III.10.H.1.b.xii.](#), [III.10.H.2.](#),  
35 [III.10.H.3.](#), and [III.10.H.4.](#)
- 36 III.10.H.1.e.iv. The Permittees will operate, calibrate, and maintain the instruments specified on Permit Tables  
37 [III.10.H.C.](#) and [F](#), as approved/modified pursuant to Permit Condition [III.10.H.5.](#), in accordance with  
38 Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition  
39 [III.10.H.5.f.](#), and as modified by Permit Conditions [III.10.H.1.b.xii.](#), [III.10.H.2.](#), [III.10.H.3.](#), and  
40 [III.10.H.4.](#)

- 1 III.10.H.1.f. Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]
- 2 III.10.H.1.f.i. The Permittees will record and maintain in the WTP Unit operating record for the LAW Vitrification  
3 System, all monitoring, calibration, maintenance, test data, and inspection data compiled under the  
4 conditions of this Permit, in accordance with Permit Conditions [III.10.C.4.](#) and [III.10.C.5.](#), as  
5 modified by Permit Conditions [III.10.H.1.b.xii.](#), [III.10.H.2.](#), [III.10.H.3.](#), and [III.10.H.4.](#)
- 6 III.10.H.1.f.ii. The Permittees will record in the WTP Unit operating record the date, time, and duration of all  
7 automatic waste feed cutoffs and/or lockouts, including the triggering parameters, reason for the  
8 deviation, and recurrence of the incident. The Permittees will also record all incidents of AWFCO  
9 system function failures, including the corrective measures taken to correct the condition that caused  
10 the failure.
- 11 III.10.H.1.f.iii. The Permittees will submit to Ecology a report semi-annually the first calendar year, and annually  
12 thereafter each calendar year within ninety (90) days following the end of the year. The report will  
13 include the following information:
- 14 A. Total dangerous and mixed waste feed processing time for the LAW Vitrification System;
- 15 B. Date/Time of all LAW Vitrification System startups and shutdowns;
- 16 C. Date/Time/Duration/Cause/Corrective Action taken for all LAW Vitrification System shutdowns  
17 caused by malfunction of either process or control equipment; and
- 18 D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or mixed  
19 waste feed cut-off due to deviations from Permit Table [III.10.H.F.](#), as approved/modified  
20 pursuant to Permit Condition [III.10.H.5.](#)
- 21 III.10.H.1.f.iv. The Permittees will submit an annual report to Ecology each calendar year within ninety (90) days  
22 following the end of the year of all quarterly CEM Calibration Error and Annual CEM Performance  
23 Specification Tests conducted in accordance with Permit Condition [III.10.H.1.e.iii.](#)
- 24 III.10.H.1.g. Closure
- 25 The Permittees will close the LAW Vitrification System in accordance with Operating Unit 10,  
26 Chapter 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8.](#)
- 27 III.10.H.2. Shakedown Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-670(7), and  
28 WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)].
- 29 III.10.H.2.a. The shakedown period for the LAW Vitrification System will be conducted in accordance with  
30 Permit Condition [III.10.H.1.](#), Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant  
31 to Permit Condition [III.10.H.5.f.](#), and as modified in accordance with Permit Conditions  
32 [III.10.H.1.b.xii.](#), [III.10.H.2.](#), and [III.10.H.3.](#)
- 33 III.10.H.2.b. Duration of the Shakedown Period
- 34 III.10.H.2.b.i. The shakedown period for the LAW Vitrification System will begin with the initial introduction of  
35 dangerous waste in the LAW Vitrification System following construction and will end with the start  
36 of the demonstration test.
- 37 III.10.H.2.b.ii. The shakedown period will not exceed the following limits, as defined by hours of operation of the  
38 LAW Vitrification System with dangerous waste. The Permittees may petition Ecology for one

- 1 extension of each shakedown phase for seven hundred and twenty (720) additional operating hours  
2 in accordance with Permit modification procedures specified in Permit Conditions [III.10.C.2.e.](#) and  
3 [III.10.C.2.f.](#)
- 4 Shakedown Phase 1: 720 hours
- 5 Shakedown Phase 2: 720 hours
- 6 III.10.H.2.b.iii. Shakedown Phase 2 will not be commenced until documentation has been submitted to Ecology  
7 verifying that the LAW Vitrification System has operated at a minimum of 75% of the shakedown  
8 Phase 1 feed-rate limit for two (2) separate eight (8) consecutive hour periods with no AWFCOs.
- 9 III.10.H.2.c. Allowable Waste Feed During the Shakedown Period
- 10 III.10.H.2.c.i. The Permittees may feed the dangerous waste specified for the LAW Vitrification System on the Part  
11 A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those wastes outside the waste  
12 acceptance criteria specified in the WAP, Attachment 1, Chapter 3.0 of this Permit, as approved  
13 pursuant to Permit Condition [III.10.C.3.](#), except Permit Conditions [III.10.H.2.c.ii.](#) through [y.](#) also  
14 apply.
- 15 III.10.H.2.c.ii. The Permittees will not feed the following wastes to the LAW Vitrification System during  
16 Shakedown Phase 1:
- 17 A. Acutely toxic dangerous waste listed in WAC 173-303-081(a)(2)(a)(i).
- 18 B. Mixed waste
- 19 III.10.H.2.c.iii. The Permittees will not feed the following waste to the LAW Vitrification System during  
20 Shakedown Phase 2:
- 21 A. Mixed waste
- 22 III.10.H.2.c.iv. The feed-rates to the LAW Vitrification System will not exceed the limits in Permit Tables  
23 [III.10.H.D](#) and [III.10.H.F](#), as approved/modified pursuant to Permit Condition [III.10.H.5.](#)
- 24 III.10.H.2.c.v. The Permittees will conduct sufficient analysis of the dangerous waste treated in the LAW  
25 Vitrification System to verify that the waste feed is within the physical and chemical composition  
26 limits specified in this Permit.
- 27 III.10.H.3. Demonstration Test Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-303-670(7),  
28 and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)].
- 29 III.10.H.3.a. Demonstration Test Period
- 30 III.10.H.3.a.i. The Permittees will operate, monitor, and maintain the LAW Vitrification System as specified in  
31 Permit Condition [III.10.H.1.](#), and Operating Unit 10, Appendix 9.15 of this Permit, as approved  
32 pursuant to Permit Condition [III.10.H.5.f.](#), except as modified in accordance with Permit Conditions  
33 [III.10.H.1.b.xii.](#), and [III.10.H.3.](#)
- 34 III.10.H.3.a.ii. Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition  
35 [III.10.H.5.f.](#), will be resubmitted to Ecology for approval by the Permittees as a permit modification  
36 pursuant to Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#) at least one hundred and eighty (180)  
37 days prior to the start date of the demonstration test. The revised Demonstration Test Plan will

- 1 include applicable EPA promulgated test methods and procedures in effect at the time of the re-  
2 submittal and projected commencement and completion dates for the Demonstration Test.
- 3 III.10.H.3.a.iii. The Permittees will not commence the demonstration test period until documentation has been  
4 submitted to Ecology verifying that the LAW Vitrification System has operated at a minimum of  
5 90% of the demonstration test period feed-rate limit for a minimum of an eight (8) consecutive hours  
6 period on two (2) consecutive days.
- 7 III.10.H.3.b. Performance Standards
- 8 The Permittees will demonstrate compliance with the performance standards specified in Permit  
9 Condition [III.10.H.1.b.](#) during the Demonstration Test Period.
- 10 III.10.H.3.c. Allowable Waste Feed During the Demonstration Test Period
- 11 III.10.H.3.c.i. The Permittees may feed the dangerous waste specified for the LAW Vitrification System in Part A  
12 Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those waste outside the waste  
13 acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved  
14 pursuant to Permit Condition [III.10.C.3.](#), except Permit Conditions [III.10.H.3.c.ii.](#) through [iv.](#) also  
15 apply.
- 16 III.10.H.3.c.ii. The Permittees will not feed mixed waste to the LAW Vitrification System.
- 17 III.10.H.3.c.iii. The dangerous waste feed-rates to the LAW Vitrification System will not exceed the limits in Permit  
18 Tables [III.10.H.D](#) and [F](#), as approved/modified pursuant to Permit Condition [III.10.H.5.](#)
- 19 III.10.H.3.c.iv. The Permittees will conduct sufficient analysis of the dangerous waste treated in the LAW  
20 Vitrification System to verify that the dangerous waste is within the physical and chemical  
21 composition limits specified in this Permit.
- 22 III.10.H.3.d. Demonstration Data Submissions and Certifications
- 23 III.10.H.3.d.i. The Permittees will submit to Ecology a complete demonstration test report within one-hundred  
24 twenty (120) calendar days of completion of the Demonstration Test including all data collected  
25 during the Demonstration Test and updated Permit Tables [III.10.I.D](#), [III.10.I.E](#) and [III.10.I.F](#).
- 26 III.10.H.3.d.ii. The Permittees must submit the following information to Ecology prior to receiving Ecology's  
27 approval to commence feed of dangerous waste and mixed waste to the LAW Vitrification System:
- 28 A. The Permittees will submit a summary of data collected as required by the Demonstration Test  
29 Plan to Ecology upon completion of the Demonstration Test.
- 30 B. A certification that the Demonstration Test has been carried out in accordance with the approved  
31 Demonstration Test Plan and approved modifications within thirty (30) days of the completion  
32 of the Demonstration Test [WAC 173-303-807(8)].
- 33 C. Calculations and analytical data showing compliance with the performance standards specified  
34 in Permit Conditions [III.10.H.1.b.i](#), [III.10.H.1.b.iv](#), [III.10.H.1.b.v](#), [III.10.H.1.b.vi](#), and  
35 [III.10.H.1.b.vii](#)
- 36 D. Laboratory data QA/QC summary for the information provided in [III.10.H.3.d.ii.C](#).

- 1 III.10.H.3.d.iii. After successful completion of the Demonstration Test and receipt of Ecology's approval, the  
2 Permittees will be authorized to commence feed of dangerous waste and mixed waste to the LAW  
3 Vitrification System for the post-demonstration test period indicated in Permit Tables [III.10.H.D](#) and  
4 [F](#), as approved/modified pursuant to Permit Condition [III.10.H.5.](#), in compliance with the operating  
5 requirements specified in Permit Condition [III.10.H.1.c.](#) and within the limitations specified in  
6 Permit Condition [III.10.C.14.](#)
- 7 III.10.H.3.d.iv. RESERVED
- 8 III.10.H.3.d.v. After successful completion of the Demonstration Test, Permittees submittal of the following to  
9 Ecology and the Permittees receipt of approval of the following in writing, the Permittees will be  
10 authorized to feed dangerous waste and mixed waste to the LAW Vitrification System pursuant to  
11 Permit Section [III.10.I.](#)
- 12 A. A complete Demonstration Test Report for the LAW Vitrification System and updated Permit  
13 Tables [III.10.I.D](#), [III.10.I.E](#), and [III.10.I.F](#), as approved/modified pursuant to Permit Conditions  
14 [III.10.H.5](#) and [III.10.C.11.c](#) or [III.10.C.11.d](#). The test report will be certified in accordance with  
15 WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).
- 16 B. A Final Risk Assessment Report completed pursuant to Permit Conditions [III.10.C.11.c.](#) or  
17 [III.10.C.11.d.](#)
- 18 III.10.H.3.d.vi. If any calculations or testing results show that one or more of the performance standards listed in  
19 Permit Condition [III.10.H.1.b.](#), with the exception of Permit Condition [III.10.H.1.b.x.](#), for the LAW  
20 Vitrification System were not met during the Demonstration Test, the Permittees will perform the  
21 following actions:
- 22 A. Immediately stop dangerous and mixed waste feed to the LAW Vitrification System under the  
23 mode of operation that resulted in not meeting the performance standard(s).
- 24 B. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the  
25 performance standard(s) as specified in Permit Condition I.E.21.
- 26 C. Investigate the cause of the failure and submit a report of the investigation findings to Ecology  
27 within fifteen (15) days of discovery of not meeting the performance standard(s).
- 28 D. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance  
29 standard(s), documentation supporting a mode of operation where all performance standards  
30 listed in Permit Condition [III.10.H.1.b.](#), with the exception of Permit Condition [III.10.H.1.b.x.](#),  
31 for the LAW Vitrification System were met during the demonstration test, if any such mode was  
32 demonstrated.
- 33 E. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions  
34 [III.10.H.3.d.vi.A](#) through D above, and any additional information, Ecology may provide in  
35 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW  
36 Vitrification System and/or amend the mode of operation the Permittees are allowed to continue  
37 operations prior to Ecology approval of a compliance schedule and/or revised Demonstration  
38 Test Plan pursuant to Permit Conditions [III.10.H.3.d.vi.F](#) and [G](#).
- 39 F. If the performance standard listed in Permit Condition [III.10.H.1.b.i.](#) was not met during the  
40 Demonstration Test, the Permittees will submit within one hundred and twenty (120) days of

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- 1                   discovery of not meeting the performance standard, a revised Demonstration Test Plan (if  
2                   appropriate), and a compliance schedule for Ecology approval to address this deficiency. If a  
3                   revised Demonstration Test Plan is submitted, it will be accompanied by a request for approval  
4                   to retest as a permit modification pursuant to Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#)  
5                   The revised Demonstration Test Plan (if submitted) must include substantive changes to prevent  
6                   failure from reoccurring.
- 7                   G. If any of the performance standards listed in Permit Condition [III.10.H.1.b.](#), with the exception  
8                   of Permit Conditions [III.10.H.1.b.i.](#) or [III.10.H.1.b.x.](#), were not met during the Demonstration  
9                   Test the Permittees will submit to Ecology within one hundred twenty (120) days of discovery of  
10                  not meeting the performance standard(s), a revised Demonstration Test Plan requesting approval  
11                  to retest as a permit modification pursuant to Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#)  
12                  The revised Demonstration Test Plan must include substantive changes to prevent failure from  
13                  reoccurring.
- 14                  III.10.H.3.d.vii. If any calculations or testing results show that any emission rate for any constituent listed in Permit  
15                  Table [III.10.H.E](#), as approved pursuant to Permit Condition [III.10.C.11.b.](#), is exceeded for LAW  
16                  Vitrification System during the Demonstration Test, the Permittees will perform the following  
17                  actions:
- 18                   A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
19                   emission rate(s) as specified in Permit Condition I.E.21.
- 20                   B. Submit to Ecology additional risk information to indicate that the increased emissions impact is  
21                   offset by decreased emission impact from one or more constituents expected to be emitted at the  
22                   same time, and/or investigate the cause and impact of the exceedence of the emission rate(s) and  
23                   submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery  
24                   of exceeding the emission rate(s); and
- 25                   C. Based on the notification and any additional information, Ecology may provide, in writing,  
26                   direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification  
27                   System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to  
28                   Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#), or [III.10.C.2.g.](#) The revised Demonstration  
29                   Test Plan must include substantive changes to prevent failure from reoccurring.
- 30                  III.10.H.4. Post Demonstration Test Period [WAC 173-303-670(5), WAC 173-303-670(6), and WAC 173-303-  
31                  807(2), in accordance with WAC 173-303-680(2) and (3)]
- 32                  III.10.H.4.a. The Permittees will operate, monitor, and maintain the LAW Vitrification System as specified in  
33                  Permit Condition [III.10.H.1.](#) and Operating Unit 10, Appendix 9.15 of this Permit, as approved  
34                  pursuant to Permit Condition [III.10.H.5.](#), except as modified in accordance with Permit Conditions  
35                  [III.10.H.1.b.xii.](#), [III.10.H.3.](#), and [III.10.H.4.](#)
- 36                  III.10.H.4.b. Allowable Waste Feed During the Post-Demonstration Test Period
- 37                  III.10.H.4.b.i. The Permittees may feed the dangerous and/or mixed waste specified for the LAW Vitrification  
38                  System on the Part A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those wastes  
39                  outside the waste acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this  
40                  Permit, as approved pursuant to Permit Condition [III.10.C.3.](#), and except Permit Conditions  
41                  [III.10.H.4.b.ii.](#) and [III.10.H.4.b.iii.](#) also apply.

- 1 III.10.H.4.b.ii. The dangerous waste and mixed waste feed-rates to the LAW Vitrification System will not exceed  
2 the limits in Permit Tables [III.10.H.D](#) and [F](#), as approved/modified pursuant to Permit Condition  
3 [III.10.H.5.](#), or in Permit Condition [III.10.H.3](#)
- 4 III.10.H.4.b.iii. The Permittees will conduct sufficient analysis of the dangerous waste and mixed waste treated in  
5 LAW Vitrification System to verify that the waste feed is within the physical and chemical  
6 composition limits specified in this Permit.
- 7 III.10.H.5. Compliance Schedules
- 8 III.10.H.5.a. All information identified for submittal to Ecology in a. through f. of this compliance schedule must  
9 be signed and certified in accordance with requirements in WAC 173-303-810(12), as modified in  
10 accordance with Permit Condition [III.10.H.1.a.iii](#). [WAC 173-303-806(4)].
- 11 III.10.H.5.b. The Permittees will submit to Ecology, pursuant to Permit Condition [III. 10.C.9.f.](#), prior to  
12 construction of each secondary containment and leak detection system for the LAW Vitrification  
13 System (per level) as identified in Permit Tables [III.10.H.A](#) and [III.10.H.B](#), engineering information  
14 as specified below, for incorporation into Operating Unit 10, Appendices 9.2 , 9.4, 9.5, 9.7, 9.8, 9.9,  
15 9.11, and 9.12 of this Permit. At a minimum, engineering information specified below will show the  
16 following as described in WAC 173-303-640, in accordance with WAC 173-303-680 (the  
17 information specified below will include dimensioned engineering drawings and information on  
18 sumps and floor drains):
- 19 III.10.H.5.b.i. IQRPE Reports (specific to foundation, secondary containment, and leak detection system) will  
20 include review of design drawings, calculations, and other information on which the certification  
21 report is based and will include as applicable, but not limited to, review of such information  
22 described below. Information (drawings, specifications, etc.) already included in Operating Unit 10,  
23 Appendix 9.0 of this Permit, may be included in the report by reference and should include drawing  
24 and document numbers. IQRPE Reports will be consistent with the information separately provided  
25 in [ii.](#) through [ix.](#) below [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC  
26 173-303-806(4)(i)(i)];
- 27 III.10.H.5.b.ii. Design drawings (General Arrangement Drawings, in plan and cross sections) and specifications for  
28 the foundation, secondary containment including liner installation details, and leak detection  
29 methodology. These items should show the dimensions, volume calculations, and location of the  
30 secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks,  
31 floor drains [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a), in accordance with  
32 WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];
- 33 III.10.H.5.b.iii. The Permittees will provide the design criteria (references to codes and standards, load definitions,  
34 and load combinations, materials of construction, and analysis/design methodology) and typical  
35 design details for the support of the secondary containment system. This information will  
36 demonstrate the foundation will be capable of providing support to the secondary containment  
37 system, resistance to pressure gradients above and below the system, and capable of preventing  
38 failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), in accordance with  
39 WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];
- 40 III.10.H.5.b.iv. A description of materials and equipment used to provide corrosion protection for external metal  
41 components in contact with soil, including factors affecting the potential for corrosion [WAC 173-

- 1 303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A)  
2 through (B)];
- 3 III.10.H.5.b.v. Secondary containment/foundation, and leak detection system, materials selection documentation  
4 (including, but not limited to, concrete coatings and water stops, and liner materials) as applicable  
5 [WAC 173-303-806(4)(i)(i)(A) through (B)];
- 6 III.10.H.5.b.vi. Detailed description of how the secondary containment for the LAW Vitrification System will be  
7 installed in compliance with WAC 173-303-640(3)(c), in accordance with WAC 173-303-680 and  
8 WAC 173-303-806(4)(i)(i)(A) through (B);
- 9 III.10.H.5.b.vii. Submit Permit Tables [III.10.H.B](#) and [III.10.I.B](#) completed to provide for all secondary containment  
10 sumps and floor drains the information as specified in each column heading consistent with  
11 information to be provided in i. through vi., above;
- 12 III.10.H.5.b.viii. Documentation that secondary containment and leak detection systems will not accumulate hydrogen  
13 gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC  
14 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];
- 15 III.10.H.5.b.ix. A detailed description of how LAW Vitrification System design provides access for conducting  
16 future LAW Vitrification System integrity assessments [WAC 173-303-640(3)(b) and WAC 173-  
17 303-806(4)(i)(i)(B)].
- 18 III.10.H.5.c. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f](#), prior to  
19 installation of each sub-system as identified in Permit Table [III.10.H.A](#), engineering information as  
20 specified below, for incorporation into Operating Unit 10, Appendices 9.1 through 9.14, and 9.17 of  
21 this Permit. At a minimum, engineering information specified below will show the following, as  
22 required pursuant to WAC 173-303-640, in accordance with WAC 173-303-680 (the information  
23 specified below will include dimensioned engineering drawings):
- 24 III.10.H.5.c.i. IQRPE Reports (specific to sub-system) will include review of design drawings, calculations, and  
25 other information on which the certification report is based and will include as applicable, but not  
26 limited to, review of such information described below. Information (drawings, specifications, etc.)  
27 already included in Operating Unit 10, Appendix 9.0 of this Permit, may be included in the report by  
28 reference and should include drawing and document numbers. The IQRPE Reports will be  
29 consistent with the information separately provided in ii. through xii. below, and the IQRPE Report  
30 specified in Permit Condition [III.10.H.5.b](#). [WAC 173-303-640(3)(a), in accordance with WAC 173-  
31 303-680(2) and WAC 173-303-806(4)(i)(i)];
- 32 III.10.H.5.c.ii. Design drawings [General Arrangement Drawings in plan and cross section, Process Flow Diagrams,  
33 Piping and Instrumentation Diagrams (including pressure control systems), Mechanical Drawings,  
34 and specifications, and other information specific to subsystems (to show location and physical  
35 attributes of each subsystem)] [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2)  
36 and WAC 173-303-806(4)(i)(i)];
- 37 III.10.H.5.c.iii. Sub-system design criteria (references to codes and standards, load definitions, and load  
38 combinations, materials of construction, and analysis/design methodology) and typical design details  
39 to support the subsystems. Structural support calculations specific to off-specification, non-standard  
40 and field fabricated subsystems will be submitted for incorporation into the Administrative Record.  
41 Documentation will include but not limited to, supporting specifications, test data, treatment

- 1 effectiveness report, etc. supporting projected operational capability (e.g., WESP projected removal  
2 efficiency for individual metals, halogens, particulates, etc.) and compliance with performance  
3 standards specified in Permit Condition [III.10.H.1.b](#) [WAC 173-303-640(3)(a), in accordance with  
4 WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];
- 5 III.10.H.5.c.iv. A description of materials and equipment used to provide corrosion protection for external metal  
6 components in contact with water, including factors affecting the potential for corrosion [WAC 173-  
7 303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)  
8 through (B)];
- 9 III.10.H.5.c.v. Sub-system materials selection documentation (e.g., physical and chemical tolerances) [WAC 173-  
10 303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];
- 11 III.10.H.5.c.vi. Sub-system vendor information (including, but not limited to, required performance warranties, as  
12 available), consistent with information submitted under ii. above, will be submitted for incorporation  
13 into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2),  
14 WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];
- 15 III.10.H.5.c.vii. System descriptions related to sub-system units will be submitted for incorporation into the  
16 Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC  
17 173-303-806(4)(i)(v)];
- 18 III.10.H.5.c.viii. Mass and energy balance for normal projected operating conditions used in developing the Piping  
19 and Instrumentation Diagrams and Process Flow Diagrams, including assumptions and formulas  
20 used to complete the mass and energy balance, so that they can be independently verified for  
21 incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B),  
22 and WAC 173-303-806(4)(i)(v)];
- 23 III.10.H.5.c.ix. Detailed description of all potential LAW Vitrification System bypass events including:
- 24 A. A report which includes an analysis of credible potential bypass events and recommendations for  
25 prevention/minimization of the potential, impact, and frequency of the bypass event to include at  
26 a minimum:
- 27 1. Operating procedures
  - 28 2. Maintenance procedures
  - 29 3. Redundant equipment
  - 30 4. Redundant instrumentation
  - 31 5. Alternate equipment
  - 32 6. Alternate materials of construction
- 33 III.10.H.5.c.x. A detailed description of how the sub-systems will be installed in compliance with WAC 173-303-  
34 640(3)(c), (d), and (e), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B);
- 35 III.10.H.5.c.xi. Sub-system design to prevent escape of vapors and emissions of acutely or chronically toxic (upon  
36 inhalation) EHW, for incorporation into the Administrative Record [WAC 173-303-640(5)(e), in  
37 accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

- 1 III.10.H.5.c.xii. Documentation that sub-systems are designed to prevent the accumulation of hydrogen gases levels  
2 above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-  
3 680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)].
- 4 III.10.H.5.d. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f](#), prior to installation  
5 of equipment for each sub-system as identified in Permit Tables [III.10.H.A](#) and [III.10.H.B](#), not  
6 addressed in Permit Conditions [III.10.H.5.b](#). or [III.10.H.5.c.](#), engineering information as specified  
7 below, for incorporation into Operating Unit 10, Appendices 9.1 through 9.14 of this Permit. At a  
8 minimum, engineering information specified below will show the following as required pursuant to  
9 WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will  
10 include dimensioned engineering drawings):
- 11 III.10.H.5.d.i. IQRPE Reports (specific to sub-system equipment) will include a review of design drawings,  
12 calculations, and other information as applicable on which the certification report is based. The  
13 reports will include, but not be limited to, review of such information described below. Information  
14 (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 9.0 of this Permit,  
15 may be included in the report by reference and should include drawing and document numbers. The  
16 IQRPE Reports will be consistent with the information provided separately in [ii.](#) through [xiii.](#) below  
17 and the IQRPE Reports specified in Permit Conditions [III.10.H.5.b.](#) and [III.10.H.5.c.](#) [WAC 173-  
18 303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through  
19 (B)];
- 20 III.10.H.5.d.ii. Design drawings [Process Flow Diagrams, Piping and Instrumentation Diagrams (including pressure  
21 control systems), specifications and other information specific to equipment (these drawings should  
22 include all equipment such as pipes, valves, fittings, pumps, instruments, etc.)] [WAC 173-303-  
23 640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through  
24 (B)];
- 25 III.10.H.5.d.iii. Sub-system equipment design criteria (references to codes and standards, load definitions, and load  
26 combinations, materials of construction, and analysis/design methodology) and typical design details  
27 for the support of the sub-system equipment [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(f),  
28 in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];
- 29 III.10.H.5.d.iv. A description of materials and equipment used to provide corrosion protection for external metal  
30 components in contact with soil and water, including factors affecting the potential for corrosion  
31 [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-  
32 806(4)(i)(i)(A)];
- 33 III.10.H.5.d.v. Materials selection documentation for equipment for each sub-system (e.g., physical and chemical  
34 tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-  
35 806(4)(i)(i)(A)];
- 36 III.10.H.5.d.vi. Vendor information (including, but not limited to, required performance warranties, as available),  
37 consistent with information submitted under [ii.](#) above, for sub-system equipment will be submitted  
38 for incorporation into the Administrative Record. [WAC 173-303-640(3)(a), in accordance with  
39 WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-  
40 806(4)(i)(iv)];

- 1 III.10.H.5.d.vii. Sub-system, sub-system equipment, and leak detection system instrument control logic narrative  
2 description (e.g., software functional specifications, descriptions of fail-safe conditions, etc.) [WAC  
3 173-303-680(2), WAC 173-303-806(4)(i)(B), and WAC 173-303-806(4)(i)(v)].
- 4 III.10.H.5.d.viii. System description related to sub-system equipment, and system descriptions related to leak  
5 detection systems, (including instrument control logic and narrative descriptions), for incorporation  
6 into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(A) through (B), and  
7 WAC 173-303-806(4)(i)(v)];
- 8 III.10.H.5.d.ix. A detailed description of how the sub-system equipment will be installed and tested [WAC 173-303-  
9 640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), in accordance with WAC 173-303-680 and  
10 WAC 173-303-806(4)(i)(B)];
- 11 III.10.H.5.d.x. For process monitoring, control, and leak detection system instrumentation for the LAW  
12 Vitrification System as identified in Permit Tables [III.10.H.C.](#) and [III.10.H.F.](#), a detailed description  
13 of how the process monitoring, control, and leak detection system instrumentation, will be installed  
14 and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-  
15 806(4)(c)(vi), and WAC 173-303-806(4)(i)(B)];
- 16 III.10.H.5.d.xi. Mass and energy balance for projected normal operating conditions used in developing the Piping  
17 and Instrumentation Diagrams and Process Flow Diagrams, including assumptions and formulas  
18 used to complete the mass and energy balance, so that they can be independently verified, for  
19 incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-806(4)(i)(B),  
20 and WAC 173-303-806(4)(i)(v)];
- 21 III.10.H.5.d.xii. Documentation that sub-systems equipment are designed to prevent the accumulation of hydrogen  
22 gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC  
23 173-303-680, WAC 173-303-806(4)(i)(A), and WAC 173-303-806(4)(i)(v)];
- 24 III.10.H.5.d.xiii. Leak detection system documentation (e.g. vendor information, etc.) consistent with information  
25 submitted under Permit Condition [III.10.H.5.c.ii.](#) and Permit Conditions [III.10.H.5.d.ii.](#), [vii.](#), [viii.](#),  
26 and [x.](#) above, will be submitted for incorporation into the Administrative Record.
- 27 III.10.H.5.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit  
28 to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), the following as specified below for  
29 incorporation into Operating Unit 10, Appendix 9.18 of this Permit, except Permit Condition  
30 [III.10.H.5.e.i.](#), which will be incorporated into Operating Unit 10, Chapter 6.0 of this Permit. All  
31 information provided under this permit condition must be consistent with information provided  
32 pursuant to Permit Conditions [III.10.H.5.b.](#), [c.](#), [d.](#), [e.](#), and [f.](#), [III.10.C.3.e.](#) and [III.10.C.11.b.](#), as  
33 approved by Ecology:
- 34 III.10.H.5.e.i. Integrity assessment program and schedule for the LAW Vitrification System will address the  
35 conducting of periodic integrity assessments on the LAW Vitrification System over the life of the  
36 system, as specified in Permit Condition [III.10.H.5.b.ix.](#) and WAC 173-303-640(3)(b), in accordance  
37 with WAC 173-303-680, and descriptions of procedures for addressing problems detected during  
38 integrity assessments. The schedule must be based on past integrity assessments, age of the system,  
39 materials of construction, characteristics of the waste, and any other relevant factors [WAC 173-303-  
40 640(3)(b), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(B)].

- 1 III.10.H.5.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so that it will  
2 detect the failure of either the primary or secondary containment structure or the presence of any  
3 release of dangerous and/or mixed waste or accumulated liquid in the secondary containment system  
4 within twenty-four (24) hours [WAC 173-303-640(4)(c)(iii)]. Detection of a leak of at least 0.1  
5 gallons per hour within twenty-four (24) hours is defined as being able to detect a leak within  
6 twenty-four (24) hours. Any exceptions to this criteria must be approved by Ecology in accordance  
7 with WAC 173-303-680, WAC 173-303-640(4)(c)(iii), and WAC 173-303-806(4)(i)(i)(b).
- 8 III.10.H.5.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and  
9 accumulated liquids can be removed from the secondary containment system within twenty-four (24)  
10 hours [WAC 173-303-806(4)(i)(i)(B)].
- 11 III.10.H.5.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices are in place  
12 to prevent spills and overflows from the LAW Vitrification System or containment systems in  
13 compliance with WAC 173-303-640(5)(b)(i) through (iii), in accordance with WAC 173-303-680  
14 and WAC 173-303-806(4)(i)(i)(B);
- 15 III.10.H.5.e.v. Description of procedures for investigation and repair of the LAW Vitrification System [WAC 173-  
16 303-640(6) and WAC 173-303-640(7)(e) and (f), in accordance with WAC 173-303-680, WAC 173-  
17 303-320, WAC 173-303-806(4)(a)(v), and WAC 173-303-806(4)(a)(ii)(B)].
- 18 III.10.H.5.e.vi. Updated Chapter 4.0, Narrative Description, Tables and Figures as identified in Permit Tables  
19 [III.10.H.A](#) and [III.10.H.B](#), as modified pursuant to Permit Condition [III.10.H.5.e.x](#). and updated to  
20 identify routinely non-accessible LAW Vitrification sub-systems.
- 21 III.10.H.5.e.vii. Description of procedures for management of ignitable and reactive, and incompatible dangerous  
22 and/or mixed waste as specified in WAC 173-303-640(9) and (10), in accordance with WAC 173-  
23 303-680 and WAC 173-303-806(4)(i)(i)(B).
- 24 III.10.H.5.e.viii. A description of the tracking system used to track dangerous and/or mixed waste generated  
25 throughout the LAW Vitrification system, pursuant to WAC 173-303-380.
- 26 III.10.H.5.e.ix. Permit Tables [III.10.H.C](#) and [III.10.I.C](#) will be completed for LAW Vitrification System process and  
27 leak detection system monitors and instruments (to include, but not be limited to: instruments and  
28 monitors measuring and/or controlling flow, pressure, temperature, density, pH, level, humidity, and  
29 emissions) to provide the information as specified in each column heading. Process and leak  
30 detection system monitors and instruments for critical systems as specified in Operating Unit 10,  
31 Appendix 2.0 and as updated pursuant to Permit Condition [III.10.C.9.b](#), and for operating  
32 parameters as required to comply with Permit Condition [III.10.C.3.e.iii](#). will be addressed. Process  
33 monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage,  
34 non-contact cooling waters, etc.) are excluded from this permit condition [WAC 173-303-680, WAC  
35 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];
- 36 III.10.H.5.e.x. Permit Tables [III.10.H.A](#) and [III.10.I.A](#) amended as follows [WAC 173-303-680 and WAC 173-303-  
37 806(4)(i)(i)(A) through (B)]:
- 38 A. Under column 1, update and complete list of dangerous and mixed waste LAW Vitrification  
39 System sub-systems, including plant items that comprise each system (listed by item number).
- 40 B. Under column 2, update and complete system designations.

