

10/2008

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant**Part III, Operating Units****Operating Unit 10****Waste Treatment and Immobilization Plant**

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

attached to 0078886

- 1 Appendix 1.0 Compliance Schedule
- 2 Appendix 2.0 Critical Systems
- 3 Appendix 3.0 Drawing Category Table
- 4 Appendix 4.0 Piping Material Index Table
- 5 Appendix 5.0 Legends for Process Flow Diagrams and Piping and Instrumentation Diagrams
- 6 Appendix 6.0 Risk Assessment
- 7 6.1 Environmental Risk Assessment Work Plan
- 8 6.1.1 Previously Submitted Preliminary Risk Assessment Work Plan
- 9 6.1.2 Documentation of Revisions to Preliminary Risk Assessment Work Plan
- 10 6.2 Risk Assessment Work Plan (RESERVED)
- 11 6.3 Pre-Demonstration Test Risk Assessment Report (RESERVED)
- 12 6.3.1 Basis and Assumptions (RESERVED)
- 13 6.4 Final Risk Assessment Report (RESERVED)
- 14 6.4.1 Basis and Assumptions (RESERVED)
- 15 Appendix 7.0 WTP Documents Applicable to All Regulated Areas
- 16 7.1 Process Flow Diagrams
- 17 7.2 Piping and Instrumentation Diagrams
- 18 7.3 System Description Documentation (RESERVED)
- 19 7.4 General Arrangement Drawings (RESERVED)
- 20 7.5 Civil, Structural, and Architectural Criteria and Typical Design Details
- 21 7.6 Mechanical Drawings (RESERVED)
- 22 7.7 Specifications
- 23 7.8 Engineering Calculations (RESERVED)
- 24 7.9 Material Selection Documentation
- 25 7.10 Critical Systems Equipment/Instrument List (RESERVED)
- 26 7.11 IQRPE Reports
- 27 7.12 Installation Plans
- 28 7.13 Instrument Control Logic and Narrative Description (RESERVED)
- 29 7.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
- 30 7.15 Operating Documents
- 31 Appendix 8.0 Pretreatment Building
- 32 8.1 Process Flow Diagrams
- 33 8.2 Piping and Instrumentation Diagrams
- 34 8.3 System Description Documentation (RESERVED)

- 1 8.4 General Arrangement Drawings
- 2 8.5 Civil, Structural, and Architectural Criteria and Typical Design Details
- 3 8.6 Mechanical Drawings
- 4 8.7 Specifications
- 5 8.8 Engineering Calculations
- 6 8.9 Material Selection Documentation
- 7 8.10 Critical Systems Equipment/Instrument List
- 8 8.11 IQRPE Reports
- 9 8.12 Installation Plans (RESERVED)
- 10 8.13 Instrument Control Logic and Narrative Description
- 11 8.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
- 12 8.15 Operating Documents (RESERVED)
- 13 Appendix 9.0 LAW Building
- 14 9.1 Process Flow Diagrams
- 15 9.2 Piping and Instrumentation Diagrams
- 16 9.3 System Description Documentation (RESERVED)
- 17 9.4 General Arrangement Drawings
- 18 9.5 Civil, Structural, and Architectural Criteria and Typical Design Details
- 19 9.6 Mechanical Drawings
- 20 9.7 Specifications
- 21 9.8 Engineering Calculations
- 22 9.9 Material Selection Documentation
- 23 9.10 Critical Systems Equipment /Instrument List
- 24 9.11 IQRPE Reports
- 25 9.12 Installation Plans (RESERVED)
- 26 9.13 Instrument Control Logic, and Narrative Description
- 27 9.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
- 28 9.15 Demonstration Test Plan (RESERVED)
- 29 9.16 Demonstration Test Report (RESERVED)
- 30 9.17 Treatment Effectiveness Report (RESERVED)
- 31 9.18 Operating Documents
- 32 Appendix 10.0 HLW Building
- 33 10.1 Process Flow Diagrams
- 34 10.2 Piping and Instrumentation Diagrams

- 1 10.3 System Description Documentation (RESERVED)
- 2 10.4 General Arrangement Drawings
- 3 10.5 Civil, Structural, and Architectural Criteria and Typical Design Details
- 4 10.6 Mechanical Drawings
- 5 10.7 Specifications
- 6 10.8 Engineering Calculations
- 7 10.9 Material Selection Documentation
- 8 10.10 Critical Systems Equipment/Instrument List
- 9 10.11 IQRPE Reports
- 10 10.12 Installation Plans (RESERVED)
- 11 10.13 Instrument Control Logic and Narrative Description
- 12 10.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
- 13 10.15 Demonstration Test Plan (RESERVED)
- 14 10.16 Demonstration Test Report (RESERVED)
- 15 10.17 Treatment Effectiveness Report (RESERVED)
- 16 10.18 Operating Documents
- 17 Appendix 11.0 Laboratory Building
- 18 11.1 Process Flow Diagrams
- 19 11.2 Piping and Instrumentation Diagrams
- 20 11.3 System Description Documentation (RESERVED)
- 21 11.4 General Arrangement Drawings
- 22 11.5 Civil, Structural, and Architectural Criteria and Typical Design Details
- 23 11.6 Mechanical Drawings
- 24 11.7 Specifications (RESERVED)
- 25 11.8 Engineering Calculations
- 26 11.9 Material Selection Documentation
- 27 11.10 Critical Systems Equipment/Instrument List
- 28 11.11 IQRPE Reports
- 29 11.12 Installation Plans (RESERVED)
- 30 11.13 Instrument Control Logic and Narrative Description
- 31 11.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
- 32 11.15 Operating Documents (RESERVED)
- 33 Appendix 12.0 Balance of Facilities
- 34 12.1 Process Flow Diagrams (RESERVED)

- 1 12.2 Piping and Instrumentation Diagrams (RESERVED)
- 2 12.3 System Description Documentation (RESERVED)
- 3 12.4 General Arrangement Drawings (RESERVED)
- 4 12.5 Civil, Structural, and Architectural Criteria and Typical Design Details (RESERVED)
- 5 12.6 Mechanical Drawings (RESERVED)
- 6 12.7 Specifications (RESERVED)
- 7 12.8 Engineering Calculations (RESERVED)
- 8 12.9 Material Selection Documentation (RESERVED)
- 9 12.10 Critical Systems Equipment/Instrument List (RESERVED)
- 10 12.11 IQRPE Reports (RESERVED)
- 11 12.12 Installation Plans (RESERVED)
- 12 12.13 Instrument Control Logic and Narrative Description (RESERVED)
- 13 12.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
- 14 12.15 Operating Documents (RESERVED)

15 III.10.B STANDARD CONDITIONS AND GENERAL FACILITY CONDITIONS

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

21 III.10.C. UNIT-SPECIFIC CONDITIONS FOR THE WTP UNIT

22 III.10.C.1 Facility-Specific Definitions and Acronyms

23 The following definitions are specific to the WTP Unit:

24 **Ash:** means a measure of the contribution of particulate matter from the melter feeds to the melter off-
25 gas, as determined by representative sampling and analysis of the melter feed using ASTM Method D-
26 482, or an equivalent method.

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

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

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

1 **Pre-process:** means prior to introduction into a dangerous or mixed waste management unit at the WTP
2 Unit.

3 **In-process:** means duration of a waste in a dangerous or mixed waste management unit at the WTP Unit.

4 **Post-process:** means prior to the introduction into a subsequent dangerous or mixed waste management
5 unit at the WTP Unit or prior to shipment from the WTP Unit.

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

14 The following acronyms are specific to the WTP Unit:

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

1	LCP	LAW Concentrate Receipt Process System
2	LEH	LAW Container Export Handling System
3	LFH	LAW Canister Finishing Handling System
4	LFP	LAW Melter Feed Process System
5	LMH	LAW Melter Handling System
6	LMP	LAW Melter Process System
7	LOP	LAW Primary Offgas Process System
8	LPH	LAW Container Pour Handling System
9	LSH	LAW Melter Equipment Support Handling System
10	LSM	Locally Shielded Melter
11	LVP	LAW Secondary Offgas/Vessel Vent Process System
12	NCR	Nonconformance Report
13	PFH	Pretreatment Filter Cave Handling System
14	PIH	Pretreatment In-Cell Handling System
15	PJV	Pulse Jet Ventilation System
16	PODC	Principal Organic Dangerous Constituents
17	PTF	Pretreatment Building
18	PVP	Pretreatment Vessel Vent Process System
19	PVV	Process Vessel Vent System
20	PWD	Plant Wash and Disposal System
21	RDP	Spent Resin and Dewatering Process System
22	RDTP	Revised Demonstration Test Plan
23	RLD	Radioactive Liquid Waste Disposal System
24	RPP-WTP	River Protection Project-Waste Treatment Plant
25	RWH	Radioactive Solid Waste Handling System
26	SBS	Submerged Bed Scrubber
27	TCP	Treated LAW Evaporation Process System
28	TLP	Treated LAW Evaporation System
29	TOC	Total Organic Carbon
30	TXP	Technetium Ion Exchange Process System
31	TEP	Technetium Eluant Recovery Process System
32	UFP	Ultrafiltration Process System
33	WESP	Wet Electrostatic Precipitator
34	WTP	River Protection Project – Waste Treatment and Immobilization Project (also known as
35		the Waste Treatment Plant and Vitrification Plant)
36	6Mo	Six Percent Molybdenum Alloy
37	304L	ASTM A240 Grade 304L Stainless Steel
38	316L	ASTM A240 Grade 316L Stainless Steel
39	III.10.C.2.	General Waste Management
40	III.10.C.2.a.	The Permittees may not commence treatment or storage of dangerous waste or mixed
41		waste in any new or modified portion of the facility until the Permittees have received a
42		Permit modification approval pursuant to Permit Conditions <u>III.10.C.2.e.</u> and
43		<u>III.10.C.2.f.</u> , or <u>III.10.C.2.g.</u> , and submitted to Ecology, by certified mail, express mail, or
44		hand delivery, a letter signed by the Permittees and a Registered Professional Engineer
45		stating that the facility has been constructed or modified in compliance with the Permit in
46		accordance with WAC 173-303-810(14)(a); and

- 1 III.10.C.2.a.i. Ecology has inspected the modified or newly constructed facility and finds it is in
2 compliance with the conditions of the Permit, or
- 3 III.10.C.2.a.ii. Ecology has either waived the inspection or has not, within fifteen business days, after
4 receipt of the Permittees' letter, notified the Permittees of an intent to inspect.
- 5 III.10.C.2.b. The Permittees are authorized to accept the dangerous and/or mixed waste specified in
6 Operating Unit 10, Chapter 1.0 (Part A Form 3) except for those wastes outside the waste
7 acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this Permit
8 as long as the generator has a valid State/EPA identification number.
- 9 III.10.C.2.c. All dangerous and/or mixed waste must be managed only in areas authorized for
10 dangerous and/or mixed waste management under the conditions of this Permit, except as
11 allowed under WAC 173-303-200. The authorized dangerous and/or mixed waste
12 management areas of the WTP Unit are specified in Conditions III.10.D through III.10.K.
13 of this Permit.
- 14 III.10.C.2.d. Dangerous and/or mixed waste may be transferred from the WTP TSD unit to a permitted
15 TSD only, in accordance with the receiving TSD unit's waste acceptance criteria.
- 16 III.10.C.2.e. Permit modifications pursuant to this Permit for dangerous and/or mixed waste at the
17 request of the Permittees must be done according to the three tiered modification system
18 specified in WAC 173-303-830(4) and Condition I.C.3. The Permit modification request
19 must include page changes to the Permit, attachments, and permit application supporting
20 documentation necessary to incorporate the proposed permit modification.
- 21 III.10.C.2.f. In addition to other requirements in WAC 173-303-830, within forty-five (45) days of a
22 permit change (i.e., permit modification) being put into effect or approved, the Permittees
23 will retype the relevant portions of the Permit and attachments, to incorporate the change
24 (if not already reflected in the change pages submitted in the original permit modification
25 request), reprint the documents, and submit them to Ecology. This submittal does not
26 require certification described in WAC 173-303-810(13).
- 27 III.10.C.2.g. For permit modifications pursuant to Operating Unit 10, Appendix 1.0 of this Permit, a
28 draft permit will be prepared and issued by Ecology pursuant to WAC 173-303-
29 830(3)(a)(ii) and WAC 173-303-840. A final permit decision will be issued by Ecology
30 pursuant to WAC 173-303-840.
- 31 III.10.C.2.h. The Permittees must complete at least one Compliance Schedule interim requirement
32 every 12 months, as specified in Operating Unit 10, Appendix 1.0 of this Permit. If no
33 interim requirement will be completed within a 12 month period, the Permittees will
34 submit progress reports to Ecology for incorporation into the Administrative Record.
35 Progress report Compliance Schedule dates will be submitted to Ecology as a Class ¹
36 permit modification, for incorporation into Operating Unit 10, Appendix 1.0 of this
37 Permit. Progress reports will contain at a minimum, the following information:
- 38 III.10.C.2.h.i. A description of the portion of the interim requirement completed;
- 39 III.10.C.2.h.ii. Summaries of any problems affecting timely completion of the interim requirement;
- 40 III.10.C.2.h.iii. A description of the plans for completing the remaining portion of the interim
41 requirement, including any alternatives;
- 42 III.10.C.2.h.iv. Projected interim requirement completion date.

- 1 III.10.C.2.i. The Permittees will submit a Part A, Form 3 Permit Application revision for Ecology
2 approval as a permit modification pursuant to Permit Conditions III.10.C.2.e. and
3 III.10.C.2.f., or III.10.C.2.g., in accordance with the schedule in Operating Unit 10,
4 Appendix 1.0 of this Permit to incorporate changes to Tables III.10.D.A., III.10.E.A.
5 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
6 modified pursuant to the compliance schedule in Operating Unit 10, Appendix 1.0 of this
7 Permit.
- 8 III.10.C.2.j. The Permittees will submit to Ecology the potential disposal path(s), including the
9 potential authorized TSD facilities, for each waste stream generated at the WTP Unit in
10 accordance with the schedule in Operating Unit 10, Appendix 1.0 of this Permit for
11 incorporation into the Administrative Record.
- 12 III.10.C.2.k. The Permittees will submit to Ecology, traffic information at the WTP Unit pursuant to
13 WAC 173-303-806(4)(a)(x), in accordance with the schedule in Operating Unit 10,
14 Appendix 1.0 of this Permit for incorporation into the Administrative Record.
- 15 III.10.C.2.l. During operations of the LAW Vitrification System and HLW Vitrification System,
16 pursuant to Permit Sections III.10.H. and J., processing of materials in the LAW and
17 HLW Vitrification Systems that would designate as dangerous waste are fully subject to
18 the requirements of this Permit, excluding the melter feed system as identified in Tables
19 III.10.H.A. and III.10.J.A., respectively. This exclusion does not apply to mixed waste.
- 20 ~~III.10.C.2.m. The Facility Owner shall ensure all waste streams generated at the WTP, when combined~~
21 ~~with the related impacts from other waste forms disposed of on the Hanford Facility, will~~
22 ~~not contribute to an exceedance of environmental standards promulgated in federal and~~
23 ~~state environmental laws and regulations if disposed of, or intended to be disposed of, at~~
24 ~~the Hanford Facility.~~
- 25 III.10.C.2.m. The Facility Owner shall ensure WTP input is provided to the risk budget tool developed
26 in accordance with permit conditions III.11.I.5.
- 27 III.10.C.2.n. The Permittees will submit the following reports, based on the August 2006 mass balance
28 submitted to Ecology (DOE Letter 06-ESO-081), for Ecology's review and
29 comment/resolution. Updated information to the August 2006 Mass Balance may be
30 used if available and mutually agreed upon by the Permittees and Ecology. The reports
31 will describe all of the treatment approaches identified by items (i) through (v)
32 immediately below, and will be included in the administrative record.
- 33 III.10.C.2.n.i. By June 30, 2010, the Permittees will perform an assessment that projects mixed waste
34 constituents and the concentrations that are expected to be contained in each secondary
35 mixed waste stream anticipated to be generated;
- 36 III.10.C.2.n.ii. By June 30, 2010, the Permittees will identify appropriate LDR treatment standards for
37 each mixed waste stream identified in item (i) immediately above;
- 38 III.10.C.2.n.iii. By June 30, 2010, the Permittees will identify which mixed waste streams that, from a
39 qualitative risk perspective, reasonably may cause or may significantly contribute to an
40 exceedance of applicable environmental standards at a disposal facility; and
- 41 III.10.C.2.n.iv. By June 30, 2010, the Permittees will, for the mixed waste streams identified in item (iii)
42 immediately above, identify potential treatment approaches that mitigate their
43 environmental impacts;

- 1 III.10.C.2.n.v. By December 31, 2015 or 12 months prior to cold commissioning of the facility
2 producing the waste, whichever is earlier, the Permittees will, for the mixed waste
3 streams identified in item (iii) immediately above, select appropriate treatment
4 approaches that mitigate their environmental impacts.
- 5 III.10.C.2.o. The Facility owner shall evaluate all waste streams generated at the WTP for potential
6 exceedances of applicable environmental standards and shall ensure all mixed and
7 dangerous waste streams generated at the WTP will not cause an exceedance of
8 applicable environmental standards at an appropriate disposal facility on-site and is
9 subject to the following requirements:
- 10 III.10.C.2.o.i. ILAW glass will be engineered to be compliant with the disposal facility WAC. The
11 waste feed and ILAW glass recipes will be verified to be compliant with the permitted
12 glass formulations (including planning for pertinent operating parameters) prior to
13 vitrification;
- 14 III.10.C.2.o.ii. Treatment methods for secondary waste streams projected to be generated by the WTP
15 that are slated for disposal at the Hanford Site will be engineered to ensure that treated
16 secondary wastes will comply with the on-site disposal facility WAC and applicable
17 LDRs prior to generation. Prior to treatment, secondary wastes must be evaluated to
18 ensure the selected treatment methods are still appropriate and continue to comply with
19 the on-site disposal facility WAC and applicable LDRs; and
- 20 III.10.C.2.o.iii. On a case-by-case basis, for any WTP mixed waste that does not meet the WAC for the
21 disposal facility, Ecology will approve or deny acceptance of that waste to the disposal
22 facility. This decision will be based on the disposal facility's WAC and compliance with
23 WAC 173-303-140.
- 24 III.10.C.3. Waste Analysis
- 25 III.10.C.3.a. The Permittees will maintain adequate knowledge of any waste to be managed properly
26 by the WTP Unit before acceptance, after receipt, and during treatment and storage of
27 these waste. The Permittees will ensure this knowledge through compliance with the
28 requirements of WAC-173-303-300 and with the provisions of the WAP, Operating Unit
29 10, Chapter 3.0 of this Permit [WAC 173-303-806(4)(a)(ii), WAC 173-303-300(1)].
- 30 III.10.C.3.b. When laboratory analytical methods are required to confirm the Permittees knowledge of
31 the waste, the Permittees must ensure that the sampling and test procedures listed as
32 acceptable by WAC 173-303-110, Appendices II and III to 40 CFR Part 261, the current
33 revision of SW-846, or equivalent methods approved in writing by Ecology are used.
- 34 III.10.C.3.c. The Permittees are responsible for obtaining accurate information for each waste stream.
35 Inaccurate waste analysis information provided by the generating site (or unit) is not a
36 defense for noncompliance by the Permittees with the waste management requirements
37 and conditions of this Permit, WAC 173-303, and the LDR in 40 CFR Part 268, as
38 incorporated by reference in Chapter 173-303.
- 39 III.10.C.3.d. Records and results of waste analyses described in Conditions II.D.3 or III.10.C.3.e. will
40 be maintained as described in Condition II.I.1 of this Permit. The WTP Unit operating
41 record will include, but not be limited to, information requirements for waste analysis in
42 Conditions I.E.10 and II.I of this Permit.
- 43 III.10.C.3.e. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the
44 Permittees will submit to Ecology for review and approval a revised WAP and QAPP in
45 Operating Unit 10, Chapter 3.0 of this Permit as a permit modification pursuant to

- 1 Conditions III.10.C.2.e and III.10.C.2.f, and Compliance Schedule in Operating Unit 10,
2 Appendix 1.0. The revised WAP and QAPP will include:
- 3 III.10.C.3.e.i. All the elements listed in WAC 173-303-300(5), Condition II.D.3 of this Permit (Waste
4 Analysis), and in compliance with Condition II.E of this Permit (Quality
5 Assurance/Quality Control).
- 6 III.10.C.3.e.ii. Requirements that characterization will be performed on the waste feed prior to transfer
7 to the WTP Unit in conformance with the regulatory data quality objectives identified in
8 the Regulatory DQO Optimization Report (24590-WTP-RPT-MGT-04-001, Rev 0).
9 Requirements that the following analyses, at a minimum, will be conducted on each new
10 batch prior to waste transfer to the WTP Unit, in accordance with the methods under
11 WAC 173-303-110: Ammonia, pH, metals, organic acids, mercury, cyanide, volatiles,
12 semi-volatiles, PCBs/pesticides, anions, TOC, and compatibility (ASTM Method D5058-
13 90). For the purposes of this Permit Condition, a "new batch" is one that has been
14 sampled and analyzed in accordance with the Regulatory DQO Optimization Report
15 (24590-WTP-RPT-MGT-04-001, Rev 0), and has received no further additions. Further
16 additions require the Permittees to resample and reanalyze, unless an exception is
17 approved by Ecology on a case-by-case basis. Only mixed waste meeting the definition
18 of "new batch", or granted an exception as discussed above, are authorized for transfer to
19 the WTP Unit. Water additions for the purposes of waste transfer are not considered
20 additions for the purposes of this Permit Condition.
- 21 III.10.C.3.e.iii. Identify and include operating parameters to be monitored/controlled and limitations for
22 these parameters for pre-process, in-process, and post-process operations addressing on a
23 unit specific basis treatment effectiveness, as specified in Tables III.10.E.E through H,
24 III.10.G.C, III.10.H.C, III.10.I.C, III.10.J.C, and III.10.K.C, waste compatibility, safe
25 operation, and compatibility with unit materials of construction. Amend the sampling,
26 analysis, and QA/QC procedures to include these parameters and the monitoring
27 frequency.
- 28 III.10.C.3.e.iv. Requirements that the Permittees will, for Type I sumps if liquids are detected, and for
29 Type II sumps, as defined in Operating Unit 10, Chapter 4.0 of this Permit, if liquid
30 levels are outside normal operating parameters, either collect the liquid and return to the
31 treatment process, or designate the sump contents for proper management and disposal
32 prior to removal.
- 33 III.10.C.3.e.v. For ILAW and IHLW containers, a description of procedures used to verify exterior
34 container surfaces are visually free of mixed waste.
- 35 III.10.C.3.e.vi. Requirement that wastes generated at the WTP Unit meet the receiving authorized TSD
36 facility waste acceptance criteria prior to a waste stream transfer.
- 37 III.10.C.3.e.vii. Requirements and criteria for reevaluation of sampling and analysis frequency for all
38 waste streams.
- 39 III.10.C.3.e.viii. Documentation demonstrating methods for obtaining samples of wastes are
40 representative as discussed in WAC 173-303-110(2).
- 41 III.10.C.4. Recordkeeping
- 42 III.10.C.4.a. The unit specific portion of the Hanford Facility Operating Record will include the
43 documentation specified in Operating Unit 10, Chapter 12.0, Permit Condition II.I,
44 applicable to the WTP Unit and other documentation specified in Operating Unit 10. The
45 facility and unit specific record keeping requirements are distinguished in Table 12-1 of

- 1 the General Information portion, Attachment 33 to the Sitewide Permit, and tied to the
2 associated Sitewide Permit Conditions.
- 3 **III.10.C.5 Procedure to Prevent Hazards**
- 4 **III.10.C.5.a.** The Permittees will design, construct, and operate the WTP Unit in compliance with
5 Operating Unit 10, Chapter 6.0, Section 6.1.
- 6 **III.10.C.5.b.** Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the
7 Permittees will update and resubmit for approval Operating Unit 10, Chapter 6.0,
8 Sections 6.3, 6.4, and 6.5 as a permit modification pursuant to Permit Conditions
9 III.10.C.2.e and III.10.C.2.f, to be consistent with design details and schedule described
10 in Operating Unit 10, Appendix 1.0. The WTP Unit fire protection systems will be
11 constructed to the applicable codes listed in Operating Unit 10, Chapter 6.0, Section
12 6.3.1.4. Updated Section 6.4.4. will include descriptions of the essential loads and
13 critical systems supplied with back-up, un-interruptible, and standby power.
- 14 **III.10.C.5.c.** The Permittees will inspect the WTP Unit to prevent malfunctions and deterioration,
15 operator errors, and discharges that may cause or lead to the release of dangerous waste
16 constituents to the environment, or a threat to human health. Inspections must be
17 conducted in accordance with the WTP Unit Inspection Schedule, Operating Unit 10,
18 Chapter 6.0, Section 6.2. Prior to the receipt of dangerous and/or mixed waste in the
19 WTP Unit, the Permittees will update and resubmit to Ecology for review and approval
20 the Inspection Schedule in Operating Unit 10, Chapter 6.0 of this Permit as a permit
21 modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, and Compliance
22 Schedule in Operating Unit 10, Appendix 1.0. The revised schedule will include, but not
23 be limited to, III.10.C.5.i. through v. below. In addition, the Permittees will submit to
24 Ecology for incorporation into the Administrative Record, the basis for developing
25 Inspection Schedule frequencies:
- 26 **III.10.C.5.c.i.** Detailed dangerous and/or mixed waste management unit specific and general inspection
27 schedules and description of procedures (not examples) pursuant to WAC 173-303-
28 395(1)(d), 173-303-630(6), 173-303-640(4)(a)(i) and (6), 173-303-670(7)(b) in
29 accordance with 173-303-680(3), 40 CFR, 264.1101(c)(4). The inspection schedule will
30 be presented in the form of a table that includes a description of the inspection
31 requirement, inspection frequency, and types of problems to look for during the
32 inspections.
- 33 **III.10.C.5.c.ii.** The proposed locations (scaled drawing with layout) and capabilities of camera(s) (i.e.,
34 zoom angles, field of view, etc.) to be used for remote inspections.
- 35 **III.10.C.5.c.iii.** Schedule and program description for performing integrity assessments as specified in
36 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.,
37 III.10.J.5.e.i., and III.10.K.1.a.v.
- 38 **III.10.C.5.c.iv.** Inspection schedules for leak detection system and control instrumentation to include, but
39 not limited to, valves pressure devices, flow devices, measuring devices, as specified in
40 Permit Conditions III.10.E.9.e.xi, III.10.F.3.c., and III.10.G.10.e.xii, and Permit
41 Conditions III.10.H.5.f.xvi, and III.10.J.5.f.xvi.
- 42 **III.10.C.5.c.v.** Inspection schedule will include inspections for all dangerous and/or mixed waste
43 management units specified in Permit Sections III.10.D, E, F, G, H, I, J, and K.

- 1 III.10.C.5.d. The Permittees will equip the WTP Unit with the equipment specified in Operating Unit
2 10, Chapter 6.0, as required by WAC 173-303-340(1), and Condition II.B.1 of this
3 Permit.
- 4 III.10.C.5.e. The Permittees will test and maintain the equipment specified in Operating Unit 10,
5 Chapter 6.0, as necessary, to assure proper operation in the event of emergency as
6 required by Condition II.B.2 of this Permit.
- 7 III.10.C.5.f. The Permittees will maintain access to communications or alarms pursuant to WAC 173-
8 303-340(2), as provided in the *RPP-WTP Emergency Response Plan*, Operating Unit 10,
9 Chapter 7.0 and Condition II.B.3 of this Permit.
- 10 III.10.C.6. Contingency Plan
- 11 III.10.C.6.a. The Permittees will immediately carry out applicable provisions of the *RPP-WTP*
12 *Emergency Response Plan*, Operating Unit 10, Chapter 7.0 of this Permit, pursuant to
13 WAC 173-303-360(2), whenever there is a release of dangerous and/or mixed waste or
14 dangerous waste constituents, or other emergency circumstance, any of which threatens
15 human health or the environment.
- 16 III.10.C.6.b. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the
17 Permittees will update and resubmit the Contingency Plan in compliance with Operating
18 Unit 10, Chapter 7.0, and pursuant to WAC 173-303-350(5), as a permit modification
19 pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, to be consistent with design
20 details and schedule described in Operating Unit 10, Appendix 1.0.
- 21 III.10.C.6.c. After initial receipt of dangerous and/or mixed waste, the Permittees will review and
22 amend, if necessary, the applicable portions of the Contingency Plan, Operating Unit 10,
23 Chapter 7.0 of this Permit, and in accordance with the provisions of WAC 173-303-
24 350(5) and WAC 173-303-830(4). The Contingency Plan will be amended as a permit
25 modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f.
- 26 III.10.C.6.d. RESERVED.
- 27 III.10.C.6.e. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the
28 Permittees will comply with the requirements of WAC 173-303-350(3) and -360(1)
29 concerning the emergency coordinator specific to the WTP Unit in compliance with
30 Permit Condition II.A.4.
- 31 III.10.C.7. Personnel Training
- 32 III.10.C.7.a. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the
33 Permittees will update and resubmit, to Ecology for review and approval, the Training
34 Program description in Operating Unit 10, Chapter 8.0 of this Permit as a permit
35 modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, and Compliance
36 Schedule in Operating Unit 10, Appendix 1.0. The revised Training Program description
37 will include but not be limited to:
- 38 III.10.C.7.a.i. Detailed unit specific and general Training Program descriptions (not typical) consistent
39 with WAC 173-303-806(4)(a)(xii).
- 40 III.10.C.7.a.ii. Sufficient detail to document that the training and qualification program for all categories
41 of personnel whose activities may reasonably be expected to directly affect emissions
42 from the LAW and HLW Systems, except control room operators, is appropriately
43 consistent with 40 CFR 63.1206(c)(6)(ii), and for control room operators, is appropriately

- 1 consistent with 40 CFR 63.1206(c)(6)(i) and 63.1206(c)(6)(iii) through 63.1206(c)(6)(vi)
2 [WAC 173-303-680(2)].
- 3 III.10.C.7.b. The Permittees will ensure that the LAW and HLW Systems are operated and
4 maintained, at all times, by persons who are trained and qualified to perform these and
5 any other duties that may reasonably be expected to directly affect emissions from the
6 LAW and HLW Systems [WAC 173-303-680(2)].
- 7 III.10.C.7.c. The Permittees will conduct personnel training in accordance with the approved
8 description of the WTP Unit Training Plan, Operating Unit 10, Chapter 8.0 of this Permit,
9 pursuant to WAC 173-303-330. The Permittees will maintain documents in accordance
10 with Condition II.C.1 of this Permit and WAC 173-303-330(2) and (3).
- 11 III.10.C.7.d. RESERVED.
- 12 III.10.C.7.e. The Permittees will submit, under separate cover, the actual detailed WTP Unit
13 Dangerous Waste Training Plan in accordance with the Compliance Schedule in
14 Operating Unit 10, Appendix 1.0. The WTP Unit Dangerous Waste Training Plan will be
15 reviewed for compliance with the outline of the training program in Operating Unit 10,
16 Chapter 8.0 and requirements of WAC 173-303-330. The Training Plan will be
17 incorporated into the Administrative Record.
- 18 III.10.C.8. Closure
- 19 III.10.C.8.a. The Permittees must conduct closure of the WTP Unit according to the Closure Plan in
20 Operating Unit 10, Chapter 11.0, and Conditions II.J (Facility Closure), II.K
21 (Soil/Ground Water Closure Performance Standards), and III.10.C.8. of this Permit. The
22 closure plan will be modified according to provisions of WAC 173-303-610(3)(b)(ii).
- 23 III.10.C.8.b. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
24 will update and resubmit the Closure Plan, Operating Unit 10, Chapter 11.0 of this
25 Permit, for approval as a permit modification pursuant to Permit Condition III.10.C.2.g.,
26 to be consistent with design details and schedule described in Operating Unit 10,
27 Appendix 1.0. The updated Closure Plan must be consistent with the closure
28 performance standards specified in Condition II.K, WAC 173-340 and, in addition for
29 Containment Buildings, consistent with 40 CFR 264.1102(b) as referenced by WAC 173-
30 303-695.
- 31 III.10.C.8.c. The Permittees will submit, for Ecology review and approval, an update to the Closure
32 Plan, Operating Unit 10, Chapter 11.0 within one hundred eighty (180) days prior to
33 commencing partial closure, as a permit modification pursuant to Permit Conditions
34 III.10.C.2.e and III.10.C.2.f.
- 35 III.10.C.8.d. One hundred eighty (180) days prior to commencing closure, the Permittees must submit
36 to Ecology, for review and approval, a Sampling and Analysis Plan and a revised Closure
37 Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f.
- 38 III.10.C.8.e. At least forty-five (45) days before initiating closure, the Permittees must provide
39 Notification of Closure pursuant to WAC 173-303-610(3)(c).
- 40 III.10.C.8.f. Ecology may require additional sampling and/or investigation after the Permittees
41 implement the approved Sampling and Analysis Plan if Ecology determines that the
42 sampling and analyses have not adequately demonstrated whether clean closure has been
43 achieved. Such a requirement will be implemented pursuant to WAC 173-303-830(3).
44 Additional sampling and analysis may be required for the following reasons:

- 1 III.10.C.8.f.i. Specialized sample collection or analytical techniques are required to ensure adequate
2 quantitation limits for chemical constituents; or
- 3 III.10.C.8.f.ii. Results indicate the need to analyze for additional constituents at certain locations; or
- 4 III.10.C.8.f.iii. Results indicate additional soil or groundwater sampling is required in certain locations;
5 or
- 6 III.10.C.8.f.iv. Other reasons indicate the Sampling and Analysis Plan has not adequately demonstrated
7 whether clean closure has been achieved.
- 8 III.10.C.8.g. RESERVED.
- 9 III.10.C.8.h. Documentation supporting the independent registered professional engineer's
10 certification of closure must be submitted to Ecology with the closure certification
11 required by WAC 173-303-610(6). In addition to the items in Operating Unit 10, Chapter
12 11.0, the documentation must include the following and other information Ecology may
13 request. The Permittees are required to furnish documentation supporting the
14 independent registered professional engineer's certification to Ecology upon request,
15 until Ecology has notified the Permittees in writing that Ecology agrees with and has
16 accepted the Permittees' closure certification:
- 17 III.10.C.8.h.i. Sampling procedures that were followed;
- 18 III.10.C.8.h.ii. soil and concrete locations that were sampled;
- 19 III.10.C.8.h.iii. Sample labeling and handling procedures that were followed, including chain of custody
20 procedures;
- 21 III.10.C.8.h.iv. Description of procedures that were followed to decontaminate concrete or metal to meet
22 the clean closure standards as set by Ecology, on a case by case basis, in accordance with
23 the closure performance standards of WAC 173-303-610(2)(a)(ii) and in a manner that
24 minimizes or eliminates post-closure escape of dangerous waste constituents, or to
25 achieve a "clean debris surface" as specified in 40 CFR 268.45, Table 1, concrete
26 surfaces, as incorporated by reference in WAC 173-303-140. [WAC 173-303-
27 610(2)(b)(ii)].
- 28 III.10.C.8.h.v. Laboratory and field data, including supporting QA/QC summary;
- 29 III.10.C.8.h.vi. Report that summarizes closure activities;
- 30 III.10.C.8.h.vii. Copy of all field notes taken by the independent registered professional engineer; and
- 31 III.10.C.8.h.viii. Copy of all contamination survey results.
- 32 III.10.C.9. Critical Systems
- 33 III.10.C.9.a. The WTP Unit critical systems, as defined in the Hanford Site-wide Permit definition
34 section, are identified in Operating Unit 10, Appendix 2.0.
- 35 III.10.C.9.b. As the design proceeds, Ecology reserves the right to modify this Permit for reasons
36 described in the WAC 173-303-830(3) to add additional systems to the Critical Systems
37 in Operating Unit 10, Appendix 2.0.
- 38 III.10.C.9.c. The Permittees will conduct all construction subject to this Permit in accordance with the
39 approved designs, plans, and specifications that are required by this Permit, except as
40 specified in Conditions III.10.C.9.d. or III.10.C.9.e. For purposes of Conditions
41 III.10.C.9.d. and III.10.C.9.e., the Ecology representative will be an Ecology construction
42 inspector, project manager, or other designated representative of Ecology.

- 1 III.10.C.9.d. The Permittees will submit a nonconformance report (NCR) or construction deficiency
2 report (CDR) to the Ecology representative (s), as applicable, within five (5) calendar
3 days of the Permittees becoming aware of incorporation of minor nonconformance or
4 construction deficiency from the approved designs, plans, and specifications into the
5 construction of critical systems, as defined in the Hanford Site-wide Permit definition
6 section. Such minor nonconformance or construction deficiency will be defined, for the
7 purposes of this Permit Condition, as nonconformance or construction deficiency that is
8 necessary to accommodate proper construction and the substitution or the use of
9 equivalent or superior materials or equipment that do not substantially alter the Permit
10 conditions or reduce the capacity of the facility to protect human health or the
11 environment. Such minor nonconformance or construction deficiency will not be
12 considered a modification of this Permit. If Ecology determines that the nonconformance
13 or construction deficiency is not minor, it will notify the Permittees in writing that a
14 permit modification is required for the deviation and whether prior approval is required
15 from Ecology before work proceeds which affect the nonconforming or construction
16 deficiency item.
- 17 III.10.C.9.e. The Permittees will formally document, with a nonconformance report (NCR) or
18 construction deficiency report (CDR), as applicable, incorporation of minor
19 nonconformance or construction deficiency from the approved designs, plans, and
20 specifications into the construction of non-critical systems subject to this Permit. Such
21 minor nonconformance or construction deficiency will not be considered a modification
22 of this Permit. All NCR's and CDR's will be maintained in the WTP Unit Operating
23 Record and will be made available to Ecology upon request or during the course of an
24 inspection. If Ecology determines that the nonconformance or construction deficiency is
25 not minor, it will notify the Permittees in writing that a permit modification is required
26 for the deviation and whether prior approval is required from Ecology before work
27 proceeds which affect the nonconforming or construction deficiency item.
- 28 III.10.C.9.f. For each Critical System identified in Operating Unit 10, Appendix 2.0 or meets the
29 definition of Critical System as defined in this Permit, the Permittees will submit to
30 Ecology for review and approval, following the schedule in Operating Unit 10, Appendix
31 1.0 of this Permit, the information identified in Permit Conditions III.10.C.16.,
32 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
33 Ecology determines to incorporate into the Permit will follow the Permit Condition
34 III.10.C.2.g. process, unless stated otherwise within the specific permit condition.
35 Information Ecology determines necessary to support design basis will be incorporated
36 into the Administrative Record.
- 37 III.10.C.9.g. Upon completion of the WTP Unit construction subject to this Permit, the Permittees
38 will produce as-built drawings of the project which incorporate the design and
39 construction modifications resulting from all change documentation as well as
40 modifications made pursuant to Permit Conditions III.10.C.2.e., III.10.C.2.f., and
41 III.10.C.2.g. The Permittees will place the as-built drawings into the operating record
42 within twelve (12) months of completing construction.
- 43 III.10.C.9.h. The Permittees will formally document changes to approved designs, plans, and
44 specifications with design change documentation [e.g., Design Change Notice (DCN),
45 Field Change Request (FCR), Field Change Notice (FCN), Specification Change Notice
46 (SCN), and Supplier Deviation Disposition Request (SDDR)]. All design change
47 documentation will be maintained in the WTP Unit-specific Operating Record and will
48 be made available to Ecology upon request or during the course of an inspection. For any

1 design change documentation affecting any critical systems, the Permittees will provide
2 copies to Ecology within five (5) working days. Identification of critical systems will be
3 included by the Permittees in each WTP Unit-specific dangerous waste permit
4 application, closure plan, or permit modification, as appropriate. If Ecology determines
5 that the design change is not minor, it will notify the Permittees in writing that a permit
6 modification is required for the design change and whether prior approval is required
7 from Ecology before work affected by the design change may proceed.

8 III.10.C.9.i. Ventilation system duct work is not required to be doubly contained within the WTP
9 Unit. However, upon discovery of accumulation of liquids, a compliance plan will be
10 submitted within sixty (60) days of discovery to correct the problem.

11 III.10.C.10 Equivalent Materials

12 III.10.C.10.a. If certain equipment, materials, and administrative information (such as names, phone
13 numbers, addresses) are specified in this Permit, the Permittees may use equivalent or
14 superior substitutes. Use of such equivalent or superior items within the limits (e.g.,
15 ranges, tolerances, and alternatives) already clearly specified in sufficient detail in
16 Operating Unit 10 of this Permit, are not considered a modification of this Permit.
17 However, the Permittees must place documentation of the substitution, accompanied by a
18 narrative explanation and the date the substitution became effective in the operating
19 record within seven (7) days of putting the substitution into effect, and submit
20 documentation of the substitution to Ecology. Upon review of the documentation of the
21 substitution, if deemed necessary, Ecology may require the Permittees to submit a permit
22 modification in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f.

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

26 III.10.C.10.b. If Ecology determines that a substitution was not equivalent to the original, they will
27 notify the Permittees that the Permittees' claim of equivalency has been denied, of the
28 reasons for the denial, and that the original material or equipment must be used. If the
29 product substitution is denied, the Permittees will comply with the original approved
30 product specification, find an acceptable substitution, or apply for a permit modification
31 in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f.

