

Compliance with Idaho Fugitive Dust Rules will require dust suppression during both earth-moving activities at the Other Surface Soils sites, and during ICDF construction, operations and closure. Compliance with NESHAPs will require air modeling to ensure that no member of the public will receive greater than an effective dose equivalent (EDE) of 10 mrem/yr (40 CFR 61.92) at the INEEL boundary from all INEEL activities including earth-moving activities at the Other Surface Soils site, and from ICDF construction, operations, closure and post-closure. Regulatory notification levels will be partially based upon the results of the modeling.

IDAPA Rules for Control of Air Pollution in Idaho apply because they also address releases or emissions of toxic and/or carcinogenic constituents to the atmosphere, which may occur during soil excavation, movement and consolidation. Engineering and administrative controls to be defined during remedial design will be used to maintain emissions below allowable levels. Storm Water Discharge During Construction Rules requiring control of contamination that discharges into waters of the United States would be met by administrative and engineering controls on construction activities, to be defined during remedial design.

The majority of soils excavated from WAG 3 for disposal at the ICDF will not be subject to Hazardous Waste Determination Requirements (IDAPA 16.01.05.006 [40 CFR 262.11]), Land Disposal Restrictions (LDRs) (IDAPA 16.01.05.011 [40 CFR 268]), or Alternative LDR Treatment Standards for Contaminated Soil (IDAPA 16.01.05.011 [40 CFR 268.49]), since they will be placed directly in the ICDF because WAG 3 is considered one single AOC for purposes of disposal at the ICDF. However, any soils that may require treatment to meet the Waste Acceptance Criteria prior to placement in the ICDF are subject to LDRs. LDRs apply to contaminated soils at sites CPP-92, -97, -98, and -99. If wastes are received from areas outside the WAG 3 AOC for disposal at the ICDF, they will be required to meet the ICDF waste acceptance criteria and LDRs.

The construction and operation of an ICDF supporting complex includes a facility waste storage, sizing staging, and treatment (SSST) facility in accordance with the substantive requirements of IDAPA 16.01.05.008, Subparts I, J, X, and DD). Operations at the facility will include chemical/physical treatment to prepare ICDF wastes to meet applicable Waste Acceptance Criteria and RCRA land disposal restrictions.

One or more remedial waste staging and storage areas will be utilized to stage and handle remediation waste. The storage area be operated in accordance with the substantive requirements of IDAPA 16.01.05.006.01 and 16.01.05.006.02 (40 CFR 262.34[a][1]).

Monitoring well construction and sampling wastes generated prior to construction of the ICDF and SSST (i.e., purge water and drill cuttings) may be managed using temporary remediation waste staging piles and temporary treatment units in accordance with the substantive requirements of IDAPA 16.01.05.008 (40 CFR 264.553 and 40 CFR 264.554). Treatment will be accomplished using mobile tankage and physical/chemical treatment and will comply with the substantive requirements of IDAPA 16.01.05.008 (40 CFR 264 Subpart J, BB, and CC).

An evaporation pond will be constructed and designated as a corrective action management unit (CAMU) in accordance with the substantive requirements of IDAPA 16.01.05.008 (40 CFR 264.552 and 40 CFR 264 Subpart K and CC) for purpose of managing ICDF leachate, purge waters, and other aqueous wastes generated as a result of operating the ICDF complex.

The ICDF Complex will be operated, closed, and post-closed in accordance with the substantive requirements of IDAPA 16.01.05.008 (40 CFR 264 Subparts G, F, and N). Site access restrictions and institutional controls will be maintained throughout the post-closure period.

An area within the INTEC fence will be designated as the remediation waste storage/treatment area for OU 3-13 remediation wastes. This area will be utilized under the substantive requirements of IDAPA 16.01.05.008 (40 CFR 264.553), Temporary Units, and IDAPA 16.01.05.008 (40 CFR 264.554) remediation waste staging piles. These regulations apply specifically to remediation wastes. Wastes treated or temporarily stored in TUs or in remediation waste staging piles are not subject to LDRs as long as they are managed within the area of contamination.

Specific sections of RCRA Standards for Owners and Operators of Hazardous Waste TSDIs apply to the ICDF (Table 12-3). Substantive portions of general facility standards (IDAPA 16.01.05.008 [40 CFR 264 Subpart B]) including IDAPA 16.01.05.008 [40 CFR 264.14 (Site Security)] will apply, and will be met during the institutional control period by maintaining all required controls on entry including fences and signs.

Specific sections of IDAPA 16.01.05.008 [40 CFR 264 Subpart F (Releases From Solid Waste Management Units)] cited in Table 12-3 apply to the ICDF, including groundwater protection standards, hazardous constituents, point of compliance, general groundwater monitoring requirements, and detection monitoring program. These will be met by developing and implementing a facility monitoring plan specific for the ICDF during remedial design.

Specific sections of IDAPA 16.01.05.008 [40 CFR 264 Subpart N (Landfills)] and IDAPA 16.01.05.005 [40 CFR 261.75 (b)] cited in Table 12-3 apply to the design, construction, operation, closure and post-closure of the ICDF. Not all of these sections will apply if the ICDF is used exclusively for a CERCLA onsite action, in particular those containing exclusively administrative requirements, including record keeping. All substantive requirements stated in the referenced sections will be met, and the methodology for compliance will be described in detail during remedial design for the ICDF.