1 C. Under column 3, replace the ‘Reserved’ with Operating Unit 10, Appendix 9.0 subsections (e.g.,  
2 9.1, 9.2, etc.) designated in Permit Conditions [III.10.H.5.b.](#), [c.](#), and [d.](#) specific to LAW  
3 Vitrification System sub-system as listed in column 1.

4 D. Under column 4, update and complete list of narrative description, tables, and figures.

5 III.10.H.5.f. One hundred and eighty (180) days prior to initial receipt of dangerous and/or mixed waste in the  
6 WTP Unit, the Permittees will submit for review and receive approval for incorporation into  
7 Operating Unit 10, Appendix 9.15 of this Permit, a Demonstration Test Plan for the LAW  
8 Vitrification System to demonstrate that the LAW Vitrification Systems meets the performance  
9 standards specified in Permit Condition [III.10.H.1.b.](#) In order to incorporate the Demonstration Test  
10 Plan for the LAW Vitrification System into Operating Unit 10, Appendix 9.15, Permit Condition  
11 [III.10.C.2.g.](#) process will be followed. The Demonstration Test Plan will include, but not be limited  
12 to, the following information. The Demonstration Test Plan will also be consistent with the  
13 information provided pursuant to Permit Conditions [III.10.H.5.b.](#), [c.](#), [d.](#), and [e.](#), [III.10.C.3.e.](#), and  
14 [III.10.C.11.b.](#), as approved by Ecology and consistent with the schedule described in Operating Unit  
15 10, Appendix 1.0 of this Permit. The documentation required pursuant to Permit Condition  
16 [III.10.H.5.f.x.](#), in addition to being incorporated into Operating Unit 10, Appendix 9.15, will be  
17 incorporated by reference in Operating Unit 10, Chapter 6.0 of this Permit.

18 *Notes: (1) The following should be consulted to prepare this Demonstration Test Plan: “Guidance*  
19 *on Setting Permit Conditions and Reporting Trial Burn Results Volume II of the Hazardous Waste*  
20 *Incineration Guidance Series,” (EPA/625/6-89/019) and Risk Burn Guidance For Hazardous Waste*  
21 *Combustion Facilities,” (EPA-R-01-001, July 2001), WAC 173-303-807(2), WAC 173-303-670(5),*  
22 *WAC-173-303-670(6), 40 CFR §63.1207(f)(2), 40 CFR §63.1209, and Appendix to 40 CFR Part 63*  
23 *EEE.*

24 *(2) Cross-referencing to the information provided pursuant to permit Conditions [III.H.5.b.](#), [c.](#), [d.](#), [e.](#),*  
25 *and [III.10.C.3.e.v.](#), as approved by Ecology, that are redundant to elements of the Demonstration*  
26 *Test Plan for the LAW Vitrification System is acceptable.*

27 III.10.H.5.f.i. Analysis of each feed-stream to be fed during the demonstration test, including dangerous waste,  
28 glass formers and reductants, process streams (e.g., volumes of air leakage including control air,  
29 process air, steam, sparge bubbler air, air in-leakage from melter cave, and gases from LAW  
30 Vitrification Vessel Ventilation System, process water, etc.) that includes:

31 A. Levels of ash, metals, total chlorine (organic and inorganic), other halogens and radionuclide  
32 surrogates;

33 B. Description of the physical form of the feed-streams;

34 C. An identification and quantification of organics that are present in the feed-stream, including  
35 constituents proposed for DRE demonstration;

36 A comparison of the proposed demonstration test feed streams to the mixed waste feed envelopes to  
37 be processed in the melters must be provided that documents that the proposed demonstration test  
38 feed streams will serve as worst case surrogates for organic destruction, formation of products of  
39 incomplete oxidation, and metals, total chlorine (organic and inorganic), other halogens, particulate  
40 formation, and radionuclides.

- 1 III.10.H.5.f.ii. Specification of trial principal organic dangerous constituents (PODCs) for which destruction and  
2 removal efficiencies are proposed to be calculated during the demonstration test and for inclusion in  
3 Permit Conditions [III.10.H.1.b.i.](#) and [III.10.I.1.b.i.](#) These trial PODCs will be specified based on  
4 destructibility, concentration or mass in the waste and the dangerous waste constituents or  
5 constituents in WAC 173-303-9905;
- 6 III.10.H.5.f.iii. A description of the blending procedures, prior to introducing the feed-streams into the melter,  
7 including analysis of the materials prior to blending, and blending ratios;
- 8 III.10.H.5.f.iv. A description of how the surrogate feeds are to be introduced for the demonstration. This description  
9 should clearly identify the differences and justify how any of differences would impact the surrogate  
10 feed introduction as representative of how mixed waste feeds will be introduced;
- 11 III.10.H.5.f.v. A detailed engineering description of the LAW Vitrification System, including:  
12
- 13 A. Manufacturer's name and model number for each sub-system;
  - 14 B. Design capacity of each sub-system including documentation (engineering calculations,  
15 manufacturer/vendor specifications, operating data, etc.) supporting projected operational  
16 efficiencies (e.g., WESP projected removal efficiency for individual metals, halogens,  
17 particulates, etc.) and compliance with performance standards specified in Permit Condition  
[III.10.H.1.b.](#);
  - 18 C. Detailed scaled engineering drawings, including Process Flow Diagrams, Piping and  
19 Instrumentation Diagrams, Vessel Drawings (plan, and elevation with cross sections) and  
20 General Arrangement Drawings;
  - 21 D. Process Engineering Descriptions;
  - 22 E. Mass and energy balance for each projected operating condition and each demonstration test  
23 condition, including assumptions and formulas used to complete the mass and energy balance, so  
24 that they can be independently verified for incorporation into the Administrative Record;
  - 25 F. Engineering Specifications/data sheets (materials of construction, physical and chemical  
26 tolerances of equipment, and fan curves);
  - 27 G. Detailed Description of Automatic Waste Feed Cutoff System addressing critical operating  
28 parameters for all performance standards specified in Permit Condition [III.10.H.1.b.](#);
  - 29 H. Documentation to support compliance with performance standards specified in Permit Condition  
30 [III.10.H.1.b.](#), including engineering calculations, test data, and manufacturer/vendor's  
31 warranties, etc.;
  - 32 I. Detailed description of the design, operation, and maintenance practices for air pollution control  
33 system;
  - 34 J. Detailed description of the design, operation, and maintenance practices of any stack gas  
35 monitoring and pollution control monitoring system;
  - 36 K. Documentation based on current WTP Unit design either confirming the Permittees'  
37 demonstration that it is not technically appropriate to correct standards listed in Permit  
38 Conditions [III.10.H.1.b.ii.](#) through [III.10.H.1.b.ix.](#) to seven (7) percent oxygen, or a request,

pursuant to Permit Conditions [III.10.C.9.e.](#) and [III.10.C.9.f.](#), to update Permit Conditions [III.10.H.1.b.ii.](#) through [III.10.H.1.b.ix.](#), [III.10.I.b.ii.](#) through [III.10.I.b.ix.](#), [III.10.I.1.e.iii.](#), and [III.10.H.1.e.iii.](#), Permit Tables [III.10.H.C.](#), [III.10.H.F.](#), [III.10.I.C.](#), [III.10.I.F.](#) and Operating Unit 10, Appendix 9.0 to reflect the addition of an oxygen monitor and the correction of the standards to seven percent (7%) oxygen.

- III.10.H.5.f.vi. Detailed description of sampling and monitoring procedures including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis including, but not limited to:
- A. A short summary narrative description of each stack sample method should be included within the main body of the demonstration test plan, which references an appendix to the plan that would include for each sampling train: (1) detailed sample method procedures, (2) sampling train configuration schematic, (3) sampling recovery flow sheet, (4) detailed analytical method procedures, and (5) sampling preparation and analysis flow sheet. The detailed procedures should clearly flag where the method has provided decision points (e.g., choices of equipment materials of construction, choices of clean-up procedures or whether additional clean-up procedures will be incorporated, whether pretest surveys or laboratory validation work will be performed, enhancements to train to accommodate high moisture content in stack gas, etc.) and what is being proposed along with the basis for the decision.
  - B. A short summary narrative description of the feed and residue sampling methods should be included within the main body of the demonstration test plan, which references an appendix that would include for each sample type: (1) detailed sample method procedures, (2) sampling recovery/compositing procedures, and (3) detailed analytical method procedures. The detailed procedures should clearly flag where the method has provided decision points (e.g., choices of equipment materials of construction, choices of clean-up procedures or whether additional clean-up procedures will be incorporated, whether pretest surveys or laboratory validation work will be performed, etc.) and what is being proposed along with the basis for the decision
- III.10.H.5.f.vii. A detailed test schedule for each condition for which the demonstration test is planned, including projected date(s), duration, quantity of dangerous waste to be fed, and other relevant factors;
- III.10.H.5.f.viii. A detailed test protocol including, for each test condition, the ranges of feed-rate for each feed system, and all other relevant parameters that may affect the ability of the LAW Vitrification System to meet performance standards specified in Permit Condition [III.10.H.1.b.](#);
- III.10.H.5.f.ix. A detailed description of planned operating conditions for each demonstration test condition, including operating conditions for shakedown, demonstration test, post-demonstration test and normal operations. This information will also include submittal of Permit Tables [III.10.H.D.](#), [III.10.H.F.](#), [III.10.I.D.](#), and [III.10.I.F.](#) completed with the information as specified in each column heading for each LAW Vitrification System waste feed cutoff parameter and submittal of supporting documentation for Permit Tables [III.10.H.D.](#), [III.10.H.F.](#), [III.10.I.D.](#), and [III.10.I.F.](#) set-point values;
- III.10.H.5.f.x. The test conditions proposed must demonstrate meeting the performance standards specified in Permit Condition [III.10.H.1.b.](#) with the simultaneous operation of both melters at capacity and input from the LAW Vitrification Vessel Ventilation System at capacity to simulate maximum loading to the LAW Vitrification System off-gas treatment system and to establish the corresponding operating parameter ranges. To the extent that operation of one (1) melter or two (2) melters can not be

- 1                   sustained within the operating parameter range established at this maximum load, additional  
2                   demonstration test conditions must be included in the plan and performed to establish operating  
3                   parameter ranges for each proposed operating mode while demonstrating meeting the performance  
4                   standards specified in Permit Condition [III.10.H.1.b.](#);
- 5   III.10.H.5.f.xi. Detailed description of procedures for start-up and shutdown of waste feed and controlling emissions  
6                   in the event of an equipment malfunction, including off-normal and emergency shutdown  
7                   procedures;
- 8   III.10.H.5.f.xii. A calculation of waste residence time;
- 9   III.10.H.5.f.xiii. Any request to extrapolate metal feed-rate limits from Demonstration Test levels must include:
- 10                   A. A description of the extrapolation methodology and rationale for how the approach ensures  
11                   compliance with the performance standards as specified in Permit Condition [III.10.H.1.b.](#)
- 12                   B. Documentation of the historical range of normal metal feed-rates for each feedstream.
- 13                   C. Documentation that the level of spiking recommended during the demonstration test will mask  
14                   sampling and analysis imprecision and inaccuracy to the extent that extrapolation of feed-rates  
15                   and emission rates from the Demonstration Test data will be as accurate and precise as if full  
16                   spiking were used.
- 17   III.10.H.5.f.xiv. Documentation of the expected levels of constituents in LAW Vitrification System input streams  
18                   including, but not limited to, waste feed, glass former and reactants, control air, process air, steam,  
19                   sparge bubbler air, air in-Leakage from melter cave, gases from LAW Vitrification Vessel  
20                   Ventilation System, and process water.
- 21   III.10.H.5.f.xv. Documentation justifying the duration of the conditioning required to ensure the LAW Vitrification  
22                   System had achieved steady-state operations under Demonstration Test operating conditions.
- 23   III.10.H.5.f.xvi. Documentation of LAW Vitrification System process and leak detection system instruments and  
24                   monitors as listed on Permit Tables [III.10.H.C](#), [III.10.H.F](#), [III.10.I.C](#), and [III.10.I.F](#) to include:
- 25                   A. Procurement specifications;
- 26                   B. Location used;
- 27                   C. Range, precision, and accuracy;
- 28                   D. Detailed descriptions of calibration/functionality test procedures (either method number ASTM)  
29                   or provide a copy of manufacturer's recommended calibration procedures;
- 30                   E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists,  
31                   including justification for calibration, inspection and maintenance frequencies, criteria for  
32                   identifying instruments found to be significantly out of calibration, and corrective action to be  
33                   taken for instruments found to be significantly out of calibration (e.g., increasing frequency of  
34                   calibration, instrument replacement, etc.);
- 35                   F. Equipment instrument control logic narrative description (e.g., software functional  
36                   specifications, descriptions of fail safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-  
37                   806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].

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1 III.10.H.5.f.xvii. Outline of demonstration test report.

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**Table III.10.H.A - LAW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables and Figures</b>
<p><b><u>LAW Melter Process System</u></b></p> <p>LMP-MLTR-00001 (LAW Melter 1)</p> <p>LMP-MLTR-00002 (LAW Melter 2)</p>	LMP	<p><b><u>24590-LAW</u></b></p> <p>-P1-P01T-P0007</p> <p>-P1-P01T-P0002</p> <p>-P1-P01T-P0009</p>	<p>Section 4.1.3.2, Table 4-8, and Figures 4A-1, 4A-3 and 4A-21 in Operating Unit 10, Chapter 4.0 of this Permit.</p>
<p><b><u>LAW Primary Offgas Process System</u></b></p> <p>LOP-FCLR-00001 (Melter 1 Primary Film Cooler)</p> <p>LOP-FCLR-00002 (Melter 1 Standby Film Cooler No. 2)</p> <p>LOP-FCLR-00003 (Melter 2 Primary Film Cooler)</p> <p>LOP-FCLR-00004 (Melter 2 Standby Film Cooler)</p>	LOP	<p><b><u>24590-LAW</u></b></p> <p>-P1-P01T-P0002</p> <p>-P1-P01T-P0007</p> <p>-P1-P01T-P0009</p> <p>-M6-LOP-P0001</p> <p>-M6-LOP-P0002</p>	<p>Section 4.1.3.3, Table 4-8, and Figures 4A-1, 4A-3 and 4A-21 in Operating Unit 10, Chapter 4.0 of this Permit.</p>
<p><b><u>LAW Primary Offgas Process System (Cont.)</u></b></p> <p>LOP-SCB-00001 (Melter 1 SBS)</p> <p>LOP-SCB-00002 (Melter 2 SBS)</p>	LOP	<p><b><u>24590-LAW</u></b></p> <p>-M5-V17T-P0007</p> <p>-M5-V17T-P0008</p> <p>-M6-LOP-P0001</p> <p>-M6-LOP-P0002</p> <p>-MK-LOP-P0001001</p> <p>-MK-LOP-P0001002</p>	<p>Section 4.1.3.3, Table 4-8, and Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.</p>

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**Table III.10.H.A - LAW Vitrification System Description**

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
		-MK-LOP-P0001003 -MKD-LOP-P0008 -NID-LOP-P0001 -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0010	
<p><b><u>LAW Primary Offgas Process System (Cont.)</u></b></p> <p>LOP-WESP-00001 (Melter 1 WESP)</p> <p>LOP-WESP-00002 (Melter 2 WESP)</p>	LOP	<p><b><u>24590-LAW</u></b></p> <p>-M5-V17T-P0007                      -M5-V17T-P0008                      -M6-LOP-P0001                      -M6-LOP-P0002                      -NID-LOP-P0003                      -P1-P01T-P0002                      -P1-P01T-P0007                      -P1-P01T-P0011                      24590-WTP-3PS-MKE0-TP001</p>	Section 4.1.3.3, Table 4-8, and Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.
<p><b><u>LAW Secondary Offgas/Vessel Vent Process System</u></b></p> <p>LVP-HEPA-00001A (HEPA Filter)</p> <p>LVP-HEPA-00001B (HEPA Filter)</p> <p>LVP-HEPA-00002A (HEPA Filter)</p>	LVP	<p><b><u>24590-LAW</u></b></p> <p>-M5-V17T-P0010                      -M6-LVP-P0003</p>	Section 4.1.3.3, Table 4-8, Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.

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**Table III.10.H.A - LAW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables and Figures</b>
LVP-HEPA-00002B (HEPA Filter) LVP-HEPA-00003A (HEPA Filter)			
<b><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></b> LVP-SCO-00001 (Selective Catalytic Oxidizer – located on LVP-SKID-00002)	LVP	RESERVED	Section 4.1.3.3, Table 4-8, Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.
<b><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></b> LVP-SCR-00001 (Selective Catalytic Reduction Unit – located on LVP-SKID-00002)	LVP	RESERVED	Section 4.1.3.3, Table 4-8, and Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.
<b><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></b> LVP-ADBR-00001A (Offgas Mercury Adsorber – located on LVP-SKID-00001) LVP-ADBR-00001B (Offgas Mercury Adsorber – located on LVP-SKID-00001)	LVP	RESERVED	Section 4.1.3.3, Table 4-8, and Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.

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**Table III.10.H.A - LAW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables and Figures</b>
<p><b><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></b></p> <p>LVP-SCB-00001 (LAW Melter Offgas Caustic Scrubber)</p>	LVP	<p><b><u>24590-LAW</u></b> -P1-P01T-P0004 -P1-P01T-P0009 -M6-LVP-P0002</p>	Section 4.1.3.3, Table 4-8, and Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.
<p><b><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></b></p> <p>LVP-HTR-00001A (Electric Heater)</p> <p>LVP-HTR-00001B (Electric Heater)</p> <p>LVP-HTR-00002 (Electric Heater – located on LVP-SKID-00002)</p>	LVP	<p><b><u>24590-LAW</u></b> -M5-V17T-P0010 -M6-LVP-P0001 -M6-LVP-P0005</p>	Section 4.1.3.3, Table 4-8, and Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.
<p><b><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></b></p> <p>LVP-HX-00001 (Heat Exchanger – located on LVP-SKID-00002)</p>	LVP	RESERVED	Section 4.1.3.3, Table 4-8, and Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.
<p><b><u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u></b></p>	LVP	<p><b><u>24590-LAW</u></b> -M5-V17T-P0010</p>	Section 4.1.3.3, Table 4-8, and Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0

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**Table III.10.H.A - LAW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables and Figures</b>
LVP-EXHR-00001A (Offgas Exhauster) LVP-EXHR-00001B (Offgas Exhauster) LVP-EXHR-00001C (Offgas Exhauster)		-M6-LVP-P0001	of this Permit.
<u><b>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</b></u>  LAW Stack	LVP	<u><b>24590-LAW</b></u> -M5-V17T-P0011 -M6-LVP-P0002	Section 4.1.3.3, and Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.

**Table III.10.H.B - LAW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains**

<b>Sump/Floor Drain I.D.# &amp; Room Location</b>	<b>Maximum Sump Capacity (gallons)</b>	<b>Sump Dimensions<sup>a</sup> (feet) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>
RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

**Table III.10.H.C - LAW Vitrification System Process and Leak Detection System Instruments and Parameters**

<b>Sub-system Locator and Name (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Failure State</b>	<b>Expected Range</b>	<b>Instrument Accuracy</b>	<b>Instrument Calibration Method No. and Range</b>
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

**Table III.10.H.D - Maximum Feed-rates to LAW Vitrification System (RESERVED)**

<b>Description of Waste</b>	<b>Shakedown 1 and Post Demonstration Test</b>	<b>Shakedown 2 and Demonstration Test</b>

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**Table III.10.H.D - Maximum Feed-rates to LAW Vitrification System (RESERVED)**

<b>Description of Waste</b>	<b>Shakedown 1 and Post Demonstration Test</b>	<b>Shakedown 2 and Demonstration Test</b>
Dangerous and Mixed Waste Feed-rate	RESERVED	RESERVED
Total Chlorine/Chloride Feed-rate	RESERVED	RESERVED
Total Metal Feed-rates	RESERVED	RESERVED
Total Ash Feed-rate	RESERVED	RESERVED

1

**Table III.10.H.E - LAW Vitrification System Estimated Emission Rates (RESERVED)**

<b>Chemicals</b>	<b>CAS Number</b>	<b>Emission Rates (grams /second)</b>
RESERVED	RESERVED	RESERVED

1

**TABLE III.10.H.F - LAW Vitrification System Waste Feed Cutoff Parameters\* <sup>1</sup> (RESERVED)**

<b>Sub-system Designation</b>	<b>Instrument Tag Number</b>	<b>Parameter Description</b>	<b>Setpoints During Shakedown 1 and Post Demonstration Test</b>	<b>Setpoints During Shakedown 2 and Demonstration Test</b>
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**

\* A continuous monitoring system will be used as defined in Permit Section [III.10.C.1](#).

<sup>1</sup> Maximum Feed-rate will be set based on not exceeding any of the constituent (e.g., ash, metals, and chlorine/chloride) feed limits specified on Table [III.10.H.D](#). of this Permit.

**III.10.I LAW Vitrification System – Long Term Miscellaneous Thermal Treatment Unit**

For purposes of Permit Section [III.10.I](#), where reference is made to WAC 173-303-640, the following substitutions apply: substitute the terms “LAW Vitrification System” for “tank system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and “sub-system(s) or sub-system equipment of a LAW Vitrification System” for “component(s),” in accordance with WAC 173-303-680.

**III.10.I.1 Requirements For LAW Vitrification System Beginning Normal Operation**

Prior to commencing normal operations provided in Permit Section [III.10.I](#), all requirements in Permit Section [III.10.H](#) will have been met by the Permittees and approved by Ecology, including the following: The LAW Vitrification System Demonstration Test results and the revised Final Risk Assessment provided for in Permit Condition [III.10.C.11.c.](#) or [III.10.C.11.d.](#) and Permit Section [III.10.H](#), will have been evaluated and approved by Ecology, Permit Tables [III.10.I.D](#) and [F](#), as approved/modified pursuant to Permit Condition [III.10.H.5.](#), will have been completed, submitted and approved pursuant to Permit Condition [III.10.H.3.d.v.](#) and Permit Table [III.10.I.E](#), as approved/modified pursuant to Permit Condition [III.10.H.5](#), will have been completed, submitted and approved pursuant to Permit Condition [III.10.C.11.c.](#) or [d.](#)

**III.10.I.1.a.** Construction and Maintenance [WAC 173-303-640, in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-340].

**III.10.I.1.a.i.** The Permittees will maintain the design and construction of the LAW Vitrification System as specified in Permit Condition [III.10.I.1.](#), Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 9.1 through 9.17 of this Permit, as approved pursuant to Permit Conditions [III.10.H.5.a.](#) through [d.](#) and [III.10.H.5.f.](#)

**III.10.I.1.a.ii.** The Permittees will maintain the design and construction of all containment systems for the LAW Vitrification System, as specified in Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 9.2 and 9.4 through 9.14 of this Permit, as approved pursuant to Permit Conditions [III.10.H.5.a.](#) through [d.](#)

**III.10.I.1.a.iii.** Modifications to approved design, plans, and specifications in Operating Unit 10 of this Permit for the LAW Vitrification System will be allowed only in accordance with Permit Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#), [III.10.C.9.d.](#), [e.](#), and [h.](#)

**III.10.I.1.a.iv.** The Permittees will ensure all certifications required by specialists (e.g., independent, qualified, registered professional engineer; registered professional engineer; independent corrosion expert; independent, qualified installation inspector; installation inspector; etc.) use the following statement or equivalent pursuant to Permit Condition [III.10.C.10](#):

“I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new LAW Vitrification system or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector, testing for tightness, etc.), for the following LAW Vitrification System components (e.g., the venting piping, etc.), as required by the Dangerous Waste Regulations, namely, WAC 173-303-640(3) (applicable paragraphs [i.e., (a) through (g)], in accordance with WAC 173-303-680.

- 1 “I certify under penalty of law that I have personally examined and am familiar with the information  
2 submitted in this document and all attachments and that, based on my inquiry of those individuals  
3 immediately responsible for obtaining the information, I believe that the information is true,  
4 accurate, and complete. I am aware that there are significant penalties for submitting false  
5 information, including the possibility of fine and imprisonment.”
- 6 III.10.I.1.a.v. The Permittees will ensure periodic integrity assessments are conducted on the LAW Vitrification  
7 System listed in Permit Table [III.10.I.A](#), as approved/modified pursuant to Permit Condition  
8 [III.10.H.5](#), over the term of this Permit in accordance with WAC 173-303-680(2) and (3) as specified  
9 in WAC 173-303-640(3)(b), following the description of the integrity assessment program and  
10 schedule in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions  
11 [III.10.H.5.e.i.](#) and [III.10.C.5.c.](#) Results of the integrity assessments will be included in the WTP Unit  
12 operating record until ten (10) years after post closure, or corrective action is complete and certified,  
13 whichever is later.
- 14 III.10.I.1.a.vi. The Permittees will address problems detected during the LAW Vitrification System integrity  
15 assessments specified in Permit Condition [III.10.I.1.a.v.](#) following the description of the integrity  
16 assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit  
17 Conditions [III.10.H.5.e.i.](#) and [III.10.C.5.c.](#)
- 18 III.10.I.1.a.vii. All process monitors/instruments as specified in Permit Table [III.10.I.F](#), as approved/modified  
19 pursuant to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#), will be equipped with operational  
20 alarms to warn of deviation, or imminent deviation from the limits specified in Permit Table  
21 [III.10.I.F](#).
- 22 III.10.I.1.a.viii. The Permittees will install and test all process and leak detection system monitors/instruments, as  
23 specified in Permit Tables [III.10.I.C](#) and [III.10.I.F](#), as approved/modified pursuant to Permit  
24 Condition [III.10.H.5](#) and [III.10.H.3.d.v.](#), in accordance with Operating Unit 10, Appendices 9.1, 9.2,  
25 and 9.14 of this Permit, as approved pursuant to Permit Conditions [III.10.H.5.d.x.](#) and  
26 [III.10.H.5.f.xvi.](#)
- 27 III.10.I.1.a.ix. No dangerous and/or mixed waste will be treated in the LAW Vitrification System unless the  
28 operating conditions, specified under Permit Condition [III.10.I.1.c.](#) are complied with.
- 29 III.10.I.1.a.x. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other materials  
30 in the LAW Vitrification System if these substances could cause the sub-system, sub-system  
31 equipment, or the containment system to rupture, leak, corrode, or otherwise fail [WAC 173-303-  
32 640(5)(a), in accordance with WAC 173-303-680(2)]. This condition is not applicable to corrosion  
33 of LAW Vitrification System sub-system or sub-system equipment that are expected to be replaced  
34 as part of normal operations (e.g., melters).
- 35 III.10.I.1.a.xi. The Permittees will operate the LAW Vitrification System to prevent spills and overflows using  
36 description of controls and practices as required under WAC 173-303-640(5)(b), described in Permit  
37 Condition [III.10.C.5](#) and Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to  
38 Permit Condition [III.10.H.5.e.](#) [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2)  
39 and (3), and WAC 173-303-806(4)(c)(ix)].
- 40 III.10.I.1.a.xii. For routinely non-accessible LAW Vitrification System sub-systems, as specified in Operating Unit  
41 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition [III.10.H.5.e.vi.](#), the

1 Permitees will mark all routinely non-accessible LAW Vitrification System sub-systems access  
2 points with labels or signs to identify the waste contained in each LAW Vitrification System sub-  
3 system. The label, or sign, must be legible at a distance of at least fifty (50) feet and must bear a  
4 legend which identifies the waste in a manner which adequately warns employees, emergency  
5 response personnel, and the public of the major risk(s) associated with the waste being stored or  
6 treated in the LAW Vitrification System sub-systems. For the purposes of this permit condition,  
7 “routinely non-accessible” means personnel are unable to enter these areas while waste is being  
8 managed in them [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

9 III.10.I.1.a.xiii. For the LAW Vitrification System sub-systems not addressed in Permit Condition [III.10.I.1.a.xii.](#),  
10 the Permitees will mark these LAW Vitrification System sub-systems holding dangerous and/or  
11 mixed waste with labels or signs to identify the waste contained in the LAW Vitrification System  
12 sub-systems. The labels, or signs, must be legible at a distance of at least fifty (50) feet and must  
13 bear a legend which identifies the waste in a manner which adequately warns employees, emergency  
14 response personnel, and the public of the major risk(s) associated with the waste being stored or  
15 treated in the LAW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with  
16 WAC 173-303-680(2)].

17 III.10.I.1.a.xiv. The Permitees will ensure that the secondary containment systems for the LAW Vitrification  
18 System sub-systems listed in Permit Tables [III.10.I.A](#) and [III.10.I.B](#), as approved/modified pursuant  
19 to Permit Condition [III.10.H.5](#), are free of cracks or gaps to prevent any migration of dangerous  
20 and/or mixed waste or accumulated liquid out of the system to the soil, groundwater, or surface  
21 water at any time during use of the LAW Vitrification System sub-systems. Any indication that a  
22 crack or gap may exist in the containment systems will be investigated and repaired in accordance  
23 with Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition  
24 [III.10.H.5.e.v.](#) [WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC 173-303-  
25 640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-806(4)(i)(i)(B), and WAC  
26 173-303-320].

27 III.10.I.1.a.xv. The Permitees must immediately, and safely, remove from service any LAW Vitrification System or  
28 secondary containment system which through an integrity assessment is found to be “unfit for use”  
29 as defined in WAC 173-303-040, following Permit Condition [III.10.I.1.a.xvii. A](#) through [D](#), and [F](#).  
30 The affected LAW Vitrification System or secondary containment system must be either repaired or  
31 closed in accordance with Permit Condition [III.10.I.1.a.xvii.E](#) [WAC 173-303-640(7)(e) and (f) and  
32 WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

33 III.10.I.1.a.xvi. An impermeable coating, as specified in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.9, 9.11, and  
34 9.12 of this Permit, as approved pursuant to Permit Condition [III.10.H.5.b.v.](#), will be maintained for  
35 all concrete containment systems and concrete portions of containment systems for the LAW  
36 Vitrification System sub-systems listed in Permit Tables [III.10.I.A](#) and [III.10.I.B](#), as  
37 approved/modified pursuant to Permit Condition [III.10.H.5](#) (concrete containment systems that do  
38 not have a liner, pursuant to WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2),  
39 and have construction joints, will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in  
40 accordance with WAC 173-303-680(2). The coating will prevent migration of any dangerous and/or  
41 mixed waste into the concrete. All coatings will meet the following performance standards:

42 A. The coating must seal the containment surface such that no cracks, seams, or other avenues  
43 through which liquid could migrate are present;

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- 1 B. The coating must be of adequate thickness and strength to withstand the normal operation of  
2 equipment and personnel within the given area such that degradation or physical damage to the  
3 coating or lining can be identified and remedied before dangerous and mixed waste could  
4 migrate from the system; and
- 5 C. The coating must be compatible with the dangerous and/or mixed waste, treatment reagents, or  
6 other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), in  
7 accordance with WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(i)(i)(A)].

8 III.10.I.1.a.xvii. The Permittees inspect all secondary containment systems for the LAW Vitrification System sub-  
9 systems listed in Permit Tables [III.10.I.A](#) and [III.10.I.B](#), as approved/modified pursuant to Permit  
10 Condition [III.10.H.5](#), in accordance with the Inspection Schedule specified in Operating Unit 10,  
11 Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions [III.10.H.5.e.i.](#) and  
12 [III.10.C.5.c.](#), and take the following actions if a leak or spill of dangerous and/or mixed waste is  
13 detected in these containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in  
14 accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-  
15 806(4)(i)(i)(B)].