32 III.10.C.11. Risk Assessment

33 III.10.C.11.a. The Permittees will submit, in accordance with Operating Unit 10, Appendix 1.0 of this
34 Permit to Ecology for approval, the "Previously Submitted Risk Assessment Workplan,"
35 Operating Unit 10, Appendix 6.1.1. of this Permit, revised in consultation with Ecology
36 to address the revisions (NOD/responses) documented in Operating Unit 10, Appendix
37 6.1.2 and updated to address the following, as a permit modification pursuant to Permit
38 Conditions III.10.C.2.e. and III.10.C.2.f. The updated previously submitted Risk
39 Assessment Work Plan will be added to Operating Unit 10 as Appendix 6.2 (Risk
40 Assessment Work Plan).

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

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

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

- 1 III.10.C.11.a.iv. Air modeling updated to include stack gas parameters based on most current emissions
2 testing and WTP Unit design;
- 3 III.10.C.11.a.v. Physical/transport properties of constituents current at the time of the submittal;
- 4 III.10.C.11.a.vi. Process Description based on most current WTP Unit design;
- 5 III.10.C.11.a.vii. Emissions data and all supporting calculations based on most current WTP Unit; and
- 6 III.10.C.11.a.viii. Update of receptor locations based on land use or land use zoning changes, if any.
- 7 III.10.C.11.b. The Permittees will submit for Ecology approval, prior to initial receipt of dangerous
8 and/or mixed waste in the WTP Unit, a Pre-Demonstration Test Risk Assessment Report
9 as Operating Unit 10, Appendix 6.3 addressing direct and indirect human health and
10 ecological risks performed pursuant to Ecology approved work plan under Permit
11 Condition III.10.C.11.a. This report will also include submittal of projected stack
12 emissions data in Tables III.10.G.D., III.10.H.E., and III.10.J.E. of this Permit and
13 Operating Unit 10, Appendix 6.3.1 (Basis and Assumptions), completed and updated
14 which details the basis and assumptions for these emissions, including but not limited to,
15 projected operating conditions, feed-rates, and treatment effectiveness, consistent with
16 information provided and approved pursuant to Permit Conditions III.10.G.6.,
17 III.10.G.10., III.10.H.5., and III.10.J.5. as a permit modification pursuant to Permit
18 Conditions III.10.C.2.e. and III.10.C.2.f.
- 19 III.10.C.11.c. Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted
20 pursuant to Permit Condition III.10.H.3.d.i., the Permittees will submit a Final Risk
21 Assessment Report as Operating Unit 10, Appendix 6.4, incorporating the emission test
22 results from the Demonstration Report(s). The Final Risk Assessment Report will be
23 prepared in accordance with the Risk Assessment Work Plan, as approved by Ecology
24 pursuant to Permit Condition III.10.C.11.a, except the following updates are hereby
25 incorporated. The Permittees will also submit with this Final Risk Assessment Report,
26 Tables III.10.G.D. and III.10.I.E. of this Permit and Operating Unit 10, Appendix 6.4.1
27 (Basis and Assumptions) updated to incorporate the emissions data from this Final Risk
28 Assessment Report(s), as a permit modification pursuant to Permit Conditions
29 III.10.C.2.e. and III.10.C.2.f.
- 30 III.10.C.11.c.i. Toxicity data current at the time of the submittal;
- 31 III.10.C.11.c.ii. Compounds newly identified or updated emissions data from current waste
32 characterization and emission testing;
- 33 III.10.C.11.c.iii. Air modeling updated to include stack gas parameters based on most current emissions
34 testing;
- 35 III.10.C.11.c.iv. Physical/transport properties of constituents current at the time of the submittal;
- 36 III.10.C.11.c.v. Update of receptor locations based on land use or land use zoning changes, if any;
- 37 III.10.C.11.c.vi. Process description based on current WTP Unit design;
- 38 III.10.C.11.c.vii. Emissions data and all supporting calculations based on current WTP Unit; and
- 39 III.10.C.11.c.viii. Data from final risk assessment report pursuant to Permit Condition III.10.C.11.d, if
40 available first, or simultaneously.
- 41 III.10.C.11.d. Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted
42 pursuant to Permit Condition III.10.J.3.d.i., the Permittees will submit a Final Risk

- 1 Assessment Report as Operating Unit 10, Appendix 6.4, incorporating the emission test
2 results from the Demonstration Report(s). The Final Risk Assessment Report will be
3 prepared in accordance with the Risk Assessment Work Plan, as approved by Ecology
4 pursuant to Permit Condition III.10.C.11.a, except the following updates are hereby
5 incorporated. The Permittees will also submit with this Final Risk Assessment Report,
6 Tables III.10.G.D. and III.10.K.E. of this Permit and Operating Unit 10, Appendix 6.4.1
7 (Basis and Assumptions) updated to incorporate the emissions data from this Final Risk
8 Assessment Report, as a permit modification pursuant to Permit Conditions III.10.C.2.e.
9 and III.10.C.2.f.
- 10 III.10.C.11.d.i. Toxicity data current at the time of the submittal;
- 11 III.10.C.11.d.ii. Compounds newly identified or updated emissions data from current waste
12 characterization and emission testing;
- 13 III.10.C.11.d.iii. Air modeling updated to include stack gas parameters based on most current emissions
14 testing;
- 15 III.10.C.11.d.iv. Physical/transport properties of constituents current at the time of the submittal;
- 16 III.10.C.11.d.v. Update of receptor locations based on land use or land use zoning changes, if any;
- 17 III.10.C.11.d.vi. Process description based on current WTP Unit design;
- 18 III.10.C.11.d.vii. Emissions data and all supporting calculations based on current WTP Unit; and
- 19 III.10.C.11.d.viii. Data from final risk assessment report pursuant to Permit Condition III.10.C.11.c, if
20 available first, or simultaneously.
- 21 III.10.C.11.e. The Final Risk Assessment Report(s) required by Permit Conditions III.10.C.11.c. and
22 III.10.C.11.d. may be combined, or provided separately, as appropriate.
- 23 III.10.C.12 Air Emissions
- 24 III.10.C.12.a Prior to installing or using any equipment subject to the requirements of WAC 173-303-
25 690, the Permittees will obtain a Permit Modification following the Permit Condition
26 III.10.C.2.g. process to incorporate WAC 173-303-690 standards into the permit
27 application and this Permit prior to generation/receipt of dangerous and/or mixed waste in
28 the WTP Unit.
- 29 III.10.C.12.b Prior to installing or using any equipment subject to the requirements of WAC 173-303-
30 691, the Permittees will obtain a Permit Modification following the Permit Condition
31 III.10.C.2.g. process to incorporate WAC 173-303-691 standards into the permit
32 application and this Permit prior to generation/receipt of dangerous and/or mixed waste in
33 the WTP Unit.
- 34 III.10.C.12.c The Permittees will comply with the organic air emission standards as set forth in WAC
35 173-303-692. The Permittees will obtain a permit modification following the Permit
36 Condition III.10.C.2.g. process to incorporate WAC 173-303-692 standards into the
37 permit application and this Permit prior to generation/receipt of dangerous waste in the
38 WTP Unit.
- 39 III.10.C.13 Remote Data Access
- 40 Onsite, unrestricted, twenty-four (24) hour access to key WTP Unit operating data and
41 emissions monitoring data will be provided to Ecology. This onsite, unrestricted access
42 will include providing and maintaining for Ecology only use a computer terminal and

- 1 printer linked to key WTP Unit operating data and emissions monitoring data. This
2 terminal will be equipped with all necessary software and hardware to monitor, retrieve,
3 and trend this data. Additional remote access will be provided on Ecology request if
4 security concerns can be addressed.
- 5 III.10.C.14 Interim Period of Operation during Post Demonstration Test Period prior to receiving
6 Ecology approval of the complete Demonstration Test Reports and the Final Risk
7 Assessment Report.
- 8 III.10.C.14.a. During this Interim Period of Operation, the Permittees will be able to treat dangerous
9 waste and mixed waste feed subject to the following conditions:
- 10 III.10.C.14.a.i. Obtain receipt of Ecology's approval for the LAW Vitrification System, Permit condition
11 III.10.H.3.d.iii., prior to receiving dangerous or mixed waste feed into the LAW
12 Vitrification System
- 13 III.10.C.14.a.ii. Obtain receipt of Ecology's approval for the HLW Vitrification System, Permit condition
14 III.10.J.3.d.iii., prior to receiving dangerous or mixed waste feed into the HLW
15 Vitrification System
- 16 III.10.C.14.a.iii. Accept and treat up to 3 million gallons of Hanford tank waste feed in
17 WTP.
- 18 III.10.C.14.a.iv. Accepting and treating more than 3 million gallons of Hanford tank waste feed in WTP
19 during this Interim Period will require a permit modification in accordance with WAC
20 173-303-830, Appendix 1, 5a.
- 21 III.10.C.15 Support Systems
- 22 III.10.C.15.a. Mechanical Handling Systems
- 23 III.10.C.15.a.i. The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., in
24 accordance with the Compliance Schedule, as specified in Operating Unit 10, Appendix
25 1.0 of this Permit, engineering information as specified below, for incorporation into
26 Attachment 51, Appendices 9.6, 9.10, 10.6, and 10.10 of this Permit, or into the
27 Administrative Record where noted.
- 28 A. System Descriptions for each Mechanical Handling system identified in
29 Permit Table III.10.C.A., for incorporation into the Administrative Record
30 (Compliance Schedule Item 36).
- 31 B. Mechanical Handling Diagrams and Mechanical Handling Data Sheets for the
32 following pieces of equipment (Compliance Schedule Item 37):
- 33 a. HDH-CRN-00005
- 34 b. HEH-CRN-00003
- 35 c. HPH-CRN-00001
- 36 d. HPH-CRN-00002
- 37 e. HSH-CRN-00001
- 38 f. HSH-CRN-00014
- 39 g. LEH-CRN-00003
- 40 h. LPH-CRN-00002

- 1 i. HEH-CRN-00001
- 2 C. Permit condition III.10.C.15.a. does not require:
 - 3 a. Additional submittals beyond those described in permit condition
 - 4 III.10.C.15.a.;
 - 5 b. IQRPE reports for equipment identified in III.10.C.15.a.i (B);
 - 6 c. Installation inspections for equipment identified in
 - 7 III.10.C.15.a.i(B); and
 - 8 d. Other inspection, verification, operability, maintenance, or records
 - 9 management beyond that which is specified elsewhere in this
 - 10 permit, for equipment identified in III.10.C.15.a.i (B), or by
 - 11 conditions III.10.C.15.a.ii and III.10.C.15.a.iii.

12 III.10.C.15.a.ii. The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior
 13 to initial receipt of dangerous waste and/or mixed waste in the WTP Unit, engineering
 14 information as identified below for incorporation into Attachment 51, Appendices 9.13,
 15 9.18, 10.13, and 10.18 of this Permit.

- 16 A. Equipment instrument logic narrative description related to safe operation of
- 17 equipment covered by III.10.C.15.a.i.B, including but not limited to allowed
- 18 travel path for bridge and trolley, upper and lower hook travel limits, two-
- 19 blocking prevention, hook load limits, wire rope misreeling, and overspeed
- 20 protection (Compliance Schedule Item 38).
- 21 B. Descriptions of operational procedures demonstrating appropriate controls and
- 22 practices are in place to ensure equipment covered by III.10.C.15.a.i.B will be
- 23 operated in a safe and reliable manner that will not result in damage to regulated
- 24 tank systems, miscellaneous unit systems, or canisters of vitrified waste
- 25 (Compliance Schedule Item 39).

26
 27 III.10.C.15.a.iii Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
 28 will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following for
 29 incorporation into Attachment 51, Chapter 4.0: Updated Narrative Description and
 30 figures for all Mechanical Handling Systems identified in Permit Table III.10.C.A., to
 31 include but not limited to travel path, fail safe conditions, fail safe logic control, safety
 32 features and controls that minimize the potential for release of dangerous/mixed waste
 33 during normal operations, and lifting and/or load capabilities of each crane specified in
 34 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

1
2
3

III.10.D. CONTAINERS**III.10.D.1. Container Storage Areas and Storage Limits**

III.10.D.1.a. The Permittees may store, in containers, all dangerous and/or mixed waste listed in the Part A, Forms Operating Unit 10, Chapter 1.0 of this Permit, in accordance with the WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved pursuant to Permit Conditions III.10.C.3. and III.10.C.2. Total containerized dangerous and/or mixed waste storage at the Facility will not exceed 2,780,000 gallons (372,520 cubic feet) pursuant to requirements in Permit Condition III.10.D.1.b.

III.10.D.1.b. The Permittees may place and store dangerous and mixed waste only in approved container storage areas and containment systems listed in Permit Tables III.10.D.A., III.10.D.B., and III.10.D.C. (as approved/modified pursuant to Permit Condition III.10.D.10.), in accordance with Permit Section III.10.D, and in accordance with Operating Unit 10, Chapters 1.0 and 4.0, and Operating Unit 10, Appendices 9.4, 9.5, 9.7, 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 of this Permit, as approved pursuant to Permit Conditions III.10.D.10.b. through d. The Permittees will limit the total volume of waste to quantities specified for the individual container storage areas listed in Permit Table III.10.D.A.

III.10.D.1.c. The Permittees must maintain a free volume (i.e., free volume = total capacity of containment system minus volume occupied by equipment and containers within containment systems) within containment systems identified in Permit Tables III.10.D.B. and III.10.D.C. (as approved/modified pursuant to Permit Condition III.10.D.10.), equal to ten percent (10%) of the total volume of dangerous and mixed waste stored within the containment system, or the volume of the largest container stored within the containment system, whichever is greater.

III.10.D.1.d. The Permittees will maintain documentation in the operating record for each container storage area and containment system listed in Permit Tables III.10.D.A., III.10.D.B., and III.10.D.C. (as approved/modified pursuant to Permit Condition III.10.D.10.), in accordance with WAC 173-303-380.

III.10.D.1.e. For the purpose of determining compliance with container storage area capacity limits and containment system requirements, every waste container will be considered to be full.

III.10.D.1.f. If the containers of ILAW and/or IHLW are determined to no longer be dangerous and/or mixed waste as described in WAC 173-303-070, the ILAW and/or IHLW containers will no longer be subject to the conditions of this Permit.

III.10.D.2 Container Storage Areas Design and Construction

III.10.D.2.a. The Permittees will construct container storage areas identified in Permit Table III.10.D.A. (as approved/modified pursuant to Permit Condition III.10.D.10.), as specified in all applicable drawings and specifications in Operating Unit 10, Appendices 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 Permit, as approved pursuant to Permit Condition III.10.D.10.b.

III.10.D.2.b. The Permittees will construct all permanent containment systems identified in Permit Table III.10.D.B. (as approved/modified pursuant to Permit Condition III.10.D.10.), as specified in all applicable drawings and specifications in Operating Unit 10, Appendices 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 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.

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

- 1 III.10.D.5.a.ii. TOXIC (if a WT01, WT02, or D waste code other than D001, D002, or D003);
- 2 III.10.D.5.a.iii. FLAMMABLE (if a D001 and other waste codes);
- 3 III.10.D.5.a.iv. CORROSIVE (if a D002 and other waste codes);
- 4 III.10.D.5.a.v. REACTIVE (if a D003 and other waste codes).
- 5 III.10.D.5.b. For all dangerous and mixed waste containers (except as otherwise specified in Operating
6 Unit 10, Chapter 4.0, Section 4.2.1.3., as updated pursuant to Permit Condition
7 III.10.D.10.c.i., for containers of ILAW and IHLW), the Permittees will ensure that:
- 8 III.10.D.5.b.i. Labels are not obscured or otherwise unreadable;
- 9 III.10.D.5.b.ii. Waste containers are oriented so as to allow inspection of the labels identified in Permit
10 Conditions III.10.D.5.a and III.10.D.5.b, the container tracking number, and, to the extent
11 possible, any labels which the generator placed upon the container; and
- 12 III.10.D.5.b.iii. Empty dangerous and mixed waste containers, as defined by WAC 173-303-160(2), must
13 have their dangerous and/or mixed waste labels destroyed or otherwise removed
14 immediately upon being rendered empty.
- 15 III.10.D.5.c. The Permittees will post entrances and access points to all ILAW and IHLW container
16 storage areas, and any other areas where containers of ILAW and IHLW are handled,
17 with signs that, in addition to meeting the requirements of WAC 173-303-310(2)(a),
18 clearly identify the major risk(s) associated with the containers of ILAW and IHLW.
- 19 III.10.D.6. Containment Systems
- 20 III.10.D.6.a. Containerized dangerous and mixed waste, and other materials that are incompatible, will
21 not be staged, segregated, or stored within the same containment system as identified in
22 Permit Tables III.10.D.B. and III.10.D.C., as approved/modified pursuant to Permit
23 Condition III.10.D.10. (e.g., metal pan, concrete berm, portable containment system)
24 [WAC 173-303-630(9)(c)].
- 25 III.10.D.6.b. The integrity of containment systems identified in Permit Tables III.10.D.B. and
26 III.10.D.C. (as approved/modified pursuant to Permit Condition III.10.D.10.) must be
27 maintained in accordance with WAC 173-303-630(7)(a)(i). Cracks, gaps, loss of
28 integrity, deterioration, corrosion, or erosion of containment pads, joints in containment
29 pads, berms, curbs, trenches, sumps, and coatings must be repaired in accordance with
30 Operating Unit 10, Chapter 6.0 of this Permit, as approved/modified pursuant to Permit
31 Conditions III.10.D.10.c.vii., III.10.C.5.b., and III.10.C.5.c. [WAC 173-303-320, WAC
32 173-303-630(7)(a)(i)].
- 33 III.10.D.6.c. An impermeable coating, as specified in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8,
34 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
35 concrete containment systems identified in Permit Table III.10.D.B. (as
36 approved/modified pursuant to Permit Condition III.10.D.10.) and will meet the
37 following performance standards [WAC 173-303-630(7)(a)]:
- 38 III.10.D.6.c.i. The coating must seal the containment system surface such that no cracks, seams, or
39 other pathways through which liquid could migrate are present;
- 40 III.10.D.6.c.ii. The coating must be of adequate thickness and strength to withstand the normal operation
41 of equipment and personnel within the given area such that degradation or physical
42 damage to the coating or lining can be identified and remedied before waste could
43 migrate from the containment system; and

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

- 1 III.10.D.10.a. All information identified for submittal to Ecology in III.10.D.10.b. through
2 III.10.D.10.d. of this compliance schedule must be signed in accordance with
3 requirements in WAC 173-303-810(12).
- 4 III.10.D.10.b. The Permittees will submit to Ecology, consistent with the schedule described in
5 Operating Unit 10, Appendix 1.0, for review and approval, prior to construction of
6 container storage area and permanent containment systems as identified in Permit Tables
7 III.10.D.A and III.10.D.B respectively, engineering information as specified below, for
8 incorporation into Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7,
9 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 of this Permit. In order to incorporate
10 engineering information specified below into Operating Unit 10, Appendices 9.4, 9.5,
11 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
12 Condition III.10.C.2.g. process will be followed. At a minimum, container storage area
13 and permanent containment system drawings and specifications will show the following
14 pursuant to WAC 173-303-806(4)(b) and WAC 173-303-630:
- 15 III.10.D.10.b.i. Design drawings (General Arrangement Drawings - in plan and cross sections) and
16 specifications including references to specific building codes (e.g., UBC, ASCE) for each
17 container storage areas' foundation and permanent containment systems. These items
18 should show basic design parameters and dimensions, and location of the container
19 storage areas and permanent containment systems; how permanent containment system
20 design promotes positive drainage control (such as a locked drainage valve) to prevent
21 release of contaminated liquids and so that uncontaminated liquids can be drained
22 promptly for convenience of operation; capacity of the permanent containment system
23 relative to the volume of the largest container to be stored; for permanent containment
24 systems, how the base underlying the containers is sloped (i.e., floor slopes to sumps) or
25 the containment system is otherwise designed and operated to drain and remove liquids
26 resulting from leaks, spills, or other liquids, or how containers are kept from contact with
27 standing liquids in the permanent containment system (i.e., elevated or are otherwise
28 protected); for container storage areas without permanent containment systems, a
29 description of how the storage area is designed or operated to drain and remove liquids or
30 how containers are kept from contact with standing liquids;
- 31 III.10.D.10.b.ii. Permanent containment systems materials selection documentation (including, but not
32 limited to, materials of construction, coatings and liner materials for concrete portions of
33 containment systems);
- 34 III.10.D.10.b.iii. Sketches, drawings, or data demonstrating compliance with WAC 173-303-630(8)
35 (location of buffer zone and containers holding ignitable or reactive waste) and WAC
36 173-303-630(9)(c) (location of incompatible waste), where applicable;
- 37 III.10.D.10.b.iv. Submit Permit Table III.10.D.B. completed to provide for all permanent containment
38 systems, the information as specified in each column heading, consistent with
39 information to be provided in III.10.D.10.b.i. through iii. above.
- 40 III.10.D.10.c. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
41 will update and submit to Ecology, consistent with the schedule described in Operating
42 Unit 10, Appendix 1.0, for review and approval, the following, as specified below, for
43 incorporation into Operating Unit 10, Chapter 4.0, and Appendices 9.18, 10.18, and 12.15
44 of this Permit, except Permit Condition III.10.D.10.c.vii., which will be incorporated into
45 Operating Unit 10, Chapter 6.0 of this Permit. In order to incorporate the following
46 information (specified below) into Operating Unit 10, Appendix 9.18, 10.18, and 12.15,
47 Permit Condition III.10.C.2.g. will be followed. All information provided under this

1 permit condition must be consistent with information provided pursuant to Permit
2 Conditions III.10.D.10.b., III.10.D.10.c., and III.10.D.10.d. as approved by Ecology, and
3 will include at a minimum, the following information as required pursuant to WAC 173-
4 303-630 and WAC 173-303-340:

- 5 III.10.D.10.c.i. Operating Unit 10, Chapter 4.0, Narrative Descriptions, updated;
- 6 III.10.D.10.c.ii. Descriptions of procedures for addition and removal of waste from containers;
- 7 III.10.D.10.c.iii. Descriptions of procedures for opening and closing of containers, including any
8 inspections performed prior to opening;
- 9 III.10.D.10.c.iv. Descriptions of procedures for handling and transport of containers within the WTP Unit;
- 10 III.10.D.10.c.v. Description of the tracking system used to track containers throughout the WTP Unit
11 pursuant to WAC 173-303-380. The tracking system, at a minimum, will do the
12 following:
- 13 A. Track the location of containers within the WTP Unit;
- 14 B. Track which containers have been shipped off-facility and/or off-site, and to where
15 they have been shipped;
- 16 C. For containers intended for transport off-site, include information in accordance with
17 the requirements specified in WAC 173-303-190(3)(b);
- 18 D. Record the date container is placed in the container storage area;
- 19 E. Record the nature of the waste in any given container, including dangerous waste
20 designation codes, any associated land disposal restriction treatment requirements, and
21 the major risk(s) associated with the waste (as described in Permit Conditions
22 III.10.D.5.a. and III.10.D.5.c.).
- 23 III.10.D.10.c.vi. Descriptions of procedures for container spacing, stacking, and labeling pursuant to
24 WAC 173-303-630(3), WAC 173-303-630(5)(c), WAC 173-303-340(3), WAC 173-303-
25 630(6);
- 26 III.10.D.10.c.vii. Descriptions of procedures for investigating container storage areas and investigating and
27 repairing containment systems [WAC 173-303-320, WAC 173-303-630(6)];
- 28 III.10.D.10.c.viii. Descriptions of procedures for responding to damaged (e.g., severe rusting, apparent
29 structural defects) or leaking containers [WAC 173-303-630(2)];
- 30 III.10.D.10.c.ix. Descriptions of operational procedures demonstrating how accumulated liquids can be
31 analyzed and removed from permanent and portable containment systems to prevent
32 overflow [WAC 173-303-806(4)(b)(i)(E)];
- 33 III.10.D.10.c.x. For portable containment systems, vendor information, design drawings, or sketches
34 showing the following information. These items will include as a minimum basic design
35 parameters, dimensions, and materials of construction; how the design promotes positive
36 drainage control (such as a locked drainage valve) to prevent release of contaminated
37 liquids and so that uncontaminated liquids can be drained promptly for convenience of
38 operation; how the base underlying the containers is sloped (i.e., floor slopes to sumps) or
39 the containment system is otherwise designed and operated to drain and remove liquids
40 resulting from leaks, spills, or other liquids, or how containers are kept from contact with
41 standing liquids in the containment system (i.e., elevated or are otherwise protected); and

- 1 capacity of the containment system relative to the volume of the largest container to be
2 stored;
- 3 III.10.D.10.c.xi. Where ignitable and reactive waste are stored or otherwise managed in containers, a
4 description of the procedures used to ensure compliance with WAC 173-303-630(8)(a)
5 and (b);
- 6 III.10.D.10.c.xii. Where incompatible waste are stored or otherwise managed in containers, a description
7 of the procedures used to ensure compliance with WAC 173-303-630(9)(a) and (b), and
8 173-303-395(1)(b) and (c);
- 9 III.10.D.10.c.xiii. Submit Permit Table III.10.D.C completed to provide for all portable containment
10 systems, the information as specified in each column heading, consistent with
11 information to be provided in III.10.D.10.c.i. through xii. above;
- 12 III.10.D.10.c.xiv. Test procedures and results or other documentation or information to show that the
13 waste do not contain free liquids, as applicable.
- 14 III.10.D.10.d. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
15 will submit to Ecology, consistent with the schedule described in Operating Unit 10,
16 Appendix 1.0, for review and approval, completed Permit Tables III.10.D.A, III.10.D.B,
17 and III.10.D.C, for incorporation into Operating Unit 10, Chapter 4.0, and Appendices
18 9.18, 10.18, and 12.15 of this Permit. In order to incorporate the information into
19 Operating Unit 10, Chapter 4.0, and Appendices 9.18, 10.18, and 12.15 of this Permit,
20 Permit Condition III.10.C.2.g. process will be followed.

21
22

1
2 **Table III.10.D.A –Container Storage/Containment Building Areas Description**
3

Dangerous and Mixed Waste Container Storage Areas	Maximum Capacity Gallons (Solids) (ft ³) ^d	Maximum Operating Volume (Liquid ^e)
HLW Vitrification Plant		
IHLW Canister Storage Cave ^a (Room H-0132)	162,589 gal. (21,735 ft ³)	N/A
HLW East Corridor El. 0' (Rooms HC-0108/09/10)	310,291 gal. (41,480 ft ³)	NA
HLW Loading Area (Room H-0130)	159,185 gal. (21,280 ft ³)	NA
Other Areas		
Non-Radioactive Dangerous Waste Container Storage Area ^b	56,104 gal. (6,461 ft ³)	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 ³)	RESERVED
Containment Buildings/Container Storage	Maximum Capacity Gallons (Solids) (ft ³) ^d	Maximum Operating Volume (Liquid ^e)
Pretreatment Plant		
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
LAW Vitrification Plant		
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
ILAW Buffer Container Containment Building	RESERVED	RESERVED
L-B025C Container Buffer Store	RESERVED	RESERVED
L-B025D Container Rework	RESERVED	RESERVED
HLW Vitrification Plant		
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:

^aCapacity is for immobilized glass waste storage.

^bCapacity is for dangerous and/or mixed waste storage.

^cAll 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).

^dGallons converted to cubic feet using a conversion factor of 1 gallon (liquid) x 0.134 = 1ft³ (rounded to the nearest whole number).

^eLocation 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.

1
2
3

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 ^a (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

^aDimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

4
5
6

Table III.10.D.C – Container Storage Area Portable Containment Systems^a

Portable Containment System Description – Specifications and Vendor Information	Portable Containment System Container Storage Area(s) Location(s)	Portable Containment System Dimensions ^b (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:

^aLocation 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.

^bDimensions 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 HLWIT 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

- 1 III.10.E.3.a. The Permittees must ensure that proper handling procedures are adhered to in order to
2 prevent damage to the system during installation. Prior to covering, enclosing, or placing
3 a new tank system or component in use, an independent, qualified, installation inspector
4 or an independent, qualified, registered professional engineer, either of whom is trained
5 and experienced in the proper installation of tank systems or components, must inspect
6 the system for the presence of any of the following items:
- 7 III.10.E.3.a.i. Weld breaks;
- 8 III.10.E.3.a.ii. Punctures;
- 9 III.10.E.3.a.iii. Scrapes of protective coatings;
- 10 III.10.E.3.a.iv. Cracks;
- 11 III.10.E.3.a.v. Corrosion;
- 12 III.10.E.3.a.vi. Other structural damage or inadequate construction/installation.
- 13 All discrepancies must be remedied before the tank system is covered, enclosed, or
14 placed in use [WAC 173-303-640(3)(c)].
- 15 III.10.E.3.b. For tank systems or components that are placed underground and that are back-filled, the
16 Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous
17 substance. The backfill must be installed so that it is placed completely around the tank
18 and compacted to ensure that the tank and piping are fully and uniformly supported
19 [WAC 173-303-640(3)(d)].
- 20 III.10.E.3.c. The Permittees must test for tightness all new tanks and ancillary equipment prior to
21 these components being covered, enclosed, or placed into use. If a tank system is found
22 not to be tight, all repairs necessary to remedy the leak(s) in the system must be
23 performed prior to the tank system being covered, enclosed, or placed in use [WAC 173-
24 303-640(3)(e)].
- 25 III.10.E.3.d. The Permittees must ensure ancillary equipment is supported and protected against
26 physical damage and excessive stress due to settlement, vibration, expansion, or
27 contraction [WAC 173-303-640(3)(f)].
- 28 III.10.E.3.e. The Permittees must provide the type and degree of corrosion protection recommended
29 by an independent corrosion expert, based on the information provided in Operating Unit
30 10, Appendices 8.9, 8.11, 9.9, 9.11, 10.9, 10.11, 11.9, and 11.11 of this Permit, as
31 approved pursuant to Permit Conditions III.10.E.9.b.i., III.10.E.9.b.iv., III.10.E.9.b.v.,
32 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
33 III.10.E.9.d.v. or other corrosion protection if the Ecology believes other corrosion
34 protection is necessary to ensure the integrity of the tank system during use of the tank
35 system. The installation of a corrosion protection system that is field fabricated must be
36 supervised by an independent corrosion expert to ensure proper installation [WAC 173-
37 303-640(3)(g)].
- 38 III.10.E.3.f. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
39 will obtain, and keep on file in the WTP Unit operating record, written statements by
40 those persons required to certify the design of the tank system and supervise the
41 installation of the tank system in accordance with the requirements of WAC 173-303-
42 640(3)(b), (c), (d), (e), (f), and (g), attesting that each tank system and corresponding
43 containment system listed in Permit Tables III.10.E.A through D and III.10.E.I through P,
44 as approved/modified pursuant to Permit Condition III.10.E.9., were properly designed

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

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

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

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

- 1 III.10.E.6.b. The inspection data for the WTP Unit Tank Systems will be recorded, and the records
2 will be placed in the WTP Unit operating record, in accordance with Permit Condition
3 III.10.C.4.
- 4 III.10.E.7 Recordkeeping (WAC 173-303-380)
5 For the WTP Unit Tank Systems, the Permittees will record and maintain in the WTP
6 Unit operating record, all monitoring, calibration, recording, maintenance, test data, and
7 inspection data compiled under the conditions of this Permit, in accordance with Permit
8 Conditions III.10.C.4. and III.10.C.5.
- 9 III.10.E.8 Closure
10 The Permittees will close the WTP Unit Tank Systems in accordance with Operating Unit
11 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.
- 12 III.10.E.9 Compliance Schedule
- 13 III.10.E.9.a. All information identified for submittal to Ecology in b. through e. of this compliance
14 schedule must be signed and certified in accordance with requirements in WAC 173-303-
15 810(12), as modified in accordance with Permit Condition III.10.E.1.d. [WAC 173-303-
16 806(4)].
- 17 III.10.E.9.b. The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior
18 to construction of each secondary containment and leak detection system for the WTP
19 Unit Tank System (per level, per WTP Unit building and outside the WTP Unit
20 buildings) as identified in Permit Tables III.10.E.A through D, J, L, N, and P, engineering
21 information as specified below, for incorporation into Operating Unit 10, Appendices 8.4,
22 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,
23 10.11, 11.4, 11.5, 11.7, 11.8, 11.9, and 11.11 of this Permit. At a minimum, engineering
24 information specified below will show the following as required pursuant to WAC 173-
25 303-640 (the information specified below will include dimensioned engineering drawings
26 and information on sumps and floor drains):
- 27 III.10.E.9.b.i. IQRPE Reports (specific to foundation, secondary containment, and leak detection
28 system) will include review of design drawings, calculations, and other information on
29 which the certification report is based and will include as applicable, but not limited to,
30 review of such information described below. Information (drawings, specifications, etc.)
31 already included in Operating Unit 10, Appendices 8.0 through 11.0 of this Permit, may
32 be included in the report by reference and should include drawing and document
33 numbers. IQRPE Reports will be consistent with the information separately provided in
34 Permit Conditions III.10.E.9.b.ii. through ix. below. The IQRPE Report(s) (specific to
35 foundation, secondary containment and leak detection system) for the LAW and HLW
36 buildings (-21 foot elevation only) will be submitted with the first IQRPE Report for
37 tanks, identified in Permit Condition III.10.E.9.c.i. [WAC 173-303-640(3)(a), WAC 173-
38 303-806(4)(c)(i)];
- 39 III.10.E.9.b.ii. Design drawings (General Arrangement Drawings in plan and cross sections) and
40 specifications for the foundation, secondary containment, including, liner installation
41 details, and leak detection methodology [Note: leak detection systems for areas where
42 daily, direct, or remote visual inspection is not feasible, will be continuous in accordance
43 with WAC 173-303-640(4)(e)(iii)(C)]. These items should show the dimensions, volume
44 calculations, and location of the secondary containment system, and should include items

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

- 1 III.10.E.9.c.ii. Design drawings (General Arrangement Drawings in plan and cross sections, Process
2 Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control
3 systems], Mechanical Drawings) and specifications, and other information, specific to
4 tanks (to show location and physical attributes of each tank) [WAC 173-303-640(3)(a),
5 WAC 173-303-806(4)(c)(i) through (iv)];
- 6 III.10.E.9.c.iii. The Permittees will provide the design criteria (references to codes and standards, load
7 definitions, and load combinations, materials of construction, and analysis/design
8 methodology) and typical design details for the support of the tank(s). Structural support
9 calculations specific to off-specification, non-standard, and field fabricated tanks will be
10 submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a),
11 WAC 173-303-806(4)(c)(i)];
- 12 III.10.E.9.c.iv. A description of materials and equipment used to provide corrosion protection for
13 external metal components in contact with water, including factors affecting the potential
14 for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-
15 806(4)(c)(v)];
- 16 III.10.E.9.c.v. Tank materials selection documentation (e.g., physical and chemical tolerances) [WAC
17 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];
- 18 III.10.E.9.c.vi. Tank vendor information (including, but not limited to required performance warranties,
19 as available), consistent with information submitted under ii. above, will be submitted for
20 incorporation into the Administrative Record [WAC 173-303-640, and WAC 173-303-
21 806(4)(c)];
- 22 III.10.E.9.c.vii. System Descriptions related to tanks will be submitted for incorporation into the
23 Administrative Record;
- 24 III.10.E.9.c.viii. Mass balance for each projected operating condition, including assumptions and formulas
25 used to complete the mass balance, so that they can be independently verified, and will
26 be submitted for incorporation into the Administrative Record;
- 27 III.10.E.9.c.ix. A detailed description of how the tanks will be installed in compliance with WAC 173-
28 303-640(3)(c), (d), and (e) [WAC 173-303-806(4)(c)(vi)];
- 29 III.10.E.9.c.x. Submit Permit Tables III.10.E.I, K, M, and O, completed to provide for all primary
30 containment sumps and floor drains, the information as specified in each column heading,
31 consistent with information to be provided in Permit Conditions III.10.E.9.c.i through
32 ix;
- 33 III.10.E.9.c.xi. Documentation that tanks are designed to prevent the accumulation of hydrogen gas
34 levels above the lower explosive limit for incorporation into the Administrative Record
35 [WAC 173-303-340];
- 36 III.10.E.9.c.xii. Documentation that tanks are designed to prevent escape of vapors and emissions of
37 acutely or chronically toxic (upon inhalation) EHW limit for incorporation into the
38 Administrative Record [WAC 173-303-640(5)(e), WAC 173-303-806(4)(c)(xii)];
- 39 III.10.E.9.d. The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior
40 to installation of ancillary equipment for each tank system, as identified in Permit Tables
41 III.10.E.A, through D, and I through P, not addressed in Permit Condition III.10.E.9.c,
42 engineering information as specified below, for incorporation into Operating Unit 10,
43 Appendices 8.1 through 8.9, 8.11 through 8.14, 9.1 through 9.9, 9.11 through 9.14, 10.1
44 through 10.9, 10.11 through 10.14, 11.1 through 11.9, and 11.11 through 11.14 of this

- 1 Permit. At a minimum, engineering information specified below will show the following
2 as required pursuant to WAC 173-303-640 (the information specified below will include
3 dimensioned engineering drawings):
- 4 III.10.E.9.d.i. IQRPE Reports (specific to ancillary equipment) will include a review of design
5 drawings, calculations, and other information as applicable, on which the certification
6 report is based. The reports will include, but not be limited to, review of such
7 information described below. Information (drawings, specifications, etc.) already
8 included in Operating Unit 10, Appendix 8.0 through 11.0 of this Permit, may be
9 included in the report by reference and should include drawing and document numbers.
10 The IQRPE Reports will be consistent with the information provided separately in Permit
11 Conditions III.10.E.9.d.ii. through xiii. below and the IQRPE Reports specified in Permit
12 Conditions III.10.E.9.b and III.10.E.9.c. [WAC 173-303-640(3)(a), WAC 173-303-
13 806(4)(c)(i)];
- 14 III.10.E.9.d.ii. Design drawings (Process Flow Diagrams, Piping and Instrumentation Diagrams
15 [including pressure control systems], etc.) specifications (including required performance
16 warranties), and other information specific to ancillary equipment (these drawings should
17 include all equipment such as pipe, valves, fittings, pumps, instruments, etc.) [WAC 173-
18 303-640(3)(a), WAC 173-303-806(4)(c)(i), (iii), (iv)];
- 19 III.10.E.9.d.iii. The Permittees will provide the design criteria (references to codes and standards, load
20 definitions, and load combinations, materials of construction, and analysis/design
21 methodology) and typical design details for the support of the ancillary equipment [WAC
22 173-303-640(3)(a), WAC 173-303-640(3)(f), WAC 173-303-806(4)(c)(i)];
- 23 III.10.E.9.d.iv. A description of materials and equipment used to provide corrosion protection for
24 external metal components in contact with soil and water, including factors affecting the
25 potential for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-
26 303-806(4)(c)(v)];
- 27 III.10.E.9.d.v. Materials selection documentation for ancillary equipment (e.g., physical and chemical
28 tolerances) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];
- 29 III.10.E.9.d.vi. Vendor information, consistent with information submitted under ii. above, will be
30 submitted for incorporation into the Administrative Record [WAC 173-303-640, and
31 WAC 173-303-806(4)(c)];
- 32 III.10.E.9.d.vii. Tank, ancillary equipment, and leak detection system instrument control logic narrative
33 description (e.g., software functional specifications, descriptions of fail-safe conditions,
34 etc.);
- 35 III.10.E.9.d.viii. System Descriptions related to ancillary equipment and system descriptions related to
36 leak detection systems, (including instrument control logic and narrative descriptions),
37 for incorporation into the Administrative Record;
- 38 III.10.E.9.d.ix. A detailed description of how the ancillary equipment will be installed and tested [WAC
39 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), and WAC 173-303-
40 806(4)(c)(vi)];
- 41 III.10.E.9.d.x. For process monitoring, control, and leak detection system instrumentation for the WTP
42 Unit Tank System as identified in Permit Tables III.10.E.E through H, a detailed
43 description of how the process monitoring, control, and leak detection system
44 instrumentation will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC
45 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi)];

- 1 III.10.E.9.d.xi. Mass balance for projected normal operating condition used in developing the process
2 and instrumentation diagrams, including assumptions and formulas used to complete the
3 mass balance, so that they can be independently verified, for incorporation into the
4 Administrative Record;
- 5 III.10.E.9.d.xii. Documentation that ancillary equipment is designed to prevent the accumulation of
6 hydrogen gas levels above the lower explosive limit for incorporation into the
7 Administrative Record [WAC 173-303-340].
- 8 III.10.E.9.d.xiii. Leak detection system documentation (e.g. vendor information, etc.) consistent with
9 information submitted under Permit Condition III.10.E.9.c.ii. and Permit Conditions
10 III.10.E.9.d.ii., vii., viii. and x. above, will be submitted for incorporation into the
11 Administrative Record.
- 12 III.10.E.9.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
13 will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following as
14 specified below for incorporation into Operating Unit 10, Appendices 8.15, 9.18, 10.18,
15 11.15 of this Permit, except Permit Condition III.10.E.9.e.v., which will be incorporated
16 into Operating Unit 10, Chapter 6.0 of this Permit. All information provided under this
17 permit condition must be consistent with information provided pursuant to Permit
18 Conditions III.10.E.9.b., c., d., and e., III.10.C.3.e., and III.10.C.11.b., as approved by
19 Ecology.
- 20 III.10.E.9.e.i. Integrity assessment program and schedule for all WTP Unit tanks will address the
21 conducting of periodic integrity assessments on all WTP Unit tanks over the life of the
22 tank, in accordance with III.10.E.9.b.ix. and WAC 173-303-640(3)(b), and descriptions
23 of procedures for addressing problems detected during integrity assessments. The
24 schedule must be based on past integrity assessments, age of the tank system, materials of
25 construction, characteristics of the waste, and any other relevant factors [WAC 173-303-
26 640(3)(b), WAC 173-303-806(4)(c)(vi)];
- 27 III.10.E.9.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so
28 that it will detect the failure of either the primary or secondary containment structure or
29 the presence of any release of dangerous and/or mixed waste, or accumulated liquid in
30 the secondary containment system within twenty-four (24) hours. Detection of a leak of
31 at least 0.1 gallons per hour within twenty-four (24) hours is defined as being able to
32 detect a leak within twenty-four (24) hours. Any exceptions to this criteria must be
33 approved by Ecology [WAC 173-303-640(4)(c)(iii), WAC 173-303-806(4)(c)(vii)];
- 34 III.10.E.9.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste
35 and accumulated liquids can be removed from the secondary containment system within
36 twenty-four (24) hours [WAC 173-303-806(4)(c)(vii)];
- 37 III.10.E.9.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices
38 are in place to prevent spills and overflows from tanks or containment systems in
39 compliance with WAC 173-303-640(5)(b)(i) through (iii) [WAC 173-303-640(5)(b),
40 WAC 173-303-806(4)(c)(ix)];
- 41 III.10.E.9.e.v. Description of procedures for investigation and repair of tank systems [WAC 173-303-
42 320, WAC 173-303-640(6), WAC 173-303-640(7)(e) and (f), WAC 173-303-
43 806(4)(a)(v), WAC 173-303-806(4)(c)(vii)];

- 1 III.10.E.9.e.vi. Updated Chapter 4.0, Narrative Descriptions, Tables and Figures as identified in Permit
2 Tables III.10.E.A through D (as modified pursuant to Permit Condition III.10.E.9.e.xii.)
3 and updated to identify routinely non-accessible tank systems;
- 4 III.10.E.9.e.vii. Description of procedures for management of ignitable and reactive, and incompatible
5 dangerous and/or mixed waste in accordance with WAC 173-303-640(9) and (10) [WAC
6 173-303-806(4)(c)(x)].
- 7 III.10.E.9.e.viii. A description of the tracking system used to track dangerous and/or mixed waste
8 throughout the WTP Unit Tank System, pursuant to WAC 173-303-380.
- 9 III.10.E.9.e.ix. Permit Tables III.10.E.E through H will be completed for WTP Unit Tank System
10 process and leak detection system monitors and instruments (to include but not limited to:
11 instruments and monitors measuring and/or controlling flow, pressure, temperature,
12 density, pH, level, humidity, and emission) to provide the information as specified in
13 each column heading. Process and leak detection system monitors and instruments for
14 critical systems as specified in Operating Unit 10, Appendix 2.0 and as updated pursuant
15 to Permit Condition III.10.C.9.b. and for operating parameters as required to comply with
16 Permit Condition III.10.C.3.e.iii. will be addressed. Process monitors and instruments for
17 non-waste management operations (e.g., utilities, raw chemical storage, non-contact
18 cooling waters, etc.) are excluded from this permit condition.
- 19 III.10.E.9.e.x. Supporting documentation for operating trips and expected operating range as specified
20 in Permit Tables III.10.E.E through H as approved pursuant to Permit Condition
21 III.10.E.9.e.ix.
- 22 III.10.E.9.e.xi. Documentation of process and leak detection instruments and monitors (as listed in
23 Permit Tables III.10.E.E through H) for the WTP Unit Tank Systems to include but not
24 be limited to the following:
- 25 A. Procurement specifications;
- 26 B. Location used;
- 27 C. Range, precision, and accuracy;
- 28 D. Detailed descriptions of Calibration/functionality test procedures (e.g., method
29 number [ASTM]) or provide a copy of manufacturer's recommended calibration
30 procedures;
- 31 E. Calibration/functionality test, inspection, and routine maintenance schedules and
32 checklists, including justification for calibration, inspection and maintenance
33 frequencies, criteria for identifying instruments found to be significantly out of
34 calibration, and corrective action to be taken for instruments found to be significantly
35 out of calibration (e.g., increasing frequency of calibration, instrument replacement,
36 etc.);
- 37 F. Equipment instrument control logic narrative description (e.g., software functional
38 specifications, descriptions of fail safe conditions, etc.), as identified in Permit Tables
39 III.10.E.E through H not addressed in Permit Condition III.10.E.9.d.
- 40 III.10.E.9.e.xii. Permit Tables III.10.E.A through D amended as follows:
- 41 A. Under column 1, update and complete list of dangerous and/or mixed waste tank
42 systems, including plant items that comprise each system (listed by item number);
- 43 B. Under column 2, update and complete system designations;

- 1 C. Under column 3, replace the 'reserved' with the Operating Unit 10, Appendices 8.0,
- 2 9.0, 10.0, and 11.0, subsections specific to tank systems as listed in column 1;
- 3 D. Under column 4, update and complete list of narrative description tables and figures;
- 4 E. Under column 5, update and complete maximum capacity, for each tank.