The equipment decontamination section of IDAPA 16.01.05.008 [40 CFR 264 Subpart G (Closure and Post-closure)] applies to closure and post-closure of the ICDF. Additionally, Sections IDAPA 16.01.05.008 [40 CFR 264.310(a)(1)(2)(3)(4)(5) and 40 CFR 264.310(b)(1)(4)(5)(6) from Subpart N] apply to final closure of the landfill. The specific performance standards cited will be met, and the methodology for compliance will be described in detail during remedial design for the ICDF. The IDAPA 16.01.05.008 [40 CFR 264.309(a) and (b)] requirements for surveying and record keeping also apply. All substantive requirements stated in the referenced sections will be met, and the methodology for compliance will be described in detail during remedial design for the ICDF.

12.2.3.2 Chemical-Specific. RCRA hazardous waste characteristics identification is required to facilitate handling and management of hazardous waste contaminated soils. PCBs waste regulations will apply to all PCB-contaminated soils received from both within and outside of the WAG 3 AOC. The substantive requirements of the PCBs regulations will be met during soil excavation and disposal. The ICDF will be designed and constructed to satisfy the PCB landfill requirements. Equipment used to handle PCB-contaminated soils will be decontaminated to satisfy the substantive PCB equipment decontamination requirements.

12.2.3.3 Location-Specific. Location-specific ARARs for this alternative relate primarily to new excavation, construction, or operations activities, including those required for the ICDF, in previously undisturbed areas. All of these ARARs will be met through the siting process for new facilities. The substantive requirements of the RCRA location standards [IDAPA 16.01.05.008 (40 CFR 264.18(a) and (b))] will be met. Archeological and Native American cultural resources will be protected by performing all activities in accordance with the National Archeological and Historical Preservation Act, and the Native American Graves Protection and Repatriation Act. No endangered species are known to be present at the proposed ICDF Study Area.

The siting evaluation study discussed in Section 11 evaluated the proposed Study Area for the ICDF against the siting criteria found at IDAPA 16.01.05.008 (40 CFR 264.18), 40 CFR 761.75 (b)(1), 19 CFR 61, 40 CFR 257.3 in addition to other criteria. The ICDF proposed Study Area was determined to meet the criteria.

12.2.3.4 TBCs. Exposure to the public will be kept ALARA as required by DOE Orders 435.1 and 5400.5 during excavation and disposal of the Other Surface Soils in the ICDF. The ICDF will be designed, constructed, operated, and closed to keep public exposures ALARA and to meet DOE performance objectives. Engineering and administrative controls used under ALARA will minimize public exposures to allowable levels during construction and operation of the ICDF.

12.2.4 Perched Water Selected Remedy: Alternative 2—Institutional Controls with Aquifer Recharge Control

Compliance with action-, chemical-, and location-specific ARARs for the selected remedy for the Perched Water, Alternative 2, is summarized in Table 12-4. A discussion of the ARARs and TBCs is provided below.

12.2.4.1 Action Specific. Site security will be required during the institutional control period. These requirements will be met by institutional and engineering controls, radiological safety measures, and health and safety plans implemented or planned for the site.

Idaho Fugitive Dust Emission rules, Rules for the Control of Air Pollution in Idaho, and NESHAPs would apply and would be met using engineering and administrative controls for all new construction.

If the Big Lost River is lined, or otherwise modified, the substantive requirements of Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, the Idaho Stream Channel Protection Act, and the Idaho Stream Channel alteration rules will be met as required.

The Agencies have not performed the analyses required under 40 CFR 230.10 and 11 to modify the Big Lost River channel. Prior to any stream alteration, the Agencies will provide their evaluation to the public through a Fact Sheet and Explanation of Significant Differences (ESD).

Action-specific requirements for discharges diverted from the Percolation Ponds will be met by the selected discharge alternative. Regulatory compliance will be described in the percolation pond replacement permit applications. If a permit is not obtained by the required time, the CERCLA program will design, construct, and operate replacement percolation ponds until a permit is obtained.

12.2.4.2 Chemical-Specific. Perched water that is stored or treated is subject to a hazardous waste determination (IDAPA 16.01.05.006 [40 CFR 262.11]). The annual limits for radionuclide effluent concentrations are applicable if the Big Lost River is lined. Although perched water releases to the SRPA may impact SRPA groundwater quality, compliance with IDAPA groundwater quality standards in the perched zone is not applicable. Perched water is not a drinking water source, and no excess human health or environmental risks will result from non-compliance with the Idaho groundwater water quality standards. Compliance with groundwater quality standards will be addressed under the selected remedy for the SRPA discussed in Section 12.2.5.

12.2.4.3 Location Specific. No location-specific ARARs are identified for Alternative 2. Location-specific requirements for discharges diverted from the Percolation Ponds will be met by the selected discharge alternative. Regulatory compliance will be described in the percolation pond replacement permit applications.

