



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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Dirk Kempthorne, Governor
Toni Hardesty, Director

**Permittee: Department of Energy (DOE) and DOE-Designated Contractors,
Idaho National Engineering and Environmental Laboratory,
Idaho Nuclear Technology and Engineering Center (INTEC)
Permit Number: EPA ID# ID4890008952**

INTRODUCTION AND SIGNATURE PAGE

Pursuant to the Idaho Hazardous Waste Management Act of 1983 (HWMA), as amended, Idaho Code §§ 39-4401 *et seq.*, and the "Rules and Standards For Hazardous Waste," as amended, IDAPA 58.01.05.000 *et seq.*, specifically IDAPA 58.01.05.012 [40 CFR § 270.1(c)(4)], a Partial-Permit (for less than the entire facility) is hereby issued to the United States Department of Energy (DOE) and DOE-designated contractor (see Permit Definitions), hereinafter called the Permittee, to operate a Hazardous Waste Treatment and Storage Facility at the Idaho Nuclear Technology and Engineering Center (INTEC), located at the Idaho National Engineering and Environmental Laboratory (INEEL), which is located in Butte County, Idaho.

The Permittee shall comply with all of the terms and conditions of this Partial-Permit (Permit) and Attachments 1 through 9 of this Permit. The Permittee shall comply with all applicable state regulations, including IDAPA 58.01.05.004 through 58.01.05.013 [40 Code of Federal Regulations (CFR), Parts 124, 260 through 266, 268, and 270], and as specified in this Permit.

Applicable state regulations are those which are in effect on the date of final administrative disposition of this Permit and any self-implementing statutory provisions and related regulations which, according to the requirements of the Hazardous and Solid Waste Amendments (HSWA), are automatically applicable to the Permittee's hazardous waste management activities, notwithstanding the conditions of this Permit.

This Permit is based upon the administrative record, as required by IDAPA 58.01.05.013 [40 CFR § 124.9]. The Permittee's failure (in the Application or during the permit-issuance process) to fully disclose all relevant facts or the Permittee's misrepresentation of any relevant facts, at any time, shall be grounds for the termination or modification of this Permit, and/or initiation of an enforcement action, including criminal proceedings. The Permittee must inform the Director of the Idaho Department of Environmental Quality (DEQ), hereinafter referred to as "Director," of any deviation from the permit conditions or changes in the information on which the Application is based, which would affect the Permittee's ability to comply or actual compliance with the applicable regulations or permit conditions, or which alters any permit condition in any way. The Director shall enforce all conditions of this Permit, which are designated in this Permit as state requirements. Any challenges of any permit condition that concern requirements shall be appealed to the Director, in accordance with IDAPA 58.01.05.996 and the Idaho Department of Environmental Quality Rules and Regulations 58.05.03.000 *et seq.*, "Rules Governing Contested Cases and Declaratory Rulings."

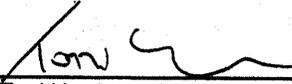
The United States Environmental Protection Agency (EPA) shall maintain an oversight role of the state-authorized program and in such capacity, shall enforce any permit condition based on state requirements if, in the EPA's judgment, the Director should fail to enforce that permit

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condition. Any challenges to the EPA-enforced conditions shall be appealed to EPA, in accordance with 40 CFR § 124.19.

This Permit is effective as of **October 18, 2004** and shall remain in effect until **October 18, 2014** unless, in accordance with IDAPA 58.01.05.012, the Permit is revoked and reissued [40 CFR § 270.41], modified [40 CFR § 270.42, Appendix A.6], terminated [40 CFR § 270.43], or continued [40 CFR § 270.51].

September 16, 2004
Date



Toni Hardesty, Director
Department of Environmental Quality

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LIST OF ATTACHMENTS

The following documents are excerpts from the Permittee's Administrative Record, i.e., HWMA Permit Application, supplemental reports, and other documents contained in the Department's supporting file for the draft Permit. The listed documents are hereby incorporated, in their entirety, by reference into this Permit. The Director, as deemed necessary, modified specific language in the Attachments. These modifications are described in the Permit Conditions (Modules I through VI) and, thereby, supersede the language of the original attachment. If the language of the Permit conflicts with either the attachments or the original application, the language in the Permit shall prevail. These incorporated Attachments are enforceable conditions of this Permit, as modified by the specific permit condition(s).

ATTACHMENT 1 FACILITY DESCRIPTION, consisting of:

- A. Part A – Exclusive of Photos
- B. Section B – Facility Description
- C. Section D – Process Information

ATTACHMENT 2 WASTE ANALYSIS PLAN, consisting of:

Section C – Waste Characteristics

ATTACHMENT 3 SECURITY

Section F-1 – Security

ATTACHMENT 4 INSPECTION SCHEDULE

Section F-2 – Inspection Schedule and Appendices F-1 through F-7

ATTACHMENT 5 TRAINING PLAN

Section H – Personnel Training

ATTACHMENT 6 PREPAREDNESS & PREVENTION

Sections F-3, F-4, and F-5 – Procedures to Prevent Hazards

ATTACHMENT 7 CONTINGENCY PLAN

Section G – Preparedness, Prevention, and Contingency Plan

ATTACHMENTS 8 and 8A CLOSURE PLANS

Section I – Closure Plan

ATTACHMENT 9 PERMIT MODIFICATION

Tracking Log

LIST OF PERMIT APPENDICES

APPENDIX I – CONCEPTUAL DESIGN FOR THE CPP-604 EMBEDDED LINES PROJECT, NOVEMBER 2003

APPENDIX II – DRAWING LIST

Including the following drawings:

Sheet 057807, Sheet 057808, Sheet 057812, Sheet 103171, Sheet 103180, Sheet 103530, Sheet 103544, Sheet 132358, Sheet 132359, Sheet 132361, Sheet 132376, Sheet 132377, Sheet 132378, Sheet 132379, Sheet 132380, Sheet 132381, Sheet 132382, Sheet 132383, Sheet 132390, Sheet 132391, Sheet 132392, Sheet 132393, Sheet 132394, Sheet 132395, Sheet 132396, Sheet 132397, Sheet 132444, Sheet 132445, Sheet 132446, Sheet 132466, Sheet 133376, Sheet 134619, Sheet 134620, Sheet 134621, Sheet 134622, Sheet 134623, Sheet 134624, Sheet 155069, Sheet 155070, Sheet 158768, Sheet 162748, Sheet 176263, Sheet 176265, Sheet 176301, Sheet 347791, Sheet 347796, Sheet 347798, Sheet 369374, Sheet 370862, Sheet 370863, Sheet 370864, Sheet 370865, Sheet 370866, Sheet 370867, Sheet 383716, Sheet 400814, Sheet 400815, Sheet 632451, Sheet 632452, Sheet 632483, Sheet 632484, Sheet 632340, Sheet 632503, Sheet 632504, Sheet 632512, Sheet 632513, Sheet 632830, Sheet 632831, Sheet 633652.

APPENDIX III – DIAGRAM LIST

Including the following diagrams:

Sheet 057498, Sheet 057499, Sheet 094276, Sheet 096156, Sheet 103308, Sheet 103589, Sheet 133400, Sheet 133401, Sheet 133402, Sheet 133406, Sheet 133407, Sheet 133408, Sheet 133409, Sheet 133410, Sheet 133411, Sheet 133412, Sheet 133413, Sheet 133417, Sheet 133418, Sheet 133420, Sheet 133423, Sheet 133424, Sheet 133425, Sheet 133426, Sheet 133427, Sheet 133428, Sheet 134251, Sheet 176274, Sheet 176275, Sheet 179009, Sheet 347791, Sheet 356596, Sheet 368921, Sheet 368922, Sheet 368923, Sheet 368924, Sheet 368925, Sheet 368926, Sheet 368927, Sheet 368928, Sheet 368929, Sheet 368930, Sheet 368931, Sheet 632359, Sheet 632750, Sheet 632752, Sheet 632753, Sheet 632754, Sheet 632757, Sheet 632759, Sheet 632760, Sheet 632779, Sheet 632780, Sheet 632792, Sheet 632793, Sheet 632797, Sheet 632798, Sheet 632799, Sheet 632801, Sheet 632821, Sheet 632822, Sheet 635083, Sheet 635084, Sheet 637285, Sheet 637293, Sheet 632756, Sheet 632762, Sheet 632763, Sheet 632764, Sheet 632765, Sheet 632766, Sheet 632782, Sheet 632783, Sheet 632787, Sheet 632788, Sheet 638790, Sheet 632791

APPENDIX IV – FINAL REPORT FOR ORGANICS PARTITIONING RESULTING FROM OPERATION OF AN INTEC DOUBLE NEEDLE SAMPLER, REVISION 1, SEPTEMBER 2004

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- APPENDIX V –** STANDARD DOUBLE NEEDLE SAMPLING PROTOCOL
- APPENDIX VI –** ENGINEERING DESIGN FILE (EDF)-1747, HYDRODYNAMIC AND STRUCTURAL ANALYSIS OF FLOOD HAZARDS AT CPP-659 DURING A PEAK FLOW IN THE BIG LOST RIVER
- APPENDIX VII –** EDF-2613, HYDRODYNAMIC AND STRUCTURAL ANALYSIS OF FLOOD HAZARDS AT THE PEWE AND LET&D BUILDINGS DURING A PEAK FLOW IN THE BIG LOST RIVER
- APPENDIX VIII –** EDF-2470, ANALYSIS OF HYDROSTATIC FORCES ON INTEC LIQUID WASTE TANKS DURING A 100-YEAR FLOOD
- APPENDIX IX –** ETS MERCURY CONCENTRATION JUSTIFICATION
- APPENDIX X –** PILOT PLANT REPORT FOR TREATING SODIUM-BEARING WASTE SURROGATES CARBONATE FLOWSHEET

DEFINITIONS

For the purposes of this Permit, the following definitions apply:

- a. "Application" means the *HWMA/RCRA Part B Permit Application for the Idaho National Engineering and Environmental Laboratory, Volume 14, Idaho Nuclear Technology and Engineering Center (INTEC) Liquid Waste Management System, Books 1 through 4, Revision 2, October 2003*; the subsequent clarifying data received January 29, 2004; the Class 3 Permit modification Request dated March 29, 2005; the Class 3 Permit Modification Request dated August 21, 2006; the revised Class 3 Permit Modification Request, including Notice of Deficiency Response dated December 7, 2006; the Class 3 Permit Modification Request dated December 2012; the supplemental information dated January 24, 2013; the March 19, 2013 Notice of Deficiency Response and all DEQ approved Permit Modification Requests, *and information submitted by DOE in support of the approved modification requests*, as detailed in Attachment 9, Permit Revision Log. All references to RCRA in the application shall mean HWMA/RCRA
- b. "CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986.
- c. "Days" means calendar day(s) unless otherwise specified. Any requirement of submittal under the terms of this Permit that would be due on a Saturday, Sunday, or a federal or state holiday shall be due on the following business day.
- d. "Department" means the Idaho Department of Environmental Quality.
- e. "Dike" means an embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.
- f. "Director" means the Director of the Department of Environmental Quality, or their designee, or authorized representative.
- g. "Discovery (discovered)" means the initial identification of a SWMU or other Area of Concern, which has the potential to release hazardous waste or hazardous waste constituents to the environment.
- h. "DOE" means the United States Department of Energy.

- i. "Distillation Operation" means an operation, either batch or continuous, separating one or more feed stream(s) into two (2) or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit. The Process Equipment Waste Evaporator (PEWE) System, the Liquid Effluent Treatment and Disposal (LET & D) System, and the Evaporator Tank System (ETS) qualify as distillation operations.
- j. "Facility" means all contiguous land, structures, other appurtenances, and improvements under the control of the Department of Energy at the Idaho National Laboratory, for a total of approximately 890 square miles or 601,260 acres.
- k. "Failure" means the inability to achieve a desired end product on the first attempt, or improperly functioning/leaking equipment.
- l. "Fractionation Operation" means a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components. The LET & D Facility, which recovers nitric acid from the PEWE overhead condensate, is referred to operationally as fractionation but qualifies as a distillation operation.
- m. "HSWA" means the Hazardous and Solid Waste Amendments of 1984.
- n. "HWMA" means the State of Idaho Hazardous Waste Management Act of 1983, as amended.
- o. "Hazardous Waste Management Unit (HWMU)" means those operable units subject to the requirements of IDAPA 58.01.05.012 (40 CFR § 270.14 to 270.29).
- p. "IDAPA" means the Idaho Administrative Procedures Act, Chapter 52, Title 67, Idaho Code.
- q. "INL" means the Idaho National Laboratory, the Facility. The INL was formerly known as the Idaho National Engineering and Environmental Laboratory (INEEL).
- r. "Mixed Waste" means waste that is both hazardous and radioactive.
- s. "Off-Site" means off the "facility" as defined in "j" of this definition section.
- t. "On-Site" means on the "facility" as defined in "j" of this definition section.

- u. "Open-ended valve, line or pipe" means any valve, except pressure relief valves, having one side of the valve seat in contact with hazardous waste and one side open to the atmosphere, either directly or through an open pipe.
- v. "Operator" means the DOE-designated Contractor that has operational responsibilities and control of the HWMU. The DOE-designated Contractor, as operator for INL, is CH2M WG Idaho, LLC (CWI). CWI reports to the DOE-ID.
- w. "Owner" means the United States Department of Energy (DOE).
- x. "Permittee" means both DOE, as owner, and the DOE-designated Contractor.
- y. "Process Vent" means any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank (e.g., distillate receiver, condenser, bottoms receiver, surge control tank, separator tank, or hot well) associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations.
- z. "RCRA" means the Resource Conservation and Recovery Act of 1976, as amended in 1984.
- aa. "Readily retrievable" shall mean available upon request from the Director, given the following: 1) Provided to the Director within one working day if the document is less than three years old, and 2) Provided to the Director within seven working days if the document is greater than three years old.
- bb. "Reforming" means the decomposition of nitrogen or organic compounds by heat (e.g. steam reforming) or catalyst. The chief cracking reactions are decomposition of nitrogen oxides and the dehydrogenation of organics (methane + water yields hydrogen gas + carbon monoxide)
- cc. "Release" means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous and/or mixed wastes (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous and/or mixed wastes or hazardous and/or mixed waste constituents).
- dd. "Shutdown" means eliminating the feed and/or steam into a unit.
- ee. "Solid Waste Management Unit" (SWMU) means any discernable unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous wastes. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

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- ff. "Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic), which provide structural support.
- gg. "Upset" shall mean an unplanned disruption in the normal operations of any equipment or emissions unit which, unresolved, may lead to excess emissions

All definitions contained in IDAPA 58.01.05.004, .005, .008, and .010 through .013 (40 CFR Parts 260, 261, 264, 266, 268, 270, and 124) are hereby incorporated (in their entirety) by reference into this Permit, except that any of the definitions used above shall supersede any definition of the same term given in IDAPA 58.01.05.000 et seq. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

ACRONYMS AND ABBREVIATIONS

| | |
|------------|--|
| ACMM | Analytical Chemistry Methods Manual |
| AE | Architectural Engineer |
| ALARA | As low as reasonably achievable (radiation exposures) |
| API | American Petroleum Institute |
| APS | Atmospheric Protection System |
| ASME | American Society of Mechanical Engineers |
| ASTM | American Society for Testing and Materials |
| AWFCO | Automatic Waste Feed Cutoff |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| CFA | Central Facilities Area |
| CFR | Code of Federal Regulations |
| COPC | Compound of Potential Concern |
| CPP | Chemical Processing Plant |
| CRR | Carbon Reduction Reformer |
| DCS | Distributed Control System |
| DEQ | Department of Environmental Quality |
| DMR | Denitration and Mineralization Reformer |
| DOE | Department of Energy |
| DOE-HQ | Department of Energy - Headquarters |
| DOE-ID | Department of Energy - Idaho Operations Office |
| DOT | Department of Transportation |
| DQO | Data Quality Objective |
| EAL | Emergency Action Level |
| EAM | Emergency Action Manager |
| EC | Emergency Coordinator |
| ED | Emergency Director |
| EDF | Engineering Design File |
| EDMS | Electronic Document Management System |
| EMCAP | Environmental Management Consolidated Audit Program |
| EOC | Emergency Operations Center |
| EP/RCRA CP | Emergency Plan, RCRA Contingency Plan |
| EPA | (United States) Environmental Protection Agency |
| EPCRA | Emergency Planning and Community Right-To-Know Act |
| ERO | Emergency Response Organization |
| ERPG | Emergency Response Planning Guideline |
| ETS | Evaporator Tank System |
| FFA/CO | Federal Facilities Agreement/Consent Order |
| FR | Facility Representative (WGS) |
| g | gram |
| GERT | General Employee Radiation Training |
| HEPA | High-Efficiency Particulate Air |
| HLLWE | High Level Liquid Waste Evaporator (ETS) |

| | |
|-------|---|
| HQ | Hazard Quotient |
| HSWA | Hazardous and Solid Waste Amendments of 1984 |
| HWMA | Hazardous Waste Management Act of 1983, as amended |
| HWMU | Hazardous Waste Management Unit |
| HWN | Hazardous Waste Number |
| ICDF | INL CERCLA Disposal Facility |
| IDAPA | Idaho Administrative Procedures Act |
| ILWMS | INTEC Liquid Waste Management System |
| INL | Idaho National Laboratory |
| INEEL | Idaho National Engineering and Environmental Laboratory |
| INTEC | Idaho Nuclear Technology and Engineering Center |
| " | Inch(es) |
| IWTS | Integrated Waste Tracking System |
| IWTU | Integrated Waste Treatment Unit |
| LDR | Land Disposal Restrictions |
| LET&D | Liquid Effluent Treatment and Disposal |
| LRA | Level Recorder Alarm |
| M&O | Management and Operating |
| MOU | Memorandum of Understanding |
| MSDS | Material Safety Data Sheet |
| NWCF | New Waste Calcining Facility |
| No. | Number |
| NRC | Nuclear Regulatory Commission |
| OJT | On-the-Job Training |
| OSC | On-Scene Commander |
| OSHA | Occupational Safety and Health Administration |
| P&ID | Piping and Instrumentation Diagram |
| PAG | Protective Action Guide |
| PE | Professional Engineer |
| PEW | Process Equipment Waste |
| PEWE | Process Equipment Waste Evaporator |
| PIR | Product of Incomplete Reaction |
| PK | Process Knowledge |
| POG | Process Off-gas |
| PPE | Personal Protective Equipment |
| ppm | parts per million |
| PWL | Process Waste Liquid |
| QA/QC | Quality Assurance/ Quality Control |
| RAL | Remote Analytical Laboratory |
| RCRA | Resource Conservation and Recovery Act |
| RGP | Rare Gas Plant |
| RSS | Rapid Shutdown System |
| SAT | Systematic Approach to Training |
| SLRA | Screening Level Risk Assessment |

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|--------|--|
| SCBA | Self-Contained Breathing Apparatus |
| SVOC | Semi-Volatile Organic Constituents |
| SW-846 | Test Methods for Evaluating Solid Waste: Physical/Chemical Methods |
| SWMU | Solid Waste Management Unit |
| TBP | Tributyl Phosphate |
| TCLP | Toxicity Characteristic Leaching Procedure |
| TFF | Tank Farm Facility |
| TFT | Tank Farm Tanks |
| TOC | Total Organic Carbon |
| TSDF | Treatment, Storage, and Disposal Facility |
| TSS | Total Suspended Solids |
| UHC | Underlying Hazardous Constituent |
| USGS | United States Geological Survey |
| UTS | Universal Treatment Standards |
| VOC | Volatile Organic Constituents |
| VOG | Vessel Off-Gas |
| WAC | Waste Acceptance Criteria |
| WAP | Waste Analysis Plan |
| WC | Water Column |
| WCC | Warning Communications Center |
| WDDF | Waste Determination and Disposition Form |
| WGS | Waste Generator Services |
| WTS | Waste Technical Specialist |

MODULE I - STANDARD PERMIT CONDITIONS

I.A. EFFECT OF PERMIT

The Permittee is allowed to store and treat mixed waste in the Idaho Nuclear Technology and Engineering Center Liquid Waste Management System (ILWMS) in accordance with the conditions of this Partial-Permit. Any storage or treatment of mixed waste in the Hazardous Waste Management Units (HWMU) described herein, not authorized in this Permit, is prohibited.