5 III.10.E.9.e.xiii. Permit Tables III.10.E.I, K, M, and O amended as follows:

- 6 A. Under column 1, replace the 'reserved' with the updated and complete list of sump
- 7 numbers and room location;
- 8 B. Under column 2, replace the 'reserved' with the updated and complete maximum
- 9 sump capacities in gallons;
- 10 C. Under column 3, replace the 'reserved' with the updated and complete sump
- 11 dimensions and materials of construction;
- 12 D. Under column 4, replace the 'reserved' with the updated and complete list of
- 13 engineering descriptions (drawing numbers, specifications, etc.);

14

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

1

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><u>Waste Feed Receipt Process System</u></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><u>24590-PTF</u></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><u>24590-WTP</u></p> <p>-3PS-G000-TP002</p> <p>-3PS-MV00-TP001</p> <p>-3PS-MV00-TP002</p> <p>-3PS-MV00-TP003</p>	<p>Section 4.1.2.1; 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>	<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>
<u>Waste Feed Evaporation Process</u>	FEP	<u>24590-PTF</u>	Section 4.1.2.2; Tables 4-2 and 4-6; and	FEP-VSL-00005 = 5,022

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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><u>System</u></p> <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>-3PS-MEVV-TP001 -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><u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003</p>	<p>Figures 4A-1, 4A-2, and 4A-02A of 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><u>Ultrafiltration Process System</u></p> <p>UFP-VSL-00001A (Ultrafiltration Feed Preparation Vessel)</p> <p>UFP-VSL-00001B (Ultrafiltration Feed Preparation Vessel)</p>	<p>UFP</p>	<p><u>24590-PTF</u> -M5-V17T-P0009 -M5-V17T-P0010 -M5-V17T-P0011 -M6-UFP-P0001 -M6-UFP-P0002 -M6-UFP-P0003</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>

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)
UFP-VSL-00002A (Ultrafiltration Feed Vessel)		-M6-UFP-P0004		UFP-VSL-00062A = 34,700
UFP-VSL-00002B (Ultrafiltration Feed Vessel)		-M6-UFP-P0005		UFP-VSL-00062B = 34,700
UFP-VSL-00062A (Ultrafilter Permeate Collection Vessel)		-M6-UFP-P0006		UFP-VSL-00062C = 34,700
UFP-VSL-00062B (Ultrafilter Permeate Collection Vessel)		-M6-UFP-P0007		UFP-FILT-00001A= 140
UFP-VSL-00062C (Ultrafilter Permeate Collection Vessel)		-M6-UFP-P0008		UFP- FILT-00001B= 140
UFP-FILT-00001A (Ultrafilter)		-M6-UFP-P0009		UPF-FILT-00002A= 140
UFP-FILT-00001B (Ultrafilter)		-M6-UFP-P0010		UPF-FILT-00002B= 140
UFP-FILT-00002A (Ultrafilter)		-M6-UFP-P0011		UPF-FILT-00003A= 140
UFP-FILT-00002B (Ultrafilter)		-M6-UFP-P0013		UPF-FILT-00003B= 140
UFP-FILT-00003A (Ultrafilter)		-M6-UFP-P0015		
UFP-FILT-00003B (Ultrafilter)		-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		

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-P0003 -N1D-UFP-P0004 -N1D-UFP-P0005 -N1D-UFP-P0008 -N1D-UFP-P0009 -P1-P01T-P0001 <u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP002 -3PS-MV00-TP003 -3PS-MV00-TP001		
<u>HLW Lag Storage and Feed Blending Process System</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>24590-PTF-</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	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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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-HLP-P0006 -N1D-HLP-P0001 -N1D-HLP-P0003 -N1D-HLP-P0007 -N1D-HLP-P0010 -P1-P01T-P0001 <u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP003 -3PS-MV00-TP003		
<u>Cesium Ion Exchange Process System</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	<u>24590-PTF</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	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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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>CXP-VSL-00026C (Cesium Ion Exchange Treated LAW Collection Vessel)</p> <p>CXP-IXC-00001 (Cesium Ion Exchange Column)</p> <p>CXP-IXC-00002 (Cesium Ion Exchange Column)</p> <p>CXP-IXC-00003 (Cesium Ion Exchange Column)</p> <p>CXP-IXC-00004 (Cesium Ion Exchange Column)</p>		<p>-MV-CXP-P0010 -MVD-CXP-P0007 -MVD-CXP-P0015 -MVD-CXP-P0016 -MVD-CXP-P0021 -MVD-CXP-P0022 -MVD-CXP-P0023 -N1D-CXP-P0001 -N1D-CXP-P0003 -N1D-CXP-P0007 -N1D-CXP-P0008 -P1-P01T-P0001 -P1-P01T-P0002</p> <p>24590-WTP -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003</p>		<p>CXP-IXC-00004 = 680</p>
<p><u>Cesium Nitric Acid Recovery Process System</u></p> <p>CNP-VSL-00001 (Cesium Evaporator Eluate Lute Pot)</p> <p>CNP-VSL-00003 (Eluate Contingency Storage Vessel)</p> <p>CNP-VSL-00004 (Cesium Evaporator Recovered Nitric Acid Vessel)</p>	<p>CNP</p>	<p>24590-PTF -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</p>	<p>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.</p>	<p>CNP-VSL-00001 = 109</p> <p>CNP-VSL-00003 = 21,570</p> <p>CNP-VSL-00004 = 11,115</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)
		-MVD-CNP-P0007 -MVD-CNP-P0010 -N1D-CNP-P0006 -N1D-CNP-P0009 -N1D-CNP-P0011 -P1-P01T-P0001		

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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><u>Treated LAW Concentrate Storage Process System</u></p> <p>TCP-VSL-00001 (Treated LAW Concentrate Storage Vessel)</p>	TCP	<p><u>24590-PTF</u> -M5-V17T-P0006 -M6-TCP-P0001 -M6-TCP-P0002 -MV-TCP-P0002 -MVD-TCP-P0002 -N1D-TCP-P0001 -P1-P01T-P0001</p> <p><u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003</p>	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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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><u>Treated LAW Evaporation Process System</u></p> <p>TLP-VSL-00002 (Treated LAW Evaporator Condensate Vessel)</p> <p>TLP-VSL-00009A (LAW SBS Condensate Receipt Vessel)</p> <p>TLP-VSL-00009B (LAW SBS Condensate Receipt Vessel)</p>	TLP	<p><u>24590-PTF</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 -N1D-TLP-P0006 -P1-P01T-P0001 -P1-P01T-P0002</p> <p><u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003</p>	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.	<p>TLP-VSL-00002 = 2300</p> <p>TLP-VSL-00009A = 130,010</p> <p>TLP-VSL-00009B = 130,010</p>
<p><u>Spent Resin and Dewatering Process System</u></p> <p>RDP-VSL-00002A (Spent Resin Slurry Vessels)</p> <p>RDP-VSL-00002B (Spent Resin Slurry Vessels)</p>	RDP	<p><u>24590-PTF</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</p>	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.	<p>RDP-VSL-00002A = 15,230</p> <p>RDP-VSL-00002B = 15,230</p> <p>RDP-VSL-00002C = 15,230</p> <p>RDP-VSL-00004 = 101</p>

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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)
RDP-VSL-00002C (Spent Resin Slurry Vessels) RDP-VSL-00004 (Spent Resin Dewatering Moisture Separation Vessel)		-MVD-RDP-P0008 -MV-RDP-P0001 -MV-RDP-P0002 -MV-RDP-P0003 -P1-P01T-P0001 24590-WTP -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<u>Pretreatment Plant Radioactive Liquid Waste Disposal System</u> RLD-TK-00006A (Process Condensate Tank) RLD-TK-00006B (Process Condensate Tank) RLD-VSL-00017A (Alkaline Effluent Vessel) RLD-VSL-00017B (Alkaline Effluent Vessel)	RLD	24590-PTF -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 24590-WTP -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002	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.	RLD-TK-00006A = 394,000 RLD-TK-00006B = 394,000 RLD-VSL-00017A = 34,340 RLD-VSL-00017B = 34,340

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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)
		-3PS-MV00-TP003		
<p><u>Pretreatment Plant Wash and Disposal System</u></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> <p>PWD-VSL-00043 (HLW Effluent Transfer Vessel)</p> <p>PWD-VSL-00044 (Plant Wash Vessel)</p> <p>PWD-VSL-00046 (C3 Floor Drain Collection Vessel)</p>	PWD	<p><u>24590-PTF</u></p> <p>-M5-V17T-P0022001</p> <p>-M5-V17T-P0022002</p> <p>-M6-PWD-P0001</p> <p>-M6-PWD-P0002</p> <p>-M6-PWD-P0003</p> <p>-M6-PWD-P0005</p> <p>-M6-PWD-P0006</p> <p>-M6-PWD-P0007</p> <p>-M6-PWD-P0008</p> <p>-M6-PWD-P0009</p> <p>-M6-PWD-P0010</p> <p>-M6-PWD-P0011</p> <p>-M6-PWD-P0012</p> <p>-M6-PWD-P0014</p> <p>-M6-PWD-P0018</p> <p>-M6-PWD-P0019</p> <p>-M6-PWD-P0020</p> <p>-M6-PWD-P0021</p> <p>-M6-PWD-P0023</p> <p>-M6-PWD-P0024</p> <p>-M6-PWD-P0025</p> <p>-M6-PWD-P0026</p> <p>-M6-PWD-P0029</p> <p>-M6-PWD-P0033</p> <p>-M6-PWD-P0041</p> <p>-M6-PWD-P0043</p> <p>-M6-PWD-P0044</p> <p>-M6-PWD-P0046</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>

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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)
		-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 -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		
<u>Pretreatment Vessel Vent Process System</u> PVP-VSL-00001 (Vessel Ventilation HEME Drain Collection Vessel)	PVP	<u>24590-PTF</u> -M5-V17T-P0021001 -M5-V17T-P0021004 -M6-PVP-P0002 -M6-PVP-P0004	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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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)
		-M6-PVP-P0009 -M6-PVP-P0017 -M6-PVP-P0018 -MVD-PVP-P0001 -MV-PVP-P0002 -N1D-PVP-P0002 -P1-P01T-P0001 <u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<u>Pulse-Jet Ventilation System</u> PJV-VSL-00002 (PJV Drain Collection Vessel)	PJV	<u>24590-PTF</u> -M5-V17T-P0021002 -M6-PJV-P0002 -M6-PJV-P0001 -M6-PJV-P0004 -MVD-PJV-P0003 -MV-PJV-P0001 -N1D-PJV-P0001 -P1-P01T-P0001 <u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	Section 4.1.2.17; 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.	PJV-VSL-00002 = 8,975
<u>Pretreatment In-Cell Handling System</u>	PIH	<u>24590-PTF</u>	Section 4.1.2.14; Tables 4-2 and 4-6;	PIH-TK-00001 = RESERVED

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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)
PIH-TK-00001 (Decontamination Soak Tank)		-M6-PIH-P0001 -P1-P01T-P0001	and Figures 4A-1, 4A-2, and 4A-02A of Operating Unit 10, Chapter 4.0 of this Permit.	

1

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

1
2

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

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p><u>LAW Concentrate Receipt Process System</u></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><u>24590-LAW</u></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><u>LAW Melter Feed Process System</u></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><u>24590-LAW</u></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</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

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-P1-P01T-P0011 -N1D-LFP-P0004 -N1D-LFP-P0006		
<p><u>LAW Secondary Off-gas/Vessel Vent Process System</u></p> <p>LVP-TK-00001 (LAW Caustic Collection Tank)</p>	LVP	<p>24590-LAW -M5-V17T-P0011 -P1-P01T-P0004 -P1-P01T-P0009 -MT-LVP-P0004 -MTD-LVP-P0001 -N1D-LVP-P0002</p>	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
<p><u>LAW Primary Off-gas Process System</u></p> <p>LOP-VSL-00001 (LAW Melter 1 SBS Condensate Vessel)</p> <p>LOP-VSL-00002 (LAW Melter 2 SBS Condensate Vessel)</p>	LOP	<p>24590-LAW -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</p>	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.	<p>LOP-VSL-00001 = 9,056</p> <p>LOP-VSL-00002 = 9,056</p>
<p><u>LAW Vitrification Plant Radioactive Liquid Waste Disposal System</u></p>	RLD	<p>24590-LAW -M5-V17T-P0014 -M6-RLD-P0001</p>	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.	<p>RLD-VSL-00003 = 25,780</p> <p>RLD-VSL-00004 = 7696</p>

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
RLD-VSL-00003 (Plant Wash Vessel) RLD-VSL-00004 (C3/C5 Drains/Sump Collection Vessel) RLD-VSL-00005 (SBS Condensate Collection Vessel)		-M6-RLD-P0002 -M6-RLD-P0003 -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		RLD-VSL-00005 = 25,780

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><u>HLW Concentrate Receipt Process System</u></p> <p>The HCP Tank System has ancillary equipment only.</p>	HCP	<p><u>24590-HLW</u> -M5-V17T-P0001 -M6-HCP-P0001 -M6-HCP-P0002</p>	<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>	
<p><u>HLW Melter Feed Process System</u></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><u>24590-HLW</u> -3YD-HFP-00001^a -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</p>	<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>	<p>HFP-VSL-00001 = 8,370 HFP-VSL-00002 = 8,370 HFP-VSL-00005 = 8370 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-P0010 -MV-HFP-P0011 -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>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<u>Melter Off-gas Treatment Process System</u> HOP-VSL-00903 (Melter 1 SBS Condensate Receiver Vessel) HOP-VSL-00904 (Melter 2 SBS Condensate Receiver Vessel)	HOP	<u>24590-HLW</u> -3YD-HOP-00001 ^a -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	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)
		-N1D-HOP-P0009 -P1-P01T-P0001 <u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<u>HLW Canister Decontamination Handling System</u> HDH-VSL-00001 (Rinse Tunnel Canister Rinse Vessel) HDH-VSL-00002 (Canister Decon Vessel 1) HDH-VSL-00003 (Waste Neutralization Vessel) HDH-VSL-00004 (Canister Decon Vessel 2)	HDH	<u>24590-HLW</u> -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 ^a	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.	HDH-VSL-00001= 3314 HDH-VSL-00002 =630 HDH-VSL-00003 = 5315 HDH-VSL-00004 = 630

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)
		<u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<u>HLW Melter Cave Support Handling System</u> HSH-TK-00001 (Decontamination Tank Melter Cave 1) HSH-TK-00002 (Decontamination Tank Melter Cave 2)	HSH	<u>24590-HLW</u> -M0-HSH-P0072 -M0-HSH-P0075 -M6-RLD-P0003 -N1D-HSH-P0001 -P1-P01T-P0002	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.	HSH-TK-00001 = 3,718 HSH-TK-00002 = 3,718
<u>HLW Vitrification Plant Radioactive Liquid Waste Disposal System</u> RLD-VSL-00002 (Off-gas Drains Collection Vessel) RLD-VSL-00007 (Acidic Waste Vessel) RLD-VSL-00008 (Plant Wash & Drain Vessel)	RLD	<u>24590-HLW</u> -3YD-RLD-00001 ^a -M5-V17T-P0007001 -M5-V17T-P0007002 -M6-RLD-P0001 -M6-RLD-P0002 -M6-RLD-P0006 -M6-RLD-P0007 -M6-RLD-P0014 -MV-RLD-P0002 -MV-RLD-P0003 -MVD-RLD-P0005	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.	RLD-VSL-00002 = 366 RLD-VSL-00007 = 18,145 RLD-VSL-00008 = 13,774

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)
		-MVD-RLD-P0007 -MVD-RLD-P0008 -N1D-RLD-P0001 -N1D-RLD-P0006 -N1D-RLD-P0013 -P1-P01T-P0001 -P1-P01T-P0002 <u>24590-WTP</u> -3PS-G000-TP002 -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
<p>Footnotes: *System Descriptions are maintained in the Administrative Record, and are listed here for information only.</p>				

1
 2
 3

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><u>Radioactive Liquid Waste Disposal System</u></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><u>24590-LAB</u></p> <p>-3YD-RLD-00001^a</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><u>24590-WTP</u></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>

Footnotes:

^aSystem Descriptions are maintained in the Administrative Record, and are listed here for information only.

1

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-00071 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00040 ^a	Not Applicable	Bubbler Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00001A ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00002 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00002A ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00003 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00004 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00005 ^a	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-00006 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00007 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00008 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00009 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00010 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00011 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00012 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00013 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00026 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-	Not	Radar Leak	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
00028 ^a	Applicable	Detector							
PWD-SUMP-00029 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00031 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00032 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00033 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00036 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00003 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

^aLocator (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.

1
2

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
RLD-SUMP-00028 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00029 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00030 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00031 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00032 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00035 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00036 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
LVP-FD-00001 ^a	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
---	-------------------	--	--	------------------	----------------	-------------	---------------------	--	---

Footnotes:
^aLocator (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.

1

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
HCP-SUMP-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HOP-SUMP-00003 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HOP-SUMP-00008 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00001 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00002 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00003 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-00001 ^a	Not Applicable	None	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-00002 ^a	Not Applicable	Radar Leak Detector	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
HFP-SUMP-00005 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-00004 ^a	Not Applicable	None	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00003 ^a	Not Applicable	Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00007 ^a	Not Applicable	Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00008 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00009 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

^aLocator (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

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
RLD-SUMP-00041 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00042 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00043A ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00043B ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00044 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00045 ^a	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00002 ^a	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00004 ^a	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00005 ^a	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00006 ^a	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00007 ^a	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00008 ^a	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00009 ^a	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

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
RLD-LDB-00011 ^a	Not Applicable	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:
^aLocator (including P&ID designator) is located on Permit Table III.10.E P - Laboratory Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

1

Table III.10.E.I – Pretreatment Plant Tank Systems Primary^a Containment Sump Systems

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

Footnotes:
^a 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.
^b Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

2
3
4

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 ^a (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	24590-PTF -M6-PWD-P0041 -P1-P01T-P0006
PWD-SUMP-00040 P-B002 (Pit-45, El. -45')	233.7	Dry Sump	60"x30"x30" 6Mo	24590-PTF -M6-PWD-P0012 -P1-P01T-P0006
PWD-SUMP-00001 P-0108B (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	24590-PTF -M6-PWD-P0008 -P1-P01T-P0001

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-SUMP-00001A P-0108C (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -M6-PWD-P0010 -P1-P01T-P0001
PWD-SUMP-00002 P-0108A (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00002A P-0108 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -M6-PWD-P0010 -P1-P01T-P0001
PWD-SUMP-00003 P-0106 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00004 P-0104 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00005 P-0102A (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -M6-PWD-P0008 -P1-P01T-P0001
PWD-SUMP-00006 P-0102 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -M6-PWD-P0008

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
				-P1-P01T-P0001
PWD-SUMP-00007 P-0109 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -M6-PWD-P0009 -P1-P01T-P0001
PWD-SUMP-00008 P-0111 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</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>24590-PTF</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>24590-PTF</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>24590-PTF</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>24590-PTF</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>24590-PTF</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

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-SUMP-00026 P-0123 (Hot Cell, El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 316L	<u>24590-PTF</u> -M6-PWD-P0014 -P1-P01T-P0001
PWD-SUMP-00028 P-0123 (Hot Cell, El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 316L	<u>24590-PTF</u> -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	<u>24590-PTF</u> -M6-PWD-P0014 -P1-P01T-P0001
PWD-SUMP-00031 P-0119 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -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	<u>24590-PTF</u> -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	<u>24590-PTF</u> -M6-PWD-P0010 -P1-P01T-P0001
PWD-SUMP-00036 P-0118 (El. 0')	73.5	Dry Sump	30" Dia. By ~28" deep 304L	<u>24590-PTF</u> -M6-PWD-P0012

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
				-P1-P01T-P0001
PJV-ZF-00027-S11B-02 P-0101 (PJV-BULGE-00001 Drain, El. 0')	60	N/A	2" Dia. 316L	<u>24590-PTF</u> -M6-PJV-P0002
PWD-ZF-00004-S11B-02 P-0105 (PVP-BULGE-00001 Drain, El. 0')	60	N/A	2" Dia. 316L	<u>24590-PTF</u> -M6-PVP-P0003
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

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^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
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
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

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
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
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

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" (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
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
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

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-FD-00442 P-0212 Drain, El. 28'	52	N/A	3" Dia. 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00404 P-0212 Drain, El. 28'	155	N/A	6" Dia. 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00404A P-0212 Drain, El. 28'	155	N/A	6" Dia. 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00446 P-0212 Drain, El. 28'	706	N/A	8" Dia. 316L	24590-PTF -M6-PWD-P0043
PVP-ZY-00036-S11B-03 from PVP-BULGE-00002 (Vessel Vent HEME Drain Vessel Pump Bulge)	RESERVED	N/A	RESERVED	24590-PTF -M6-PVP-P00018
PWD-FD-00002 P-0335 Drain, El. 56'	255 (Note 1)	N/A	4" Dia 316L	24590-PTF -M6-PWD-P0011
PWD-FD-00003 P-0335 Drain, El. 56'	255 (Note 1)	N/A	4" Dia 316L	24590-PTF -M6-PWD-P0011
PWD-FD-00313 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0044
PWD-FD-00314 P-0303B Drain, El. 56'	655	N/A	8" Dia 316L	24590-PTF -M6-PWD-P0044
PWD-FD-00315 P-0303B Drain, El. 56'	655	N/A	8" Dia 316L	24590-PTF -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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-FD-00316 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-003117 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00318 P-0303B Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00319 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00322 P-0303B Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00323 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00324 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00325 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00326 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00327 P-0304 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00328 P-0303 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00329 P-0303 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00333 P-0324 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00334	140	N/A	6" Dia	<u>24590-PTF</u>

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
P-0302 Drain, El. 56'			316L	-M6-PWD-P0044
PWD-FD-00335 P-0302 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00384 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00385 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00386 P-0307 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00387 P-0307 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00388 P-0307 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00389 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00390 P-0317 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00391 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00392 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00393 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00394 P-0317 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00458 P-0324 Drain, El. 56'	140	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

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-FD-00459 P-0324 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00460 P-0324 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00461 P-0302 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00462 P-0302 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00463 P-0302 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00464 P-0301 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00465 P-0301 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00466 P-0301 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00469 P-0336 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00470 P-0336 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00471 P-0336 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00472 P-0336 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00503 P-0332B Drain, El. 56'	104	N/A	4" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0011
PWD-FD-00508	140	N/A	6" Dia	<u>24590-PTF</u>

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
P-0311 Drain, El. 56'			316L	-M6-PWD-P0043
PWD-FD-00509 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00510 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00511 P-0332B Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00512 P-0320 Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00513 P-0320 Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00514 P-0320 Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00515 P-0325 Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00516 P-0325 Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00517 P-0325 Drain, El. 56'	655	N/A	8" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00518 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00519 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00520 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	24590-PTF -M6-PWD-P0043
PWD-FD-00521 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	24590-PTF -M6-PWD-P0043

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-FD-00522 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00523 P-0311 Drain, El. 56'	655	N/A	8" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00524 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00527 P-0311 Drain, El. 56'	140	N/A	6" Dia 316L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00528 P-0311 Drain, El. 56'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00286 P-0407 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00287 P-0407 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00288 P-0407 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00289 P-0407 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00290 P-0407 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00291 P-0426 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00292 P-0426 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00293 P-0426 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00298	140	N/A	6" Dia	<u>24590-PTF</u>

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
P-0425 Drain, El. 77'			304L	-M6-PWD-P0044
PWD-FD-00309 P-0402 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00310 P-0402 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00311 P-0402 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00312 P-0402 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00376 P-0415 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00377 P-0415 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00378 P-0415 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00379 P-0415 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00380 P-0415A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00381 P-0415A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00382 P-0415A Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00383 P-0415A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00557 P-0430 Drain, El. 77'	140	N/A	6" Dia 304L	<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

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-FD-00559 P-0430 Drain, El. 77'	665	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00561 P-0430 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00563 P-0411 Drain, El. 77'	665	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
PWD-FD-00564 P-0411 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0043
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	140	N/A	6" Dia	<u>24590-PTF</u>

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
P-0422A Drain, El. 77'			304L	-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
PWD-FD-00591 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00592 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00593 P-0423 Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00594 P-0423 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00595 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00596 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00597 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00598 P-0431A 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

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-FD-00599 P-0431A Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00600 P-0431A Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00604 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00605 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00606 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00607 P-0431A Drain, El. 77'	140	N/A	6" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
PWD-FD-00629 P-0425 Drain, El. 77'	655	N/A	8" Dia 304L	<u>24590-PTF</u> -M6-PWD-P0044
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

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
---	--	--	--	---

Footnotes:

^aDimensions 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.

1
 2
 3
 4

1
2

Table III.10.E.K - LAW Vitrification Plant Tank Systems Primary^a Containment Sump Systems

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

3
4
5
6
7

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 ^a (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

**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^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RLD-SUMP-00030 L-0123 (Process Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	24590-LAW -M6-RLD-P0003 -LAW-P1-P01T-P0002 -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	24590-LAW -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	24590-LAW -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	24590-LAW -M6-RLD-P0003
RLD-SUMP-00034 L-0125 (Process Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	24590-LAW -M6-RLD-P0003
RLD-SUMP-00035 L-0126 (Effluent Cell, El. +3')	46	Dry Sump	30" Dia. By 15" deep 304L or higher grade	24590-LAW -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	24590-LAW -M6-RLD-P0003 -P1-P01T-P0002 -LAW -P1-P01T-P0010

**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 ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
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
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

**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* (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
Drain Line ID# = RESERVED L-0124 [Primary Offgas (LOP) Melter 2 Valve Bulge Drain, El. +3']	60	N/A	2" Dia. 6 Mo	24590-LAW -M6-LOP-P0002
Drain Line ID# = RESERVED L-0124 (LCP-BULGE-00003 Drain, El. +3')	60	N/A	2" Dia. 316L	24590-LAW -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	24590-LAW -M6-LFP-P0003
RLD-WS-20033-S11B-01 L-0124 (Melter 2 Encasement Assembly Drain, El. +3')	RESERVED	RESERVED	RESERVED	24590-LAW -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	24590-LAW -M6-RLD-P0001
LVP-FD-00001 L-0218 (Berm floor drain for LVP-TK-00001, El. 28')	RESERVED	N/A	RESERVED	24590-LAW -M6-LVP-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 ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD). ^b ^a This sump is routinely accessible for inspections and maintenance.				

1
2
3

1
2

Table III.10.E.M - HLW Vitrification Plant Tank Systems Primary^a Containment Sump Systems

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

3
4
5
6

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 ^a (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	70	Dry Sump	30" Dia. X 18" Deep 6Mo	<u>24590-HLW</u> -M6-RLD-P20004

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
Collection Cell No. 2, El. -21				-P1-P01T-P0001
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

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
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
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>24590-HLW</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>24590-HLW</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>24590-HLW</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>24590-HLW</u> -M6-RLD-P20004
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).				

1
2
3

1
2

Table III.10.E.O – Laboratory Tank Systems Primary^a Containment Sump Systems

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

3
4
5
6
7

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 ^a (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	24590-LAB -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	24590-LAB -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	24590-LAB -M6-RLD-P0002 -P1-60-P0007 -PER-M-02-002

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
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	24590-LAB -M6-RLD-P0001 -P1-60-P0007 -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	24590-LAB -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	24590-LAB -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	24590-LAB -M6-RLD-P0002
RLD-ZN-02203-S11E-04 A-B004, (C5 Effluent Vessel Cell)	86	N/A	4" Dia 316L	24590-LAB -M6-RLD-P0001
RLD-ZN-03393-S11E-04 A-B004, (C5 Effluent Vessel Cell)	86	N/A	4" Dia 316L	24590-LAB -M6-RLD-P0001
RLD-ZN-03394-S11E-04 A-B004, (C5 Effluent Vessel Cell)	86	N/A	4" Dia 316L	24590-LAB -M6-RLD-P0001
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a 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

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

- 1 III.10.F.3.c. The Permittees will inspect the containment building units per requirements in the
2 Operating Unit 10, Chapter 6.0 of this permit, as approved pursuant to Permit Condition
3 III.10.C.5., 40 CFR 264.1101©(4), in accordance with WAC 173-303-695 and WAC 173-
4 303-320 and record in the Facility's operating record, at least once every seven (7) days,
5 data gathered from monitoring equipment and leak detection equipment as well as the
6 containment building unit and area immediately surrounding the containment building
7 unit to detect signs of releases of dangerous and mixed waste.
- 8 III.10.F.3.d. Throughout the active life of the containment building unit, if the Permittees detects a
9 condition that could lead to or has caused a release of dangerous and/or mixed waste, the
10 Permittees must repair the condition promptly, in accordance with the following
11 procedures:
- 12 III.10.F.3.d.i. Upon detection of a condition that has lead to the release of dangerous and/or mixed
13 waste (e.g., upon detection of leakage from the primary barrier) the Permittees must:
- 14 A. Enter a record of the discovery in the facility operating record;
- 15 B. Immediately remove the portion of the containment building unit affected by the
16 condition from service;
- 17 C. Determine what steps must be taken to repair the containment building unit, remove
18 any leakage from the secondary collection system, and establish a schedule for
19 accomplishing the cleanup and repairs; and
- 20 D. Within seven (7) days after the discovery of the condition, notify Ecology of the
21 condition, and within fourteen (14) working days, provide a written notice to Ecology
22 with a description of the steps taken to repair the containment building unit, and the
23 schedule for accomplishing the work.
- 24 III.10.F.3.d.i.ii. Ecology will review the information submitted, make a determination regarding whether
25 the containment building unit must be removed from service completely or partially until
26 repairs and cleanup are complete, and notify the Permittees of the determination and
27 underlying rationale in writing.
- 28 III.10.F.3.d.i.iii. Upon completing all repairs and cleanup the Permittees must notify Ecology in writing
29 and provide verification, signed by a qualified, registered, professional engineer, that
30 repairs have been completed according to the written notice submitted in accordance with
31 Permit Condition III.10.F.3.d.i.D.
- 32 III.10.F.4 Inspections [WAC 173-303-640(6)]
- 33 III.10.F.4.a. The Permittees will inspect the containment building units in accordance with the
34 Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified
35 pursuant to Permit Condition III.10.C.5.c.
- 36 III.10.E.4.b. The inspection data for the containment building units will be recorded, and the records
37 will be placed in the WTP Unit operating record, in accordance with Permit Condition
38 III.10.C.4.
- 39 III.10.F.5 Recordkeeping (WAC 173-303-380)
- 40 For the containment building units, the Permittees will record and maintain in the WTP
41 Unit operating record, all monitoring, calibration, recording, maintenance, test data, and
42 inspection data compiled under the conditions of this Permit, in accordance with Permit
43 Conditions III.10.C.4. and III.10.C.5.

- 1 III.10.F.6. Closure
- 2 The Permittees will close the containment building units in accordance with Operating
- 3 Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.
- 4 III.10.F.7. Compliance Schedule
- 5 III.10.F.7.a. All information identified for submittal to Ecology in Permit Conditions III.10.F.7.b.
- 6 through e. of this compliance schedule must be signed in accordance with requirements in
- 7 WAC 173-303-810(12), as modified in accordance with Permit Condition III.10.F.1.d.
- 8 [WAC 173-303-806(4)].
- 9 III.10.F.7.b. Prior to initial receipt of dangerous and/or mixed waste, the Permittees will submit to
- 10 Ecology a certification by a qualified, registered, professional engineer that the
- 11 containment building units design meets the requirements of Permit Conditions
- 12 III.10.F.1. and III.10.F.2. in accordance with Permit Condition III.10.F.7.a. The
- 13 certification will also be stored in the WTP Unit operating record. For containment
- 14 buildings units in Permit Table III.10.F.A., as modified pursuant to Permit Condition
- 15 III.10.F.7.d.iv., identified as allowed to manage free liquids, the certification will include
- 16 an additional demonstration that the containment building meets the requirements
- 17 specified in 40 CFR 264.1101(b), in accordance with WAC 173-303-695.
- 18 III.10.F.7.c. The Permittees submit to Ecology pursuant to Permit Condition III.10.C.9.f., prior to
- 19 construction of the containment building unit containment system, and as appropriate,
- 20 leak detection system for each containment building unit (per level, per WTP Unit
- 21 building) as identified in Permit Condition III.10.F.1., Permit Tables III.10.F.A.,
- 22 engineering information as specified below, for incorporation, as appropriate, into
- 23 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
- 24 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this Permit.
- 25 At a minimum, engineering information specified below will show the following as
- 26 required in accordance with WAC 173-303-695 (the information specified below will
- 27 include dimensioned engineering drawings showing floors, walls, and ceilings/roof of the
- 28 containment building units and other information on floor drains and sumps):
- 29 III.10.F.7.c.i. Design drawings (General Arrangement Drawings in plan and cross sections) and
- 30 specifications for the foundation, containment, including liner/coating installation details
- 31 and leak detection methodology, as appropriate [40 CFR 264.1101(a)(1) and (b), in
- 32 accordance with WAC 173-303-695].
- 33 III.10.F.7.c.ii. The Permittees provide the design criteria (references to codes and standards, load
- 34 definitions and load combinations, materials of construction, and analysis/design
- 35 methodology) and typical design details for the support of the containment system. This
- 36 information demonstrate the foundation will be capable of providing support to the
- 37 secondary containment system, resistance to pressure gradients above and below the
- 38 system, and capable of preventing failure due to settlement, compression, or uplift [40
- 39 CFR 264.1101(a)(2) in accordance with WAC 173-303-695, in accordance with WAC
- 40 173-303-695].
- 41 III.10.F.7.c.iii. The Permittees provide documentation addressing how coatings will withstand the
- 42 movement of personnel, waste, and equipment during the operating life of the
- 43 containment building per 40 CFR 264.1101(a)(2), (a)(4), and (b) in accordance with
- 44 WAC 173-303-695.

- 1 III.10.F.7.c.iv. Containment/foundation and, as appropriate, for leak detection systems, materials
2 selection documentation (including, but not limited to, concrete coatings and water stops,
3 and liner materials as applicable [e.g. physical and chemical tolerances]) [40 CFR
4 264.1101(a)(4) and (b) in accordance with WAC 173-303-695].
- 5 III.10.F.7.c.v. A detailed description of how the containment/foundation and, as appropriate, leak
6 detection systems, will be installed.
- 7 III.10.F.7.c.vi. Submit Permit Tables III.10.F.B and III.10.F.C, completed to provide for all secondary
8 containment sumps and floor drains, the information as specified in each column heading,
9 consistent with the information to be provided in i. through viii.
- 10 III.10.F.7.c.vii. A detailed description of how fugitive emissions will be controlled such that any
11 openings (e.g., doors, windows, vents, cracks, etc.) exhibit no visible emissions [40 CFR
12 264.1101©(1)(iv) in accordance with WAC 173-303-695].
- 13 III.10.F.7.c.viii. Prior to installation, the Permittees will submit coating vendor information specific to
14 containment buildings for incorporation into the Administrative Record [40 CFR
15 264.1101(a)(4) and (b) in accordance with WAC 173-303-695].
- 16 III.10.F.7.c.ix. Prior to installation, leak detection system documentation (e.g. vendor information, etc.)
17 consistent with information submitted under i. above, will be submitted for incorporation
18 into the Administrative Record; III.10.F.7.c.x. Prior to installation, the Permittees will
19 submit leak detection system instrumentation control logic narrative description (e.g.,
20 software functional specifications, descriptions of fail-safe conditions, etc.);^a
- 21 III.10.F.7.c.xi. Prior to installation, system descriptions related to leak detection systems (including
22 instrument control logic and narrative descriptions) will be submitted for incorporation
23 into the Administrative Record;^a
- 24 III.10.F.7.c.xii. For leak detection system instrumentation for containment buildings as identified in Permit
25 Tables III.10.F.D., a detailed description of how the leak detection system
26 instrumentation will be installed and tested [40 CFR 264.1101(b)(3) in accordance with
27 WAC 173-303-695] will be submitted prior to installation.^a
- 28 Information pertaining to leak detection systems in Permit Conditions III.10.F.7.c.ix.
29 through xii. Will be submitted pursuant to Permit Conditions III.10.E.9.d.vii., viii., x.,
30 and xiii.
- 31 III.10.F.7.d. Prior to initial receipt of dangerous and mixed waste, in the WTP Unit, the Permittees
32 will submit the following, as specified below, for incorporation into Operating Unit 10.
33 The information specified below into Operating Unit 10, and incorporated pursuant to
34 Permit Condition III.10.C.2.g. will be followed:
- 35 III.10.F.7.d.i. Registered Professional Engineer certification documentation consistent with the
36 information provided in III.10.F.7.b. and III.10.F.7.c. for incorporation in the
37 Administrative Record. The certification must be maintained in the WTP Unit Operating
38 Record [40 CFR 264.1101©(2)];
- 39 III.10.F.7.d.ii. Updated Chapter 4.0, Section 4.2.1., and the figures for containment building units
40 identified in Permit Table III.10.F.A. (as modified pursuant to Permit Condition
41 III.10.F.7.d.iv., consistent with Operating Unit 10, Appendices 8.1, 8.2, 8.4 through 8.10,
42 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,
43 and 10.18, as approved pursuant Permit Conditions III.10.F.7.a. through d.);

- 1 III.10.F.7.d.iii. Description of operating procedures demonstrating compliance with 40 CFR 264.1101©
2 and (d) in accordance with WAC 173-303-695;
- 3 III.10.F.7.d.iv. Permit Table III.10.F.A., amended as follows:
- 4 A. Under column 1, update and complete list of dangerous and mixed waste containment
5 building units including room location and number.
- 6 B. Under column 2, update unit dimensions.
- 7 C. Under column 3, replace the 'Reserved' with the Operating Unit 10, Appendices 8.0,
8 9.0, and 10.0, subsections specific to containment building units as listed in column
9 1.
- 10 D. Under column 4, update and complete list of narrative description, tables, and
11 figures.
- 12 E. Under column 5, replace the 'Reserved' to indicate if container storage is used in
13 each containment building units (Yes or No) consistent with Permit Table III.10.D.A.
14 updated pursuant to Permit Condition III.10.D.10.d.
- 15 F. Under column 6, replace the 'Reserved' to indicate if tank storage is used in each
16 containment building units (Yes or No) consistent with Permit Tables III. 10.E.A-D.,
17 updated pursuant to Permit Condition III.10.E.9.e.vi.
- 18 G. Under column 7, replace the 'Reserved' with the maximum operating volume for
19 each containment building unit, to include the container storage capacity specified in
20 Permit Table III.10.D.A., tank capacity specified in Permit Tables III. 10.E.A-D. and
21 update the total capacity for the containment building units.
- 22 H. Under column 8, update the status of each containment building unit.
- 23 III.10.F.7.d.v. Permit Table III.10.F.D. will be completed for Containment Building leak detection
24 system instrumentation and parameters to provide the information as specified in each
25 column heading. Leak detection system monitors and instruments for critical systems as
26 specified in Operating Unit 10, Appendix 2.0 and as updated pursuant to Permit
27 Condition III.10.C.9.b. will be addressed.
- 28 III.10.F.7.e. All information provided under Permit Condition III.10.F.7.d. must be consistent with
29 information provided pursuant to Permit Conditions III.10.F.7.a. through d., as approved
30 by Ecology.