Table 12-4. Compliance with ARARs for Group 4—Perched Water Selected Remedy.

Alternative/ARARs citation	Description	Applicable, or Relevant and Appropriate (R&A), or TBC	Comments
Group 4—Perched Water: Alternative 2—Institutional Controls with Aquifer Recharge Control			
<i>Action-specific</i>			
IDAPA 16.01.05.008 (40 CFR 264.14)	Site security	Applicable	Applies to the institutional controls
40 CFR 230.10 and 11	Substantive requirements of 404(b)(1) specifications of disposal sites for dredged or fill material	Applicable	Applies only if the Big Lost River channel is modified
Executive Order 11990	Protection of wetlands	Applicable	Applies only if the Big Lost River channel is modified
Executive Order 11988	Floodplain management	Applicable	Applies only if the Big Lost River channel is modified
Rivers and Harbors Act	Section 10 of the Rivers and harbors act of 3 March 1899	Applicable	Applies only if the Big Lost River channel is modified
IDAPA 37.03.09	Idaho Well Construction Standards	R&A	Applies to perched water monitoring
IDAPA 16.01.05.008 (40 CFR 264.114)	Disposal or decontamination of equipment, structures, and soils	Applicable	Applies to drilling, sampling, or treatment equipment that contacts perched water
IDAPA 16.01.01.650, 16.01.01.651	Idaho Fugitive Dust Emissions	Applicable	Will be met through administrative and engineering controls during construction
IDAPA 16.01.01.585, 16.01.01.586	Rules for the Control of Air Pollution in Idaho	Applicable	Will be met through administrative and engineering controls during construction
40 CFR 61.92, 61.93	NESHAPS for Radionuclides from DOE Facilities, Emission Monitoring and Emission Compliance	Applicable	Will be met through administrative and engineering controls during construction
IDAPA 37.03.07.030	Idaho stream channel alteration rules	Applicable	Applicable only if the Big Lost River is determined to be a continuously flowing water body; relevant and appropriate if the Big Lost River is determined to be an intermittent river

Table 12-4. (continued).

Alternative/ARARs citation	Description	Applicable, or Relevant and Appropriate (R&A), or TBC	Comments
IDAPA 16.01.05.008 (40 CFR 264.533)	Temporary units	Applicable	Applies to temporary tankage or treatment that may be required for purge or decontamination waters.
IDAPA 16.01.05.008 (40 CFR 264.554)	Remediation waste staging piles	Applicable	Applies to drill cuttings that may be generated during monitoring well installation.
<i>Chemical-specific</i>			
IDAPA 16.01.05.006 (40CFR 262.11)	Hazardous waste determination	Applicable	Applies to perched water that is stored and treated.
10 CFR 20 Appendix B, Table 2	Annual limits for radionuclide effluent concentrations	R&A	Only clean liner material will be used if the Big Lost River is lined
<i>Location-specific</i>			
None identified			
<i>TBCs</i>			
DOE Order 435.1	Radioactive waste management performance objectives to protect workers	TBC	Substantive requirements will be met in designing, construction, and sampling perched water wells.
DOE Order 5400.5	Exposures to the public will be kept ALARA	TBC	Will be met by administrative and engineering controls.

12.2.4.4 TBCs. DOE Orders 435.1 and 5400.5 provide guidance on radiological human health and environmental protection requirements, on cleanup and management of residual radioactive material, and the release of property. Radiation exposures to the public, workers, and the environment will be kept ALARA as required by these orders. These performance objectives will be met through monitoring, and administrative and engineering controls to minimize exposures to contaminated perched water.

12.2.5 Snake River Plain Aquifer Interim Action Selected Remedy: Alternative 2B— Institutional Controls with Monitoring and Contingent Remediation

Compliance with action-, chemical-, and location-specific ARARs for the selected remedy for the Snake River Plain Aquifer Interim Action, Alternative 2, is summarized in Table 12-5. A discussion of the ARARs and TBCs is provided below.

12.2.5.1 Action Specific. IDAPA Rules for Control of Air Pollution in Idaho apply to releases or emissions of toxic and/or carcinogenic constituents to the atmosphere, which may occur during soil excavation, movement and consolidation, or during groundwater treatment system operation. Engineering and administrative controls would be used to maintain emissions from soils below allowable levels. Any groundwater treatment system would be designed and operated to meet emissions limits.

State of Idaho Fugitive Dust Emission rules would apply to any activities generating fugitive dust. These rules require that all reasonable precautions be taken to prevent the generation of fugitive dust from unprotected surfaces, as well as during active operations.

National Emissions Standards for Hazardous Air Pollutants for radionuclide emissions from DOE facilities applies to these activities because radionuclides may be suspended with fugitive dust during soil movement and consolidation. The radiation dose to the public will be estimated and included in the annual INEEL calculations and reports. If radionuclides associated with fugitive dust releases exceed acceptable standards (10 mrem/yr to the public), then the need for additional measures will be evaluated and implemented as appropriate.

Storm Water Discharge During Construction Rules requiring control of contamination that discharges into waters of the United States would be met by administrative and engineering controls on construction activities, to be defined during remedial design.