Pursuant to IDAPA 58.01.05.012 [40 CFR § 270.4], compliance with this Permit generally constitutes compliance (for purposes of enforcement) with the Idaho Hazardous Waste Management Act (HWMA) of 1983, as amended, except for the requirements not included in this Permit, which become effective by future statute or regulatory changes, to include those requirements promulgated under IDAPA 58.01.05.011 [40 CFR Part 268] restricting the placement of hazardous and/or mixed waste in or on the land. Issuance of this Permit does not convey any property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations, as specified in IDAPA 58.01.05.012 [40 CFR § 270.4].

I.A.1. The Department of Energy (DOE) is the owner and is responsible for the activities that include policy, programmatic, funding, and scheduling decisions, as well as general oversight.

I.A.2. The DOE-designated contractor, as operator, is responsible for the day-to-day operations of the assigned permitted units and for all permitted activities related to the assigned units, for which the DOE-designated contractor, its agents, employees, or subcontractors have operational control including waste characterization and handling, monitoring, record keeping, reporting, and contingency planning.

I.B. ENFORCEABILITY

The terms and conditions of this Permit are enforceable pursuant to the HWMA or any other applicable federal, state, or local law. Violations of this Permit may result in civil penalties, in accordance with the HWMA (Idaho Code § 39-4414) and the HWMA Civil Penalty Policy.

I.B.1. Any person who knowingly makes any false statement or representation in any application, label, manifest, record, report, permit, or other document filed, maintained, or used for the purposes of complying with the provisions of Idaho Code § 39-4415 shall be guilty of a misdemeanor and subject to a fine of not more than ten thousand dollars (\$10,000) or imprisonment not to exceed one (1) year, or both, for each separate violation or for each day of a continuing violation.

I.C. OTHER AUTHORITY

The Department expressly reserves any right of entry provided by law and any authority to order or perform emergency or other response activities as authorized by law.

I.D. PERMIT ACTIONS

- I.D.1. This Permit may be modified, revoked and reissued, or terminated for cause as specified in IDAPA 58.01.05.012 [40 CFR §§ 270.41, 270.42, or 270.43].
- I.D.2. The filing of a request for a Permit Modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.
- I.D.3. The Director may modify this Permit when the standards or regulations on which the Permit was based have been changed by statute, amended standards or regulations, or by judicial decision after the effective date of this Permit.
- I.D.4. Except as provided by specific language in this Permit or except for the Director's approval of a Class 1 or 2 Permit Modification, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.42(a) and (b)], any modifications which substantially alter INL or its operation as covered by this Permit shall be administered as a Class 3 Permit Modification prior to such change taking place, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.42(c)].
- I.D.5. Within forty five (45) days of a Permit Modification being put into effect or approved, the Permittee shall provide clean copies of the relevant portions of the Permit and Attachments to incorporate the change (if not already reflected/provided in the change pages submitted with the Permit Modification Request), reprint the documents (as necessary), and submit them to the Director.
- I.D.6. The Permittee shall ensure that Attachment 9 is current, consistent with Permit Condition I.D.5.

I.E. SEVERABILITY

The provisions of this Permit are severable; and if any provision of this Permit or the Application of any provision of this Permit to any circumstance is held invalid, the Application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. Invalidation of any state or federal statutory or regulatory provision, which forms the basis for any condition of this Permit, does not affect the validity of any other state or federal statutory or regulatory basis for said provision.

I.F. DUTIES TO COMPLY

I.F.1. The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an Emergency Permit issued in accordance with IDAPA 58.01.05.012 [40 CFR § 270.61]. Any permit noncompliance, other than noncompliance authorized by an Emergency Permit, constitutes a violation of HWMA and is grounds for enforcement action or permit termination, revocation and reissuance, or modification of the Permit, or denial of a Permit Renewal Application as specified in IDAPA 58.01.05.012 [40 CFR § 270.30(a)].

I.F.2. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under §§ 3007, 3008, 3013, or 7003 of RCRA [42 U.S.C. §§ 6927, 6928, 6934 and 6973], §§ 104, 106(a), or 107 of CERCLA [42 U.S.C. §§ 9604, 9606(a), or 9607], as amended by the Superfund Amendments and Reauthorization Act of 1986, or any other state or federal law providing for protection of public health or the environment from any imminent and substantial endangerment to human health or the environment.

I.G. DUTY TO REAPPLY

If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee shall submit a new Application a minimum of one hundred eighty (180) calendar days prior to the expiration of this Permit, in accordance with IDAPA 58.01.05.012 [40 CFR §§ 270.10(h) and 270.30(b)].

I.H. PARTIAL PERMIT EXPIRATION

Except as renewed, modified, revoked, reissued, or terminated by the Department, this Permit shall automatically expire ten (10) years from the effective date of this Permit.

I.I. CONTINUATION OF EXPIRING PERMIT

This Permit and all conditions herein shall continue in force until the effective date of a new permit, if the Permittee has submitted a timely and complete Application, in accordance with IDAPA 58.01.05.012 [40 CFR § § 270.10, 270.13 through 270.29], and through no fault of the Permittee, the Director has neither issued or denied a new permit under IDAPA 58.01.05.013 [40 CFR § 124.15] on or before the expiration date of this Permit.

I.J. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit, as specified in IDAPA 58.01.05.012 [40 CFR § 270.30(c)].

I.K. DUTY TO MITIGATE

In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment resulting from the noncompliance, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(d)].

I.L. PROPER OPERATION AND MAINTENANCE

The Permittee shall, at all times, properly operate and maintain all facilities and controls (and related appurtenances), which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary equipment or similar systems only when necessary to achieve compliance with the conditions of this Permit, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(e)].

I.M. DUTY TO PROVIDE INFORMATION

The Permittee shall furnish to the Department and/or the Director, within a reasonable time, any relevant information which the Department and/or the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Department and/or the Director, upon request, copies of records required to be kept by this Permit, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(h)].

I.N. INSPECTION AND ENTRY

Pursuant to IDAPA 58.01.05.012 [40 CFR § 270.30(i)], the Permittee shall allow the Department, the Director, and/or their authorized officers, employees, or representatives (upon the presentation of credentials and other documents as may be required by law) to:

- I.N.1. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records are kept as required by the conditions of this Permit;
- I.N.2. Have access to and copy, at reasonable times, any records that are kept as required by the conditions of this Permit;
- I.N.3. Inspect at reasonable times any portion of the facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- I.N.4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the HWMA or RCRA, any substances or parameters at any location.

I.O. MONITORING AND RECORDS

- I.O.1. The Permittee shall retain copies of all reports required by this Permit, the certification required by IDAPA 58.01.05.008 and .012 [40 CFR §§ 264.73(b)(9) and 270.30(j)(2)], and records of all data used to complete the Application for this Permit for a period of at least three (3) years from the date of the report, record, or certification unless a longer retention period for certain information is required by other conditions of this Permit.
- I.O.2. Pursuant to IDAPA 58.01.05.012 [40 CFR § 270.30(j)(3)], records of monitoring information shall specify:
 - I.O.2.a. The date(s), exact place, and times of sampling or measurements;
 - I.O.2.b. The name(s) of individuals who performed the sampling or measurements;
 - I.O.2.c. The date(s) analyses were performed;
 - I.O.2.d. The name(s) of individuals who performed the analyses;
 - I.O.2.e. The analytical techniques or methods used; and
 - I.O.2.f. The results of such analyses, including the Quality Assurance/Quality Control summary.
- I.O.3. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(j)(1)]. The method used to obtain a representative sample of the waste to be analyzed shall be the appropriate method from IDAPA 58.01.05.005 [40 CFR Part 261, Appendix I], or an equivalent method approved by the Director.

Laboratory methods shall be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846, Standard Methods for the Examination of Water and Wastewater (prevailing edition), or other alternate methods approved in this Permit, or an equivalent method in accordance with Permit Condition I.O.4. of this Permit.

- I.O.4. The Permittee may substitute analytical methods, which are equivalent or superior to those specifically approved for use in this Permit, in accordance with the following:
- I.O.4.a. The Permittee submits to the Director a request for substitution of analytical method(s) specifically approved for use in this Permit. The request shall provide information demonstrating that the proposed method(s) requested to be substituted are equivalent or superior in terms of sensitivity, accuracy, and precision (i.e., reproducibility); and
- I.O.4.b. The Permittee receives a written approval from the Director for the substitution of analytical method(s). Such approval shall not require a Permit Modification under IDAPA 58.01.05.012 [40 CFR § 270.42].

I.P. REPORTING PLANNED CHANGES

The Permittee shall give notice as soon as possible to the Director of any planned physical alteration or additions to the permitted facility, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(l)(1)].

I.Q. REPORTING ANTICIPATED NONCOMPLIANCE

The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with requirements of this Permit, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(l)(2)]. Advance notice shall not constitute a defense for any noncompliance.

I.R. CERTIFICATION OF CONSTRUCTION OR MODIFICATION

- I.R.1. The Permittee may not commence storage or treatment of mixed waste in a new permitted HWMU or in a modified portion of an existing permitted HWMU, except as provided in IDAPA 58.01.05.012 [40 CFR § 270.42], until the Permittee has submitted to the Director by certified mail, express mail, or hand-delivered letter, along with the Attachments required under Permit Condition II.A.2., signed by the Permittee, and a registered professional engineer certifying that the permitted unit(s) at INL have been constructed or modified, in accordance with the approved plans and specifications in compliance with this Permit (IDAPA 58.01.05.012 [40 CFR § 270.30(l)]); and

- I.R.2. The Director has reviewed and inspected (if deemed appropriate) the modified or newly constructed unit(s), and has notified the Permittee in writing that the unit(s) were found in compliance with the conditions of this Permit; or
- I.R.3. If within fifteen (15) calendar days after the date of submission of the letter, in Permit Condition I.R.1. of this Permit, the Permittee has not received notice from the Director of the intent to inspect, prior inspection is waived; and the Permittee may commence storage or treatment of hazardous and mixed waste in the permitted unit(s), certified in accordance with Permit Condition I.R.1. of this Permit.

I.S. TRANSFER OF PERMIT

This Permit shall be transferred to a new owner or operator only if it is modified or revoked and reissued, pursuant to IDAPA 58.01.05.012 [40 CFR § 270.40]. Prior to transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator, in writing, of the requirements of IDAPA 58.01.05.008 and 58.01.05.012 [40 CFR Parts 264 and 270] and this Permit.

I.T. REPORTING

- I.T.1. In accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(I)(6)], the Permittee shall verbally report to the Idaho State Communications Center any noncompliance with this Permit, which may endanger human health or the environment, within twenty-four (24) hours from the time the Permittee becomes aware of the noncompliance, including:
- I.T.1.a. Noncompliance with Permit Condition II.A.1. of this Permit; or
- I.T.1.b. Information concerning a release of any mixed waste that may endanger public drinking water supplies; or
- I.T.1.c. A release or discharge of mixed waste, or of a fire or explosion at the INL that could threaten human health or the environment outside the facility.
- I.T.2. The description of the occurrence and its cause shall, at a minimum, include:
- Name, title, and telephone number of the individual reporting;
 - Name, address, and telephone number of the owner or operator;
 - Name, address, and telephone number of the facility;
 - Date, time, and type of incident;
 - Location and cause of the accident;
 - Name and quantity of materials involved;
 - The extent of injuries, if any;
 - An assessment of actual or potential hazards to the environment and human health, where this is applicable;
 - Description of any emergency action taken to minimize possible threat(s) to human health and the environment;

- Estimated quantity and disposition of recovered material that resulted from the incident; and
- Any other information necessary to evaluate the situation fully, and to develop an appropriate course of action.

I.T.3. Within five (5) calendar days after the Permittee is required to provide verbal notification, as specified in Permit Condition I.T.1. of this Permit, the Permittee shall provide to the Director a written submission.

I.T.3.a. The written submission shall include, but not be limited to, the following:

- Name, address, and telephone number of the individual reporting;
- A description (include cause, location, extent of injuries (if any), and an assessment of actual or potential hazard(s) to the environment and human health outside the INL, where this is applicable) of the incident (noncompliance and/or release);
- The period(s) in which the incident (noncompliance and/or release) occurred (including exact dates and times);
- Whether the results of the incident remain a threat to human health and the environment (whether the noncompliance has been corrected and/or the release has been adequately remediated); and
- If not, the anticipated time it is expected to continue and the steps taken or planned to reduce, eliminate, and prevent re-occurrence of the noncompliance, and/or the steps taken or planned to adequately remediate the release.

I.T.4. The Permittee need not comply with the five (5) calendar day written notice requirement, if the Director waives the requirement and the Permittee submits a written report within fifteen (15) calendar days from the time the Permittee is required to provide verbal notification, as specified in Permit Condition I.T.1. of this Permit.

I.T.5. If the facility stops operations in response to a fire, explosion, or release, a report must be submitted within fifteen (15) days that includes the following information:

- Name, title, and telephone number of the individual submitting the report;
- Date, time and type of incident;
- Location and suspected cause of the incident;
- Name and quantity of materials involved, if any;
- Any leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment;
- All changes made to the operation of the facility to ensure that the event does not recur.

I.T.5.a. If the required information is provided electronically or verbally within 24 hours of the incident, DEQ, at its' discretion, may provide a written waiver of this reporting requirement.

I.U. OTHER NONCOMPLIANCE

The Permittee shall report, on a semi-annual basis from the effective date of the Permit, all other instances of noncompliance not otherwise required to be reported, in accordance with Permit Condition I.T. of this Permit, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(l)(10)]. Reports shall be due on February 1 and August 1 of each year. The reports shall contain the information, as applicable, listed in Permit Condition I.T. of this Permit. Reporting shall not constitute a defense for any noncompliance.

I.V. OTHER INFORMATION

Whenever the Permittee becomes aware that any relevant information was omitted in the Permit Application or incorrectly submitted in the Permit Application, or in any report to the Director, the Permittee shall promptly submit such facts or information to the Director in accordance with Permit Condition I.Y. of this Permit, and in accordance with IDAPA 58.01.05.012 [40 CFR § 270.30(l)(11)].

I.W. SIGNATORY REQUIREMENT

All applications, reports, or information requested by or submitted to the Director shall be signed and certified, in accordance with IDAPA 58.01.05.012 [40 CFR § 270.11] and submitted in accordance with Permit Condition I.Y.

I.X. CONFIDENTIAL INFORMATION

Pursuant to Title 9, Chapter 3, of the Idaho Code, IDAPA 58.01.05.012 [40 CFR § 270.12] or any other applicable federal, state, or local law, the Permittee may assert a claim of confidentiality regarding any information required to be submitted pursuant to this Permit. The Department shall determine whether said information is exempt from disclosure, pursuant to applicable law.

I.Y. REPORTS, NOTIFICATIONS, AND SUBMISSIONS

All reports, notifications, or other submissions, which are required by this Permit and IDAPA 58.01.05.012 [40 CFR § 270.5], shall be sent or given to the Director in duplicate by certified mail, express mail, or hand-delivered to:

Director
c/o Hazardous Waste Program Manager
Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706-1255
Telephone No. (208) 373-0502

Twenty-four (24) hour telephone number 1-800-632-8000

The addresses and telephone numbers listed above are current as of the effective date of this Permit and may be subject to change.

I.Z. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

- I.Z.1. The Permittee shall maintain until closure is completed and certified by an independent, registered, professional engineer, the following documents and amendments, and revisions or modifications to these documents:
- I.Z.1.a. A complete copy of this Permit including attachments and tables;
 - I.Z.1.b. Waste Analysis Plan(s) for each HWMU of this Permit, as required by IDAPA 58.01.05.008 [40 CFR § 264.13] and this Permit;
 - I.Z.1.c. Operating Record, as required by IDAPA 58.01.05.008 [40 CFR § 264.73] and this Permit;
 - I.Z.1.d. Inspection procedures, schedules, logs, and records for each HWMU of this Permit, as required by IDAPA 58.01.05.008 [40 CFR §§ 264.15(b)(2), 264.73(b)(5)] and this Permit;
 - I.Z.1.e. Personnel training requirements for each position, and personnel training records for each individual involved with management or treatment of mixed waste at each HWMU in this Permit, as required by IDAPA 58.01.05.008 [40 CFR § 264.16(d)] and this Permit;
 - I.Z.1.f. The Site-wide Contingency Plan and Contingency Plan(s) for each HWMU of this Permit, as required by IDAPA 58.01.05.008 [40 CFR § 264.53(a)] and this Permit;
 - I.Z.1.g. Closure Plan(s) for each HWMU of this Permit, as required by IDAPA 58.01.05.008 [40 CFR § 264.112(a)] and this Permit.
- I.Z.2. Documents, as specified by this Permit, may be maintained at INTEC records storage, records storage in Idaho Falls, and/or Electronic Document Management System [EDMS] Records Vault in a readily retrievable manner. These documents may be maintained solely using an electronic format, as long as the documents are readily retrievable to obtain a printed copy.