- 16 A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the LAW  
17 Vitrification System sub-systems or secondary containment system.
- 18 B. Determine the source of the dangerous and/or mixed waste.
- 19 C. Remove the waste from the containment area in accordance with WAC 173-303-680(2) and (3)  
20 as specified in WAC 173-303-640(7)(b). The waste removed from containment areas of the  
21 LAW Vitrification System sub-systems will be, as a minimum, managed as dangerous and/or  
22 mixed waste.
- 23 D. If the cause of the release was a spill that has not damaged the integrity of the LAW Vitrification  
24 System sub-system, the Permittees may return the LAW Vitrification System sub-system to  
25 service in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-  
26 640(7)(e)(ii). In such case, the Permittees will take action to ensure the incident that caused the  
27 dangerous and/or mixed waste to enter the containment system will not reoccur.
- 28 E. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary  
29 LAW Vitrification System into the secondary containment system, or the system is unfit for use  
30 as determined through an integrity assessment or other inspection, the Permittees will comply  
31 with the requirements of WAC 173-303-640(7) and take the following actions:
- 32 1. Close the LAW Vitrification System sub-system following procedures in WAC 173-  
33 303-640(7)(e)(i), in accordance with WAC 173-303-680 and Operating Unit 10, Chapter  
34 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8](#); or
  - 35 2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified  
36 pursuant to Permit Condition [III.10.I.1.a.iii.](#)) the LAW Vitrification System in  
37 accordance with Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant  
38 to Permit Condition [III.10.H.5.e.v.](#), before the LAW Vitrification System is placed back  
39 into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance  
40 with WAC 173-303-680].

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- 1 F. The Permittees will document in the WTP Unit operating record actions/procedures taken to  
2 comply with A through E above, as specified in WAC 173-303-640(6)(d), in accordance with  
3 WAC 173-303-680(2) and (3).
- 4 G. In accordance with WAC 173-303-680(2) and (3), the Permittees will notify and report releases  
5 to the environment to Ecology, as specified in WAC 173-303-640(7)(d).
- 6 III.10.I.1.a.xviii.If liquids (e.g., dangerous and/or mixed waste, leaks and spills, precipitation, fire water, liquids from  
7 damaged or broken pipes) cannot be removed from the secondary containment system within twenty-  
8 four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of discovery. The  
9 notification will provide the information in A, B, and C, listed below. The Permittees will provide  
10 Ecology with a written demonstration within seven (7) business days, identifying at a minimum  
11 [WAC 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-  
12 680(3) and WAC 173-303-806(4)(i)(i)(B)]:
  - 13 A. Reasons for delayed removal;
  - 14 B. Measures implemented to ensure continued protection of human health and the environment;
  - 15 C. Current actions being taken to remove liquids from secondary containment.
- 16 III.10.I.1.a.xix. All air pollution control devices and capture systems in the LAW Vitrification System will be  
17 maintained and operated at all times in a manner so as to minimize the emissions of air contaminants  
18 and to minimize process upsets. Procedures for ensuring that the air pollution control devices and  
19 capture systems in the LAW Vitrification System are properly operated and maintained so as to  
20 minimize the emission of air contaminants and process upsets will be established.
- 21 III.10.I.1.a.xx. In all future narrative permit submittals, the Permittees will include LAW Vitrification sub-system  
22 names with the sub-system designation.
- 23 III.10.I.1.a.xxi. For any portion of the LAW Vitrification System that has the potential for formation and  
24 accumulation of hydrogen gases, the Permittees will operate the portion to maintain hydrogen levels  
25 below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].
- 26 III.10.I.1.a.xxii. For each LAW Vitrification System sub-system holding dangerous and/or mixed waste that are  
27 acutely or chronically toxic by inhalation, the Permittees will operate the system to prevent escape of  
28 vapors, fumes, or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-  
29 640(5)(e), in accordance with WAC 173-303-680].
- 30 III.10.I.1.a.xxiii.The existing LAW building will retain capability to install the third melter before or after hot start-  
31 up. No permanent systems, structures, or components shall be installed in the melter cell, pour cave  
32 or wet process cell for the third melter that would preclude future installation of the third melter.
- 33 III.10.I.1.b. Performance Standards
- 34 III.10.I.1.b.i. The LAW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99%  
35 for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1) and  
36 40CFR §63.1203(c)(2), in accordance with WAC 173-303-680(2)]:  
37 RESERVED  
38 DRE in this permit condition will be calculated in accordance with the formula given below:

1 DRE=[1-(Wout/Win)] x 100%

2 Where:

3 Win=mass feedrate of one principal organic dangerous constituent (PODC) in a waste feedstream;  
4 and

5 Wout=mass emission rate of the same PODC present in exhaust emissions prior to release to the  
6 atmosphere.

- 7 III.10.I.1.b.ii. Particulate matter emissions from the LAW Vitrification System will not exceed 34 mg/dscm (0.015  
8 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with WAC 173-303-680(2)];
- 9 III.10.I.1.b.iii. Hydrochloric acid and chlorine gas emissions from the LAW Vitrification System will not exceed 21  
10 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-303-680(2)];
- 11 III.10.I.1.b.iv. Dioxin and Furan TEQ emissions from the LAW Vitrification System will not exceed 0.2  
12 nanograms (ng)/dscm, [40 CFR §63.1203(b)(1), in accordance with WAC 173-303-680(2)];
- 13 III.10.I.1.b.v. Mercury emissions from the LAW Vitrification System will not exceed 45 µg/dscm [40 CFR  
14 §63.1203(b)(2), in accordance with WAC 173-303-680(2)];
- 15 III.10.I.1.b.vi. Lead and cadmium emissions from the LAW Vitrification System will not exceed 120 µg/dscm,  
16 combined [40 CFR §63.1203(b)(3), in accordance with WAC 173-303-680(2)];
- 17 III.10.I.1.b.vii. Arsenic, beryllium, and chromium emissions from the LAW Vitrification System will not exceed 97  
18 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with WAC 173-303-680(2)];
- 19 III.10.I.1.b.viii. Carbon monoxide (CO) emission from the LAW Vitrification System will not exceed 100 parts per  
20 million (ppm) by volume, over an hourly rolling average (as measured and recorded by the  
21 continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-  
22 303-680(2) and (3)];
- 23 III.10.I.1.b.ix. Hydrocarbon emission from the LAW Vitrification System will not exceed 10 parts per million  
24 (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous  
25 monitoring system during demonstration testing required by this Permit), dry basis and reported as  
26 propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC 173-303-680(2) and (3)];
- 27 III.10.I.1.b.x. If the emissions from the LAW Vitrification System exceed the emission rates listed in Permit Table  
28 [III.10.I.E.](#), as approved pursuant to Permit Condition [III.10.C.11.c.](#) or [d.](#), the Permittees will perform  
29 the following actions [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)]:
- 30 A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
31 emission rate(s) as specified in Permit Condition I.E.21.
- 32 B. Submit to Ecology additional risk information to indicate that the increased emissions impact is  
33 offset by decreased emission impact from one or more constituents expected to be emitted at the  
34 same time, and/or investigate the cause and impact of the exceedence of the emission rate(s) and  
35 submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery  
36 of exceeding the emission rate(s); and
- 37 C. Based on the notification and any additional information, Ecology may provide, in writing,  
38 direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification

- 1 System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to  
2 Permit Conditions [III.10.C.2.e.](#) through [g.](#) The revised Demonstration Test Plan must include  
3 substantive changes to prevent failure from reoccurring.
- 4 The emission limits specified in Permit Conditions [III.10.I.1.b.i.](#) through [x.](#) above, will be met for the  
5 LAW Vitrification System by limiting feed rates as specified in Permit Tables [III.10.I.D](#) and  
6 [III.10.I.F.](#), as approved/modified pursuant to Permit Conditions [III.10.H.5.](#) and [III.10.H.3.d.v.](#),  
7 compliance with operating conditions specified in Permit Condition [III.10.I.1.c.](#) (except as specified  
8 in Permit Condition [III.10.I.1.b.xii.](#)), and compliance with Permit Condition [III.10.I.1.b.xi.](#);
- 9 III.10.I.1.b.xi. Treatment effectiveness, feed-rates and operating rates for dangerous and/or mixed waste  
10 management units contained in the LAW Building, but not included in Permit Table [III.10.I.A.](#), as  
11 approved/modified pursuant to Permit Condition [III.10.H.5.](#), will be as specified in Permit Sections  
12 [III.10.D](#) through [F](#) and consistent with assumptions and basis which are reflected in Operating Unit  
13 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition [III.10.C.11.b.](#) For the  
14 purposes of this permit condition, Operating Unit 10, Appendix 6.3.1 will be superceded by  
15 Appendix 6.4.1 upon its approval pursuant to either Permit Condition [III.10.C.11.c](#) or [III.10.C.11.d.](#)  
16 [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)];
- 17 III.10.I.1.b.xii. Compliance with the operating conditions specified in Permit Condition [III.10.I.1.c.](#), will be  
18 regarded as compliance with the required performance standards identified in Permit Conditions  
19 [III.10.I.1.b.i.](#) through [x.](#) However, if it is determined that during the effective period of this Permit  
20 that compliance with the operating conditions in Permit Condition [III.10.I.1.c.](#) is not sufficient to  
21 ensure compliance with the performance standards specified in Permit Conditions [III.10.I.1.b.i.](#)  
22 through [x.](#), the Permit may be modified, revoked, or reissued pursuant to Permit Conditions  
23 [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#)
- 24 III.10.I.1.c. Operating Conditions [WAC-303-670(6), in accordance with WAC 173-303-680(2) and (3)]  
25 The Permittees will operate the LAW Vitrification System in accordance with Operating Unit 10,  
26 Chapter 4.0 of this Permit, as updated pursuant to Permit Condition [III.10.H.5.e.vi.](#) and Operating  
27 Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition [III.10.H.5.e.](#), and  
28 Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition  
29 [III.10.H.5.f.](#), except as modified pursuant to Permit Conditions [III.10.H.3.](#) [III.10.I.1.b.x.](#),  
30 [III.10.I.1.b.xii.](#), [III.10.I.1.h.](#), and in accordance with and the following:
- 31 III.10.I.1.c.i. The Permittees will operate the LAW Vitrification System in order to maintain the systems and  
32 process parameters listed in Permit Tables [III.10.I.C](#) and [III.10.I.F.](#), as approved/modified pursuant to  
33 Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#), within the set-points specified in Permit Table  
34 [III.10.I.F.](#)
- 35 III.10.I.1.c.ii. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.I.F.](#), as  
36 approved/modified pursuant to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#), to automatically cut-  
37 off and/or lock-out the dangerous and/or mixed waste feed to LAW Vitrification System when the  
38 monitored operating conditions deviate from the set-points specified in Permit Table [III.10.I.F.](#)
- 39 III.10.I.1.c.iii. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.I.F.](#), as  
40 approved/modified pursuant to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#), to automatically cut-  
41 off and/or lock-out the dangerous and/or mixed waste feed to LAW Vitrification System when all

- 1 instruments specified in Permit Table [III.10.H.F](#) for measuring the monitored parameters fails or  
2 exceeds its span value.
- 3 III.10.I.1.c.iv. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.I.F](#), as  
4 approved/modified pursuant to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#), to automatically cut-  
5 off and/or lock out the dangerous waste and/or mixed waste feed to the LAW Vitrification System  
6 when any portion of the LAW Vitrification System is bypassed. The terms “bypassed” and “bypass  
7 event,” as used in Permit Sections [III.10.H](#) and [III.10.I](#), will mean if any portion of the LAW  
8 Vitrification System is bypassed so that gases are not treated as during the Demonstration Test.
- 9 III.10.I.1.c.v. In the event of a malfunction of the AWFCO systems listed in Permit Table [III.10.I.F](#), as  
10 approved/modified pursuant to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#), the Permittees will  
11 immediately, manually cut-off the dangerous and/or mixed waste feed to the LAW Vitrification  
12 System. The Permittees will not restart the dangerous and/or mixed waste feed until the problem  
13 causing the malfunction has been identified and corrected.
- 14 III.10.I.1.c.vi. The Permittees will manually cut-off the dangerous and/or mixed waste feed to the LAW  
15 Vitrification System when the operating conditions deviate from the limits specified in Permit  
16 Condition [III.10.I.1.c.i.](#), unless the deviation automatically activates the waste feed cut-off sequence  
17 specified in Permit Conditions [III.10.I.1.c.ii.](#), [iii.](#), and/or [iv.](#)
- 18 III.10.I.1.c.vii. If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the LAW  
19 Vitrification System occur due to deviations from Permit Table [III.10.I.F](#), as approved/modified  
20 pursuant to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#), within a sixty (60) day period, the  
21 Permittees will submit a written report to Ecology within five (5) calendar days of the thirty-first  
22 exceedence, including the information specified below. These dangerous and/or mixed waste feed  
23 cut-offs to the LAW Vitrification System, whether automatically or manually activated, are counted  
24 if the specified set-points are deviated from while dangerous and/or mixed waste and waste residues  
25 continue to be processed in the LAW Vitrification System. A cascade event is counted at a  
26 frequency of one (1) towards the first waste feed cut-off parameter, specified in Permit Table  
27 [III.10.I.F](#), from which the set-point is deviated:
- 28 A. The parameter(s) that deviated from the set-point(s) in Permit Table [III.10.I.F](#);  
29 B. The magnitude, dates, and duration of the deviations;  
30 C. Results of the investigation of the cause of the deviations; and  
31 D. Corrective measures taken to minimize future occurrences of the deviations.
- 32 III.10.I.1.c.viii. If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the LAW  
33 Vitrification System occur due to deviations from Permit Table [III.10.I.F](#), as approved/modified  
34 pursuant to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#), within a thirty (30) day period, the  
35 Permittees will submit the written report required to be submitted pursuant to Permit Condition  
36 [III.10.I.1.c.vii.](#) to Ecology on the first business day following the thirty-first exceedence. These  
37 dangerous and/or mixed waste feed cut-offs to the LAW Vitrification System, whether automatically  
38 or manually activated, are counted if the specified set-points are deviated from while dangerous  
39 and/or mixed waste and waste residues continue to be processed in the LAW Vitrification System. A  
40 cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter,  
41 specified on Permit Table [III.10.I.F](#), from which the set-point is deviated:

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- 1 In accordance with WAC 173-303-680(2) and (3), the Permittees may not resume dangerous and/or  
2 mixed waste feed to the LAW Vitrification System until this written report has been submitted, and
- 3 A. Ecology has authorized the Permittees, in writing, to resume dangerous and/or mixed waste feed,  
4 or
- 5 B. Ecology has not, within seven (7) days, notified the Permittees in writing of the following:
- 6 1. The Permittees written report does not document that the corrective measures taken will  
7 minimize future exceedances; and
- 8 2. The Permittees must take further corrective measures and document that these further  
9 corrective measures will minimize future exceedances.
- 10 III.10.I.1.c.ix. If any portion of the LAW Vitrification System is bypassed while treating dangerous and/or mixed  
11 waste, it will be regarded as non-compliance with the operating conditions specified in Permit  
12 Condition [III.10.I.1.c.](#) and the performance standards specified in Permit Condition [III.10.I.1.b.](#)  
13 After such a bypass event, the Permittees will perform the following actions:
- 14 A. Investigate the cause of the bypass event;
- 15 B. Take appropriate corrective measures to minimize future bypasses;
- 16 C. Record the investigation findings and corrective measures in the WTP Unit operating record; and
- 17 D. Submit a written report to Ecology within five (5) days of the bypass event documenting the  
18 result of the investigation and corrective measures.
- 19 III.10.I.1.c.x. The Permittees will control fugitive emissions from the LAW Vitrification System by maintaining  
20 the melters under negative pressure.
- 21 III.10.I.1.c.xi. Compliance with the operating conditions specified in Permit Condition [III.10.I.1.c.](#) will be regarded  
22 as compliance with the required performance standards identified in Permit Condition [III.10.I.1.b.](#)  
23 However, evidence that compliance with these operating conditions is insufficient to ensure  
24 compliance with the performance standards, will justify modification, revocation, or re-issuance of  
25 this Permit, in accordance with Permit Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#)
- 26 III.10.I.1.d. Inspection Requirements [WAC 173-303-680(3)]
- 27 III.10.I.1.d.i. The Permittees will inspect the LAW Vitrification System in accordance with the Inspection  
28 Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in accordance with Permit  
29 Condition [III.10.C.5.c.](#)
- 30 III.10.I.1.d.ii. The inspection data for LAW Vitrification System will be recorded, and the records will be placed  
31 in the WTP Unit operating record for LAW Vitrification System, in accordance with Permit  
32 Condition [III.10.C.4.](#)
- 33 III.10.I.1.d.iii. The Permittees will comply with the inspection requirements specified in Operating Unit 10,  
34 Appendix 9.15 of this Permit, as approved pursuant to Permit Condition [III.10.H.5.f.](#) and as modified  
35 by Permit Conditions [III.10.H.3.](#), [III.10.I.1.b.x.](#), [III.10.I.1.b.xii.](#), and [III.10.I.1.h.](#)
- 36 III.10.I.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-303-670(7),  
37 and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]

- 1 III.10.I.1.e.i. Upon receipt of a written request from Ecology, the Permittees will perform sampling and analysis  
2 of the dangerous and/or mixed waste and exhaust emissions to verify that the operating requirements  
3 established in the Permit achieve the performance standards delineated in this Permit.
- 4 III.10.I.1.e.ii. The Permittees will comply with the monitoring requirements specified in the Operating Unit 10,  
5 Appendices 9.2, 9.3, 9.7, 9.13, 9.15 and 9.18 of this Permit, as approved pursuant to Permit  
6 Condition [III.10.H.5](#), and as modified by Permit Conditions [III.10.H.3](#), [III.10.I.1.h.](#), [III.10.I.1.b.x.](#),  
7 and [III.10.I.1.b.xii.](#)
- 8 III.10.I.1.e.iii. The Permittees will operate, calibrate, and maintain the carbon monoxide and hydrocarbon  
9 continuous emission monitors (CEM) specified in this Permit in accordance with Performance  
10 Specifications 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart  
11 EEE of 40 CFR Part 63, and Operating Unit 10 Appendix 9.15 of this Permit, as approved pursuant  
12 to Permit Condition [III.10.H.5.f.](#), and as modified by Permit Conditions [III.10.H.3](#), [III.10.I.1.h.](#),  
13 [III.10.I.1.b.x.](#), and [III.10.I.1.b.xii.](#)
- 14 III.10.I.1.e.iv. The Permittees will operate, calibrate, and maintain the instruments specified in Permit Tables  
15 [III.10.I.C](#) and [F](#), as approved/modified pursuant to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#),  
16 in accordance with Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit  
17 Condition [III.10.H.5.f.](#), and as modified by Permit Conditions [III.10.H.3](#), [III.10.I.1.h.](#), [III.10.I.1.b.x.](#),  
18 and [III.10.I.1.b.xii.](#)
- 19 III.10.I.1.f. Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]
- 20 III.10.I.1.f.i. The Permittees will record and maintain in the WTP Unit operating record for the LAW  
21 Vitrification System, all monitoring, calibration, maintenance, test data, and inspection data  
22 compiled under the conditions of this Permit, in accordance with Permit Conditions [III.10.C.4](#) and [5](#),  
23 as modified by Permit Conditions [III.10.H.3](#), [III.10.I.1.h.](#), [III.10.I.1.b.x.](#), and [III.10.I.1.b.xii.](#)
- 24 III.10.I.1.f.ii. The Permittees will record in the WTP Unit operating record the date, time, and duration of all  
25 automatic waste feed cutoffs and/or lockouts, including the triggering parameters, reason for the  
26 deviation, and recurrence of the incident. The Permittees will also record all incidents of AWFCO  
27 system function failures, including the corrective measures taken to correct the condition that caused  
28 the failure.
- 29 III.10.I.1.f.iii. The Permittees will submit to Ecology an annual report each calendar year within ninety (90) days  
30 following the end of the year. The report will include the following information:
- 31 A. Total dangerous and/or mixed waste feed processing time for the LAW Vitrification System;
- 32 B. Date/Time of all LAW Vitrification System startups and shutdowns;
- 33 C. Date/Time/Duration/Cause/Corrective Action taken for all LAW Vitrification System shutdowns  
34 caused by malfunction of either process or control equipment; and
- 35 D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or mixed  
36 waste feed cut-off due to deviations from Permit Table [III.10.I.F](#), as approved/modified pursuant  
37 to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#)

- 1 III.10.I.1.f.iv. The Permittees will submit an annual report to Ecology each calendar year within ninety (90) days  
2 following the end of the year of all quarterly CEM Calibration Error and Annual CEM Performance  
3 Specification Tests conducted, in accordance with Permit Condition [III.10.I.1.e.iii.](#)
- 4 III.10.I.1.g. Closure  
5 The Permittees will close the LAW Vitrification System in accordance with Operating Unit 10,  
6 Chapter 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8.](#)
- 7 III.10.I.1.h. Periodic Emission Re-testing Requirements [WAC 173-303-670(5), WAC 173-303-670(7), and  
8 WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)]
- 9 III.10.I.1.h.i. Dioxin and Furan Emission Testing  
10 A. Within eighteen (18) months of commencing operation pursuant to Permit Section [III.10.I.](#), the  
11 Permittees will submit to Ecology for approval, a Dioxin and Furan Emission Test Plan  
12 (DFETP) for the performance of emission testing of the LAW Vitrification System gases for  
13 dioxin and furans during “Normal Operating Conditions” as a permit modification in accordance  
14 with Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#) The DFETP will include all elements  
15 applicable to dioxin and furan emission testing included in the “Previously Approved  
16 Demonstration Test Plan,” applicable EPA promulgated test methods and procedures in effect at  
17 the time of the submittal, and projected commencement and completion dates for dioxin and  
18 furan emission test. “Normal Operating Conditions” will be defined for the purposes of this  
19 permit condition as follows:
- 20 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic  
21 waste feed cut-off parameters specified in Permit Table [III.10.I.F](#) (as approved/modified  
22 pursuant to Permit Conditions [III.10.H.5](#) and [III.10.H.3.d.v.](#)), that were established to  
23 maintain compliance with Permit Condition [III.10.I.1.b.iv.](#) as specified in Operating Unit  
24 10, Appendix 9.15 of this Permit (as approved pursuant to Permit Condition  
25 [III.10.H.3.d.](#), and in accordance with [III.10.I.1.b.xii.](#) and [III.10.I.1.c.xi.](#)), are held within  
26 the range of the average value over the previous twelve (12) months and the set-point  
27 value specified in Permit Table [III.10.I.F](#). The average value is defined as the sum of the  
28 rolling average values recorded over the previous twelve (12) months divided by the  
29 number of rolling averages recorded during that time. The average value will not  
30 include calibration data, malfunction data, and data obtained when not processing  
31 dangerous and/or mixed waste; and
  - 32 2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average  
33 value over the previous twelve (12) months and the set-point value specified on Permit  
34 Table [III.10.I.D](#) (as approved/modified pursuant to Permit Conditions [III.10.H.5](#) and  
35 [III.10.H.3.d.v.](#)). Feed-rate of organics as measured by TOC are held within the range of  
36 the average value over the previous twelve (12) months. The average value is defined as  
37 the sum of the rolling average values recorded over the previous twelve (12) months  
38 divided by the number of rolling averages recorded during that time. The average value  
39 will not include data obtained when not processing dangerous and/or mixed waste.
- 40 For purposes of this permit condition, the “Previously Approved Demonstration Test Plan” is  
41 defined to include the Demonstration Test Plan approved pursuant to Permit Condition [III.10.H.5.f.](#)

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- 1 B. Within sixty (60) days of Ecology's approval of the DFETP, or within thirty-one (31) months of  
2 commencing operation pursuant to Permit Section [III.10.I](#), whichever is later, the Permittees will  
3 implement the DFETP approved pursuant to Permit Condition [III.10.I.1.h.i.A](#).
- 4 C. The Permittees will resubmit the DFETP, approved pursuant to Permit Condition [III.10.I.1.h.i.A](#),  
5 revised to include applicable EPA promulgated test methods and procedures in effect at the time  
6 of the submittal, and projected commencement and completion dates for dioxin and furan  
7 emission test as a permit modification in accordance with Permit Conditions [III.10.C.2.e](#). and  
8 [III.10.C.2.f](#). at twenty-four (24) months from the implementation date of the testing required  
9 pursuant to Permit Condition [III.10.I.1.h.i.A](#) and at reoccurring eighteen (18) month intervals  
10 from the implementation date of the previously approved DFETP. The Permittees will  
11 implement these newly approved revised DFETPs, every thirty-one (31) months from the  
12 previous approved DFETP implementation date or within sixty (60) days of the newly Ecology  
13 approved revised DFETP, whichever is later, for the duration of this Permit.
- 14 D. The Permittees will submit a summary of operating data collected pursuant to the DFETPs in  
15 accordance with Permit Conditions [III.10.I.1.h.i.A](#) and [C](#) to Ecology upon completion of the  
16 tests. The Permittees will submit to Ecology the complete test report within ninety (90) calendar  
17 days of completion of the testing. The test reports will be certified as specified in WAC 173-  
18 303-807(8), in accordance with WAC 173-303-680(2) and (3).
- 19 E. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit  
20 Conditions [III.10.I.1.h.i.A](#) and [C](#). show that one or more of the performance standards listed in  
21 Permit Condition [III.10.I.1.b.](#), with the exception of Permit Condition [III.10.I.1.b.x.](#), for the  
22 LAW Vitrification System were not met during the emission test, the Permittees will perform  
23 the following actions:
- 24 1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System  
25 under the mode of operation that resulted in not meeting the performance standard(s);
  - 26 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the  
27 performance standard(s), as specified in Permit Condition I.E.21;
  - 28 3. Investigate the cause of the failure and submit a report of the investigation findings to  
29 Ecology within fifteen (15) days of discovery of not meeting the performance  
30 standard(s);
  - 31 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance  
32 standard(s) documentation supporting a mode of operation where all performance  
33 standards listed in Permit Condition [III.I.1.b.](#), with the exception of Permit Condition  
34 [III.10.I.1.b.x.](#), for the LAW Vitrification System were met during the demonstration test,  
35 if any such mode was demonstrated;
  - 36 5. Based on the information provided to Ecology by the Permittees pursuant to Permit  
37 Conditions [III.10.I.1.h.i.E.1](#) through [4](#) above, and any additional information, Ecology  
38 may provide in writing, direction to the Permittees to stop dangerous waste and mixed  
39 waste feed to the LAW Vitrification System and/or amend the mode of operation the  
40 Permittees are allowed to continue operations prior to Ecology approval of the revised  
41 Demonstration Test Plan pursuant to Permit Condition [III.10. I.1.h.i.E.6](#); and

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- 1                   6.    Submit to Ecology within one hundred and twenty (120) days of discovery of not  
2                   meeting the performance standard(s) a revised Demonstration Test Plan requesting  
3                   approval to retest as a permit modification pursuant to Permit Conditions  
4                   [III.10.C.2.e.](#) and [III.10.C.2.f.](#) The revised Demonstration Test Plan must include  
5                   substantive changes to prevent failure from reoccurring reflecting performance under  
6                   operating conditions representative of the extreme range of normal conditions, and  
7                   include revisions to Permit Tables [III.10.I.D](#) and [F](#).
- 8                   F.    If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit  
9                   Conditions [III.10.I.1.h.i.A](#) and C show that any emission rate for any constituent listed in Permit  
10                  Table [III.10.I.E](#), as approved/modified pursuant to Permit Conditions [III.10.C.11.c.](#) or [d.](#) is  
11                  exceeded for LAW Vitrification System during the emission test, the Permittees will perform the  
12                  following actions:
- 13                  1.    Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
14                  emission rate(s), as specified in Permit Condition I.E.21;
- 15                  2.    Submit to Ecology additional risk information to indicate that the increased emissions  
16                  impact is off-set by decreased emission impact from one or more constituents expected  
17                  to be emitted at the same time, and/or investigate the cause and impact of the exceedence  
18                  and submit a report of the investigation findings to Ecology within fifteen (15) days of  
19                  this discovery of exceeding the emission rate(s); and
- 20                  3.    Based on the notification and any additional information, Ecology may provide, in  
21                  writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the  
22                  LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a  
23                  permit modification pursuant to Permit Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#)  
24                  The revised Demonstration Test Plan must include substantive changes to prevent failure  
25                  from reoccurring reflecting performance under operating conditions representative of the  
26                  extreme range of normal conditions, and include revisions to Permit Tables [III.10.I.D](#)  
27                  and [III.10.I.F](#).

28    III.10.I.1.h.ii.   Non-organic Emission Testing

- 29                  A.    Within forty-eight (48) months of commencing operation pursuant to Permit Section [III.10.I](#), the  
30                  Permittees will resubmit to Ecology for approval the “Previously Approved Demonstration Test  
31                  Plan” revised as a permit modification in accordance with Permit Conditions [III.10.C.2.e.](#) and  
32                  [III.10.C.2.f.](#) The revised Demonstration Test Plan (RDTP) will include applicable EPA  
33                  promulgated test methods and procedures in effect at the time of the submittal, projected  
34                  commencement and completion dates for emission testing to demonstrate performance standards  
35                  specified in Permit Conditions [III.10.I.1.b.ii.](#), [iii.](#), [v.](#), [vi.](#), and [vii.](#), and non-organic emissions as  
36                  specified in Permit Table [III.10.I.E](#), as approved/modified pursuant to Permit Conditions  
37                  [III.10.H.3.d.](#) and [III.10.C.11.c.](#) or [d.](#), under “Normal Operating Conditions.” “Normal Operating  
38                  Conditions” will be defined for the purposes of this permit condition as follows:

- 39                  1.    Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic  
40                  waste feed cut-off parameters specified in Permit Table [III.10.I.F](#), as approved/modified  
41                  pursuant to Permit Conditions [III.10.H.3.d.](#) and [III.10.C.11.c.](#) or [d.](#), that were established  
42                  to maintain compliance with Permit Conditions [III.10.I.1.b.ii.](#), [iii.](#), [v.](#), [vi.](#), and [vii.](#), and

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1 non-organic emissions, as specified in Permit Table [III.10.I.E](#), as specified in Operating  
2 Unit 10, Appendix 9.15 of this Permit (as approved pursuant to Permit Conditions  
3 [III.10.H.3.d.](#) and [III.10.C.11.c.](#) or [d.](#)), are held within the range of the average value over  
4 the previous twelve (12) months and the set-point value specified in Permit Table  
5 [III.10.I.E](#). The average value is defined as the sum of the rolling average values  
6 recorded over the previous twelve (12) months divided by the number of rolling  
7 averages recorded during that time. The average value will not include calibration data,  
8 malfunction data, and data obtained when not processing dangerous or mixed waste; and

- 9
- 10 2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average  
11 value over the previous twelve (12) months and the set-point value specified in Permit  
12 Table [III.10.I.D](#), as approved/modified pursuant to Permit Conditions [III.10.H.3.d.](#) and  
13 [III.10.C.11.c.](#) or [d.](#) The average value is defined as the sum of all rolling average values  
14 recorded over the previous twelve (12) months divided by the number of rolling  
15 averages recorded during that time. The average value will not include data obtained  
when not processing dangerous or mixed waste.

16 For purposes of this permit condition, the “Previously Approved Demonstration Test Plan” is  
17 defined to include the Demonstration Test Plan approved pursuant to Permit Condition [III.10.H.5.f](#).

- 18 B. Within sixty (60) days of Ecology’s approval of the RDTP, or within sixty (60) months of  
19 commencing operation pursuant to Permit Section [III.10.I](#), whichever is later, the Permittees will  
20 implement the RDTP approved pursuant to Permit Condition [III.10.I.1.h.ii.A](#).
- 21 C. The Permittees will resubmit the RDTP, approved pursuant to Permit Condition [III.10.I.1.h.ii.A](#),  
22 revised to include applicable EPA promulgated test methods and procedures in effect at the time  
23 of the submittal, and projected commencement and completion dates for emission test as a  
24 permit modification in accordance with Permit Conditions [III.10.C.2.e.](#) and [f.](#) at forty-eight (48)  
25 months from the implementation date of the testing required pursuant to Permit Condition  
26 [III.10.I.1.h.ii.A](#) and at reoccurring forty-eight (48) month intervals from the implementation date  
27 of the previously approved RDTP. The Permittees will implement these newly approved revised  
28 RDTP, every sixty (60) months from the previous approved RDTP implementation date or  
29 within sixty (60) days of the newly Ecology approved revised RDTP, whichever is later, for the  
30 duration of this Permit.
- 31 D. The Permittees will submit a summary of operating data collected pursuant to the RDTPs in  
32 accordance with Permit Conditions [III.10.I.1.h.ii.A](#) and C to Ecology upon completion of the  
33 tests. The Permittees will submit to Ecology the complete test report within ninety (90)  
34 calendar days of completion of the testing. The test reports will be certified pursuant to WAC  
35 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).
- 36 E. If any calculations or testing results collected pursuant to the RDTPs in accordance with Permit  
37 Conditions [III.10.I.1.h.ii.A](#) and C show that any emission rate for any constituent listed in Permit  
38 Table [III.10.I.E](#), as approved/modified pursuant to Permit Conditions [III.10.H.3.d.](#) and  
39 [III.10.C.11.c.](#) or [d.](#), is exceeded for LAW Vitrification System during the emission test, the  
40 Permittees will perform the following actions:

- 41 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
42 emission rate(s), as specified in Permit condition I.E.21;



1 representative of the extreme range of normal conditions, and include revisions to Permit  
2 Tables [III.10.I.D](#) and [F](#).