If contingent groundwater remediation is implemented, the treated groundwater will either be discharged to the intermittent Big Lost River with downstream recharge of the SRPA or placed in a percolation pond. Federal and state surface water discharge requirements and wastewater land application ARARs will apply, depending on which disposal alternative is selected. The disposal alternative will be determined during RD.

Substantive portions of Treatment Standards for Miscellaneous Units (IDAPA 16.01.05.008 [40 CFR 264.601]) will likely apply to any system used to treat extracted SRPA water, if contingent remediation is implemented. Standards will be met by designing, constructing, operating and closing the system so as to prevent releases to soil, groundwater, surface water or air that would result in adverse effects on human health and the environment. The remedial design report will identify specific measures to control releases. The treatment system will also need to address all COCs which are present in the groundwater.

Table 12-5. Compliance with ARARs for Group 5—Snake River Plain Aquifer Interim Action Selected Remedy.

Alternative/ARARs citation	Description	Applicable, or Relevant and Appropriate (R&A), or TBC	Comments
Group 5—Snake River Plain Aquifer: Alternative 2B—Institutional Controls with Monitoring and Contingent Remediation			
<i>Action-Specific</i>			
IDAPA 37.03.09.025	Idaho Well Construction Standards	Applicable	Applies to SRPA monitoring.
IDAPA 16.01.05.008 (40 CFR 264.114)	Disposal or decontamination of equipment, structures, and soils	Applicable	Applies to drilling, sampling, and treatment equipment that contacts SRPA groundwater.
IDAPA 16.01.01.585, 16.01.01.586	Rules for the Control of Air Pollution in Idaho	Applicable	Will be met by treatment system.
IDAPA 16.01.01.650, 16.01.01.651	Idaho Fugitive Dust Emissions	Applicable	Will be met for contaminated drill cuttings.
40 CFR 61.92, 61.93	NESHAPs for Radionuclides from DOE Facilities, Emission Monitoring and Emission Compliance	Applicable	Will be met using engineering and administrative controls.
40 CFR 125	NPDES		Applies if contingent remediation is implemented and treated groundwater is discharged to the Big Lost River.
10 CFR 20, Appendix B, Table 2	Annual limits for Effluent Concentrations	Applicable	Applies if treated water is discharged.
40 CFR 122.26	Storm Water Discharges During Construction	Applicable	Substantive requirements will be met.
IDAPA 16.0105.008 (40 CFR 264.601)	Treatment Standards for Miscellaneous Units	Applicable	Specific requirements will be clarified and met in 10% design.
IDAPA 16.01.07.300	Wastewater land application permit requirements	applicable	Applies if treated waste water is discharged to a percolation pond; substantive requirements will be met.
IDAPA 16.01.02.400	Rules governing point source discharge	Applicable	Applies to treated waste water is discharged to the Big Lost River.
IDAPA 16.01.02.401	Point source wastewater treatment requirements	Applicable	Applies if treated wastewater is discharged to the Big Lost River.
<i>Chemical-specific</i>			
IDAPA 16.01.05.006 (40 CFR 262.11)	Hazardous waste determination	Applicable	Applicable to groundwater that will be stored long term or treated

Table 12-5. (continued).

Alternative/ARARs citation	Description	Applicable, or Relevant and Appropriate (R&A), or TBC	Comments
IDAPA 16.01.11.200(a) (40 CFR 141) for: Gross alpha particle activity (including radium-226, but excluding radon and uranium) Combined beta/photon emitters Combined Radium-226 and radium 228 Strontium-90 Tritium	Groundwater Quality Standards (Primary drinking water standards)	Applicable	This ARAR will be met in the restoration timeframe (2095) in the SRPA contaminant plume outside of the current INTEC security fence. Any recharge to the SRPA will be limited to concentrations so that this ARAR will be met in 2095.
<i>Location-specific</i>			
None identified			
<i>TBCs</i>			
DOE Order 435.1	Radioactive waste management performance objectives to protect workers	TBC	Substantive requirements will be met to protect workers.
DOE 5400.5	Exposures to the public will be kept ALARA	TBC	Substantive ALARA requirements will be met to protect the public.

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OU 3-13 RD/RA and OU 3-14 monitoring well construction and sampling wastes generated prior to the construction of the ICDF and SSST will be managed and treated with the WAG 3 AOC in remediation waste staging piles and temporary units in accordance with the substantive requirements of IDAPA 16.01.05.008 (40 CFR 264.553 and 40 CFR 264.554). Treatment will be accomplished using mobile tankage and physical/chemical treatment and will comply with the substantive requirements of IDAPA 16.01.05.008 (40 CFR 264 Subparts J, BB, and CC). The final disposition of these wastes will be in the ICDF. The anticipated wastes include soil drill cuttings, monitoring well purge water, personnel protective equipment, and decontamination wastes.

12.2.5.2 Chemical-Specific. The groundwater quality standards promulgated under IDAPA 16.01.11.200(a) are applicable to the specific contaminants cited in Table 12-5. Computer modeling predicts that all of these contaminants will meet the groundwater quality standards by 2095.

If the COCs action level(s) are exceeded in selected monitoring wells as described in Section 11.1.5 within the SRPA contaminant plume outside the current INTEC security fence in the year 2000, then contingent remediation will be implemented.