MODULE II - GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY

- II.A.1. The Permittee shall construct, maintain, and operate all permitted HWMUs on the INL to minimize the possibility of a fire, explosion, or any unplanned, sudden or non-sudden release of hazardous and mixed waste or hazardous and mixed waste constituents to the air, soil, ground water, or surface water which could threaten human health and/or the environment.
- II.A.2. The Permittee shall construct and/or maintain all HWMUs in accordance with the approved designs, specifications, and maintenance schedules that are included as Attachments 1 through 9 of this Permit. Minor deviations from the approved designs or specifications, necessary to accommodate proper construction and the substitution of equivalent or superior materials or equipment, shall be noted on the As-built drawings and the rationale for those deviations shall be provided in narrative form. After completion of construction or modification of each new HWMU, the Permittee shall submit final As-built drawings and the narrative report to the Director as part of the construction certification documentation specified in Permit Condition I.R.
- II.A.3. The Permittee shall comply with all applicable requirements of the Land Disposal Restrictions of IDAPA 58.01.05.011 [40 CFR Part 268].
- II.A.4. The Permittee shall inspect all transfer lines from which there has been a release, suspected release, or unexplained volume of missing transferred waste, and for which a report was filed under the requirement of Permit Conditions I.T. or I.U. The suspect transfer lines shall not be returned to service until the integrity of the line has been demonstrated.

II.B. RECEIPT OF OFF-SITE WASTE

- II.B.1. The Permittee shall not accept into the ILWMS mixed waste generated off-site.

II.C. WASTE ANALYSIS PLAN

The Permittee shall comply with the procedures and requirements of the Waste Analysis Plan provisions, in accordance with IDAPA 58.01.05.008 and 58.01.05.011 [40 CFR §§ 264.13 and 268.7] and Attachment 2 of this Permit, and as follows:

- II.C.1. The Permittee shall collect representative samples of waste to be analyzed in accordance with IDAPA 58.01.05.005, 58.01.05.008, and 58.01.05.011 [40 CFR Part 261, Appendix I and 40 CFR §§ 264.13(a) and 268.7], and as specified in Attachment 2 of this Permit.

- II.C.2. The Permittee shall perform the analysis of each waste stream in accordance with the latest edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, Standard Methods for the Examination of Water and Wastewater (prevailing edition), or equivalent method approved by the Director in accordance with Permit Condition I.O.3. and I.O.4. of this Permit. At a minimum, the Permittee shall maintain proper functional instruments, use-approved sampling and analytical methods, verify the validity of sampling and analytical procedures, and perform correct calculations. If the Permittee uses a contract laboratory to perform analyses, the Permittee shall notify the laboratory in writing of the waste analysis conditions it is to meet, in order that waste analysis conditions of the Permit are met.
- II.C.3. The Director, based on data provided, approves the use of a double-needle sampler when collecting mixed waste volatile organic and total organic samples from the ILWMS.
- II.C.3.a. Double-needle sampling results must not be used in Land Disposal Restriction certifications.
- II.C.3.b. Analytical data obtained from double-needle sampling may be used for demonstrating compliance with IDAPA 58.01.05.008 [40 CFR Part 264 Subpart AA].

II.D. SECURITY

The Permittee shall comply with the Security Provisions of IDAPA 58.01.05.008 [40 CFR § 264.14] and the INL site-specific security measures described in Attachment 3 of this Permit.

II.E. INSPECTION PLAN

The Permittee shall comply with the inspection provisions of IDAPA 58.01.05.008 [40 CFR § 264.15] and as follows:

- II.E.1. The Permittee shall maintain the inspection schedules and logs, in accordance with Permit Condition I.Z.1.d. and I.Z.2. of this Permit;
- II.E.2. The Permittee shall comply with the inspection schedules and logs for the INL, as included in Attachment 4 of this Permit;
- II.E.3. The Permittee shall remedy, as required by IDAPA 58.01.05.008 [40 CFR § 264.15(c)], any deterioration or malfunction discovered by an inspection;

- II.E.4. The Permittee shall retain the inspection procedures, schedules, logs and records required by Permit Condition II.E.1., in accordance with Permit Condition I.Z.1.d. and I.Z.2. of this Permit;
- II.E.5. The Permittee shall inspect the Cathodic Protection System for proper operation at least annually; and all sources of impressed current shall be inspected and/or tested bi-monthly, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.195(g)].
- II.E.6. The Permittee shall record inspections on the inspection logs and inspection log sheets, required by Permit Condition II.E.1., as specified in IDAPA 58.01.05.008 [40 CFR § 264.15(d)]. At a minimum, the following information shall be recorded:
- The date and time of the inspection;
 - The name of the inspector;
 - A notation of the observations made; and
 - The date and nature of any repairs or other remedial actions.
- II.E.7. The Permittee shall inspect the instrumentation found in Attachment 1 Section D of this permit, at a minimum, according to the Operations and Maintenance Schedule provided with the instrument list.

II.F. TRAINING PLAN

- II.F.1. The Permittee shall comply with the INL Personnel Training Plan, as included in Attachment 5 of this Permit and in accordance with IDAPA 58.01.05.008 [40 CFR § 264.16], until each HWMU is fully closed and certified.
- II.F.2. The Permittee shall ensure that all personnel who handle mixed waste are trained in mixed waste management, safety, and emergency procedures, as applicable to their job description, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.16(a)] and the Personnel Training Plan included in Attachment 5 of this Permit.
- II.F.3. The Permittee shall maintain the Personnel Training Plan in Attachment 5 of this Permit and documentation of personnel training received, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.16(e)] and Permit Condition I.Z.1.e. and I.Z.2. of this Permit.

II.G. PREPAREDNESS AND PREVENTION

The Permittee shall comply with the Preparedness and Prevention Provisions of IDAPA 58.01.05.008 [40 CFR Part 264 Subpart C] and as follows:

- II.G.1. The Permittee shall operate the permitted INTEC Units so as to minimize the possibility of a fire, explosion, or sudden or non-sudden releases to the air or soil (which could threaten human health or the environment), in accordance with IDAPA 58.01.05.008 [40 CFR § 264.31] and Attachment 6 of this Permit.
- II.G.2. At a minimum, the Permittee shall perform preventative maintenance and repair of the INL emergency equipment, safety devices, and miscellaneous equipment included in the Attachments of this Permit, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.33] and the manufacturer's specifications. The Permittee shall maintain records of these preventative maintenance and repair activities on this equipment and schedules, reflecting minimum and planned performance of these preventative maintenance activities in the Operating Record at the facility, in accordance with Permit Condition I.Z.1.c and I.Z.2 of this Permit.
- II.G.3. The Permittee shall maintain access to the communications and alarm systems, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.34] and Attachment 6 of this Permit.
- II.G.4. The Permittee shall maintain arrangements with state and local authorities, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.37] and Attachment 7 of this Permit. If state or local officials refuse to enter into preparedness and prevention arrangements with the Permittee for a given HWMU, the Permittee must document this refusal in the Operating Record for the excluded unit.

II.H. CONTINGENCY PLAN

The Permittee shall comply with the Contingency Plan matrix provisions of IDAPA 58.01.05.008 [40 CFR Part 264 Subpart D] and as follows:

- II.H.1. The Permittee shall comply with the Contingency Plan included in Attachment 7 of this Permit, at a minimum, whenever there is:
 - II.H.1.a A fire;
 - II.H.1.b An explosion; or,
 - II.H.1.c A sudden or non-sudden release of hazardous or mixed waste or hazardous waste constituents to the environment.
- II.H.2. The Permittee shall review and amend, as necessary, the Contingency Plan, pursuant to IDAPA 58.01.05.008 and .012 (40 CFR §§ 264.54 and 270.42) and Permit Conditions I.D.4. and I.D.5. of this Permit within fourteen (14) calendar days of the following events:
 - II.H.2.a This Permit is revised;

- II.H.2.b. The plan fails in an emergency;
- II.H.2.c. The Permittee changes the INL design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of mixed waste or mixed waste constituents, or changes the response necessary in an emergency;
- II.H.2.d. The list of emergency coordinators changes; or
- II.H.2.e. The list of emergency equipment changes.
- II.H.3. The Permittee shall ensure that a trained Emergency Coordinator or equivalent is available at all times in case of an emergency, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.55] and Attachment 7 of this Permit.
- II.H.4. The Permittee shall submit a copy of the Contingency Plan (and all revisions to the plan) to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.53(b)] and Attachment 7 of this Permit.
- II.H.5. The point of contact (POC) for reporting emergencies to the State of Idaho shall be the State of Idaho Communications Center at (800) 632-8000 or (208) 846-7610, and Fax Number (208) 846-7620.
- II.H.6. The Permittee shall document in the Facility Operating Record the time, date, and details of any incident that requires implementing the Contingency Plan. Within fifteen (15) days after the incident, the Permittee shall submit a written report on the incident to the Director, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.56(j)] and Attachment 7 of this Permit. Said report shall include, at a minimum, the items in Permit Condition I.T.3.a. of this Permit.

II.I. MANIFEST SYSTEM

The Permittee shall comply with the manifest requirements of IDAPA 58.01.05.008 [40 CFR Part 264 Subpart E].

II.J. RECORD KEEPING AND REPORTING

In addition to the record keeping and reporting requirements specified elsewhere in this Permit, the Permittee shall comply with the following:

- II.J.1. The Permittee shall maintain a written Operating Record at INL, in accordance with Permit Condition I.Z.1.c. and I.Z.2. and IDAPA 58.01.05.008 [40 CFR § 264.73(a)],

for all records identified in IDAPA 58.01.05.008 [40 CFR § 264.73(b)(1) through (b)(16)].

- II.J.2. The Permittee shall, by March 1 of each year, submit to the Director a waste minimization certification, pursuant to IDAPA 58.01.05.008 [40 CFR § 264.73(b)(9)], that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage, or disposal is the most practicable method currently available to the Permittee, which minimizes the present and future threat to human health and the environment.
- II.J.3. The Permittee shall, by March 1 of each even numbered year, submit to the Director a biennial report covering the facility (INL-wide) activities pursuant to IDAPA 58.01.05.008 [40 CFR § 264.75(a) through (j)].
- II.J.4. The Permittee shall conduct and complete a source reduction evaluation review and written plan in accordance with the procedures and format provided in the "EPA Waste Minimization Opportunity Assessment Manual" (EPA/625/7-88/003). The review and plan shall be completed in compliance with Permit Condition II.J.5. of this Permit and include, at a minimum, the following general operating and reporting requirements:
 - II.J.4.a. The Permittee shall submit to the Director detailed descriptions of any programs the Permittee may have to assist generators of hazardous waste in reducing the volume or quantity and toxicity of wastes they produce.
 - II.J.4.b. The Permittee shall submit the following information to the Director and shall submit revisions or changes to the Director within thirty (30) calendar days after those revisions or changes:
 - II.J.4.b.1. A list of generators who received information from the Permittee according to Permit Condition II.J.4.a. of this Permit.
 - II.J.4.b.2. A list of generators who used the Permittee's contractor services on a Waste Minimization Program.
 - II.J.4.b.3. A list of generators known to the Permittee who have a Waste Minimization Program in place and any known results (i.e., has there been a reduction in wastes submitted for treatment, recycling, or disposal).
- II.J.5. A waste minimization review and plan shall be submitted to the Director by March 31, 2007 and every four (4) years thereafter, in accordance with Permit Condition II.J.4. of this Permit. The review and plan shall address the entire INL, unless otherwise approved by the DEQ.

II.J.6. All reports, notifications, applications, or other materials (required to be submitted to the Director) shall be submitted in accordance with Permit Condition I.W. of this Permit.

II.K. CLOSURE

II.K.1. The Permittee shall meet the general Closure Performance Standard, as specified in IDAPA 58.01.05.008 [40 CFR § 264.111] and Attachments 8, 8A, 8B, and 8C of this permit, as modified here, during any partial and final closure of the ILWMS.

II.K.1.a. Clean closure of each HWMU shall be demonstrated by no detectable hazardous waste or underlying hazardous constituents in samples of the final rinse solution for both the tank and associated containment system. Revised action levels may be developed prior to closure and implemented through the appropriate class permit modification.

II.K.1.b. The pH of the final rinse water, before and after use, shall not change more than one-half (0.5) pH. A pH variance by more than one-half unit suggests hazardous waste or hazardous waste constituents are present, thus clean closure is not demonstrated.

II.K.2. The integrity of waste lines that will not be removed as a part of closure shall be determined by pressure testing, or other methods pre-approved by the Director, prior to completion of decontamination activities.

II.K.2.a. If a line fails a pressure test, or other integrity test method pre-approved by the Director, the Permittee shall determine the cause of the failure (e.g. open connection, loss of line integrity, malfunctioning pressure relief valve, etc.).

II.K.2.b. If a line fails a pressure test, or other integrity test method pre-approved by the Director, the Permittee shall determine if there has been a release to the environment.

II.K.2.b.1. If there has been a release to the environment, the Permittee shall characterize the nature and extent of the release.

II.K.2.b.2. If the release cannot be remediated as part of the general closure activity, the release may be passed to the FFA/CO for corrective action, with HWMA as an applicable requirement.

II.K.3. Closure of HWMA/RCRA lines shall be verified as empty and closed by blind flanging. If a line is to remain after closure, both ends shall be blind flanged. In the case that one end of the pipe cannot be reached; the pipe shall be blind flanged at the end nearest the source. In addition to this, all valves leading to the blind flange shall be locked closed, and the valves tagged out.

- II.K.4. During all closure activities, atmospheric releases of hazardous waste and hazardous waste constituents shall be minimized by venting any off-gases through the appropriate off-gas system. If gases are vented directly to the atmosphere, the Permittee shall obtain any necessary air permits or exemptions.
- II.K.5. The Permittee shall perform a hazardous waste determination on all solid waste generated during closure including, but not limited to, contaminated process equipment, building components, tanks and ancillary equipment, scrap metal, soils, etc., in accordance with IDAPA 58.01.05.006 [40 CFR § 262.11] and Attachment 2 of this Permit.
- II.K.6. The following corrections are hereby made to the ILWMS Closure Plan, Attachments 8 and 8A, of this Permit:
- II.K.6.a. Locking valves closed or tagging out valves is not sufficient to secure a system to prevent reintroduction of waste to a closed HWMU. DEQ will not consider locking or tagging out a valve unless the integrity of the valve is demonstrated, and the valve is then added to a weekly inspection procedure through a modification to this Permit.
- II.K.6.b. References in the plan to the closure requirements for surface impoundments, waste piles, land treatment, incinerators, and containment buildings are not applicable and are hereby deleted from the plan.
- II.K.6.c. The Permittee shall conduct sampling and analysis, performed in accordance with Permit Condition I.O., to verify that the Clean Closure Performance Standard has been achieved.
- II.K.7. The Permittee shall amend the Closure Plans, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.112(c)] and Attachments 8 and 8A of this Permit, prior to partial or final closure and whenever necessary.

II.L. EQUIVALENT MATERIALS/INFORMATION

- II.L.1. If certain equipment, materials, and administrative information (such as names, phone numbers, addresses) are specified in this Permit, the Permittee is hereby authorized to use equivalent or superior items. Use of such equivalent or superior items shall not be considered a modification of this Permit, but the Permittee shall place in the Operating Record (prior to the institution of such revision) the revision, accompanied by a narrative explanation, and the date the revision became effective. The Director may judge the soundness of the revision during inspections of the facility and take appropriate action. The format of tables, forms, and figures are not subject to the requirements of this Permit and may be revised at the Permittee's discretion.

II.L.2. If the Department determines that the substitution was not equivalent to the original, it will notify the Permittee that the Permittee's claim of equivalency has been denied, the reasons for the denial, and that the original material or equipment must be used. If the product substitution is denied, the Permittee shall comply with the original approved product specification, find an acceptable substitution, or apply for a Permit Modification, in accordance with Permit Condition I.D.4.

II.M. AIR EMISSION STANDARDS FOR PROCESS VENTS

II.M.1. Applicability

II.M.1.a. The Process Equipment Waste Evaporator (PEWE) off-gas is processed through both the Building 604 Vessel Off-Gas System and the Process Atmospheric Protection System (APS) in Building 649, prior to discharge to the INTEC main stack. The PEWE vent does not meet the definition of a process vent at IDAPA 58.01.05.008 [40 CFR § 264.1031]. Therefore, the air emission standards for process vents do not apply.

II.M.1.b. The Evaporator Tank System (ETS) off-gas is processed through both the Building 659 Process Off-Gas System and the Atmospheric Protection System (APS) in Building 649, prior to discharge to the INTEC main stack. The ETS vent does not meet the definition of a process vent at IDAPA 58.01.05.008 [40 CFR § 264.1031]. Therefore, the air emission standards for process vents do not apply.

II.M.1.c. The Liquid Effluent Treatment and Disposal Facility (LET&D) off-gas is discharged to the INTEC main stack through a process vent, therefore, IDAPA 58.01.05.008 [40 CFR § 264.1031] is applicable.

II.M.1.d. The Integrated Waste Treatment Unit (IWTU) uses a two stage steam reformation process to treat the waste. The IWTU process does not involve distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping. The IWTU vent does not meet the definition of a process vent at IDAPA 58.01.05.008 [40 CFR § 264.1031]. Therefore, the air emission standards for process vents do not apply.

II.M.2. The Permittee shall determine the applicability of IDAPA 58.01.05.008 [40 CFR Part 264 Subpart AA] by documenting the total organic concentration in all feed sources to the LET&D.

II.M.2.a. If the LET&D manages only mixed hazardous waste with total organic concentrations less than 10 ppmw, then IDAPA 58.01.05.008 [40 CFR Part 264 Subpart AA] does not apply.

- II.M.2.b. If the LET&D manages mixed hazardous waste with total organic concentrations greater than or equal to 10 ppmw, then IDAPA 58.01.05.008 [40 CFR Part 264 Subpart AA] applies.
- II.M.3. The Permittee shall document compliance with the IDAPA 58.01.05.008 [40 CFR Part 264 Subpart AA] standards by:
 - II.M.3.a. Reducing the input total organic concentrations to the LET&D to less than 10 ppmw for all wastes processed; or
 - II.M.3.b. Reducing total organic emissions from all affected process vents at INL below 1.4 kg/h (3.0 lb/h) and 2.8 Mg/yr (3.1 tons/yr); or
 - II.M.3.c. Reducing, by means of a control device, total organic emissions from all affected process vents at INL by 95 weight percent.
- II.M.4. The Permittee shall record the following information in the Facility Operating Record, in accordance with IDAPA 05.01.008 [40 CFR § 264.1035]:
 - II.M.4.a. Up-to-date documentation of the applicability and/or compliance with the process vent standards in Permit Conditions II.M.3., including:
 - II.M.4.a.1. Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility [i.e., the total emissions for all affected vents at the facility, and the approximate location within the facility of each affected unit (e.g., identify the hazardous waste management units on a facility plot plan)].
 - II.M.4.a.2. Information and data supporting determinations of vent emissions and emission reductions achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, determinations of vent emissions and emission reductions must be made using operating parameter values (e.g., temperatures, flow rates, or vent stream organic compounds and concentrations) that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. If any action is taken (e.g., managing a waste of different composition or increasing operating hours of affected waste management units) that would result in an increase in total organic emissions from affected process vents at the facility, then a new determination is required.
- II.M.5. Records of the monitoring, operating, and inspection information, required by Permit Condition II.M.4., shall be maintained in accordance with Permit Conditions I.Z.1.c. and I.Z.2.