31

1
2

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

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
Pretreatment Plant							
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	RESERVED	RESERVED	RESERVED	RESERVED

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

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
			Operating Unit 10, Chapter 4.0 of this Permit.				
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
LAW Vitrification Plant							

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

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
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
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	21x15x24	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	18x15x24	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	55x15x24	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	21x15x24	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	18x15x24	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	55x15x24	RESERVED	Section 4.2.4; Table 4-7; and Fig. 4A-59 (Sheets 1-2) of Operating Unit 10, Chapter	RESERVED	RESERVED	RESERVED	RESERVED

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

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
			4.0 of this Permit.				
L-109E Container/Monitoring/Export Area	19x18x14	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 Container/Monitoring/Export Area	19x18x14	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-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	RESERVED	RESERVED	RESERVED	RESERVED

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

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
			Operating Unit 10, Chapter 4.0 of this Permit.				
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 Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	RESERVED
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
HLW Vitrification Plant							
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

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

Mixed Waste Containment Building Units ^a & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas ^b	Tank Systems ^c	Containment Building Capacity (cu ft)	Manage Free Liquids
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 Operating Unit 10, Chapter 4.0 of this Permit.	RESERVED	RESERVED	RESERVED	No
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	RESERVED	RESERVED	RESERVED	RESERVED

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

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

Footnotes:

^aContainment Building Units include associated process systems and equipment

^bRequirements pertaining to the containers in the Containment Building Units are specified in Section III.10.D. of this Permit.

^cRequirements pertaining to the tanks in the Containment Building Units are specified in Section III.10.E. of this Permit.

Table III.10.F.B – Containment Building Primary^a Containment Sump Systems

Sump I.D.# & Room Location	Maximum Capacity (gallons)	Dimensions ^a (feet) & Materials of Construction	Maximum Allowable Liquid Height (inches)	Secondary Containment Volume (gallons)	Unit Description Drawings [#]
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.	24590-PTF -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.	24590-PTF -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.	24590-HLW -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.	24590-HLW -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.	24590-HLW -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.	24590-HLW -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.	24590-HLW -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.	24590-HLW -M6-RLD-P0004 -P1-P01T-P0002

Table III.10.F.B – Containment Building Primary^a Containment Sump Systems

Sump I.D.# & Room Location	Maximum Capacity (gallons)	Dimensions ^a (feet) & Materials of Construction	Maximum Allowable Liquid Height (inches)	Secondary Containment Volume (gallons)	Unit Description Drawings [#]
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:
^a 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.
^b Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

1
2
3

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 ^a (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications No.'s, etc.)
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:
^a Dimensions listed are based on permitted design. Actual dimensions may vary within plus or minus (TBD).

4
5
6
7

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	RESERVE	RESERVED	RESERVED	RESERVED

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
				D			
Footnotes: ^a Locator (including P&ID designator) is located on Permit Table III.10.F.C – Containment Building Secondary Containment Systems Including Sumps and Floor Drains.							

1

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

2 For purposes of Permit Section III.10.G., where reference is made to WAC 173-303-640,
3 the following substitutions apply: substitute the terms "Pretreatment Plant Miscellaneous
4 Unit System(s)" for "tank system(s)," "miscellaneous unit(s)" for "tank(s)," "equipment"
5 for "ancillary equipment," and "miscellaneous unit(s) or equipment of a Pretreatment
6 Plant Miscellaneous Unit System" for "component(s)" in accordance with WAC 173-
7 303-680.

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

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

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

23 **III.10.G.1.c.** The Permittees will manage ignitable and reactive, and incompatible waste in accordance
24 with WAC 173-303-395(1). Any Pretreatment Plant Miscellaneous Unit System
25 specified in Permit Tables III.10.G.A and III.10.G.B in which ignitable, reactive or
26 incompatible waste are managed will meet the requirements specified in WAC 173-303-
27 640(9) and (10), in accordance to WAC 173-303-680.

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

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

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

- 1 III.10.G.1.e. In all future narrative permit submittals, the Permittees will include miscellaneous unit
2 system names with the unit designation (e.g., Waste Feed Evaporator Separator Vessels
3 are designated V11002A and V11002B, respectively).
- 4 III.10.G.2 Miscellaneous Unit Systems Design and Construction [WAC 173-303-640, in accordance
5 with WAC 173-303-680(2) and WAC 173-303-340].
- 6 III.10.G.2.a. The Permittees will construct the Pretreatment Plant Miscellaneous Unit Systems
7 identified in Permit Table III.10.G.A, as specified in Operating Unit 10, Appendices 8.1
8 through 8.14 of this Permit, as approved pursuant to Permit Conditions III.10.G.10.b.,
9 III.10.G.10.c., and III.10.G.10.d.
- 10 III.10.G.2.b. The Permittees will construct secondary containment systems for the Pretreatment Plant
11 Miscellaneous Unit Systems identified in Permit Tables III.10.G.A and III.10.G.B, as
12 specified in Operating Unit 10, Appendices 8.2, 8.4 through 8.14 of this Permit, as
13 approved pursuant to Permit Conditions III.10.G.10.b., III.10.G.10.c., and III.10.G.10.d.
- 14 III.10.G.2.c. Modifications to approved design, plans, and specifications in Operating Unit 10 of this
15 Permit for the Pretreatment Plant Miscellaneous Unit Systems will be allowed only in
16 accordance with Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g., III.10.C.9.d., e.,
17 and h.
- 18 III.10.G.3 Miscellaneous Unit System Installation and Certification [WAC 173-303-640, in
19 accordance with WAC 173-303-680(2) and (3), and WAC 173-303-340].
- 20 III.10.G.3.a. The Permittees must ensure that proper handling procedures are adhered to in order to
21 prevent damage to Pretreatment Plant Miscellaneous Unit Systems during installation.
22 Prior to covering, enclosing, or placing a new Pretreatment Plant Miscellaneous Unit
23 System(s) or component(s) in use, an independent, qualified, installation inspector or an
24 independent, qualified, registered professional engineer, either of whom is trained and
25 experienced in the proper installation of similar systems or components, must inspect the
26 system for the presence of any of the following items:
- 27 III.10.G.3.a.i. Weld breaks;
- 28 III.10.G.3.a.ii Punctures;
- 29 III.10.G.3.a.iii. Scrapes of protective coatings;
- 30 III.10.G.3.a.iv. Cracks;
- 31 III.10.G.3.a.v. Corrosion;
- 32 III.10.G.3.a.vi. Other structural damage or inadequate construction/installation;
- 33 III.10.G.3.a.vii. All discrepancies must be remedied before the Pretreatment Plant Miscellaneous Unit
34 Systems are covered, enclosed, or placed in use [WAC 173-303-640(3)(c) in accordance
35 with WAC 173-303-680(2) and (3)].
- 36 III.10.G.3.b. For Pretreatment Plant Miscellaneous Unit Systems or components that are placed
37 underground and that are back-filled, the Permittees must provide a backfill material that
38 is a non-corrosive, porous, homogeneous substance. The backfill must be installed so
39 that it is placed completely around the miscellaneous unit and compacted to ensure that
40 the miscellaneous unit and piping are fully and uniformly supported [WAC 173-303-
41 640(3)(d), in accordance with WAC 173-303-680(2) and (3)].

- 1 III.10.G.3.c. The Permittees must test for tightness all new Pretreatment Plant miscellaneous units and
2 equipment, prior to being covered, enclosed, or placed into use. If the Pretreatment Plant
3 Miscellaneous Unit Systems are found not to be tight, all repairs necessary to remedy the
4 leak(s) in the system must be performed prior to the Pretreatment Plant Miscellaneous
5 Units Systems being covered, enclosed, or placed in use [WAC 173-303-640(3)(e), in
6 accordance with WAC 173-303-680(2) and (3)].
- 7 III.10.G.3.d. The Permittees must ensure Pretreatment Plant Miscellaneous Unit Systems equipment is
8 supported and protected against physical damage and excessive stress due to settlement,
9 vibration, expansion, or contraction [WAC 173-303-640(3)(f), in accordance with WAC
10 173-303-680(2) and (3)].
- 11 III.10.G.3.e. The Permittees must provide the type and degree of corrosion protection recommended
12 by an independent corrosion expert, based on the information provided in Operating Unit
13 10, Appendices 8.9 and 8.11 as approved pursuant to Permit Conditions III.10.G.10.b.i.,
14 III.10.G.10.b.i.v., 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
15 III.10.G.10.d.i., III.10.G.10.d.iv., III.10.G.10.d.v., or other corrosion protection if Ecology
16 believes other corrosion protection is necessary to ensure the integrity of the Pretreatment
17 Plant Miscellaneous Unit Systems during use of the Pretreatment Plant Miscellaneous
18 Unit Systems. The installation of a corrosion protection system that is field fabricated
19 must be supervised by an independent corrosion expert to ensure proper installation
20 [WAC 173-303-640(3)(g), in accordance with WAC 173-303-680(2) and (3)].
- 21 III.10.G.3.f. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
22 will obtain, and keep on file in the WTP Unit operating record, written statements by
23 those persons required to certify the design of the Pretreatment Plant Miscellaneous Unit
24 Systems and supervise the installation of the Pretreatment Plant Miscellaneous Unit
25 Systems, as specified in WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), in accordance
26 with WAC 173-303-680, attesting that each Pretreatment Plant Miscellaneous Unit
27 System and corresponding containment system listed in Permit Tables III.10.G.A and
28 III.10.G.B, as approved/modified pursuant to Permit Condition III.10.G.10., were
29 properly designed and installed, and that repairs, in accordance with WAC 173-303-
30 640(3)(c) and (e), were performed [WAC 173-303-640(3)(a), WAC 173-303-640(3)(h),
31 in accordance with WAC 173-303-680(3)].
- 32 III.10.G.3.g. The independent Pretreatment Plant Miscellaneous Unit System installation inspection
33 and subsequent written statements will be certified in accordance with WAC 173-303-
34 810(13)(a) as modified pursuant to Permit Condition III.10.G.1.d., comply with all
35 requirements of WAC 173-303-640(3)(h), in accordance with WAC 173-303-680, and
36 will consider, but not be limited to, the following miscellaneous unit system installation
37 documentation:
- 38 III.10.G.3.g.i. Field installation report with date of installation;
- 39 III.10.G.3.g.ii. Approved welding procedures;
- 40 III.10.G.3.g.iii. Welder qualifications and certification;
- 41 III.10.G.3.g.iv. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical
42 Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1, American
43 Petroleum Institute (API) Standard 620, or Standard 650 as applicable;
- 44 III.10.G.3.g.v. Tester credentials;
- 45 III.10.G.3.g.vi. Field inspector credentials;

- 1 III.10.G.3.g.vii. Field inspector reports;
- 2 III.10.G.3.g.viii. Field waiver reports; and
- 3 III.10.G.3.g.ix. Non-compliance reports and corrective action (including field waiver reports) and repair
4 reports.
- 5 III.10.G.4 Integrity Assessments [WAC 173-303-340 and WAC 173-303-640, in accordance with
6 WAC 173-303-680(2) and (3)].
- 7 III.10.G.4.a. The Permittees will ensure periodic integrity assessments are conducted on the
8 Pretreatment Plant Miscellaneous Unit Systems listed in Permit Table III.10.G.A, as
9 approved/modified pursuant to Permit Condition III.10.G.10., over the term of this Permit
10 in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-
11 640(3)(b), following the description of the integrity assessment program and schedule in
12 Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions
13 III.10.G.10.e.i. and III.10.C.5.c. Results of the integrity assessments will be included in
14 the WTP Unit operating record until ten (10) years after post-closure, or corrective action
15 is complete and certified, whichever is later.
- 16 III.10.G.4.b. The Permittees will address problems detected during Pretreatment Plant Miscellaneous
17 Unit Systems integrity assessments specified in Permit Condition III.10.G.4.a. following
18 the integrity assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as
19 approved pursuant to Permit Conditions III.10.G.10.e.i. and III.10.C.5.c.
- 20 III.10.G.4.c. The Permittees must immediately and safely remove from service any Pretreatment Plant
21 Miscellaneous Unit System or secondary containment system which through an integrity
22 assessment is found to be "unfit for use" as defined in WAC 173-303-040, following
23 Permit Condition III.10.G.5.j.i. through iv., and vi. The affected Pretreatment Plant
24 Miscellaneous Unit or secondary containment system must be either repaired or closed in
25 accordance with Permit Condition III.10.G.5.j.v. [WAC 173-303-640(7)(e) and (f) and
26 WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].
- 27 III.10.G.5 Miscellaneous Unit Management Practices
- 28 III.10.G.5.a. No dangerous and/or mixed waste will be managed in the Pretreatment Plant
29 Miscellaneous Unit Systems unless the operating conditions, specified under Permit
30 Condition III.10.G.5., are complied with.
- 31 III.10.G.5.b. The Permittees will install and test all process and leak detection system
32 monitoring/instrumentation, as specified in Permit Table III.10.G.C., as
33 approved/modified pursuant to Permit Condition III.10.G.10., in accordance with
34 Operating Unit 10, Appendices 8.1, 8.2, and 8.14 of this Permit, as approved pursuant to
35 Permit Condition III.10.G.10.d.x.
- 36 III.10.G.5.c. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
37 materials in the Pretreatment Plant Miscellaneous Unit Systems if these substances could
38 cause the systems to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a), in
39 accordance with WAC 173-303-680(2)].
- 40 III.10.G.5.d. The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems to
41 prevent spills and overflows using the description of controls and practices, as required
42 under WAC 173-303-640(5)(b), described in Permit Condition III.10.C.5., and Operating
43 Unit 10, Appendix 8.15 of this Permit, as approved pursuant to Permit Condition

- 1 III.10.G.10.e.iv. [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2)
2 and (3) and WAC 173-303-806(4)(c)(ix)].
- 3 III.10.G.5.e. For routinely non-accessible Pretreatment Plant Miscellaneous Unit Systems, as specified
4 in Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition
5 III.10.G.10.e.vi., the Permittees will mark all routinely non-accessible Pretreatment Plant
6 Miscellaneous Unit System access points with labels or signs to identify the waste
7 contained in the units. The label, or sign, must be legible at a distance of at least fifty
8 (50) feet and must bear a legend which identifies the waste in a manner which adequately
9 warns employees, emergency response personnel, and the public of the major risk(s)
10 associated with the waste being stored or treated in the miscellaneous unit system(s). For
11 the purposes of this Permit condition, "routinely non-accessible" means personnel are
12 unable to enter these areas while waste is being managed in them [WAC 173-303-
13 640(5)(d), in accordance with WAC 173-303-680(2)].
- 14 III.10.G.5.f. For all Pretreatment Plant Miscellaneous Unit Systems not addressed in Permit Condition
15 III.10.G.5.e, the Permittees will mark all these miscellaneous unit systems holding
16 dangerous and/or mixed waste with labels or signs to identify the waste contained in the
17 unit. The labels, or sign, must be legible at a distance of at least fifty (50) feet, and must
18 bear a legend which identifies the waste in a manner which adequately warns employees,
19 emergency response personnel, and the public of the major risk(s) associated with the
20 waste being stored or treated in the miscellaneous unit system(s) [WAC 173-303-
21 640(5)(d), in accordance with WAC 173-303-680(2)].
- 22 III.10.G.5.g. The Permittees will ensure that the secondary containment systems for Pretreatment Plant
23 Miscellaneous Unit Systems listed in Permit Tables III.10.G.A and III.10.G.B, as
24 approved/modified pursuant to Permit Condition III.10.G.10, are free of cracks or gaps to
25 prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the
26 system to the soil, ground water, or surface water at any time waste is in the Pretreatment
27 Plant Miscellaneous Units System. Any indication that a crack or gap may exist in the
28 containment systems will be investigated and repaired in accordance with Operating Unit
29 10, Appendix 8.15 of this Permit, as approved pursuant to Permit Condition
30 III.10.G.10.e.v. [WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC
31 173-303-640(6) in accordance with WAC 173-303-680(2) and (3), WAC 173-303-
32 806(4)(i)(i)(B), and WAC 173-303-320].
- 33 III.10.G.5.i. An impermeable coating, as specified in Operating Unit 10, Appendices 8.4, 8.5, 8.7, 8.9,
34 8.11, and 8.12 of this Permit, as approved pursuant to Permit Condition III.10.G.10.b.v.
35 of this Permit, will be maintained for all concrete containment systems and concrete
36 portions of containment systems for each Pretreatment Plant Miscellaneous Unit System
37 listed in Permit Tables III.10.G.A and III.10.G.B, as approved/modified pursuant to
38 Permit Condition III.10.G.10 [concrete containment systems that do not have a liner
39 pursuant to WAC-173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and
40 have construction joints, will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in
41 accordance with WAC 173-303-680(2)]. The coating will prevent migration of any
42 dangerous and mixed waste into the concrete. All coatings will meet the following
43 performance standards:
- 44 III.10.G.5.i.i. The coating must seal the containment surface such that no cracks, seams, or other
45 avenues through which liquid could migrate are present;
- 46 III.10.G.5.i.ii. The coating must be of adequate thickness and strength to withstand the normal operation
47 of equipment and personnel within the given area such that degradation or physical

- 1 damage to the coating or lining can be identified and remedied before dangerous and
2 mixed waste III.10.G.5.i. could migrate from the system; and
- 3 III.10.G.5.i.iii. The coating must be compatible with the dangerous and mixed waste, treatment reagents,
4 or other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D),
5 in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(i)(i)(A)].
- 6 III.10.G.5.j. The Permittees will inspect all secondary containment systems for the Pretreatment Plant
7 Miscellaneous Unit Systems listed in Permit Tables III.10.G.A and III.10.G.B., as
8 approved/modified pursuant to Permit Condition III.10.G.10., in accordance with the
9 Inspection Schedule specified in Operating Unit 10, Chapter 6.0 of this Permit, as
10 approved pursuant to Permit Conditions III.10.G.10.e.i. and III.10.C.5.c., and take the
11 following actions if a leak or spill of dangerous and/or mixed waste is detected in these
12 containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in accordance
13 with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-
14 806(4)(i)(i)(B)]:
- 15 III.10.G.5.j.i. Immediately and safely stop the flow of dangerous and/or mixed waste into the
16 miscellaneous unit system or secondary containment system;
- 17 III.10.G.5.j.ii. Determine the source of the dangerous and/or mixed waste;
- 18 III.10.G.5.j.iii. Remove the waste from the containment area in accordance with WAC 173-303-680(2)
19 and (3), as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed waste
20 removed from containment areas of miscellaneous unit systems will be, as a minimum,
21 managed as dangerous and/or mixed waste;
- 22 III.10.G.5.j.iv. If the cause of the release was a spill that has not damaged the integrity of the
23 miscellaneous unit system, the Permittees may return the miscellaneous unit system to
24 service in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-
25 640(7)(e)(ii). In such a case, the Permittees will take action to ensure the incident that
26 caused liquid to enter the containment system will not reoccur [WAC 173-303-320(3)];
- 27 III.10.G.5.j.v. If the source of the dangerous and/or mixed waste is determined to be a leak from the
28 primary Pretreatment Plant Miscellaneous Unit System into the secondary containment
29 system, or the system is unfit for use as determined through an integrity assessment or
30 other inspection, the Permittees must comply with the requirements of WAC 173-303-
31 640(7), and take the following actions:
- 32 A Close the miscellaneous unit following procedures in WAC 173-303-640(7)(e)(i) and
33 in accordance with WAC 173-303-680, and Operating Unit 10, Chapter 11.0 of this
34 Permit, as approved pursuant to Permit Condition III.10.C.8; or
- 35 B. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified
36 pursuant to Permit Condition III.10.G.1.d.) the Pretreatment Plant Miscellaneous
37 Unit System in accordance with Operating Unit 10, Appendix 8.15 of this Permit, as
38 approved pursuant to Permit Condition III.10.G.10.e.v. before the Pretreatment Plant
39 Miscellaneous Unit System is placed back into service [WAC 173-303-640(7)(e)(iii)
40 and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].
- 41 III.10.G.5.j.vi. The Permittees will document, in the operating record, actions/procedures taken to
42 comply with i. through v. above, as specified in WAC 173-303-640(6)(d) and in
43 accordance with WAC 173-303-680(2) and (3).

- 1 III.10.G.5.j.vii. In accordance with WAC 173-303-680(2) and (3), the Permittees will notify and report
2 releases to the environment to Ecology as specified in WAC 173-303-640(7)(d).
- 3 III.10.G.5.k. If liquids (e.g., Dangerous and/or mixed waste leaks and spills, precipitation, fire water,
4 liquids from damaged or broken pipes) cannot 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) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-680(3)
10 and WAC 173-303-806(4)(i)(i)(B)]:
- 11 A. Reasons for delayed removal;
- 12 B. Measures implemented to ensure continued protection of human health and the
13 environment; and
- 14 C. Current actions being taken to remove liquids from secondary containment.
- 15 III.10.G.5.l. The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems in
16 accordance with Operating Unit 10, Chapter 4.0 as updated pursuant to Permit Condition
17 III.10.G.10.e.vi. and Appendix 8.15 of this Permit, as approved pursuant to Permit
18 Condition III.10.G.10.e., and the following:
- 19 III.10.G.5.l.i. The Permittees will operate the Pretreatment Plant Miscellaneous Unit Systems in order
20 to maintain the systems and process parameters listed in Permit Table III.10.G.C. as
21 approved/modified pursuant to Permit Condition III.10.G.10., within the operating trips
22 and operating ranges specified in Permit Table III.10.G.C., and consistent with
23 assumptions and basis which are reflected in Operating Unit 10, Appendix 6.3.1, as
24 approved pursuant to Permit Condition III.10.C.11.b. [WAC 173-303-815(2)(b)(ii) and
25 WAC 173-303-680(2) and (3)]. For the purposes of this Permit Condition, Operating
26 Unit 10, Appendix 6.3.1. will be superceded by Appendix 6.4.1. upon its approval
27 pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d.
- 28 III.10.G.5.l.ii. The Permittees will calibrate/function test the instruments listed in Permit Table
29 III.10.G.C., in accordance with Operating Unit 10, Appendix 8.15, as approved pursuant
30 to Permit Condition III.10.G.10.e.xii.
- 31 III.10.G.5.m. For any portion of the Pretreatment Plant Miscellaneous Unit Systems which have the
32 potential for formation and accumulation of hydrogen gases, the Permittees will operate
33 the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-
34 815(2)(b)(ii)].
- 35 III.10.G.5.n. For each miscellaneous unit holding dangerous waste which are acutely or chronically
36 toxic by inhalation, the Permittees will operate the system to prevent escape of vapors,
37 fumes, or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-
38 640(5)(e), in accordance with WAC 173-303-680].
- 39 III.10.G.6 Air Emissions
- 40 III.10.G.6.a. Treatment effectiveness, feed-rates, and operating rates for dangerous and mixed waste
41 systems and sub-systems contained in the Pretreatment Plant (as specified in Permit
42 Tables III.10.E.A., III.10.F.A., and III.10.G.A., as approved/modified pursuant to Permit
43 Conditions III.10.E.9., III.10.F.5., III.10.G.10., respectively) will be as specified in
44 Permit Sections III.10.E., III.10.F., and III.10.G., and consistent with the assumptions and

- 1 basis reflected in Operating Unit 10, Appendix 6.3.1 of this Permit, as approved pursuant
2 to Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating
3 Unit 10, Appendix 6.3.1 will be superceded by Appendix 6.4.1, upon its approval,
4 pursuant to either Permit Condition III.10.C.11.c. or III.10.C.11.d. [WAC 173-303-
5 680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 6 **III.10.G.6.b.** Compliance with Permit Condition III.10.G.6.a. of this Permit will be regarded as
7 operating within the emission limits specified in Permit Table III.10.G.D., as approved
8 pursuant to Permit Conditions III.10.C.11.b., III.10.C.11.c., or III.10.C.11.d. of this
9 Permit.
- 10 **III.10.G.6.c.** All air pollution control devices and capture systems in the Pretreatment Plant
11 Miscellaneous Unit Systems will be maintained and operated at all times in a manner so
12 as to minimize the emissions of air contaminants and to minimize process upsets.
13 Procedures for ensuring that the above equipment is properly operated and maintained so
14 as to minimize the emission of air contaminants and process upsets will be established.
- 15 **III.10.G.6.d.** The Permittees will ensure that for all dangerous and/or mixed waste areas, systems, and
16 units contained in the Pretreatment Plant (as specified in Permit Tables III.10.E.A.,
17 III.10.F.A., and III.10.G.A., as approved pursuant to Permit Conditions III.10.E.9.e.xii.,
18 III.10.F.7.d.iv., and III.10.G.10.e.ix., respectively), the Pretreatment Vessel Vent Process
19 System specified in Permit Table III.10.G.A.i will be in operation prior to waste being
20 introduced into these dangerous and/or mixed waste areas, systems, and units contained
21 in the Pretreatment Building. At any time the Pretreatment Vessel Vent Process System
22 ceases to operate or produces insufficient vacuum to recover emissions from the areas,
23 systems, or units, the Permittees will not commence new treatment activities within the
24 dangerous and mixed waste areas, systems, or units contained in the Pretreatment
25 Building, and take measures to minimize evolution of emissions from on-going
26 treatment, and will not receive new dangerous and/or mixed waste shipments into the
27 Pretreatment Building. The Permittees will not re-commence new treatment activities
28 until the Pretreatment Vessel Vent Process System is operational and producing sufficient
29 vacuum to recover emissions.
- 30 **III.10.G.7** Inspections [WAC 173-303-680(3)]
- 31 **III.10.G.7.a.** The Permittees will inspect the Pretreatment Plant Miscellaneous Unit Systems in
32 accordance with the Inspection Schedules in Operating Unit 10, Chapter 6.0 of this
33 Permit, as modified in accordance with Permit Condition III.10.C.5.c.
- 34 **III.10.G.7.b.** The inspection data for Pretreatment Plant Miscellaneous Unit Systems will be recorded,
35 and the records will be placed in the WTP Unit operating record for the Pretreatment
36 Plant Miscellaneous Unit Systems, in accordance with Permit Condition III.10.C.4.
- 37 **III.10.G.8** Recordkeeping
- 38 The Permittees will record and maintain in the WTP Unit operating record for the
39 Pretreatment Plant Miscellaneous Unit Systems, all monitoring, calibration, maintenance,
40 test data, and inspection data compiled under the conditions of this Permit, in accordance
41 with Permit Conditions III.10.C.4 and III.10.C.5.
- 42 **III.10.G.9** Closure
- 43 The Permittees will close the Pretreatment Plant Miscellaneous Unit Systems in
44 accordance with Operating Unit 10, Chapter 11.0, as approved pursuant to Permit
45 Condition III.10.C.8.

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

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

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

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

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

- 1 III.10.G.10.e.vi. Updated Chapter 4.0, Narrative Descriptions, Tables and Figures as identified in Permit
2 Tables III.10.G.A and III.10.G.B., as modified pursuant to Permit Condition
3 III.10.G.10.e.ix., and updated to identify routinely non-accessible Pretreatment Plant
4 Miscellaneous Unit Systems [WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A)
5 through (B)];
- 6 III.10.G.10.e.vii. Descriptions of procedures for management of ignitable and reactive, and incompatible
7 dangerous and/or mixed waste, in accordance with WAC 173-303-640(9) and (10), in
8 accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B).
- 9 III.10.G.10.e.viii. A description of the tracking system used to track dangerous and/or mixed waste
10 generated throughout the Pretreatment Plant Miscellaneous Unit Systems, pursuant to
11 WAC 173-303-380.
- 12 III.10.G.10.e.ix. Permit Table III.10.G.A, amended as follows [WAC 173-303-680 and WAC 173-303-
13 806(4)(i)(i)(A) through (B)]:
- 14 A. Under column 1, update and complete list of dangerous and mixed waste
15 Pretreatment Plant Miscellaneous Unit Systems, including plant items which
16 comprise each system (listed by item number).
- 17 B. Under column 2, update and complete system designations.
- 18 C. Under column 3, replace the 'Reserved' with the Operating Unit 10, Appendix 8.0
19 subsections specific to miscellaneous unit systems as listed in column 1.
- 20 D. Under column 4, update and complete list of narrative description tables and figures.
- 21 E. Under column 5, update and complete maximum operating volume for each
22 miscellaneous unit, as applicable.
- 23 F. Permit Table III.10.G.A.i., amended as follows:
- 24 1. Under column 1, update and complete list of plant items that comprise the
25 Pretreatment Plant Vessel Vent System (listed by item number).
- 26 2. Under column 2, update and complete designations.
- 27 3. Under column 3, replace the 'Reserved' with the Operating Unit 10,
28 Appendix 8.0, subsections (e.g., 9.1, 9.2, etc.) specific to systems as listed in
29 column 1.
- 30 4. Under column 4, update and complete list of narrative description tables and
31 figures.
- 32 III.10.G.10.e.x. Permit Table III.10.G.C. will be completed for Pretreatment Plant Miscellaneous Unit
33 System process and leak detection system monitors and instruments (to include, but not
34 be limited to: instruments and monitors measuring and/or controlling flow, pressure,
35 temperature, density, pH, level, humidity, and emissions) to provide the information as
36 specified in each column heading. Process and leak detection system monitors and
37 instruments for critical systems as specified in Operating Unit 10, Appendix 2.0 and as
38 updated pursuant to Permit Condition III.10.C.9.b. and for operating parameters as
39 required to comply with Permit Condition III.10.C.3.e.iii. will be addressed. Process
40 monitors and instruments for non-waste management operations (e.g., utilities, raw
41 chemical storage, non-contact cooling waters, etc.) are excluded from this permit
42 condition [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC
43 173-303-806(4)(i)(v)];

- 1 III.10.G.10.e.xi. Supporting documentation for operating trips and expected operating range as specified
2 in Permit Table III.10.G.C., as approved pursuant to Permit Condition III.10.G.10.e.x.
3 [WAC 173-303-680, WAC 173-303-806(4)(i)(B), WAC 173-303-806(4)(i)(iv), and
4 WAC 173-303-806(4)(i)(v)];
- 5 III.10.G.10.e.xii. Documentation of process and leak detection instruments and monitors (as listed in
6 Permit Table III.10.G.C.) for the Pretreatment Plant Miscellaneous Unit Systems to
7 include, but not be limited to, the following [WAC 173-303-680, WAC 173-303-
8 806(4)(i)(B), and WAC 173-303-806(4)(i)(v)]:
- 9 A. Procurement Specifications
 - 10 B. Location used
 - 11 C. Range, precision, and accuracy
 - 12 D. Detailed descriptions of calibration/functionality test procedures (e.g., method
13 number [ASTM]) or provide a copy of manufacturer's recommended calibration
14 procedures.
 - 15 E. Calibration/functionality test, inspection, and routine maintenance schedules and
16 checklists, including justification for calibration, inspection and maintenance
17 frequencies, criteria for identifying instruments found to be significantly out of
18 calibration, and corrective action to be taken for instruments found to be significantly
19 out of calibration (e.g., increasing frequency of calibration, instrument replacement,
20 etc.)
 - 21 F. Equipment instrument control logic narrative description (e.g., software functional
22 specifications, descriptions of fail-safe conditions, etc.) [WAC 173-303-680(2),
23 WAC 173-303-806(4)(i)(B), and WAC 173-303-806(4)(i)(v)].

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p>Waste Feed Evaporation Process System</p> <p>FEP-SEP-00001A (Waste Feed Evaporator Separator Vessel)</p> <p>FEP-SEP-00001B (Waste Feed Evaporator Separator Vessel)</p>	FEP	<p>24590-PTF</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>	<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>	<p>FEP-SEP-00001A = 13,359</p> <p>FEP-SEP-00001B = 13,359</p>

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

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
Waste Feed Evaporation Process System (Cont.)	FEP	24590-PTF -3PS-MEVV-TP001 -M5-V17T-P0004001 -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	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
FEP-COND-00001A (Waste Evaporator Primary Condenser)				
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)				
Waste Feed Evaporation Process System (Cont.)	FEP	24590-PTF -3PS-MEVV-TP001 -M5-V17T-P0004001 -M5-V17T-P0004002 -MED-FEP-P0010	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	N/A
FEP-RBLR-00001A (Reboiler)				
FEP-RBLR-00001B (Reboiler)				

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
		-N1D-FEP-P0007 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0007	Permit.	
<u>Cesium Nitric Acid Recovery Process System</u> CNP-EVAP-00001 (Cs Evaporator Separator Vessel)	CNP	<u>24590-PTE</u> -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	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.	CNP-EVAP-00001 = RESERVED

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
		-P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004		
<u>Cesium Nitric Acid Recovery Process System (Cont.)</u> Cs Evaporator Concentrate Reboiler (CNP-HX-00001)	CNP	24590-PTF -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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><u>Cesium Nitric Acid Recovery Process System (Cont.)</u> CNP-DISTC-00001 (Cs Evaporator Nitric Acid Rectifier Column)</p>	CNP	<p><u>24590-PTF</u> -M5-V17T-P0014 -M6-CNP-P0010 -N1D-CNP-P0001 -P1-P01T-P0003 -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><u>Cesium Nitric Acid Recovery Process System (Cont.)</u> CNP-HX-00002 (Cs Evaporator Primary Condenser) CNP-HX-00003 (Cs Evaporator Inter-Condenser) CNP-HX-00004 (Cs Evaporator After-Condenser)</p>	CNP	<p><u>24590-PTF</u> -M5-V17T-P0014 -M5D-CNP-00001 -M6-CNP-P0001 -M6-CNP-P0002 -M6-CNP-P0010 -MB-CNP-HX-00001 -ME-CNP-EVAP-00001 -ME-CNP-HX-00002 -ME-CNP-HX-00003 -ME-CNP-HX-00004 -N1D-CNP-P0002 -N1D-CNP-P0003 -N1D-CNP-P0012 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><u>Treated LAW Evaporation Process System</u> TLP-SEP-00001 (Treated LAW Evaporator Separator Vessel)</p>	<p>TLP</p>	<p><u>24590-PTF</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 -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</p>	<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.</p>	<p>TLP-SEP-00001=13,359</p>

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
<p><u>Treated LAW Evaporation Process System (Cont.)</u></p> <p>TLP-COND-00001 (Primary Condenser)</p> <p>TLP-COND-00002 (Inter-condenser)</p> <p>TLP-COND-00003 (After-condenser)</p>	TLP	<p><u>24590-PTF</u></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>-MED-TLP-P0001</p> <p>-MED-TLP-P0002</p> <p>-MED-TLP-P0003</p> <p>-MV-TLP-P0001</p> <p>-MV-TLP-P0002</p> <p>-N1D-TLP-P0002</p> <p>-N1D-TLP-P0003</p> <p>-P1-P01T-P0001</p> <p>-P1-P01T-P0002</p> <p>-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><u>Treated LAW Evaporation Process System (Cont.)</u></p> <p>TLP-RBLR-00001 (Reboiler)</p>	TLP	<p><u>24590-PTF</u></p> <p>-3PS-MEVV-TP001</p> <p>-M5-V17T-P0005</p> <p>-MV-TLP-P0001</p> <p>-MV-TLP-P0002</p> <p>-N1D-TLP-P0011</p> <p>-P1-P01T-P0001</p> <p>-P1-P01T-P0002</p> <p>-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

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

Miscellaneous Unit System Description ^a	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)

Footnotes:

^a 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 III.10.G.A.i 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 III.10.G.A is also a reference to Permit Table III.10.G.A.i.

1
2

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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><u>Pretreatment Vessel Vent Process System</u></p> <p>PVP-SCB-00002 (Caustic Scrubber)</p>	PVP	<p><u>24590-PTF</u></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><u>Pretreatment Vessel Vent Process System (Cont.)</u></p> <p>PVP-HEME-00001A (HEME Filter)</p> <p>PVP-HEME-00001B (HEME Filter)</p> <p>PVP-HEME-00001C (HEME Filter)</p>	PVP	<p><u>24590-PTF</u></p> <p>-M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003</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>

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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
		-P1-P01T-P0004	
<p><u>Pretreatment Vessel Vent Process System (Cont.)</u> PVP-HX-00002 (Vessel Vent Scrubbing Liquid Cooler)</p>	PVP	<p><u>24590-PTF</u> -M5-V17T-P0021001 -M6-PVP-P0017 -P1-P01T-P0002 -P1-P01T-P0003 -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><u>Pretreatment Vessel Vent Process System (Cont.)</u> PVP-OXID-00001 (VOC Oxidizer)</p>	PVP	<p><u>24590-PTF</u> -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</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><u>Pretreatment Vessel Vent Process System (Cont.)</u> PVP-CLR-00001 (Vessel Vent Scrubbing Liquid Cooler, Aftercooler)</p>	PVP	<p><u>24590-PTF</u> -M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001</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.

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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
		-P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004	
<u>Pretreatment Vessel Vent Process System (Cont.)</u> PVP-ADBR-00001A (Vessel Vent Carbon Bed Absorber) PVP-ADBR-00001B (Vessel Vent Carbon Bed Absorber)	PVP	<u>24590-PTF</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>Pretreatment Vessel Vent Process System (Cont.)</u> PVP-FILT-00001 (Vessel Vent Adsorber Outlet Filter)	PVP	<u>24590-PTF</u> -M5-V17T-P0021001 -M5-V17T-P0021004 -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>Process Vessel Vent System</u> PVV-HEPA-00001A (Primary HEPA Filter) PVV-HEPA-00001B (Primary HEPA Filter)	PVV	<u>24590-PTF</u> -M5-V17T-P0021001 -P1-P01T-P00002	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.

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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
PVV-HEPA-00002A (Secondary HEPA Filter) PVV-HEPA-00002B (Secondary HEPA Filter)			
<u>Process Vessel Vent System (Cont.)</u> PVV-FAN-00001A (Vessel Vent Exhaust Fan) PVV-FAN-00001B (Vessel Vent Exhaust Fan)	PVV	<u>24590-PTF</u> M5-V17T-P0021001 -M5-V17T-P0021004 -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>Process Vessel Vent System (Cont.)</u> PVV Stack and associated equipment	PVV	<u>24590-PTF</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>Pretreatment Pulse Jet Mixer Exhaust Vent System</u> PJV-HEPA-00001A (Primary HEPA Filter) PJV-HEPA-00001B (Primary HEPA Filter)	PJV	<u>24590-PTF</u> -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004	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.

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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-00001C (Primary HEPA Filter) PJV-HEPA-00001D (Primary HEPA Filter) PJV-HEPA-00001E (Primary HEPA Filter) PJV-HEPA-00001F (Primary HEPA Filter) 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)		-MVD-PJV-P0003 -N1D-PJV-P0001 -P1-P01T-P0001	
<u>Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)</u> PJV-FAN-00001A (Exhaust Fan) PJV-FAN-00001B (Exhaust Fan)	PJV	<u>24590-PTF</u> -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004	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.

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-FAN-00001C (Exhaust Fan)		-MVD-PJV-P0003 -N1D-PJV-P0001 -P1-P01T-P0001	
<u>Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)</u> PJV-DMST-00002A (Demister) PJV-DMST-00002B (Demister) PJV-DMST-00002C (Demisters)	PJV	<u>24590-PTF</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.
<u>Pretreatment Pulse Jet Mixer Exhaust Vent System (Cont.)</u> PJV Stack and associated equipment	PJV	<u>24590-PTF</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.
Footnotes: ^a The Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), and Pulse Jet Mixer Exhaust System (PJV) specified in Permit Table <u>III.10.G.A.i</u> 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 <u>III.10.G.A</u> is also a reference to Permit Table <u>III.10.G.A.i</u> .			