Treated SRPA groundwater will be returned to the aquifer through land recharge in accordance with the Idaho Wastewater Land Application ARARs if a recharge impoundment is used, or in accordance with NPDES/SPDES ARARs if the treated effluent is discharged to the Big Lost River, which recharges the aquifer downstream of the INTEC facility.

It is possible that the ICPP groundwater contains listed hazardous waste at detectable concentrations. If this is found to be the case, implementation of remedies under this ROD may be impacted as the groundwater will be determined to contain listed hazardous waste. If so, the Agencies may elect to amend this ROD to include requirements to delist low concentrations of hazardous waste and/or constituents contained in extracted groundwater and sediments.

12.2.5.3 Location-specific. No location-specific ARARs are identified for the selected alternative.

12.2.5.4 TBCs. DOE Orders 435.1 and 5400.5 provide guidance on radiological human health and environmental protection requirements, on cleanup and management of residual radioactive material, and the release of property. Radiation exposures to the public, workers, and the environment will be kept ALARA as required by these orders. These performance objectives will be met through monitoring, and administrative and engineering controls to minimize exposures to contaminated SRPA groundwater.

The DOE Order 5400.5 requirement that the treatment technology be selected based on an evaluation of potential technologies will be met through treatability studies and a focused feasibility study for the groundwater treatment system. The most cost-effective technology that meets ARARs will be selected.

12.2.6 Buried Gas Cylinders Selected Remedy: Alternative 2—Removal, Treatment and Disposal

Compliance with action-, chemical-, and location-specific ARARs for the selected remedy for the Buried Gas Cylinders, Alternative 2, is summarized in Table 12-6. A discussion of the ARARs and TBCs is provided below.

Table 12-6. Compliance with ARARs for Group 6—Buried Gas Cylinders Selected Remedy.

Alternative/ARARs citation	Description	Applicable, or Relevant and Appropriate (R&A), or TBC	Comments
Group 6—Buried Gas Cylinders: Alternative 2—Removal, Treatment, and Disposal			
<i>Action-specific</i>			
IDAPA 16.01.01.650, 16.01.01.651	Idaho fugitive dust emissions	Applicable	Will be met during excavation and disposal using dust suppression
IDAPA 16.01.01.585, 16.01.01.586	Rules for control of air pollution in Idaho	Applicable	Will be met during treatment of tank contents
40 CFR 122.26	Storm water discharges during construction	Applicable	Will be met through engineering controls during excavation and construction
IDAPA 16.01.05.008 (40 CFR 264.114)	Disposal or decontamination of equipment, structures, and soils	Applicable	Applies to equipment used to treat or handle hazardous materials in the cylinders
40 CFR 300.440	Procedures for Planning and Implementing Offsite Response Actions	Applicable	Applies only to offsite disposal of the cylinder contents
IDAPA 16.01.05.005 (40 CFR 261.20 through 24)	Hazardous waste characteristics identification	Applicable	Applies for hazardous waste contaminated soils that are excavated and managed on-site
IDAPA 16.01.05.005 [40 CFR 261.7(a)(1), (b)(2)]	Residues of hazardous waste in empty containers	Applicable	Applicable to empty containers and compressed gas cylinders
IDAPA 16.01.05.008 (40 CFR 264.170 through 179)	Use and Management of Containers	Applicable	Substantive requirements will be met for treatment, storage, disposal and transportation of RCRA hazardous cylinder contents or hazardous waste contaminated soils
IDAPA 16.01.05.011 (40 CFR 268)	Land disposal restrictions	Applicable	Applies only to the treatment and disposal of hazardous waste contaminated soils
IDAPA 16.01.05.011 (40 CFR 268.49)	Alternative LDR treatment standards for contaminated soil	Applicable	Applies only to the treatment and disposal of hazardous waste contaminated soils
IDAPA 16.01.05.008 (40 CFR 264.553)	Temporary units	Applicable	Applies to the storage and treatment of hazardous remediation media
IDAPA 16.01.05.008 (40 CFR 264.554)	Remediation waste staging piles	Applicable	Applies to the staging of hazardous remediation soils/debris

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Table 12-6. (continued).

Alternative/ARARs citation	Description	Applicable, or Relevant and Appropriate (R&A), or TBC	Comments
IDAPA 16.01.05.008 (40 CFR 264 Subpart X)	Miscellaneous units	Applicable	Applies to hazardous wastes that are stored, treated or disposed.
IDAPA 16.01.05.008 (40 CFR 264 Subpart J)	Tank systems	Applicable	Applies to hazardous wastes that are stored, treated or disposed.
IDAPA 16.01.05.008 (40 CFR 264 Subpart BB)	Air emission standards for equipment leaks	Applicable	Applies to hazardous wastes that are stored, treated or disposed.
IDAPA 16.01.05.008 (40 CFR 264 1080 through 1082)	Air emission standards for tanks, surface impoundments, and containers	Applicable	Applies to hazardous wastes that are stored, treated or disposed.
IDAPA 16.01.05.008 (40 CFR 264.310)	Landfills	Applicable	Applies only if cylinders are capped in place.
<i>Chemical-specific</i>			
IDAPA 16.01.05.005 (40 CFR 261)	Identification of Hazardous Waste	Applicable	Applies of soils containing hazardous waste area encountered
<i>Location-specific</i>			
None identified			
<i>TBCs</i>			
None identified			

12.2.6.1 Action Specific. Idaho Fugitive Dust Emission regulations, and regulations for Storm Water Discharges During Construction apply and substantive provisions will be met as described previously. Substantive Portions of Rules for Control of Air Pollution in Idaho will be met by characterizing the tank contents, and designing and using treatment systems that will not result in releases to the atmosphere exceeding allowable levels.