3 III.10.I.1.h.iii. Other Emission Testing

4 A. Within seventy-eight (78) months of commencing operation pursuant to Permit Section [III.10.I](#),  
5 the Permittees will resubmit to Ecology for approval the “Previously Approved Demonstration  
6 Test Plan” revised as a permit modification in accordance with Permit Conditions [III.10.C.2.e](#)  
7 and [f](#). The Revised Demonstration Test Plan (RDTP) will include applicable EPA promulgated  
8 test methods and procedures in effect at the time of the submittal, projected commencement and  
9 completion dates for emission testing to demonstrate performance standards as specified in  
10 Permit Conditions [III.10.I.1.b.viii](#), and [ix](#)., and emissions as specified in Permit Table [III.10.I.E](#),  
11 as approved/modified pursuant to Permit Conditions [III.10.H.3.d](#) and [III.10.C.11.c](#) or [d](#)., not  
12 addressed under Permit Conditions [III.10.I.1.h.i](#) or [ii](#) under “Normal Operating Conditions.”  
13 “Normal Operating Conditions” will be defined for the purposes of this permit condition as  
14 follows:

- 15 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic  
16 waste feed cut-off parameters specified in Permit Table [III.10.I.F](#), as approved/modified  
17 pursuant to Permit Condition [III.10.H.3.d](#), and [III.10.C.11.c](#) or [d](#)., that were established  
18 to maintain compliance with Permit Conditions [III.10.I.1.b.viii](#) and [ix](#)., and emissions as  
19 specified in Permit Table [III.10.I.E](#), not addressed under Permit Conditions [III.10.I.1.h.i](#)  
20 or [ii](#) as specified in Operating Unit 10, Appendix 9.15 of this Permit, as approved  
21 pursuant to Permit Condition [III.10.H.3.d](#), and in accordance with Permit Conditions  
22 [III.10.I.1.b.xii](#) and [III.10.I.1.c.xi](#) are held within the range of the average value over the  
23 previous twelve (12) months and the set-point value specified on Permit Table [III.10.I.F](#).  
24 The average value is defined as the sum of all rolling average values recorded over the  
25 previous twelve (12) months divided by the number of rolling averages recorded during  
26 that time. The average value will not include calibration data, malfunction data, and  
27 data obtained when not processing dangerous and/or mixed waste; and
- 28 2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average  
29 value over the previous twelve (12) months and the set-point value specified in Permit  
30 Table [III.10.I.D](#), as approved/modified pursuant to Permit Conditions [III.10.H.3.d](#) and  
31 [III.10.C.11.c](#) or [d](#). Feed-rate of organics as measured by TOC are held within the range  
32 of the average value over the previous twelve (12) months. The average value is defined  
33 as the sum of the rolling average values recorded over the previous twelve (12) months  
34 divided by the number of rolling averages recorded during that time. The average value  
35 will not include data obtained when not processing dangerous and/or mixed waste.

36 For purposes of this permit condition, the “Previously Approved Demonstration Test Plan” is  
37 defined to include the Demonstration Test Plan approved pursuant to Permit Condition [III.10.H.5.f](#).

38 B. Within sixty (60) days of Ecology’s approval of the RDTP, or within ninety-one (91) months of  
39 commencing operation pursuant to Permit Section [III.10.I](#), whichever is later, the Permittees  
40 will implement the RDTP approved pursuant to Permit Condition [III.10.I.1.h.iii.A](#).

41 C. The Permittees will submit a summary of operating data collected pursuant to the RDTPs in  
42 accordance with Permit Condition [III.10.I.1.h.iii.A](#) to Ecology upon completion of the tests. The

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1 Permitees will submit to Ecology the complete test report within ninety (90) calendar days of  
2 completion of the testing. The test reports will be certified as specified in WAC 173-303-807(8),  
3 in accordance with Permit Condition WAC 173-303-680(2) and (3).

4 D. If any calculations or testing results show that one or more of the performance standards listed in  
5 Permit Condition [III.10.I.1.b.](#), with the exception of Permit Condition [III.10.I.1.b.x.](#), for the  
6 LAW Vitrification System were not met during the emission test, the Permitees will perform  
7 the following actions:

- 8 1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System  
9 under the mode of operation that resulted in not meeting the performance standard(s);
- 10 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the  
11 performance standard(s), as specified in Permit Condition I.E.21;
- 12 3. Investigate the cause of the failure and submit a report of the investigation findings to  
13 Ecology within fifteen (15) days of discovery of not meeting the performance  
14 standard(s);
- 15 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance  
16 standard(s) documentation supporting a mode of operation where all performance  
17 standards listed in Permit Condition [III.I.1.b.](#), with the exception of Permit Condition  
18 [III.10.I.1.b.x.](#), for the LAW Vitrification System were met during the demonstration test,  
19 if any such mode was demonstrated;
- 20 5. Based on the information provided to Ecology by the Permitees pursuant to Permit  
21 Conditions [III.10.I.1.h.iii.D.1](#) through [4](#) above, and any additional information, Ecology  
22 may provide in writing, direction to the Permitees to stop dangerous and/or mixed waste  
23 feed to the LAW Vitrification System and/or amend the mode of operation the  
24 Permitees are allowed to continue operations prior to Ecology approval of the revised  
25 Demonstration Test Plan, pursuant to Permit Condition [III.10. I.h.1.iii.D.6.](#); and
- 26 6. Submit to Ecology within one hundred and twenty (120) days of discovery of not  
27 meeting the performance standard(s) a revised Demonstration Test Plan requesting  
28 approval to retest as a permit modification pursuant to Permit Conditions [III.10.C.2.e.](#)  
29 and [f.](#) The revised Demonstration Test Plan must include substantive changes to prevent  
30 failure from reoccurring reflecting performance under operating conditions  
31 representative of the extreme range of normal conditions, and include revisions to Permit  
32 Tables [III.10.I.D](#) and [III.10.I.F.](#)

33 E. If any calculations or testing results show that any emission rate for any constituent listed in  
34 Permit Table [III.10.I.E.](#), as approved/modified pursuant to Permit Conditions [III.10.C.11.c.](#) or [d.](#),  
35 is exceeded for LAW Vitrification System during the emission test, the Permitees will perform  
36 the following actions:

- 37 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
38 emission rate(s), as specified in Permit Condition I.E.21;
- 39 2. Submit to Ecology additional risk information to indicate that the increased emissions  
40 impact is off-set by decreased emission impact from one or more constituents expected

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- 1 to be emitted at the same time, and/or investigate the cause and impact of the exceedence  
2 of the emission rate(s) and submit a report of the investigation findings to Ecology  
3 within fifteen (15) days of the discovery of the exceedence of the emission rate(s); and
- 4 3. Based on the notification and any additional information, Ecology may provide, in  
5 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the  
6 LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a  
7 permit modification pursuant to Permit Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#)  
8 The revised Demonstration Test Plan must include substantive changes to prevent failure  
9 from reoccurring reflecting performance under operating conditions representative of the  
10 extreme range of normal conditions, and include revisions to Permit Tables [III.10.I.D](#)  
11 and [F.](#)

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**Table III.10.I.A - LAW Vitrification System Description<sup>a</sup>**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos, Specification Nos, etc.)</b>	<b>Narrative Description, Tables and Figures</b>
RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b>			
<sup>a</sup> Permit Table III.10.I.A will be completed in accordance with Permit Condition III.10.H.5.e.x., prior to initiating Permit Condition III.10.I.1. See Permit Table III.10.H.A for the current LAW Vitrification System Description.			

**Table III.10.I.B - LAW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains**

<b>Sump/Floor Drain I.D.# &amp; Room Location</b>	<b>Maximum Sump Capacity (gallons)</b>	<b>Sump Dimensions<sup>b</sup> (feet) &amp; Materials of Construction</b>	<b>Engineering Description (Drawing Nos, Specification Nos, etc.)</b>
RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b>			
<sup>a</sup> Permit Table III.10.I.B will be completed in accordance with Permit Condition III.10.H.5.b.vii., prior to initiating Permit Condition III.10.I.1. See Permit Table III.10.H.B for the current LAW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains.			
<sup>b</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

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**Table III.10.I.C - LAW Vitrification Systems Process and Leak Detection System Instruments and Parameters**

<b>Sub-system Locator and Name (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Failure State</b>	<b>Expected Range</b>	<b>Instrument Accuracy</b>	<b>Instrument Calibration Method No. and Range</b>
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>3</sup> Permit Table III.10.I.C will be completed in accordance with Permit Condition III.10.H.5.e.ix., prior to initiating Permit Condition III.10.I.1 See Permit Table III.10.H.C for the current LAW Vitrification Systems Process and Leak Detection System Instruments and Parameters.								

1  
2

1  
2

**Table III.10.I.D - Maximum Feed-rates to LAW Vitrification System (RESERVED)**

Description of Waste	Normal Operation
Dangerous and/or Mixed Waste Feed Rate	RESERVED
Ash Feed Rate	RESERVED
Total Chlorine/Chloride Feed Rate	RESERVED
Total Metal Feedrates	RESERVED

3  
4

**Table III.10.I.E - LAW Vitrification System Estimated Emission Rates (RESERVED)**

Chemicals	CAS Number	Emission Rates (grams /second)
RESERVED	RESERVED	RESERVED

5  
6

**TABLE III.10.I.F - LAW Vitrification System Waste Feed Cut-off Parameters\* <sup>1</sup>(RESERVED)**

Sub-system Designation	Instrument Tag Number	Parameter Description	Set-points During Normal Operation
RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**

\*A continuous monitoring system will be used as defined in Permit Section [III.10.C.1.](#)

<sup>1</sup>Maximum Feed-rate will be set based on not exceeding any of the constituent (e.g., metals, ash, and chlorine/chloride) feed limits specified on Table [III.10.I.D.](#) of this Permit

7

**III.10.J HLW Vitrification System – Short Term Miscellaneous Thermal Treatment Unit-Shakedown, Demonstration Test, and Post Demonstration Test**

For purposes of Permit Section [III.10.J](#), where reference is made to WAC 173-303-640, the following substitutions apply: substituting the terms “HLW Vitrification System” for “tank system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and “sub-system(s) or sub-system equipment of a HLW Vitrification System” for “component(s),” in accordance with WAC 173-303-680.

**III.10.J.1. [III.10.I.1.h](#). General Conditions During Shakedown, Demonstration Test, and Post-Demonstration Test for HLW Vitrification System**

**III.10.J.1.a. Construction and Maintenance [WAC 173-303-640, in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-340].**

**III.10.J.1.a.i.** The Permittees will construct the HLW Vitrification System (listed in Permit Tables [III.10.J.A](#) and [III.10.J.B](#), as approved/modified pursuant to Permit Condition [III.10.J.5.](#)) as specified in Permit Condition [III.10.J.1.](#) and Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 10.1 through 10.15 and 10.17 of this Permit, as approved pursuant to Permit Conditions [III.10.J.5.a.](#) through [d.](#), and [III.10.J.5.f.](#)

**III.10.J.1.a.ii.** The Permittees will construct all containment systems for the HLW Vitrification System as specified in Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 10.2, 10.4, through 10.14 of this Permit, as approved pursuant to Permit Conditions [III.10.J.5.a.](#) through [d.](#)

**III.10.J.1.a.iii.** The Permittees will ensure all certifications required by specialists (e.g., independent, qualified, registered professional engineer, independent corrosion expert, independent qualified installation inspector, etc.) use the following statement or equivalent pursuant to Permit Condition [III.10.C.10.](#):

“I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new HLW Vitrification system or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector, testing for tightness, etc.), for the following HLW Vitrification system components (e.g., the venting piping, etc.), as required by the Dangerous Waste Regulations, namely, WAC 173-303-640(3) (applicable paragraphs (i.e., (a) through (g)) in accordance with WAC 173-303-680).

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

**III.10.J.1.a.iv.** The Permittees must ensure that proper handling procedures are adhered to in order to prevent damage to the HLW Vitrification System during installation. Prior to covering, enclosing, or placing the new HLW Vitrification System or component in use, an independent, qualified, installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of similar systems or components, must inspect the system for the presence of any of the following items:

A. Weld breaks;

- 1 B. Punctures;  
2 C. Scrapes of protective coatings;  
3 D. Cracks;  
4 E. Corrosion;  
5 F. Other structural damage or inadequate construction/installation.

6 All discrepancies must be remedied before the HLW Vitrification system is covered, enclosed, or  
7 placed in use [WAC 173-303-640(3)(c), in accordance with WAC 173-303-680(2) and (3)].

- 8 III.10.J.1.a.v. For the HLW Vitrification System or components that are placed underground and that are back-  
9 filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous  
10 substance. The backfill must be installed so that it is placed completely around the HLW  
11 Vitrification System and compacted to ensure that the HLW Vitrification System is fully and  
12 uniformly supported [WAC 173-303-640(3)(d), in accordance with WAC 173-303-680(2) and (3)].
- 13 III.10.J.1.a.vi. The Permittees must test for tightness the HLW Vitrification System or components, prior to being  
14 covered, enclosed, or placed into use. If the HLW Vitrification System or components are found not  
15 to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the  
16 HLW Vitrification System being covered, enclosed, or placed in use [WAC 173-303-640(3)(e), in  
17 accordance with WAC 173-303-680(2) and (3)].
- 18 III.10.J.1.a.vii. The Permittees must ensure the HLW Vitrification System equipment is supported and protected  
19 against physical damage and excessive stress due to settlement, vibration, expansion, or contraction  
20 [WAC 173-303-640(3)(f), in accordance with WAC 173-303-680(2) and (3)].
- 21 III.10.J.1.a.viii. The Permittees must provide the type and degree of corrosion protection recommended by an  
22 independent corrosion expert, based on the information provided in Operating Unit 10, Appendices  
23 10.9 and 10.11 of this Permit, as approved pursuant to Permit Conditions [III.10.J.5.b.i.](#),  
24 [III.10.J.5.b.iv.](#), [III.10.J.5.b.v.](#), [III.10.J.5.c.i.](#), [III.10.J.5.c.iv.](#), [III.10.J.5.c.v.](#), [III.10.J.5.d.i.](#),  
25 [III.10.J.5.d.iv.](#), and [III.10.J.5.d.v.](#), or other corrosion protection if Ecology believes other corrosion  
26 protection is necessary to ensure the integrity of the HLW Vitrification System during use of the  
27 HLW Vitrification System. The installation of a corrosion protection system that is field fabricated  
28 must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-  
29 640(3)(g), in accordance with WAC 173-303-680(2) and (3)].
- 30 III.10.J.1.a.ix. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will obtain  
31 and keep on file in the WTP Unit operating record, written statements by those persons required to  
32 certify the design of the HLW Vitrification System and supervise the installation of the HLW  
33 Vitrification System, as specified in WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), in accordance  
34 with WAC 173-303-680, attesting that the HLW Vitrification system and corresponding containment  
35 system listed in Permit Tables [III.10.J.A](#) and [III.10.J.B](#), as approved/modified pursuant to Permit  
36 Condition [III.10.J.5.](#), were properly designed and installed, and that repairs, in accordance with  
37 WAC 173-303-640(3)(c) and (e), were performed [WAC 173-303-640(3)(a) and WAC 173-303-  
38 640(3)(h), in accordance with WAC 173-303-680(3)].
- 39 III.10.J.1.a.x. The independent HLW Vitrification System installation inspection and subsequent written  
40 statements will be certified in accordance with WAC 173-303-810(13)(a), as modified pursuant to

1 Permit Condition [III.10.J.1.a.iii.](#), comply with all requirements of WAC 173-303-640(3)(h) in  
2 accordance with WAC 173-303-680, and will consider, but not be limited to, the following LAW  
3 Vitrification System installation documentation:

4 A. Field installation report with date of installation;

5 B. Approved welding procedures;

6 C. Welder qualification and certifications;

7 D. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical  
8 Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1; American Petroleum  
9 Institute (API) Standard 620, or Standard 650, as applicable;

10 E. Tester credentials;

11 F. Field inspector credentials;

12 G. Field inspector reports;

13 H. Field waiver reports; and

14 I. Non-compliance reports and corrective action (including field waiver reports) and repair reports.

15 III.10.J.1.a.xi. The Permittees will ensure periodic integrity assessments are conducted on the HLW Vitrification  
16 System, listed in Permit Table [III.10.J.A.](#), as approved/modified pursuant to Permit Condition  
17 [III.10.J.5.](#), over the term of this Permit, in accordance with WAC 173-303-680(2) and (3) as  
18 specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program  
19 and schedule in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit  
20 Conditions [III.10.J.5.e.i.](#) and [III.10.C.5.c.](#) Results of the integrity assessments will be included in  
21 the WTP Unit operating record until ten (10) years after post-closure, or corrective action is  
22 complete and certified, whichever is later.

23 III.10.J.1.a.xii. The Permittees will address problems detected during the HLW Vitrification System integrity  
24 assessments specified in Permit Condition [III.10.J.1.a.xi.](#) following the integrity assessment program  
25 in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions  
26 [III.10.J.5.e.i.](#) and [III.10.C.5.c.](#)

27 III.10.J.1.a.xiii. All process monitors/instruments as specified in Permit Table [III.10.J.F.](#), as approved/modified  
28 pursuant to Permit Condition [III.10.J.5.](#), will be equipped with operational alarms to warn of  
29 deviation, or imminent deviation from the limits specified in Permit Table [III.10.J.F.](#)

30 III.10.J.1.a.xiv. The Permittees will install and test all process and leak detection system monitors/instrumentation as  
31 specified in Permit Tables [III.10.J.C](#) and [III.10.J.F.](#), as approved/modified pursuant to Permit  
32 Condition [III.10.J.5.](#), in accordance with Operating Unit 10, Appendices 10.1, 10.2, and 10.14 of this  
33 Permit, as approved pursuant to Permit Conditions [III.10.J.5.d.x.](#) and [III.10.J.5.f.xvi.](#)

34 III.10.J.1.a.xv. No dangerous and/or mixed waste will be treated in the HLW Vitrification System unless the  
35 operating conditions, specified under Permit Condition [III.10.J.1.c.](#) are complied with.

36 III.10.J.1.a.xvi. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other materials  
37 in the HLW Vitrification System if these substances could cause the subsystem, subsystem  
38 equipment, or the containment system to rupture, leak, corrode, or otherwise fail [WAC 173-303-

- 1 640(5)(a), in accordance with WAC 173-303-680(2)]. This condition is not applicable to corrosion  
2 of HLW Vitrification System sub-system and sub-system equipment that are expected to be replaced  
3 as part of normal operations (e.g., melters).
- 4 III.10.J.1.a.xvii. The Permittees will operate the HLW Vitrification System to prevent spills and overflows using  
5 description of controls and practices as required under WAC 173-303-640(5)(b) described in Permit  
6 Condition [III.10.C.5](#), and Operating Unit 10, Appendix 10.18 of this Permit, as approved pursuant to  
7 Permit Condition [III.10.J.5.e](#). [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2)  
8 and (3), and WAC 173-303-806(4)(c)(ix)].
- 9 III.10.J.1.a.xviii. For routinely non-accessible HLW Vitrification System sub-systems, as specified in Operating Unit  
10 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition [III.10.J.5.e.vi.](#), the Permittees  
11 will mark all routinely non-accessible HLW Vitrification System sub-systems access points with  
12 labels or signs to identify the waste contained in each HLW Vitrification System sub-system. The  
13 label, or sign, must be legible at a distance of at least fifty (50) feet, and must bear a legend which  
14 identifies the waste in a manner which adequately warns employees, emergency response personnel,  
15 and the public of the major risk(s) associated with the waste being stored or treated in the HLW  
16 Vitrification System sub-systems. For the purposes of this permit condition, “routinely non-  
17 accessible” means personnel are unable to enter these areas while waste is being managed in them  
18 [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].
- 19 III.10.J.1.a.xix. For all HLW Vitrification System sub-systems not addressed in Permit Condition [III.10.J.1.a.xviii.](#),  
20 the Permittees will mark all these HLW Vitrification System sub-systems holding dangerous and/or  
21 mixed waste with labels or signs to identify the waste contained in the HLW Vitrification System  
22 sub-systems. The labels, or signs, must be legible at a distance of at least fifty (50) feet, and must  
23 bear a legend which identifies the waste in a manner which adequately warns employees, emergency  
24 response personnel, and the public of the major risk(s) associated with the waste being stored or  
25 treated in the HLW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with  
26 WAC 173-303-680(2)].
- 27 III.10.J.1.a.xx. The Permittees will ensure that the containment systems for the HLW Vitrification System sub-  
28 systems listed in Permit Tables [III.10.J.A.](#) and [III.10.J.B.](#), as approved/modified pursuant to Permit  
29 Condition [III.10.J.5](#), are free of cracks or gaps to prevent any migration of dangerous and/or mixed  
30 waste or accumulated liquid out of the system to the soil, groundwater, or surface water at any time  
31 during use of the HLW Vitrification System sub-systems. Any indication that a crack or gap may  
32 exist in the containment systems will be investigated and repaired in accordance with Operating  
33 Unit 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition [III.10.J.5.e.v.](#)  
34 [WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC 173-303-640(6), in  
35 accordance with WAC 173-303-680(2) and (3), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-  
36 320].
- 37 III.10.J.1.a.xxi. The Permittees must immediately, and safely, remove from service any HLW Vitrification System or  
38 secondary containment system which, through an integrity assessment, is found to be “unfit for use”  
39 as defined in WAC 173-303-040, following Permit Conditions [III.10.J.1.a.xxiii.A.](#) through [D.](#), and [F.](#)  
40 The affected HLW Vitrification System, or secondary containment system, must be either repaired or  
41 closed in accordance with Permit Condition [III.10.J.1.a.xxiii.E.](#) [WAC 173-303-640(7)(e) and (f),  
42 and WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

- 1 III.10.J.1.a.xxii. An impermeable coating, as specified in Operating Unit 10, Appendices 10.4, 10.5, 10.7, 10.9,  
2 10.11, and 10.12 of this Permit, as approved pursuant to Permit Condition [III.10.J.5.b.v.](#), will be  
3 maintained for all concrete containment systems and concrete portions of containment systems for  
4 each HLW Vitrification System sub-systems listed in Permit Tables [III.10.J.A](#) and [III.10.J.B](#) as  
5 approved/modified pursuant to Permit Condition III.10.J.5 (concrete containment systems that do not  
6 have a liner, pursuant to WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and  
7 have construction joints, will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in  
8 accordance with WAC 173-303-680(2). The coating will prevent migration of any dangerous and  
9 mixed waste into the concrete. All coatings will meet the following performance standards:
- 10 A. The coating must seal the containment surface such that no cracks, seams, or other avenues  
11 through which liquid could migrate, are present;
  - 12 B. The coating must be of adequate thickness and strength to withstand the normal operation of  
13 equipment and personnel within the given area such that degradation or physical damage to the  
14 coating or lining can be identified and remedied before dangerous and mixed waste could  
15 migrate from the system; and
  - 16 C. The coating must be compatible with the dangerous and mixed waste, treatment reagents, or  
17 other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), in  
18 accordance with WAC 173-303-680(2) and (3), and WAC 173-303-806(4)(i)(i)(A)].
- 19 III.10.J.1.a.xxiii. The Permittees will inspect all containment systems for the HLW Vitrification System sub-systems  
20 listed in Permit Tables [III.10.J.A](#) and [III.10.J.B](#), as approved/modified pursuant to Permit Condition  
21 [III.10.J.5.](#), in accordance with the Inspection Schedule specified in Operating Unit 10, Chapter 6.0 of  
22 this Permit, as approved pursuant to Permit Conditions [III.10.J.5.e.i.](#) and [III.10.C.5.c.](#), and take the  
23 following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment  
24 systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in accordance with WAC 173-303-  
25 680(2) and (3), WAC 173-303-320, and WAC 173-303-806(4)(i)(i)(B)]:
- 26 A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the HLW  
27 Vitrification System sub-systems or secondary containment system.
  - 28 B. Determine the source of the dangerous and/or mixed waste.
  - 29 C. Remove the dangerous and/or mixed waste from the containment area in accordance with WAC  
30 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed  
31 waste removed from containment areas of the HLW Vitrification System sub-systems will be, as  
32 a minimum, managed as mixed waste.
  - 33 D. If the cause of the release was a spill has not damaged the integrity of the HLW Vitrification  
34 System sub-system, the Permittees may return the HLW Vitrification System sub-system to  
35 service in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-  
36 640(7)(e)(ii). In such case, the Permittees will take action to ensure the incident that caused the  
37 dangerous and/or mixed waste to enter the containment system will not re-occur [WAC 173-303-  
38 320(3)].
  - 39 E. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary  
40 HLW Vitrification System into the secondary containment system, or the system is unfit for use

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as determined through an integrity assessment or other inspection, the Permittees will comply with the requirements of WAC 173-303-640(7) and take the following actions:

1. Close the HLW Vitrification System Sub-system following procedures in WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680 and Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8.](#), or
2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition [III.10.J.1.a.iii.](#)) the HLW Vitrification System in accordance with Operating Unit 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition [III.10.J.5.e.v.](#), before the HLW Vitrification System is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

F. The Permittees will document, in the WTP Unit operating record, actions/procedures taken to comply with A. through E. above, as specified in WAC 173-303-640(6)(d), in accordance with WAC 173-303-680(2) and (3).

G. In accordance with WAC 173-303-680(2) and WAC 173-303-680 (3), the Permittees will notify and report releases to the environment to Ecology, as specified in WAC 173-303-640(7)(d).

III.10.J.1.a.xxiv.If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water, liquids from damaged or broken pipes) cannot be removed from the secondary containment system within twenty-four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of discovery. The notification will provide the information in A, B, and C, listed below. The Permittees will provide Ecology with a written demonstration within seven (7) business days, identifying at a minimum [WAC 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-680(3) and WAC 173-303-806(4)(i)(i)(B)]:

- A. Reasons for delayed removal;
- B. Measures implemented to ensure continued protection of human health and the environment;
- C. Current actions being taken to remove liquids from secondary containment.

III.10.J.1.a.xxv. All air pollution control devices and capture systems in the HLW Vitrification System will be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants and to minimize process upsets. Procedures for ensuring that the air pollution control devices and capture systems in the HLW Vitrification System are properly operated and maintained so as to minimize the emission of air contaminants and process upsets will be established.

III.10.J.1.a.xxvi.In all future narrative permit submittals, the Permittees will include HLW Vitrification sub-system names with the sub-system designation.

III.10.J.1.a.xxvii.Modifications to approved design, plans, and specifications in Operating Unit 10 of this Permit for the HLW Vitrification System will be allowed only in accordance with Permit Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#), [III.10.C.9.d.](#), [e.](#), and [h.](#)

III.10.J.1.a.xxviii.For any portion of the HLW Vitrification System that has the potential for formation and accumulation of hydrogen gases, the Permittees will operate the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

- 1 III.10.J.1.a.xxix. For each HLW Vitrification System sub-system holding dangerous waste which are acutely or  
2 chronically toxic by inhalation, the Permittees will operate the system to prevent escape of vapors,  
3 fumes or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e) in  
4 accordance with WAC 173-303-680].
- 5 III.10.J.1.b. Performance Standards
- 6 III.10.J.1.b.i. The HLW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99%  
7 for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1) and  
8 40CFR 63.1203(c)(2), in accordance with WAC 173-303-680(2)].
- 9 RESERVED
- 10 DRE in this Permit condition will be calculated in accordance with the formula given below:  
11 
$$\text{DRE} = [1 - (\text{Wout} / \text{Win})] \times 100\%$$
  
12 Where:  
13 Win = mass feedrate of one principal organic dangerous constituent (PODC) in a waste feedstream;  
14 and  
15 Wout = mass emission rate of the same PODC present in exhaust emissions prior to release to the  
16 atmosphere.
- 17 III.10.J.1.b.ii. Particulate matter emissions from the HLW Vitrification System will not exceed 34 mg/dscm (0.015  
18 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with WAC 173-303-680(2)].
- 19 III.10.J.1.b.iii. Hydrochloric acid and chlorine gas emissions from the HLW Vitrification System will not exceed 21  
20 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-303-680(2)].
- 21 III.10.J.1.b.iv. Dioxin and Furan TEQ emissions from the HLW Vitrification System will not exceed 0.2  
22 nanograms (ng)/dscm [40 CFR §63.1203(b)(1), in accordance with WAC 173-303-680(2)].
- 23 III.10.J.1.b.v. Mercury emissions from the HLW Vitrification System will not exceed 45 µg/dscm, [40 CFR  
24 §63.1203(b)(2), in accordance with WAC 173-303-680(2)].
- 25 III.10.J.1.b.vi. Lead and cadmium emissions from the HLW Vitrification System will not exceed 120 µg/dscm,  
26 combined [40 CFR §63.1203(b)(3), in accordance with WAC 173-303-680(2)].
- 27 III.10.J.1.b.vii. Arsenic, beryllium, and chromium emissions from the HLW Vitrification System will not exceed 97  
28 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with WAC 173-303-680(2)].
- 29 III.10.J.1.b.viii. Carbon monoxide (CO) emission from the HLW Vitrification System will not exceed 100 parts per  
30 million (ppm) by volume, over an hourly rolling average (as measured and recorded by the  
31 continuous monitoring system), dry [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-303-  
32 680(2)].
- 33 III.10.J.1.b.ix. Hydrocarbon emission from the HLW Vitrification System will not exceed 10 parts per million  
34 (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous  
35 monitoring system during demonstration testing required by this Permit), dry basis, and reported as  
36 propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC 173-303-680(2)].