II.M.6. Information and data used to determine whether any other INL process vents are subject to the requirements of IDAPA 58.01.05.008 [40 CFR Part 264 Subpart AA] shall be kept in the Operating Record.

II.M.6.a. The Operating Record shall be updated within thirty (30) days of a change in INL operations that potentially involve regulated process vents.

II.M.6.b. INL process vent data shall be reviewed at least annually for compliance with the IDAPA 58.01.05.008 [40 CFR §§ 264.1030 and .1035].

II.M.7. The Permittee shall modify this permit as necessary to ensure compliance with Permit Condition II.M.3. whenever:

II.M.7.a. The Permittee identifies additional hazardous waste process vents; or

II.M.7.b. The Permittee determines that the LET&D is subject to the requirements of IDAPA 58.01.05.008 [40 CFR Part 264 Subpart AA].

II.N. FINANCIAL ASSURANCE FOR FACILITY CLOSURE

The Permittee (DOE, as a federal government unit, and the DOE-designated contractor, as co-Permittee) is exempt from the financial assurance requirements, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.140(c)].

II.O. LIABILITY INSURANCE FOR SUDDEN ACCIDENTAL OCCURRENCES

The Permittee (DOE, as a federal government unit, and the DOE-designated contractor, as co-Permittee) is exempt from the liability coverage for sudden accidental occurrence requirements, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.140(c)].

II.P. COMPLIANCE SCHEDULE

II.P.1. The Permittee shall continue to evaluate methods to conduct inspections of the ILWMS tanks that can not presently be inspected using standard techniques.

II.P.1.a. Inspection techniques that are to be adopted shall be incorporated into the permit through the procedures of Permit Condition I.D.

II.P.1.b. The Permittee shall record a brief description and justification for adopting/rejecting each inspection method evaluated in the facility operating record.

II.P.1.c. The Permittee shall summarize the inspection methods evaluated in the semi-annual non-compliance report.

- II.P.2. The Permittee shall revise, as necessary, and finalize the IWTU System Performance Test Plan (PLN-3298) at least thirty (30) days before the scheduled start of the System Performance Test..
 - II.P.3. The Permittee shall submit revised Operating Procedures and Emergency Alarm and Response Procedures within forty-five (45) days following the Directors approval for a Temporary Authorization for Construction for the permit modifications submitted in December 2012.
 - II.P.4. The Permittee shall prepare and submit a Class 2 Permit Modification Request to update IWTU information such as the contingency plan, emergency contact list, inspection schedules and checklists, and any other affected permit conditions, as necessary, reflecting as-built conditions and results of performance testing to ensure compliance with IDAPA 58.01.05.008 [40 CFR Part 264, Subparts B, C, D, and X] according to the following schedule:
 - II.P.4.a. Forty five (45) days after the System Performance Test (SPT) Report is submitted to the DEQ, submit the permit modification request to the DEQ.
 - II.P.5. Prior to start of hazardous waste operations, DEQ must receive the certification of construction documents of Permit Condition I.R. for the permit modifications submitted in December 2012 and any subsequent modifications.
- II.Q. RISK ANALYSIS VALIDATION**
- II.Q.1. The risk analysis prepared to demonstrate the protectiveness of the ILWMS shall be re-evaluated whenever a compound of potential concern (COPC) is added to the emission inventory, as indicated by offgas measurements of a new COPC that confirm the compound is present in the offgas, or the emission rate of a known COPC exceeds the predicted emissions estimate by a factor of two (2) or more.
 - II.Q.1.a. If the calculated total risk from ILWMS exceeds 5.0E-6 risk for carcinogens and/or 0.5 hazard quotient for noncarcinogens, the risk analysis shall be revised and submitted to the Director within ninety (90) days
 - II.Q.1.b. If the calculated total risk from ILWMS does not exceed 5.0E-6 risk for carcinogens and/or 0.5 hazard quotient for noncarcinogens, the risk re-evaluation shall be noted in the operating record.

MODULE III - CONTAINER STORAGE

III.A. PERMITTED CONTAINER STORAGE

Subject to the terms of this Permit, the Permittee may store mixed waste in the container storage areas of Building CPP-1696. Waste containers may be stored in vaults in the Vault Staging Area and the Vault Storage Area.

III.B. PERMITTED AND PROHIBITED WASTES IN THE CONTAINER STORAGE AREAS

III.B.1 The Permittee shall only store mixed waste that is exempt from IDAPA 58.01.05.008 (40 CFR 264 Subpart CC), as provided in IDAPA 58.01.05.008 (40 CFR § 264.1080).

III.B.2 Waste must meet the unit-specific waste acceptance criteria in Attachment 2 of this Permit.

III.B.3 The maximum permitted capacity for container storage is 175,000 gallons (663 m³) in the Vault Storage Area and 4,070 gallons (15 m³) in the Vault Loading Area.

III.B.4 Waste containing free liquids cannot be stored in the Vault Loading Area or Vault Storage Area.

III.C. CONDITION OF CONTAINERS

If a container holding waste is not in good condition (e.g., severe rusting, apparent structural defects), or if it begins to leak, the Permittee shall: transfer the waste from said container to a container that is in good condition or otherwise manage the waste in accordance with IDAPA 58.01.05.008 [40 CFR § 264.171] and Attachment 1.

III.D. COMPATIBILITY OF WASTE WITH CONTAINERS

The Permittee shall assure that the ability of the container to contain the waste is not impaired, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.172] and Attachments 1 and 6 of this Permit.

III.E. MANAGEMENT OF CONTAINERS

III.E.1. The Permittee shall keep all storage containers closed during storage, and shall not open, handle, or store containers in a manner which may rupture the container or cause it to leak, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.173] and Attachments 1 and 6 of this Permit.

III.E.2. The waste stored in the Vault Loading Area does not contain free liquids due to the elevated process temperatures. The containers (canisters) are placed in cement vaults, therefore, secondary containment is not required in the Vault Storage Area.

III.F. INSPECTIONS

- III.F.1. The Permittee shall inspect the permitted container storage areas in accordance with IDAPA.58.01.05.008 [40 CFR § 264.174] and the inspection schedules found in Attachment 4 of this permit.
- III.F.1.a. Due to the high radiation fields anticipated for the stored waste, DEQ approves managing the concrete vaults as the container for the purposes of inspection.
- III.F.1.b. The Permittee shall inspect the canisters within a vault to ensure canister integrity when a vault is opened, weekly if the vault remains open, and prior to vault closure. These inspections may be visual, camera or by some other method pre-approved by DEQ.

III.G. RECORDKEEPING

The Permittee shall document the results of all inspections, spill responses, waste analysis, and certifications in accordance with Permit Conditions I.Z. and II.J. of this Permit.

III.H. CLOSURE

The Permittee shall close the permitted container storage area in accordance with IDAPA 58.01.05.008 [40 CFR § 264.178] and Attachment 8 of this Permit.

MODULE IV - STORAGE IN TANKS

IV.A. TANK STORAGE

IV.A.1. Deep Tanks. The Deep Tanks VES-WG-100, VES-WG-101, VES-WH-100 and VES_WH-101 have been closed and removed from this partial permit.

IV.A.2. PEWE Storage Tanks

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|-------------------------|---|-----------------------|-----------------|
| UNIT NAME: | Evaporator Feed Sediment Tank, VES-WL-132 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, T01 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and vertical-oriented, with domed ends. The dimensions of the tank are an outside diameter of 9' and a length of 11', with a tangent-to-tangent length of 7' 9". The tank construction material is Nitronic 50 SS.</p> <p>Secondary Containment: The tank is located in an underground vault constructed of reinforced concrete, with floors and the lower 2' 6" of the walls lined with SS. The vault has the dimensions of 17' x 16' 6" x 13' 8". The cell floor slopes to a 3" drain line that leads to the VES-WL-133 vault sump. Upon high alarm, liquid in the sump is jetted to the inlet line to VES-WL-132.</p> | | |
| CAPACITY: | ~4,700 Gallons | | |
| NOTES: | <p>Receives: Inputs come from New Waste Calcining Facility Tanks, VES-WL-101/111, VES-WM-100/101/102, snow melt or other liquids from TFF sumps, basin water from CPP-666 or CPP-603. Waste is jetted or pumped into the tank.</p> <p>Output: The waste is normally drained by gravity to VES-WL-133.</p> | | |

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| UNIT NAME: | Evaporator Feed Collection Tank, VES-WL-133 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, T01 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and horizontal-oriented with domed ends. The dimensions of the tank are an outside diameter of 10', and a length of 34' with a tangent-to-tangent length of 30'. The tank construction material is Nitronic 50 SS.</p> <p>Secondary Containment: The tank is located in an underground vault constructed of reinforced concrete, with floors and the lower 5' of the walls lined with SS. The vault has the dimensions of 42' x 16' 6" x 17'. The cell drains to a sump shared with the VES-WL-132 vault, with the floor sloping to a sump along the west wall. Upon high alarm, liquid in the sump is jetted to the inlet line to VES-WL-132.</p> | | |
| CAPACITY: | ~19,000 Gallons | | |
| NOTES: | <p>Receives: Inputs come from VES-WL-132 and all the same sources as VES-WL-132 and recycled condensate from WL-106, WL-107 and WL-163 via gravity drain lines. Liquid that collects in the PWL system tanks and sumps is transferred via steam jets. Waste is gravity-fed into the tank.</p> <p>Outputs: Waste is normally pumped to VES-WL-109 or EVAP-WL-129.</p> | | |

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|-------------------------|--|-----------------------|----------|
| UNIT NAME: | Surge Tank, VES-WL-102 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, T01 |
| DESCRIPTION: | <p>Size: The tank is a cylindrical and horizontal-oriented tank with domed ends. The dimensions of the tank are an outside diameter of 10', and a length of 33', with a tangent-to-tangent length of 30'. The tank construction material is Type 347 SS.</p> <p>Secondary Containment: The tank is located in a vault constructed of reinforced concrete, with floors and the lower 3' of the walls lined with Hypalon. The vault has the dimensions of 30' 6" x 43' x 16'. The cell drains to an SS-lined floor sump in the center of the cell. Upon high alarm, the liquid in the sump is jetted to VES-WL-150 and then to VES-WL-132.</p> | | |
| CAPACITY: | ~18,400 Gallons | | |
| NOTES: | <p>Receives: Inputs are normally pumped from VES-WL-133.</p> <p>Outputs: Waste is normally pumped to VES-WL-133.</p> | | |

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| UNIT NAME: | Evaporator Head Tank, VES-WL-109 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODE: | S02 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and vertical-oriented, with domed ends. The dimensions of the tank are an outside diameter of 3' and a length of 7' 2", with a tangent-to-tangent length of 5'. The tank construction material is Type 347 SS.</p> <p>Secondary Containment: The tank is located in a cell constructed of reinforced concrete, with the floors and lower 3' of the walls lined with SS. The cell has the dimensions of 22' x 18' x 34'. The cell drains to an SS-lined sump (10" x 1') in the NW corner of the cell. Upon high alarm, liquid in the sump is jetted as part of the PWL Collection System to VES-WL-133.</p> | | |
| CAPACITY: | ~270 Gallons | | |
| NOTES: | <p>Receives: Inputs come from VES-WL-133 or VES-WL-102. Waste is jetted or pumped into the tank.</p> <p>Outputs: The waste is gravity-fed into EVAP-WL-161, and the overflow returns to VES-WL-133 or VES-WL-102.</p> | | |

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| UNIT NAME: | Evaporator Flash Column, VES-WL-129 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, X99 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and vertical-oriented, with domed ends. The dimensions of the tank are an outside diameter of 3', and a length of 19' 6" with a tangent-to-tangent length of 14' 9". The tank construction material is Nitronic 50 SS.</p> <p>Secondary Containment: The unit is located in a cell constructed of reinforced concrete, with the floors and walls lined with SS. The vault has the dimensions of 14' x 21' 4" (including the access area) x 34' (the access area is only 8' high). The access area floor and lower 1' of the walls are lined with SS. The cell drains to a sump, with the floor sloping to a 2-inch drain that leads to the feed pump cell sump. The sump has dimensions of 1' 6" x 1' 6" x 2' 6". Upon high alarm, the sump is jetted to VES-WL-133.</p> | | |
| CAPACITY: | ~1000 Gallons | | |
| NOTES: | <p>Receives: Inputs come from VES-WL-133. Waste is pumped into the column.</p> <p>Outputs: The overheads are collected in VES-WL-131. The bottoms are gravity fed to VES-WL-133, VES-WL-101, or VES-WL-111.</p> | | |

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|-------------------------|--|----------------------|---------------------|---------|
| UNIT NAME: | Process Condensate Surge Tank, VES-WL-134 | | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODE: | S02 | |
| DESCRIPTION: | <p>Size: The tank is cylindrical and vertical-oriented, with domed ends. The dimensions of the tank are an outside diameter of 3' 6", and a length of 8' 9", with a tangent-to-tangent length of 7'. The tank construction is Type 304L SS.</p> <p>Secondary Containment: The tank is located in a cell constructed of reinforced concrete, with the floors and the lower 1' of the walls lined with SS. A barrier that is 6" high is located in front of the condensate collection cell door to prevent leakage to the access corridor. The cell has the dimensions of 46' x 21' x 35'6". The containment area drains to either SU-WL-145 or SU-WL-146. Upon high alarm, liquid in the sump is jetted as part of the PWL Collection System to VES-WL-133.</p> | | | |
| CAPACITY: | ~500 Gallons | | | |
| NOTES: | <p>Receives: Inputs come from HE-WL-308 (acidic condensate). Waste is gravity fed into the tank.</p> <p>Outputs: In series operation, this tank provides feed for EVAP-WL-161. The waste is pumped to VES-WL-161.</p> | | | |

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| UNIT NAME: | Evaporator Flash Column, VES-WL-161 | | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, X99 | |
| DESCRIPTION: | <p>Size: The column is vertical and cylindrical, with domed ends. The dimensions of the tank are an outside diameter of 3', and a length of 19' 6", with a tangent-to-tangent length of 14' 9". The tank construction material is Nitronic 50 SS.</p> <p>Secondary Containment: The unit is located in a cell constructed of reinforced concrete, with the floors and lower 3' of the walls lined with SS. The cell has the dimensions of 22' x 18' x 34'. The cell drains to an SS-lined sump (10" x 1') in the NW corner of the cell. Upon high alarm, liquid in the sump is jetted as part of the PWL Collection System to VES-WL-133.</p> | | | |
| CAPACITY: | ~1,000 Gallons | | | |
| NOTES: | <p>Receives: Inputs come from VES-WL-109 or VES-WL-134. Waste is gravity fed into the column.</p> <p>Outputs: The overheads are collected in VES-WL-131. The bottoms are gravity fed to VES-WL-133, VES-WL-101, or VES-WL-111.</p> | | | |

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|-------------------------|--|----------------------|----------------|
| UNIT NAME: | Process Condensate Surge Tank, VES-WL-131 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODE: | S02 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and horizontal-oriented, with domed ends. The dimensions of the tank are an outside diameter of 2', and a length of 2' 10" with a tangent-to-tangent length of 2' 9". The tank construction material is Type 304L SS.</p> <p>Secondary Containment: The tank is located in a cell constructed of reinforced concrete, with the floor and lower 1' of the walls lined with SS. The barrier is 6" high and is located in front of the condensate collection cell door to prevent leakage to the access corridor. The cell has the dimensions of 46' x 21' x 35' 6". The cell drains to either SU-WL-145 or SU-WL-146. Upon high alarm, liquid in the sump is jetted as part of the PWL Collection System to VES-WL-133.</p> | | |
| CAPACITY: | ~66 Gallons | | |
| NOTES: | <p>Receives: Inputs come from HE-WL-301 or HE-WL-308 (acidic condensate). Waste is gravity-fed into the tank.</p> <p>Outputs: The waste is pumped to VES-WL-106, VES-WL-107, and VES-WL-163.</p> | | |

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| UNIT NAME: | Process Off-gas Condensate Knock-Out Pot, VES-WL-108 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODE: | S02 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and vertical-oriented, with domed ends. The dimensions of the tank are an outside diameter of 2', and a length of 5' 8", with a tangent-to-tangent length of 2' 8". The tank construction material is Type 347 SS.</p> <p>Secondary Containment: The tank is located in the same cell as VES-WL-106, VES-WL-107, and VES-WL-163.</p> | | |
| CAPACITY: | ~98 Gallons | | |
| NOTES: | <p>Receives: Inputs are the condensed liquid from the evaporator VOG before the off-gas is released to the plant VOG system.</p> <p>Outputs: The waste is gravity-fed to VES-WL-133.</p> | | |

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| UNIT NAME: | Bottoms Collection Tank, VES-WL-111 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, T01 |
| DESCRIPTION: | <p>Size: The tank is rectangular and horizontal-oriented. The dimensions of the tank are 12' long, 4' 8" wide, and 3' 6" high. The tank construction material is Type 304L SS.</p> <p>Secondary Containment: The tank is located in a cell constructed of reinforced concrete, with the floors and lower 3' of the walls lined with SS. The cell has the dimensions of 22' x 18' x 34'. The cell drains to a SS-lined sump (10" x 1') in the NW corner of the cell. Upon high alarm, liquid in the sump is jetted as part of the PWL Collection System to VES-WL-133.</p> | | |
| CAPACITY: | ~1,500 Gallons | | |
| NOTES: | <p>Receives: Inputs come from VES-WL-129 and VES-WL-161 (concentrated acidic bottoms). Waste is gravity-fed into the tank.</p> <p>Outputs: The waste is normally jetted to the CPP-604 TFT, the TFF, VES-WL-101 or the ETS.</p> | | |

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|-------------------------|---|-----------------------|-----------------|
| UNIT NAME: | Bottoms Collection Tank, VES-WL-101 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, T01 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and horizontal-oriented, with domed ends. The dimensions of the tank are an outside diameter of 10', and a length of 33', with a tangent-to-tangent length of 30'. The tank construction material is Type 347 SS.</p> <p>Secondary Containment: The tank is located in a vault constructed of reinforced concrete, with the floors and the lower 3' of the walls lined with Hypalon. The vault has the dimensions of 30' 6" x 43' x 16'. The cell drains to a SS-lined floor sump in the center of the cell. Upon high alarm, the sump is jetted to VES-WL-150 and then to VES-WL-132.</p> | | |
| CAPACITY: | ~18,400 Gallons | | |
| NOTES: | <p>Receives: Inputs come from VES-WL-129 and VES-WL-161 (concentrated acidic bottoms). The waste is gravity-fed into the tank.</p> <p>Outputs: The waste is normally jetted to the CPP-604 TFT, the TFF, or the ETS.</p> | | |