Although the gases in the buried gas cylinders are not thought to be hazardous, if hazardous substances are discovered in the cylinders these will be removed from the cylinder and treated to meet hazardous waste treatment requirements. However, a hazardous waste residue remaining in an empty container is not subject to regulation under IDAPA 16.01.05.005 (40 CFR Parts 261) through IDAPA 16.01.05.009 (40 CFR 265), or IDAPA 16.01.05.011 (40 CFR Part 268), IDAPA 16.01.05.012 (40 CFR 270), or 40 CFR 124 [IDAPA 16.01.05.005 (40 CFR 261.7(a)(1))]. A container that has held a hazardous waste or substance that is a compressed gas is considered empty when the pressure in the container approaches atmospheric IDAPA 16.01.05.005 [40 CFR 261.7(b)(2)]. The requirements of IDAPA 16.01.05.005 (40 CFR 261.7) will be met by determining that the internal pressure of the compressed gas cylinders is at atmospheric pressure, and therefore termed empty. Hazardous waste residues in empty gas cylinders are not considered hazardous waste and can be disposed accordingly.

Hazardous waste treatment residuals resulting from treatment of the compressed gas cylinder contents, if necessary, will be containerized. The use and management of hazardous waste containers will be applicable. The substantive requirements of these regulations will be met as specified.

If hazardous wastes are present in the compressed gas cylinders have leaked to the underlying soils, the LDRs will apply. The LDRs requirements for hazardous waste contaminated soils will be met by either a Contained in policy decision or by treating the contaminated soils to meet LDRs.

The Agencies may elect to pursue a contingent remedy of capping in place pursuant to the substantive requirement of IDAPA 16.01.05.008 (40 CFR 264.310) if safety concerns with excavation and removal of the cylinders prevent implementation of the selected remedy.

The CERCLA Procedures for Planning and Implementing Offsite Response Actions under 40 CFR 300.440 apply, and will be met for off-site shipment and disposal of any solid or hazardous wastes by shipping any hazardous wastes or hazardous waste treatment residuals derived from the cylinders to a RCRA Subtitle C permitted facility, provided the waste is acceptable to the receiving facility's authorizing state.

12.2.6.2 Chemical Specific. If a hazardous waste is determined to have been released to the soils, the soils will be subject to hazardous waste characteristics identification in IDAPA 16.01.05.005 (40 CFR 261). Soils determined to be hazardous will be disposed in the ICDF. Soils that are determined to be listed will be delisted using a no-longer contained in determination and disposed in the ICDF.

12.2.6.3 Location Specific. None identified.

12.2.6.4 TBCs. Radioactive waste management procedures will be used to protect workers (DOE Order 435.1) and to keep exposures to the public ALARA (DOE Order 5400.5).

12.2.7 SFE-20 Hot Waste Tank System Selected Remedy: Alternative 4—Removal, Treatment and Disposal

Compliance with action-, chemical-, and location-specific ARARs for the selected remedy for the SFE-20 Hot Waste Tank System, Alternative 4, is summarized in Table 12-7. A discussion of the ARARs and TBCs is provided below.

12.2.7.1 Action-Specific. Idaho fugitive dust emissions rules, Idaho rules for the control of air pollution, and NESHAPs requirements will be met using institutional and engineering controls during excavation and disposal of either on-site or off-site actions.

The SFE-20 Hot Waste Tank System was previously closed and abandoned in 1976, and, therefore, was not used as a RCRA tank storage unit. As such, excavation and removal of the SFE-20 tank system is considered consolidation of a land disposal unit. Excavated tank system components and underlying soils will be managed as remediation waste within the AOC. The liquid and sludge wastes will be removed and solidified/stabilized prior to disposal in the ICDF. Since the tank system components and other wastes occur within the WAG 3 AOC and are considered remediation waste, they can be disposed in the ICDF without triggering LDRs or MTRs. The wastes will be managed in remediation waste staging piles within the AOC prior to disposal at the ICDF. Any tank system components that are treated in the SSST will be subject to LDRs. Liquid wastes that are treated to meet the ICDF Waste Acceptance Criteria will also be subject to LDRs.

If the SFE-20 tank components and waste are determined to be hazardous and are removed, treated, and disposed off-site the CERCLA Procedures for Planning and Implementing Offsite Response Actions under 40 CFR 300.440 apply. The criteria specified for the off-site response actions will be met by shipping remediation wastes only to a permitted RCRA Subtitle C facility that prevents releases of hazardous waste, hazardous constituents or substances to groundwater, surface water, soil or air. The wastes will only be shipped if they meet, or can be treated to meet, the receiving facility's waste acceptance criteria.