- 1 III.10.J.1.b.x. If the emissions from the HLW Vitrification System exceed the emission rates listed in Permit Table  
2 [III.10.J.E](#), as approved pursuant to Permit Condition [III.10.C.11.b.](#), the Permittees will notify  
3 Ecology, in accordance with Permit Condition [III.10.J.3.d.vii](#). [WAC 173-303-680(2) and (3), and  
4 WAC 173-303-815(2)(b)(ii)].
- 5 The emission limits specified in Permit Conditions [III.10.J.1.b.i.](#) through [III.10.J.1.b.x.](#) above, will  
6 be met for the HLW Vitrification System by limiting feed rates as specified in Permit Tables  
7 [III.10.J.D](#) and [III.10.J.F](#), as approved/modified pursuant to Permit Condition [III.10.J.5.](#), compliance  
8 with operating conditions specified in Permit Condition [III.10.J.1.c.](#) (except as specified in Permit  
9 Condition III.10.J.1.b.xii.), and compliance with Permit Condition [III.10.J.1.b.xi.](#)
- 10 III.10.J.1.b.xi. Treatment effectiveness, feed-rates and operating rates for dangerous and mixed waste management  
11 units contained in the HLW Building, but not included in Permit Table [III.10.J.A](#), as  
12 approved/modified pursuant to Permit Condition [III.10.J.5.](#), will be as specified in Permit Sections  
13 [III.10.D](#), [III.10.E](#), [III.10.F](#) and consistent with assumptions and basis which are reflected in  
14 Operating Unit 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition  
15 [III.10.C.11.b](#). For the purposes of this permit condition, Operating Unit 10, Appendix 6.3.1 will be  
16 superceded by Appendix 6.4.1 upon its approval pursuant to either Permit Conditions [III.10.C.11.c.](#)  
17 or [III.10.C.11.d.](#) [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 18 III.10.J.1.b.xii. Compliance with the operating conditions specified in Permit Condition [III.10.J.1.c.](#), will be  
19 regarded as compliance with the required performance standards identified in Permit Conditions  
20 [III.10.J.1.b.i.](#) through [x.](#) However, if it is determined that during the effective period of this Permit  
21 that compliance with the operating conditions in Permit Condition [III.10.J.1.c.](#) is not sufficient to  
22 ensure compliance with the performance standards specified in Permit Conditions [III.10.J.1.b.i.](#)  
23 through [x.](#), the Permit may be modified, revoked, or reissued pursuant to Permit Conditions  
24 [III.10.C.2.e.](#) and [III.10.C.2.f.](#), or [III.10.C.2.g.](#)
- 25 III.10.J.1.c. Operating Conditions [WAC-303-670(6), in accordance with WAC 173-303-680(2)and (3)].
- 26 The Permittees will operate the HLW Vitrification System in accordance with Operating Unit 10,  
27 Chapter 4.0 of this Permit, as updated pursuant to Permit Condition [III.10.J.5.e.vi.](#), and Operating  
28 Unit 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition [III.10.J.5.e.](#), and  
29 Operating Unit 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition  
30 [III.10.J.5.f.](#), except as modified pursuant to Permit Conditions [III.10.J.1.b.xii.](#), [III.10.J.2.](#), [III.10.J.3.](#),  
31 [III.10.J.4.](#), and in accordance with the following:
- 32 III.10.J.1.c.i. The Permittees will operate the HLW Vitrification System in order to maintain the systems and  
33 process parameters listed in Permit Tables [III.10.J.C](#) and [III.10.J.F](#), as approved/modified pursuant to  
34 Permit Condition [III.10.J.5.](#), within the set-points specified in Permit Table [III.10.J.F](#).
- 35 III.10.J.1.c.ii. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.J.F](#), as  
36 approved/modified pursuant to Permit Condition [III.10.J.5.](#), to automatically cut-off and/or lock-out  
37 the dangerous and mixed waste feed to the HLW Vitrification System when the monitored operating  
38 conditions deviate from the set-points specified in Permit Table [III.10.J.F](#).
- 39 III.10.J.1.c.iii. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.J.F](#), as  
40 approved/modified pursuant to Permit Condition [III.10.J.5.](#), to automatically cut-off and/or lock-out

- 1 the dangerous and mixed waste feed to the HLW Vitrification System when all instruments specified  
2 on Permit Table [III.10.H.F](#) for measuring the monitored parameters fails or exceeds its span value
- 3 III.10.J.1.c.iv. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.J.F](#), as  
4 approved/modified pursuant to Permit Condition [III.10.J.5](#), to automatically cut-off and/or lock out  
5 the dangerous and/or mixed waste feed to the HLW Vitrification System when any portion of the  
6 HLW Vitrification System is bypassed. The terms “bypassed” and “bypass event” as used in Permit  
7 Sections [III.10.J](#) and [III.10.K](#) will mean if any portion of the HLW Vitrification System is bypassed  
8 so that gases are not treated as during the Demonstration Test.
- 9 III.10.J.1.c.v. In the event of a malfunction of the AWFCO systems listed in Permit Table [III.10.J.F](#), as  
10 approved/modified pursuant to Permit Condition [III.10.J.5](#), the Permittees will immediately,  
11 manually cut-off the dangerous and mixed waste feed to the HLW Vitrification System. The  
12 Permittees will not restart the dangerous and/or mixed waste feed until the problem causing the  
13 malfunction has been identified and corrected.
- 14 III.10.J.1.c.vi. The Permittees will manually cut-off the dangerous and mixed waste feed to the HLW Vitrification  
15 System when the operating conditions deviate from the limits specified in Permit Condition  
16 [III.10.J.1.c.i](#), unless the deviation automatically activates the waste feed cut-off sequence specified  
17 in Permit Conditions [III.10.J.1.c.ii](#), [III.10.J.1.c.iii](#), and/or [III.10.J.1.c.iv](#).
- 18 III.10.J.1.c.vii. If greater than thirty (30) dangerous and mixed waste feed cut-off, combined, to the HLW  
19 Vitrification System occur due to deviations from Permit Table [III.10.J.F](#), as approved/modified  
20 pursuant to Permit Condition [III.10.J.5](#), within a sixty (60) day period, the Permittees will submit a  
21 written report to Ecology within five (5) calendar days of the thirty-first exceedence including the  
22 information specified below. These dangerous and mixed waste feed cut-offs to the HLW  
23 Vitrification System, whether automatically or manually activated, are counted if the specified set-  
24 points are deviated from while dangerous waste, mixed waste, and waste residues continue to be  
25 processed in the HLW Vitrification System. A cascade event is counted at a frequency of one (1)  
26 towards the first waste feed cut-off parameter, specified on Permit Table [III.10.J.F](#), from which the  
27 set-point is deviated:
- 28 A. The parameter(s) that deviated from the set-point(s) in Permit Table [III.10.J.F](#);  
29 B. The magnitude, dates, and duration of the deviations;  
30 C. Results of the investigation of the cause of the deviations; and,  
31 D. Corrective measures taken to minimize future occurrences of the deviations.
- 32 III.10.J.1.c.viii. If any portion of the HLW Vitrification System is bypassed while treating dangerous and/or mixed  
33 waste, it will be regarded as non-compliance with the operating conditions specified in Permit  
34 Condition [III.10.J.1.c](#) and the performance standards specified in Permit Condition [III.10.J.1.b](#).  
35 After such a bypass event, the Permittees will perform the following actions:
- 36 A. Investigate the cause of the bypass event;  
37 B. Take appropriate corrective measures to minimize future bypasses;  
38 C. Record the investigation findings and corrective measures in the operating record; and

- 1 D. Submit a written report to Ecology within five (5) days of the bypass event documenting the  
2 result of the investigation and corrective measures.
- 3 III.10.J.1.c.ix. The Permittees will control fugitive emissions from the HLW Vitrification System by maintaining  
4 the melter under negative pressure.
- 5 III.10.J.1.c.x. Compliance with the operating conditions specified in Permit Condition [III.10.J.1.c.](#) will be regarded  
6 as compliance with the required performance standards identified in Permit Condition [III.10.J.1.b.](#)  
7 However, evidence that compliance with these operating conditions is insufficient to ensure  
8 compliance with the performance standards, will justify modification, revocation, or re-issuance of  
9 this Permit, in accordance with Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#), or [III.10.C.2.g.](#)
- 10 III.10.J.1.d. Inspection Requirements [WAC 173-303-680(3)].
- 11 III.10.J.1.d.i. The Permittees will inspect the HLW Vitrification System in accordance with the Inspection  
12 Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in accordance with Permit  
13 Condition [III.10.C.5.c.](#)
- 14 III.10.J.1.d.ii. The inspection data for HLW Vitrification System will be recorded, and the records will be placed in  
15 the WTP Unit operating record for the HLW Vitrification System, in accordance with Permit  
16 Condition [III.10.C.4.](#)
- 17 III.10.J.1.d.iii. The Permittees will comply with the inspection requirements specified in Operating Unit 10,  
18 Appendix 10.15 of this Permit, as approved pursuant to Permit Condition [III.10.J.5.f.](#), and as  
19 modified by Permit Conditions [III.10.J.1.b.xii.](#), [III.10.J.2.](#), [III.10.J.3.](#), and [III.10.J.4.](#)
- 20 III.10.J.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-670(7),  
21 and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]
- 22 III.10.J.1.e.i. Upon receipt of a written request from Ecology, the Permittees will perform sampling and analysis  
23 of the dangerous and mixed waste and exhaust emissions to verify that the operating requirements  
24 established in the Permit achieve the performance standards delineated in this Permit.
- 25 III.10.J.1.e.ii. The Permittees will comply with the monitoring requirements specified in Operating Unit 10,  
26 Appendices 10.2, 10.3, 10.7, 10.13, 10.15, and 10.18 of this Permit, as approved pursuant to Permit  
27 Conditions [III.10.J.5.c.](#), [III.10.J.5.d.](#), [III.10.J.5.e.](#), and [III.10.J.5.f.](#), as modified by Permit Conditions  
28 [III.10.J.1.b.xii.](#), [III.10.J.2.](#), [III.10.J.3.](#), and [III.10.J.4.](#)
- 29 III.10.J.1.e.iii. The Permittees will operate, calibrate, and maintain the carbon monoxide and hydrocarbon  
30 continuous emission monitors (CEM) specified in this Permit in accordance with Performance  
31 Specification 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart  
32 EEE of 40 CFR Part 63, and Operating Unit 10 Appendix 10.15 of this Permit, as approved pursuant  
33 to Permit Condition [III.10.J.5.f.](#), and as modified by Permit Conditions [III.10.J.1.b.xii.](#), [III.10.J.2.](#),  
34 [III.10.J.3.](#), and [III.10.J.4.](#)
- 35 III.10.J.1.e.iv. The Permittees will operate, calibrate, and maintain the instruments specified on Permit Tables  
36 [III.10.J.C](#) and [E](#), as approved/modified pursuant to Permit Condition [III.10.J.5.](#), in accordance with  
37 Operating Unit 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition  
38 [III.10.J.5.f.](#), and as modified by Permit Conditions [III.10.J.1.b.xii.](#), [III.10.J.2.](#), [III.10.J.3.](#), and  
39 [III.10.J.4.](#)

- 1 III.10.J.1.f. Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]
- 2 III.10.J.1.f.i. The Permittees will record and maintain in the WTP Unit operating record for the HLW Vitrification  
3 System, all monitoring, calibration, maintenance, test data, and inspection data compiled under the  
4 conditions of this Permit, in accordance with Permit Conditions [III.10.C.4.](#) and [III.10.C.5.](#), as  
5 modified by Permit Conditions [III.10.J.1.b.xii.](#), [III.10.J.2.](#), [III.10.J.3.](#), and [III.10.J.4.](#)
- 6 III.10.J.1.f.ii. The Permittees will record in the WTP Unit operating record the date, time, and duration of all  
7 automatic waste feed cut-offs and/or lockouts, including the triggering parameters, reason for the  
8 deviation, and recurrence of the incident. The Permittees will also record all incidents of AWFCO  
9 system function failures, including the corrective measures taken to correct the condition that caused  
10 the failure.
- 11 III.10.J.1.f.iii. The Permittees will submit to Ecology a report semi-annually the first calendar year, and annually  
12 thereafter each calendar year within ninety (90) days following the end of the year. The report will  
13 include the following information:
- 14 A. Total dangerous and mixed waste feed processing time for the HLW Vitrification System;
- 15 B. Date/Time of all HLW Vitrification System startups and shutdowns;
- 16 C. Date/Time/Duration/Cause/Corrective Action taken for all HLW Vitrification System shutdowns  
17 caused by malfunction of either process or control equipment; and
- 18 D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or mixed  
19 waste feed cut-off due to deviations from Permit Table [III.10.J.F.](#), as approved/modified pursuant  
20 to Permit Condition [III.10.J.5.](#)
- 21 III.10.J.1.f.iv. The Permittees will submit an annual report to Ecology each calendar year within ninety (90) days  
22 following the end of the year of all quarterly CEM Calibration Error and Annual CEM Performance  
23 Specification Tests conducted in accordance with Permit Condition [III.10.J.1.e.iii.](#)
- 24 III.10.J.1.g. Closure
- 25 The Permittees will close the HLW Vitrification System in accordance with Operating Unit 10,  
26 Chapter 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8.](#)
- 27 III.10.J.2. Shakedown Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-670(7), and  
28 WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)].
- 29 III.10.J.2.a. The shakedown period for the HLW Vitrification System will be conducted in accordance with  
30 Permit Condition [III.10.J.1.](#), Operating Unit 10, Appendix 10.15 of this Permit, as approved pursuant  
31 to Permit Condition [III.10.J.5.f.](#), and as modified in accordance with Permit Conditions  
32 [III.10.J.1.b.xii.](#), [III.10.J.2.](#), and [III.10.J.3.](#)
- 33 III.10.J.2.b. Duration of the Shakedown Period
- 34 III.10.J.2.b.i. The shakedown period for the HLW Vitrification System will begin with the initial introduction of  
35 dangerous waste in the HLW Vitrification System following construction and will end with the start  
36 of the demonstration test.
- 37 III.10.J.2.b.ii. The shakedown period will not exceed the following limits, as defined by hours of operation of the  
38 HLW Vitrification System with dangerous waste. The Permittees may petition Ecology for one (1)

- 1 extension of each shakedown phase for seven hundred and twenty (720) additional operating hours  
2 in accordance with permit modification procedures specified in Permit Conditions [III.10.C.2.e.](#) and  
3 [III.10.C.2.f.](#)
- 4 Shakedown Phase 1: 720 hours
- 5 Shakedown Phase 2: 720 hours
- 6 III.10.J.2.b.iii. Shakedown Phase 2 will not be commenced until documentation has been submitted to Ecology  
7 verifying that the HLW Vitrification System has operated at a minimum of 75% of the shakedown  
8 Phase 1 feed-rate limit for two (2) separate eight (8) consecutive hour periods with no AWFCOs.
- 9 III.10.J.2.c. Allowable Waste Feed During the Shakedown Period
- 10 III.10.J.2.c.i. The Permittees may feed the dangerous waste specified for the HLW Vitrification System on the Part  
11 A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those waste outside the waste  
12 acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved  
13 pursuant to Permit Condition [III.10.C.3.](#), except Permit Conditions [III.10.J.2.c.ii.](#) through [v.](#) also  
14 apply.
- 15 III.10.J.2.c.ii. The Permittees will not feed the following waste to the HLW Vitrification System during  
16 Shakedown Phase 1:
- 17 A. Acutely toxic dangerous waste listed in WAC 173-303-081(a)(2)(a)(i).  
18 B. Mixed waste
- 19 III.10.J.2.c.iii. The Permittees will not feed the following waste to the HLW Vitrification System during  
20 Shakedown Phase 2:
- 21 A. Mixed waste
- 22 III.10.J.2.c.iv. The feed-rates to the HLW Vitrification System will not exceed the limits in Permit Tables [III.10.J.D](#)  
23 and [III.10.J.F](#), as approved/modified pursuant to Permit Condition [III.10.J.5.](#)
- 24 III.10.J.2.c.v. The Permittees will conduct sufficient analysis of the dangerous waste treated in the HLW  
25 Vitrification System to verify that the waste feed is within the physical and chemical composition  
26 limits specified in this Permit.
- 27 III.10.J.3. Demonstration Test Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-303-670(7),  
28 and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)]
- 29 III.10.J.3.a. Demonstration Test Period
- 30 III.10.J.3.a.i. The Permittees will operate, monitor, and maintain the HLW Vitrification System as specified in  
31 Permit Condition [III.10.J.1.](#), and Operating Unit 10, Appendix 10.15 of this Permit, as approved  
32 pursuant to Permit Condition [III.10.J.5.f.](#), except as modified in accordance with Permit Conditions  
33 [III.10.J.1.b.xii.](#) and [III.10.J.3.](#)
- 34 III.10.J.3.a.ii. Operating Unit 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition  
35 [III.10.J.5.f.](#), will be re-submitted to Ecology for approval by the Permittees as a permit modification  
36 pursuant to Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#) at least one hundred and eighty (180)  
37 days prior to the start date of the demonstration test. The revised Demonstration Test Plan will

- 1 include applicable EPA promulgated test methods and procedures in effect at the time of the re-  
2 submittal and projected commencement and completion dates for the Demonstration Test.
- 3 III.10.J.3.a.iii. The Permittees will not commence the demonstration test period until documentation has been  
4 submitted to Ecology verifying that the HLW Vitrification System has operated at a minimum of  
5 90% of the demonstration test period feed-rate limit for a minimum of an eight (8) consecutive hours  
6 period on two (2) consecutive days.
- 7 III.10.J.3.b. Performance Standards
- 8 The Permittees will demonstrate compliance with the performance standards specified in Permit  
9 Condition [III.10.J.1.b.](#) during the Demonstration Test Period.
- 10 III.10.J.3.c. Allowable Waste Feed During the Demonstration Test Period
- 11 III.10.J.3.c.i. The Permittees may feed the dangerous waste specified for the HLW Vitrification System in Part A  
12 Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those waste outside the waste  
13 acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved  
14 pursuant to Permit Condition [III.10.C.3.](#), except Permit Conditions [III.10.J.3.c.ii.](#) through [iv.](#) also  
15 apply.
- 16 III.10.J.3.c.ii. The Permittees will not feed mixed waste to the HLW Vitrification System.
- 17 III.10.J.3.c.iv. The dangerous waste feed-rates to the HLW Vitrification System will not exceed the limits in Permit  
18 Tables [III.10.J.D](#) and [F](#), as approved/modified pursuant to Permit Condition [III.10.J.5.](#)
- 19 III.10.J.3.c.v. The Permittees will conduct sufficient analysis of the dangerous waste treated in the HLW  
20 Vitrification System to verify that the dangerous waste is within the physical and chemical  
21 composition limits specified in this Permit.
- 22 III.10.J.3.d. Demonstration Data Submissions and Certifications
- 23 III.10.J.3.d.i. The Permittees will submit to Ecology a complete demonstration test report within one hundred and  
24 twenty (120) calendar days of completion of the Demonstration Test including all data collected  
25 during the Demonstration Test and updated Permit Tables [III.10.K.D.](#), [III.10.K.E.](#) and [III.10.K.F.](#)
- 26 III.10.J.3.d.ii. The Permittees must submit the following information to Ecology prior to receiving Ecology's  
27 approval to commence feed of dangerous waste and mixed waste to the HLW Vitrification System:
- 28 A. The Permittees will submit a summary of data collected as required during the Demonstration  
29 Test to Ecology upon completion of the Demonstration Test.
- 30 B. A certification that the Demonstration Test has been carried out in accordance with the approved  
31 Demonstration Test Plan and approved modifications within thirty (30) days of the completion  
32 of the Demonstration Test [WAC 173-303-807(8)].
- 33 C. Calculations and analytical data showing compliance with the performance standards specified  
34 in Permit Conditions [III.10.J.1.b.i.](#), [III.10.J.1.b.iv.](#), [III.10.J.1.b.v.](#), [III.10.J.1.b.vi.](#) and [III.10.J.1.b.vii](#)
- 35 D. Laboratory data QA/QC summary for the information provided in [III.10.J.3.d.ii.C.](#)
- 36 III.10.J.3.d.iii. After successful completion of the Demonstration Test and receipt of Ecology's approval, the  
37 Permittees will be authorized to commence feed of dangerous waste and mixed waste to the HLW

1           Vitrification System for the post-demonstration test period indicated in Permit Tables [III.10.J.D](#) and  
2           [E](#), as approved/modified pursuant to Permit Condition [III.10.J.5.](#), in compliance with the operating  
3           requirements specified in Permit Condition [III.10.J.1.c.](#) and within the limitations specified in Permit  
4           Condition [III.10.C.14.](#)

5   III.10.J.3.d.iv. RESERVED

6   III.10.J.3.d.v. After successful completion of the Demonstration Test, Permittees submittal of the following to  
7           Ecology, and Permittees receipt of Ecology approval of the following in writing, the Permittees will  
8           be authorized to feed dangerous waste and mixed waste to the HLW Vitrification System pursuant to  
9           Permit Section [III.10.K.](#)

10           A. A complete Demonstration Test Report for the HLW Vitrification System and updated Permit  
11           Tables [III.10.K.D](#), [III.10.K.E](#), and [III.10.K.F](#), as approved/modified pursuant to Permit  
12           Conditions [III.10.J.5](#) and [III.10.C.11.c.](#) or [III.10.C.11.d.](#), the test report will be certified in  
13           accordance with WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).

14           B. A Final Risk Assessment Report completed pursuant to Permit Conditions [III.10.C.11.c.](#) or  
15           [III.10.C.11.d.](#)

16   III.10.J.3.d.vi. If any calculations or testing results show that one or more of the performance standards listed in  
17           Permit Condition [III.10.J.1.b.](#), with the exception of Permit Condition [III.10.J.1.b.x.](#), for the HLW  
18           Vitrification System were not met during the Demonstration Test, the Permittees will perform the  
19           following actions:

20           A. Immediately stop dangerous and mixed waste feed to the HLW Vitrification System under the  
21           mode of operation that resulted in not meeting the performance standard(s).

22           B. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the  
23           performance standard(s) as specified in Permit Condition I.E.21.

24           C. Investigate the cause of the failure and submit a report of the investigation findings to Ecology  
25           within fifteen (15) days of discovery of not meeting the performance standard(s).

26           D. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance  
27           standard(s), documentation supporting a mode of operation where all performance standards  
28           listed in Permit Condition [III.10.J.1.b.](#), with the exception of Permit Condition [III.10.J.1.b.x.](#), for  
29           the HLW Vitrification System were met during the demonstration test, if any such mode was  
30           demonstrated.

31           E. Based on the information provided to Ecology by the Permittees, pursuant to Permit Conditions  
32           [III.10.J.3.d.vi.A](#) through D above, and any additional information, Ecology may provide, in  
33           writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW  
34           Vitrification System and/or amend the mode of operation the Permittees are allowed to continue  
35           operations prior to Ecology approval of a compliance schedule and/or revised Demonstration  
36           Test Plan, pursuant to Permit Conditions [III.10.J.3.d.vi.F](#) and [G](#).

37           F. If the performance standard listed in Permit Condition [III.10.J.1.b.i.](#) was not met during the  
38           Demonstration Test, the Permittees will submit within one hundred and twenty (120) days of  
39           discovery of not meeting the performance standard, a revised Demonstration Test Plan (if  
40           appropriate) and a compliance schedule for Ecology approval to address this deficiency. If a

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- 1 revised Demonstration Test Plan is submitted, it will be accompanied by a request for approval  
2 to retest as a permit modification pursuant to Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#)  
3 The revised Demonstration Test Plan (if submitted) must include substantive changes to prevent  
4 failure from reoccurring.
- 5 G. If any of the performance standards listed in Permit Condition [III.10.J.1.b.](#), with the exception of  
6 Permit Conditions [III.10.J.1.b.i.](#) or [III.10.J.1.b.x.](#), were not met during the Demonstration Test,  
7 the Permittees will submit to Ecology within one hundred and twenty (120) days of discovery of  
8 not meeting the performance standard(s), a revised Demonstration Test Plan requesting approval  
9 to retest as a permit modification pursuant to Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#)  
10 The revised Demonstration Test Plan must include substantive changes to prevent failure from  
11 reoccurring.
- 12 III.10.J.3.d.vii. If any calculations or testing results show that any emission rate for any constituent listed in Permit  
13 Table [III.10.J.E.](#), as approved pursuant to Permit Condition [III.10.C.11.b.](#), is exceeded for HLW  
14 Vitrification System during the Demonstration Test, the Permittees will perform the following  
15 actions:
- 16 A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
17 emission rate(s) as specified in Permit Condition I.E.21.
- 18 B. Submit to Ecology additional risk information to indicate that the increased emissions impact is  
19 offset by decreased emission impact from one or more constituents expected to be emitted at the  
20 same time, and/or investigate the cause and impact of the exceedence of the emission rate(s) and  
21 submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery  
22 of exceeding the emission rate(s); and,
- 23 C. Based on the notification and any additional information, Ecology may provide, in writing,  
24 direction to the Permittees to stop dangerous and/or mixed waste feed to the HLW Vitrification  
25 System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to  
26 Permit Conditions [III.10.C.2.e.](#) and [III.10.C.2.f.](#), or [III.10.C.2.g.](#) The revised Demonstration  
27 Test Plan must include substantive changes to prevent failure from reoccurring.
- 28 III.10.J.4. Post-Demonstration Test Period [WAC 173-303-670(5), WAC 173-303-670(6), and WAC 173-303-  
29 807(2), in accordance with WAC 173-303-680(2) and (3)].
- 30 III.10.J.4.a. The Permittees will operate, monitor, and maintain the HLW Vitrification System as specified in  
31 Permit Condition [III.10.J.1.](#) and Operating Unit 10, Appendix 10.15 of this Permit, as approved  
32 pursuant to Permit Condition [III.10.J.5.](#), except as modified in accordance with Permit Conditions  
33 [III.10.J.1.b.xii.](#), [III.10.J.3.](#), and [III.10.J.4.](#)
- 34 III.10.J.4.b. Allowable Waste Feed During the Post-Demonstration Test Period
- 35 III.10.J.4.b.i. The Permittees may feed the dangerous and/or mixed waste specified for the HLW Vitrification  
36 System on the Part A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those waste  
37 outside the waste acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this  
38 Permit, as approved pursuant to Permit Condition [III.10.C.3.](#), and except Permit Conditions  
39 [III.10.J.4.b.ii.](#) and [III.10.J.4.b.iii.](#) also apply.

- 1 III.10.J.4.b.ii. The dangerous waste and mixed waste feed rates to the HLW Vitrification System will not exceed  
2 the limits in Permit Tables [III.10.J.D](#) and [F](#), as approved/modified pursuant to Permit Condition  
3 [III.10.J.5.](#), or in Permit Condition [III.10.J.3.](#)
- 4 III.10.J.4.b.iii. The Permittees will conduct sufficient analysis of the dangerous waste and mixed waste treated in  
5 HLW Vitrification System to verify that the waste feed is within the physical and chemical  
6 composition limits specified in this Permit.
- 7 III.10.J.5. Compliance Schedules
- 8 III.10.J.5.a. All information identified for submittal to Ecology in a. through f. of this compliance schedule must  
9 be signed and certified in accordance with requirements in WAC 173-303-810(12), as modified in  
10 accordance with Permit Condition [III.10.J.1.a.iii.](#) [WAC 173-303-806(4)].
- 11 III.10.J.5.b. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), prior to  
12 construction of each secondary containment and leak detection system for the HLW Vitrification  
13 System (per level) as identified in Permit Tables [III.10.J.A](#) and [III.10.J.B](#), engineering information as  
14 specified below, for incorporation into Operating Unit 10, Appendices 10.2, 10.4, 10.5, 10.7, 10.8,  
15 10.9, 10.11, and 10.12 of this Permit. At a minimum, engineering information specified below will  
16 show the following as described in WAC 173-303-640, in accordance with WAC 173-303-680 (the  
17 information specified below will include dimensioned engineering drawings and information on  
18 sumps and floor drains):
- 19 III.10.J.5.b.i. IQRPE Reports (specific to foundation, secondary containment, and leak detection system) will  
20 include review of design drawings, calculations, and other information on which the certification  
21 report is based and will include, but not limited to, review of such information described below.  
22 Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 10.0 of  
23 this Permit, may be included in the report by reference and should include drawing and document  
24 numbers. IQRPE Reports will be consistent with the information separately provided in ii. through  
25 ix. below [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-  
26 806(4)(i)(i)];
- 27 III.10.J.5.b.ii. Design drawings (General Arrangement Drawings, plan and cross sections) and specifications for the  
28 foundation, secondary containment including liner installation details, and leak detection  
29 methodology. These items should show the dimensions, volume calculations, and location of the  
30 secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks,  
31 floor drains [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a), in accordance with  
32 WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];
- 33 III.10.J.5.b.iii. The Permittees will provide the design criteria (references to codes and standards, load definitions,  
34 and load combinations, materials of construction, and analysis/design methodology) and typical  
35 design details for the support of the secondary containment system. This information will  
36 demonstrate the foundation will be capable of providing support to the secondary containment  
37 system, resistance to pressure gradients above and below the system, and capable of preventing  
38 failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), in accordance with  
39 WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];
- 40 III.10.J.5.b.iv. A description of materials and equipment used to provide corrosion protection for external metal  
41 components in contact with soil, including factors affecting the potential for corrosion [WAC 173-

- 1 303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A)  
2 through (B)];
- 3 III.10.J.5.b.v. Secondary containment/foundation, and leak detection system, materials selection documentation  
4 (including, but not limited to, concrete coatings and water stops, and liner materials), as applicable  
5 [WAC 173-303-806(4)(i)(i)(A) through (B)];
- 6 III.10.J.5.b.vi Detailed description of how the secondary containment for the HLW Vitrification System will be  
7 installed in compliance with WAC 173-303-640(3)(c), in accordance with WAC 173-303-680 and  
8 WAC 173-303-806(4)(i)(i)(A) through (B);
- 9 III.10.J.5.b.vii. Submit Permit Tables [III.10.J.B](#) and [III.10.K.B](#) completed to provide for all secondary containment  
10 sumps and floor drains the information, as specified in each column heading consistent with  
11 information to be provided in [i.](#) through [vi.](#), above;
- 12 III.10.J.5.b.viii. Documentation that secondary containment and leak detection systems will not accumulate hydrogen  
13 gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC  
14 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];
- 15 III.10.J.5.b.ix. A detailed description of how HLW Vitrification System design provides access for conducting  
16 future HLW Vitrification System integrity assessments [WAC 173-303-640(3)(b) and WAC 173-  
17 303-806(4)(i)(i)(B)].
- 18 III.10.J.5.c. The Permittees will submit to Ecology pursuant to Permit Condition [III.10.C.9.f.](#), prior to installation  
19 of each sub-system as identified in Permit Table [III.10.J.A](#), engineering information as specified  
20 below, for incorporation into Operating Unit 10, Appendices 10.1 through 10.14 and 10.17 of this  
21 Permit. At a minimum, engineering information specified below will show the following, as  
22 required pursuant to WAC 173-303-640, in accordance with WAC 173-303-680 (the information  
23 specified below will include dimensioned engineering drawings):
- 24 III.10.J.5.c.i. IQRPE Reports (specific to sub-system) will include review of design drawings, calculations, and  
25 other information on which the certification report is based and will include as applicable, but not  
26 limited to, review of such information described below. Information (drawings, specifications, etc.)  
27 already included in Operating Unit 10, Appendix 10.0 of this Permit, may be included in the report  
28 by reference and should include drawing and document numbers. The IQRPE Reports will be  
29 consistent with the information separately provided in ii. through xii. below and the IQRPE Report  
30 specified in Permit Condition [III.10.J.5.b.](#) [WAC 173-303-640(3)(a), in accordance with WAC 173-  
31 303-680(2) and WAC 173-303-806(4)(i)(i)];
- 32 III.10.J.5.c.ii. Design drawings [General Arrangement Drawings in plan and cross section, Process Flow Diagrams,  
33 Piping and Instrumentation Diagrams, (including pressure control systems), Mechanical Drawings,  
34 and specifications, and other information specific to subsystems (to show location and physical  
35 attributes of each subsystem specific to miscellaneous units)] [WAC 173-303-640(3)(a), in  
36 accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];
- 37 III.10.J.5.c.iii. Sub-system design criteria (references to codes and, standards, load definitions, and load  
38 combinations, materials of construction, and analysis/design methodology) and typical design details  
39 to support the sub-systems. Structural support calculations specific to off-specification, non-  
40 standard, and field-fabricated subsystems will be submitted for incorporation into the Administrative  
41 Record. Documentation will include, but not be limited to, supporting specifications (test data,

- 1 treatment effectiveness report, etc.), supporting projected operational capability (e.g., WESP  
2 projected removal efficiency for individual metals, halogens, particulates, etc.), and compliance with  
3 performance standards specified in Permit Condition [III.10.J.1.b](#) [WAC 173-303-640(3)(a), in  
4 accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(B)];
- 5 III.10.J.5.c.iv. A description of materials and equipment used to provide corrosion protection for external metal  
6 components in contact with water, including factors affecting the potential for corrosion [WAC 173-  
7 303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(A)  
8 through (B)];
- 9 III.10.J.5.c.v. Sub-system materials selection documentation (e.g., physical and chemical tolerances) [WAC 173-  
10 303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(A)];
- 11 III.10.J.5.c.vi. Sub-system vendor information (including, but not limited to, required performance warranties, as  
12 available), consistent with information submitted under ii. above, will be submitted for incorporation  
13 into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2),  
14 WAC 173-303-806(4)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];
- 15 III.10.J.5.c.vii. System descriptions related to sub-system units will be submitted for incorporation into the  
16 Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(A) through (B), and WAC  
17 173-303-806(4)(i)(v)];
- 18 III.10.J.5.c.viii. Mass and energy balance for normal projected operating conditions used in developing the Piping  
19 and Instrumentation Diagrams and Process Flow Diagrams, including assumptions and formulas  
20 used to complete the mass and energy balance, so that they can be independently verified for  
21 incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-806(4)(i)(B),  
22 and WAC 173-303-806(4)(i)(v)];
- 23 III.10.J.5.c.ix. Detailed description of all potential HLW Vitrification System bypass events including:
- 24 A. A report which includes an analysis of credible potential bypass events and recommendations for  
25 prevention/minimization of the potential, impact, and frequency of the bypass event to include at  
26 a minimum:
- 27 1. Operating procedures
  - 28 2. Maintenance procedures
  - 29 3. Redundant equipment
  - 30 4. Redundant instrumentation
  - 31 5. Alternate equipment
  - 32 6. Alternate materials of construction
- 33 III.10.J.5.c.x. A detailed description of how the sub-systems will be installed in compliance with WAC 173-303-  
34 640(3)(b), (c), (d), and (e), in accordance with WAC 173-303-680 and WAC 173-303-  
35 806(4)(i)(B);
- 36 III.10.J.5.c.xi. Sub-system design to prevent escape of vapors and emissions of acutely or chronically toxic (upon  
37 inhalation) EHW, for incorporation into the Administrative Record [WAC 173-303-640(5)(e), in  
38 accordance with WAC 173-303-680, (2), and WAC 173-303-806(4)(i)(B)];

- 1 III.10.J.5.c.xii. Documentation that sub-systems are designed to prevent the accumulation of hydrogen gases levels  
2 above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-  
3 680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];
- 4 III.10.J.5.d. The Permittees will submit to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), prior to  
5 installation of equipment for each sub-system as identified in Permit Tables [III.10.J.A](#) and [III.10.J.B](#),  
6 not addressed in Permit Conditions [III.10.J.5.b.](#) or [III.10.J.5.c.](#), engineering information as specified  
7 below, for incorporation into Operating Unit 10, Appendices 10.1 through 10.14 of this Permit. At a  
8 minimum, engineering information specified below will show the following as required pursuant to  
9 in WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will  
10 include dimensioned engineering drawings):
- 11 III.10.J.5.d.i. IQRPE Reports (specific to sub-system equipment) will include a review of design drawings,  
12 calculations, and other information as applicable on which the certification report is based. The  
13 reports will include, but not be limited to, review of such information described below. Information  
14 (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 10.0 of this Permit,  
15 may be included in the report by reference and should include drawing and document numbers. The  
16 IQRPE Reports will be consistent with the information provided separately in ii. through xiii. below  
17 and the IQRPE Reports specified in Permit Conditions [III.10.J.5.b.](#) and [III.10.J.5.c.](#) [WAC 173-303-  
18 640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(I)(I)(A) through  
19 (B)];
- 20 III.10.J.5.d.ii. Design drawings [Process Flow Diagrams, Piping and Instrumentation Diagrams (including pressure  
21 control systems), and specifications, and other information specific to equipment (these drawings  
22 should include all equipment such as pipes, valves, fittings, pumps, instruments, etc.)] [WAC 173-  
23 303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through  
24 (B)];
- 25 III.10.J.5.d.iii. Sub-system equipment design criteria (references to codes and standards, load definitions and load  
26 combinations, materials of construction, and analysis/design methodology) and typical design details  
27 for the support of the sub-system equipment. [WAC 173-303-640(3)(a) and WAC 173-303-  
28 640(3)(f), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];
- 29 III.10.J.5.d.iv. A description of materials and equipment used to provide corrosion protection for external metal  
30 components in contact with soil and water, including factors affecting the potential for corrosion  
31 [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-  
32 806(4)(i)(i)(A)];
- 33 III.10.J.5.d.v. Materials selection documentation for equipment for each sub-system (e.g., physical and chemical  
34 tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-  
35 806(4)(i)(i)(A)];
- 36 III.10.J.5.d.vi. Vendor information (including, but not limited to, required performance warranties, as available),  
37 consistent with information submitted under ii. above, for sub-system equipment will be submitted  
38 for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with  
39 WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-  
40 806(4)(i)(iv)];