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| UNIT NAME: | Tank Farm Tank, VES-WM-100 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, T01 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and horizontal-oriented with domed ends. The dimensions of the tank are an outside diameter of 10' and a length of 33', with a tangent-to-tangent length of 30'. The tank construction material is Type 347 SS.</p> <p>Secondary Containment: This tank is located in a vault constructed of reinforced concrete, with the floor and lower 3' 6" of the walls lined with SS. The vault has the dimensions of 17' x 43' x 16'. The floor of the vault slopes to a sump with the dimensions of 2' x 2' x 4' along east wall of the vault. Upon high alarm, the liquid in the sump is jetted to VES-WL-132.</p> | | |
| CAPACITY: | ~18,400 Gallons | | |
| NOTES: | <p>Receives: Inputs come from CPP-659, the Deep Tanks, VES-WL-101, 111, and fuel storage basins. Waste is gravity-fed, jetted, or pumped into the tank.</p> <p>Outputs: Waste is normally jetted to VES-WL-132, the ETS, or the TFF.</p> | | |

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| UNIT NAME: | Tank Farm Tanks, VES-WM-101 and VES-WM-102 | BUILDING NO. | CPP-604 |
| NUMBER OF UNITS: | 2 | PROCESS CODES: | S02, T01 |
| DESCRIPTION: | <p>Size: The tanks are cylindrical and horizontal-oriented with domed ends. The dimensions of the tanks are an outside diameter of 10' and a length of 33', with a tangent-to-tangent length of 30'. The tank construction material is Type 347 SS.</p> <p>Secondary Containment: The tanks are located in a vault constructed of reinforced concrete, with the floor and the lower 3' 6" of the walls lined with SS. The vault has the dimensions of 30' 6" x 43' x 16'. The vault floor slopes to a sump with the dimensions of 2' x 2' x 4' in the center of the vault. Upon high alarm, the liquid in the sump is jetted to VES-WL-132.</p> | | |
| CAPACITY: | ~18,400 Gallons Each | | |
| NOTES: | <p>Receives: Inputs come from VES-WM-100. The waste is gravity-fed or jetted into the tanks.</p> <p>Outputs: Waste is jetted to VES-WL-132, VES-WM-100, VES-WM-101, the ETS, or the TFF.</p> | | |

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| UNIT NAME: | Process Waste Liquid System: VES-WL-135, VES-WL-136, VES-WL-139, VES-WL-142 | BUILDING # | CPP-604 |
| NUMBER OF UNITS: | 4 | PROCESS CODE: | S02 |
| DESCRIPTION: | <p>Size: Each tank is cylindrical and vertical-oriented with domed ends. The dimensions of the tanks are an outside diameter of 1' 6" and a length of 10", with a tangent-to-tangent length of 8". The tanks' construction material is Type 304L SS.</p> <p>Secondary Containment: The tanks are located in sumps constructed of reinforced concrete lined with SS. The sump has the dimensions of 2' x 2' x 1' 8". VES-WL-135 is located in Valve Box D5, which has measurements of 6' x 8' x 11' 9". Upon high alarm, all are jetted to a common header and transferred to VES-WL-133.</p> | | |
| CAPACITY: | ~10 Gallons Each | | |
| NOTES: | <p>Receives: Off-gas condensate from CPP-604, CPP-649, and associated valve boxes. Waste is gravity-fed into the tanks.</p> <p>Outputs: Waste is jetted to VES-WL-133.</p> | | |

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| UNIT NAME: | Process Waste Liquid System: VES-WL-137, VES-WL-138, VES-WL-144 | BUILDING # | CPP-604 |
| NUMBER OF UNITS: | 3 | PROCESS CODE: | S02 |
| DESCRIPTION: | <p>Size: Each tank is cylindrical and vertical-oriented with domed ends. The dimensions of the tanks are an outside diameter of 2' and a length of 13", with a tangent-to-tangent length of 1'. The construction material of each tank is Type 304L SS.</p> <p>Secondary Containment: The tanks are located in sumps constructed of reinforced concrete and lined with SS. The sumps have the dimensions of 2' 6" x 2' 6" x 2'. Upon high alarm liquid from the sumps is jetted to a common header and transferred to VES-WL-133.</p> | | |
| CAPACITY: | ~25 Gallons Each | | |
| NOTES: | <p>Receives: Inputs are off-gas condensate from CPP-604, CPP-649, and associated valve boxes. Waste is gravity-fed into the tanks.</p> <p>Outputs: Waste is jetted to VES-WL-133.</p> | | |

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| UNIT NAME: | Process Waste Liquid System: VES-WL-150 | | BUILDING # | CPP- 604 |
| NUMBER OF UNITS: | 1 | PROCESS CODE: | S02 | |
| DESCRIPTION: | <p>Size: The tank is cylindrical and vertical-oriented with domed ends. The dimensions of the tank are a diameter of 2' and a length of 2' 3", with a tangent-to-tangent length of 2'. The tank construction material is Type 304L SS.</p> <p>Secondary Containment: The tank is located in the same cell as VES-WL-101/102.</p> | | | |
| CAPACITY: | ~50 Gallons | | | |
| NOTES: | <p>Receives: Inputs come from floor drains. Waste is jetted or gravity-fed from floor drains into the tank.</p> <p>Outputs: Waste is jetted to VES-WL-132.</p> | | | |

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|-------------------------|--|-----------------------|-------------------|----------------|
| UNIT NAME: | Process Condensate Collection Tanks: VES-WL-106 and VES-WL-107 | | BUILDING # | CPP-604 |
| NUMBER OF UNITS: | 2 | PROCESS CODES: | S02, T01 | |
| DESCRIPTION: | <p>Size: Each tank is cylindrical and vertical-oriented with domed ends. The dimensions of the tanks are an outside diameter of 8' and a length of 14', with a tangent-to-tangent length of 12'. The tanks construction material is Type 347 SS.</p> <p>Secondary Containment: The tanks are located in a cell constructed of reinforced concrete, with the floor and lower 1' of the wall lined with SS. A 6-inch high barrier is located in front of the condensate collection cell door to prevent leakage to the access corridor. The cell has the dimensions of 46' x 21' x 35' 6". The liquid drains to either SU-WL-145 or SU-WL-146. Upon high alarm, the liquid in the sump is jetted as part of the PWL Collection System to VES-WL-133.</p> | | | |
| CAPACITY: | ~5,000 Gallons Each | | | |
| NOTES: | <p>Receives: Inputs are evaporator vapor condensate from VES-WL-131. Waste is pumped into the tank.</p> <p>Outputs: Waste is normally pumped to the LET&D facility.</p> | | | |

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|-------------------------|---|-----------------------|-------------------|----------------|
| UNIT NAME: | Process Condensate Collection Tank: VES-WL-163 | | BUILDING # | CPP-604 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, T01 | |
| DESCRIPTION: | <p>Size: This tank is cylindrical and vertical-oriented with domed ends. The dimensions of the tank are an outside diameter of 8' and a length of 14', with a tangent-to-tangent length of 12'. The tank construction material is Type 304L SS.</p> <p>Secondary Containment: The tank is located in a cell constructed of reinforced concrete, with the floor and lower 1' of the wall lined with SS. A 6-inch high barrier is located in front of the condensate collection cell door to prevent leakage to the access corridor. The vault has the dimension of 46' x 21' x 35' 6". The liquid drains to either SU-WL-145 or SU-WL-146. Upon high alarm, the liquid in the sump is jetted as part of the PWL Collection System to VES-WL-133.</p> | | | |
| CAPACITY: | 5,000 Gallons | | | |
| NOTES: | <p>Receives: Input is evaporator vapor condensate from VES-WL-131. Waste is pumped into the tank.</p> <p>Outputs: Waste is normally pumped to the LET&D Facility.</p> | | | |

IV.A.2.1. The following components are integral equipment to the PEWE Distillation Systems. Failure of one of these components will result in the shut down of the associated PEWE distillation unit. These components may contain *de minimus* volumes of waste during operations and shut down.

EVAPORATOR UNIT (EVAP-WL-129)

VES-WL-130 Mist Eliminator
 HE-WL-307 Evaporator Reboiler
 HE-WL-308 Evaporator Condenser

EVAPORATOR UNIT (EVAP-WL-161)

VES-WL-162 Evaporator Separator
 HE-WL-300 Evaporator Reboiler
 HE-WL-301 Evaporator Condenser

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IV.A.3. Liquid Effluent Treatment and Disposal Tanks (LET&D)

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|-------------------------|---|----------------------|-------------------|-----------------|
| UNIT NAME: | Acid Fractionator Waste Feed Head Tank: VES-WLK-197 | | BUILDING # | CPP-1618 |
| NUMBER OF UNITS: | 1 | PROCESS CODE: | S02 | |
| DESCRIPTION: | <p>Size: The tank is cylindrical and horizontal-oriented with domed ends. The dimensions of the tank are an outside diameter of 3' and a length of 5' 6", with a tangent-to-tangent length of 4'. The tank construction material is Type 304L SS.</p> <p>Secondary Containment: The tank is located in the top of CPP-1618, above the Fractionator Cell 1 containment. The tank is located in a vault made of steel-reinforced concrete, with the floors and lower 3' of the walls lined with SS. The floor dimensions of the vault are 17' x 14' 6". The cell drains to a SS lined sump located slightly northeast of the center of the cell. Liquid in the sump is jetted to VES-WL-195 or VES-WL-133. Upon high-high alarm, the feed inlet valve and pump are automatically shut down.</p> | | | |
| CAPACITY: | ~270 Gallons | | | |
| NOTES: | <p>Receives: Inputs come from VES-WL-106, 107, and 163. Waste is pumped into the tank.</p> <p>Outputs: The waste is gravity fed to either Acid Fractionator FRAC-WLL-170 or FRAC-WLK-171.</p> | | | |

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|-------------------------|---|-----------------------|-------------------|-----------------|
| UNIT NAME: | Acid Fractionator: FRAC-WLL-170 | | BUILDING # | CPP-1618 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | S02, X99 | |
| DESCRIPTION: | <p>Size: The two acid fractionators are identical thermal siphon units, with an inside diameter of 42" and a height of approximately 28' 6" (24' from tangent to tangent). Both units consist of vertical-oriented, cylindrical tanks, with domed ends. Hastelloy G-30 is used for equipment and piping.</p> <p>Secondary Containment: Acid Fractionator Cell 2 is 17' long and 14' 6" wide. The cell is constructed of steel-reinforced concrete with a stainless-steel liner that is 3' high. The cell has a door in the east wall. In front of the door is a step measuring 3' 10" by 3' 10" by 4". The floor is sloped toward a sump, which is located slightly to the northeast of the center of the cell.</p> | | | |
| CAPACITY: | ~460 Gallons | | | |
| NOTES: | <p>Receives: Waste is gravity-fed from VES-WLK-197.</p> <p>Outputs: Overheads pass through air pollution control equipment and are transferred out the INTEC Main Stack. Bottoms are collected in VES-WLL-195.</p> | | | |

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| UNIT NAME: | Acid Fractionator: FRAC-WLK-171 | | BUILDING # | CPP-1618 |
| NUMBER OF UNITS: | 1 | PROCESS CODES: | | S02, X99 |
| DESCRIPTION: | <p>Size: The two acid fractionators are identical thermal siphon units, with an inside diameter of 42" and a height of approximately 28' 6" (24' from tangent to tangent). Both units consist of vertical-oriented, cylindrical tanks, with domed ends. Hastelloy G-30 is used for equipment and piping.</p> <p>Secondary Containment: Acid Fractionator Cell 1 is 17' long and 14' 6" wide. The cell is constructed of steel-reinforced concrete with a stainless-steel liner that is 3' high. The cell has a door in the west wall. The floor is sloped toward a sump, which is located in the cell.</p> | | | |
| CAPACITY: | ~460 Gallons | | | |
| NOTES: | <p>Receives: Waste is gravity-fed from VES-WLK-197.</p> <p>Outputs: Overheads pass through air pollution control equipment and are transferred out the INTEC Main Stack. Bottoms are collected in VES-WLL-195.</p> | | | |

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|-------------------------|--|----------------------|-------------------|-----------------|
| UNIT NAME: | Acid Fractionator Bottoms Tank: VES-WLL-195 | | BUILDING # | CPP-1618 |
| NUMBER OF UNITS: | 1 | PROCESS CODE: | | S02 |
| DESCRIPTION: | <p>Size: The tank is a cylindrical and horizontal-oriented tank with domed ends. The dimensions of the tank are an inner diameter of 3' and a length of 5' 9", with a tangent-to-tangent length of 4'. The tank construction material is Type 304L SS.</p> <p>Secondary Containment: The tank is located in a pit in Acid Fractionator Cell 2 of CPP-1618, constructed of steel-reinforced concrete with a SS liner. The pit has the dimensions of 7' 10" x 6' 9" x 6'. Upon high alarm, the operator is notified of a potential overflow condition and the need to transfer the waste. The secondary containment can contain 100% of the volume of VES-WLL-195.</p> | | | |
| CAPACITY: | ~270 Gallons | | | |
| NOTES: | <p>Receives: Inputs are the fractionator bottoms, from either VES-WLL-170 or VES-WLK-171. Waste is gravity fed into the tank.</p> <p>Outputs: The waste is pumped to VES-WL-133, VES-WL-101/111, VES-NCR-171, or the TFF.</p> | | | |

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| UNIT NAME: | Acid Recycle Tank: VES-NCR-171 | BUILDING # | CPP-659 Annex |
| NUMBER OF UNITS: | 1 | PROCESS CODE: | S02 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and horizontal-oriented. The dimensions of the tank are an outside diameter of 11' and a length of 33' 8". The tank construction material is Type 304 SS.</p> <p>Secondary Containment: The tank is located in a vault constructed of reinforced concrete with the floor and lower 4' 8" lined with Type 304L SS. The vault has the floor dimensions of 17' 4" x 41' 3", with a minimum containment volume of 24,676 gallons. The cell drains to a gutter on the south side of the vault, which drains to the southeast into a sump unit. Upon high level alarm, liquid in the sump is jetted to VES-NCR-171.</p> | | |
| CAPACITY: | ~22,500 Gallons | | |
| NOTES: | <p>Receives: Inputs come from the fractionator bottoms tank, VES-WLL-195. Waste is pumped into the tank.</p> <p>Outputs: Waste is airlifted to VES-NCR-173 and distributed into a common header for use elsewhere at the INTEC.</p> | | |

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| UNIT NAME: | Nitric Acid Head Tank: VES-NCR-173 | BUILDING # | CPP-659 Annex |
| NUMBER OF UNITS: | 1 | PROCESS CODE: | S02 |
| DESCRIPTION: | <p>Size: The tank is cylindrical and vertical-oriented. The dimensions of the tank are a diameter of 2' and a length of 4' 8". The tank construction material is Type 304L SS.</p> <p>Secondary Containment: The tank is located in the Acid Recycle Tank Vault, constructed of reinforced concrete with the floor and lower 4' 8" of the walls lined with Type 304L SS. The vault has the floor dimensions of 17' 4" x 41' 3", with a minimum containment volume of 24,676 gallons. The cell drains to a gutter on the south side of the vault, which drains to the southeast into a sump unit. Upon high level alarm, the liquid in the sump is jetted to VES-NCR-171.</p> | | |
| CAPACITY: | ~90 Gallons | | |
| NOTES: | <p>Receives: Inputs come from VES-NCR-171. Waste is airlifted into the tank.</p> <p>Outputs: The waste is gravity fed to a common header that can be routed for reuse throughout the INTEC.</p> | | |

IV.A.3.1. The following components make up the LET&D Treatment Unit. Failure of one component will result in the shut down of the associated LET&D Distillation Unit. These components may contain waste during operation shut downs.

ACID FRACTIONATOR (FRAC-WLL-170)

- HE-WLL-391 Heat Exchanger
- HE-WLL-396 Condenser
- HE-WLL-398 Reboiler
- VES-WLL-198 Liquid Separator
- HE-WLL-394 Superheater

ACID FRACTIONATOR (FRAC-WLK-171)

- HE-WLK-392 Heat Exchanger
- HE-WLK-397 Condenser
- HE-WLK-399 Reboiler
- VES-WLK-198 Liquid Separator
- HE-WLK-395 Superheater

IV.A.4. EVAPORATOR TANK SYSTEM (ETS)

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|------------------------|--|---------------------|---------|
| UNIT NAME: | Blend Tank VES-NCC-101 | BUILDING NO. | CPP-659 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02/T01 |
| DESCRIPTION: | <p>Size: The tank has an approximate diameter of 9 ft 6 in. and a height of 13 ft. It is a vertical, cylindrical tank with domed ends. It is constructed of Nitronic 50 stainless steel.</p> <p>Secondary Containment: Located in a concrete cell – 32' 4" x 24'. The floor and lower 3' of the walls are lined with stainless steel. The floor slopes to a drain. An alarm sounds when liquid is detected. The floor is drained to VES-NCC-119.</p> | | |
| CAPACITY | ~5,870 Gallons | | |
| NOTES: | <p>Receives: Inputs normally come from VES-NCC-102, VES-NCC-103, VES-NCC-119, VES-NCC-122, VES-NCD-123, VES-NCD-129, PEWE, and the TFF. May also receive liquid from VES-SRC-131, since transfers from VES-SCR-131 may occur to this tank, if necessary.</p> <p>Output: The waste is jetted to VES-NCC-102, VES-NCC-103, VES-NCC-119, PEWE, or back to the TFF and is airlifted to VES-NCC-152. May also be airlifted to VES-NCC-102 or VES-NCC-103.</p> | | |

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|------------------------|--|---------------------|---------|
| UNIT NAME: | Hold Tanks VES-NCC-102 and VES-NCC-103 | BUILDING NO. | CPP-659 |
| NUMBER OF UNITS | 2 | PROCESS CODE | S02/T01 |
| DESCRIPTION: | <p>Size: The tanks have an approximate diameter of 8' and a height of 12'. These vertical cylindrical tanks are equipped with domed ends. They are constructed of Nitronic 50 stainless steel.</p> <p>Secondary Containment: Located in a concrete cell 32' 4" x 24'. The floor and lower 3' of the walls are lined with stainless steel. The floor slopes to a drain. An alarm sounds when liquid is detected. Floor is drained to VES-NCC-119.</p> | | |
| CAPACITY | ~4,000 Gallons Each | | |
| NOTES: | <p>Receives: Input is normally from VES-NCC-101, VES-NCC-102, VES-NCC-103, VES-NCC-119, VES-NCC-122, VES-NCD-123, VES-NCD-129, PEWE, and the TFF. May also receive liquid from VES-SRC-131, since transfers from VES-SRC-131 may occur to this tank, if necessary.</p> <p>Output: The waste is jetted to VES-NCC-101, VES-NCC-102, VES-NCC-103, VES-NCC-119, PEWE, back to the TFF, or pumped to VES-SRC-131.</p> | | |