12.2.7.2 Chemical-Specific. Tank liquids, sludges, and underlying contaminated soils will be characterized to determine if hazardous constituents or characteristics are present. The results of the hazardous waste characterization will be used to facilitate proper management and disposal of these materials at either the ICDF or off-site. Asbestos regulations cited in Table 12-7 apply, and will be met by managing asbestos debris generated during demolition and removal of the tank vault, pump pit and associated structures in accordance with all substantive provisions of the regulations.

12.2.7.3 Location-Specific. There are no location specific ARARs.

12.2.7.4 TBCs. DOE Orders 435.1 and 5400.5 provide guidance on radiological human health and environmental protection requirements, on cleanup and management of residual radioactive material, and the release of property. Radiation exposures to the public, workers, and the environment will be kept ALARA as required by these orders. These performance objectives will be met through monitoring, and administrative and engineering controls to minimize exposures.

Specific EDE limits to the public defined in DOE Order 5400.5 will be met through monitoring, and administrative and engineering controls as required during excavation and construction in contaminated areas.

Table 12-7. Compliance with ARARs for Group 7—SFE-20 Hot Waste Tank System Selected Remedy.

Alternative/ARARs citation	Description	Applicable, or Relevant and Appropriate (R&A), or TBC	Comments
Group 7—SFE-20 Hot Waste Tank System: Alternative 4—Removal, Treatment, and On-Site Disposal			
<i>Action-specific</i>			
IDAPA 16.01.01.650, 16.01.01.651	Idaho Fugitive Dust Emissions	Applicable	Will be met using engineering controls during tank waste and system removal
40 CFR 61.92, 61.93	NESHAPs for Radionuclides from DOE Facilities	Applicable	Will be met using engineering controls during tank waste and system removal
IDAPA 16.01.01.585, 16.01.01.586	Rules for the Control of Air Pollution in Idaho	Applicable	Will be met using engineering controls during tank waste and system removal
IDAPA 16.01.05.008 [40 CFR 264.193(b)]	Secondary containment and detection of releases	Applicable	Applies if hazardous wastes are pumped or transferred to a treatment system.
IDAPA 16.01.05.008 (40 CFR 264.553)	Temporary units	Applicable	Applies to any tank components or soils that are excavated
IDAPA 16.01.05.008 (40 CFR 264.554)	Remediation waste staging piles	Applicable	Applies to any tank components or soils that are excavated
IDAPA 16.01.05.008 (40 CFR 264 Subpart X)	Miscellaneous units	Relevant and Appropriate	Applies to liquids or sludges that are removed from the tank
IDAPA 16.01.05.011 (40 CFR 268)	Land disposal restrictions	Applicable	If placement is triggered, LDRs will apply.
IDAPA 16.01.05.011 (40 CFR 268.49)	Alternative LDR Treatment Standards for Contaminated Soil	Applicable	If placement is triggered, LDRs will apply.
<i>Chemical-specific</i>			
IDAPA 16.01.05.005 (40 CFR 261.20 through 24)	Hazardous waste characteristics identification	Applicable	Applies only to hazardous liquids or sludges in the tank or underlying soils that may have been impacted by a release
IDAPA 16.01.05.006 (40 CFR 262.11)	Hazardous waste determination	Applicable	
40 CFR 61 Subpart M, 61.145, 61.150; 61.156	Asbestos regulations	Applicable	Substantive requirements will be met
<i>Location-specific</i>			
None identified			

Table 12-7. (continued).

Alternative/ARARs citation	Description	Applicable, or Relevant and Appropriate (R&A), or TBC	Comments
<i>TBCs</i>			
DOE Order 435.1	Radioactive waste management performance objectives to protect workers	TBC	Substantive requirements will be met by administrative and engineering controls during excavation, removal, treatment and disposal of the tank system and contents.
DOE Order 5400.5	Exposures to the public will be kept ALARA	TBC	Will be met by administrative and engineering controls during excavation, removal, treatment and disposal of the tank system and contents.

12.3 Cost Effectiveness

Table 12-8 summarizes the comparison of costs of the OU 3-13 remedial alternatives. In all cases, the alternative that most cost-effectively protects human health and the environment, and meets ARARs, was selected for implementation under this ROD. Each remedial action selected is cost effective in that the costs were determined to be proportional to the overall effectiveness of the remedy. The Agencies have determined that each remedial action adequately protects human health and the environment and complies with ARARs. The comparison of cost-effectiveness between alternatives is described below for each site grouping.

12.3.1 Tank Farm Soils Interim Action (Group 1)

Alternative 3 (the selected alternative) is the most expensive, because it contains the largest amount of capital improvements to the site. It is the only alternative that will reduce contaminant transport to the SRPA and facilitate meeting water quality ARARs.

12.3.2 Soils Under Buildings and Structures (Group 2)

Alternative 2 (the selected alternative) is the most expensive alternative, because it includes both institutional controls and capital costs for containment, while Alternative 1, the least expensive, includes no active remediation. Alternative 3 is a contingency remedy that will only be implemented in the event that contaminated soils are excavated during D&D of the buildings and structures. Alternative 2 is easily implemented, effective, and protective of human health and the environment.