- 1 III.10.J.5.d.vii. Sub-system, sub-system equipment, and leak detection system instrument control logic narrative  
2 description (e.g., software functional specifications, descriptions of fail-safe conditions, etc.) [WAC  
3 173-303-680(2), WAC 173-303-806(4)(i)(B), and WAC 173-303-806(4)(i)(v)];
- 4 III.10.J.5.d.viii. System description related to sub-system equipment, and system descriptions related to leak  
5 detection systems, (including instrument control logic and narrative descriptions), for incorporation  
6 into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(A) through (B), and  
7 WAC 173-303-806(4)(i)(v)];
- 8 III.10.J.5.d.ix. A detailed description of how the sub-system equipment will be installed and tested [WAC 173-303-  
9 640(3)(c) through (e) and WAC 173-303-640(4)(b) and (c), in accordance with WAC 173-303-680  
10 and WAC 173-303-806(4)(i)(B)];
- 11 III.10.J.5.d.x. For process monitoring, control, and leak detection system instrumentation for the HLW  
12 Vitrification System as identified in Permit Tables [III.10.J.C.](#) and [III.10.J.F.](#), a detailed description  
13 of how the process monitoring, control, and leak detection system instrumentation will be installed  
14 and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-  
15 806(4)(c)(vi), and WAC 173-303-806(4)(i)(B)];
- 16 III.10.J.5.d.xi. Mass and energy balance for projected normal operating conditions used in developing the Piping  
17 and Instrumentation Diagrams and Process Flow Diagrams, including assumptions and formulas  
18 used to complete the mass and energy balance, so that they can be independently verified, for  
19 incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-806(4)(i)(B),  
20 and WAC 173-303-806(4)(i)(v)];
- 21 III.10.J.5.d.xii. Documentation that sub-systems equipment are designed to prevent the accumulation of hydrogen  
22 gas levels above the lower explosive limit into the Administrative Record [WAC 173-303-680,  
23 WAC 173-303-806(4)(i)(A), and WAC 173-303-806(4)(i)(v)] [WAC 173-303-815(2)(b)(ii)];
- 24 III.10.J.5.d.xiii. Leak Detection system documentation (e.g. vendor information etc.) consistent with information  
25 submitted under Permit Condition [III.10.J.5.c.ii.](#) and Permit Conditions [III.10.J.5.d.ii.](#), [vii.](#), [viii.](#), and  
26 [x.](#) above, will be submitted for incorporation into the Administrative Record.
- 27 III.10.J.5.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees will submit  
28 to Ecology, pursuant to Permit Condition [III.10.C.9.f.](#), the following as specified below for  
29 incorporation into Operating Unit 10, Appendix 10.18 of this Permit, except Permit Condition  
30 [III.10.J.5.e.i.](#), which will be incorporated into Operating Unit 10, Chapter 6.0 of this Permit. All  
31 information provided under this permit condition must be consistent with information provided  
32 pursuant to Permit Conditions [III.10.J.5.b.](#), [c.](#), [d.](#), [e.](#), and [f.](#), [III.10.C.3.e.v.](#), and [III.10.C.11.b.](#), as  
33 approved by Ecology:
- 34 III.10.J.5.e.i. Integrity assessment program and schedule for the HLW Vitrification System will address the  
35 conducting of periodic integrity assessments on the HLW Vitrification System over the life of the  
36 system, as specified in Permit Condition [III.10.J.5.b.ix.](#) and as specified in WAC 173-303-640(3)(b),  
37 in accordance with WAC 173-303-680, and descriptions of procedures for addressing problems  
38 detected during integrity assessments. The schedule must be based on past integrity assessments,  
39 age of the system, materials of construction, characteristics of the waste, and any other relevant  
40 factors [WAC 173-303-640(3)(b), in accordance with WAC 173-303-680 and WAC 173-303-  
41 806(4)(i)(B)];

- 1 III.10.J.5.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so that it will  
2 detect the failure of either the primary or secondary containment structure or the presence of any  
3 release of dangerous and/or mixed waste or accumulated liquid in the secondary containment system  
4 within twenty-four (24) hours [WAC 173-303-640(4)(c)(iii)]. Detection of a leak of at least 0.1  
5 gallons per hour within twenty-four (24) hours is defined as being able to detect a leak within  
6 twenty-four (24) hours. Any exceptions to this criteria must be approved by Ecology in accordance  
7 with WAC 173-303-680, WAC 173-303-640(4)(c)(iii), and WAC 173-303-806(4)(i)(i)(b);
- 8 III.10.J.5.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and  
9 accumulated precipitation liquids can be removed from the secondary containment system within  
10 twenty-four (24) hours [WAC 173-303-806(4)(i)(i)(B)];
- 11 III.10.J.5.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices are in place  
12 to prevent spills and overflows from the HLW Vitrification System or containment systems in  
13 compliance with WAC 173-303-640(5)(b)(i) through (iii), in accordance with WAC 173-303-680  
14 and WAC 173-303-806(4)(i)(i)(B);
- 15 III.10.J.5.e.v. Description of procedures for investigation and repair of the HLW Vitrification System [WAC 173-  
16 303-640(6) and WAC 173-303-640(7)(e) and (f), in accordance with WAC 173-303-680, WAC 173-  
17 303-320, WAC 173-303-806(4)(ia)(iv), and WAC 173-303-806(4)(a)(ii)(B)];
- 18 III.10.J.5.e.vi. Updated Chapter 4.0, Narrative Description, Tables and Figures as identified in Permit Tables  
19 [III.10.J.A](#) and [III.10.J.B](#), as modified pursuant to Permit Condition [III.10.H.5.e.x](#), and updated to  
20 identify routinely non-accessible LAW Vitrification sub-systems.
- 21 III.10.J.5.e.vii. Description of procedures for management of ignitable and reactive, and incompatible dangerous  
22 and/or mixed waste as specified in accordance with WAC 173-303-640(9) and (10), in accordance  
23 with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B).
- 24 III.10.J.5.e.viii. A description of the tracking system used to track dangerous and/or mixed waste generated  
25 throughout the HLW Vitrification System, pursuant to WAC 173-303-380.
- 26 III.10.J.5.e.ix. Permit Table [III.10.J.C](#) and [III.10.K.C](#) will be revised and/or completed for HLW Vitrification  
27 System process and leak detection system monitors and instruments (to include, but not be limited  
28 to: instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH,  
29 level, humidity, and emissions) to provide the information as specified in each column heading.  
30 Process and leak detection system monitors and instruments for critical systems, as specified in  
31 Operating Unit 10, Appendix 2.0 and as updated pursuant to Permit Condition [III.10.C.9.b](#), and for  
32 operating parameters as required to comply with Permit Condition [III.10.C.3.e.iii](#), will be addressed.  
33 Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical  
34 storage, non-contact cooling waters, etc.) are excluded from this permit condition [WAC 173-303-  
35 680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];
- 36 III.10.J.5.e.x. Permit Tables [III.10.J.A](#) and [III.10.K.A](#) amended as follows [WAC 173-303-680 and WAC 173-303-  
37 806(4)(i)(i)(A) through (B)]:
- 38 A. Under column 1, update and complete list of dangerous and mixed waste HLW Vitrification  
39 System sub-systems, including plant items that comprise each system (listed by item number).
- 40 B. Under column 2, update and complete system designations.

1 C. Under column 3, replace the ‘Reserved’ with Operating Unit 10, Appendix 10.0 sub-sections  
2 (e.g., 10.1, 10.2, etc.) designated in Permit Conditions [III.10.J.5.b.](#), [c.](#), and [d.](#) specific to HLW  
3 Vitrification System sub-system, as listed in column 1.

4 D. Under column 4, update and complete list of narrative description, tables, and figures.

5 III.10.J.5.f. One hundred and eighty (180) days prior to initial receipt of dangerous and/or mixed waste in the  
6 WTP Unit, the Permittees will submit for review and receive approval for incorporation into  
7 Operating Unit 10, Appendix 10.15 of this Permit, a Demonstration Test Plan for the HLW  
8 Vitrification System to demonstrate that the HLW Vitrification Systems meets the performance  
9 standards specified in Permit Condition [III.10.J.1.b.](#) In order to incorporate the Demonstration Test  
10 Plan for the HLW Vitrification System into Operating Unit 10, Appendix 10.15, Permit Condition  
11 [III.10.C.2.g.](#) process will be followed. The Demonstration Test Plan will include, but not be limited  
12 to, the following information. The Demonstration Test Plan will also be consistent with the  
13 information provided pursuant to Permit Conditions [III.10.J.5.b.](#), [c.](#), [d.](#) and [e.](#), [III.10.C.3.e.v.](#) and  
14 [III.10.C.11.b.](#), as approved by Ecology and consistent with the schedule described in Operating Unit  
15 10, Appendix 1.0 of this Permit. The documentation required pursuant to Permit Condition  
16 [III.10.J.5.f.xvi.](#), in addition to being incorporated into Operating Unit 10, Appendix 10.15, will be  
17 incorporated by reference in Operating Unit 10, Chapter 6.0 of this Permit.

18 *Notes: (1) The following should be consulted to prepare this Demonstration Test Plan: “Guidance*  
19 *on Setting Permit Conditions and Reporting Trial Burn Results Volume II of the Hazardous Waste*  
20 *Incineration Guidance Series”, and EPA/625/6-89/019 and Risk Burn Guidance For Hazardous*  
21 *Waste Combustion Facilities”, EPA-R-01-001, July 2001, WAC 173-303-807(2), WAC 173-303-*  
22 *670(5), WAC-173-303-670(6), 40 CFR §63.1207(f)(2), 40 CFR §63.1209 and Appendix to 40 CFR*  
23 *Part 63 EEE.*

24 *(2) Cross-referencing to the information provided pursuant to permit Conditions [III.H.5.b.](#), [c.](#), [d.](#), [e.](#)*  
25 *and [III.10.C.3.e.v.](#), as approved by Ecology, that are redundant to elements of the Demonstration*  
26 *Test Plan for the HLW Vitrification System is acceptable.*

27 III.10.J.5.f.i. Analysis of each feed-stream to be fed during the demonstration test, including dangerous waste,  
28 glass formers and reductants, process streams (e.g., control air, process air, steam, sparge bubbler air,  
29 air in-leakage from melter cave, and gases from HLW Vitrification Vessel Ventilation System,  
30 process water, etc.) that includes:

31 A. Levels of ash, levels of metals, total chlorine (organic and inorganic), other halogens and  
32 radionuclide surrogates.

33 B. Description of the physical form of the feed-streams;

34 C. An identification and quantification of organics that are present in the feed-stream, including  
35 constituents proposed for DRE demonstration;

36 A comparison of the proposed demonstration test feed streams to the mixed waste feed envelopes to  
37 be processed in the melter must be provided that documents that the proposed demonstration test  
38 feed streams will serve as worst case surrogates for organic destruction, formation of products of  
39 incomplete oxidation, and metals, total chlorine (organic and inorganic), other halogens, particulate  
40 formation, and radionuclides;

- 1 III.10.J.5.f.ii. Specification of trial principal organic dangerous constituents (PODCs) for which destruction and  
2 removal efficiencies are proposed to be calculated during the demonstration test and for inclusion in  
3 Permit Conditions [III.10.J.1.b.i.](#) and [III.10.K.1.b.i.](#) These trial PODCs will be specified based on  
4 destructibility, concentration or mass in the waste and the dangerous waste constituents or  
5 constituents in WAC 173-303-9905;
- 6 III.10.J.5.f.iii. A description of the blending procedures, prior to introducing the feed-streams into the melter,  
7 including analysis of the materials prior to blending, and blending ratios;
- 8 III.10.J.5.f.iv. A description of how the surrogate feeds are to be introduced for the demonstration. This description  
9 should clearly identify the differences and justify how any of differences would impact the surrogate  
10 feed introduction as representative of how mixed waste feeds will be introduced;
- 11 III.10.J.5.f.v. A detailed engineering description of the HLW Vitrification System, including:  
12  
13 A. Manufacturer's name and model number for each sub-system;  
14  
15 B. Design capacity of each sub-system including documentation (engineering calculations,  
16 manufacturer/vendor specifications, operating data, etc.) supporting projected operational  
17 efficiencies (e.g., WESP projected removal efficiency for individual metals, halogens,  
18 particulates, etc.) and compliance with performance standards specified in Permit Condition  
19 [III.10.J.1.b.](#);  
20  
21 C. Detailed scaled engineering drawings, including Process Flow Diagrams, Piping and  
22 Instrumentation Diagrams, Vessel Drawings (plan, and elevation with cross sections) and  
23 General Arrangement Drawings;  
24  
25 D. Process Engineering Descriptions;  
26  
27 E. Mass and energy balances for each projected operating condition and each demonstration test  
28 condition, including assumptions and formulas used to complete mass and energy balances so  
29 that they can be independently verified for incorporation into the Administrative Record;  
30  
31 F. Engineering Specifications/data sheets (materials of construction, physical and chemical  
32 tolerances of equipment, equipment performance warranties, and fan curves);  
33  
34 G. Detailed Description of Automatic Waste Feed Cut-off System addressing critical operating  
35 parameters for all performance standards specified in Permit Condition [III.10.J.1.b.](#)  
36  
37 H. Documentation to support compliance with performance standards specified in Permit Condition  
38 [III.10.J.1.b.](#), including engineering calculations, test data, and manufacturer/vendor's warranties,  
etc.
- I. Detailed description of the design, operation and maintenance practices for air pollution control system.
- J. Detailed description of the design, operation, and maintenance practices of any stack gas monitoring and pollution control monitoring system.
- K. Documentation based on current WTP Unit design either confirming the Permittees' demonstration that it is not technically appropriate to correct standards listed in Permit Conditions [III.J.1.b.ii.](#) through [III.J.1.b.ix.](#) to seven percent (7%) oxygen., or a request, pursuant

- 1 to Permit Conditions [III.10.C.9.e.](#) and [III.10.C.9.f.](#), to update Permit Conditions [III.J.1.b.ii.](#)  
2 through [III.J.1.b.ix.](#), [III.K.b.ii.](#) through [III.K.b.ix.](#), [III.K.e.iii.](#), and [III.J.1.e.iii.](#), Permit Tables  
3 [III.10.J.C.](#), [III.10.J.F.](#), [III.10.K.C.](#), [III.10.K.F.](#) and Operating Unit 10, Appendix 10.0 to reflect the  
4 addition of an oxygen monitor and the correction of the standards to seven percent (7%) oxygen.
- 5 III.10.J.5.f.vi. Detailed description of sampling and monitoring procedures including sampling and monitoring  
6 locations in the system, the equipment to be used, sampling and monitoring frequency, and planned  
7 analytical procedures for sample analysis including, but not limited to:
- 8 A. A short summary narrative description of each stack sample method should be included within  
9 the main body of the demonstration test plan, which references an appendix to the plan that  
10 would include for each sampling train: (1) detailed sample method procedures, (2) sampling train  
11 configuration schematic, (3) sampling recovery flow sheet, (4) detailed analytical method  
12 procedures, and (5) sampling preparation and analysis flow sheet. The detailed procedures  
13 should clearly flag where the method has provided decision points (e.g., choices of equipment  
14 materials of construction, choices of clean-up procedures or whether additional clean-up  
15 procedures will be incorporated, whether pretest surveys or laboratory validation work will be  
16 performed, enhancements to train to accommodate high moisture content in stack gas, etc.) and  
17 what is being proposed along with the basis for the decision.
- 18 B. A short summary narrative description of the feed and residue sampling methods should be  
19 included within the main body of the demonstration test plan, which references an appendix that  
20 would include for each sample type: (1) detailed sample method procedures, (2) sampling  
21 recovery/compositing procedures, and (3) detailed analytical method procedures. The detailed  
22 procedures should clearly flag where the method has provided decision points (e.g., choices of  
23 equipment materials of construction, choices of clean-up procedures or whether additional clean-  
24 up procedures will be incorporated, whether pretest surveys or laboratory validation work will be  
25 performed, etc.) and what is being proposed along with the basis for the decision.
- 26 III.10.J.5.f.vii. A detailed test schedule for each condition for which the demonstration test is planned, including  
27 projected date(s), duration, quantity of dangerous waste to be fed, and other relevant factors;
- 28 III.10.J.5.f.viii. A detailed test protocol including, for each test condition, the ranges of feed-rate for each feed  
29 system, and all other relevant parameters that may affect the ability of the HLW Vitrification System  
30 to meet performance standards specified in Permit Condition [III.10.J.1.b.](#);
- 31 III.10.J.5.f.ix. A detailed description of planned operating conditions for each demonstration test condition,  
32 including operating conditions for shakedown, demonstration test, post-demonstration test and  
33 normal operations. This information will also include submittal of Permit Tables [III.10.J.D.](#),  
34 [III.10.J.F.](#), [III.10.K.D.](#), and [III.10.K.F.](#) completed with the information as specified in each column  
35 heading for each HLW Vitrification System waste feed cut-off parameter and submittal of supporting  
36 documentation for Permit Tables [III.10.J.D.](#), [III.10.J.F.](#), [III.10.K.D.](#), and [III.10.K.F.](#) set-point values.
- 37 III.10.J.5.f.x. The test conditions proposed must demonstrate meeting the performance standards specified in  
38 Permit Condition [III.10.J.1.b.](#) with the simultaneous operation of the melter at capacity and input  
39 from the HLW Vitrification Vessel Ventilation System at capacity to simulate maximum loading to  
40 the HLW Vitrification System off-gas treatment system and to establish the corresponding operating  
41 parameter ranges.

- 1 III.10.J.5.f.xi. A detailed description of procedures for start-up and shutdown of waste feed and controlling  
2 emissions in the event of an equipment malfunction, including off-normal and emergency shutdown  
3 procedures;
- 4 III.10.J.5.f.xii. A calculation of waste residence time;
- 5 III.10.J.5.f.xiii. Any request to extrapolate metal feed-rate limits from Demonstration Test levels must include:  
6 A. A description of the extrapolation methodology and rationale for how the approach ensures  
7 compliance with the performance standards, as specified in Permit Condition [III.10.J.1.b](#).  
8 B. Documentation of the historical range of normal metal feed-rates for each feedstream.  
9 C. Documentation that the level of spiking recommended during the demonstration test will mask  
10 sampling and analysis imprecision and inaccuracy to the extent that extrapolation of feed-rates  
11 and emission rates from the Demonstration Test data will be as accurate and precise as if full  
12 spiking were used.
- 13 III.10.J.5.f.xiv. Documentation of the expected levels of constituents in HLW Vitrification System input streams,  
14 including, but not limited to, waste feed, glass former and reactants, control air, process air, steam,  
15 sparge bubbler air, air in-leakage from melter cave, gases from HLW Vitrification Vessel Ventilation  
16 System, and process water.
- 17 III.10.J.5.f.xv. Documentation justifying the duration of the conditioning required to ensure the HLW Vitrification  
18 System had achieved steady-state operations under Demonstration Test operating conditions.
- 19 III.10.J.5.f.xvi. Documentation of HLW Vitrification System process and leak detection system instruments and  
20 monitors as listed on Permit Tables [III.10.J.C](#), [III.10.J.F](#), [III.10.K.C](#), and [III.10.K.F](#) to include:  
21 A. Procurement specifications  
22 B. Location used  
23 C. Range, precision, and accuracy  
24 D. Calibration/functionality test procedures (either method number ASTM) or provide a copy of  
25 manufacturer's recommended calibration procedures  
26 E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists,  
27 including justification for calibration, inspection and maintenance frequencies, criteria for  
28 identifying instruments found to be significantly out of calibration, and corrective action to be  
29 taken for instruments found to be significantly out of calibration (e.g., increasing frequency of  
30 calibration, instrument replacement, etc.).  
31 F. Equipment instrument control logic narrative description (e.g., software functional  
32 specifications, descriptions of fail safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-  
33 806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)]
- 34 III.10.J.5.f.xvii. Outline of demonstration test report.  
35

1  
2**Table III.10.J.A – HLW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables, and Figures</b>
<u><b>HLW Melter Process System</b></u> HMP-MLTR-00001 (HLW Melter 1) HMP-MLTR-00002 (HLW Melter 2)	HMP	RESERVED	Section 4.1.4.2; Table 4-8; and Figures 4A-1, 4A-4, 4A-27 and 4A-54 in Operating Unit 10, Chapter 4.0 of this Permit.
<u><b>Melter Offgas Treatment Process System</b></u> HOP-FCLR-00001 (Film Cooler) HOP-FCLR-00002 (Film Cooler) HOP-FCLR-00003 (Film Cooler) HOP-FCLR-00004 (Film Cooler)	HOP	<u><b>24590-HLW</b></u> -M5-V17T-P0002 -M5-V17T-P20002 -M6-HMP-P0002 -M6-HMP-P20002 -3YD-HOP-00001 <sup>a</sup>	Section 4.1.4.3; Table 4-8; and Figures 4A-1, 4A-4 and 4A-27 in Operating Unit 10, Chapter 4.0 of this Permit.
<u><b>Melter Offgas Treatment Process System (Cont.)</b></u> HOP-SCB-00001 (HLW Melter 1 SBS) HOP-SCB-00002 (HLW Melter 2 SBS)	HOP	<u><b>24590-HLW</b></u> -M5-V17T-P0003 -M5-V17T-P20003 -M6-HOP-P0001 -M6-HOP-P20001 -MKD-HOP-P0016 -MK-HOP-P0001001 -MK-HOP-P0001002 -MK-HOP-P0001003 -MK-HOP-P0001004 -N1D-HOP-P0010 -P1-P01T-P0002 -3YD-HOP-00001 <sup>a</sup>  <u><b>24590-WTP</b></u> -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<u><b>Melter Offgas Treatment Process System (Cont.)</b></u> HOP-WESP-00001 (Melter 1 WESP)	HOP	<u><b>24590-HLW</b></u> -M5-V17T-P0003 -M5-V17T-P20003 -M6-HOP-P0002	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.

**Table III.10.J.A – HLW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables, and Figures</b>
HOP-WESP-00002 (Melter 2 WESP)		-M6-HOP-P20002 -N1D-HOP-P0002 -P1-P01T-P0004 -P1-P01T-P0005 -3YD-HOP-00001 <sup>a</sup>  <b><u>24590-WTP</u></b> -3PS-MKE0-TP001	
<b><u>Melter Offgas Treatment Process System (Cont.)</u></b>  HOP-HEPA-00001A (Melter 1 HEPA Filter)  HOP-HEPA-00001B (Melter 1 HEPA Filter)  HOP-HEPA-00002A (Melter 1 HEPA Filter)  HOP-HEPA-00002B (Melter 1 HEPA Filter)  HOP-HEPA-00007A (Melter 2 HEPA Filter)  HOP-HEPA-00007B (Melter 2 HEPA Filter)  HOP-HEPA-00008A (Melter 2 HEPA Filter)  HOP-HEPA-00008B (Melter 2 HEPA Filter)	HOP	<b><u>24590-HLW</u></b> -M5-V17T-P0003 -M5-V17T-P20003 -M6-HOP-P0010 -M6-HOP-P20010 -MAD-HOP-P0010 -MAD-HOP-P0011 -MAD-HOP-P0012 -MAD-HOP-P0013 -MAD-HOP-P0014 -MAD-HOP-P0015 -MAD-HOP-P0016 -MAD-HOP-P0017 -P1-P01T-P0002 -3YD-HOP-00001 <sup>a</sup>  <b><u>24590-WTP</u></b> -3PS-MKH0-TP002	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<b><u>Melter Offgas Treatment Process System (Cont.)</u></b>  HOP-ADBR-00001A (Melter 1 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00001)	HOP	<b><u>24590-HLW</u></b> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0003 -M6-HOP-P20003 -MVD-HOP-P0015 -MVD-HOP-P0016	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.

**Table III.10.J.A – HLW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables, and Figures</b>
<p>HOP-ADBR-00001B (Melter 1 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00001)</p> <p>HOP-ADBR-00002A (Melter 2 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00002)</p> <p>HOP-ADBR-00002B (Melter 2 Activated Carbon Adsorber – located on Activated Carbon Adsorber Skid HOP-ADBR-00002)</p>		<p>-N1D-HOP-P0003 -P1-P01T-P0002</p> <p><b><u>24590-WTP</u></b> -3PS-MWK0-TP001</p>	
<p><b><u>Melter Offgas Treatment Process System (Cont.)</u></b></p> <p>HOP-HEME-00001A (Melter 1 HEME)</p> <p>HOP-HEME-00001B (Melter 1 HEME)</p> <p>HOP-HEME-00002A (Melter 2 HEME)</p> <p>HOP-HEME-00002B (Melter 2 HEME)</p>	HOP	<p><b><u>24590-HLW</u></b> -M5-V17T-P0003 -M5-V17T-P20003 -M6-HOP-P0009 -M6-HOP-P20009 -MVD-HOP-P0007 -MV-HOP-P0002001 -MV-HOP-P0002002 -MV-HOP-P0002003 -N1D-HOP-P0001 -P1-P01T-P0002 -3YD-HOP-00001<sup>a</sup></p>	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<p><b><u>Melter Offgas Treatment Process System (Cont.)</u></b></p> <p>HOP-SCO-00001 (Thermal Catalytic Oxidizer – located on Catalyst Skid HOP-SCO-00002)</p> <p>HOP-SCO-00004 (Thermal Catalytic Oxidizer – located on Catalyst Skid HOP-SCO-00003)</p>	HOP	<p><b><u>24590-HLW</u></b> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0008 -M6-HOP-P20008 -MKD-HOP-P0019 -MKD-HOP-P0020 -N1D-HOP-P0004 -N1D-HOP-P0005 -P1-PO1T-P0002</p> <p><b><u>24590-WTP</u></b> -3PS-MBTV-TP001</p>	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.

**Table III.10.J.A – HLW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables, and Figures</b>
<p><b><u>Melter Offgas Treatment Process System (Cont.)</u></b></p> <p>HOP-SCR-00001 (NO<sub>x</sub> Selective Catalytic Reducer – located on Catalyst Skid HOP-SCO-00002)</p> <p>HOP-SCR-00002 (NO<sub>x</sub> Selective Catalytic Reducer – located on Catalyst Skid HOP-SCO-00003)</p>	HOP	<p><b><u>24590-HLW</u></b>  -M5-V17T-P0004  -M5-V17T-P20004  -M6-HOP-P0008  -M6-HOP-P20008  -MKD-HOP-P0019  -MKD-HOP-P0020  -N1D-HOP-P0004  -N1D-HOP-P0005  -P1-PO1T-P0002</p> <p><b><u>24590-WTP</u></b>  -3PS-MBTV-TP001</p>	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<p><b><u>Melter Offgas Treatment Process System (Cont.)</u></b></p> <p>HOP-HX-00001 (Catalyst Skid Preheater – located on Catalyst Skid HOP-SCO-00002)</p> <p>HOP-HX-00003 (Catalyst Skid Preheater – located on Catalyst Skid HOP-SCO-00003)</p>	HOP	<p><b><u>24590-HLW</u></b>  -M5-V17T-P0004  -M5-V17T-P20004  -M6-HOP-P0008  -M6-HOP-P20008  -MKD-HOP-P0019  -MKD-HOP-P0020  -P1-PO1T-P0002</p> <p><b><u>24590-WTP</u></b>  -3PS-MBTV-TP001</p>	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<p><b><u>Melter Offgas Treatment Process System (Cont.)</u></b></p> <p>HOP-HTR-00001 (Catalyst Skid Electric Heater – located on Catalyst Skid HOP-SCO-00002)</p> <p>HOP-HTR-00007 (Catalyst Skid Electric Heaters – located on Catalyst Skid HOP-SCO-00003)</p>	HOP	<p><b><u>24590-HLW</u></b>  -M5-V17T-P0004  -M5-V17T-P20004  -M6-HOP-P0008  -M6-HOP-P20008  -MKD-HOP-P0019  -MKD-HOP-P0020  -P1-PO1T-P0002</p> <p><b><u>24590-WTP</u></b>  -3PS-MBTV-TP001</p>	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<p><b><u>Melter Offgas Treatment Process System (Cont.)</u></b></p> <p>HOP-ABS-00002 (Silver Mordenite Column)</p> <p>HOP-ABS-00003 (Silver Mordenite</p>	HOP	<p><b><u>24590-HLW</u></b>  -M5-V17T-P0004  -M5-V17T-P20004  -M6-HOP-P0008  -M6-HOP-P20008  -MKD-HOP-P0014  -MKD-HOP-P0017</p>	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.

**Table III.10.J.A – HLW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables, and Figures</b>
Column)		-NID-HOP-P0006 -P1-P01T-P0001 -3PS-MBT0-TP001	
<b><u>Melter Offgas Treatment Process System (Cont.)</u></b>  HOP-HTR-00001B (HEPA Preheater)  HOP-HTR-00002A (HEPA Preheater)  HOP-HTR-00005A (HEPA Preheater)  HOP-HTR-00005B (HEPA Preheater)	HOP	<b><u>24590-HLW</u></b> -M5-V17T-P0003 -M5-V17T-P20003 -M6-HOP-P0010 -M6-HOP-P20010 -MED-HOP-P0013 -3PS-MEE0-TP001	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<b><u>Melter Offgas Treatment Process System (Cont.)</u></b>  HOP-HX-00002 (Silver Mordenite Preheater)  HOP-HX-00004 (Silver Mordenite Preheater)	HOP	<b><u>24590-HLW</u></b> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0003 -M6-HOP-P20003 -MED-HOP-P0012 -MED-HOP-P0017 -N1D-HOP-P0007 -P1-P01T-P0002	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<b><u>Melter Offgas Treatment Process System (Cont.)</u></b>  HOP-FAN-00001A (Booster Extraction Fan)  HOP-FAN-00001B (Booster Extraction Fan)  HOP-FAN-00001C (Booster Extraction Fan)  HOP-FAN-00009A (Booster Extraction Fan)  HOP-FAN-00009B (Booster Extraction Fan)	HOP	<b><u>24590-HLW</u></b> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0003 -M6-HOP-P20003 -MAD-HOP-P0018 -P1-P01T-P0001  <b><u>24590-WTP</u></b> -3PS-MACS-TP004	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.

**Table III.10.J.A – HLW Vitrification System Description**

<b>Sub-system Description</b>	<b>Sub-system Designation</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>	<b>Narrative Description, Tables, and Figures</b>
HOP-FAN-00009C (Booster Extraction Fan)			
<b><u>Melter Offgas Treatment Process System (Cont.)</u></b> HOP-FAN-00008A (Stack Extraction Fan) HOP-FAN-00008B (Stack Extraction Fan) HOP-FAN-00008C (Stack Extraction Fan) HOP-FAN-000010A (Stack Extraction Fan) HOP-FAN-000010B (Stack Extraction Fan) HOP-FAN-000010C (Stack Extraction Fan)	HOP	<b><u>24590-HLW</u></b> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0008 -M6-HOP-P20008 -MAD-HOP-P0038 -P1-P01T-P0005  <b><u>24590-WTP</u></b> -3PS-MACS-TP004	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<b><u>Melter Offgas Treatment Process System (Cont.)</u></b> HLW Stack	HOP	<b><u>24590-HLW</u></b> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0008 -M6-HOP-P20008	Section 4.1.4.3; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter 4.0 of this Permit.
<b>Footnotes:</b> <sup>a</sup> System Descriptions are maintained in the Administrative Record, and are listed here for information only.			

**Table III.10.J.B – HLW Vitrification Systems Secondary Containment Systems Including Sumps and Floor Drains**

<b>Sump/Floor Drain I.D.# &amp; Room Location</b>	<b>Maximum Sump Capacity (gallons)</b>	<b>Sump Dimensions<sup>a</sup> (feet) &amp; Materials of Construction</b>	<b>Maximum Allowable Liquid Height (inches)</b>	<b>Secondary Containment Volume (gallons)</b>	<b>Engineering Description (Drawing Nos., Specification Nos., etc.)</b>
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).					

**Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters**

<b>P&amp;ID</b>	<b>Monitoring or Control Parameter</b>	<b>Type of Instrument or Control Device</b>	<b>Instrument or Control Device Tag No.</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Instrument Calibration Method No. and Range</b>
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 62"	TBD	(TE-0920A + TT-0920A + TI-0920A)*  Or (TE-0920C + TT-0921A + TI-0921F)*	TBD	TBD	TBD	TBD	TBD

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**Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters**

<b>P&amp;ID</b>	<b>Monitoring or Control Parameter</b>	<b>Type of Instrument or Control Device</b>	<b>Instrument or Control Device Tag No.</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Instrument Calibration Method No. and Range</b>
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 59"	TBD	(TE-0920B + TT-920A + TI-0920B)*  Or  (TE-920D + TT-0921A+ TI-0921E)*	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P2004	Melter 2 plenum temperature, 62"	TBD	(TE-2920A + TT-2920A + TI-2920A)*  Or  (TE-2920C + TT-2921A + TI-2920C)*	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P2004	Melter 2 plenum temperature, 59"	TBD	(TE-2920B + TT-2920A + TI-2920B)*  Or  (TE-2920D +	TBD	TBD	TBD	TBD	TBD

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**Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters**

<b>P&amp;ID</b>	<b>Monitoring or Control Parameter</b>	<b>Type of Instrument or Control Device</b>	<b>Instrument or Control Device Tag No.</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Instrument Calibration Method No. and Range</b>
			TT-2921A + TI-2920D)*					
24590-HLW-M6-HMP-P0013	Melter 1 glass pool density	TBD	DT-0132 DI-0132	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P0013	Melter 1 glass pool level	TBD	LT-0131 LI-0131	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P2013	Melter 2 glass pool density	TBD	DT-2132 DI-2132	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P2013	Melter 2 glass pool level	TBD	LT-2131 LI-2131	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P0013	Melter 1 plenum pressure	TBD	(PDT-0139A + PDI-0139A)*  Or  (PDT-0139B + PDI-0139B)*	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P2013	Melter 2 plenum pressure	TBD	(PDT-2139A + PDI-2139A)* Or	TBD	TBD	TBD	TBD	TBD

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**Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters**

<b>P&amp;ID</b>	<b>Monitoring or Control Parameter</b>	<b>Type of Instrument or Control Device</b>	<b>Instrument or Control Device Tag No.</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Instrument Calibration Method No. and Range</b>
			(PDT-2139B + PDI-2139B)*					
24590-HLW-M6-HMP-P0008	Melter 1 West canister level	TBD	LT-0816  (LI-0816A Or LI-0816B)**	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P0007	Melter 1 West Discharge Air Lift	TBD	YC-0761  YV-0761	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P0008	Melter 1 East canister level	TBD	LT-0820  (LI-0820A Or LI-0820B)**	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P0006	Melter 1 East Discharge Air Lift	TBD	YC-0644  YV-0644	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P2008	Melter 2 West canister level	TBD	LT-2816  (LI-2816A Or LI-2816B)**	TBD	TBD	TBD	TBD	TBD

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**Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters**

<b>P&amp;ID</b>	<b>Monitoring or Control Parameter</b>	<b>Type of Instrument or Control Device</b>	<b>Instrument or Control Device Tag No.</b>	<b>Instrument Range</b>	<b>Expected Range</b>	<b>Fail States</b>	<b>Instrument Accuracy</b>	<b>Instrument Calibration Method No. and Range</b>
24590-HLW-M6-HMP-P20007	Melter 2 West Discharge Air Lift	TBD	YC-2761 YV-2761	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P2008	Melter 2 East canister level	TBD	LT-2820 (LI-2820A Or LI-2820B)**	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-P20006	Melter 2 East Discharge Air Lift	TBD	YC-2664 YV-2664	TBD	TBD	TBD	TBD	TBD
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b>								
*These instrument sets are duplicates. Only one instrument set is required to remain functioning during waste feed operations.								
**These instruments are duplicates. Only one instrument is required to remain functioning during waste feed operations.								

1  
2**Table III.10.J.D – Maximum Feed-rates to HLW Vitrification System (RESERVED)**

<b>Description of Waste</b>	<b>Shakedown 1 and Post Demonstration Test</b>	<b>Shakedown 2 and Demonstration Test</b>
Dangerous and Mixed Waste Feed Rate	RESERVED	RESERVED
Ash Feed Rate	RESERVED	RESERVED
Total Chlorine/Chloride Feed Rate	RESERVED	RESERVED
Total Metal Feedrates	RESERVED	RESERVED

3  
4**Table III.10.J.E – HLW Vitrification System Estimated Emission Rates (RESERVED)**

<b>Chemicals</b>	<b>CAS Number</b>	<b>Emission Rates (grams /second)</b>
RESERVED	RESERVED	RESERVED

5  
6**Table III.10.J.F. - HLW Vitrification System Waste Feed Cut-off Parameters\* (RESERVED)**

<b>Subsystem Designation</b>	<b>Instrument Tag Number</b>	<b>Parameter Description</b>	<b>Setpoints During Shakedown 1 and Post Demonstration Test</b>	<b>Setpoints During Shakedown 2 and Demonstration Test</b>
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

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**Table III.10.J.F. - HLW Vitrification System Waste Feed Cut-off Parameters\* (RESERVED)**

<b>Subsystem Designation</b>	<b>Instrument Tag Number</b>	<b>Parameter Description</b>	<b>Setpoints During Shakedown 1 and Post Demonstration Test</b>	<b>Setpoints During Shakedown 2 and Demonstration Test</b>
<b>Footnotes:</b> *A continuous monitoring system will be used as defined in Permit Section <a href="#">III.10.C.1.</a> <sup>1</sup> Maximum Feed-rate will be set based on not exceeding any of the constituent (e.g., metals, ash, and chlorine/chloride) feed limits specified on Table <a href="#">III.10.J.D.</a> of this Permit				

1

2 **III.10.K HLW Vitrification System – Long Term Miscellaneous Thermal Treatment Unit**

3 For purposes of Permit Section [III.10.K](#), where reference is made to WAC 173-303-640, the  
4 following substitutions apply: substitute the terms “HLW Vitrification System” for “tank  
5 system(s),” “sub-system(s)” for “tank(s),” “sub-system equipment” for “ancillary equipment,” and  
6 “sub-system(s) or sub-system equipment of a HLW Vitrification System” for “component(s),” in  
7 accordance with WAC 173-303-680.

8 **III.10.K.1 Requirements For HLW Vitrification System Beginning Normal Operation**

9 Prior to commencing normal operations provided in Permit Section [III.10.K](#), all requirements in  
10 Permit Section [III.10.J](#) will have been met by the Permittees and approved by Ecology, including the  
11 following: The HLW Vitrification System Demonstration Test results and the revised Final Risk  
12 Assessment provided for in Permit Conditions [III.10.C.11.c.](#) or [d.](#) and Permit Section [III.10.J](#), will  
13 have been evaluated and approved by Ecology, Permit Tables [III.10.K.D](#) and [F](#), as  
14 approved/modified pursuant to Permit Condition [III.10.J.5](#), will have been completed, submitted and  
15 approved pursuant to Permit Condition [III.10.J.3.d.v.](#) and Permit Table [III.10.K.E](#), as  
16 approved/modified pursuant to Permit Condition [III.10.J.5](#), will have been completed, submitted and  
17 approved pursuant to Permit Conditions [III.10.C.11.c.](#) or [d.](#)

18 **III.10.K.1.a. Construction and Maintenance** [WAC 173-303-640, in accordance with WAC 173-303-680(2) and  
19 (3), and WAC 173-303-340]

20 **III.10.K.1.a.i.** The Permittees will maintain the design and construction of the HLW Vitrification System as  
21 specified in Permit Condition [III.10.K.1](#), Operating Unit 10, Chapter 4.0 of this Permit, and  
22 Operating Unit 10, Appendices 10.1 through 10.17 of this Permit, as approved pursuant to Permit  
23 Conditions [III.10.J.5.a.](#) through [d.](#) and [III.10.J.5.f.](#)

24 **III.10.K.1.a.ii.** The Permittees will maintain the design and construction of all containment systems for the HLW  
25 Vitrification System as specified in Operating Unit 10, Chapter 4.0 of this Permit, and Operating  
26 Unit 10, Appendices 10.2 and 10.4 through 10.14 of this Permit, as approved pursuant to Permit  
27 Conditions [III.10.J.5.a.](#) through [d.](#)

28 **III.10.K.1.a.iii.** Modifications to approved design, plans, and specifications in Operating Unit 10, of this Permit, for  
29 the HLW Vitrification System will be allowed only in accordance with Permit Conditions  
30 [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#), [III.10.C.9.d.](#), [e.](#), and [h.](#)

31 **III.10.K.1.a.iv.** The Permittees will ensure all certifications required by specialists (e.g., independent, qualified,  
32 registered professional engineer; registered, professional engineer; independent corrosion expert;  
33 independent, qualified installation inspector; installation inspector; etc.) use the following statement  
34 or equivalent pursuant to Permit Condition [III.10.C.10](#):

35 “I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or  
36 certified) a portion of the design or installation of a new HLW Vitrification system or component  
37 located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector,  
38 testing for tightness, etc.), for the following HLW Vitrification system components (e.g., the venting  
39 piping, etc.), as required by the Dangerous Waste Regulations, namely, WAC 173-303-640(3)  
40 (applicable paragraphs [i.e., (a) through (g)]), in accordance with WAC 173-303-680.

1 “I certify under penalty of law that I have personally examined and am familiar with the information  
2 submitted in this document and all attachments and that, based on my inquiry of those individuals  
3 immediately responsible for obtaining the information, I believe that the information is true,  
4 accurate, and complete. I am aware that there are significant penalties for submitting false  
5 information, including the possibility of fine and imprisonment.”

- 6 III.10.K.1.a.v. The Permittees will ensure periodic integrity assessments are conducted on the HLW Vitrification  
7 System listed in Permit Table [III.10.I.A](#), as approved/modified pursuant to Permit Condition  
8 [III.10.J.5](#), over the term of this Permit, in accordance with WAC 173-303-680(2) and (3), as  
9 specified in WAC 173-303-640(3)(b) following the description of the integrity assessment program  
10 and schedule in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit  
11 Conditions [III.10.J.5.e.i](#) and [III.10.C.5.c](#). Results of the integrity assessments will be included in  
12 the WTP Unit operating record until ten (10) years after post-closure, or corrective action is  
13 complete and certified, whichever is later.
- 14 III.10.K.1.a.vi. The Permittees will address problems detected during the HLW Vitrification System integrity  
15 assessments specified in Permit Condition [III.10.K.1.a.v](#) following the description of the integrity  
16 assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit  
17 Conditions [III.10.J.5.e.i](#) and [III.10.C.5.c](#).
- 18 III.10.K.1.a.vii. All process monitors/instruments as specified in Permit Table [III.10.K.F](#), as approved/modified  
19 pursuant to Permit Condition [III.10.J.5](#) and [III.10.J.3.d.v.](#), will be equipped with operational alarms  
20 to warn of deviation, or imminent deviation from the limits specified in Permit Table [III.10.K.F](#).
- 21 III.10.K.1.a.viii. The Permittees will install and test all process and leak detection system monitors/instruments, as  
22 specified in Permit Tables [III.10.K.C](#) and [III.10.K.F](#), as approved/modified pursuant to Permit  
23 Conditions [III.10.J.5](#) and [III.10.J.3.d.v.](#), in accordance with Operating Unit 10, Appendices 10.1,  
24 10.2, and 10.14 of this Permit, as approved pursuant to Permit Conditions [III.10.J.5.d.x](#) and  
25 [III.10.J.5.f.xvi](#).
- 26 III.10.K.1.a.ix. No dangerous and/or mixed waste will be treated in the HLW Vitrification System unless the  
27 operating conditions, specified under Permit Condition [III.10.K.1.c](#) are complied with.
- 28 III.10.K.1.a.x. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other materials  
29 in the HLW Vitrification System if these substances could cause the sub-system, sub-system  
30 equipment, or the containment system to rupture, leak, corrode, or otherwise fail [WAC 173-303-  
31 640(5)(a), in accordance with WAC 173-303-680(2)]. This condition is not applicable to corrosion  
32 of HLW Vitrification System sub-system or sub-system equipment that are expected to be replaced  
33 as part of normal operations (e.g., melter).
- 34 III.10.K.1.a.xi. The Permittees will operate the HLW Vitrification System to prevent spills and overflows using the  
35 description of controls and practices as required under WAC 173-303-640(5)(b), described in Permit  
36 Condition [III.10.C.5](#), and Operating Unit 10, Appendix 10.18 of this Permit, as approved pursuant to  
37 Permit Condition [III.10.J.5.e](#). [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2)  
38 and (3), WAC-173-303-806(4)(c)(ix)].
- 39 III.10.K.1.a.xii. For routinely non-accessible HLW Vitrification System sub-systems, as specified in Operating Unit  
40 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition [III.10.J.5.e.vi](#), the Permittees  
41 will mark all routinely non-accessible HLW Vitrification System sub-systems access points with

1 labels or signs to identify the waste contained in each HLW Vitrification System sub-system. The  
2 label, or sign, must be legible at a distance of at least fifty (50) feet, and must bear a legend which  
3 identifies the waste in a manner which adequately warns employees, emergency response personnel,  
4 and the public of the major risk(s) associated with the waste being stored or treated in the HLW  
5 Vitrification System sub-systems. For the purposes of this permit condition, “routinely non-  
6 accessible” means personnel are unable to enter these areas while waste is being managed in them  
7 [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

8 III.10.K.1.a.xiii. For all the HLW Vitrification System sub-systems not addressed in Permit Condition  
9 [III.10.K.1.a.xii.](#), the Permittees will mark all these HLW Vitrification System sub-systems holding  
10 dangerous and/or mixed waste with labels or signs to identify the waste contained in the HLW  
11 Vitrification System sub-systems. The labels, or signs, must be legible at a distance of at least fifty  
12 (50) feet, and must bear a legend which identifies the waste in a manner which adequately warns  
13 employees, emergency response personnel, and the public of the major risk(s) associated with the  
14 waste being stored or treated in the HLW Vitrification System sub-systems [WAC 173-303-  
15 640(5)(d), in accordance with WAC 173-303-680(2)].

16 III.10.K.1.a.xiv. The Permittees will ensure that the secondary containment systems for the HLW Vitrification  
17 System sub-systems listed in Permit Tables [III.10.K.A](#) and [III.10.K.B](#), as approved/modified  
18 pursuant to Permit Condition [III.10.J.5](#), are free of cracks or gaps to prevent any migration of  
19 dangerous and/or mixed waste or accumulated liquid out of the system to the soil, groundwater, or  
20 surface water at any time during the use of the HLW Vitrification System sub-systems. Any  
21 indication that a crack or gap may exist in the containment systems will be investigated and repaired  
22 in accordance with Operating Unit 10, Appendix 10.18 of this Permit, as approved pursuant to  
23 Permit Condition [III.10.J.5.e.v.](#) [WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and  
24 WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-  
25 806(4)(i)(i)(B), and WAC 173-303-320].

26 III.10.K.1.a.xv. The Permittees must immediately and safely remove from service any HLW Vitrification System or  
27 secondary containment system which through an integrity assessment is found to be “unfit for use”  
28 as defined in WAC 173-303-040, following Permit Condition [III.10.K.1.a.xvii.A](#) through [D](#), and [F](#).  
29 The affected HLW Vitrification System or secondary containment system must be either repaired or  
30 closed in accordance with Permit Condition [III.10.K.1.a.xvii.E](#) [WAC 173-303-640(7)(e) and (f) and  
31 WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

32 III.10.K.1.a.xvi. An impermeable coating, as specified in Operating Unit 10, Appendices 10.4, 10.5, 10.7, 10.9,  
33 10.11, and 10.12 of this Permit, as approved pursuant to Permit Condition [III.10.J.5.b.v.](#), will be  
34 maintained for all concrete containment systems and concrete portions of containment systems for  
35 the HLW Vitrification System sub-systems listed in Permit Tables [III.10.K.A](#) and [III.10.K.B](#), as  
36 approved/modified pursuant to Permit Condition [III.10.J.5](#) (concrete containment systems that do not  
37 have a liner, pursuant to WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and  
38 have construction joints, will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in  
39 accordance with WAC 173-303-680(2). The coating will prevent migration of any dangerous and/or  
40 mixed waste into the concrete. All coatings will meet the following performance standards:

41 A. The coating must seal the containment surface such that no cracks, seams, or other avenues  
42 through which liquid could migrate are present;

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- 1           B. The coating must be of adequate thickness and strength to withstand the normal operation of  
2           equipment and personnel within the given area such that degradation or physical damage to the  
3           coating or lining can be identified and remedied before dangerous and/or mixed waste could  
4           migrate from the system; and
- 5           C. The coating must be compatible with the dangerous and/or mixed waste, treatment reagents, or  
6           other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), in  
7           accordance with WAC 173-303-680(2) and (3), and WAC 173-303-806(4)(i)(i)(A)].

8   III.10.K.1.a.xvii. The Permittees will inspect all secondary containment systems for the HLW Vitrification System  
9   sub-systems listed in Permit Tables [III.10.K.A](#) and [III.10.K.B](#), as approved/modified pursuant to  
10   Permit Condition [III.10.J.5.](#), in accordance with the Inspection Schedule specified in Operating Unit  
11   10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions [III.10.J.5.e.i.](#) and  
12   [III.10.C.5.c.](#), and take the following actions if a leak or spill of dangerous and/or mixed waste is  
13   detected in these containment systems [WAC 173-303-640(5)(c), WAC 173-303-640(6) in  
14   accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-  
15   806(4)(i)(i)(B)]:

- 16           A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the HLW  
17           Vitrification System sub-systems or secondary containment system.
- 18           B. Determine the source of the dangerous and/or mixed waste.
- 19           C. Remove the dangerous and/or mixed waste from the containment area in accordance with WAC  
20           173-303-680(2) and (3), as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed  
21           waste removed from containment areas of the HLW Vitrification System will be, at a minimum,  
22           managed as mixed waste.
- 23           D. If the cause of the release was a spill that has not damaged the integrity of the HLW Vitrification  
24           System sub-system, the Permittees may return the HLW Vitrification System sub-system to  
25           service in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-  
26           640(7)(e)(ii). In such case, the Permittees will take action to ensure the incident that caused the  
27           dangerous and/or mixed waste to enter the containment system will not reoccur.
- 28           E. If the source of the dangerous and/or mixed waste is determined to be a leak in from the primary  
29           HLW Vitrification System into the secondary containment system, or the system is unfit for use  
30           as determined through an integrity assessment or other inspection, the Permittees will comply  
31           with the requirements of WAC 173-303-640(7) and take the following actions:
- 32                   1. Close the HLW Vitrification System sub-system following procedures in WAC 173-  
33                   303-640(7)(e)(i), in accordance with WAC 173-303-680, and Operating Unit 10,  
34                   Chapter 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8](#); or
- 35                   2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified  
36                   pursuant to Permit Condition [III.10.K.1.a.iii.](#)) the HLW Vitrification System, in  
37                   accordance with Operating Unit 10, Appendix 10.18 of this Permit, as approved  
38                   pursuant to Permit Condition [III.10.J.5.e.v.](#), before the HLW Vitrification System is  
39                   placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in  
40                   accordance with WAC 173-303-680].

- 1 F. The Permittees will document in the operating record actions/procedures taken to comply with A  
2 through E above, as specified in WAC 173-303-640(6)(d), in accordance with WAC 173-303-  
3 680(2) and (3).
- 4 G. In accordance with WAC 173-303-680(2) and (3), the Permittees will notify and report releases  
5 to the environment to Ecology as specified in WAC 173-303-640(7)(d).
- 6 III.10.K.1.a.xviii. If liquids (e.g., dangerous and/or mixed waste, leaks and spills, precipitation, fire water, liquids  
7 from damaged or broken pipes) cannot be removed from the secondary containment system within  
8 twenty-four (24) hours; Ecology will be verbally notified within twenty-four (24) hours of discovery.  
9 The notification will provide the information in A, B, and C, listed below. The Permittees will  
10 provide Ecology with a written demonstration within seven (7) business days, identifying at a  
11 minimum [WAC 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC  
12 173-303-680(3) and WAC 173-303-806(4)(i)(i)(B)]:
- 13 A. Reasons for delayed removal;
- 14 B. Measures implemented to ensure continued protection of human health and the environment;
- 15 C. Current actions being taken to remove liquids from secondary containment.
- 16 III.10.K.1.a.xix. All air pollution control devices and capture systems in the HLW Vitrification System will be  
17 maintained and operated at all times in a manner so as to minimize the emissions of air contaminants  
18 and to minimize process upsets. Procedures for ensuring that the air pollution control devices and  
19 capture systems in the HLW Vitrification System are properly operated and maintained so as to  
20 minimize the emission of air contaminants and process upsets will be established.
- 21 III.10.K.1.a.xx. In all future narrative permit submittals, the Permittees will include HLW Vitrification sub-system  
22 names with the sub-system designation.
- 23 III.10.K.1.a.xxi. For any portion of the HLW Vitrification System which has the potential for formation and  
24 accumulation of hydrogen gases, the Permittees will operate the portion to maintain hydrogen levels  
25 below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].
- 26 III.10.K.1.a.xxii. For each HLW Vitrification System sub-system holding dangerous waste which are acutely or  
27 chronically toxic by inhalation, the Permittees will operate the system to prevent escape of vapors,  
28 fumes, or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e),  
29 in accordance with WAC 173-303-680].
- 30 III.10.K.1.b. Performance Standards
- 31 III.10.K.1.b.i. The HLW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99%  
32 for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1) and  
33 40CFR §63.1203(c)(2), in accordance with WAC 173-303-680(2)]:
- 34 RESERVED
- 35 DRE in this Permit Condition will be calculated in accordance with the formula given below:
- 36 
$$DRE = [1 - (W_{out}/W_{in})] \times 100\%$$
- 37 Where:

- 1  $W_{in}$ =mass feed-rate of one principal organic dangerous constituent (PODC) in a waste feedstream;  
2 and
- 3  $W_{out}$ =mass emission rate of the same PODC present in exhaust emissions prior to release to the  
4 atmosphere.
- 5 III.10.K.1.b.ii. Particulate matter emissions from the HLW Vitrification System will not exceed 34 mg/dscm (0.015  
6 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with WAC 173-303-680(2)];
- 7 III.10.K.1.b.iii. Hydrochloric acid and chlorine gas emissions from the HLW Vitrification System will not exceed 21  
8 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-303-680(2)];
- 9 III.10.K.1.b.iv. Dioxin and Furan TEQ emissions from the HLW Vitrification System will not exceed 0.2 nanograms  
10 (ng)/dscm [40 CFR §63.1203(b)(1), in accordance with WAC 173-303-680(2)];
- 11 III.10.K.1.b.v. Mercury emissions from the HLW Vitrification System will not exceed 45 µg/dscm [40 CFR  
12 §63.1203(b)(2), in accordance with WAC 173-303-680(2)];
- 13 III.10.K.1.b.vi. Lead and cadmium emissions from the HLW Vitrification System will not exceed 120 µg/dscm,  
14 combined [40 CFR §63.1203(b)(3), in accordance with WAC 173-303-680(2)];
- 15 III.10.K.1.b.vii. Arsenic, beryllium, and chromium emissions from the HLW Vitrification System will not exceed 97  
16 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with WAC 173-303-680(2)];
- 17 III.10.K.1.b.viii. Carbon monoxide (CO) emission from the HLW Vitrification System will not exceed 100 parts per  
18 million (ppm) by volume, over an hourly rolling average (as measured and recorded by the  
19 continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-  
20 303-680(2) and (3)];
- 21 III.10.K.1.b.ix. Hydrocarbon emission from the HLW Vitrification System will not exceed 10 parts per million  
22 (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous  
23 monitoring system during demonstration testing required by this Permit), dry basis and reported as  
24 propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC 173-303-680(2) and (3)];
- 25 III.10.K.1.b.x. If the emissions from the HLW Vitrification System exceed the emission rates listed in Permit Table  
26 [III.10.K.E](#), as approved pursuant to Permit Condition [III.10.C.11.c](#) or [d](#)., the Permittees will perform  
27 the following actions [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)]:
- 28 A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
29 emission rate(s) as specified in Permit Condition I.E.21;
- 30 B. Submit to Ecology additional risk information to indicate that the increased emissions impact is  
31 off-set by decreased emission impact from one or more constituents expected to be emitted at the  
32 same time, and/or investigate the cause and impact of the exceedence of the emission rate(s) and  
33 submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery  
34 of exceeding the emission rate(s); and
- 35 C. Based on the notification and any additional information, Ecology may provide, in writing,  
36 direction to the Permittees to stop dangerous and/or mixed waste feed to the HLW Vitrification  
37 System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to  
38 Permit Conditions [III.10.C.2.e](#) and [f](#)., or [III.10.C.2.g](#). The revised Demonstration Test Plan  
39 must include substantive changes to prevent failure from reoccurring.

- 1 The emission limits specified in Permit Conditions [III.10.K.1.b.i.](#) through [x.](#) above, will be met for  
2 the HLW Vitrification System by limiting feed rates as specified in Permit Tables [III.10.K.D](#) and  
3 [III.10.K.F](#), as approved/modified pursuant to Permit Condition [III.10.J.5](#) and [III.10.J.3.d.v.](#),  
4 compliance with operating conditions specified in Permit Condition [III.10.K.1.c.](#) (except as specified  
5 in Permit Condition [III.10.K.1.b.xii.](#)), and compliance with Permit Condition [III.10.K.1.b.xi.](#)
- 6 III.10.K.1.b.xi. Treatment effectiveness, feed-rates, and operating rates for dangerous and/or mixed waste  
7 management units contained in the HLW Building, but not included in Permit Table [III.10.K.A](#), as  
8 approved/modified pursuant to Permit Condition [III.10.J.5](#), will be as specified in Permit Sections  
9 [III.10.D](#), [III.10.E](#), [III.10.F](#) and consistent with the assumptions and basis which are reflected in  
10 Operating Unit 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition  
11 [III.10.C.11.b.](#) For the purposes of this permit condition, Operating Unit 10, Appendix 6.3.1 will be  
12 superceded by Appendix 6.4.1 upon its approval pursuant to either Permit Conditions [III.10.C.11.c.](#)  
13 or [d.](#) [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 14 III.10.K.1.b.xii. Compliance with the operating conditions specified in Permit Condition [III.10.K.1.c.](#), will be  
15 regarded as compliance with the required performance standards identified in Permit Conditions  
16 [III.10.K.1.b.i.](#) through [x.](#) However, if it is determined that during the effective period of this Permit  
17 that compliance with the operating conditions in Permit Condition [III.10.K.1.c.](#) is not sufficient to  
18 ensure compliance with the performance standards specified in Permit Conditions [III.10.K.1.b.i.](#)  
19 through [x.](#), the Permit may be modified, revoked, or reissued pursuant to Permit Conditions  
20 [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#)
- 21 III.10.K.1.c. Operating Conditions [WAC-303-670(6), in accordance with WAC 173-303-680(2)and (3)]  
22 The Permittees will operate the HLW Vitrification System in accordance with Operating Unit 10,  
23 Chapter 4.0 of this Permit, as updated pursuant to Permit Condition [III.10.J.5.e.vi.](#), Operating Unit  
24 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Conditions [III.10.J.5.e.](#) and [f.](#), and  
25 Operating Unit 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition  
26 [III.10.J.5.f.](#), except as modified pursuant to Permit Conditions [III.10.J.3](#), [III.10.K.1.b.x.](#),  
27 [III.10.K.1.b.xii.](#), [III.10.K.1.h.](#), and in accordance with and the following:
- 28 III.10.K.1.c.i. The Permittees will operate the HLW Vitrification System in order to maintain the systems and  
29 process parameters listed in Permit Tables [III.10.K.C](#) and [III.10.K.F](#), as approved/modified pursuant  
30 to Permit Conditions [III.10.J.5](#) and [III.J.3.d.v.](#), within the set-points specified in Permit Table  
31 [III.10.K.F](#).
- 32 III.10.K.1.c.ii. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.K.F](#), as  
33 approved/modified pursuant to Permit Conditions [III.10.J.5](#) and [III.J.3.d.v.](#), to automatically cut-off  
34 and/or lock-out the dangerous and/or mixed waste feed to HLW Vitrification System when the  
35 monitored operating conditions deviate from the set-points specified in Permit Table [III.10.K.F](#).
- 36 III.10.K.1.c.iii. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.K.F](#), as  
37 approved/modified pursuant to Permit Conditions [III.10.J.5](#) and [III.J.3.d.v.](#), to automatically cut-off  
38 and/or lock-out the dangerous and/or mixed waste feed to HLW Vitrification System when all  
39 instruments specified on Permit Table [III.10.I.F](#) for measuring the monitored parameters fails or  
40 exceeds its span value.

- 1 III.10.K.1.c.iv. The Permittees will operate the AWFCO systems, specified in Permit Table [III.10.K.F](#), as  
2 approved/modified pursuant to Permit Conditions [III.10.J.5](#) and [III.J.3.d.v.](#), to automatically cut-off  
3 and/or lock out the dangerous and/or mixed waste feed to the HLW Vitrification System when any  
4 portion of the HLW Vitrification System is bypassed. The terms “bypassed” and “bypass event” as  
5 used in Permit Sections [III.10.J](#) and [K](#) will mean if any portion of the HLW Vitrification System is  
6 bypassed so that gases are not treated as during the Demonstration Test.
- 7 III.10.K.1.c.v. In the event of a malfunction of the AWFCO systems listed in Permit Table [III.10.K.F](#), as  
8 approved/modified pursuant to Permit Conditions [III.10.J.5](#) and [III.J.3.d.v.](#), the Permittees will  
9 immediately, manually, cut-off the dangerous and/or mixed waste feed to the HLW Vitrification  
10 System. The Permittees will not restart the dangerous and/or mixed waste feed until the problem  
11 causing the malfunction has been identified and corrected.
- 12 III.10.K.1.c.vi. The Permittees will manually cut-off the dangerous and/or mixed waste feed to the HLW  
13 Vitrification System when the operating conditions deviate from the limits specified in Permit  
14 Condition [III.10.K.1.c.i.](#), unless the deviation automatically activates the waste feed cut-off sequence  
15 specified in Permit Conditions [III.10.K.1.c.ii.](#), [iii.](#), and/or [iv.](#)
- 16 III.10.K.1.c.vii. If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the HLW  
17 Vitrification System occur due to deviations from Permit Table [III.10.K.F](#), as approved/modified  
18 pursuant to Permit Conditions [III.10.J.5](#) and [III.J.3.d.v.](#), within a sixty (60) day period, the Permittees  
19 will submit a written report to Ecology within five (5) calendar days of the thirty-first (31)  
20 exceedence including the information specified below. These dangerous and/or mixed waste feed  
21 cut-offs to the HLW Vitrification System, whether automatically or manually activated, are counted  
22 if the specified set-points are deviated from while dangerous and/or mixed waste and waste residues  
23 continue to be processed in the HLW Vitrification System. A cascade event is counted at a  
24 frequency of one (1) towards the first waste feed cut-off parameter, specified on Permit Table  
25 [III.10.K.F](#), from which the set-point is deviated:
- 26 A. The parameter(s) that deviated from the set-point(s) in Permit Table [III.10.K.F](#);  
27 B. The magnitude, dates, and duration of the deviations;  
28 C. Results of the investigation of the cause of the deviations; and  
29 D. Corrective measures taken to minimize future occurrences of the deviations.
- 30 III.10.K.1.c.viii. If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the HLW  
31 Vitrification System occur due to deviations from Permit Table [III.10.K.F](#), as approved/modified  
32 pursuant to Permit Conditions [III.10.J.5](#) and [III.J.3.d.v.](#), within a thirty (30) day period, the  
33 Permittees will submit the written report required to be submitted pursuant to Permit Condition  
34 [III.10.K.1.c.vii.](#) to Ecology, on the first business day following the thirty-first exceedence. These  
35 dangerous and/or mixed waste feed cut-offs to the HLW Vitrification System, whether automatically  
36 or manually activated, are counted if the specified set-points are deviated from while dangerous  
37 and/or mixed waste and waste residues continue to be processed in the HLW Vitrification System. A  
38 cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter,  
39 specified on Permit Table [III.10.K.F](#), from which the set-point is deviated:
- 40 In accordance with WAC 173-303-680(2) and (3), the Permittees may not resume dangerous and/or  
41 mixed waste feed to the HLW Vitrification System until this written report has been submitted; and

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- 1           A. Ecology has authorized the Permittees, in writing, to resume dangerous and/or mixed waste feed,  
2           or
- 3           B. Ecology has not, within seven (7) days, notified the Permittees in writing of the following:
  - 4               1. The Permittees written report does not document that the corrective measures taken will  
5               minimize future exceedances; and
  - 6               2. The Permittees must take further corrective measures and document that these further  
7               corrective measures will minimize future exceedances.
- 8   III.10.K.1.c.ix. If any portion of the HLW Vitrification System is bypassed while treating dangerous and/or mixed  
9           waste, it will be regarded as non-compliance with the operating conditions specified in Permit  
10           Condition [III.10.K.1.c.](#) and the performance standards specified in Permit Condition [III.10.K.1.b.](#)  
11           After such a bypass event, the Permittees will perform the following actions:
  - 12               A. Investigate the cause of the bypass event;
  - 13               B. Take appropriate corrective measures to minimize future bypasses;
  - 14               C. Record the investigation findings and corrective measures in the operating record; and
  - 15               D. Submit a written report to Ecology within five (5) days of the bypass event documenting the  
16               result of the investigation and corrective measures.
- 17   III.10.K.1.c.x. The Permittees will control fugitive emissions from the HLW Vitrification System by maintaining  
18           the melter under negative pressure.
- 19   III.10.K.1.c.xi. Compliance with the operating conditions specified in Permit Condition [III.10.K.1.c.](#) will be  
20           regarded as compliance with the required performance standards identified in Permit Condition  
21           [III.10.K.1.b.](#) However, evidence that compliance with these operating conditions is insufficient to  
22           ensure compliance with the performance standards, will justify modification, revocation, or re-  
23           issuance of this Permit, in accordance with Permit Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#)
- 24   III.10.K.1.d. Inspection Requirements [WAC 173-303-680(3)]
- 25   III.10.K.1.d.i. The Permittees will inspect the HLW Vitrification System in accordance with the Inspection  
26           Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in accordance with Permit  
27           Condition [III.10.C.5.c.](#)
- 28   III.10.K.1.d.ii. The inspection data for HLW Vitrification System will be recorded, and the records will be placed in  
29           the WTP Unit operating record for HLW Vitrification System, in accordance with Permit Condition  
30           [III.10.C.4.](#)
- 31   III.10.K.1.d.iii. The Permittees will comply with the inspection requirements specified in Operating Unit 10,  
32           Appendix 10.15 of this Permit, as approved pursuant to Permit Condition [III.10.J.5.f.](#), and as  
33           modified by Permit Conditions [III.10.J.3.](#), [III.10.K.1.b.x.](#), [III.10.K.1.b.xii.](#), and [III.10.K.1.h.](#)
- 34   III.10.K.1.d.iv. The Permittees shall calibrate, inspect, and maintain or replace the following cooling water flow and  
35           temperature instruments: (Melter 1: FT/FI-0306, FT/FI-0316, FT/FI-0321, FT/FI-0326, FT/FI-0336,  
36           TE/TT/TI-0352; Melter 2: FT/FI-2306, FT/FI-2316, FT/FI-2321, FT/FI-2326, FT/FI-2336) in  
37           accordance with manufacturer's recommendations.