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|------------------------|--|---------------------|---------|
| UNIT NAME: | Constant Head Feed Tank VES-NCC-152 | BUILDING NO. | CPP-659 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02 |
| DESCRIPTION: | <p>Size: The tank has an approximate diameter of a 2' and a length of 9'. The tank is horizontally oriented, cylindrical and has domed ends. It is constructed of Nitronic 50 stainless steel.</p> <p>Secondary Containment: Located in a concrete cell 32' 4" x 24'. The floor and lower 3' of the walls are lined with stainless steel. The floor slopes to a drain. An alarm sounds when liquid is detected. Floor is drained to VES-NCC-119.</p> | | |
| CAPACITY | ~200 Gallons | | |
| NOTES: | <p>Receives: The waste is airlifted to VES-NCC-152 from VES-NCC-101.</p> <p>Output: The waste is gravity fed to the EVAP-NCC-150 or overflows back to VES-NCC-101.</p> | | |

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|------------------------|---|---------------------|----------------|
| UNIT NAME: | Evaporator Flash Column VES-NCC-150 | BUILDING NO. | CPP-659 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02/X99 |
| Description: | <p>Size: The column tank has an approximate diameter of 5' 6" and a height of 21' 6" from bottom to the top 14" flange. This tank is vertical and cylindrical with domed ends. It is constructed of G-30 Hastelloy stainless steel.</p> <p>Secondary Containment: Located in a concrete cell 32' 4" x 24'. The floor and lower 3' of the walls are lined with stainless steel. The floor slopes to a drain. An alarm sounds when liquid is detected. Floor is drained to VES-NCC-119.</p> | | |
| Capacity | ~2,600 Gallons | | |
| Notes: | <p>Receives: Waste is airlifted to VES-NCC-152 and then gravity fed to VES-NCC-150.</p> <p>Output: The overheads are transferred to VES-NCC-122. The bottoms are transferred to VES-NCC-119 or VES-NCC-101.</p> | | |

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|------------------------|---|---------------------|----------------|
| UNIT NAME: | Fluoride Hot Sump Tank VES-NCC-119 | BUILDING NO. | CPP-659 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02/T01 |
| Description: | <p>Size: The tank is a horizontal, cylindrical tank with domed ends. It has an approximate diameter of 9' and length of 16'. It is constructed of Nitronic 50 stainless steel.</p> <p>Secondary Containment: Located in a concrete cell – 24' 2" x 24' 6" x 17' 6". The floor and walls are lined with stainless steel. This area is also connected to an adjacent valve access room 19' 6" by 11' 10". The floor and lower 3' of the wall is lined with stainless-steel. The floor is sloped to a sump that can be jetted to VES-NCC-119. The sump is equipped with a liquid level indicator and an alarm.</p> | | |
| Capacity | ~6,500 Gallons | | |
| Notes: | <p>Receives: Normally receives wastes from floor drains, VES-NCC-150, VES-NCC-101, VES-NCC-102, VES-NCC-103, and VES-NCC-108.</p> <p>Output: The waste can be jetted or pumped to the evaporator feed system, the PEWE, or TFF.</p> | | |

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|------------------------|---|---------------------|----------------|
| UNIT NAME: | Non-fluoride Hot Sump Tank VES-NCC-122 | BUILDING NO. | CPP-659 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02/T01 |
| Description: | <p>Size: The tank is a horizontal cylindrical tank with domed ends. It has an approximate diameter of 7' 6" and a length of 14'. It is constructed of Nitronic 50 stainless steel.</p> <p>Secondary Containment: Located in a concrete cell 24' 2" x 24' 6" x 17' 6". The floor and walls are lined with stainless steel. This area is also connected to an adjacent valve access room – 19' 6" by 11' 10". The floor and lower 3' of the wall is lined with stainless steel. The floor is sloped to a sump that can be jetted to VES-NCC-119. The sump is equipped with a liquid level indicator and an alarm.</p> | | |
| Capacity | ~4,300 Gallons | | |
| Notes: | <p>Receives: Normally receives wastes from floor drains, HE-NCC-351, VES-NCD-122, and VES-NCD-129.</p> <p>Output: The waste can be jetted to the evaporator feed system, the PEWE, VES-NCC-119, or TFF.</p> | | |

| | | | |
|------------------------|--|---------------------|----------------|
| UNIT NAME: | Scrub Hold Tank VES-NCC-108 | BUILDING NO. | CPP-659 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02/T01 |
| Description: | <p>Size: The tank is a horizontal, cylindrical tank with domed ends, an approximate diameter of 5' and a length of 12'.</p> <p>Secondary Containment: Located in a concrete cell – 33' 4" x 16' 3". The floor and lower 3' of the walls are lined with stainless steel. A sloped, 1"-deep gutter runs along the length of the east wall. The floor drain line is equipped with a liquid level indicator and an alarm. Containment of solution is provided by the floor drain, which directs solution to VES-NCC-119.</p> | | |
| Capacity | ~2,000 Gallons | | |
| Notes: | <p>Receives: Condensed liquid from the equipment vent system.</p> <p>Output: The waste can be jetted to VES-NCC-119.</p> | | |

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|------------------------|---|---------------------|----------------|
| UNIT NAME: | Mist Collector VES-NCC-116 | BUILDING NO. | CPP-659 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02 |
| Description: | <p>Size: The tank is vertical and cylindrical with domed ends, an approximate diameter of 3' 6" and a height of 7' 6". It is designed to remove any liquid from the process and vessel offgas mixture entering the vessel. It is constructed of Type 304 stainless steel</p> <p>Secondary Containment: Located in a concrete cell – 26' 6" x 31' 6". The floor and lower 3' of the walls are lined with stainless steel. The floor has a sump with leak detection. Upon high level alarm, the collected liquid is drained to VES-NCC-122.</p> | | |
| Capacity | ~500 Gallons | | |
| Notes: | <p>Receives: Vapor from the evaporator POG before the off-gas is released to APS.</p> <p>Output: The waste is gravity fed to VES-NCC-119.</p> | | |

| | | | |
|------------------------|---|---------------------|----------------|
| UNIT NAME: | Vent Condenser Knockout Drum VES-NCC-136 | BUILDING NO. | CPP-659 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02 |
| Description: | <p>Size: The tank is a vertical, cylindrical vessel with domed ends, an approximate diameter of 16" and a height of 6'. It is constructed of Type 304 stainless steel.</p> <p>Secondary Containment: Located in a concrete cell – 26' 6" x 31' 6". The floor and lower 3' of the walls are lined with stainless steel. The floor has a sump with leak detection. Upon high level alarm, the collected liquid is drained to VES-NCC-122.</p> | | |
| Capacity | ~60 Gallons | | |
| Notes: | <p>Receives: Vapor from the evaporator POG before the off-gas is released to the APS.</p> <p>Output: The waste is gravity fed to VES-NCC-108.</p> | | |

IV.A.5 The following component is integral equipment to the ETS distillation system. Failure of this component will result in the shut down of the ETS distillation unit. This component may contain de minimus volumes of waste during operations and shut down.

EVAPORATOR UNIT (EVAP-NCC-150)

HE-NCC-351 Condenser

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IV.A.6. INTEGRATED WASTE TREATMENT UNIT (IWTU)

| | | | |
|------------------------|--|---------------------|-----------------|
| UNIT NAME: | Waste Feed Tank, VES-SRC-131 | BUILDING NO. | CPP-1696 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02/T01 |
| DESCRIPTION: | <p>Size: The feed tank is a vertical, cylindrical vessel with domed ends, with an approximate diameter of 7' and 8' 9" in height. It is constructed of Type 304L stainless steel.</p> <p>Secondary Containment: Located in a shielded cell – 37' 2" x 34' 5". The floor and lower 2' of the walls are lined with stainless steel. The floor has a sump (1'6" x 1'6" x 1'6") with leak detection. Upon high level alarm, the collected liquid is jetted to VES-NCC-101, VES-NCC-102, or VES-NCC-103. The sump may be jetted back to VES-SRC-131 if this vessel is not the source of the liquid.</p> | | |
| CAPACITY | ~2,170 Gallons | | |
| NOTES: | <p>Receives: Liquid waste from the NWCF Hold Tanks, VES-NCC-102 and -103 and CPP-1696 sumps</p> <p>Outputs: The waste is normally pumped to the DMR. It can also be pumped to VES-NCC-101, VES-NCC-102, or VES-NCC-103.</p> | | |

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|------------------------|---|---------------------|-----------------|
| UNIT NAME: | Product Receiver/Coolers VES-SRC-190 and -191 | BUILDING NO. | CPP-1696 |
| NUMBER OF UNITS | 2 | PROCESS CODE | S02 |
| DESCRIPTION: | <p>Size: The two Product Receiver/Cooler tanks are identical vertical, cylindrical vessels with domed tops and cone-shaped bottoms. They are approximately 4' in diameter and 7' 9" in height. They are constructed of Type 316H stainless steel.</p> <p>Secondary Containment: Located in shielded cells – 17' 6" x 23' 8". The floor and lower 1' of the walls are lined with stainless steel. The floor has a sump (1' x 1' x 1') with leak detection. Upon high level alarm, the collected liquid is pumped to VES-SRC-131.</p> | | |
| CAPACITY | ~512 Gallons Each | | |
| NOTES: | <p>Receives: Primarily receives sodium carbonate based granular solid treatment product from the DMR. Also, receives fines from the Process Filter, Offgas Filter, Product Receiver Filter, and Vacuum Filter.</p> <p>Outputs: The IWTU treatment product is gravity loaded into canisters for storage and transport for ultimate disposal.</p> | | |

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|------------------------|---|---------------------|-----------------|
| UNIT NAME: | Firewater Collection Tank TK-SRE-196 | BUILDING NO. | CPP-1696 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02 |
| DESCRIPTION: | <p>Size: The Firewater Collection Tank is a horizontal, cylindrical vessel with domed ends. It is approximately 32' long and 9' in diameter.</p> <p>Secondary Containment: The Firewater Collection Tank is a double shelled tank that is directly buried in the soil. The tank is equipped with leak detection and the ability to remove liquid from the annulus to appropriate containers. Any liquids collected in the tank will be removed via an external portable pump.</p> | | |
| CAPACITY | ~15,000 Gallons | | |
| NOTES: | <p>Receives: During a fire incident, this tank will collect firewater from the Process and Building HEPA Filters and the Mercury Adsorbers.</p> <p>Output: If removal of firewater from this tank is necessary, a portable pump will be used to empty the contents.</p> | | |

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|------------------------|---|---------------------|-----------------|
| UNIT NAME: | Condensate Collection Tank TK-SRH-141 | BUILDING NO. | CPP-1696 |
| NUMBER OF UNITS | 1 | PROCESS CODE | S02 |
| DESCRIPTION: | <p>Size: The Condensate Collection Tank is a horizontal, double walled, rectangular vessel. It's dimensions are approximately 4' x 2' x 2'.</p> <p>Secondary Containment: Double walled tank with leak detection. Any collected liquid is removed and placed in appropriate containers.</p> | | |
| CAPACITY | ~120 Gallons | | |
| NOTES: | <p>Receives: Condensate from the off-gas system including the IWTU stack.</p> <p>Output: Pumped to the VES-SRC-131.</p> | | |

IV.A.6.1. The following components are integral to the Integrated Waste Treatment Unit. Failure of one of these components will result in the shut down of the associated IWTU. These components may contain waste during operation and/or shut downs.

| | |
|-------------------|---|
| P-SRC-231 | Waste Feed Pump |
| VES-SRC-140 | Denitration and Mineralization Reformer |
| F-SRC-153 | Process Gas Filter |
| VES-SRC-160 | Carbon Reduction Reformer |
| COL-SRC-160 | Offgas Cooler |
| F-SRC-160 | Offgas Filter |
| F-SRH-140-A/B/C/D | Process HEPA Pre-filters and Process HEPA Filters |
| F-SRH-141A/B | Mercury Adsorbers |
| VES-SRC-190/191 | Product Receiver Coolers |
| F-SRC-191 | Product Receiver Filter |
| VES-SRC-180 | Product Receiver Filter Product Pump |
| F-SRC-190 | Product Handling Vacuum Filter |

IV.B. PERMITTED AND PROHIBITED WASTES IN THE INTEC LIQUID WASTE MANAGEMENT SYSTEM UNITS

IV.B.1. Storage of mixed wastes in tanks is authorized in the tanks identified in Permit Condition IV.A. of this Permit.

IV.B.2. Discharge of hazardous only waste, including de minimus volumes, to the ILWMS is not authorized.

IV.B.3. The Permittee may store the mixed waste identified in the Part A of Attachment 1 of this Permit, in the tanks identified in Permit IV.A., as modified below:

IV.B.3.a. If a prohibited waste [see Attachment 2, Section C-2a(1)] is identified in the ILWMS the following shall occur:

IV.B.3.a.1. The affected tanks and process lines shall be isolated from the remainder of the ILWMS until such time as the Director approves the completed remedial measures.

IV.B.3.a.2. A notification will be sent to DEQ within seven (7) days, in accordance with Permit Condition I.Y., and shall include at least the following information:

- A list of the affected tanks and process lines isolated;
- A description of the prohibited waste including volume and potential hazards;
- Proposed measures necessary to neutralize or remove the prohibited waste;
- Proposed schedule to remediate the affected tanks; and
- Proposed measures to prevent recurrences.

- IV.B.3.b. The Director shall approve all remedial measures prior to implementation.
- IV.B.3.c. The affected tanks and ancillary equipment shall remain isolated until such time as the Director approves the completed remedial measures.

IV.C. SECONDARY CONTAINMENT AND CONTAINMENT SYSTEM SUMPS

- IV.C.1. The Permittee shall operate and maintain Secondary Containment Systems that are capable of detecting and collecting releases, and which prevent any migration of waste or accumulated liquid out of the system to the soil, ground water, or surface water during use of the tank systems, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.193] and Attachment 1 of this Permit.
- IV.C.2. Secondary Containment Systems, materials of construction, and design calculations are located in Attachment 1 [D-2f(1)(b) and B-1] of the Permit.
- IV.C.3. The following requirements apply to all ILWMS tank containment sumps:
 - IV.C.3.a. The liquid level in all tank sumps shall be monitored and recorded daily;
 - IV.C.3.b. The Permittee shall note in the Operating Record any rise in the sump level during waste management operations.
 - IV.C.3.c. If the liquid level in a sump exceeds the high/high setpoint or overflows the sump, the Permittee shall immediately comply with the requirements of IDAPA 58.01.05.008 [40 CFR § 264.196].
- IV.C.4. The following requirements apply to ILWMS ancillary equipment (valve-box) containment sumps:
 - IV.C.4.a. Ancillary equipment sumps shall be checked for free liquids prior to initiating waste transfers. The presence of liquids shall be noted in the Facility Operating Record.
 - IV.C.4.b. The Permittee shall note in the Operating Record any rise in the sump level during waste management operations.
 - IV.C.4.c. If liquid levels overtop a sump during waste transfer operations, the Permittee shall immediately discontinue the waste transfer operation and take the necessary response actions, in accordance with Permit Condition IV.C.6. and IDAPA 58.01.05.008 [40 CFR § 264.196].
 - IV.C.4.d. If the liquid level in a sump increases during waste transfer operations but do not overtop the containment sump, the waste transfer may continue. Upon completion of the waste transfer, the Permittee shall comply with Permit Condition IV.C.6. and IDAPA 58.01.05.008 [40 CFR § 264.196(b)].

- IV.C.5. In addition to the requirements of Permit Condition IV.C.3., the following requirements apply to VES-NCC-119 only:
- IV.C.5.a. Detection of liquids in the VES-NCC-119 sump shall be reported in accordance with Permit Condition I.T.
- IV.C.5.b. The operator shall determine if the source of sump liquids is a leak in VES-NCC-119
- IV.C.5.b.i. If the source of liquids is determined to be non-waste (e.g., steam leak, pump priming water, etc) then operations of VES-NCC-119 may continue provided the level of liquids remains below the action levels set in Permit Condition IV.C.3;
- IV.C.5.b.ii. If the source of liquids either is a leak in VES-NCC-119 or can not be determined, the Permittee shall respond in accordance with IDAPA 58.01.05.008 [40 CFR §264.196]. This includes closing the secondary containment sump drain lines that empty to VES-NCC-119.
- IV.C.6. The Permittee shall immediately remove a tank system from service if there is a leak or spill from the tank system Secondary Containment, or if the system or Secondary Containment are unfit for use, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.196]. The Permittee shall then:
- IV.C.6.a. Immediately stop the flow of hazardous waste into the tank system or Secondary Containment System and inspect the system to determine the cause of the release, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.196(a)] and Attachment 1 and 7 [D-2f(1)(b) and G-4] of this Permit.
- IV.C.6.b. Within 24 hours, remove as much of the waste as is necessary to prevent further releases of hazardous waste and to allow inspection and repair of the tank system, including the Secondary Containment System, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.196(a) and (b)], and Attachment 1 (D-2f(1)(b)) of this Permit.
- IV.C.6.b.1. If, after pumpable waste is removed from a sump, liquids continue to be detected, the facility shall:
- Notify DEQ of the sump involved, volume of liquid, and proposed path forward within seven (7) days; and
 - The Permittee shall initiate corrective measures to remove liquids from the sump within seven (7) days of notifying DEQ. Removal by evaporation of non-pumpable (using existing steam jets) volumes of liquid is authorized.
- IV.C.6.c. Follow the verbal and written reporting requirements for any release to the environment, in accordance with Permit Condition I.T. of this Permit.