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

Sump, Bulge or Floor Drain 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 ^a (inches) & Materials of Construction	Engineering Description (Drawings No.'s, Specification No.'s etc.)
PVP-BULGE-00001 P-0105 (Vessel Vent Caustic Scrubber Transfer Pump Bulge, El. 0')	RESERVED	Dry Sump	RESERVED	24590-PTF -M6-PVP-P0017 -P1-P01T-P0001
PVP-BULGE-00014 P-0302(Vessel Vent Heat Exchanger Bulge, El. 56')	RESERVED	RESERVED	RESERVED	24590-PTF -M6-PVP-P0017
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a 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

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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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 ^a	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
PVP-BULGE-00014 ^a	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:

^aSump 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

10/2008

**WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant**

1 **III.10.H LAW Vitrification System – Short Term Miscellaneous Thermal Treatment Unit-**
2 **Shakedown, Demonstration Test, and Post Demonstration Test**

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

8 **III.10.H.1. General Conditions During Shakedown, Demonstration Test, and Post-Demonstration**
9 **Test for LAW Vitrification System**

10 **III.10.H.1.a. Construction and Maintenance [WAC 173-303-640, in accordance with WAC 173-303-**
11 **680(2) and (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**
13 **III.10.H.A and B., as approved/modified pursuant to Permit Condition III.10.H.5.) as**
14 **specified in Permit Condition III.10.H.1. and Operating Unit 10, Chapter 4.0 of this**
15 **Permit, and Operating Unit 10, Appendices 9.1 through 9.15 and 9.17 of this Permit, as**
16 **approved pursuant to Permit Conditions III.10.H.5.a. 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**
18 **as specified in Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10,**
19 **Appendices 9.2 and 9.4 through 9.14 of this Permit, as approved pursuant to Permit**
20 **Conditions III.10.H.5.a. through d.**

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

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

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

38 **III.10.H.1.a.iv. The Permittees must ensure that proper handling procedures are adhered to in order to**
39 **prevent damage to the LAW Vitrification System during installation. Prior to covering,**
40 **enclosing, or placing the new LAW Vitrification System or component in use, an**

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

- 5 A. Weld breaks;
- 6 B. Punctures;
- 7 C. Scrapes of protective coatings;
- 8 D. Cracks;
- 9 E. Corrosion;
- 10 F. Other structural damage or inadequate construction/installation.

11 All discrepancies must be remedied before the LAW Vitrification System is covered,
12 enclosed, or placed in use [WAC 173-303-640(3)(c), in accordance with WAC 173-
13 303-680(2) and (3)].

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

20 III.10.H.1.a.vi. The Permittees must test for tightness the LAW Vitrification System or components,
21 prior to being covered, enclosed, or placed into use. If the LAW Vitrification System or
22 components are found not to be tight, all repairs necessary to remedy the leak(s) in the
23 system must be performed prior to the LAW Vitrification System being covered,
24 enclosed, or placed in use [WAC 173-303-640(3)(e), in accordance with WAC 173-303-
25 680(2) and (3)].

26 III.10.H.1.a.vii. The Permittees must ensure the LAW Vitrification System equipment is supported and
27 protected against physical damage and excessive stress due to settlement, vibration,
28 expansion, or contraction [WAC 173-303-640(3)(f), in accordance with WAC 173-303-
29 680(2) and (3)].

30 III.10.H.1.a.viii. The Permittees must provide the type and degree of corrosion protection recommended
31 by an independent corrosion expert, based on the information provided in Operating Unit
32 10, Appendices 9.9 and 9.11 of this Permit, as approved pursuant to Permit Conditions
33 III.10.H.5.b.i., III.10.H.5.b.iv., III.10.H.5.b.v., III.10.H.5.c.i., III.10.H.5.c.iv.,
34 III.10.H.5.c.v., III.10.H.5.d.i., III.10.H.5.d.iv., and III.10.H.5.d.v., or other corrosion
35 protection if Ecology believes other corrosion protection is necessary to ensure the
36 integrity of the LAW Vitrification System during use of the LAW Vitrification System.
37 The installation of a corrosion protection system that is field fabricated must be
38 supervised by an independent corrosion expert to ensure proper installation [WAC 173-
39 303-640(3)(g), in accordance with WAC 173-303-680(2) and (3)].

- 1 III.10.H.1.a.ix. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
2 will obtain and keep on file in the WTP Unit operating record, written statements by
3 those persons required to certify the design of the LAW Vitrification System and
4 supervise the installation of the LAW Vitrification System, as specified in WAC 173-
5 303-640(3)(b), (c), (d), (e), (f), and (g), in accordance with WAC 173-303-680, attesting
6 that the LAW Vitrification System and corresponding containment system listed in
7 Permit Tables III.10.H.A and III.10.H.B, as approved/modified pursuant to Permit
8 Condition III.10.H.5., were properly designed and installed, and that repairs, in
9 accordance with WAC 173-303-640(3)(c) and (e) were performed [WAC 173-303-
10 640(3)(a) and WAC 173-303-640(3)(h), in accordance with WAC 173-303-680(3)].
- 11 III.10.H.1.a.x. The independent LAW Vitrification System installation inspection and subsequent
12 written statements will be certified in accordance with WAC 173-303-810(13)(a), as
13 modified pursuant to Permit Condition III.10.H.1.a.iii., comply with all requirements of
14 WAC 173-303-640(3)(h) in accordance with WAC 173-303-680, and will consider, but
15 not be limited to, the following LAW Vitrification System installation documentation:
- 16 A. Field installation report with date of installation;
 - 17 B. Approved welding procedures;
 - 18 C. Welder qualification and certifications;
 - 19 D. Hydro-test reports, as applicable, in accordance with the American Society of
20 Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1;
21 American Petroleum Institute (API) Standard 620, or Standard 650, as applicable;
 - 22 E. Tester credentials;
 - 23 F. Field inspector credentials;
 - 24 G. Field inspector reports;
 - 25 H. Field waiver reports; and
 - 26 I. Non-compliance reports and corrective action (including field waiver reports) and
27 repair reports.
- 28 III.10.H.1.a.xi. The Permittees will ensure periodic integrity assessments are conducted on the LAW
29 Vitrification System, listed in Permit Table III.10.H.A, as approved/modified pursuant to
30 Permit Condition III.10.H.5., over the term of this Permit in accordance with WAC 173-
31 303-680(2) and (3) as specified in WAC 173-303-640(3)(b), following the description of
32 the integrity assessment program and schedule in Operating Unit 10, Chapter 6.0 of this
33 Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c.
34 Results of the integrity assessments will be included in the WTP Unit operating record
35 until ten (10) years after post-closure, or corrective action is complete and certified,
36 whichever is later.
- 37 III.10.H.1.a.xii. The Permittees will address problems detected during the LAW Vitrification System
38 integrity assessments specified in Permit Condition III.10.H.1.a.xi. following the integrity

1 assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as approved
2 pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c.

3 III.10.H.1.a.xiii. All process monitors/instruments, as specified in Permit Table III.10.H.F., as
4 approved/modified pursuant to Permit Condition III.10.H.5., will be equipped with
5 operational alarms to warn of deviation, or imminent deviation from the limits specified
6 in Permit Table III.10.H.F.

7 III.10.H.1.a.xiv. The Permittees will install and test all process and leak detection system
8 monitors/instrumentation as specified in Permit Tables III.10.H.C and III.10.H.F., as
9 approved/modified pursuant to Permit Condition III.10.H.5., in accordance with
10 Operating Unit 10, Appendices 9.1, 9.2, and 9.14 of this Permit, as approved pursuant to
11 Permit Conditions III.10.H.5.d.x. and III.10.H.5.f.xvi.

12 III.10.H.1.a.xv. No dangerous and/or mixed waste will be treated in the LAW Vitrification System unless
13 the operating conditions, specified under Permit Condition III.10.H.1.c. are complied
14 with.

15 III.10.H.1.a.xvi. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
16 materials in the LAW Vitrification System if these substances could cause the subsystem,
17 subsystem equipment, or the containment system to rupture, leak, corrode, or otherwise
18 fail [WAC 173-303-640(5)(a), in accordance with WAC 173-303-680(2)]. This
19 condition is not applicable to corrosion of LAW Vitrification System sub-system or sub-
20 system equipment that are expected to be replaced as part of normal operations (e.g.,
21 melters).

22 III.10.H.1.a.xvii. The Permittees will operate the LAW Vitrification System to prevent spills and
23 overflows using controls and practices as required under WAC 173-303-640(5)(b)
24 described in Permit Condition III.10.C.5 and Operating Unit 10, Appendix 9.18 of this
25 Permit, as approved pursuant to Permit Condition III.10.H.5.e. [WAC 173-303-640(5)(b),
26 in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-806(4)(c)(ix)].

27 III.10.H.1.a.xviii. For routinely non-accessible LAW Vitrification System sub-systems, as specified in
28 Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition
29 III.10.H.5.e.vi., the Permittees will mark all routinely non-accessible LAW Vitrification
30 System sub-systems access points with labels, or signs, to identify the waste contained in
31 each LAW Vitrification System sub-system. The label, or sign, must be legible at a
32 distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a
33 manner which adequately warns employees, emergency response personnel, and the
34 public of the major risk(s) associated with the waste being stored or treated in the LAW
35 Vitrification System sub-systems. For the purposes of this permit condition, "routinely
36 non-accessible" means personnel are unable to enter these areas while waste is being
37 managed in them [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

38 III.10.H.1.a.xix. For all LAW Vitrification System sub-systems not addressed in Permit Condition
39 III.10.H.1.a.xviii., the Permittees will mark all these LAW Vitrification System sub-
40 systems holding dangerous and/or mixed waste with labels, or signs, to identify the waste
41 contained in the LAW Vitrification System sub-systems. The labels, or signs, must be

legible at a distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the LAW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

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

III.10.H.1.a.xxi. The Permittees must immediately, and safely, remove from service any LAW Vitrification System or secondary containment system which through an integrity assessment is found to be "unfit for use" as defined in WAC 173-303-040, following Permit Conditions III.10.H.1.a.xxiii.A. through D., and F. The affected LAW Vitrification System or secondary containment system must be either repaired or closed in accordance with Permit Condition III.10.H.1.a.xxiii.E. [WAC 173-303-640(7)(e) and (f), WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

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 9.12 of this Permit, as approved pursuant to Permit Condition III.10.H.5.b.v. will be maintained for all concrete containment systems and concrete portions of containment systems for each LAW Vitrification System sub-systems listed in Permit Tables III.10.H.A. and III.10.H.B., as approved/modified pursuant to Permit Condition III.10.H.5 (concrete containment systems that do not have a liner, pursuant to WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and have construction joints, will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in accordance with WAC 173-303-680(2). The coating will prevent migration of any dangerous and mixed waste into the concrete. All coatings will meet the following performance standards:

- A. The coating must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present;
- B. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical damage to the coating or lining can be identified and remedied before dangerous and mixed waste could migrate from the system; and

- 1 C. The coating must be compatible with the dangerous and mixed waste, treatment
2 reagents, or other materials managed in the containment system [WAC 173-303-
3 640(4)(e)(ii)(D), in accordance with WAC 173-303-680(2) and (3), and WAC 173-
4 303-806(4)(i)(i)(A)].

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

- 14 A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the
15 LAW Vitrification System sub-systems or secondary containment system.
- 16 B. Determine the source of the dangerous and/or mixed waste.
- 17 C. Remove the dangerous and/or mixed waste from the containment area in accordance
18 with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(b). The
19 dangerous and/or mixed waste removed from containment areas of the LAW
20 Vitrification System sub-systems will be, as a minimum, managed as mixed waste.
- 21 D. If the cause of the release was a spill that has not damaged the integrity of the LAW
22 Vitrification System sub-system, the Permittees may return the LAW Vitrification
23 System sub-system to service in accordance with WAC 173-303-680(2) and (3) as
24 specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees will take
25 action to insure the incident that caused the dangerous and/or mixed waste to enter
26 the containment system will not reoccur [WAC 173-303-320(3)].
- 27 E. If the source of the dangerous and/or mixed waste is determined to be a leak from the
28 primary LAW Vitrification System into the secondary containment system, or the
29 system is unfit for use as determined through an integrity assessment or other
30 inspection, the Permittees will comply with the requirements of WAC 173-303-
31 640(7) and take the following actions:
- 32 1. Close the LAW Vitrification System sub-system following procedures in
33 WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680 and
34 Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to
35 Permit Condition III.10.C.8., or
 - 36 2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as
37 modified pursuant to Permit Condition III.10.H.1.a.iii.) the LAW
38 Vitrification System, in accordance with Operating Unit 10, Appendix 9.18
39 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e.v.,
40 before the LAW Vitrification System is placed back into service [WAC

1 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with
2 WAC 173-303-680].

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

6 G. In accordance with WAC 173-303-680(2) and WAC 173-303-680 (3), the Permittees
7 will notify and report releases to the environment to Ecology as specified in WAC
8 173-303-640(7)(d).

9 III.10.H.1.a.xxiv.If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water,
10 liquids from damaged or broken pipes) cannot be removed from the secondary
11 containment system within twenty-four (24) hours, Ecology will be verbally notified
12 within twenty-four (24) hours of discovery. The notification will provide the
13 information in A, B, and C, listed below. The Permittees will provide Ecology with a
14 written demonstration within seven (7) business days, identifying at a minimum [WAC
15 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-
16 303-680(3) and WAC 173-303-806(4)(i)(i)(B)]:

17 A. Reasons for delayed removal;

18 B. Measures implemented to ensure continued protection of human health and the
19 environment;

20 C Current actions being taken to remove liquids from secondary containment.

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

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

29 III.10.H.1.a.xxvii.Modifications to approved design, plans, and specifications in Operating Unit 10 of this
30 Permit for the LAW Vitrification System will be allowed only in accordance with Permit
31 Conditions III.10.C.2.e. and f., or III.10.C.2.g., III.10.C.9.d., III.10.C.9.e., and
32 III.10.C.9.h.

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

36 III.10.H.1.a.xxix.For each LAW Vitrification System sub-system holding dangerous waste which are
37 acutely or chronically toxic by inhalation, the Permittees will operate the system to
38 prevent escape of vapors, fumes or other emissions into the air [WAC 173-303-
39 806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].

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

- 1 dry basis, and reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC
2 173-303-680(2)].
- 3 III.10.H.1.b.x. If the emissions from the LAW Vitrification System exceed the emission rates listed in
4 Permit Table III.10.H.E, as approved pursuant to Permit Condition III.10.C.11.b., the
5 Permittees will notify Ecology in accordance with Permit Condition III.10.H.3.d.vii.
6 [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 7 The emission limits specified in Permit Conditions III.10.H.1.b.i. through
8 III.10.H.1.b.x. above, will be met for the LAW Vitrification System by limiting feed-
9 rates as specified in Permit Tables III.10.H.D. and III.10.H.F., as approved/modified
10 pursuant to Permit Condition III.10.H.5., compliance with operating conditions
11 specified in Permit Condition III.10.H.1.c. (except as specified in Permit Condition
12 III.10.H.1.b.xii.), and compliance with Permit Condition III.10.H.1.b.xi.
- 13 III.10.H.1.b.xi. Treatment effectiveness, feed-rates and operating rates for dangerous and mixed waste
14 management units contained in the LAW Building, but not included in Permit Table
15 III.10.H.A., as approved/modified pursuant to Permit Condition III.10.H.5., will be as
16 specified in Permit Sections III.10.D., III.10.E., III.10.F and consistent with assumptions
17 and basis which are reflected in Operating Unit 10, Appendix 6.3.1 of this Permit, as
18 approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit
19 condition, Operating Unit 10, Appendix 6.3.1 will be superceded by Appendix 6.4.1 upon
20 its approval pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d. [WAC
21 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 22 III.10.H.1.b.xii. Compliance with the operating conditions specified in Permit Condition III.10.H.1.c., will
23 be regarded as compliance with the required performance standards identified in Permit
24 Conditions III.10.H.1.b.i. through x. However, if it is determined that during the
25 effective period of this Permit that compliance with the operating conditions in Permit
26 Condition III.10.H.1.c. is not sufficient to ensure compliance with the performance
27 standards specified in Permit Conditions III.10.H.1.b.i. through x., the Permit may be
28 modified, revoked, or reissued pursuant to Permit Conditions III.10.C.2.e. and
29 III.10.C.2.f., or III.10.C.2.g.
- 30 III.10.H.1.c. Operating Conditions [WAC-303-670(6), in accordance with WAC 173-303-680(2) and
31 (3)].
- 32 The Permittees will operate the LAW Vitrification System in accordance with Operating
33 Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition
34 III.10.H.5.e.vi., Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to
35 Permit Condition III.10.H.5.e., and Operating Unit 10, Appendix 9.15 of this Permit, as
36 approved pursuant to Permit Condition III.10.H.5.f., except as modified pursuant to
37 Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., III.10.H.4., and in accordance
38 with the following:
- 39 III.10.H.1.c.i. The Permittees will operate the LAW Vitrification System in order to maintain the
40 systems and process parameters listed in Permit Tables III.10.H.C and III.10.H.F., as

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

- 1 B. The magnitude, dates, and duration of the deviations;
2 C. Results of the investigation of the cause of the deviations; and
3 D. Corrective measures taken to minimize future occurrences of the deviations.
- 4 III.10.H.1.c.viii. If any portion of the LAW Vitrification System is bypassed while treating dangerous
5 and/or mixed waste it will be regarded as non-compliance with the operating conditions
6 specified in Permit Condition III.10.H.1.c. and the performance standards specified in
7 Permit Condition III.10.H.1.b. After such a bypass event, the Permittees will perform the
8 following actions:
- 9 A. Investigate the cause of the bypass event;
10 B. Take appropriate corrective measures to minimize future bypasses;
11 C. Record the investigation findings and corrective measures in the operating record;
12 and
13 D. Submit a written report to Ecology within five (5) days of the bypass event
14 documenting the result of the investigation and corrective measures.
- 15 III.10.H.1.c.ix. The Permittees will control fugitive emissions from the LAW Vitrification System by
16 maintaining the melters under negative pressure.
- 17 III.10.H.1.c.x. Compliance with the operating conditions specified in Permit Condition III.10.H.1.c. will
18 be regarded as compliance with the required performance standards identified in Permit
19 Condition III.10.H.1.b. However, evidence that compliance with these operating
20 conditions is insufficient to ensure compliance with the performance standards, will
21 justify modification, revocation, or re-issuance of this Permit, in accordance with Permit
22 Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g.
- 23 III.10.H.1.d. Inspection Requirements [WAC 173-303-680(3)]
- 24 III.10.H.1.d.i. The Permittees will inspect the LAW Vitrification System in accordance with the
25 Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in
26 accordance with Permit Condition III.10.C.5.c.
- 27 III.10.H.1.d.ii. The inspection data for LAW Vitrification System will be recorded, and the records will
28 be placed in the WTP Unit operating record for the LAW Vitrification System, in
29 accordance with Permit Condition III.10.C.4.
- 30 III.10.H.1.d.iii. The Permittees will comply with the inspection requirements specified in Operating Unit
31 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f.,
32 and as modified by Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., and
33 III.10.H.4.
- 34 III.10.H.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-
35 303-670(7) and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]
- 36 III.10.H.1.e.i. Upon receipt of a written request from Ecology, the Permittees will perform sampling
37 and analysis of the dangerous and mixed waste and exhaust emissions to verify that the

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

- 1 III.10.H.1.f.iv. The Permittees will submit an annual report to Ecology each calendar year within ninety
2 (90) days following the end of the year of all quarterly CEM Calibration Error and
3 Annual CEM Performance Specification Tests conducted in accordance with Permit
4 Condition III.10.H.1.e.iii.
- 5 III.10.H.1.g. Closure
6 The Permittees will close the LAW Vitrification System in accordance with Operating
7 Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.
- 8 III.10.H.2. Shakedown Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-
9 670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)].
- 10 III.10.H.2.a. The shakedown period for the LAW Vitrification System will be conducted in
11 accordance with Permit Condition III.10.H.1., Operating Unit 10, Appendix 9.15 of this
12 Permit, as approved pursuant to Permit Condition III.10.H.5.f., and as modified in
13 accordance with Permit Conditions III.10.H.1.b.xii., III.10.H.2., and III.10.H.3.
- 14 III.10.H.2.b. Duration of the Shakedown Period
- 15 III.10.H.2.b.i. The shakedown period for the LAW Vitrification System will begin with the initial
16 introduction of dangerous waste in the LAW Vitrification System following construction
17 and will end with the start of the demonstration test.
- 18 III.10.H.2.b.ii. The shakedown period will not exceed the following limits, as defined by hours of
19 operation of the LAW Vitrification System with dangerous waste. The Permittees may
20 petition Ecology for one extension of each shakedown phase for seven hundred and
21 twenty (720) additional operating hours in accordance with Permit modification
22 procedures specified in Permit Conditions III.10.C.2.e. and III.10.C.2.f.
- 23 Shakedown Phase 1: 720 hours
24 Shakedown Phase 2: 720 hours
- 25 III.10.H.2.b.iii. Shakedown Phase 2 will not be commenced until documentation has been submitted to
26 Ecology verifying that the LAW Vitrification System has operated at a minimum of 75%
27 of the shakedown Phase 1 feed-rate limit for two (2) separate eight (8) consecutive hour
28 periods with no AWFCOs.
- 29 III.10.H.2.c. Allowable Waste Feed During the Shakedown Period
- 30 III.10.H.2.c.i. The Permittees may feed the dangerous waste specified for the LAW Vitrification System
31 on the Part A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those
32 wastes outside the waste acceptance criteria specified in the WAP, Attachment 1, Chapter
33 3.0 of this Permit, as approved pursuant to Permit Condition III.10.C.3., except Permit
34 Conditions III.10.H.2.c.ii. through v. also apply.
- 35 III.10.H.2.c.ii. The Permittees will not feed the following wastes to the LAW Vitrification System
36 during Shakedown Phase 1:
- 37 A. Acutely toxic dangerous waste listed in WAC 173-303-081(a)(2)(a)(i).

- 1 B. Mixed waste
- 2 III.10.H.2.c.iii. The Permittees will not feed the following waste to the LAW Vitrification System during
3 Shakedown Phase 2:
- 4 A. Mixed waste
- 5 III.10.H.2.c.iv. The feed-rates to the LAW Vitrification System will not exceed the limits in Permit
6 Tables III.10.H.D and III.10.H.F, as approved/modified pursuant to Permit Condition
7 III.10.H.5.
- 8 III.10.H.2.c.v. The Permittees will conduct sufficient analysis of the dangerous waste treated in the
9 LAW Vitrification System to verify that the waste feed is within the physical and
10 chemical composition limits specified in this Permit.
- 11 III.10.H.3. Demonstration Test Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-
12 303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and
13 (3)].
- 14 III.10.H.3.a. Demonstration Test Period
- 15 III.10.H.3.a.i. The Permittees will operate, monitor, and maintain the LAW Vitrification System as
16 specified in Permit Condition III.10.H.1., and Operating Unit 10, Appendix 9.15 of this
17 Permit, as approved pursuant to Permit Condition III.10.H.5.f., except as modified in
18 accordance with Permit Conditions III.10.H.1.b.xii., and III.10.H.3.
- 19 III.10.H.3.a.ii. Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit
20 Condition III.10.H.5.f., will be resubmitted to Ecology for approval by the Permittees as
21 a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. at least
22 one hundred and eighty (180) days prior to the start date of the demonstration test. The
23 revised Demonstration Test Plan will include applicable EPA promulgated test methods
24 and procedures in effect at the time of the re-submittal and projected commencement and
25 completion dates for the Demonstration Test.
- 26 III.10.H.3.a.iii. The Permittees will not commence the demonstration test period until documentation has
27 been submitted to Ecology verifying that the LAW Vitrification System has operated at a
28 minimum of 90% of the demonstration test period feed-rate limit for a minimum of an
29 eight (8) consecutive hours period on two (2) consecutive days.
- 30 III.10.H.3.b. Performance Standards
- 31 The Permittees will demonstrate compliance with the performance standards specified in
32 Permit Condition III.10.H.1.b. during the Demonstration Test Period.
- 33 III.10.H.3.c. Allowable Waste Feed During the Demonstration Test Period
- 34 III.10.H.3.c.i. The Permittees may feed the dangerous waste specified for the LAW Vitrification System
35 in Part A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those waste
36 outside the waste acceptance criteria specified in the WAP, Operating Unit 10, Chapter
37 3.0 of this Permit, as approved pursuant to Permit Condition III.10.C.3., except Permit
38 Conditions III.10.H.3.c.ii. through iv. also apply.

- 1 III.10.H.3.c.ii. The Permittees will not feed mixed waste to the LAW Vitrification System.
- 2 III.10.H.3.c.iii. The dangerous waste feed-rates to the LAW Vitrification System will not exceed the
3 limits in Permit Tables III.10.H.D and F, as approved/modified pursuant to Permit
4 Condition III.10.H.5.
- 5 III.10.H.3.c.iv. The Permittees will conduct sufficient analysis of the dangerous waste treated in the
6 LAW Vitrification System to verify that the dangerous waste is within the physical and
7 chemical composition limits specified in this Permit.
- 8 III.10.H.3.d. Demonstration Data Submissions and Certifications
- 9 III.10.H.3.d.i. The Permittees will submit to Ecology a complete demonstration test report within one-
10 hundred twenty (120) calendar days of completion of the Demonstration Test including
11 all data collected during the Demonstration Test and updated Permit Tables III.10.I.D,
12 III.10.I.E and III.10.I.F.
- 13 III.10.H.3.d.ii. The Permittees must submit the following information to Ecology prior to receiving
14 Ecology's approval to commence feed of dangerous waste and mixed waste to the LAW
15 Vitrification System:
- 16 A. The Permittees will submit a summary of data collected as required by the
17 Demonstration Test Plan to Ecology upon completion of the Demonstration Test.
- 18 B. A certification that the Demonstration Test has been carried out in accordance with
19 the approved Demonstration Test Plan and approved modifications within thirty (30)
20 days of the completion of the Demonstration Test [WAC 173-303-807(8)].
- 21 C. Calculations and analytical data showing compliance with the performance standards
22 specified in Permit Conditions III.10.H.1.b.i, III.10.H.1.b.iv, III.10.H.1.b.v,
23 III.10.H.1.b.vi, and III.10.H.1.b.vii
- 24 D. Laboratory data QA/QC summary for the information provided in
25 III.10.H.3.d.ii.C.
- 26 III.10.H.3.d.iii. After successful completion of the Demonstration Test and receipt of Ecology's approval,
27 the Permittees will be authorized to commence feed of dangerous waste and mixed waste
28 to the LAW Vitrification System for the post-demonstration test period indicated in
29 Permit Tables III.10.H.D and F, as approved/modified pursuant to Permit Condition
30 III.10.H.5, in compliance with the operating requirements specified in Permit Condition
31 III.10.H.1.c. and within the limitations specified in Permit Condition III.10.C.14.
- 32 III.10.H.3.d.iv. RESERVED
- 33 III.10.H.3.d.v. After successful completion of the Demonstration Test, Permittees submittal of the
34 following to Ecology and the Permittees receipt of approval of the following in writing,
35 the Permittees will be authorized to feed dangerous waste and mixed waste to the LAW
36 Vitrification System pursuant to Permit Section III.10.I.
- 37 A. A complete Demonstration Test Report for the LAW Vitrification System and
38 updated Permit Tables III.10.I.D, III.10.I.E, and III.10.I.F, as approved/modified

1 pursuant to Permit Conditions III.10.H.5 and III.10.C.11.c or III.10.C.11.d. The test
2 report will be certified in accordance with WAC 173-303-807(8), in accordance with
3 WAC 173-303-680(2) and (3).

4 B. A Final Risk Assessment Report completed pursuant to Permit Conditions
5 III.10.C.11.c. or III.10.C.11.d.

6 III.10.H.3.d.vi. If any calculations or testing results show that one or more of the performance standards
7 listed in Permit Condition III.10.H.1.b., with the exception of Permit Condition
8 III.10.H.1.b.x., for the LAW Vitrification System were not met during the Demonstration
9 Test, the Permittees will perform the following actions:

- 10 A. Immediately stop dangerous and mixed waste feed to the LAW Vitrification System
11 under the mode of operation that resulted in not meeting the performance standard(s).
- 12 B. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting
13 the performance standard(s) as specified in Permit Condition I.E.21.
- 14 C. Investigate the cause of the failure and submit a report of the investigation findings to
15 Ecology within fifteen (15) days of discovery of not meeting the performance
16 standard(s).
- 17 D. Submit to Ecology within fifteen (15) days of discovery of not meeting the
18 performance standard(s), documentation supporting a mode of operation where all
19 performance standards listed in Permit Condition III.10.H.1.b., with the exception of
20 Permit Condition III.10.H.1.b.x., for the LAW Vitrification System were met during
21 the demonstration test, if any such mode was demonstrated.
- 22 E. Based on the information provided to Ecology by the Permittees pursuant to Permit
23 Conditions III.10.H.3.d.vi.A through D above, and any additional information,
24 Ecology may provide in writing, direction to the Permittees to stop dangerous and/or
25 mixed waste feed to the LAW Vitrification System and/or amend the mode of
26 operation the Permittees are allowed to continue operations prior to Ecology approval
27 of a compliance schedule and/or revised Demonstration Test Plan pursuant to Permit
28 Conditions III.10.H.3.d.vi.F and G.
- 29 F. If the performance standard listed in Permit Condition III.10.H.1.b.i. was not met
30 during the Demonstration Test, the Permittees will submit within one hundred and
31 twenty (120) days of discovery of not meeting the performance standard, a revised
32 Demonstration Test Plan (if appropriate), and a compliance schedule for Ecology
33 approval to address this deficiency. If a revised Demonstration Test Plan is
34 submitted, it will be accompanied by a request for approval to retest as a permit
35 modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. The
36 revised Demonstration Test Plan (if submitted) must include substantive changes to
37 prevent failure from reoccurring.
- 38 G. If any of the performance standards listed in Permit Condition III.10.H.1.b., with the
39 exception of Permit Conditions III.10.H.1.b.i. or III.10.H.1.b.x., were not met during
40 the Demonstration Test the Permittees will submit to Ecology within one hundred

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

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

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

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

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

- 1 [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(f), in accordance with WAC 173-
2 303-680 and WAC 173-303-806(4)(i)(i)(B)];
- 3 III.10.H.5.d.iv. A description of materials and equipment used to provide corrosion protection for
4 external metal components in contact with soil and water, including factors affecting the
5 potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-
6 303-680(2) and WAC 173-303-806(4)(i)(i)(A)];
- 7 III.10.H.5.d.v. Materials selection documentation for equipment for each sub-system (e.g., physical and
8 chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-
9 680(2) and WAC 173-303-806(4)(i)(i)(A)];
- 10 III.10.H.5.d.vi. Vendor information (including, but not limited to, required performance warranties, as
11 available), consistent with information submitted under ii. above, for sub-system
12 equipment will be submitted for incorporation into the Administrative Record. [WAC
13 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-
14 806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(iv)];
- 15 III.10.H.5.d.vii. Sub-system, sub-system equipment, and leak detection system instrument control logic
16 narrative description (e.g., software functional specifications, descriptions of fail-safe
17 conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-
18 303-806(4)(i)(v)].
- 19 III.10.H.5.d.viii. System description related to sub-system equipment, and system descriptions related to
20 leak detection systems, (including instrument control logic and narrative descriptions),
21 for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-
22 806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];
- 23 III.10.H.5.d.ix. A detailed description of how the sub-system equipment will be installed and tested
24 [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), in accordance
25 with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];
- 26 III.10.H.5.d.x. For process monitoring, control, and leak detection system instrumentation for the LAW
27 Vitrification System as identified in Permit Tables III.10.H.C. and III.10.H.F., a detailed
28 description of how the process monitoring, control, and leak detection system
29 instrumentation, will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC
30 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi), and WAC 173-303-
31 806(4)(i)(i)(B)];
- 32 III.10.H.5.d.xi. Mass and energy balance for projected normal operating conditions used in developing
33 the Piping and Instrumentation Diagrams and Process Flow Diagrams, including
34 assumptions and formulas used to complete the mass and energy balance, so that they can
35 be independently verified, for incorporation into the Administrative Record [WAC 173-
36 303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];
- 37 III.10.H.5.d.xii. Documentation that sub-systems equipment are designed to prevent the accumulation of
38 hydrogen gas levels above the lower explosive limit for incorporation into the
39 Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC
40 173-303-806(4)(i)(v)];

- 1 III.10.H.5.d.xiii. Leak detection system documentation (e.g. vendor information, etc.) consistent with
2 information submitted under Permit Condition III.10.H.5.c.ii. and Permit Conditions
3 III.10.H.5.d.ii., vii., viii., and x. above, will be submitted for incorporation into the
4 Administrative Record.
- 5 III.10.H.5.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
6 will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following as
7 specified below for incorporation into Operating Unit 10, Appendix 9.18 of this Permit,
8 except Permit Condition III.10.H.5.e.i., which will be incorporated into Operating Unit
9 10, Chapter 6.0 of this Permit. All information provided under this permit condition must
10 be consistent with information provided pursuant to Permit Conditions III.10.H.5.b., c.,
11 d., e., and f., III.10.C.3.e. and III.10.C.11.b., as approved by Ecology:
- 12 III.10.H.5.e.i. Integrity assessment program and schedule for the LAW Vitrification System will
13 address the conducting of periodic integrity assessments on the LAW Vitrification
14 System over the life of the system, as specified in Permit Condition III.10.H.5.b.ix. and
15 WAC 173-303-640(3)(b), in accordance with WAC 173-303-680, and descriptions of
16 procedures for addressing problems detected during integrity assessments. The schedule
17 must be based on past integrity assessments, age of the system, materials of construction,
18 characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b), in
19 accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(B)].
- 20 III.10.H.5.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so
21 that it will detect the failure of either the primary or secondary containment structure or
22 the presence of any release of dangerous and/or mixed waste or accumulated liquid in the
23 secondary containment system within twenty-four (24) hours [WAC 173-303-
24 640(4)(c)(iii)]. Detection of a leak of at least 0.1 gallons per hour within twenty-four
25 (24) hours is defined as being able to detect a leak within twenty-four (24) hours. Any
26 exceptions to this criteria must be approved by Ecology in accordance with WAC 173-
27 303-680, WAC 173-303-640(4)(c)(iii), and WAC 173-303-806(4)(i)(b).
- 28 III.10.H.5.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste
29 and accumulated liquids can be removed from the secondary containment system within
30 twenty-four (24) hours [WAC 173-303-806(4)(i)(B)].
- 31 III.10.H.5.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices
32 are in place to prevent spills and overflows from the LAW Vitrification System or
33 containment systems in compliance with WAC 173-303-640(5)(b)(i) through (iii), in
34 accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(B);
- 35 III.10.H.5.e.v. Description of procedures for investigation and repair of the LAW Vitrification System
36 [WAC 173-303-640(6) and WAC 173-303-640(7)(e) and (f), in accordance with WAC
37 173-303-680, WAC 173-303-320, WAC 173-303-806(4)(a)(v), and WAC 173-303-
38 806(4)(a)(ii)(B)].
- 39 III.10.H.5.e.vi. Updated Chapter 4.0, Narrative Description, Tables and Figures as identified in Permit
40 Tables III.10.H.A and III.10.H.B, as modified pursuant to Permit Condition

- 1 III.10.H.5.e.x. and updated to identify routinely non-accessible LAW Vitrification sub-
2 systems.
- 3 III.10.H.5.e.vii. Description of procedures for management of ignitable and reactive, and incompatible
4 dangerous and/or mixed waste as specified in WAC 173-303-640(9) and (10), in
5 accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B).
- 6 III.10.H.5.e.viii. A description of the tracking system used to track dangerous and/or mixed waste
7 generated throughout the LAW Vitrification system, pursuant to WAC 173-303-380.
- 8 III.10.H.5.e.ix. Permit Tables III.10.H.C and III.10.I.C will be completed for LAW Vitrification System
9 process and leak detection system monitors and instruments (to include, but not be
10 limited to: instruments and monitors measuring and/or controlling flow, pressure,
11 temperature, density, pH, level, humidity, and emissions) to provide the information as
12 specified in each column heading. Process and leak detection system monitors and
13 instruments for critical systems as specified in Operating Unit 10, Appendix 2.0 and as
14 updated pursuant to Permit Condition III.10.C.9.b., and for operating parameters as
15 required to comply with Permit Condition III.10.C.3.e.iii. will be addressed. Process
16 monitors and instruments for non-waste management operations (e.g., utilities, raw
17 chemical storage, non-contact cooling waters, etc.) are excluded from this permit
18 condition [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC
19 173-303-806(4)(i)(v)];
- 20 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
21 WAC 173-303-806(4)(i)(i)(A) through (B)]:
- 22 A. Under column 1, update and complete list of dangerous and mixed waste LAW
23 Vitrification System sub-systems, including plant items that comprise each system
24 (listed by item number).
- 25 B. Under column 2, update and complete system designations.
- 26 C. Under column 3, replace the 'Reserved' with Operating Unit 10, Appendix 9.0
27 subsections (e.g., 9.1, 9.2, etc.) designated in Permit Conditions III.10.H.5.b., c., and
28 d. specific to LAW Vitrification System sub-system as listed in column 1.
- 29 D. Under column 4, update and complete list of narrative description, tables, and
30 figures.
- 31 III.10.H.5.f. One hundred and eighty (180) days prior to initial receipt of dangerous and/or mixed
32 waste in the WTP Unit, the Permittees will submit for review and receive approval for
33 incorporation into Operating Unit 10, Appendix 9.15 of this Permit, a Demonstration Test
34 Plan for the LAW Vitrification System to demonstrate that the LAW Vitrification
35 Systems meets the performance standards specified in Permit Condition III.10.H.1.b. In
36 order to incorporate the Demonstration Test Plan for the LAW Vitrification System into
37 Operating Unit 10, Appendix 9.15, Permit Condition III.10.C.2.g. process will be
38 followed. The Demonstration Test Plan will include, but not be limited to, the following
39 information. The Demonstration Test Plan will also be consistent with the information
40 provided pursuant to Permit Conditions III.10.H.5.b., c., d., and e., III.10.C.3.e., and

1 III.10.C.11.b., as approved by Ecology and consistent with the schedule described in
2 Operating Unit 10, Appendix 1.0 of this Permit. The documentation required pursuant to
3 Permit Condition III.10.H.5.f.x., in addition to being incorporated into Operating Unit 10,
4 Appendix 9.15, will be incorporated by reference in Operating Unit 10, Chapter 6.0 of
5 this Permit.

6 *Notes: (1) The following should be consulted to prepare this Demonstration Test Plan:*
7 *"Guidance on Setting Permit Conditions and Reporting Trial Burn Results Volume II of*
8 *the Hazardous Waste Incineration Guidance Series," (EPA/625/6-89/019) and Risk Burn*
9 *Guidance For Hazardous Waste Combustion Facilities," (EPA-R-01-001, July 2001),*
10 *WAC 173-303-807(2), WAC 173-303-670(5), WAC-173-303-670(6), 40 CFR*
11 *§63.1207(f)(2), 40 CFR §63.1209, and Appendix to 40 CFR Part 63 EEE.*

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

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

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

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

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

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

30 III.10.H.5.f.ii. Specification of trial principal organic dangerous constituents (PODCs) for which
31 destruction and removal efficiencies are proposed to be calculated during the
32 demonstration test and for inclusion in Permit Conditions III.10.H.1.b.i. and III.10.I.1.b.i.
33 These trial PODCs will be specified based on destructibility, concentration or mass in the
34 waste and the dangerous waste constituents or constituents in WAC 173-303-9905;

35 III.10.H.5.f.iii. A description of the blending procedures, prior to introducing the feed-streams into the
36 melter, including analysis of the materials prior to blending, and blending ratios;

37 III.10.H.5.f.iv. A description of how the surrogate feeds are to be introduced for the demonstration. This
38 description should clearly identify the differences and justify how any of differences

1 would impact the surrogate feed introduction as representative of how mixed waste feeds
2 will be introduced;

3 III.10.H.5.f.v. A detailed engineering description of the LAW Vitrification System, including:

- 4 A. Manufacturer's name and model number for each sub-system;
- 5 B. Design capacity of each sub-system including documentation (engineering
6 calculations, manufacturer/vendor specifications, operating data, etc.) supporting
7 projected operational efficiencies (e.g., WESP projected removal efficiency for
8 individual metals, halogens, particulates, etc.) and compliance with performance
9 standards specified in Permit Condition III.10.H.1.b.;
- 10 C. Detailed scaled engineering drawings, including Process Flow Diagrams, Piping and
11 Instrumentation Diagrams, Vessel Drawings (plan, and elevation with cross sections)
12 and General Arrangement Drawings;
- 13 D. Process Engineering Descriptions;
- 14 E. Mass and energy balance for each projected operating condition and each
15 demonstration test condition, including assumptions and formulas used to complete
16 the mass and energy balance, so that they can be independently verified for
17 incorporation into the Administrative Record;
- 18 F. Engineering Specifications/data sheets (materials of construction, physical and
19 chemical tolerances of equipment, and fan curves);
- 20 G. Detailed Description of Automatic Waste Feed Cutoff System addressing critical
21 operating parameters for all performance standards specified in Permit Condition
22 III.10.H.1.b.;
- 23 H. Documentation to support compliance with performance standards specified in
24 Permit Condition III.10.H.1.b., including engineering calculations, test data, and
25 manufacturer/vendor's warranties, etc.;
- 26 I. Detailed description of the design, operation, and maintenance practices for air
27 pollution control system;
- 28 J. Detailed description of the design, operation, and maintenance practices of any stack
29 gas monitoring and pollution control monitoring system;
- 30 K. Documentation based on current WTP Unit design either confirming the Permittees'
31 demonstration that it is not technically appropriate to correct standards listed in
32 Permit Conditions III.10.H.1.b.ii. through III.10.H.1.b.ix. to seven (7) percent
33 oxygen, or a request, pursuant to Permit Conditions III.10.C.9.e. and III.10.C.9.f., to
34 update Permit Conditions III.10.H.1.b.ii. through III.10.H.1.b.ix., III.10.I.b.ii. through
35 III.10.I.b.ix., III.10.I.1.e.iii., and III.10.H.1.e.iii., Permit Tables III.10.H.C.,
36 III.10.H.F., III.10.I.C., III.10.I.F. and Operating Unit 10, Appendix 9.0 to reflect the
37 addition of an oxygen monitor and the correction of the standards to seven percent
38 (7%) oxygen.