- 1
- 2 III.10.K.1.d.v. The Permittees shall maintain operating and calibration/maintenance records for Ecology's inspection  
3 for the following cooling water flow and temperature instruments (Melter 1: FT/FI-0306, FT/FI-  
4 0316, FT/FI-0321, FT/FI-0326, FT/FI-0336, TE/TT/TI-0352; Melter 2: FT/FI-2306, FT/FI-2316,  
5 FT/FI-2321, FT/FI-2326, FT/FI-2336).
- 6 III.10.K.1.d.vi. The Permittees shall maintain refractory thermocouple temperature data for Ecology inspection.
- 7 III.10.K.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-303-670(7),  
8 and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]
- 9 III.10.K.1.e.i. Upon receipt of a written request from Ecology, the Permittees will perform sampling and analysis  
10 of the dangerous and/or mixed waste and exhaust emissions to verify that the operating requirements  
11 established in the permit achieve the performance standards delineated in this Permit.
- 12 III.10.K.1.e.ii. The Permittees will comply with the monitoring requirements specified in the Operating Unit 10,  
13 Appendices 10.2, 10.3, 10.7, 10.13, 10.15, and 10.18 of this Permit, as approved pursuant to Permit  
14 Condition [III.10.J.5](#), and as modified by Permit Conditions [III.10.J.3](#), [III.10.K.1.h.](#), and  
15 [III.10.K.1.b.x.](#) and [xii.](#)
- 16 III.10.K.1.e.iii. The Permittees will operate, calibrate, and maintain the carbon monoxide and hydrocarbon  
17 continuous emission monitors (CEM) specified in this Permit in accordance with Performance  
18 Specifications 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart  
19 EEE of 40 CFR Part 63, and Operating Unit 10 Appendix 10.15 of this Permit, as approved pursuant  
20 to Permit Condition [III.10.J.5.f.](#), and as modified by Permit Conditions [III.10.H.3](#), [III.10.K.1.h.](#), and  
21 [III.10.K.1.b.x.](#) and [xii.](#)
- 22 III.10.K.1.e.iv. The Permittees will operate, calibrate, and maintain the instruments specified on Permit Tables  
23 [III.10.K.C](#) and [F](#), as approved/modified pursuant to Permit Conditions [III.10.J.5](#) and [III.J.3.d.v.](#), in  
24 accordance with Operating Unit 10, Appendix 10.15 of this Permit, as approved pursuant to Permit  
25 Condition [III.10.J.5.f.](#), and as modified by Permit Conditions [III.10.J.3](#), [III.10.K.1.h.](#), and  
26 [III.10.K.1.b.x.](#) and [xii.](#)
- 27 III.10.K.1.f. Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]
- 28 III.10.K.1.f.i. The Permittees will record and maintain in the WTP Unit operating record for the HLW Vitrification  
29 System, all monitoring, calibration, maintenance, test data, and inspection data compiled under the  
30 conditions of this Permit, in accordance with Permit Conditions [III.10.C.4](#) and [5](#) as modified by  
31 Permit Conditions [III.10.J.3](#), [III.10.K.1.h.](#), and [III.10.K.1.b.x.](#) and [xii.](#)
- 32 III.10.K.1.f.ii. The Permittees will record in the WTP Unit operating record the date, time, and duration of all  
33 automatic waste feed cut-offs and/or lockouts, including the triggering parameters, reason for the  
34 deviation, and recurrence of the incident. The Permittees will also record all incidents of AWFCO  
35 system function failures, including the corrective measures taken to correct the condition that caused  
36 the failure.
- 37 III.10.K.1.f.iii. The Permittees will submit to Ecology an annual report each calendar year within ninety (90) days  
38 following the end of the year. The report will include the following information:
- 39 A. Total dangerous and/or mixed waste feed processing time for the HLW Vitrification System;

- 1 B. Date/Time of all HLW Vitrification System startups and shutdowns;
- 2 C. Date/Time/Duration/Cause/Corrective Action taken for all HLW Vitrification System shutdowns  
3 caused by malfunction of either process or control equipment; and
- 4 D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or mixed  
5 waste feed cut-off due to deviations from Permit Table [III.10.K.F](#), as approved/modified  
6 pursuant to Permit Conditions [III.10.J.5](#) and [III.10J.3.d.v](#).
- 7 III.10.K.1.f.iv. The Permittees will submit an annual report to Ecology each calendar year within ninety (90) days  
8 following the end of the year of all quarterly CEM Calibration Error and Annual CEM Performance  
9 Specification Tests conducted in accordance with Permit Condition [III.10.K.1.e.iii](#).
- 10 III.10.K.1.g. Closure
- 11 The Permittees will close the HLW Vitrification System in accordance with Operating Unit 10,  
12 Chapter 11.0 of this Permit, as approved pursuant to Permit Condition [III.10.C.8](#).
- 13 III.10.K.1.h. Periodic Emission Re-testing Requirements [WAC 173-303-670(5), WAC 173-303-670(7), and  
14 WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)]
- 15 III.10.K.1.h.i. Dioxin and Furan Emission Testing
- 16 A. Within eighteen (18) months of commencing operation pursuant to Permit Section [III.10.K](#), the  
17 Permittees will submit to Ecology for approval, a Dioxin and Furan Emission Test Plan  
18 (DFETP) for the performance of emission testing of the HLW Vitrification System gases for  
19 dioxin and furans during “Normal Operating Conditions” as a permit modification in accordance  
20 with Permit Conditions [III.10.C.2.e](#). and [f](#). The DFETP will include all elements applicable to  
21 dioxin and furan emission testing included in the “Previously Approved Demonstration Test  
22 Plan,” applicable EPA promulgated test methods and procedures in effect at the time of the  
23 submittal, and projected commencement and completion dates for dioxin and furan emission test.  
24 “Normal Operating Conditions” will be defined for the purposes of this permit condition as  
25 follows:
- 26 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic  
27 waste feed cut-off parameters specified on Permit Table [III.10.K.F](#) (as  
28 approved/modified pursuant to Permit Conditions [III.10.J.5](#) and [III.10.J.3.d.v](#)), that were  
29 established to maintain compliance with Permit Condition [III.10.K.1.b.iv.](#), as specified  
30 in Operating Unit 10, Appendix 10.15 of this Permit (as approved pursuant to Permit  
31 Condition [III.10.J.3.d](#). and in accordance with [III.10.K.1.b.xii](#). and [III.10.K.1.c.xi](#).), are  
32 held within the range of the average value over the previous twelve (12) months and the  
33 set-point value specified on Permit Table [III.10.K.F](#). The average value is defined as the  
34 sum of the rolling average values recorded over the previous twelve (12) months divided  
35 by the number of rolling averages recorded during that time. The average value will not  
36 include calibration data, malfunction data, and data obtained when not processing  
37 dangerous and/or mixed waste; and
- 38 2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average  
39 value over the previous twelve (12) months and the set-point value specified on Permit  
40 Table [III.10.K.D](#) (as approved/modified pursuant to Permit Conditions [III.10.J.5](#) and

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1 [III.10.J.3.d.v](#)). Feed-rate of organics as measured by TOC are held within the range of  
2 the average value over the previous twelve (12) months. The average value is defined as  
3 the sum of the rolling average values recorded over the previous twelve (12) months  
4 divided by the number of rolling averages recorded during that time. The average value  
5 will not include data obtained when not processing dangerous and/or mixed waste.

6 For purposes of this permit Condition, the “Previously Approved Demonstration Test Plan” is  
7 defined to include the Demonstration Test Plan approved pursuant to Permit Condition  
8 [III.10.J.5.f](#).

- 9 B. Within sixty (60) days of Ecology’s approval of the DFETP, or within thirty-one (31) months of  
10 commencing operation pursuant to Permit Section [III.10.K](#), whichever is later, the Permittees  
11 will implement the DFETP approved, pursuant to Permit Condition [III.10.K.1.h.i.A](#).
- 12 C. The Permittees will resubmit the DFETP, approved pursuant to Permit Condition  
13 [III.10.K.1.h.i.A](#), revised to include applicable EPA promulgated test methods and procedures in  
14 effect at the time of the submittal, and projected commencement and completion dates for dioxin  
15 and furan emission test as a permit modification in accordance with Permit Conditions  
16 [III.10.C.2.e](#). and [f](#). at twenty-four (24) months from the implementation date of the testing  
17 required pursuant to Permit Condition [III.10.K.1.h.i.A](#) and at reoccurring eighteen (18) month  
18 intervals from the implementation date of the previously approved DFETP. The Permittees will  
19 implement these newly approved revised DFETPs every thirty-one (31) months from the  
20 previous approved DFETP implementation date or within sixty (60) days of the newly Ecology  
21 approved revised DFETP, whichever is later, for the duration of this Permit.
- 22 D. The Permittees will submit a summary of operating data collected pursuant to the DFETPs in  
23 accordance with Permit Conditions [III.10.K.1.h.i.A](#) and C to Ecology upon completion of the  
24 tests. The Permittees will submit to Ecology the complete test report within ninety (90) calendar  
25 days of completion of the testing. The test reports will be certified as specified in WAC 173-  
26 303-807(8), in accordance with WAC 173-303-680(2) and (3).
- 27 E. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit  
28 Conditions [III.10.K.1.h.i.A](#) and C show that one or more of the performance standards listed in  
29 Permit Condition [III.10.K.1.b.](#), with the exception of Permit Condition [III.10.K.1.b.x.](#), for the  
30 HLW Vitrification System were not met during the emission test, the Permittees will perform the  
31 following actions:
- 32 1. Immediately stop dangerous and/or mixed waste feed to the HLW Vitrification System  
33 under the mode of operation that resulted in not meeting the performance standard(s).
  - 34 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the  
35 performance standard(s) as specified in Permit Condition I.E.21.
  - 36 3. Investigate the cause of the failure and submit a report of the investigation findings to  
37 Ecology within fifteen (15) days of discovery of not meeting the performance  
38 standard(s).
  - 39 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance  
40 standard(s) documentation supporting a mode of operation where all performance  
41 standards listed in Permit Condition [III.K.1.b.](#), with the exception of Permit Condition

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1 [III.10.K.1.b.x.](#), for the HLW Vitrification System were met during the demonstration  
2 test, if any such mode was demonstrated.

- 3 5. Based on the information provided to Ecology by the Permittees, pursuant to Permit  
4 Conditions [III.10.K.1.h.i.E.1](#) through 4 above, and any additional information, Ecology  
5 may provide, in writing, direction to the Permittees to stop dangerous and/or mixed  
6 waste feed to the HLW Vitrification System and/or amend the mode of operation the  
7 Permittees are allowed to continue operations prior to Ecology approval of the revised  
8 Demonstration Test Plan pursuant to Permit Condition [III.10. K.1.h.i.E.6](#).
- 9 6. Submit to Ecology within one hundred and twenty (120) days of discovery of not  
10 meeting the performance standard(s) a revised Demonstration Test Plan requesting  
11 approval to retest as a permit modification pursuant to Permit Conditions [III.10.C.2.e.](#)  
12 and [f.](#) The revised Demonstration Test Plan must include substantive changes to prevent  
13 failure from reoccurring reflecting performance under operating conditions  
14 representative of the extreme range of normal conditions, and include revisions to Permit  
15 Tables [III.10.K.D](#) and [F.](#)

16 F. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit  
17 Conditions [III.10.K.1.h.i.A](#) and C show that any emission rate for any constituent listed in Permit  
18 Table [III.10.K.E](#), as approved/modified pursuant to Permit Conditions [III.10.C.11.c.](#) or [d.](#), is  
19 exceeded for HLW Vitrification System during the emission test, the Permittees will perform the  
20 following actions:

- 21 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
22 emission rate(s) as specified in Permit Condition I.E.21;
- 23 2. Submit to Ecology additional risk information to indicate that the increased emissions  
24 impact is off-set by decreased emission impact from one or more constituents expected  
25 to be emitted at the same time, and/or investigate the cause and impact of the exceedence  
26 and submit a report of the investigation findings to Ecology within fifteen (15) days of  
27 this discovery of exceeding the emission rate(s); and
- 28 3. Based on the notification and any additional information, Ecology may provide, in  
29 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the  
30 HLW Vitrification System and/or to submit a revised Demonstration Test Plan as a  
31 permit modification pursuant to Permit Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#)  
32 The revised Demonstration Test Plan must include substantive changes to prevent failure  
33 from reoccurring reflecting performance under operating conditions representative of the  
34 extreme range of normal conditions, and include revisions to Permit Tables [III.10.K.D](#)  
35 and [F.](#)

36 **III.10.K.1.h.ii. Non-organic Emission Testing**

- 37 A. Within forty-eight (48) months of commencing operation pursuant to Permit Section [III.10.K.](#),  
38 the Permittees will resubmit to Ecology for approval the "Previously Approved Demonstration  
39 Test Plan" revised as a permit modification in accordance with Permit Conditions [III.10.C.2.e.](#)  
40 and [f.](#) The revised Demonstration Test Plan (RDTP) will include applicable EPA promulgated  
41 test methods and procedures in effect at the time of the submittal, projected commencement and

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1 completion dates for emission testing to demonstrate performance standards specified in Permit  
2 Conditions [III.10.K.1.b.ii.](#), [iii.](#), [v.](#), [vi.](#), and [vii.](#), and non-organic emissions as specified in Permit  
3 Table [III.10.K.E.](#), as approved/modified pursuant to Permit Conditions [III.10.J.3.d.](#) and  
4 [III.10.C.11.c.](#) or [d.](#), under “Normal Operating Conditions.” “Normal Operating Conditions” will  
5 be defined for the purposes of this permit condition as follows:

- 6 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic  
7 waste feed cut-off parameters specified in Permit Table [III.10.K.F.](#), as approved/modified  
8 pursuant to Permit Conditions [III.10.J.3.d.](#) and [III.10.C.11.c.](#) or [d.](#), that were established  
9 to maintain compliance with Permit Conditions [III.10.K.1.b.ii.](#), [iii.](#), [v.](#), [vi.](#), and [vii.](#), and  
10 non-organic emissions, as specified in Permit Table [III.10.K.E.](#), as specified in Operating  
11 Unit 10, Appendix 10.15 of this Permit (as approved pursuant to Permit Conditions  
12 [III.10.J.3.d.](#) and [III.10.C.11.c.](#) or [d.](#)), are held within the range of the average value over  
13 the previous twelve (12) months and the set-point value specified on Permit Table  
14 [III.10.K.F.](#) The average value is defined as the sum of the rolling average values  
15 recorded over the previous twelve (12) months divided by the number of rolling  
16 averages recorded during that time. The average value will not include calibration data,  
17 malfunction data, and data obtained when not processing dangerous and/or mixed waste;  
18 and
- 19 2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average  
20 value over the previous twelve (12) months and the set-point value specified on Permit  
21 Table [III.10.K.D.](#), as approved/modified pursuant to Permit Conditions [III.10.J.3.d.](#) and  
22 [III.10.C.11.c.](#) or [d.](#) The average value is defined as the sum of all rolling average values  
23 recorded over the previous twelve (12) months divided by the number of rolling  
24 averages recorded during that time. The average value will not include data obtained  
25 when not processing dangerous and/or mixed waste.

26 For purposes of this permit Condition, the “Previously Approved Demonstration Test Plan” is  
27 defined to include the Demonstration Test Plan approved pursuant to Permit Condition  
28 [III.10.J.5.f.](#)

- 29 B. Within sixty (60) days of Ecology’s approval of the RDTP, or within sixty (60) months of  
30 commencing operation pursuant to Permit Section [III.10.K.](#), whichever is later, the Permittees  
31 will implement the RDTP approved pursuant to Permit Condition [III.10.K.1.h.ii.A.](#)
- 32 C. The Permittees will resubmit the RDTP, approved pursuant to Permit Condition  
33 [III.10.K.1.h.ii.A.](#), revised to include applicable EPA promulgated test methods and procedures in  
34 effect at the time of the submittal, and projected commencement and completion dates for  
35 emission test as a permit modification in accordance with Permit Conditions [III.10.C.2.e.](#) and [f.](#)  
36 at forty-eight (48) months from the implementation date of the testing required pursuant to  
37 Permit Condition [III.10.K.1.h.ii.A](#) and at reoccurring forty-eight (48) month intervals from the  
38 implementation date of the previously approved RDTP. The Permittees will implement these  
39 newly approved revised RDTP, every sixty (60) months from the previous approved RDTP  
40 implementation date or within sixty (60) days of the newly Ecology approved revised RDTP,  
41 whichever is later, for the duration of this Permit.

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- 1 D. The Permittees will submit a summary of operating data collected pursuant to the RDTPs in  
2 accordance with Permit Conditions [III.10.K.1.h.ii](#).A and C to Ecology upon completion of the  
3 tests. The Permittees will submit to Ecology the complete test report within ninety (90) calendar  
4 days of completion of the testing. The test reports will be certified pursuant to WAC 173-303-  
5 807(8), in accordance with WAC 173-303-680(2) and (3).
- 6 E. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit  
7 Conditions [III.10.K.1.h.ii](#).A and C show that any emission rate for any constituent listed in  
8 Permit Table [III.10.K.E](#), as approved/modified pursuant to Permit Conditions [III.10.J.3.d](#). and  
9 [III.10.C.11.c](#). or [d.](#), is exceeded for HLW Vitrification System during the emission test, the  
10 Permittees will perform the following actions:
- 11 1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
12 emission rate(s) as specified in Permit Condition I.E.21;
  - 13 2. Submit to Ecology additional risk information to indicate that the increased emissions  
14 impact is off-set by decreased emission impact from one or more constituents expected  
15 to be emitted at the same time, and/or investigate the cause and impact of the exceedence  
16 and submit a report of the investigation findings to Ecology within fifteen (15) days of  
17 this discovery of exceeding the emission rate(s); and
  - 18 3. Based on the notification and any additional information, Ecology may provide, in  
19 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the  
20 HLW Vitrification System and/or to submit a revised Demonstration Test Plan as a  
21 permit modification pursuant to Permit Conditions [III.10.C.2.e](#). and [f.](#), or [III.10.C.2.g](#).  
22 The revised Demonstration Test Plan must include substantive changes to prevent failure  
23 from reoccurring reflecting performance under operating conditions representative of the  
24 extreme range of normal conditions, and include revisions to Permit Tables [III.10.K.D](#)  
25 and [III.10.K.F](#).
- 26 F. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit  
27 Conditions [III.10.K.1.h.ii](#).A and C show that one or more of the performance standards listed in  
28 Permit Condition [III.10.K.1.b.](#), with the exception of Permit Condition [III.10.K.1.b.x.](#), for the  
29 HLW Vitrification System were not met during the emission test, the Permittees will perform the  
30 following actions:
- 31 1. Immediately stop dangerous and/or mixed waste feed to the HLW Vitrification System  
32 under the mode of operation that resulted in not meeting the performance standard(s).
  - 33 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the  
34 performance standard(s), as specified in Permit Condition I.E.21.
  - 35 3. Investigate the cause of the failure and submit a report of the investigation findings to  
36 Ecology within fifteen (15) days of discovery of not meeting the performance  
37 standard(s).
  - 38 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance  
39 standard(s) documentation supporting a mode of operation where all performance  
40 standards listed in Permit Condition [III.K.1.b.](#), with the exception of Permit Condition

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1 [III.10.K.1.b.x.](#), for the HLW Vitrification System were met during the demonstration  
2 test, if any such mode was demonstrated.

- 3 5. Based on the information provided to Ecology by the Permittees pursuant to Permit  
4 Conditions [III.10.K.1.h.ii.F.1](#) through 4 above, and any additional information, Ecology  
5 may provide, in writing, direction to the Permittees to stop dangerous and/or mixed  
6 waste feed to the HLW Vitrification System and/or amend the mode of operation the  
7 Permittees are allowed to continue operations prior to Ecology approval of the revised  
8 Demonstration Test Plan pursuant to Permit Condition [III.10.K.1.h.ii.F.6](#).
- 9 6. Submit to Ecology within one hundred and twenty (120) days of discovery of not  
10 meeting the performance standard(s) a revised Demonstration Test Plan requesting  
11 approval to retest as a permit modification pursuant to Permit Conditions [III.10.C.2.e.](#)  
12 and [f](#). The revised Demonstration Test Plan must include substantive changes to prevent  
13 failure from reoccurring reflecting performance under operating conditions  
14 representative of the extreme range of normal conditions, and include revisions to Permit  
15 Tables [III.10.K.D](#) and [E](#).

16 III.10.K.1.h.iii. Other Emission Testing

- 17 A. Within seventy-eight (78) months of commencing operation pursuant to Permit Section [III.10.K.](#),  
18 the Permittees will resubmit to Ecology for approval the “Previously Approved Demonstration  
19 Test Plan” revised as a permit modification in accordance with Permit Conditions [III.10.C.2.e.](#)  
20 and [f](#). The revised Demonstration Test Plan (RDTP) will include applicable EPA promulgated  
21 test methods and procedures in effect at the time of the submittal, projected commencement and  
22 completion dates for emission testing to demonstrate performance standards as specified in  
23 Permit Conditions [III.10.K.1.b.viii.](#) and [ix.](#), and emissions as specified on Permit Table  
24 [III.10.K.E](#), as approved/modified pursuant to Permit Conditions [III.10.J.3.d.](#) and [III.10.C.11.c.](#) or  
25 [d.](#), not addressed under Permit Conditions [III.10.K.1.h.i.](#) or [ii.](#) under “Normal Operating  
26 Conditions.” “Normal Operating Conditions” will be defined for the purposes of this permit  
27 Condition as follows:

- 28 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic  
29 waste feed cut-off parameters specified on Permit Table [III.10.K.F](#), as  
30 approved/modified pursuant to Permit Condition [III.10.J.3.d.](#) and [III.10.C.11.c.](#) or [d.](#),  
31 that were established to maintain compliance with Permit Conditions [III.10.K.1.b.viii.](#)  
32 and [ix.](#), and emissions as specified on Permit Table [III.10.K.E](#), not addressed under  
33 Permit Conditions [III.10.K.1.h.i.](#) or [ii.](#) as specified in Operating Unit 10, Appendix 10.15  
34 of this Permit, as approved pursuant to Permit Condition [III.10.J.3.d.](#), and in accordance  
35 with Permit Conditions [III.10.K.1.b.xii.](#) and [III.10.K.1.c.xi.](#) are held within the range of  
36 the average value over the previous twelve (12) months and the set-point value specified  
37 on Permit Table [III.10.K.F](#). The average value is defined as the sum of all rolling  
38 average values recorded over the previous twelve (12) months divided by the number of  
39 rolling averages recorded during that time. The average value will not include  
40 calibration data, malfunction data, and data obtained when not processing dangerous  
41 and/or mixed waste; and

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- 1                   2.   Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average  
2                   value over the previous twelve (12) months and the set-point value specified on Permit  
3                   Table [III.10.K.D](#), as approved/modified pursuant to Permit Conditions [III.10.J.3.d](#). and  
4                   [III.10.C.11.c](#). or [d](#). Feed-rate of organics as measured by TOC are held within the range  
5                   of the average value over the previous twelve (12) months. The average value is defined  
6                   as the sum of the rolling average values recorded over the previous twelve (12) months  
7                   divided by the number of rolling averages recorded during that time. The average value  
8                   will not include data obtained when not processing dangerous and/or mixed waste.

9                   For purposes of this permit Condition, the “Previously Approved Demonstration Test  
10                  Plan” is defined to include the Demonstration Test Plan approved pursuant to Permit  
11                  Condition [III.10.J.5.f](#).

- 12               B.   Within sixty (60) days of Ecology’s approval of the RDTP, or within ninety-one (91) months of  
13               commencing operation pursuant to Permit Section [III.10.K](#), whichever is later, the Permittees  
14               will implement the RDTP approved pursuant to Permit Condition [III.10.K.1.h.iii.A](#).
- 15               C.   The Permittees will submit a summary of operating data collected pursuant to the RDTPs in  
16               accordance with Permit Condition [III.10.K.1.h.iii.A](#) to Ecology upon completion of the tests.  
17               The Permittees will submit to Ecology the complete test report within ninety (90) calendar days  
18               of completion of the testing. The test reports will be certified as specified in WAC 173-303-  
19               807(8), in accordance with Permit Condition WAC 173-303-680(2) and (3).
- 20               D.   If any calculations or testing results show that one or more of the performance standards listed in  
21               Permit Condition [III.10.K.1.b.](#), with the exception of Permit Condition [III.10.K.1.b.x.](#), for the  
22               HLW Vitrification System were not met during the emission test, the Permittees will perform the  
23               following actions:
- 24                   1.   Immediately stop dangerous and/or mixed waste feed to the HLW Vitrification System  
25                   under the mode of operation that resulted in not meeting the performance standard(s).
- 26                   2.   Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the  
27                   performance standard(s), as specified Permit Condition I.E.21.
- 28                   3.   Investigate the cause of the failure and submit a report of the investigation findings to  
29                   Ecology within fifteen (15) days of discovery of not meeting the performance  
30                   standard(s).
- 31                   4.   Submit to Ecology within fifteen (15) days of discovery of not meeting the performance  
32                   standard(s) documentation supporting a mode of operation where all performance  
33                   standards listed in Permit Condition [III.10.K.1.b.](#), with the exception of Permit  
34                   Condition [III.10.K.1.b.x.](#), for the HLW Vitrification System were met during the  
35                   demonstration test, if any such mode was demonstrated.
- 36                   5.   Based on the information provided to Ecology by the Permittees pursuant to Permit  
37                   Conditions [III.10.K.1.h.iii.D.1](#) through [4](#) above, and any additional information, Ecology  
38                   may provide, in writing, direction to the Permittees to stop dangerous and/or mixed  
39                   waste feed to the HLW Vitrification System and/or amend the mode of operation the  
40                   Permittees are allowed to continue operations prior to Ecology approval of the revised  
41                   Demonstration Test Plan, pursuant to Permit Condition [III.10.K.1.h.iii.D.6](#).

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- 1                   6.    Submit to Ecology within one hundred and twenty (120) days of discovery of not  
2                   meeting the performance standard(s) a revised Demonstration Test Plan requesting  
3                   approval to retest as a permit modification pursuant to Permit Conditions [II.10.C.2.e.](#)  
4                   and [f.](#) The revised Demonstration Test Plan must include substantive changes to prevent  
5                   failure from reoccurring reflecting performance under operating conditions  
6                   representative of the extreme range of normal conditions, and include revisions to Permit  
7                   Tables [III.10.K.D](#) and [F.](#)
  
- 8                   E.    If any calculations or testing results show that any emission rate for any constituent listed in  
9                   Permit Table [III.10.K.E](#), as approved/modified pursuant to Permit Condition [III.10.C.11.c.](#) or [d.](#),  
10                  is exceeded for HLW Vitrification System during the emission test, the Permittees will perform  
11                  the following actions:
  - 12                   1.    Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the  
13                   emission rate(s) as specified in Permit Condition I.E.21;
  - 14                   2.    Submit to Ecology additional risk information to indicate that the increased emissions  
15                   impact is off-set by decreased emission impact from one or more constituents expected  
16                   to be emitted at the same time, and/or investigate the cause and impact of the exceedence  
17                   of the emission rate(s) and submit a report of the investigation findings to Ecology  
18                   within fifteen (15) days of the discovery of the exceedence of the emission rate(s); and
  - 19                   3.    Based on the notification and any additional information, Ecology may provide, in  
20                   writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the  
21                   HLW Vitrification System and/or to submit a revised Demonstration Test Plan as a  
22                   permit modification pursuant to Permit Conditions [III.10.C.2.e.](#) and [f.](#), or [III.10.C.2.g.](#)  
23                   The revised Demonstration Test Plan must include substantive changes to prevent failure  
24                   from reoccurring reflecting performance under operating conditions representative of the  
25                   extreme range of normal conditions, and include revisions to Permit Tables [III.10.K.D](#)  
26                   and [F.](#)

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**Table III.10.K.A - HLW Vitrification System Description**

Sub-system Description	Sub-System Designation	Engineering Description (Drawing Nos., etc.)	Narrative Description, Tables, and Figures
RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Permit Table III.10.K.A will be completed in accordance with Permit Condition III.10.J.5.e.x., prior to initiating Permit Condition III.10.K.1. See Permit Table III.10.J.A for the current HLW Vitrification System Description.			

**Table III.10.K.B - HLW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains**

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions <sup>b</sup> (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specification Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
<b>Footnotes:</b> <sup>a</sup> Permit Table III.10.K.B will be completed in accordance with Permit Condition III.10.J.5.b.vii., prior to initiating Permit Condition III.10.K.1. See Permit Table III.10.J.B for the current HLW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains. <sup>b</sup> Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).			

**Table III.10.K.C - HLW Vitrification System Process and Leak Detection System Instruments and Parameters**

Sub-system Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Failure State	Expected Range	Instrument Accuracy	Instrument Calibration Method No. and Range
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

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**Table III.10.K.C - HLW Vitrification System Process and Leak Detection System Instruments and Parameters**

<b>Sub-system Locator and Name (including P&amp;ID)</b>	<b>Control Parameter</b>	<b>Type of Measuring or Leak Detection Instrument</b>	<b>Location of Measuring Instrument (Tag No.)</b>	<b>Instrument Range</b>	<b>Failure State</b>	<b>Expected Range</b>	<b>Instrument Accuracy</b>	<b>Instrument Calibration Method No. and Range</b>
<b>Footnotes:</b> <sup>a</sup> Permit Table III.10.K.C will be completed in accordance with Permit Condition III.10.J.5.e.ix., prior to initiating Permit Condition III.10.K.1. See Permit Table III.10.J.C for the current HLW Vitrification System Process and Leak Detection System Instruments and Parameters.								

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**Table III.10.K.D – Maximum Feed-rates to HLW Vitrification System (RESERVED)**

Description of Waste	Normal Operation
Dangerous and/or mixed waste Feed Rate	RESERVED
Ash Feed Rate	RESERVED
Total Chlorine/Chloride Feed Rate	RESERVED
Total Metal Feed-rates	RESERVED

2

3

**Table III.10.K.E – HLW Vitrification System Estimated Emission Rates (RESERVED)**

Chemicals	CAS Number	Emission Rates (grams /second)
RESERVED	RESERVED	RESERVED

4

5

**TABLE III.10.K.F - HLW Vitrification System Waste Feed Cut-off Parameters\* <sup>1</sup>(RESERVED)**

Sub-system Designation	Instrument Tag Number	Parameter Description	Set-points During Normal Operation
RESERVED	RESERVED	RESERVED	RESERVED

**Footnotes:**

\*A continuous monitoring system will be used as defined in Permit Section [III.10.C.1.](#)

<sup>1</sup>Maximum Feed-rate will be set based on not exceeding any of the constituent (e.g., metals, ash, and chlorine/chloride) feed limits specified on Table [III.10.K.D.](#) of this Permit

6

7

8