- IV.C.6.d. The Permittee shall follow Permit Conditions IV.C.6.b and IV.C.6.c of this Permit for de minimis spills into the secondary containment system from normal treatment processes (i.e., transfers into and out of tanks, condensate drippage, etc.).
- IV.C.7. The Permittee shall isolate and close any unfit portion of the ILWMS System, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.197], Permit Condition II.K., and Attachments 8 and 8A of this Permit unless he satisfies the following requirements:
- IV.C.7.a. For a release caused by a spill that has not damaged the integrity of the system, the Permittee shall remove the released waste and make any necessary repairs before returning the tank system to service, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.196(e)(2)].
- IV.C.7.b. For a release caused by a leak from a primary tank system to a Secondary Containment System, the Permittee shall repair the tank system prior to returning it to service, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.196(e)(3)].
- IV.C.7.c. If the Permittee replaces a component of the tank system to eliminate the leak, that component must satisfy the requirements for new tank systems or components in IDAPA 58.01.05.008 [40 CFR §§ 264.192 and 264.193].
- IV.C.8. If the Permittee has repaired a tank system, in accordance with Permit Condition III.C.7. of this Permit, and the repair has been extensive (e.g., installation of an internal liner, repair of a ruptured primary containment or Secondary Containment vessel), the tank system must not be returned to service until the Permittee obtains a certification by an independent, qualified, registered, professional engineer that the repaired system is capable of handling hazardous waste without release for the intended life of the system. The certification shall be submitted to the Director within seven (7) days after returning the tank system to use, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.196(f)], Permit Condition I.W., and retained in accordance with Permit Conditions I.Z. and II.J., and Attachment 4 [F-2b(2)(a)] of this Permit.
- IV.D. TANK SYSTEM OPERATING CONDITIONS
- IV.D.1. The Permittee shall not place waste or treatment reagents in a tank system if they could cause the tank, ancillary equipment, or containment system to rupture, leak, corrode, or otherwise fail, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.194(a)] and Attachments 1, 2, and 6 of this Permit.
- IV.D.2. The Permittee shall use appropriate controls and practices to prevent spills and overflows from the tank or containment systems, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.194(b)(1)(2)] and the following Table:

INTEC LIQUID WASTE MANAGEMENT SYSTEM

TANK DIMENSIONS, HIGH ALARM SETPOINTS, AND OVERFLOW

| TANK | APPROXIMATE OUTSIDE DIMENSIONS | HIGH ALARM SETPOINT NOT TO EXCEED¹ | OVERFLOW (IF ALARMS IGNORED) |
|-------------|---|--|--|
| VES-WL-132 | 11' 0" × 9' 0" | 9" water column (wc) (4,230 Gallons) | Designed to Overflow to VES-WL-133 |
| VES-WL-133 | 10' 0" × 34' 0" | 109" wc ⁴ (18,000 gallons) | Overflows to the Vault Sump, Which is Equipped with Leak Detection |
| VES-WL-102 | 10' 0" × 33' 0" | 104" wc ⁴ (17,000 gallons) | Overflows to VES-WL-101 |
| VES-WL-108 | 5' 8" × 2' 0" ² | NA | Designed to Overflow to VES-WL-131 or VES-WL-133 |
| VES-WL-109 | 7' 2" × 3' 0" ² | NA | Designed to Overflow to VES-WL-133 or VES-WL-102 |
| EVAP-WL-129 | 19' 6" × 3' 0" | 75" wc ⁴ (750 gallons) | Overflows to VES-WL-131 or VES-WL-134 |
| EVAP-WL-161 | 19' 6" × 3' 0" | 75" wc ⁴ (750 gallons) | Overflows to VES-WL-131 |
| VES-WL-131 | 2' 0" × 2' 10" | 18" wc ³ (59 gallons) | Overflows to VES-WL-161, VES-WL-129, VES-WL-106, VES-WL-107, VES-WL-163, or VES-WL-134 |

| INTEC LIQUID WASTE MANAGEMENT SYSTEM | | | |
|--|---|--|--|
| TANK DIMENSIONS, HIGH ALARM SETPOINTS, AND OVERFLOW | | | |
| TANK | APPROXIMATE OUTSIDE DIMENSIONS | HIGH ALARM SETPOINT NOT TO EXCEED¹ | OVERFLOW (IF ALARMS IGNORED) |
| VES-WL-134 | 8' 9" × 3' 6" | 90" wc (450 gallons) | Overflows to VES-WL-129, VES-WL-161, VES-WL-131, VES-WL-106, VES-WL-107, or VES-WL-163 |
| VES-WL-101 | 10' 0" × 33' 0" | 104" wc ⁴ (E), 123" wc (P) (17,000 gallons) | Overflows to VES-WL-102 |
| VES-WL-111 | 3' 6" × 4' 8" × 12' 0" | 34" wc ⁴ (1,275 gallons) | Overflows to VES-WL-101, VES-WL-102, or VES-WL-133 |
| VES-WL-106 | 14' 0" × 8' 0" | 130" wc ³ (4,250 gallons) | Overflows to VES-WL-107, VES-WL-163, VES-WL-131, VES-WL-129, VES-WL-161, or VES-WL-134 |
| VES-WL-107 | 14' 0" × 8' 0" | 130" wc ³ (4,250 gallons) | Overflows to VES-WL-106, VES-WL-163, VES-WL-131, VES-WL-129, VES-WL-161, or VES-WL-134 |
| VES-WL-163 | 14' 0" × 8' 0" | 130" wc ³ (4,250 gallons) | Overflows to VES-WL-106, VES-WL-107, VES-WL-131, VES-WL-129, VES-WL-161, or VES-WL-134 |
| VES-WM-100 | 10' 0" × 33' 0" | 100" wc ⁴ (16,950 gallons) | Administratively controlled to prevent overflow. |
| VES-WM-101 | 10' 0" × 33' 0" | 100" wc ⁴ (16,950 gallons) | Administratively controlled to prevent overflow. |
| VES-WM-102 | 10' 0" × 33' 0" | 94" wc ⁴ (E), 135" wc (P) (16,000 gallons) | Overflows to VES-WM-101 |

| INTEC LIQUID WASTE MANAGEMENT SYSTEM | | | |
|--|---|--|--|
| TANK DIMENSIONS, HIGH ALARM SETPOINTS, AND OVERFLOW | | | |
| TANK | APPROXIMATE OUTSIDE DIMENSIONS | HIGH ALARM SETPOINT NOT TO EXCEED¹ | OVERFLOW (IF ALARMS IGNORED) |
| VES-WL-135 | 10" × 1' 6" | 12" wc (10 gallons) | New Waste Calcining Facility Off-gas Line or the Vault Sump, Which is Equipped with Leak Detection |
| VES-WL-136 | 10" × 1' 6" | 12" wc (10 gallons) | New Waste Calcining Facility Off-Gas Line or the Vault Sump, Which is Equipped with Leak Detection |
| VES-WL-137 | 13" × 2' 0" | 18" wc (28 gallons) | Overflows to VES-OGF-132, VES-WL-104, or the Vault Sump, Which is Equipped with Leak Detection |
| VES-WL-138 | 13" × 2' 0" | 18" wc (28 gallons) | Overflows to the Vault Sump, Which is Equipped with Leak Detection |
| VES-WL-139 | 10" × 1' 6" | 12" wc (10 gallons) | Overflows to the Vault Sump, Which is Equipped with Leak Detection |
| VES-WL-142 | 10" × 1' 6" | 12" wc (10 gallons) | Overflows to the Vault Sump, Which is Equipped with Leak Detection |
| VES-WL-144 | 13" × 2' 0" | 18" wc (28 gallons) | Overflows to the Vault Sump, Which is Equipped with Leak Detection |
| VES-WL-150 | 2' 3" × 2' 0" | 31" wc ³ (48 gallons) | Overflows to the Vault Sump, Which is Equipped with Leak Detection |
| VES-WLK-197 | 3' 0" × 5' 6" | 28" wc ³ (225 gallons) | Overflows to VES-WLL-195 |
| FRAC-WLL-170 | 28' 6" × 3' 6" ² | 40" wc ^{3, 4} (325 gallons) | Overflows to VES-WLL-195 |

| INTEC LIQUID WASTE MANAGEMENT SYSTEM | | | |
|--|---|--|---|
| TANK DIMENSIONS, HIGH ALARM SETPOINTS, AND OVERFLOW | | | |
| TANK | APPROXIMATE OUTSIDE DIMENSIONS | HIGH ALARM SETPOINT NOT TO EXCEED¹ | OVERFLOW (IF ALARMS IGNORED) |
| FRAC-WLK-171 | 28' 6" x 3' 6" ² | 40" wc ^{3, 4} (325 gallons) | Overflows to VES-WLL-195 |
| VES-WLL-195 | 3' 0" x 5' 9" | 28" wc ⁴ (220 gallons) | Overflows to FRAC-WLL-170, FRAC-WLK-171, or the Vault Sump, Which is Equipped with Leak Detection |
| VES-NCR-171 | 11' 0" x 33' 8" | 109" wc ⁴ (21,300 gallons) | Overflows to the Vault Sump, Which is Equipped with Leak Detection |
| VES-NCR-173 | 4' 8" x 2' 0" | NA | Designed to Overflow to VES-NCR-171 |
| VES-NCC-101 | 9' 6" x 13' | 113" wc ^{3 and 4} (4910 gallons) | Overflows to VES-NCC-119 |
| VES-NCC-102 | 8' 1" x 12' | 111" wc ^{3 and 4} (3455 gallons) | Overflows to VES-NCC-119 |
| VES-NCC-103 | 8' 1" x 12' | 111" wc ^{3 and 4} (3455 gallons) | Overflows to VES-NCC-119 |
| VES-NCC-152 | 2' 1" x 9' 2" | N/A | Designed to Overflow to VES-NCC-101 |
| VES-NCC-150 | 5' 6" x 21' 6" | 158" wc ^{3 and 4} (2362 gallons) | Overflows to VES-NCC-122 |
| VES-NCC-119 | 9' 1" x 13' 6" | 84" wc ^{3 and 4} (5765 gallons) | Overflows to room 101 that has a sump with leak detection |
| VES-NCC-122 | 7' 6" x 14' | 78" wc ^{3 and 4} (4180 gallons) | Overflows to VES-NCC-119 |
| VES-NCC-108 | 5' x 14' | 36" wc ⁴ (1500 gallons) | Overflows to VES-NCC-119 |
| VES-NCC-116 | 3' 6" x 7' 6" | 12" wc (70 gallons) | Overflows to the offgas system |
| VES-NCC-136 | 1' 4" x 6' | 12 inches (17 gallons) | Overflows to the offgas system |
| VES-SRC-131 | 7' x 8' 9" | 95% of capacity ³ (2,050 gallons) | Overflows to the SU-SRC-190 sump, which is equipped with leak detection |

| INTEC LIQUID WASTE MANAGEMENT SYSTEM | | | |
|--|---|---|---|
| TANK DIMENSIONS, HIGH ALARM SETPOINTS, AND OVERFLOW | | | |
| TANK | APPROXIMATE OUTSIDE DIMENSIONS | HIGH ALARM SETPOINT NOT TO EXCEED¹ | OVERFLOW (IF ALARMS IGNORED) |
| TK-SRE-196 | 9' x 32' | 95% of capacity (14,250 gallons) | Overflows to the Building HEPA filter enclosure |
| VES-SRC-190, VES-SRC-191 | 4' x 7' 9" | 95% of capacity | Dry solids |
| TK-SRH-141 | 4' x 2' x 2' | ~50% of capacity (~60 gallons) and high-high alarm at 86% (103 gallons) | Overflows to vent inlet |

- 1 High alarm set points may be exceeded on a case-by-case basis (e.g., to allow tanks to be filled to capacity with water to provide shielding during periods of maintenance, or when tanks are designed to overflow to other tanks). When allowed, notations will be made in the Operating Record. In actual practice the high alarm setpoint will be set at or below the indicated value. Alarm set points for tanks with more than one instrument have a setpoint for both instruments listed. The new electronic, or DCS, instruments are designated as (E) and the older pneumatic-type instruments are designated as (P). Volume given is based on liquids with a specific gravity of 1.0; actual volume is calculated based on the measured specific gravity.
- 2 Height measured from the bottom of the lower connection to the top of the upper connection.
- 3 This is a high-high alarm setpoint.
- 4 Density compensated instrument. Density compensation is used to read true level that will not be affected by the solution density.

- IV.D.2.a. Any overflow events, except as authorized in IV.D.7., shall be recorded in the Facility Operating Record and included in either the Permit Condition I.T. or I.U. Report (as appropriate).
- IV.D.2.b. The tank operating procedures shall be reviewed and modified, as appropriate, to prevent recurrences of overflow situations.
- IV.D.3. Waste transfers are to be minimized to reduce the potential for releases to the environment.
- IV.D.4. Tank inventory records, including tank volume changes as a result of transfers, shall be maintained as part of the Operating Record, in accordance with Permit Condition II.J.
- IV.D.5. If the waste volume increase in the influent and the related decrease in the effluent tanks vary by more than (+)10 percent (10%) or (-)3 percent (3%), but there is no evidence of a release, then the circumstances must be reported in the Permit Condition I.U. Report. Out of specification transfers between tanks with significant capacity differences (i.e., where one tank is greater than three times the size of the other), that have no evidence of release, will be documented in the operating record but do not have to be included in this report.

- IV.D.6. If a release during transfer is suspected, based on inconsistent tank volumes, detection of liquids in the Secondary Containment System or other information, the requirements of Permit Condition I.T.1. shall be followed.
- IV.D.7. Completely filling a tank with water for shielding purposes during maintenance/manned entry shall be noted in the Facility Operating Record. No additional reporting is required unless the procedure overfills the tank, resulting in a discharge to the Secondary Containment System.
- IV.D.8. Transfers through lines equipped with carboys, or other containers, used as leak detection devices, must be monitored before, during (as appropriate), and immediately following transfers to ensure that the containers do not overflow, resulting in a spill or release to the environment. Such monitoring will be documented in the facility operating record. If liquids are detected in quantities that exhibit a potential for overflow, the transfer will be terminated.

IV.E. INSPECTION SCHEDULES AND PROCEDURES

- IV.E.1. The Permittee shall develop and maintain a schedule and procedures for inspecting the overfill controls, in accordance with IDAPA 58.01.05.008 [40 CFR § 264.195(a)] and Attachment 4 of this Permit.
- IV.E.2. The Permittee shall inspect the following, at least once each operating day, in accordance with Attachment 4 (F-2a and Appendices F-2 – F-7) of this Permit:
 - IV.E.2.a. Data gathered from monitoring and leak detection equipment and overfill controls to ensure that the tank system is being operated according to design; and
 - IV.E.2.b. The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the Secondary Containment System and ancillary equipment, to detect corrosion or signs of release of hazardous waste when performing equipment maintenance or repair inside a cell or vault.
- IV.E.3. The Permittee shall visually inspect tanks and ancillary equipment, located within radiological containment areas, daily whenever the cells are entered. The inspection protocols for the initial entrance inspection, and on-going daily inspections, may be established as part of the specific work permit.
- IV.E.4. The inspection protocols shall be placed in the Facility Operating Record.
- IV.E.5. The results of all inspections shall be documented in accordance with Permit Condition II.J.1.

IV.F. IGNITABLE OR REACTIVE WASTES

Ignitable or reactive waste shall not be placed in the tank systems unless the waste is treated, rendered, or mixed before or immediately after placement in the tank systems so that:

- IV.F.1. The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under IDAPA 58.01.05.005 [40 CFR §§ 261.21 or 261.23]; and
- IV.F.2. The requirements of IDAPA 58.01.05.008 [40 CFR § 264.17(b)] are satisfied.

IV.G. INCOMPATIBLE WASTE

The Permittee shall not place incompatible waste or materials that are incompatible in the same tank system, except in accordance with IDAPA 58.01.05.008 [40 CFR § 264.199(a)].

MODULE V - TREATMENT IN TANKS

V.A. **SOLIDS SETTLING, CHEMICAL ADDITION, WASTE BLENDING AND PH ADJUSTMENT**

V.A.1. Treatment by solids settling is authorized in VES-WL-132.

V.A.2. Chemical addition, waste blending, and pH adjustment are permitted treatment activities in the following tanks:

VES-WL-133, VES-WL-102, VES-WL-101, VES-WL-111, VES-WM-100, VES-WM-101, VES-WM-102, VES-WL-106, VES-WL-107, VES-WL-163, VES-NCC-101, VES-NCC-102, VES-NCC-103, VES-NCC-108, VES-NCC-119, VES-NCC-122, and VES-SRC-131.

V.A.3. Treatment failure shall be indicated by the following:

V.A.3.a. The inability to achieve the treatment objective of creating waste that is acceptable to the ILWMS according to the WAC; or

V.A.3.b. The treatment tank reaching operational capacity prior to completion of the pH adjustment or blending operation.

V.A.4. If a specific treatment method fails the following shall occur:

V.A.4.a. All treatment failures shall be reported in the Permit Condition I.U. Report.

V.A.4.b. If a second treatment is performed on the same batch and the waste still does not meet the WAC, then:

- DEQ shall be notified within 72 hours via telephone or facsimile;
- The waste shall be re-characterized, and DEQ shall be provided with the new proposed treatment plan for that batch; and
- The current treatment procedure shall be revised through a Permit Modification to prevent repeated failures.

V.A.4.c. If a treatment procedure fails a second time, but on a different batch than that which failed earlier, the failure shall not only be reported in the Permit Condition I.U. Report, but the treatment procedure shall also be analyzed to determine the cause of the failures and how to prevent further failures.

- V.A.4.d. If a treatment procedure fails three (3) times, it shall be reported in the Permit Condition I.U. Report and a new treatment method must be implemented through a Permit Modification in accordance with Permit Condition I.D.
- V.A.5. Treatment volumes for each tank shall be subject to the limits found on Page 3c and 3d of 6 in the Part A, found in Attachment 1 of this Permit.
- V.B. PERMITTED/PROHIBITED WASTE TO BE TREATED**
- V.B.1. Treatment of hazardous only (no radioactive waste component) waste is not authorized.
- V.B.2. The Permittee may pH adjust or blend the wastes identified in Permit Condition IV.B.3. of this Permit, except that blending or pH adjustment of wastes to comply with LDR is not authorized.
- V.B.3. Blending and/or pH adjustment is a pre-treatment process meant only to facilitate further treatment in the PEWE, LET&D, ETS, IWTU, or other INTEC Treatment Unit.
- V.B.4. Blending or pH adjustment to meet Land Disposal Restriction requirements is not authorized.
- V.B.5. The Permittee shall minimize waste and material transfers through the ILWMS process lines since transfers increase the potential for releases to the environment.
- V.B.6. Addition of acid to ensure radioactive components of the waste remain in solution to preclude the possibility of a criticality event, is not subject to regulation under this Permit except for the following:
 - V.B.6.a. The addition of materials to a tank shall not result in overfilling of the tank.
 - V.B.6.b. The Permittee shall ensure compliance with Permit Conditions IV.F. and IV.G. prior to initiating chemical addition procedures.
- V.C. RECORD KEEPING**
- V.C.1. The Permittee shall record the following information associated with each blending operation or pH adjustment:
 - V.C.1.a. Date and time of treatment;
 - V.C.1.b. Tank where treatment occurs;
 - V.C.1.c. Initial volume of waste in tank;

- V.C.1.d. Volume of waste added for blending or volume of acid/base added for pH adjustment;
- V.C.1.e. Cross references to any waste analyses, including field methods, performed on the tank contents or documentation of the process knowledge used to determine the need for treatment;
- V.C.1.f. Treatment failures as defined in Permit Condition V.A.3.; and
- V.C.1.g. Final volume and composition (parameters of concern and underlying hazardous constituents) of the waste after blending and/or pH adjustment.