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

- 1 III.10.H.5.f.x. The test conditions proposed must demonstrate meeting the performance standards
2 specified in Permit Condition III.10.H.1.b. with the simultaneous operation of both
3 melters at capacity and input from the LAW Vitrification Vessel Ventilation System at
4 capacity to simulate maximum loading to the LAW Vitrification System off-gas
5 treatment system and to establish the corresponding operating parameter ranges. To the
6 extent that operation of one (1) melter or two (2) melters can not be sustained within the
7 operating parameter range established at this maximum load, additional demonstration
8 test conditions must be included in the plan and performed to establish operating
9 parameter ranges for each proposed operating mode while demonstrating meeting the
10 performance standards specified in Permit Condition III.10.H.1.b.;
- 11 III.10.H.5.f.xi. Detailed description of procedures for start-up and shutdown of waste feed and
12 controlling emissions in the event of an equipment malfunction, including off-normal and
13 emergency shutdown procedures;
- 14 III.10.H.5.f.xii. A calculation of waste residence time;
- 15 III.10.H.5.f.xiii. Any request to extrapolate metal feed-rate limits from Demonstration Test levels must
16 include:
- 17 A. A description of the extrapolation methodology and rationale for how the approach
18 ensures compliance with the performance standards as specified in Permit Condition
19 III.10.H.1.b.
- 20 B. Documentation of the historical range of normal metal feed-rates for each
21 feedstream.
- 22 C. Documentation that the level of spiking recommended during the demonstration test
23 will mask sampling and analysis imprecision and inaccuracy to the extent that
24 extrapolation of feed-rates and emission rates from the Demonstration Test data will
25 be as accurate and precise as if full spiking were used.
- 26 III.10.H.5.f.xiv. Documentation of the expected levels of constituents in LAW Vitrification System input
27 streams including, but not limited to, waste feed, glass former and reactants, control air,
28 process air, steam, sparge bubbler air, air in-Leakage from melter cave, gases from LAW
29 Vitrification Vessel Ventilation System, and process water.
- 30 III.10.H.5.f.xv. Documentation justifying the duration of the conditioning required to ensure the LAW
31 Vitrification System had achieved steady-state operations under Demonstration Test
32 operating conditions.
- 33 III.10.H.5.f.xvi. Documentation of LAW Vitrification System process and leak detection system
34 instruments and monitors as listed on Permit Tables III.10.H.C., III.10.H.F., III.10.I.C., and
35 III.10.I.F. to include:
- 36 A. Procurement specifications;
- 37 B. Location used;
- 38 C. Range, precision, and accuracy;

- 1 D. Detailed descriptions of calibration/functionality test procedures (either method
2 number ASTM) or provide a copy of manufacturer's recommended calibration
3 procedures;
- 4 E. Calibration/functionality test, inspection, and routine maintenance schedules and
5 checklists, including justification for calibration, inspection and maintenance
6 frequencies, criteria for identifying instruments found to be significantly out of
7 calibration, and corrective action to be taken for instruments found to be significantly
8 out of calibration (e.g., increasing frequency of calibration, instrument replacement,
9 etc.);
- 10 F. Equipment instrument control logic narrative description (e.g., software functional
11 specifications, descriptions of fail safe conditions, etc.) [WAC 173-303-680(2), WAC
12 173-303-806(4)(i)(B), and WAC 173-303-806(4)(i)(v)].

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

14

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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
<u>LAW Melter Process System</u> LMP-MLTR-00001 (LAW Melter 1) LMP-MLTR-00002 (LAW Melter 2)	LMP	<u>24590-LAW</u> -P1-P01T-P0007 -P1-P01T-P0002 -P1-P01T-P0009	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.
<u>LAW Primary Offgas Process System</u> LOP-FCLR-00001 (Melter 1 Primary Film Cooler) LOP-FCLR-00002 (Melter 1 Standby Film Cooler No. 2) LOP-FCLR-00003 (Melter 2 Primary Film Cooler) LOP-FCLR-00004 (Melter 2 Standby Film Cooler)	LOP	<u>24590-LAW</u> -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0009 -M6-LOP-P0001 -M6-LOP-P0002	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.
<u>LAW Primary Offgas Process System (Cont.)</u> LOP-SCB-00001 (Melter 1 SBS) LOP-SCB-00002 (Melter 2 SBS)	LOP	<u>24590-LAW</u> -M5-V17T-P0007 -M5-V17T-P0008 -M6-LOP-P0001 -M6-LOP-P0002 -MK-LOP-P0001001	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.

10/2008

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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-P0001002 -MK-LOP-P0001003 -MKD-LOP-P0008 -NID-LOP-P0001 -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0010	
<u>LAW Primary Offgas Process System (Cont.)</u> LOP-WESP-00001 (Melter 1 WESP) LOP-WESP-00002 (Melter 2 WESP)	LOP	<u>24590-LAW</u> -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	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.
<u>LAW Secondary Offgas/Vessel Vent Process System</u> LVP-HEPA-00001A (HEPA Filter) LVP-HEPA-00001B (HEPA Filter)	LVP	<u>24590-LAW</u> -M5-V17T-P0010 -M6-LVP-P0003	Section 4.1.3.3, Table 4-8, Figures 4A-1 and 4A-3 in Operating Unit 10, Chapter 4.0 of this Permit.

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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
LVP-HEPA-00002A (HEPA Filter) LVP-HEPA-00002B (HEPA Filter) LVP-HEPA-00003A (HEPA Filter)			
<u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u> 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.
<u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u> 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.
<u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u> LVP-ADBR-00001A (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.

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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
LVP-ADBR-00001B (Offgas Mercury Adsorber – located on LVP-SKID-00001)			
<u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u> LVP-SCB-00001 (LAW Melter Offgas Caustic Scrubber)	LVP	<u>24590-LAW</u> -P1-P01T-P0004 -P1-P01T-P0009 -M6-LVP-P0002	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.
<u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u> LVP-HTR-00001A (Electric Heater) LVP-HTR-00001B (Electric Heater) LVP-HTR-00002 (Electric Heater – located on LVP-SKID-00002)	LVP	<u>24590-LAW</u> -M5-V17T-P0010 -M6-LVP-P0001 -M6-LVP-P0005	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.
<u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u> LVP-HX-00001 (Heat Exchanger – located on	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.

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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
LVP-SKID-00002)			
<u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u> LVP-EXHR-00001A (Offgas Exhauster) LVP-EXHR-00001B (Offgas Exhauster) LVP-EXHR-00001C (Offgas Exhauster)	LVP	<u>24590-LAW</u> -M5-V17T-P0010 -M6-LVP-P0001	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.
<u>LAW Secondary Offgas/Vessel Vent Process System (Cont.)</u> LAW Stack	LVP	<u>24590-LAW</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

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^a (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specification Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a 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

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

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

Description of Waste	Shakedown 1 and Post Demonstration Test	Shakedown 2 and Demonstration Test

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant**Table III.10.H.D - Maximum Feed-rates to LAW Vitrification System (RESERVED)**

Description of Waste	Shakedown 1 and Post Demonstration Test	Shakedown 2 and Demonstration Test
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

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

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

1

TABLE III.10.H.F - LAW Vitrification System Waste Feed Cutoff Parameters* ¹ (RESERVED)

Sub-system Designation	Instrument Tag Number	Parameter Description	Setpoints During Shakedown 1 and Post Demonstration Test	Setpoints During Shakedown 2 and Demonstration Test
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
<p>Footnotes: * A continuous monitoring system will be used as defined in Permit Section <u>III.10.C.1.</u> ¹ 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 <u>III.10.H.D.</u> of this Permit.</p>				

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 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.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

1 Dangerous Waste Regulations, namely, WAC 173-303-640(3) (applicable paragraphs
2 [i.e., (a) through (g)], in accordance with WAC 173-303-680.

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

- 9 III.10.I.1.a.v. The Permittees will ensure periodic integrity assessments are conducted on the LAW
10 Vitrification System listed in Permit Table III.10.I.A, as approved/modified pursuant to
11 Permit Condition III.10.H.5, over the term of this Permit in accordance with WAC 173-
12 303-680(2) and (3) as specified in WAC 173-303-640(3)(b), following the description of
13 the integrity assessment program and schedule in Operating Unit 10, Chapter 6.0 of this
14 Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c.
15 Results of the integrity assessments will be included in the WTP Unit operating record
16 until ten (10) years after post closure, or corrective action is complete and certified,
17 whichever is later.
- 18 III.10.I.1.a.vi. The Permittees will address problems detected during the LAW Vitrification System
19 integrity assessments specified in Permit Condition III.10.I.1.a.v. following the
20 description of the integrity assessment program in Operating Unit 10, Chapter 6.0 of this
21 Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c.
- 22 III.10.I.1.a.vii. All process monitors/instruments as specified in Permit Table III.10.I.F, as
23 approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., will be
24 equipped with operational alarms to warn of deviation, or imminent deviation from the
25 limits specified in Permit Table III.10.I.F.
- 26 III.10.I.1.a.viii. The Permittees will install and test all process and leak detection system
27 monitors/instruments, as specified in Permit Tables III.10.I.C and III.10.I.F, as
28 approved/modified pursuant to Permit Condition III.10.H.5 and III.10.H.3.d.v., in
29 accordance with Operating Unit 10, Appendices 9.1, 9.2, and 9.14 of this Permit, as
30 approved pursuant to Permit Conditions III.10.H.5.d.x. and III.10.H.5.f.xvi.
- 31 III.10.I.1.a.ix. No dangerous and/or mixed waste will be treated in the LAW Vitrification System unless
32 the operating conditions, specified under Permit Condition III.10.I.1.c. are complied with.
- 33 III.10.I.1.a.x. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
34 materials in the LAW Vitrification System if these substances could cause the sub-
35 system, sub-system equipment, or the containment system to rupture, leak, corrode, or
36 otherwise fail [WAC 173-303-640(5)(a), in accordance with WAC 173-303-680(2)].
37 This condition is not applicable to corrosion of LAW Vitrification System sub-system or
38 sub-system equipment that are expected to be replaced as part of normal operations (e.g.,
39 melters).

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

1 with Permit Condition III.10.I.1.a.xvii.E [WAC 173-303-640(7)(e) and (f) and WAC
2 173-303-640(8), in accordance with WAC 173-303-680(3)].

3 III.10.I.1.a.xvi. An impermeable coating, as specified in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.9,
4 9.11, and 9.12 of this Permit, as approved pursuant to Permit Condition III.10.H.5.b.v.,
5 will be maintained for all concrete containment systems and concrete portions of
6 containment systems for the LAW Vitrification System sub-systems listed in Permit
7 Tables III.10.I.A and III.10.I.B, as approved/modified pursuant to Permit Condition
8 III.10.H.5 (concrete containment systems that do not have a liner, pursuant to WAC 173-
9 303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and have construction joints,
10 will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in accordance with WAC
11 173-303-680(2). The coating will prevent migration of any dangerous and/or mixed
12 waste into the concrete. All coatings will meet the following performance standards:

- 13 A. The coating must seal the containment surface such that no cracks, seams, or other
14 avenues through which liquid could migrate are present;
- 15 B. The coating must be of adequate thickness and strength to withstand the normal
16 operation of equipment and personnel within the given area such that degradation or
17 physical damage to the coating or lining can be identified and remedied before
18 dangerous and mixed waste could migrate from the system; and
- 19 C. The coating must be compatible with the dangerous and/or mixed waste, treatment
20 reagents, or other materials managed in the containment system [WAC 173-303-
21 640(4)(e)(ii)(D), in accordance with WAC 173-303-680(2) and (3) and WAC 173-
22 303-806(4)(i)(A)].

23 III.10.I.1.a.xvii. The Permittees inspect all secondary containment systems for the LAW Vitrification
24 System sub-systems listed in Permit Tables III.10.I.A and III.10.I.B, as
25 approved/modified pursuant to Permit Condition III.10.H.5, in accordance with the
26 Inspection Schedule specified in Operating Unit 10, Chapter 6.0 of this Permit, as
27 approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c., and take the
28 following actions if a leak or spill of dangerous and/or mixed waste is detected in these
29 containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in accordance
30 with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-
31 806(4)(i)(B)].

- 32 A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the
33 LAW Vitrification System sub-systems or secondary containment system.
- 34 B. Determine the source of the dangerous and/or mixed waste.
- 35 C. Remove the waste from the containment area in accordance with WAC 173-303-
36 680(2) and (3) as specified in WAC 173-303-640(7)(b). The waste removed from
37 containment areas of the LAW Vitrification System sub-systems will be, as a
38 minimum, managed as dangerous and/or mixed waste.
- 39 D. If the cause of the release was a spill that has not damaged the integrity of the LAW
40 Vitrification System sub-system, the Permittees may return the LAW Vitrification

1 System sub-system to service in accordance with WAC 173-303-680(2) and (3) as
2 specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees will take
3 action to ensure the incident that caused the dangerous and/or mixed waste to enter
4 the containment system will not reoccur.

5 E. If the source of the dangerous and/or mixed waste is determined to be a leak from the
6 primary LAW Vitrification System into the secondary containment system, or the
7 system is unfit for use as determined through an integrity assessment or other
8 inspection, the Permittees will comply with the requirements of WAC 173-303-
9 640(7) and take the following actions:

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

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

23 G. In accordance with WAC 173-303-680(2) and (3), the Permittees will notify and
24 report releases to the environment to Ecology, as specified in WAC 173-303-
25 640(7)(d).

26 III.10.I.1.a.xviii. If liquids (e.g., dangerous and/or mixed waste, leaks and spills, precipitation, fire water,
27 liquids from damaged or broken pipes) cannot be removed from the secondary
28 containment system within twenty-four (24) hours, Ecology will be verbally notified
29 within twenty-four (24) hours of discovery. The notification will provide the information
30 in A, B, and C, listed below. The Permittees will provide Ecology with a written
31 demonstration within seven (7) business days, identifying at a minimum [WAC 173-303-
32 640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-680(3)
33 and WAC 173-303-806(4)(i)(i)(B)]:

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

38 III.10.I.1.a.xix. All air pollution control devices and capture systems in the LAW Vitrification System
39 will be maintained and operated at all times in a manner so as to minimize the emissions

- 1 of air contaminants and to minimize process upsets. Procedures for ensuring that the air
2 pollution control devices and capture systems in the LAW Vitrification System are
3 properly operated and maintained so as to minimize the emission of air contaminants and
4 process upsets will be established.
- 5 III.10.I.1.a.xx. In all future narrative permit submittals, the Permittees will include LAW Vitrification
6 sub-system names with the sub-system designation.
- 7 III.10.I.1.a.xxi. For any portion of the LAW Vitrification System that has the potential for formation and
8 accumulation of hydrogen gases, the Permittees will operate the portion to maintain
9 hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].
- 10 III.10.I.1.a.xxii. For each LAW Vitrification System sub-system holding dangerous and/or mixed waste
11 that are acutely or chronically toxic by inhalation, the Permittees will operate the system
12 to prevent escape of vapors, fumes, or other emissions into the air [WAC 173-303-
13 806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].
- 14 III.10.I.1.a.xxiii. The existing LAW building will retain capability to install the third melter before or after
15 hot start-up. No permanent systems, structures, or components shall be installed in the
16 melter cell, pour cave or wet process cell for the third melter that would preclude future
17 installation of the third melter.
- 18 III.10.I.1.b. Performance Standards
- 19 III.10.I.1.b.i. The LAW Vitrification System must achieve a destruction and removal efficiency (DRE)
20 of 99.99% for the principal organic dangerous constituents (PODCs) listed below [40
21 CFR §63.1203(c)(1) and 40CFR §63.1203(c)(2), in accordance with WAC 173-303-
22 680(2)]:
- 23 RESERVED
- 24 DRE in this permit condition will be calculated in accordance with the formula given
25 below:
- 26 $DRE = [1 - (W_{out}/W_{in})] \times 100\%$
- 27 Where:
- 28 W_{in} = mass feedrate of one principal organic dangerous constituent (PODC) in a waste
29 feedstream; and
- 30 W_{out} = mass emission rate of the same PODC present in exhaust emissions prior to
31 release to the atmosphere.
- 32 III.10.I.1.b.ii. Particulate matter emissions from the LAW Vitrification System will not exceed 34
33 mg/dscm (0.015 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with WAC 173-
34 303-680(2)];
- 35 III.10.I.1.b.iii. Hydrochloric acid and chlorine gas emissions from the LAW Vitrification System will
36 not exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-
37 303-680(2)];

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

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

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

1 offs to the LAW Vitrification System, whether automatically or manually activated, are
2 counted if the specified set-points are deviated from while dangerous and/or mixed waste
3 and waste residues continue to be processed in the LAW Vitrification System. A cascade
4 event is counted at a frequency of one (1) towards the first waste feed cut-off parameter,
5 specified on Permit Table III.10.I.F, from which the set-point is deviated:

6 In accordance with WAC 173-303-680(2) and (3), the Permittees may not resume
7 dangerous and/or mixed waste feed to the LAW Vitrification System until this written
8 report has been submitted, and

9 A. Ecology has authorized the Permittees, in writing, to resume dangerous and/or mixed
10 waste feed, or

11 B. Ecology has not, within seven (7) days, notified the Permittees in writing of the
12 following:

- 13 1. The Permittees written report does not document that the corrective measures
14 taken will minimize future exceedances; and
- 15 2. The Permittees must take further corrective measures and document that
16 these further corrective measures will minimize future exceedances.

17 III.10.I.1.c.ix. If any portion of the LAW Vitrification System is bypassed while treating dangerous
18 and/or mixed waste, it will be regarded as non-compliance with the operating conditions
19 specified in Permit Condition III.10.I.1.c. and the performance standards specified in
20 Permit Condition III.10.I.1.b. After such a bypass event, the Permittees will perform the
21 following actions:

22 A. Investigate the cause of the bypass event;

23 B. Take appropriate corrective measures to minimize future bypasses;

24 C. Record the investigation findings and corrective measures in the WTP Unit operating
25 record; and

26 D. Submit a written report to Ecology within five (5) days of the bypass event
27 documenting the result of the investigation and corrective measures.

28 III.10.I.1.c.x. The Permittees will control fugitive emissions from the LAW Vitrification System by
29 maintaining the melters under negative pressure.

30 III.10.I.1.c.xi. Compliance with the operating conditions specified in Permit Condition III.10.I.1.c. will
31 be regarded as compliance with the required performance standards identified in Permit
32 Condition III.10.I.1.b. However, evidence that compliance with these operating
33 conditions is insufficient to ensure compliance with the performance standards, will
34 justify modification, revocation, or re-issuance of this Permit, in accordance with Permit
35 Conditions III.10.C.2.e. and f., or III.10.C.2.g.

36 III.10.I.1.d. Inspection Requirements [WAC 173-303-680(3)]

- 1 III.10.I.1.d.i. The Permittees will inspect the LAW Vitrification System in accordance with the
2 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.I.1.d.ii. The inspection data for LAW Vitrification System will be recorded, and the records will
5 be placed in the WTP Unit operating record for LAW Vitrification System, in accordance
6 with Permit Condition III.10.C.4.
- 7 III.10.I.1.d.iii. The Permittees will comply with the inspection requirements specified in Operating Unit
8 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f.
9 and as modified by Permit Conditions III.10.H.3, III.10.I.1.b.x., III.10.I.1.b.xii., and
10 III.10.I.1.h.
- 11 III.10.I.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-
12 303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]
- 13 III.10.I.1.e.i. Upon receipt of a written request from Ecology, the Permittees will perform sampling
14 and analysis of the dangerous and/or mixed waste and exhaust emissions to verify that the
15 operating requirements established in the Permit achieve the performance standards
16 delineated in this Permit.
- 17 III.10.I.1.e.ii. The Permittees will comply with the monitoring requirements specified in the Operating
18 Unit 10, Appendices 9.2, 9.3, 9.7, 9.13, 9.15 and 9.18 of this Permit, as approved
19 pursuant to Permit Condition III.10.H.5, and as modified by Permit Conditions
20 III.10.H.3, III.10.I.1.h., III.10.I.1.b.x., and III.10.I.1.b.xii.
- 21 III.10.I.1.e.iii. The Permittees will operate, calibrate, and maintain the carbon monoxide and
22 hydrocarbon continuous emission monitors (CEM) specified in this Permit in accordance
23 with Performance Specifications 4B and 8A of 40 CFR Part 60, Appendix B, in
24 accordance with Appendix to Subpart EEE of 40 CFR Part 63, and Operating Unit 10
25 Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., and
26 as modified by Permit Conditions III.10.H.3, III.10.I.1.h., III.10.I.1.b.x., and
27 III.10.I.1.b.xii.
- 28 III.10.I.1.e.iv. The Permittees will operate, calibrate, and maintain the instruments specified in Permit
29 Tables III.10.I.C and E, as approved/modified pursuant to Permit Conditions III.10.H.5
30 and III.10.H.3.d.v., in accordance with Operating Unit 10, Appendix 9.15 of this Permit,
31 as approved pursuant to Permit Condition III.10.H.5.f., and as modified by Permit
32 Conditions III.10.H.3, III.10.I.1.h., III.10.I.1.b.x., and III.10.I.1.b.xii.
- 33 III.10.I.1.f. Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]
- 34 III.10.I.1.f.i. The Permittees will record and maintain in the WTP Unit operating record for the LAW
35 Vitrification System, all monitoring, calibration, maintenance, test data, and inspection
36 data compiled under the conditions of this Permit, in accordance with Permit Conditions
37 III.10.C.4 and 5, as modified by Permit Conditions III.10.H.3, III.10.I.1.h., III.10.I.1.b.x.,
38 and III.10.I.1.b.xii.

- 1 III.10.I.1.f.ii. The Permittees will record in the WTP Unit operating record the date, time, and duration of all automatic waste feed cutoffs and/or lockouts, including the triggering parameters, reason for the deviation, and recurrence of the incident. The Permittees will also record all incidents of AWFCO system function failures, including the corrective measures taken to correct the condition that caused the failure.
- 2
3
4
5
- 6 III.10.I.1.f.iii. The Permittees will submit to Ecology an annual report each calendar year within ninety (90) days following the end of the year. The report will include the following information:
- 7
8
- 9 A. Total dangerous and/or mixed waste feed processing time for the LAW Vitrification System;
- 10
- 11 B. Date/Time of all LAW Vitrification System startups and shutdowns;
- 12 C. Date/Time/Duration/Cause/Corrective Action taken for all LAW Vitrification System shutdowns caused by malfunction of either process or control equipment; and
- 13
- 14 D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or mixed waste feed cut-off due to deviations from Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v.
- 15
16
- 17 III.10.I.1.f.iv. The Permittees will submit an annual report to Ecology each calendar year within ninety (90) days following the end of the year of all quarterly CEM Calibration Error and Annual CEM Performance Specification Tests conducted, in accordance with Permit Condition III.10.I.1.e.iii.
- 18
19
20
- 21 III.10.I.1.g. Closure
- 22 The Permittees will close the LAW Vitrification System in accordance with Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.
- 23
- 24 III.10.I.1.h. Periodic Emission Re-testing Requirements [WAC 173-303-670(5), WAC 173-303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)]
- 25
- 26 III.10.I.1.h.i. Dioxin and Furan Emission Testing
- 27 A. Within eighteen (18) months of commencing operation pursuant to Permit Section III.10.I, the Permittees will submit to Ecology for approval, a Dioxin and Furan Emission Test Plan (DFETP) for the performance of emission testing of the LAW Vitrification System gases for dioxin and furans during "Normal Operating Conditions" as a permit modification in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f. The DFETP will include all elements applicable to dioxin and furan emission testing included in the "Previously Approved Demonstration Test Plan," applicable EPA promulgated test methods and procedures in effect at the time of the submittal, and projected commencement and completion dates for dioxin and furan emission test. "Normal Operating Conditions" will be defined for the purposes of this permit condition as follows:
- 28
29
30
31
32
33
34
35
36
37

- 1 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and
2 automatic waste feed cut-off parameters specified in Permit Table III.10.I.F
3 (as approved/modified pursuant to Permit Conditions III.10.H.5 and
4 III.10.H.3.d.v.), that were established to maintain compliance with Permit
5 Condition III.10.I.1.b.iv. as specified in Operating Unit 10, Appendix 9.15 of
6 this Permit (as approved pursuant to Permit Condition III.10.H.3.d., and in
7 accordance with III.10.I.1.b.xii. and III.10.I.1.c.xi.), are held within the range
8 of the average value over the previous twelve (12) months and the set-point
9 value specified in Permit Table III.10.I.F. The average value is defined as
10 the sum of the rolling average values recorded over the previous twelve (12)
11 months divided by the number of rolling averages recorded during that time.
12 The average value will not include calibration data, malfunction data, and
13 data obtained when not processing dangerous and/or mixed waste; and
- 14 2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of
15 the average value over the previous twelve (12) months and the set-point
16 value specified on Permit Table III.10.I.D (as approved/modified pursuant to
17 Permit Conditions III.10.H.5 and III.10.H.3.d.v.). Feed-rate of organics as
18 measured by TOC are held within the range of the average value over the
19 previous twelve (12) months. The average value is defined as the sum of the
20 rolling average values recorded over the previous twelve (12) months divided
21 by the number of rolling averages recorded during that time. The average
22 value will not include data obtained when not processing dangerous and/or
23 mixed waste.

24 For purposes of this permit condition, the "Previously Approved Demonstration Test
25 Plan" is defined to include the Demonstration Test Plan approved pursuant to Permit
26 Condition III.10.H.5.f.

- 27 B. Within sixty (60) days of Ecology's approval of the DFETP, or within thirty-one (31)
28 months of commencing operation pursuant to Permit Section III.10.I, whichever is
29 later, the Permittees will implement the DFETP approved pursuant to Permit
30 Condition III.10.I.1.h.i.A.
- 31 C. The Permittees will resubmit the DFETP, approved pursuant to Permit Condition
32 III.10.I.1.h.i.A., revised to include applicable EPA promulgated test methods and
33 procedures in effect at the time of the submittal, and projected commencement and
34 completion dates for dioxin and furan emission test as a permit modification in
35 accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f. at twenty-four (24)
36 months from the implementation date of the testing required pursuant to Permit
37 Condition III.10.I.1.h.i.A and at reoccurring eighteen (18) month intervals from the
38 implementation date of the previously approved DFETP. The Permittees will
39 implement these newly approved revised DFETPs, every thirty-one (31) months from
40 the previous approved DFETP implementation date or within sixty (60) days of the
41 newly Ecology approved revised DFETP, whichever is later, for the duration of this
42 Permit.

- 1 D. The Permittees will submit a summary of operating data collected pursuant to the
2 DFETPs in accordance with Permit Conditions III.10.I.1.h.i.A and C to Ecology upon
3 completion of the tests. The Permittees will submit to Ecology the complete test
4 report within ninety (90) calendar days of completion of the testing. The test reports
5 will be certified as specified in WAC 173-303-807(8), in accordance with WAC 173-
6 303-680(2) and (3).
- 7 E. If any calculations or testing results collected pursuant to the DFETPs in accordance
8 with Permit Conditions III.10.I.1.h.i.A and C, show that one or more of the
9 performance standards listed in Permit Condition III.10.I.1.b., with the exception of
10 Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were not met
11 during the emission test, the Permittees will perform the following actions:
- 12 1. Immediately stop dangerous and/or mixed waste feed to the LAW
13 Vitrification System under the mode of operation that resulted in not meeting
14 the performance standard(s);
 - 15 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not
16 meeting the performance standard(s), as specified in Permit Condition I.E.21;
 - 17 3. Investigate the cause of the failure and submit a report of the investigation
18 findings to Ecology within fifteen (15) days of discovery of not meeting the
19 performance standard(s);
 - 20 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the
21 performance standard(s) documentation supporting a mode of operation
22 where all performance standards listed in Permit Condition III.I.1.b., with the
23 exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification
24 System were met during the demonstration test, if any such mode was
25 demonstrated;
 - 26 5. Based on the information provided to Ecology by the Permittees pursuant to
27 Permit Conditions III.10.I.1.h.i.E.1 through 4 above, and any additional
28 information, Ecology may provide in writing, direction to the Permittees to
29 stop dangerous waste and mixed waste feed to the LAW Vitrification System
30 and/or amend the mode of operation the Permittees are allowed to continue
31 operations prior to Ecology approval of the revised Demonstration Test Plan
32 pursuant to Permit Condition III.10. I.1.h.i.E.6; and
 - 33 6. Submit to Ecology within one hundred and twenty (120) days of discovery of
34 not meeting the performance standard(s) a revised Demonstration Test Plan
35 requesting approval to retest as a permit modification pursuant to Permit
36 Conditions III.10.C.2.e. and III.10.C.2.f. The revised Demonstration Test
37 Plan must include substantive changes to prevent failure from reoccurring
38 reflecting performance under operating conditions representative of the
39 extreme range of normal conditions, and include revisions to Permit Tables
40 III.10.I.D and F.

1 F. If any calculations or testing results collected pursuant to the DFETPs in accordance
2 with Permit Conditions III.10.I.1.h.i.A and C show that any emission rate for any
3 constituent listed in Permit Table III.10.I.E, as approved/modified pursuant to Permit
4 Conditions III.10.C.11.c. or d. is exceeded for LAW Vitrification System during the
5 emission test, the Permittees will perform the following actions:

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

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

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

- 36 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and
37 automatic waste feed cut-off parameters specified in Permit Table III.10.I.F,
38 as approved/modified pursuant to Permit Conditions III.10.H.3.d. and
39 III.10.C.11.c. or d., that were established to maintain compliance with Permit
40 Conditions III.10.I.1.b.ii., iii., v., vi., and vii., and non-organic emissions, as
41 specified in Permit Table III.10.I.E, as specified in Operating Unit 10,

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

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

17 For purposes of this permit condition, the "Previously Approved Demonstration Test
18 Plan" is defined to include the Demonstration Test Plan approved pursuant to Permit
19 Condition III.10.H.5.f.

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

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

1 System were met during the demonstration test, if any such mode was
2 demonstrated;

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

17 **III.10.I.1.h.iii. Other Emission Testing**

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

- 30 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and
31 automatic waste feed cut-off parameters specified in Permit Table III.10.I.E.,
32 as approved/modified pursuant to Permit Condition III.10.H.3.d. and
33 III.10.C.11.c. or d., that were established to maintain compliance with Permit
34 Conditions III.10.I.1.b.viii. and ix., and emissions as specified in Permit
35 Table III.10.I.E., not addressed under Permit Conditions III.10.I.1.h.i. or ii. as
36 specified in Operating Unit 10, Appendix 9.15 of this Permit, as approved
37 pursuant to Permit Condition III.10.H.3.d., and in accordance with Permit
38 Conditions III.10.I.1.b.xii. and III.10.I.1.c.xi. are held within the range of the
39 average value over the previous twelve (12) months and the set-point value
40 specified on Permit Table III.10.I.F. The average value is defined as the sum
41 of all rolling average values recorded over the previous twelve (12) months
42 divided by the number of rolling averages recorded during that time. The

1 average value will not include calibration data, malfunction data, and data
2 obtained when not processing dangerous and/or mixed waste; and

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

13 For purposes of this permit condition, the "Previously Approved Demonstration Test
14 Plan" is defined to include the Demonstration Test Plan approved pursuant to Permit
15 Condition III.10.H.5.f.

16 B. Within sixty (60) days of Ecology's approval of the RDTP, or within ninety-one (91)
17 months of commencing operation pursuant to Permit Section III.10.I, whichever is
18 later, the Permittees will implement the RDTP approved pursuant to Permit
19 Condition III.10.I.1.h.iii.A.

20 C. The Permittees will submit a summary of operating data collected pursuant to the
21 RDTPs in accordance with Permit Condition III.10.I.1.h.iii.A to Ecology upon
22 completion of the tests. The Permittees will submit to Ecology the complete test
23 report within ninety (90) calendar days of completion of the testing. The test reports
24 will be certified as specified in WAC 173-303-807(8), in accordance with Permit
25 Condition WAC 173-303-680(2) and (3).

26 D. If any calculations or testing results show that one or more of the performance
27 standards listed in Permit Condition III.10.I.1.b., with the exception of Permit
28 Condition III.10.I.1.b.x., for the LAW Vitrification System were not met during the
29 emission test, the Permittees will perform the following actions:

- 30 1. Immediately stop dangerous and/or mixed waste feed to the LAW
31 Vitrification System under the mode of operation that resulted in not meeting
32 the performance standard(s);
- 33 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not
34 meeting the 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
36 findings to Ecology within fifteen (15) days of discovery of not meeting the
37 performance standard(s);
- 38 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the
39 performance standard(s) documentation supporting a mode of operation
40 where all performance standards listed in Permit Condition III.I.1.b., with the

1 exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification
2 System were met during the demonstration test, if any such mode was
3 demonstrated;

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

19 E. If any calculations or testing results show that any emission rate for any constituent
20 listed in Permit Table III.10.I.E., as approved/modified pursuant to Permit Conditions
21 III.10.C.11.c. or d., is exceeded for LAW Vitrification System during the emission
22 test, the Permittees will perform the following actions:

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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

Table III.10.I.A - LAW Vitrification System Description^a

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables and Figures
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a 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

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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

Table III.10.I.C - LAW Vitrification Systems 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
Footnotes:								
^a 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**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* ¹(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.
¹Maximum 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-Shutdown, 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 Shutdown, 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,

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

- 6 A. Weld breaks;
- 7 B. Punctures;
- 8 C. Scrapes of protective coatings;
- 9 D. Cracks;
- 10 E. Corrosion;
- 11 F. Other structural damage or inadequate construction/installation.

12 All discrepancies must be remedied before the HLW Vitrification system is covered,
13 enclosed, or placed in use [WAC 173-303-640(3)(c), in accordance with WAC 173-303-
14 680(2) and (3)].

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

21 III.10.J.1.a.vi. The Permittees must test for tightness the HLW Vitrification System or components,
22 prior to being covered, enclosed, or placed into use. If the HLW Vitrification System or
23 components are found not to be tight, all repairs necessary to remedy the leak(s) in the
24 system must be performed prior to the HLW Vitrification System being covered,
25 enclosed, or placed in use [WAC 173-303-640(3)(e), in accordance with WAC 173-303-
26 680(2) and (3)].

27 III.10.J.1.a.vii. The Permittees must ensure the HLW Vitrification System equipment is supported and
28 protected against physical damage and excessive stress due to settlement, vibration,
29 expansion, or contraction [WAC 173-303-640(3)(f), in accordance with WAC 173-303-
30 680(2) and (3)].

31 III.10.J.1.a.viii. The Permittees must provide the type and degree of corrosion protection recommended
32 by an independent corrosion expert, based on the information provided in Operating Unit
33 10, Appendices 10.9 and 10.11 of this Permit, as approved pursuant to Permit Conditions
34 III.10.J.5.b.i., 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.,
35 III.10.J.5.d.i., III.10.J.5.d.iv., and III.10.J.5.d.v., or other corrosion protection if Ecology
36 believes other corrosion protection is necessary to ensure the integrity of the HLW
37 Vitrification System during use of the HLW Vitrification System. The installation of a
38 corrosion protection system that is field fabricated must be supervised by an independent

- 1 corrosion expert to ensure proper installation [WAC 173-303-640(3)(g), in accordance
2 with WAC 173-303-680(2) and (3)].
- 3 III.10.J.1.a.ix. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
4 will obtain and keep on file in the WTP Unit operating record, written statements by
5 those persons required to certify the design of the HLW Vitrification System and
6 supervise the installation of the HLW Vitrification System, as specified in WAC 173-
7 303-640(3)(b), (c), (d), (e), (f), and (g), in accordance with WAC 173-303-680, attesting
8 that the HLW Vitrification system and corresponding containment system listed in Permit
9 Tables III.10.J.A and III.10.J.B, as approved/modified pursuant to Permit Condition
10 III.10.J.5., were properly designed and installed, and that repairs, in accordance with
11 WAC 173-303-640(3)(c) and (e), were performed [WAC 173-303-640(3)(a) and WAC
12 173-303-640(3)(h), in accordance with WAC 173-303-680(3)].
- 13 III.10.J.1.a.x. The independent HLW Vitrification System installation inspection and subsequent
14 written statements will be certified in accordance with WAC 173-303-810(13)(a), as
15 modified pursuant to Permit Condition III.10.J.1.a.iii., comply with all requirements of
16 WAC 173-303-640(3)(h) in accordance with WAC 173-303-680, and will consider, but
17 not be limited to, the following LAW Vitrification System installation documentation:
- 18 A. Field installation report with date of installation;
 - 19 B. Approved welding procedures;
 - 20 C. Welder qualification and certifications;
 - 21 D. Hydro-test reports, as applicable, in accordance with the American Society of
22 Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1;
23 American Petroleum Institute (API) Standard 620, or Standard 650, as applicable;
 - 24 E. Tester credentials;
 - 25 F. Field inspector credentials;
 - 26 G. Field inspector reports;
 - 27 H. Field waiver reports; and
 - 28 I. Non-compliance reports and corrective action (including field waiver reports) and
29 repair reports.
- 30 III.10.J.1.a.xi. The Permittees will ensure periodic integrity assessments are conducted on the HLW
31 Vitrification System, listed in Permit Table III.10.J.A, as approved/modified pursuant to
32 Permit Condition III.10.J.5., over the term of this Permit, in accordance with WAC 173-
33 303-680(2) and (3) as specified in WAC 173-303-640(3)(b), following the description of
34 the integrity assessment program and schedule in Operating Unit 10, Chapter 6.0 of this
35 Permit, as approved pursuant to Permit Conditions III.10.J.5.e.i. and III.10.C.5.c. Results
36 of the integrity assessments will be included in the WTP Unit operating record until ten
37 (10) years after post-closure, or corrective action is complete and certified, whichever is
38 later.

- 1 III.10.J.1.a.xii. The Permittees will address problems detected during the HLW Vitrification System
2 integrity assessments specified in Permit Condition III.10.J.1.a.xi. following the integrity
3 assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as approved
4 pursuant to Permit Conditions III.10.J.5.e.i. and III.10.C.5.c.
- 5 III.10.J.1.a.xiii. All process monitors/instruments as specified in Permit Table III.10.J.F., as
6 approved/modified pursuant to Permit Condition III.10.J.5., will be equipped with
7 operational alarms to warn of deviation, or imminent deviation from the limits specified
8 in Permit Table III.10.J.F.
- 9 III.10.J.1.a.xiv. The Permittees will install and test all process and leak detection system
10 monitors/instrumentation as specified in Permit Tables III.10.J.C and III.10.J.F., as
11 approved/modified pursuant to Permit Condition III.10.J.5., in accordance with Operating
12 Unit 10, Appendices 10.1, 10.2, and 10.14 of this Permit, as approved pursuant to Permit
13 Conditions III.10.J.5.d.x. and III.10.J.5.f.xvi.
- 14 III.10.J.1.a.xv. No dangerous and/or mixed waste will be treated in the HLW Vitrification System unless
15 the operating conditions, specified under Permit Condition III.10.J.1.c. are complied
16 with.
- 17 III.10.J.1.a.xvi. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
18 materials in the HLW Vitrification System if these substances could cause the subsystem,
19 subsystem equipment, or the containment system to rupture, leak, corrode, or otherwise
20 fail [WAC 173-303-640(5)(a), in accordance with WAC 173-303-680(2)]. This
21 condition is not applicable to corrosion of HLW Vitrification System sub-system and
22 sub-system equipment that are expected to be replaced as part of normal operations (e.g.,
23 melters).
- 24 III.10.J.1.a.xvii. The Permittees will operate the HLW Vitrification System to prevent spills and overflows
25 using description of controls and practices as required under WAC 173-303-640(5)(b)
26 described in Permit Condition III.10.C.5., and Operating Unit 10, Appendix 10.18 of this
27 Permit, as approved pursuant to Permit Condition III.10.J.5.e. [WAC 173-303-640(5)(b),
28 in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-806(4)(c)(ix)].
- 29 III.10.J.1.a.xviii. For routinely non-accessible HLW Vitrification System sub-systems, as specified in
30 Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition
31 III.10.J.5.e.vi., the Permittees will mark all routinely non-accessible HLW Vitrification
32 System sub-systems access points with labels or signs to identify the waste contained in
33 each HLW Vitrification System sub-system. The label, or sign, must be legible at a
34 distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a
35 manner which adequately warns employees, emergency response personnel, and the
36 public of the major risk(s) associated with the waste being stored or treated in the HLW
37 Vitrification System sub-systems. For the purposes of this permit condition, "routinely
38 non-accessible" means personnel are unable to enter these areas while waste is being
39 managed in them [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].
- 40 III.10.J.1.a.xix. For all HLW Vitrification System sub-systems not addressed in Permit Condition
41 III.10.J.1.a.xviii., the Permittees will mark all these HLW Vitrification System sub-

1 systems holding dangerous and/or mixed waste with labels or signs to identify the waste
2 contained in the HLW Vitrification System sub-systems. The labels, or signs, must be
3 legible at a distance of at least fifty (50) feet, and must bear a legend which identifies the
4 waste in a manner which adequately warns employees, emergency response personnel,
5 and the public of the major risk(s) associated with the waste being stored or treated in the
6 HLW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with
7 WAC 173-303-680(2)].

8 III.10.J.1.a.xx. The Permittees will ensure that the containment systems for the HLW Vitrification
9 System sub-systems listed in Permit Tables III.10.J.A. and III.10.J.B., as
10 approved/modified pursuant to Permit Condition III.10.J.5., are free of cracks or gaps to
11 prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the
12 system to the soil, groundwater, or surface water at any time during use of the HLW
13 Vitrification System sub-systems. Any indication that a crack or gap may exist in the
14 containment systems will be investigated and repaired in accordance with Operating Unit
15 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition
16 III.10.J.5.e.v. [WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC
17 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-
18 806(4)(i)(i)(B), and WAC 173-303-320].

19 III.10.J.1.a.xxi. The Permittees must immediately, and safely, remove from service any HLW
20 Vitrification System or secondary containment system which, through an integrity
21 assessment, is found to be "unfit for use" as defined in WAC 173-303-040, following
22 Permit Conditions III.10.J.1.a.xxiii.A. through D., and F. The affected HLW
23 Vitrification System, or secondary containment system, must be either repaired or closed
24 in accordance with Permit Condition III.10.J.1.a.xxiii.E. [WAC 173-303-640(7)(e) and
25 (f), and WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

26 III.10.J.1.a.xxii. An impermeable coating, as specified in Operating Unit 10, Appendices 10.4, 10.5, 10.7,
27 10.9, 10.11, and 10.12 of this Permit, as approved pursuant to Permit Condition
28 III.10.J.5.b.v., will be maintained for all concrete containment systems and concrete
29 portions of containment systems for each HLW Vitrification System sub-systems listed in
30 Permit Tables III.10.J.A and III.10.J.B as approved/modified pursuant to Permit
31 Condition III.10.J.5 (concrete containment systems that do not have a liner, pursuant to
32 WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and have
33 construction joints, will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in
34 accordance with WAC 173-303-680(2). The coating will prevent migration of any
35 dangerous and mixed waste into the concrete. All coatings will meet the following
36 performance standards:

- 37 A. The coating must seal the containment surface such that no cracks, seams, or other
38 avenues through which liquid could migrate, are present;
- 39 B. The coating must be of adequate thickness and strength to withstand the normal
40 operation of equipment and personnel within the given area such that degradation or
41 physical damage to the coating or lining can be identified and remedied before
42 dangerous and mixed waste could migrate from the system; and

- 1 C. The coating must be compatible with the dangerous and mixed waste, treatment
2 reagents, or other materials managed in the containment system [WAC 173-303-
3 640(4)(e)(ii)(D), in accordance with WAC 173-303-680(2) and (3), and WAC 173-
4 303-806(4)(i)(i)(A)].

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

- 13 A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the
14 HLW Vitrification System sub-systems or secondary containment system.
- 15 B. Determine the source of the dangerous and/or mixed waste.
- 16 C. Remove the dangerous and/or mixed waste from the containment area in accordance
17 with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(b). The
18 dangerous and/or mixed waste removed from containment areas of the HLW
19 Vitrification System sub-systems will be, as a minimum, managed as mixed waste.
- 20 D. If the cause of the release was a spill has not damaged the integrity of the HLW
21 Vitrification System sub-system, the Permittees may return the HLW Vitrification
22 System sub-system to service in accordance with WAC 173-303-680(2) and (3), as
23 specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees will take
24 action to ensure the incident that caused the dangerous and/or mixed waste to enter
25 the containment system will not re-occur [WAC 173-303-320(3)].
- 26 E. If the source of the dangerous and/or mixed waste is determined to be a leak from the
27 primary HLW Vitrification System into the secondary containment system, or the
28 system is unfit for use as determined through an integrity assessment or other
29 inspection, the Permittees will comply with the requirements of WAC 173-303-
30 640(7) and take the following actions:
- 31 1. Close the HLW Vitrification System Sub-system following procedures in
32 WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680 and
33 Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to
34 Permit Condition III.10.C.8., or
 - 35 2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as
36 modified pursuant to Permit Condition III.10.J.1.a.iii.) the HLW
37 Vitrification System in accordance with Operating Unit 10, Appendix
38 10.18 of this Permit, as approved pursuant to Permit Condition
39 III.10.J.5.e.v., before the HLW Vitrification System is placed back into

1 service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in
2 accordance with WAC 173-303-680].

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

6 G. In accordance with WAC 173-303-680(2) and WAC 173-303-680 (3), the Permittees
7 will notify and report releases to the environment to Ecology, as specified in WAC
8 173-303-640(7)(d).

9 III.10.J.1.a.xxiv.If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water,
10 liquids from damaged or broken pipes) cannot be removed from the secondary
11 containment system within twenty-four (24) hours, Ecology will be verbally notified
12 within twenty-four (24) hours of discovery. The notification will provide the information
13 in A, B, and C, listed below. The Permittees will provide Ecology with a written
14 demonstration within seven (7) business days, identifying at a minimum [WAC 173-303-
15 640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-680(3)
16 and WAC 173-303-806(4)(i)(i)(B)]:

17 A. Reasons for delayed removal;

18 B. Measures implemented to ensure continued protection of human health and the
19 environment;

20 C. Current actions being taken to remove liquids from secondary containment.

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

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

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

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

35 III.10.J.1.a.xxix.For each HLW Vitrification System sub-system holding dangerous waste which are
36 acutely or chronically toxic by inhalation, the Permittees will operate the system to
37 prevent escape of vapors, fumes or other emissions into the air [WAC 173-303-
38 806(4)(i)(i)(B) and WAC 173-303-640(5)(e) in accordance with WAC 173-303-680].

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

- 1 dry basis, and reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC
2 173-303-680(2)]:
- 3 III.10.J.1.b.x. If the emissions from the HLW Vitrification System exceed the emission rates listed in
4 Permit Table III.10.J.E, as approved pursuant to Permit Condition III.10.C.11.b., the
5 Permittees will notify Ecology, in accordance with Permit Condition III.10.J.3.d.vii.
6 [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 7 The emission limits specified in Permit Conditions III.10.J.1.b.i. through III.10.J.1.b.x.
8 above, will be met for the HLW Vitrification System by limiting feed rates as specified in
9 Permit Tables III.10.J.D and III.10.J.F, as approved/modified pursuant to Permit
10 Condition III.10.J.5., compliance with operating conditions specified in Permit Condition
11 III.10.J.1.c. (except as specified in Permit Condition III.10.J.1.b.xii.), and compliance
12 with Permit Condition III.10.J.1.b.xi.
- 13 III.10.J.1.b.xi. Treatment effectiveness, feed-rates and operating rates for dangerous and mixed waste
14 management units contained in the HLW Building, but not included in Permit Table
15 III.10.J.A, as approved/modified pursuant to Permit Condition III.10.J.5., will be as
16 specified in Permit Sections III.10.D, III.10.E, III.10.F and consistent with assumptions
17 and basis which are reflected in Operating Unit 10, Appendix 6.3.1 of this Permit, as
18 approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit
19 condition, Operating Unit 10, Appendix 6.3.1 will be superceded by Appendix 6.4.1 upon
20 its approval pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d. [WAC
21 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 22 III.10.J.1.b.xii. Compliance with the operating conditions specified in Permit Condition III.10.J.1.c., will
23 be regarded as compliance with the required performance standards identified in Permit
24 Conditions III.10.J.1.b.i. through x. However, if it is determined that during the effective
25 period of this Permit that compliance with the operating conditions in Permit Condition
26 III.10.J.1.c. is not sufficient to ensure compliance with the performance standards
27 specified in Permit Conditions III.10.J.1.b.i. through x., the Permit may be modified,
28 revoked, or reissued pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or
29 III.10.C.2.g.
- 30 III.10.J.1.c. Operating Conditions [WAC-303-670(6), in accordance with WAC 173-303-680(2)and
31 (3)].
- 32 The Permittees will operate the HLW Vitrification System in accordance with Operating
33 Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition
34 III.10.J.5.e.vi., and Operating Unit 10, Appendix 10.18 of this Permit, as approved
35 pursuant to Permit Condition III.10.J.5.e., and Operating Unit 10, Appendix 10.15 of this
36 Permit, as approved pursuant to Permit Condition III.10.J.5.f., except as modified
37 pursuant to Permit Conditions III.10.J.1.b.xii., III.10.J.2., III.10.J.3., III.10.J.4., and in
38 accordance with the following:
- 39 III.10.J.1.c.i. The Permittees will operate the HLW Vitrification System in order to maintain the
40 systems and process parameters listed in Permit Tables III.10.J.C and III.10.J.E, as

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

- 1 B. The magnitude, dates, and duration of the deviations;
2 C. Results of the investigation of the cause of the deviations; and,
3 D. Corrective measures taken to minimize future occurrences of the deviations.
- 4 III.10.J.1.c.viii. If any portion of the HLW Vitrification System is bypassed while treating dangerous
5 and/or mixed waste, it will be regarded as non-compliance with the operating conditions
6 specified in Permit Condition III.10.J.1.c. and the performance standards specified in
7 Permit Condition III.10.J.1.b. After such a bypass event, the Permittees will perform the
8 following actions:
- 9 A. Investigate the cause of the bypass event;
10 B. Take appropriate corrective measures to minimize future bypasses;
11 C. Record the investigation findings and corrective measures in the operating record;
12 and
13 D. Submit a written report to Ecology within five (5) days of the bypass event
14 documenting the result of the investigation and corrective measures.
- 15 III.10.J.1.c.ix. The Permittees will control fugitive emissions from the HLW Vitrification System by
16 maintaining the melter under negative pressure.
- 17 III.10.J.1.c.x. Compliance with the operating conditions specified in Permit Condition III.10.J.1.c. will
18 be regarded as compliance with the required performance standards identified in Permit
19 Condition III.10.J.1.b. However, evidence that compliance with these operating
20 conditions is insufficient to ensure compliance with the performance standards, will
21 justify modification, revocation, or re-issuance of this Permit, in accordance with Permit
22 Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g.
- 23 III.10.J.1.d. Inspection Requirements [WAC 173-303-680(3)].
- 24 III.10.J.1.d.i. The Permittees will inspect the HLW Vitrification System in accordance with the
25 Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in
26 accordance with Permit Condition III.10.C.5.c.
- 27 III.10.J.1.d.ii. The inspection data for HLW Vitrification System will be recorded, and the records will
28 be placed in the WTP Unit operating record for the HLW Vitrification System, in
29 accordance with Permit Condition III.10.C.4.
- 30 III.10.J.1.d.iii. The Permittees will comply with the inspection requirements specified in Operating Unit
31 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition III.10.J.5.f.,
32 and as modified by Permit Conditions III.10.J.1.b.xii., III.10.J.2., III.10.J.3., and
33 III.10.J.4.
- 34 III.10.J.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-
35 303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]
- 36 III.10.J.1.e.i. Upon receipt of a written request from Ecology, the Permittees will perform sampling
37 and analysis of the dangerous and mixed waste and exhaust emissions to verify that the

- 1 operating requirements established in the Permit achieve the performance standards
2 delineated in this Permit.
- 3 III.10.J.1.e.ii. The Permittees will comply with the monitoring requirements specified in Operating Unit
4 10, Appendices 10.2, 10.3, 10.7, 10.13, 10.15, and 10.18 of this Permit, as approved
5 pursuant to Permit Conditions III.10.J.5.c., III.10.J.5.d., III.10.J.5.e., and III.10.J.5.f., as
6 modified by Permit Conditions III.10.J.1.b.xii., III.10.J.2., III.10.J.3., and III.10.J.4.
- 7 III.10.J.1.e.iii. The Permittees will operate, calibrate, and maintain the carbon monoxide and
8 hydrocarbon continuous emission monitors (CEM) specified in this Permit in accordance
9 with Performance Specification 4B and 8A of 40 CFR Part 60, Appendix B, in
10 accordance with Appendix to Subpart EEE of 40 CFR Part 63, and Operating Unit 10
11 Appendix 10.15 of this Permit, as approved pursuant to Permit Condition III.10.J.5.f., and
12 as modified by Permit Conditions III.10.J.1.b.xii., III.10.J.2., III.10.J.3., and III.10.J.4.
- 13 III.10.J.1.e.iv. The Permittees will operate, calibrate, and maintain the instruments specified on Permit
14 Tables III.10.J.C and F, as approved/modified pursuant to Permit Condition III.10.J.5., in
15 accordance with Operating Unit 10, Appendix 10.15 of this Permit, as approved pursuant
16 to Permit Condition III.10.J.5.f., and as modified by Permit Conditions III.10.J.1.b.xii.,
17 III.10.J.2., III.10.J.3., and III.10.J.4.
- 18 III.10.J.1.f. Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]
- 19 III.10.J.1.f.i. The Permittees will record and maintain in the WTP Unit operating record for the HLW
20 Vitrification System, all monitoring, calibration, maintenance, test data, and inspection
21 data compiled under the conditions of this Permit, in accordance with Permit Conditions
22 III.10.C.4. and III.10.C.5., as modified by Permit Conditions III.10.J.1.b.xii., III.10.J.2.,
23 III.10.J.3., and III.10.J.4.
- 24 III.10.J.1.f.ii. The Permittees will record in the WTP Unit operating record the date, time, and duration
25 of all automatic waste feed cut-offs and/or lockouts, including the triggering parameters,
26 reason for the deviation, and recurrence of the incident. The Permittees will also record
27 all incidents of AWFCO system function failures, including the corrective measures
28 taken to correct the condition that caused the failure.
- 29 III.10.J.1.f.iii. The Permittees will submit to Ecology a report semi-annually the first calendar year, and
30 annually thereafter each calendar year within ninety (90) days following the end of the
31 year. The report will include the following information:
- 32 A. Total dangerous and mixed waste feed processing time for the HLW Vitrification
33 System;
- 34 B. Date/Time of all HLW Vitrification System startups and shutdowns;
- 35 C. Date/Time/Duration/Cause/Corrective Action taken for all HLW Vitrification System
36 shutdowns caused by malfunction of either process or control equipment; and
- 37 D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous
38 and/or mixed waste feed cut-off due to deviations from Permit Table III.10.J.F, as
39 approved/modified pursuant to Permit Condition III.10.J.5.

- 1 III.10.J.1.f.iv. The Permittees will submit an annual report to Ecology each calendar year within ninety
2 (90) days following the end of the year of all quarterly CEM Calibration Error and
3 Annual CEM Performance Specification Tests conducted in accordance with Permit
4 Condition III.10.J.1.e.iii.
- 5 III.10.J.1.g. Closure
6 The Permittees will close the HLW Vitrification System in accordance with Operating
7 Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.
- 8 III.10.J.2. Shakedown Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-
9 670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)].
- 10 III.10.J.2.a. The shakedown period for the HLW Vitrification System will be conducted in
11 accordance with Permit Condition III.10.J.1., Operating Unit 10, Appendix 10.15 of this
12 Permit, as approved pursuant to Permit Condition III.10.J.5.f., and as modified in
13 accordance with Permit Conditions III.10.J.1.b.xii., III.10.J.2., and III.10.J.3.
- 14 III.10.J.2.b. Duration of the Shakedown Period
- 15 III.10.J.2.b.i. The shakedown period for the HLW Vitrification System will begin with the initial
16 introduction of dangerous waste in the HLW Vitrification System following construction
17 and will end with the start of the demonstration test.
- 18 III.10.J.2.b.ii. The shakedown period will not exceed the following limits, as defined by hours of
19 operation of the HLW Vitrification System with dangerous waste. The Permittees may
20 petition Ecology for one (1) extension of each shakedown phase for seven hundred and
21 twenty (720) additional operating hours in accordance with permit modification
22 procedures specified in Permit Conditions III.10.C.2.e. and III.10.C.2.f.
- 23 Shakedown Phase 1: 720 hours
24 Shakedown Phase 2: 720 hours
- 25 III.10.J.2.b.iii. Shakedown Phase 2 will not be commenced until documentation has been submitted to
26 Ecology verifying that the HLW Vitrification System has operated at a minimum of 75%
27 of the shakedown Phase 1 feed-rate limit for two (2) separate eight (8) consecutive hour
28 periods with no AWFCOs.
- 29 III.10.J.2.c. Allowable Waste Feed During the Shakedown Period
- 30 III.10.J.2.c.i. The Permittees may feed the dangerous waste specified for the HLW Vitrification System
31 on the Part A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those
32 waste outside the waste acceptance criteria specified in the WAP, Operating Unit 10,
33 Chapter 3.0 of this Permit, as approved pursuant to Permit Condition III.10.C.3., except
34 Permit Conditions III.10.J.2.c.ii. through v. also apply.
- 35 III.10.J.2.c.ii. The Permittees will not feed the following waste to the HLW Vitrification System during
36 Shakedown Phase 1:
37 A. Acutely toxic dangerous waste listed in WAC 173-303-081(a)(2)(a)(i).

- 1 B. Mixed waste
- 2 III.10.J.2.c.iii. The Permittees will not feed the following waste to the HLW Vitrification System during
3 Shakedown Phase 2:
- 4 A. Mixed waste
- 5 III.10.J.2.c.iv. The feed-rates to the HLW Vitrification System will not exceed the limits in Permit
6 Tables III.10.J.D and III.10.J.F, as approved/modified pursuant to Permit Condition
7 III.10.J.5.
- 8 III.10.J.2.c.v. The Permittees will conduct sufficient analysis of the dangerous waste treated in the
9 HLW Vitrification System to verify that the waste feed is within the physical and
10 chemical composition limits specified in this Permit.
- 11 III.10.J.3. Demonstration Test Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-
12 303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and
13 (3)]
- 14 III.10.J.3.a. Demonstration Test Period
- 15 III.10.J.3.a.i. The Permittees will operate, monitor, and maintain the HLW Vitrification System as
16 specified in Permit Condition III.10.J.1, and Operating Unit 10, Appendix 10.15 of this
17 Permit, as approved pursuant to Permit Condition III.10.J.5.f, except as modified in
18 accordance with Permit Conditions III.10.J.1.b.xii and III.10.J.3.
- 19 III.10.J.3.a.ii. Operating Unit 10, Appendix 10.15 of this Permit, as approved pursuant to Permit
20 Condition III.10.J.5.f, will be re-submitted to Ecology for approval by the Permittees as
21 a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f at least
22 one hundred and eighty (180) days prior to the start date of the demonstration test. The
23 revised Demonstration Test Plan will include applicable EPA promulgated test methods
24 and procedures in effect at the time of the re-submittal and projected commencement and
25 completion dates for the Demonstration Test.
- 26 III.10.J.3.a.iii. The Permittees will not commence the demonstration test period until documentation has
27 been submitted to Ecology verifying that the HLW Vitrification System has operated at a
28 minimum of 90% of the demonstration test period feed-rate limit for a minimum of an
29 eight (8) consecutive hours period on two (2) consecutive days.
- 30 III.10.J.3.b. Performance Standards
- 31 The Permittees will demonstrate compliance with the performance standards specified in
32 Permit Condition III.10.J.1.b during the Demonstration Test Period.
- 33 III.10.J.3.c. Allowable Waste Feed During the Demonstration Test Period
- 34 III.10.J.3.c.i. The Permittees may feed the dangerous waste specified for the HLW Vitrification System
35 in Part A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those waste
36 outside the waste acceptance criteria specified in the WAP, Operating Unit 10, Chapter
37 3.0 of this Permit, as approved pursuant to Permit Condition III.10.C.3, except Permit
38 Conditions III.10.J.3.c.ii through iv, also apply.

- 1 III.10.J.3.c.ii. The Permittees will not feed mixed waste to the HLW Vitrification System.
- 2 III.10.J.3.c.iv. The dangerous waste feed-rates to the HLW Vitrification System will not exceed the
3 limits in Permit Tables III.10.J.D and F, as approved/modified pursuant to Permit
4 Condition III.10.J.5.
- 5 III.10.J.3.c.v. The Permittees will conduct sufficient analysis of the dangerous waste treated in the
6 HLW Vitrification System to verify that the dangerous waste is within the physical and
7 chemical composition limits specified in this Permit.
- 8 III.10.J.3.d. Demonstration Data Submissions and Certifications
- 9 III.10.J.3.d.i. The Permittees will submit to Ecology a complete demonstration test report within one
10 hundred and twenty (120) calendar days of completion of the Demonstration Test
11 including all data collected during the Demonstration Test and updated Permit Tables
12 III.10.K.D, III.10.K.E, and III.10.K.F.
- 13 III.10.J.3.d.ii. The Permittees must submit the following information to Ecology prior to receiving
14 Ecology's approval to commence feed of dangerous waste and mixed waste to the HLW
15 Vitrification System:
- 16 A. The Permittees will submit a summary of data collected as required during the
17 Demonstration Test to Ecology upon completion of the Demonstration Test.
- 18 B. A certification that the Demonstration Test has been carried out in accordance with
19 the approved Demonstration Test Plan and approved modifications within thirty (30)
20 days of the completion of the Demonstration Test [WAC 173-303-807(8)].
- 21 C. Calculations and analytical data showing compliance with the performance standards
22 specified in Permit Conditions III.10.J.1.b.i, III.10.J.1.b.iv, III.10.J.1.b.v,
23 III.10.J.1.b.vi, and III.10.J.1.b.vii
- 24 D. Laboratory data QA/QC summary for the information provided in
25 III.10.J.3.d.ii.C.
- 26 III.10.J.3.d.iii. After successful completion of the Demonstration Test and receipt of Ecology's approval,
27 the Permittees will be authorized to commence feed of dangerous waste and mixed waste
28 to the HLW Vitrification System for the post-demonstration test period indicated in
29 Permit Tables III.10.J.D and F, as approved/modified pursuant to Permit Condition
30 III.10.J.5, in compliance with the operating requirements specified in Permit Condition
31 III.10.J.1.c and within the limitations specified in Permit Condition III.10.C.14.
- 32 III.10.J.3.d.iv. RESERVED
- 33 III.10.J.3.d.v. After successful completion of the Demonstration Test, Permittees submittal of the
34 following to Ecology, and Permittees receipt of Ecology approval of the following in
35 writing, the Permittees will be authorized to feed dangerous waste and mixed waste to the
36 HLW Vitrification System pursuant to Permit Section III.10.K.
- 37 A. A complete Demonstration Test Report for the HLW Vitrification System and
38 updated Permit Tables III.10.K.D, III.10.K.E, and III.10.K.F, as approved/modified

1 pursuant to Permit Conditions III.10.J.5 and III.10.C.11.c. or III.10.C.11.d., the test
2 report will be certified in accordance with WAC 173-303-807(8), in accordance with
3 WAC 173-303-680(2) and (3).

4 B. A Final Risk Assessment Report completed pursuant to Permit Conditions
5 III.10.C.11.c. or III.10.C.11.d.

6 III.10.J.3.d.vi. If any calculations or testing results show that one or more of the performance standards
7 listed in Permit Condition III.10.J.1.b., with the exception of Permit Condition
8 III.10.J.1.b.x., for the HLW Vitrification System were not met during the Demonstration
9 Test, the Permittees will perform the following actions:

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

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

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

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

22 E. Based on the information provided to Ecology by the Permittees, pursuant to Permit
23 Conditions III.10.J.3.d.vi.A through D above, and any additional information,
24 Ecology may provide, in writing, direction to the Permittees to stop dangerous and/or
25 mixed waste feed to the LAW Vitrification System and/or amend the mode of
26 operation the Permittees are allowed to continue operations prior to Ecology approval
27 of a compliance schedule and/or revised Demonstration Test Plan, pursuant to Permit
28 Conditions III.10.J.3.d.vi.F and G.

29 F. If the performance standard listed in Permit Condition III.10.J.1.b.i. was not met
30 during the Demonstration Test, the Permittees will submit within one hundred and
31 twenty (120) days of discovery of not meeting the performance standard, a revised
32 Demonstration Test Plan (if appropriate) and a compliance schedule for Ecology
33 approval to address this deficiency. If a revised Demonstration Test Plan is
34 submitted, it will be accompanied by a request for approval to retest as a permit
35 modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. The
36 revised Demonstration Test Plan (if submitted) must include substantive changes to
37 prevent failure from reoccurring.

38 G. If any of the performance standards listed in Permit Condition III.10.J.1.b., with the
39 exception of Permit Conditions III.10.J.1.b.i. or III.10.J.1.b.x., were not met during
40 the Demonstration Test, the Permittees will submit to Ecology within one hundred

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

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

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

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

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

- 1 640(3)(a) and WAC 173-303-640(3)(f), in accordance with WAC 173-303-680 and WAC
2 173-303-806(4)(i)(i)(B)];
- 3 III.10.J.5.d.iv. A description of materials and equipment used to provide corrosion protection for
4 external metal components in contact with soil and water, including factors affecting the
5 potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-
6 303-680(2) and WAC 173-303-806(4)(i)(i)(A)];
- 7 III.10.J.5.d.v. Materials selection documentation for equipment for each sub-system (e.g., physical and
8 chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-
9 680(2) and WAC 173-303-806(4)(i)(i)(A)];
- 10 III.10.J.5.d.vi. Vendor information (including, but not limited to, required performance warranties, as
11 available), consistent with information submitted under ii. above, for sub-system
12 equipment will be submitted for incorporation into the Administrative Record [WAC
13 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-
14 806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(iv)];
- 15 III.10.J.5.d.vii. Sub-system, sub-system equipment, and leak detection system instrument control logic
16 narrative description (e.g., software functional specifications, descriptions of fail-safe
17 conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-
18 303-806(4)(i)(v)];
- 19 III.10.J.5.d.viii. System description related to sub-system equipment, and system descriptions related to
20 leak detection systems, (including instrument control logic and narrative descriptions),
21 for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-
22 806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];
- 23 III.10.J.5.d.ix. A detailed description of how the sub-system equipment will be installed and tested
24 [WAC 173-303-640(3)(c) through (e) and WAC 173-303-640(4)(b) and (c), in
25 accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];
- 26 III.10.J.5.d.x. For process monitoring, control, and leak detection system instrumentation for the HLW
27 Vitrification System as identified in Permit Tables III.10.J.C. and III.10.J.F., a detailed
28 description of how the process monitoring, control, and leak detection system
29 instrumentation will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC
30 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi), and WAC 173-303-
31 806(4)(i)(i)(B)];
- 32 III.10.J.5.d.xi. Mass and energy balance for projected normal operating conditions used in developing
33 the Piping and Instrumentation Diagrams and Process Flow Diagrams, including
34 assumptions and formulas used to complete the mass and energy balance, so that they can
35 be independently verified, for incorporation into the Administrative Record [WAC 173-
36 303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];
- 37 III.10.J.5.d.xii. Documentation that sub-systems equipment are designed to prevent the accumulation of
38 hydrogen gas levels above the lower explosive limit into the Administrative Record
39 [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)]
40 [WAC 173-303-815(2)(b)(ii)];

- 1 III.10.J.5.d.xiii. Leak Detection system documentation (e.g. vendor information etc.) consistent with
2 information submitted under Permit Condition III.10.J.5.c.ii. and Permit Conditions
3 III.10.J.5.d.ii., vii., viii., and x. above, will be submitted for incorporation into the
4 Administrative Record.
- 5 III.10.J.5.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees
6 will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following as
7 specified below for incorporation into Operating Unit 10, Appendix 10.18 of this Permit,
8 except Permit Condition III.10.J.5.e.i., which will be incorporated into Operating Unit 10,
9 Chapter 6.0 of this Permit. All information provided under this permit condition must be
10 consistent with information provided pursuant to Permit Conditions III.10.J.5.b., c., d., e.,
11 and f., III.10.C.3.e.v., and III.10.C.11.b., as approved by Ecology:
- 12 III.10.J.5.e.i. Integrity assessment program and schedule for the HLW Vitrification System will
13 address the conducting of periodic integrity assessments on the HLW Vitrification
14 System over the life of the system, as specified in Permit Condition III.10.J.5.b.ix. and as
15 specified in WAC 173-303-640(3)(b), in accordance with WAC 173-303-680, and
16 descriptions of procedures for addressing problems detected during integrity assessments.
17 The schedule must be based on past integrity assessments, age of the system, materials of
18 construction, characteristics of the waste, and any other relevant factors [WAC 173-303-
19 640(3)(b), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];
- 20 III.10.J.5.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so
21 that it will detect the failure of either the primary or secondary containment structure or
22 the presence of any release of dangerous and/or mixed waste or accumulated liquid in the
23 secondary containment system within twenty-four (24) hours [WAC 173-303-
24 640(4)(c)(iii)]. Detection of a leak of at least 0.1 gallons per hour within twenty-four
25 (24) hours is defined as being able to detect a leak within twenty-four (24) hours. Any
26 exceptions to this criteria must be approved by Ecology in accordance with WAC 173-
27 303-680, WAC 173-303-640(4)(c)(iii), and WAC 173-303-806(4)(i)(i)(b);
- 28 III.10.J.5.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste
29 and accumulated precipitation liquids can be removed from the secondary containment
30 system within twenty-four (24) hours [WAC 173-303-806(4)(i)(i)(B)];
- 31 III.10.J.5.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices
32 are in place to prevent spills and overflows from the HLW Vitrification System or
33 containment systems in compliance with WAC 173-303-640(5)(b)(i) through (iii), in
34 accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B);
- 35 III.10.J.5.e.v. Description of procedures for investigation and repair of the HLW Vitrification System
36 [WAC 173-303-640(6) and WAC 173-303-640(7)(e) and (f), in accordance with WAC
37 173-303-680, WAC 173-303-320, WAC 173-303-806(4)(ia)(iv), and WAC 173-303-
38 806(4)(a)(ii)(B)];
- 39 III.10.J.5.e.vi. Updated Chapter 4.0, Narrative Description, Tables and Figures as identified in Permit
40 Tables III.10.J.A and III.10.J.B, as modified pursuant to Permit Condition III.10.H.5.e.x.
41 and updated to identify routinely non-accessible LAW Vitrification sub-systems.

- 1 III.10.J.5.e.vii. Description of procedures for management of ignitable and reactive, and incompatible
2 dangerous and/or mixed waste as specified in accordance with WAC 173-303-640(9) and
3 (10), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B).
- 4 III.10.J.5.e.viii. A description of the tracking system used to track dangerous and/or mixed waste
5 generated throughout the HLW Vitrification System, pursuant to WAC 173-303-380.
- 6 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
7 Vitrification System process and leak detection system monitors and instruments (to
8 include, but not be limited to: instruments and monitors measuring and/or controlling
9 flow, pressure, temperature, density, pH, level, humidity, and emissions) to provide the
10 information as specified in each column heading. Process and leak detection system
11 monitors and instruments for critical systems, as specified in Operating Unit 10,
12 Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b. and for operating
13 parameters as required to comply with Permit Condition III.10.C.3.e.iii., will be
14 addressed. Process monitors and instruments for non-waste management operations (e.g.,
15 utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this
16 permit condition [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and
17 WAC 173-303-806(4)(i)(v)];
- 18 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
19 WAC 173-303-806(4)(i)(i)(A) through (B)]:
- 20 A. Under column 1, update and complete list of dangerous and mixed waste HLW
21 Vitrification System sub-systems, including plant items that comprise each system
22 (listed by item number).
- 23 B. Under column 2, update and complete system designations.
- 24 C. Under column 3, replace the 'Reserved' with Operating Unit 10, Appendix 10.0 sub-
25 sections (e.g., 10.1, 10.2, etc.) designated in Permit Conditions III.10.J.5.b., c., and d.
26 specific to HLW Vitrification System sub-system, as listed in column 1.
- 27 D. Under column 4, update and complete list of narrative description, tables, and
28 figures.
- 29 III.10.J.5.f. One hundred and eighty (180) days prior to initial receipt of dangerous and/or mixed
30 waste in the WTP Unit, the Permittees will submit for review and receive approval for
31 incorporation into Operating Unit 10, Appendix 10.15 of this Permit, a Demonstration
32 Test Plan for the HLW Vitrification System to demonstrate that the HLW Vitrification
33 Systems meets the performance standards specified in Permit Condition III.10.J.1.b. In
34 order to incorporate the Demonstration Test Plan for the HLW Vitrification System into
35 Operating Unit 10, Appendix 10.15, Permit Condition III.10.C.2.g. process will be
36 followed. The Demonstration Test Plan will include, but not be limited to, the following
37 information. The Demonstration Test Plan will also be consistent with the information
38 provided pursuant to Permit Conditions III.10.J.5.b., c., d. and e., III.10.C.3.e.v. and
39 III.10.C.11.b., as approved by Ecology and consistent with the schedule described in
40 Operating Unit 10, Appendix 1.0 of this Permit. The documentation required pursuant to

1 Permit Condition III.10.J.5.f.xvi., in addition to being incorporated into Operating Unit
2 10, Appendix 10.15, will be incorporated by reference in Operating Unit 10, Chapter 6.0
3 of this Permit.

4 *Notes: (1) The following should be consulted to prepare this Demonstration Test Plan:*
5 *"Guidance on Setting Permit Conditions and Reporting Trial Burn Results Volume II of*
6 *the Hazardous Waste Incineration Guidance Series", and EPA/625/6-89/019 and Risk*
7 *Burn Guidance For Hazardous Waste Combustion Facilities", EPA-R-01-001, July 2001,*
8 *WAC 173-303-807(2), WAC 173-303-670(5), WAC-173-303-670(6), 40 CFR*
9 *§63.1207(f)(2), 40 CFR §63.1209 and Appendix to 40 CFR Part 63 EEE.*

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

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

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

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

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

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

27 III.10.J.5.f.ii. Specification of trial principal organic dangerous constituents (PODCs) for which
28 destruction and removal efficiencies are proposed to be calculated during the
29 demonstration test and for inclusion in Permit Conditions III.10.J.1.b.i. and III.10.K.1.b.i.
30 These trial PODCs will be specified based on destructibility, concentration or mass in the
31 waste and the dangerous waste constituents or constituents in WAC 173-303-9905;

32 III.10.J.5.f.iii. A description of the blending procedures, prior to introducing the feed-streams into the
33 melter, including analysis of the materials prior to blending, and blending ratios;

34 III.10.J.5.f.iv. A description of how the surrogate feeds are to be introduced for the demonstration. This
35 description should clearly identify the differences and justify how any of differences
36 would impact the surrogate feed introduction as representative of how mixed waste feeds
37 will be introduced;

38 III.10.J.5.f.v. A detailed engineering description of the HLW Vitrification System, including:

- 1 A. Manufacturer's name and model number for each sub-system;
- 2 B. Design capacity of each sub-system including documentation (engineering
3 calculations, manufacturer/vendor specifications, operating data, etc.) supporting
4 projected operational efficiencies (e.g., WESP projected removal efficiency for
5 individual metals, halogens, particulates, etc.) and compliance with performance
6 standards specified in Permit Condition III.10.J.1.b.;
- 7 C. Detailed scaled engineering drawings, including Process Flow Diagrams, Piping and
8 Instrumentation Diagrams, Vessel Drawings (plan, and elevation with cross sections)
9 and General Arrangement Drawings;
- 10 D. Process Engineering Descriptions;
- 11 E. Mass and energy balances for each projected operating condition and each
12 demonstration test condition, including assumptions and formulas used to complete
13 mass and energy balances so that they can be independently verified for
14 incorporation into the Administrative Record;
- 15 F. Engineering Specifications/data sheets (materials of construction, physical and
16 chemical tolerances of equipment, equipment performance warranties, and fan
17 curves);
- 18 G. Detailed Description of Automatic Waste Feed Cut-off System addressing critical
19 operating parameters for all performance standards specified in Permit Condition
20 III.10.J.1.b.
- 21 H. Documentation to support compliance with performance standards specified in
22 Permit Condition III.10.J.1.b., including engineering calculations, test data, and
23 manufacturer/vendor's warranties, etc.
- 24 I. Detailed description of the design, operation and maintenance practices for air
25 pollution control system.
- 26 J. Detailed description of the design, operation, and maintenance practices of any stack
27 gas monitoring and pollution control monitoring system.
- 28 K. Documentation based on current WTP Unit design either confirming the Permittees'
29 demonstration that it is not technically appropriate to correct standards listed in
30 Permit Conditions III.J.1.b.ii. through III.J.1.b.ix. to seven percent (7%) oxygen, or a
31 request, pursuant to Permit Conditions III.10.C.9.e. and III.10.C.9.f., to update Permit
32 Conditions III.J.1.b.ii. through III.J.1.b.ix., III.K.b.ii. through III.K.b.ix., III.K.e.iii.,
33 and III.J.1.e.iii., Permit Tables III.10.J.C., III.10.J.F., III.10.K.C., III.10.K.F. and
34 Operating Unit 10, Appendix 10.0 to reflect the addition of an oxygen monitor and
35 the correction of the standards to seven percent (7%) oxygen.
- 36 III.10.J.5.f.vi. Detailed description of sampling and monitoring procedures including sampling and
37 monitoring locations in the system, the equipment to be used, sampling and monitoring
38 frequency, and planned analytical procedures for sample analysis including, but not
39 limited to:

- 1 A. A short summary narrative description of each stack sample method should be
2 included within the main body of the demonstration test plan, which references an
3 appendix to the plan that would include for each sampling train: (1) detailed sample
4 method procedures, (2) sampling train configuration schematic, (3) sampling
5 recovery flow sheet, (4) detailed analytical method procedures, and (5) sampling
6 preparation and analysis flow sheet. The detailed procedures should clearly flag
7 where the method has provided decision points (e.g., choices of equipment materials
8 of construction, choices of clean-up procedures or whether additional clean-up
9 procedures will be incorporated, whether pretest surveys or laboratory validation
10 work will be performed, enhancements to train to accommodate high moisture
11 content in stack gas, etc.) and what is being proposed along with the basis for the
12 decision.
- 13 B. A short summary narrative description of the feed and residue sampling methods
14 should be included within the main body of the demonstration test plan, which
15 references an appendix that would include for each sample type: (1) detailed sample
16 method procedures, (2) sampling recovery/compositing procedures, and (3) detailed
17 analytical method procedures. The detailed procedures should clearly flag where the
18 method has provided decision points (e.g., choices of equipment materials of
19 construction, choices of clean-up procedures or whether additional clean-up
20 procedures will be incorporated, whether pretest surveys or laboratory validation
21 work will be performed, etc.) and what is being proposed along with the basis for the
22 decision.
- 23 III.10.J.5.f.vii. A detailed test schedule for each condition for which the demonstration test is planned,
24 including projected date(s), duration, quantity of dangerous waste to be fed, and other
25 relevant factors;
- 26 III.10.J.5.f.viii. A detailed test protocol including, for each test condition, the ranges of feed-rate for each
27 feed system, and all other relevant parameters that may affect the ability of the HLW
28 Vitrification System to meet performance standards specified in Permit Condition
29 III.10.J.1.b.;
- 30 III.10.J.5.f.ix. A detailed description of planned operating conditions for each demonstration test
31 condition, including operating conditions for shakedown, demonstration test, post-
32 demonstration test and normal operations. This information will also include submittal of
33 Permit Tables III.10.J.D, III.10.J.F, III.10.K.D, and III.10.K.F completed with the
34 information as specified in each column heading for each HLW Vitrification System
35 waste feed cut-off parameter and submittal of supporting documentation for Permit
36 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
38 specified in Permit Condition III.10.J.1.b. with the simultaneous operation of the melter
39 at capacity and input from the HLW Vitrification Vessel Ventilation System at capacity
40 to simulate maximum loading to the HLW Vitrification System off-gas treatment system
41 and to establish the corresponding operating parameter ranges.