MODULE VI - MISCELLANEOUS TREATMENT

VI.A. TREATMENT BY DISTILLATION, EVAPORATION, OR STEAM REFORMING

The Permittee may treat aqueous liquid waste in the following treatment units:

- VI.A.1. Process Equipment Waste Evaporators (PEWE).
 - VI.A.1.a. The PEWE consists of two (2) similarly designed thermo-siphon evaporators and associated ancillary equipment.
 - VI.A.1.b. A complete description of the PEWE is found in Attachment 1 of this Permit and summarized in Exhibit D-1 Attachment 1 of this Permit.
- VI.A.2. Liquid Effluent Treatment and Disposal Facility (LET&D).
 - VI.A.2.a. The LET&D consists of two (2) fractionation columns and associated ancillary equipment.
 - VI.A.2.b. A complete description of the LET&D is found in Attachment 1 of this Permit and summarized in Exhibit D-2 Attachment 1 of this Permit.
- VI.A.3. Evaporator Tank System (ETS)
 - VI.A.3.a. The ETS consists of a thermo-siphon evaporator and associated ancillary equipment.
 - VI.A.3.b. A complete description of the ETS is found in Attachment 1 of this Permit and summarized in Exhibit D-3 Attachment 1 of this Permit.
- VI.A.4. Integrated Waste Treatment Unit (IWTU)
 - VI.A.4.a. The IWTU consists of a two-stage steam reformer (Denitration Mineralization Reformer and the Carbon Reduction Reformer) and associated ancillary equipment.
 - VI.A.4.b. A complete description of the IWTU is found in Attachment 1 of this Permit.

VI.B. PERMITTED AND PROHIBITED WASTE

- VI.B.1. The PEWE may process the waste described in Permit Condition IV.B., subject to the following supplemental conditions:
 - VI.B.1.a. Waste containing greater than or equal to 260 mg/l Hg may not be processed in the PEWE;

- VI.B.1.b. Total organic carbon concentration in the feed shall be less than 800 parts per million;
- VI.B.1.c. If the feed contains ≥ 50 ppm but ≤ 150 ppm chlorides, the following equation applies:
$$[\text{No}_3] \text{ (in Molar)} \geq [\text{Cl}] \text{ (in ppm)} \times 0.006 + 0.1$$

This equation ensures that there are enough nitrates to passivate the stainless steel.
Waste containing greater than 150 ppm chlorides will not be processed in the PEWE.
- VI.B.1.d. The feed shall contain a minimum of a 1:1 mole ratio of aluminum to fluoride; and
- VI.B.1.e. Sulfate concentration shall be limited to less than, or equal to, 500 parts per million as fed.
- VI.B.2. The LET&D may process only PEWE overhead condensate waste containing the waste codes identified in Permit Condition IV.B, subject to the following supplemental conditions:
- VI.B.2.a. Waste containing greater than or equal to 260 mg per liter Hg may not be processed in the LET&D;
- VI.B.2.b. Waste subject to regulation under IDAPA 58.01.05.008 [40 CFR Part 264 Subpart AA] may not be processed in the LET&D unless the requirements of Permit Condition II.M are satisfied; and
- VI.B.2.c. The feed shall contain a minimum of a 1:1 mole ratio of aluminum to fluoride.
- VI.B.3. The ETS may process the waste described in Permit Condition IV.B., subject to the following supplemental conditions;
- VI.B.3.a. Waste containing greater than or equal to 3,000 ppm mercury will not be processed in the ETS;
- VI.B.3.b. The feed shall contain a minimum of a 1:1 mole ratio of aluminum to fluoride, if fluoride is present in the feed;
- VI.B.3.c. Maintain at least a 2:1 mole ratio of sodium to sulfate, as fed if the feed contains ≥ 500 ppm sulfate
- VI.B.3.d. Waste containing greater than 5,000 ppm chloride in solution will not be processed in the ETS.

- VI.B.4. The IWTU may process the waste described in Permit Condition IV.B., subject to the following supplemental conditions;
- VI.B.4.a. Waste containing greater than or equal to 3,000 ppm mercury in solution will not be processed in the IWTU;
- VI.B.4.b. Waste containing greater than 5,000 ppm chloride in solution will not be processed in the IWTU;
- VI.B.4.c. Waste containing greater than 3,000 ppm fluoride in solution will not be processed in the IWTU

VI.C. OPERATING CONDITIONS

Permit conditions for PEWE, LET&D, ETS, and IWTU. If liquid is detected in the treatment unit sump the facility shall determine the following;

Source of the liquids. If the source can not be determined or if the source is mixed waste, the affected treatment unit shall be shut down until the source of the liquid is determined and appropriate action is taken in accordance with Permit Condition IV.C.

- VI.C.1. Operating conditions for each of the distillation columns associated with the PEWE System shall include, but not be limited to, the following:
 - VI.C.1.a. The waste feed limit to each distillation column shall not exceed 500 gallons per hour throughput. Total combined waste feed for both evaporators shall not exceed 12,000 gallons per each twenty-four (24) -hour period.
 - VI.C.1.b. Steam, fed to the reboiler, shall be manually discontinued in the event the operating temperature exceeds 108°C.
 - VI.C.1.c. Shutdown shall be initiated when the specific gravity of the liquids in the evaporator equals or exceeds 1.3.
 - VI.C.1.d. Shutdown shall be initiated if the condenser outlet temperature exceeds 50°C.
 - VI.C.1.e. Shutdown shall be initiated if negative atmospheric pressure cannot be maintained in the VOG system providing vacuum for the PEWE.
 - VI.C.1.f. Shutdown shall be initiated if the 604 VOG System or the INTEC Process APS is malfunctioning, or the differential pressure across any HEPA filter bank exceeds five (5) inches of water.

- VI.C.2. Operating conditions for each of the fractionation columns associated with the LET&D shall include, but not be limited to, the following:
- VI.C.2.a. The combined maximum operating throughput for the two (2) LET&D fractionation columns shall be 1,100 gallons per hour, or 550 gallon per hour per fractionation column;
 - VI.C.2.b. Process shutdown shall be initiated if the fractionator level drops below ten (10) inches water column;
 - VI.C.2.c. Process shutdown shall be initiated if the temperature on Tray #1 exceeds 130°C;
 - VI.C.2.d. Process shutdown shall be initiated if the fractionator level rises above 40 inches water column;
 - VI.C.2.e. Process shutdown shall be initiated if the separator level exceeds ten (10) inches water column; or
 - VI.C.2.f. Process shutdown shall be initiated if the differential pressure across the HEPA filter exceeds five (5) inches water column or suddenly decreases.
- VI.C.3. Operating conditions for the distillation column associated with the ETS shall include, but not be limited to, the following;
- VI.C.3.a. The waste feed limit to the distillation column shall not exceed 500 gallons per hour throughput as determined by tank depletion in VES-NCC-101. Total waste feed shall not exceed 12,000 gallons per each twenty-four (24) -hour period.
 - VI.C.3.b. Steam fed to the reboiler shall be manually discontinued in the event the operating temperature exceeds 117°C as read on T150-1C thru 10C.
 - VI.C.3.c. Shutdown shall be initiated before the specific gravity of the liquids in the evaporator equals or exceeds 1.4 as read on D150-1C.
 - VI.C.3.d. Start-up shall not begin or shutdown shall be initiated if T-351-1 is not operating within normal parameters.
 - VI.C.3.e. Shutdown shall be initiated if the condenser HE-NCC-351 outlet temperature exceeds 60° C as read on T-351-1.

- VI.C.3.f. Shutdown shall be initiated if atmospheric pressure exceeds 18 in. water column in the ETS as read on P150-1C.
- VI.C.4. Operating conditions for the IWTU shall include, but not be limited to, the following:
- VI.C.4.a. Shutdown of the liquid waste feed will occur for the conditions identified in the following table. Liquid waste feed shall not be initiated until all conditions in the table are in a satisfactory state;

Table VI-1. IWTU Automatic Waste Feed Cutoff

| DCS Instrument | Function | AWFCO Actuation |
|-----------------------|--|---|
| YS-C-401-11 | Hydrogen deflagration protection | Tripped |
| YS-C-402-21 | High temperature protection system | Tripped |
| YS-H-403-31 | High CO detection system | Tripped |
| L-C-231-3 | Seal water tank level | ≤9 inches WC |
| FY-C-140-1 | Total feed rate | ≥3.5 gpm |
| VOL-C-131-2 | Waste feed tank volume | ≤200 gal |
| P-C-131-1A/B | Feed pump discharge pressure (one pump in use, one on standby) | ≤20 PSIG |
| TC-C-140-9 | DMR average bed temperature | ≤580 C |
| TC-C-140-9 | DMR average bed temperature | ≥680 C |
| TDY-C-140-9 | Temperature difference across DMR bed | ≥50 C |
| P-C-140-1/7 | DMR freeboard pressure (both) | ≤1 PSIG |
| P-C-140-1/7 | DMR freeboard pressure (both) | ≥10 PSIG |
| AC-C-153-1 | Hydrogen in DMR/PGF off-gas average | ≤1.5% (rolling 10 minute average dry basis) |
| AC-C-153-1 | Hydrogen in DMR/PGF off-gas average | ≥15% (rolling 10 minute average dry basis) |
| FY-B-365-1 | SSV | ≤0.4 ft/sec |
| FY-B-365-1 | SSV | ≥1.6 ft/sec |
| P-B-365-11A | N2/steam pressure to fluidizing gas superheater | ≥45 PSIG |
| T-B-365-17 | DMR fluidizing gas temperature average | ≤430 C |
| P-C-153-11 | PGF rupture Disk pressure | ≥12 PSIG |
| PD-C-153-1 | Differential Pressure across the PGF | ≥81 in. W.C. |
| TC-C-160-4 | CRR average bed temperature | ≥1100 C |
| TC-C-160-4 | CRR average bed temperature | ≤850 C |
| TDY-C-160-4 | Temperature difference across CRR bed | ≥50C |
| | | |
| P-C-760-10/16 | CRR Exit Gas Pressure (both) | ≥0 |
| AC-C-760-1 | O2 concentration in the CRR off-gas | ≥8 Vol% (average wet |

| DCS Instrument | Function | AWFCO Actuation |
|--------------------|---|--|
| | outlet (AVG) | basis) |
| AC-C-760-1 | O2 concentration in the CRR off-gas outlet (AVG) | ≤ 1.0 Vol% (average wet basis) |
| PD-C-160-3 | Differential Pressure across the OGF | ≥ 81 in. W.C. |
| T-C-160-1A/1B | Temperature after the off-gas cooler (either) | ≥ 205 C |
| T-C-160-1A/1B | Temperature after the off-gas cooler (either) | ≤ 130 C |
| P-C-160-12 | OGC rupture disk pressure | ≥ 2.9 PSIG |
| I-H-260-1A/B | Off-gas blowers current (both) | ≤ 35 amps (after 10 second delay) |
| T-H-140-3A/B | Temperature at outlet of process HEPA/Inlet to GAC beds (Average) | ≤ 130 C |
| T-H-140-3A/B | Temperature at outlet of process HEPA/Inlet to GAC beds (Average) | ≥ 175 C |
| T-H-140-2 | Temperature at inlet to process HEPA pre-filter inlet | ≤ 130 C |
| PD-H-140-4A/B/C/D | Process HEPA pre-filter differential pressure (any) | ≥ 8 inches WC |
| P-H-140-8 | HEPA filter inlet rupture disk pressure | ≥ 2.5 PSIG |
| T-H-141-7A/B | GAC outlet temperature (both) | ≥ 200 C |
| P-H-141-7A | GAC bed A rupture disk pressure | ≥ 0.5 PSIG |
| P-H-141-7B | GAC bed B rupture disk pressure | ≥ 0.5 PSIG |
| I-H-240-10A/B | Process exhaust blowers current (both) | ≤ 35 amps (after 10 second delay) |
| L-E-121-5 | N2 Tank Level | < 25 inches |
| P-B-357-2A/2B | Loss of N2 (both) | < 80 PSIG |
| P-B-146-3A/3B | Loss of O2 (both) | < 75 PSIG |
| L-E-124-5 | O2 Tank Level | < 30 inches |
| A-H-941-3A/B | CO concentration Hourly rolling ave 2 instruments | ≥ 100 PPM |
| JS-B-120-1 | PDC power loss | NA |
| P-B-166-2A/B | Loss of compressed air pressure (both) | < 70 PSIG |
| XSH023-1CXSH023-2C | Seismic event (both) | NA |

- VI.C.4.b. If the differential pressure of any Process HEPA filter element exceeds 5" water column or suddenly decreases, the affected HEPA bank must be isolated and filter element replacement initiated;
- VI.C.4.c. If the differential pressure on any process HEPA pre-filter element exceeds 6.5 " water column or suddenly decreases unexpectedly, the affected HEPA bank must be isolated and the process HEPA pre-filter element replacement initiated;
- VI.C.4.d. Pure oxygen may be injected into the CRR using the process gas distributor only during initial heat up or cool down and shall be disabled while adding waste feed to the DMR;
- VI.C.4.e. Bleed in air for the process offgas blowers shall be disabled when waste feed is being processed.
- VI.C.4.f. The solids in the Product Receiver Cooler shall be cooled to <150 °C before being transferred to a canister.
- VI.C.4.g. There shall be no visible emissions, except water in an uncombined form from STK-SRE-140
- VI.C.4.h. For the interim period between completion of the SPT and receipt of final approval from DEQ for full operation, the operating parameters will be those identified above or as modified during the shakedown and SPT (following the process in Appendix D-7 of this permit). However, during this interim period, the maximum feed rate will be 3 gallons per minute.
- VI.C.4.i. Transfer of solids accumulated in the IWTU off gas filters will be as follows: Process Gas Filter shall be at least once every 24 hours, Off Gas Filter shall be at least once every 48 hours, Product Receiver Filter shall be at least once every 24 hours, and the Product Handling Vacuum Filter shall be at least once every 48 hours.
- VI.C.4.j. The functionality of the AWFCO system will be tested prior to starting initial waste feed to the DMR. Results of the functionality test will be provided to the DEQ prior to the start of the SPT. To ensure modifications of the DCS software logic do not adversely affect the functionality of the AWFCOs all DCS software logic modifications will be tested on the IWTU simulator prior to installing on the IWTU DCS.
- VI.C.5. The following requirements apply to the ILWMS miscellaneous units containment sumps:
 - VI.C.5.a. The liquid level in all tank sumps shall be monitored and recorded daily;

VI.C.5.b. The Permittee shall note in the Operating Record any rise in the sump level during waste management operations.

VI.C.5.c. If the liquid level in a sump exceeds the high/high setpoint or overflows the sump, the Permittee shall immediately comply with the requirements of IDAPA 58.01.05.008 [40 CFR § 264.196].

VI.D. INSPECTIONS

The Permittee shall conduct inspections of the PEWE, LET&D, ETS, and IWTU in accordance with the schedules found in Attachment 4 as amended by Permit Condition IV.E.

VI.E. RECORD KEEPING AND REPORTING

VI.E.1. The Permittee shall document the following PEWE operations data in the Facility Operating Record:

VI.E.1.a. Volume of waste fed to the PEWE;

VI.E.1.b. Volume of PEWE bottoms waste and disposition;

VI.E.1.c. Volume of PEWE condensate waste and disposition;

VI.E.1.d. A calculation of material (steam) discharged per cycle from the PEWE System as a gas (i.e., Volume of discharge equals volume of input minus [volume of condensate plus volume of bottoms]);

VI.E.1.e. Waste analysis data, including underlying hazardous constituents, for each waste stream processed;

VI.E.1.f. Data demonstrating compliance with the operating requirements for the PEWE; and

VI.E.1.g. Waste feed shut downs including cause of shutdown, if unscheduled, and measures to prevent repeat shutdowns from the same cause/operating conditions.

VI.E.2. The Permittee shall document the following LET&D operations data in the Facility Operating Record:

VI.E.2.a. Volume of waste fed to the LET&D;

VI.E.2.b. Volume of nitric acids bottoms removed from the LET&D;

- VI.E.2.c. Material balance determination of the volume of water vapor discharged to the INTEC Main stack as a result of processing PEWE condensate;
- VI.E.2.d. Waste analysis data, including organic concentration and underlying hazardous constituents, for the condensate feed;
- VI.E.2.e. Data demonstrating compliance with the operating requirements for the LET&D; and
- VI.E.2.f. Waste feed shutdowns, including cause of shutdown if unscheduled, and measures to prevent repeat shutdowns from the same cause/operating conditions.
- VI.E.3. The Permittee shall document the following ETS operations data in the Facility Operating Record:
 - VI.E.3.a. Volume of waste fed to the ETS;
 - VI.E.3.b. Volume of ETS bottoms waste and disposition;
 - VI.E.3.c. Volume of ETS condensate waste and disposition;
 - VI.E.3.d. Waste analysis data, including underlying hazardous constituents, for each waste stream;
 - VI.E.3.e. Data demonstrating compliance with the operating requirements for the ETS; and
 - VI.E.3.f. Unscheduled waste feed shutdowns, including cause of the unscheduled shutdown and measures to prevent repeat unscheduled shutdowns from the same cause/operating conditions.
- VI.E.4. The Permittee shall document the following IWTU operations data in the Facility Operating Record:
 - VI.E.4.a. Volume of waste fed to the DMR;
 - VI.E.4.b. Volume of IWTU solids generated and disposition;
 - VI.E.4.c. Waste analysis data, including underlying hazardous constituents, for each waste stream;
 - VI.E.4.d. Data demonstrating compliance with the operating requirements for the IWTU; and
 - VI.E.4.e. Unscheduled waste feed shutdowns, including cause of the unscheduled shutdown and measures to prevent repeat unscheduled shutdowns from the same cause/operating conditions.

VI.E.5. Activation of an IWTU Automatic Waste Feed Cut Off (AWFCO)

VI.E.5.a. If the IWTU stops operations due to an AWFCO event, the Permittee must submit a quarterly report that includes the following information:

- Date, time and cause for an AWFCO;
- Corrective actions to preclude reoccurrence.

VI.E.5.b. If an IWTU AWFCO occurs more than two times in a 14 day period, the Permittee must provide verbal notification to the Director within 24 hours or as soon as possible during the next business day.

VI.F. START OF STEAM REFORMER OPERATIONS

VI.F.1. Prior to start of hazardous waste operations, DEQ must receive the certification of construction documents of Permit Condition I.R.

VI.F.2. Upon start of hazardous waste operations, consistent with IDAPA 58.01.05.008 and .012 [40 CFR § 264.601 and 40 CFR §270.62(a)], the Permittee may operate for up to 720 hours on waste feed to determine operational readiness prior to initiating the IWTU performance test described at Condition II.P.2 of this permit.

VI.F.3. The Permittee shall operate the IWTU consistent with the operational parameters set forth in Permit Condition VI.C.4. during this 720 hour period.

VI.F.4. This 720 hour start up period may be extended once for up to 720 additional hours, by the Director at the request of the applicant when good cause is shown.

VI.F.5. The Permittee shall maintain a running total of hours operated in the facility operating record to demonstrate compliance with the 720 operating hour limit.

VI.G. CLOSURE

The Permittee shall close the PEWE, LET&D, ETS Units, and IWTU in accordance with the approved Closure Plan, Attachments 8 and 8A of this Permit, as modified by Permit Condition II.K.

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MODULE VII - CORRECTIVE ACTION

The Corrective Action Requirements for INTEC are addressed in the Volume 18 Partial-Permit.