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

10/2008

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

- 1 F. Equipment instrument control logic narrative description (e.g., software functional
- 2 specifications, descriptions of fail safe conditions, etc.) [WAC 173-303-680(2), WAC
- 3 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)]
- 4 III.10.J.5.f.xvii. Outline of demonstration test report.
- 5

1
2

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

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
<p><u>HLW Melter Process System</u> HMP-MLTR-00001 (HLW Melter 1) HMP-MLTR-00002 (HLW Melter 2)</p>	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.
<p><u>Melter Offgas Treatment Process System</u> HOP-FCLR-00001 (Film Cooler) HOP-FCLR-00002 (Film Cooler) HOP-FCLR-00003 (Film Cooler) HOP-FCLR-00004 (Film Cooler)</p>	HOP	<p><u>24590-HLW</u> -M5-V17T-P0002 -M5-V17T-P20002 -M6-HMP-P0002 -M6-HMP-P20002 -3YD-HOP-00001^a</p>	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.
<p><u>Melter Offgas Treatment Process System (Cont.)</u> HOP-SCB-00001 (HLW Melter 1 SBS) HOP-SCB-00002 (HLW Melter 2 SBS)</p>	HOP	<p><u>24590-HLW</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^a</p> <p><u>24590-WTP</u> -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003</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><u>Melter Offgas Treatment Process System (Cont.)</u></p>	HOP	<p><u>24590-HLW</u> -M5-V17T-P0003 -M5-V17T-P20003</p>	Section 4.1.4.3; Table 4-8; and Figures 4A-1 and 4A-4 in Operating Unit 10, Chapter

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

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
HOP-WESP-00001 (Melter 1 WESP) HOP-WESP-00002 (Melter 2 WESP)		-M6-HOP-P0002 -M6-HOP-P20002 -N1D-HOP-P0002 -P1-P01T-P0004 -P1-P01T-P0005 -3YD-HOP-00001 ^a <u>24590-WTP</u> -3PS-MKE0-TP001	4.0 of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> 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	<u>24590-HLW</u> -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 ^a <u>24590-WTP</u> -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.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-ADBR-00001A (Melter 1 Activated Carbon Adsorber – located on Activated	HOP	<u>24590-HLW</u> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0003 -M6-HOP-P20003	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

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
<p>Carbon Adsorber Skid HOP-ADBR-00001)</p> <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>-MVD-HOP-P0015 -MVD-HOP-P0016 -N1D-HOP-P0003 -P1-P01T-P0002</p> <p><u>24590-WTP</u> -3PS-MWK0-TP001</p>	
<p><u>Melter Offgas Treatment Process System (Cont.)</u></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><u>24590-HLW</u> -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^a</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><u>Melter Offgas Treatment Process System (Cont.)</u></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><u>24590-HLW</u> -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>	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

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
		<u>24590-WTP</u> -3PS-MBTV-TP001	
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-SCR-00001 (NOx Selective Catalytic Reducer – located on Catalyst Skid HOP-SCO-00002) HOP-SCR-00002 (NOx Selective Catalytic Reducer – located on Catalyst Skid HOP-SCO-00003)	HOP	<u>24590-HLW</u> -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 <u>24590-WTP</u> -3PS-MBTV-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.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HX-00001 (Catalyst Skid Preheater – located on Catalyst Skid HOP-SCO-00002) HOP-HX-00003 (Catalyst Skid Preheater – located on Catalyst Skid HOP-SCO-00003)	HOP	<u>24590-HLW</u> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0008 -M6-HOP-P20008 -MKD-HOP-P0019 -MKD-HOP-P0020 -P1-PO1T-P0002 <u>24590-WTP</u> -3PS-MBTV-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.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HTR-00001 (Catalyst Skid Electric Heater – located on Catalyst Skid HOP-SCO-00002) HOP-HTR-00007 (Catalyst Skid Electric Heaters – located on Catalyst Skid HOP-SCO-00003)	HOP	<u>24590-HLW</u> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0008 -M6-HOP-P20008 -MKD-HOP-P0019 -MKD-HOP-P0020 -P1-PO1T-P0002 <u>24590-WTP</u> -3PS-MBTV-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.
<u>Melter Offgas Treatment Process System (Cont.)</u>	HOP	<u>24590-HLW</u> -M5-V17T-P0004 -M5-V17T-P20004	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

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
HOP-ABS-00002 (Silver Mordenite Column) HOP-ABS-00003 (Silver Mordenite Column)		-M6-HOP-P0008 -M6-HOP-P20008 -MKD-HOP-P0014 -MKD-HOP-P0017 -NID-HOP-P0006 -P1-P01T-P0001 -3PS-MBT0-TP001	4.0 of this Permit.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HTR-00001B (HEPA Preheater) HOP-HTR-00002A (HEPA Preheater) HOP-HTR-00005A (HEPA Preheater) HOP-HTR-00005B (HEPA Preheater)	HOP	<u>24590-HLW</u> -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.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-HX-00002 (Silver Mordenite Preheater) HOP-HX-00004 (Silver Mordenite Preheater)	HOP	<u>24590-HLW</u> -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.
<u>Melter Offgas Treatment Process System (Cont.)</u> HOP-FAN-00001A (Booster Extraction Fan) HOP-FAN-00001B (Booster Extraction Fan) HOP-FAN-00001C (Booster Extraction Fan) HOP-FAN-00009A (Booster Extraction	HOP	<u>24590-HLW</u> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0003 -M6-HOP-P20003 -MAD-HOP-P0018 -P1-P01T-P0001 <u>24590-WTP</u> -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

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
Fan) HOP-FAN-00009B (Booster Extraction Fan) HOP-FAN-00009C (Booster Extraction Fan)			
<u>Melter Offgas Treatment Process System (Cont.)</u> 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	<u>24590-HLW</u> -M5-V17T-P0004 -M5-V17T-P20004 -M6-HOP-P0008 -M6-HOP-P20008 -MAD-HOP-P0038 -P1-P01T-P0005 <u>24590-WTP</u> -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.
<u>Melter Offgas Treatment Process System (Cont.)</u> HLW Stack	HOP	<u>24590-HLW</u> -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.
Footnotes: ^a System Descriptions are maintained in the Administrative Record, and are listed here for information only.			

1

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions ^a (feet) & Materials of Construction	Maximum Allowable Liquid Height (inches)	Secondary Containment Volume (gallons)	Engineering Description (Drawing Nos., Specification Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Footnotes:
^aDimensions 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

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
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	TBD	TBD	TBD	TBD	TBD

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
			(TE-2920D + 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-	Melter 2	TBD	(PDT-2139A +	TBD	TBD	TBD	TBD	TBD

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
HMP-P2013	plenum pressure		PDI-2139A)* Or (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	TBD	TBD	TBD	TBD	TBD

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
			LI-2816B)**					
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

Footnotes:

*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)

Description of Waste	Shakedown 1 and Post Demonstration Test	Shakedown 2 and Demonstration Test
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)

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

5
6

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

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

10/2008

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Subsystem Designation	Instrument Tag Number	Parameter Description	Setpoints During Shakedown 1 and Post Demonstration Test	Setpoints During Shakedown 2 and Demonstration Test
Footnotes: *A continuous monitoring system will be used as defined in Permit Section <u>III.10.C.1.</u> ¹ 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 <u>III.10.J.D.</u> of this Permit				

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42

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

For purposes of Permit Section III.10.K, where reference is made to WAC 173-303-640, the following substitutions apply: substitute 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.K.1 Requirements For HLW Vitrification System Beginning Normal Operation

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

III.10.K.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.K.1.a.i. The Permittees will maintain the design and construction of the HLW Vitrification System as specified in Permit Condition III.10.K.1, Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 10.1 through 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.K.1.a.ii. The Permittees will maintain the design and construction of 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 and 10.4 through 10.14 of this Permit, as approved pursuant to Permit Conditions III.10.J.5.a. through d.

III.10.K.1.a.iii. 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.K.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 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.

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

- 7 III.10.K.1.a.v. The Permittees will ensure periodic integrity assessments are conducted on the HLW
8 Vitrification System listed in Permit Table III.10.I.A, as approved/modified pursuant to
9 Permit Condition III.10.J.5, over the term of this Permit, in accordance with WAC 173-
10 303-680(2) and (3), as specified in WAC 173-303-640(3)(b) following the description of
11 the integrity assessment program and schedule in Operating Unit 10, Chapter 6.0 of this
12 Permit, as approved pursuant to Permit Conditions III.10.J.5.e.i and III.10.C.5.c. Results
13 of the integrity assessments will be included in the WTP Unit operating record until ten
14 (10) years after post-closure, or corrective action is complete and certified, whichever is
15 later.
- 16 III.10.K.1.a.vi. The Permittees will address problems detected during the HLW Vitrification System
17 integrity assessments specified in Permit Condition III.10.K.1.a.v following the
18 description of the integrity assessment program in Operating Unit 10, Chapter 6.0 of this
19 Permit, as approved pursuant to Permit Conditions III.10.J.5.e.i and III.10.C.5.c.
- 20 III.10.K.1.a.vii. All process monitors/instruments as specified in Permit Table III.10.K.F, as
21 approved/modified pursuant to Permit Condition III.10.J.5 and III.10.J.3.d.v., will be
22 equipped with operational alarms to warn of deviation, or imminent deviation from the
23 limits specified in Permit Table III.10.K.F.
- 24 III.10.K.1.a.viii. The Permittees will install and test all process and leak detection system
25 monitors/instruments, as specified in Permit Tables III.10.K.C and III.10.K.F, as
26 approved/modified pursuant to Permit Conditions III.10.J.5 and III.10.J.3.d.v., in
27 accordance with Operating Unit 10, Appendices 10.1, 10.2, and 10.14 of this Permit, as
28 approved pursuant to Permit Conditions III.10.J.5.d.x and III.10.J.5.f.xvi.
- 29 III.10.K.1.a.ix. No dangerous and/or mixed waste will be treated in the HLW Vitrification System unless
30 the operating conditions, specified under Permit Condition III.10.K.1.c are complied
31 with.
- 32 III.10.K.1.a.x. The Permittees will not place dangerous and/or mixed waste, treatment reagents, or other
33 materials in the HLW Vitrification System if these substances could cause the sub-
34 system, sub-system equipment, or the containment system to rupture, leak, corrode, or
35 otherwise fail [WAC 173-303-640(5)(a), in accordance with WAC 173-303-680(2)].
36 This condition is not applicable to corrosion of HLW Vitrification System sub-system or
37 sub-system equipment that are expected to be replaced as part of normal operations (e.g.,
38 melter).
- 39 III.10.K.1.a.xi. The Permittees will operate the HLW Vitrification System to prevent spills and overflows
40 using the description of controls and practices as required under WAC 173-303-
41 640(5)(b), described in Permit Condition III.10.C.5, and Operating Unit 10, Appendix
42 10.18 of this Permit, as approved pursuant to Permit Condition III.10.J.5.e. [WAC 173-
43 303-640(5)(b), in accordance with WAC 173-303-680(2) and (3), WAC-173-303-
44 806(4)(c)(ix)].

- 1 III.10.K.1.a.xii. For routinely non-accessible HLW Vitrification System sub-systems, as specified in
2 Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition
3 III.10.J.5.e.vi., the Permittees will mark all routinely non-accessible HLW Vitrification
4 System sub-systems access points with labels or signs to identify the waste contained in
5 each HLW Vitrification System sub-system. The label, or sign, must be legible at a
6 distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a
7 manner which adequately warns employees, emergency response personnel, and the
8 public of the major risk(s) associated with the waste being stored or treated in the HLW
9 Vitrification System sub-systems. For the purposes of this permit condition, "routinely
10 non-accessible" means personnel are unable to enter these areas while waste is being
11 managed in them [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].
- 12 III.10.K.1.a.xiii. For all the HLW Vitrification System sub-systems not addressed in Permit Condition
13 III.10.K.1.a.xii., the Permittees will mark all these HLW Vitrification System sub-
14 systems holding dangerous and/or mixed waste with labels or signs to identify the waste
15 contained in the HLW Vitrification System sub-systems. The labels, or signs, must be
16 legible at a distance of at least fifty (50) feet, and must bear a legend which identifies the
17 waste in a manner which adequately warns employees, emergency response personnel,
18 and the public of the major risk(s) associated with the waste being stored or treated in the
19 HLW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with
20 WAC 173-303-680(2)].
- 21 III.10.K.1.a.xiv. The Permittees will ensure that the secondary containment systems for the HLW
22 Vitrification System sub-systems listed in Permit Tables III.10.K.A and III.10.K.B, as
23 approved/modified pursuant to Permit Condition III.10.J.5, are free of cracks or gaps to
24 prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the
25 system to the soil, groundwater, or surface water at any time during the use of the HLW
26 Vitrification System sub-systems. Any indication that a crack or gap may exist in the
27 containment systems will be investigated and repaired in accordance with Operating Unit
28 10, Appendix 10.18 of this Permit, as approved pursuant to Permit Condition
29 III.10.J.5.e.v. [WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC
30 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-
31 806(4)(i)(i)(B), and WAC 173-303-320].
- 32 III.10.K.1.a.xv. The Permittees must immediately and safely remove from service any HLW Vitrification
33 System or secondary containment system which through an integrity assessment is found
34 to be "unfit for use" as defined in WAC 173-303-040, following Permit Condition
35 III.10.K.1.a.xvii.A through D, and F. The affected HLW Vitrification System or
36 secondary containment system must be either repaired or closed in accordance with
37 Permit Condition III.10.K.1.a.xvii.E [WAC 173-303-640(7)(e) and (f) and WAC 173-
38 303-640(8), in accordance with WAC 173-303-680(3)].
- 39 III.10.K.1.a.xvi. An impermeable coating, as specified in Operating Unit 10, Appendices 10.4, 10.5, 10.7,
40 10.9, 10.11, and 10.12 of this Permit, as approved pursuant to Permit Condition
41 III.10.J.5.b.v., will be maintained for all concrete containment systems and concrete
42 portions of containment systems for the HLW Vitrification System sub-systems listed in
43 Permit Tables III.10.K.A and III.10.K.B, as approved/modified pursuant to Permit
44 Condition III.10.J.5 (concrete containment systems that do not have a liner, pursuant to
45 WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and have

1 construction joints, will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in
2 accordance with WAC 173-303-680(2). The coating will prevent migration of any
3 dangerous and/or mixed waste into the concrete. All coatings will meet the following
4 performance standards:

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

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

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

- 42 1. Close the HLW Vitrification System sub-system following procedures in
43 WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680, and

- 1 Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to
2 Permit Condition III.10.C.8; or
- 3 2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as
4 modified pursuant to Permit Condition III.10.K.1.a.iii.) the HLW
5 Vitrification System, in accordance with Operating Unit 10, Appendix 10.18
6 of this Permit, as approved pursuant to Permit Condition III.10.J.5.e.v.,
7 before the HLW Vitrification System is placed back into service [WAC 173-
8 303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC
9 173-303-680].
- 10 F. The Permittees will document in the operating record actions/procedures taken to
11 comply with A through E above, as specified in WAC 173-303-640(6)(d), in
12 accordance with WAC 173-303-680(2) and (3).
- 13 G. In accordance with WAC 173-303-680(2) and (3), the Permittees will notify and
14 report releases to the environment to Ecology as specified in WAC 173-303-
15 640(7)(d).
- 16 III.10.K.1.a.xviii. If liquids (e.g., dangerous and/or mixed waste, leaks and spills, precipitation, fire water,
17 liquids from damaged or broken pipes) cannot be removed from the secondary
18 containment system within twenty-four (24) hours; Ecology will be verbally notified
19 within twenty-four (24) hours of discovery. The notification will provide the
20 information in A, B, and C, listed below. The Permittees will provide Ecology with a
21 written demonstration within seven (7) business days, identifying at a minimum [WAC
22 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-
23 303-680(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
26 environment;
- 27 C. Current actions being taken to remove liquids from secondary containment.
- 28 III.10.K.1.a.xix. All air pollution control devices and capture systems in the HLW Vitrification System
29 will be maintained and operated at all times in a manner so as to minimize the emissions
30 of air contaminants and to minimize process upsets. Procedures for ensuring that the air
31 pollution control devices and capture systems in the HLW Vitrification System are
32 properly operated and maintained so as to minimize the emission of air contaminants and
33 process upsets will be established.
- 34 III.10.K.1.a.xx. In all future narrative permit submittals, the Permittees will include HLW Vitrification
35 sub-system names with the sub-system designation.
- 36 III.10.K.1.a.xxi. For any portion of the HLW Vitrification System which has the potential for formation
37 and accumulation of hydrogen gases, the Permittees will operate the portion to maintain
38 hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].
- 39 III.10.K.1.a.xxii. For each HLW Vitrification System sub-system holding dangerous waste which are
40 acutely or chronically toxic by inhalation, the Permittees will operate the system to
41 prevent escape of vapors, fumes, or other emissions into the air [WAC 173-303-
42 806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].

- 1 III.10.K.1.b. Performance Standards
- 2 III.10.K.1.b.i. The HLW Vitrification System must achieve a destruction and removal efficiency (DRE)
- 3 of 99.99% for the principal organic dangerous constituents (PODCs) listed below [40
- 4 CFR §63.1203(c)(1) and 40CFR §63.1203(c)(2), in accordance with WAC 173-303-
- 5 680(2)];
- 6 RESERVED
- 7 DRE in this Permit Condition will be calculated in accordance with the formula given
- 8 below:
- 9 $DRE = [1 - (W_{out}/W_{in})] \times 100\%$
- 10 Where:
- 11 W_{in} = mass feed-rate of one principal organic dangerous constituent (PODC) in a waste
- 12 feedstream; and
- 13 W_{out} = mass emission rate of the same PODC present in exhaust emissions prior to release
- 14 to the atmosphere.
- 15 III.10.K.1.b.ii. Particulate matter emissions from the HLW Vitrification System will not exceed 34
- 16 mg/dscm (0.015 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with WAC 173-
- 17 303-680(2)];
- 18 III.10.K.1.b.iii. Hydrochloric acid and chlorine gas emissions from the HLW Vitrification System will
- 19 not exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-
- 20 303-680(2)];
- 21 III.10.K.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-
- 23 680(2)];
- 24 III.10.K.1.b.v. Mercury emissions from the HLW Vitrification System will not exceed 45 µg/dscm [40
- 25 CFR §63.1203(b)(2), in accordance with WAC 173-303-680(2)];
- 26 III.10.K.1.b.vi. Lead and cadmium emissions from the HLW Vitrification System will not exceed 120
- 27 µg/dscm, combined [40 CFR §63.1203(b)(3), in accordance with WAC 173-303-680(2)];
- 28 III.10.K.1.b.vii. Arsenic, beryllium, and chromium emissions from the HLW Vitrification System will not
- 29 exceed 97 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with WAC 173-
- 30 303-680(2)];
- 31 III.10.K.1.b.viii. Carbon monoxide (CO) emission from the HLW Vitrification System will not exceed
- 32 100 parts per million (ppm) by volume, over an hourly rolling average (as measured and
- 33 recorded by the continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in
- 34 accordance with WAC 173-303-680(2) and (3)];
- 35 III.10.K.1.b.ix. Hydrocarbon emission from the HLW Vitrification System will not exceed 10 parts per
- 36 million (ppm) by volume, over an hourly rolling average (as measured and recorded by
- 37 the continuous monitoring system during demonstration testing required by this Permit),
- 38 dry basis and reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC
- 39 173-303-680(2) and (3)];

- 1 III.10.K.1.b.x. If the emissions from the HLW Vitrification System exceed the emission rates listed in
2 Permit Table III.10.K.E, as approved pursuant to Permit Condition III.10.C.11.c. or d.,
3 the Permittees will perform the following actions [WAC 173-303-680(2) and (3), and
4 WAC 173-303-815(2)(b)(ii)]:
- 5 A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding
6 the emission rate(s) as specified in Permit Condition I.E.21;
- 7 B. Submit to Ecology additional risk information to indicate that the increased emissions
8 impact is off-set by decreased emission impact from one or more constituents
9 expected to be emitted at the same time, and/or investigate the cause and impact of
10 the exceedence of the emission rate(s) and submit a report of the investigation
11 findings to Ecology within fifteen (15) days of the discovery of exceeding the
12 emission rate(s); and
- 13 C. Based on the notification and any additional information, Ecology may provide, in
14 writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the
15 HLW Vitrification System and/or to submit a revised Demonstration Test Plan as a
16 permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or
17 III.10.C.2.g. The revised Demonstration Test Plan must include substantive changes
18 to prevent failure from reoccurring.
- 19 The emission limits specified in Permit Conditions III.10.K.1.b.i. through x. above, will
20 be met for the HLW Vitrification System by limiting feed rates as specified in Permit
21 Tables III.10.K.D and III.10.K.F, as approved/modified pursuant to Permit Condition
22 III.10.J.5 and III.10.J.3.d.v., compliance with operating conditions specified in Permit
23 Condition III.10.K.1.c. (except as specified in Permit Condition III.10.K.1.b.xii.), and
24 compliance with Permit Condition III.10.K.1.b.xi.
- 25 III.10.K.1.b.xi. Treatment effectiveness, feed-rates, and operating rates for dangerous and/or mixed waste
26 management units contained in the HLW Building, but not included in Permit Table
27 III.10.K.A, as approved/modified pursuant to Permit Condition III.10.J.5, will be as
28 specified in Permit Sections III.10.D, III.10.E, III.10.F and consistent with the
29 assumptions and basis which are reflected in Operating Unit 10, Appendix 6.3.1 of this
30 Permit, as approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this
31 permit condition, Operating Unit 10, Appendix 6.3.1 will be superceded by Appendix
32 6.4.1 upon its approval pursuant to either Permit Conditions III.10.C.11.c. or d. [WAC
33 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].
- 34 III.10.K.1.b.xii. Compliance with the operating conditions specified in Permit Condition III.10.K.1.c.,
35 will be regarded as compliance with the required performance standards identified in
36 Permit Conditions III.10.K.1.b.i. through x. However, if it is determined that during the
37 effective period of this Permit that compliance with the operating conditions in Permit
38 Condition III.10.K.1.c. is not sufficient to ensure compliance with the performance
39 standards specified in Permit Conditions III.10.K.1.b.i. through x., the Permit may be
40 modified, revoked, or reissued pursuant to Permit Conditions III.10.C.2.e. and f., or
41 III.10.C.2.g.
- 42 III.10.K.1.c. Operating Conditions [WAC-303-670(6), in accordance with WAC 173-303-680(2)and
43 (3)]

1 The Permittees will operate the HLW Vitrification System in accordance with Operating
2 Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition
3 III.10.J.5.e.vi., Operating Unit 10, Appendix 10.18 of this Permit, as approved pursuant
4 to Permit Conditions III.10.J.5.e. and f., and Operating Unit 10, Appendix 10.15 of this
5 Permit, as approved pursuant to Permit Condition III.10.J.5.f., except as modified
6 pursuant to Permit Conditions III.10.J.3., III.10.K.1.b.x., III.10.K.1.b.xii., III.10.K.1.h.,
7 and in accordance with and the following:

- 8 **III.10.K.1.c.i.** The Permittees will operate the HLW Vitrification System in order to maintain the
9 systems and process parameters listed in Permit Tables III.10.K.C and III.10.K.F, as
10 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., within the
11 set-points specified in Permit Table III.10.K.F.
- 12 **III.10.K.1.c.ii.** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.K.F, as
13 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., to
14 automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to HLW
15 Vitrification System when the monitored operating conditions deviate from the set-points
16 specified in Permit Table III.10.K.F.
- 17 **III.10.K.1.c.iii.** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.K.F, as
18 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., to
19 automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to HLW
20 Vitrification System when all instruments specified on Permit Table III.10.I.F for
21 measuring the monitored parameters fails or exceeds its span value.
- 22 **III.10.K.1.c.iv.** The Permittees will operate the AWFCO systems, specified in Permit Table III.10.K.F, as
23 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., to
24 automatically cut-off and/or lock out the dangerous and/or mixed waste feed to the HLW
25 Vitrification System when any portion of the HLW Vitrification System is bypassed. The
26 terms "bypassed" and "bypass event" as used in Permit Sections III.10.J and K will mean
27 if any portion of the HLW Vitrification System is bypassed so that gases are not treated
28 as during the Demonstration Test.
- 29 **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
30 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., the
31 Permittees will immediately, manually, cut-off the dangerous and/or mixed waste feed to
32 the HLW Vitrification System. The Permittees will not restart the dangerous and/or
33 mixed waste feed until the problem causing the malfunction has been identified and
34 corrected.
- 35 **III.10.K.1.c.vi.** The Permittees will manually cut-off the dangerous and/or mixed waste feed to the HLW
36 Vitrification System when the operating conditions deviate from the limits specified in
37 Permit Condition III.10.K.1.c.i., unless the deviation automatically activates the waste
38 feed cut-off sequence specified in Permit Conditions III.10.K.1.c.ii., iii., and/or iv.
- 39 **III.10.K.1.c.vii.** If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the
40 HLW Vitrification System occur due to deviations from Permit Table III.10.K.F, as
41 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., within a sixty
42 (60) day period, the Permittees will submit a written report to Ecology within five (5)
43 calendar days of the thirty-first (31) exceedence including the information specified
44 below. These dangerous and/or mixed waste feed cut-offs to the HLW Vitrification

1 System, whether automatically or manually activated, are counted if the specified set-
2 points are deviated from while dangerous and/or mixed waste and waste residues
3 continue to be processed in the HLW Vitrification System. A cascade event is counted at
4 a frequency of one (1) towards the first waste feed cut-off parameter, specified on Permit
5 Table III.10.K.F, from which the set-point is deviated:

- 6 A. The parameter(s) that deviated from the set-point(s) in Permit Table III.10.K.F;
- 7 B. The magnitude, dates, and duration of the deviations;
- 8 C. Results of the investigation of the cause of the deviations; and
- 9 D. Corrective measures taken to minimize future occurrences of the deviations.

10 III.10.K.1.c.viii. If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the
11 HLW Vitrification System occur due to deviations from Permit Table III.10.K.F, as
12 approved/modified pursuant to Permit Conditions III.10.J.5 and III.J.3.d.v., within a
13 thirty (30) day period, the Permittees will submit the written report required to be
14 submitted pursuant to Permit Condition III.10.K.1.c.vii. to Ecology, on the first business
15 day following the thirty-first exceedence. These dangerous and/or mixed waste feed cut-
16 offs to the HLW Vitrification System, whether automatically or manually activated, are
17 counted if the specified set-points are deviated from while dangerous and/or mixed waste
18 and waste residues continue to be processed in the HLW Vitrification System. A cascade
19 event is counted at a frequency of one (1) towards the first waste feed cut-off parameter,
20 specified on Permit Table III.10.K.F, from which the set-point is deviated:

21 In accordance with WAC 173-303-680(2) and (3), the Permittees may not resume
22 dangerous and/or mixed waste feed to the HLW Vitrification System until this written
23 report has been submitted; and

- 24 A. Ecology has authorized the Permittees, in writing, to resume dangerous and/or mixed
25 waste feed, or
- 26 B. Ecology has not, within seven (7) days, notified the Permittees in writing of the
27 following:
 - 28 1. The Permittees written report does not document that the corrective measures
29 taken will minimize future exceedances; and
 - 30 2. The Permittees must take further corrective measures and document that
31 these further corrective measures will minimize future exceedances.

32 III.10.K.1.c.ix. If any portion of the HLW Vitrification System is bypassed while treating dangerous
33 and/or mixed waste, it will be regarded as non-compliance with the operating conditions
34 specified in Permit Condition III.10.K.1.c. and the performance standards specified in
35 Permit Condition III.10.K.1.b. After such a bypass event, the Permittees will perform
36 the following actions:

- 37 A. Investigate the cause of the bypass event;
- 38 B. Take appropriate corrective measures to minimize future bypasses;
- 39 C. Record the investigation findings and corrective measures in the operating record;
40 and

- 1 D. Submit a written report to Ecology within five (5) days of the bypass event
2 documenting the result of the investigation and corrective measures.
- 3 III.10.K.1.c.x. The Permittees will control fugitive emissions from the HLW Vitrification System by
4 maintaining the melter under negative pressure.
- 5 III.10.K.1.c.xi. Compliance with the operating conditions specified in Permit Condition III.10.K.1.c.
6 will be regarded as compliance with the required performance standards identified in
7 Permit Condition III.10.K.1.b. However, evidence that compliance with these operating
8 conditions is insufficient to ensure compliance with the performance standards, will
9 justify modification, revocation, or re-issuance of this Permit, in accordance with Permit
10 Conditions III.10.C.2.e. and f., or III.10.C.2.g.
- 11 III.10.K.1.d. Inspection Requirements [WAC 173-303-680(3)]
- 12 III.10.K.1.d.i. The Permittees will inspect the HLW Vitrification System in accordance with the
13 Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in
14 accordance with Permit Condition III.10.C.5.c.
- 15 III.10.K.1.d.ii. The inspection data for HLW Vitrification System will be recorded, and the records will
16 be placed in the WTP Unit operating record for HLW Vitrification System, in accordance
17 with Permit Condition III.10.C.4.
- 18 III.10.K.1.d.iii. The Permittees will comply with the inspection requirements specified in Operating Unit
19 10, Appendix 10.15 of this Permit, as approved pursuant to Permit Condition III.10.J.5.f.,
20 and as modified by Permit Conditions III.10.J.3., III.10.K.1.b.x., III.10.K.1.b.xii., and
21 III.10.K.1.h.
- 22 III.10.K.1.d.iv. The Permittees shall calibrate, inspect, and maintain or replace the following cooling
23 water flow and temperature instruments: (Melter 1: FT/FI-0306, FT/FI-0316, FT/FI-0321,
24 FT/FI-0326, FT/FI-0336, TE/TT/TI-0352; Melter 2: FT/FI-2306, FT/FI-2316, FT/FI-
25 2321, FT/FI-2326, FT/FI-2336) in accordance with manufacturer's recommendations.
- 26
- 27 III.10.K.1.d.v. The Permittees shall maintain operating and calibration/maintenance records for
28 Ecology's inspection for the following cooling water flow and temperature instruments
29 (Melter 1: FT/FI-0306, FT/FI-0316, FT/FI-0321, FT/FI-0326, FT/FI-0336, TE/TT/TI-
30 0352; Melter 2: FT/FI-2306, FT/FI-2316, FT/FI-2321, FT/FI-2326, FT/FI-2336).
- 31 III.10.K.1.d.vi. The Permittees shall maintain refractory thermocouple temperature data for Ecology
32 inspection.
- 33 III.10.K.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-
34 303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]
- 35 III.10.K.1.e.i. Upon receipt of a written request from Ecology, the Permittees will perform sampling
36 and analysis of the dangerous and/or mixed waste and exhaust emissions to verify that the
37 operating requirements established in the permit achieve the performance standards
38 delineated in this Permit.
- 39 III.10.K.1.e.ii. The Permittees will comply with the monitoring requirements specified in the Operating
40 Unit 10, Appendices 10.2, 10.3, 10.7, 10.13, 10.15, and 10.18 of this Permit, as approved

- 1 pursuant to Permit Condition III.10.J.5, and as modified by Permit Conditions III.10.J.3,
2 III.10.K.1.h., and III.10.K.1.b.x. and xii.
- 3 III.10.K.1.e.iii. The Permittees will operate, calibrate, and maintain the carbon monoxide and
4 hydrocarbon continuous emission monitors (CEM) specified in this Permit in accordance
5 with Performance Specifications 4B and 8A of 40 CFR Part 60, Appendix B, in
6 accordance with Appendix to Subpart EEE of 40 CFR Part 63, and Operating Unit 10
7 Appendix 10.15 of this Permit, as approved pursuant to Permit Condition III.10.J.5.f., and
8 as modified by Permit Conditions III.10.H.3, III.10.K.1.h., and III.10.K.1.b.x. and xii.
- 9 III.10.K.1.e.iv. The Permittees will operate, calibrate, and maintain the instruments specified on Permit
10 Tables III.10.K.C and F, as approved/modified pursuant to Permit Conditions III.10.J.5
11 and III.J.3.d.v., in accordance with Operating Unit 10, Appendix 10.15 of this Permit, as
12 approved pursuant to Permit Condition III.10.J.5.f., and as modified by Permit
13 Conditions III.10.J.3, III.10.K.1.h., and III.10.K.1.b.x. and xii.
- 14 III.10.K.1.f. Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]
- 15 III.10.K.1.f.i. The Permittees will record and maintain in the WTP Unit operating record for the HLW
16 Vitrification System, all monitoring, calibration, maintenance, test data, and inspection
17 data compiled under the conditions of this Permit, in accordance with Permit Conditions
18 III.10.C.4 and 5 as modified by Permit Conditions III.10.J.3, III.10.K.1.h., and
19 III.10.K.1.b.x. and xii.
- 20 III.10.K.1.f.ii. The Permittees will record in the WTP Unit operating record the date, time, and duration
21 of all automatic waste feed cut-offs and/or lockouts, including the triggering parameters,
22 reason for the deviation, and recurrence of the incident. The Permittees will also record
23 all incidents of AWFCO system function failures, including the corrective measures
24 taken to correct the condition that caused the failure.
- 25 III.10.K.1.f.iii. The Permittees will submit to Ecology an annual report each calendar year within ninety
26 (90) days following the end of the year. The report will include the following
27 information:
- 28 A. Total dangerous and/or mixed waste feed processing time for the HLW Vitrification
29 System;
- 30 B. Date/Time of all HLW Vitrification System startups and shutdowns;
- 31 C. Date/Time/Duration/Cause/Corrective Action taken for all HLW Vitrification System
32 shutdowns caused by malfunction of either process or control equipment; and
- 33 D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous
34 and/or mixed waste feed cut-off due to deviations from Permit Table III.10.K.F, as
35 approved/modified pursuant to Permit Conditions III.10.J.5 and III.10.J.3.d.v.
- 36 III.10.K.1.f.iv. The Permittees will submit an annual report to Ecology each calendar year within ninety
37 (90) days following the end of the year of all quarterly CEM Calibration Error and
38 Annual CEM Performance Specification Tests conducted in accordance with Permit
39 Condition III.10.K.1.e.iii.
- 40 III.10.K.1.g. Closure

1 The Permittees will close the HLW Vitrification System in accordance with Operating
2 Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.

3 III.10.K.1.h. Periodic Emission Re-testing Requirements [WAC 173-303-670(5), WAC 173-303-
4 670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)]

5 III.10.K.1.h.i. Dioxin and Furan Emission Testing

6 A. Within eighteen (18) months of commencing operation pursuant to Permit Section
7 III.10.K., the Permittees will submit to Ecology for approval, a Dioxin and Furan
8 Emission Test Plan (DFETP) for the performance of emission testing of the HLW
9 Vitrification System gases for dioxin and furans during "Normal Operating
10 Conditions" as a permit modification in accordance with Permit Conditions
11 III.10.C.2.e. and f. The DFETP will include all elements applicable to dioxin and
12 furan emission testing included in the "Previously Approved Demonstration Test
13 Plan," applicable EPA promulgated test methods and procedures in effect at the time
14 of the submittal, and projected commencement and completion dates for dioxin and
15 furan emission test. "Normal Operating Conditions" will be defined for the purposes
16 of this permit condition as follows:

- 17 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and
18 automatic waste feed cut-off parameters specified on Permit Table III.10.K.F
19 (as approved/modified pursuant to Permit Conditions III.10.J.5 and
20 III.10.J.3.d.v), that were established to maintain compliance with Permit
21 Condition III.10.K.1.b.iv., as specified in Operating Unit 10, Appendix 10.15
22 of this Permit (as approved pursuant to Permit Condition III.10.J.3.d. and in
23 accordance with III.10.K.1.b.xii. and III.10.K.1.c.xi.), are held within the
24 range of the average value over the previous twelve (12) months and the set-
25 point value specified on Permit Table III.10.K.F. The average value is
26 defined as the sum of the rolling average values recorded over the previous
27 twelve (12) months divided by the number of rolling averages recorded
28 during that time. The average value will not include calibration data,
29 malfunction data, and data obtained when not processing dangerous and/or
30 mixed waste; and
- 31 2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of
32 the average value over the previous twelve (12) months and the set-point
33 value specified on Permit Table III.10.K.D (as approved/modified pursuant
34 to Permit Conditions III.10.J.5 and III.10.J.3.d.v). Feed-rate of organics as
35 measured by TOC are held within the range of the average value over the
36 previous twelve (12) months. The average value is defined as the sum of the
37 rolling average values recorded over the previous twelve (12) months divided
38 by the number of rolling averages recorded during that time. The average
39 value will not include data obtained when not processing dangerous and/or
40 mixed waste.

41 For purposes of this permit Condition, the "Previously Approved Demonstration
42 Test Plan" is defined to include the Demonstration Test Plan approved pursuant to
43 Permit Condition III.10.J.5.f.

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

1 stop dangerous and/or mixed waste feed to the HLW Vitrification System
2 and/or amend the mode of operation the Permittees are allowed to continue
3 operations prior to Ecology approval of the revised Demonstration Test Plan
4 pursuant to Permit Condition III.10.K.1.h.i.E.6.

- 5 6. Submit to Ecology within one hundred and twenty (120) days of discovery of
6 not meeting the performance standard(s) a revised Demonstration Test Plan
7 requesting approval to retest as a permit modification pursuant to Permit
8 Conditions III.10.C.2.e and f. The revised Demonstration Test Plan must
9 include substantive changes to prevent failure from reoccurring reflecting
10 performance under operating conditions representative of the extreme range
11 of normal conditions, and include revisions to Permit Tables III.10.K.D and
12 F.

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

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

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

36 A. Within forty-eight (48) months of commencing operation pursuant to Permit Section
37 III.10.K, the Permittees will resubmit to Ecology for approval the "Previously
38 Approved Demonstration Test Plan" revised as a permit modification in accordance
39 with Permit Conditions III.10.C.2.e and f. The revised Demonstration Test Plan
40 (RDTP) will include applicable EPA promulgated test methods and procedures in
41 effect at the time of the submittal, projected commencement and completion dates for
42 emission testing to demonstrate performance standards specified in Permit
43 Conditions III.10.K.1.b.ii., iii., v., vi., and vii., and non-organic emissions as
44 specified in Permit Table III.10.K.E, as approved/modified pursuant to Permit

1 Conditions III.10.J.3.d. and III.10.C.11.c. or d., under “Normal Operating
2 Conditions.” “Normal Operating Conditions” will be defined for the purposes of this
3 permit condition as follows:

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

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

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

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

- 1 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the
2 performance standard(s) documentation supporting a mode of operation
3 where all performance standards listed in Permit Condition III.K.1.b., with
4 the exception of Permit Condition III.10.K.1.b.x., for the HLW Vitrification
5 System were met during the demonstration test, if any such mode was
6 demonstrated.
- 7 5. Based on the information provided to Ecology by the Permittees pursuant to
8 Permit Conditions III.10.K.1.h.ii.F.1 through 4 above, and any additional
9 information, Ecology may provide, in writing, direction to the Permittees to
10 stop dangerous and/or mixed waste feed to the HLW Vitrification System
11 and/or amend the mode of operation the Permittees are allowed to continue
12 operations prior to Ecology approval of the revised Demonstration Test Plan
13 pursuant to Permit Condition III.10.K.1.h.ii.F.6.
- 14 6. Submit to Ecology within one hundred and twenty (120) days of discovery of
15 not meeting the performance standard(s) a revised Demonstration Test Plan
16 requesting approval to retest as a permit modification pursuant to Permit
17 Conditions III.10.C.2.e. and f. The revised Demonstration Test Plan must
18 include substantive changes to prevent failure from reoccurring reflecting
19 performance under operating conditions representative of the extreme range
20 of normal conditions, and include revisions to Permit Tables III.10.K.D and
21 F.

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

- 23 A. Within seventy-eight (78) months of commencing operation pursuant to Permit
24 Section III.10.K., the Permittees will resubmit to Ecology for approval the
25 “Previously Approved Demonstration Test Plan” revised as a permit modification in
26 accordance with Permit Conditions III.10.C.2.e. and f. The revised Demonstration
27 Test Plan (RDTP) will include applicable EPA promulgated test methods and
28 procedures in effect at the time of the submittal, projected commencement and
29 completion dates for emission testing to demonstrate performance standards as
30 specified in Permit Conditions III.10.K.1.b.viii. and ix., and emissions as specified on
31 Permit Table III.10.K.E, as approved/modified pursuant to Permit Conditions
32 III.10.J.3.d. and III.10.C.11.c. or d., not addressed under Permit Conditions
33 III.10.K.1.h.i. or ii. under “Normal Operating Conditions.” “Normal Operating
34 Conditions” will be defined for the purposes of this permit Condition as follows:
- 35 1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and
36 automatic waste feed cut-off parameters specified on Permit Table
37 III.10.K.F, as approved/modified pursuant to Permit Condition III.10.J.3.d.
38 and III.10.C.11.c. or d., that were established to maintain compliance with
39 Permit Conditions III.10.K.1.b.viii. and ix., and emissions as specified on
40 Permit Table III.10.K.E, not addressed under Permit Conditions
41 III.10.K.1.h.i. or ii. as specified in Operating Unit 10, Appendix 10.15 of this
42 Permit, as approved pursuant to Permit Condition III.10.J.3.d., and in
43 accordance with Permit Conditions III.10.K.1.b.xii. and III.10.K.1.c.xi. are
44 held within the range of the average value over the previous twelve (12)
45 months and the set-point value specified on Permit Table III.10.K.F. The

1 average value is defined as the sum of all rolling average values recorded
2 over the previous twelve (12) months divided by the number of rolling
3 averages recorded during that time. The average value will not include
4 calibration data, malfunction data, and data obtained when not processing
5 dangerous and/or mixed waste; and

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

16 For purposes of this permit Condition, the "Previously Approved
17 Demonstration Test Plan" is defined to include the Demonstration Test Plan
18 approved pursuant to Permit Condition III.10.J.5.f.

- 19 B. Within sixty (60) days of Ecology's approval of the RDTP, or within ninety-one (91)
20 months of commencing operation pursuant to Permit Section III.10.K, whichever is
21 later, the Permittees will implement the RDTP approved pursuant to Permit
22 Condition III.10.K.1.h.iii.A.
- 23 C. The Permittees will submit a summary of operating data collected pursuant to the
24 RDTPs in accordance with Permit Condition III.10.K.1.h.iii.A to Ecology upon
25 completion of the tests. The Permittees will submit to Ecology the complete test
26 report within ninety (90) calendar days of completion of the testing. The test reports
27 will be certified as specified in WAC 173-303-807(8), in accordance with Permit
28 Condition WAC 173-303-680(2) and (3).
- 29 D. If any calculations or testing results show that one or more of the performance
30 standards listed in Permit Condition III.10.K.1.b., with the exception of Permit
31 Condition III.10.K.1.b.x., for the HLW Vitrification System were not met during the
32 emission test, the Permittees will perform the following actions:
- 33 1. Immediately stop dangerous and/or mixed waste feed to the HLW
34 Vitrification System under the mode of operation that resulted in not meeting
35 the performance standard(s).
 - 36 2. Verbally notify Ecology within twenty-four (24) hours of discovery of not
37 meeting the performance standard(s), as specified Permit Condition I.E.21.
 - 38 3. Investigate the cause of the failure and submit a report of the investigation
39 findings to Ecology within fifteen (15) days of discovery of not meeting the
40 performance standard(s).
 - 41 4. Submit to Ecology within fifteen (15) days of discovery of not meeting the
42 performance standard(s) documentation supporting a mode of operation
43 where all performance standards listed in Permit Condition III.10.K.1.b.,

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

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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
Footnotes: ^a 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 ^b (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specification Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED
Footnotes: ^a 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. ^b 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

10/2008

WA7890008967, Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

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

Footnotes:

^aPermit 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.

1

1

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* ¹(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.

¹Maximum 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