12.3.3 Other Surface Soils (Group 3)

The costs for each alternative progressively increase from Alternative 1 (Existing Institutional Controls), with the lowest overall cost, to Alternative 4B (Excavation, Ex Situ Treatment, and Off-Site

Table 12-8. Comparison of costs^a of alternatives^b for WAG 3.

Site/Grouping	Alternative 1	Alternative 2	Alternative 3	Alternative 4A	Alternative 4B
Tank Farm Soils Interim Action	\$3.4M	\$10.0M	\$15.1M		
Soils Under Buildings and Structures	\$6.4M	\$9.2M	\$8.3M	NA	NA
Other Surface Soils	\$6.8M	\$15.0M	\$37.5M	\$84.9M	\$244.6M
Perched Water	\$7.3M	\$20.0M	\$259.2M	NA	NA
Snake River Plain Aquifer Interim Action	\$13.9M	\$14.8M (2A) ^c	\$39.8M(2B)	\$787.9M (3)	NA
Buried Gas Cylinders	\$6.4M	\$1.8M	\$8.2M	NA	NA
SFE-20 Tank	\$6.4M	\$8.7M	\$8.5M	\$4.6M(4)	NA

a. All costs are in millions (M) of dollars, calculated as net present value (NPV). A discount rate of 5% , per EPA guidance, was used to calculate the NPV.

b. Costs for the selected alternative are shown in bold.

c. The number in parentheses following the cost refers to the alternative number for the specific group.

Disposal), with the highest cost of the five alternatives evaluated. However, as the cost of each alternative increases from Alternative 1 through Alternative 4B, so does the level of overall protection and long-term effectiveness. Alternative 1, while the least expensive, provides the lowest level of protection after the institutional control period is over, and is least effective in the long-term. Alternative 4B provides the greatest level of protection and long-term effectiveness by removing the contaminated material from the site, treating it, and permanently disposing of it off-Site. Additionally, the toxicity, mobility and volume of the contaminated soils will be reduced by this alternative. Similarly, Alternative 4A (Excavation and On-Site Disposal) provides a significant level of protection and effectiveness by consolidating the contaminated soil in one location and containing it in an engineered and monitored facility. Neither the toxicity nor the volume of the contaminated soil is reduced by this alternative, however. Comparing Alternative 4A to 4B for all criteria but cost indicates that Alternative 4A is slightly more effective overall than Alternative 4B. However, the additional effectiveness provided by Alternative 4B compared with its significant cost makes Alternative 4A the more reasonable alternative.

12.3.4 Perched Water (Group 4)

Alternative 2 (the selected alternative) is more expensive than Alternative 1, because aquifer recharge controls are included. Alternative 2 is much less expensive than Alternative 3, which would add perched water pumping and treatment but would not significantly improve protection of human health. Alternative 2 is the least expensive alternative considered that is protective of human health after 2095 and meets ARARs. Environmental receptors are not exposed to the perched water.

12.3.5 Snake River Plain Aquifer Interim Action (Group 5)

Alternative 2B (the selected alternative) is more expensive than 1 and 2A, since it includes both the existing and additional controls defined for those alternatives, as well as contingent groundwater pumping and treatment to remove COCs. The treatment system will need to address all COCs which are present in SRPA groundwater, but are not predicted to be above risk-based levels following institutional control. It is much less expensive than Alternative 3, which would incorporate much higher pumping rates, but with no significant increase in human health protection. Alternative 2B is the least expensive alternative considered that is predicted to meet MCLs after 2095 and meets all other ARARs. Environmental receptors are not exposed to SRPA water.

12.3.6 Buried Gas Cylinders (Group 6)

Alternative 2 (the selected alternative) is the least expensive alternative considered, because all hazardous materials will be removed from the site and no long-term monitoring or institutional controls will be required. Alternative 2 is the least expensive alternative that is protective of human health and the environment and meets ARARs.

12.3.7 SFE-20 Hot Waste Tanks System (Group 7)

Alternative 4 (the selected alternative) is the least expensive alternative considered, because all hazardous materials will be removed from the site and no long-term monitoring or institutional controls will be required. Alternative 4 is the most cost-effective alternative that is protective of human health and the environment and meets ARARs.

12.4 Utilization Of Permanent Solution And Alternative Treatment Technology To The Maximum Extent Practicable

The selected remedies in this ROD represent the maximum extent to which permanent solutions and alternative treatment technologies can be used in a practicable manner at OU 3-13. Of those alternatives that are protective of human health and the environment and comply with ARARs, the selected remedy provides the best balance of trade-offs in terms of the five balancing criteria, while also considering the statutory preference for treatment as a principal element and considering State and community acceptance.

The Tank Farm Soils Interim Action, Alternative 3, is not a permanent solution and does not use alternative treatment technologies. Because current information regarding the nature and extent of contamination at the Tank Farm is inadequate to support selection of a final remedy, a separate RI/FS for the Tank Farm is underway. The Tank Farm is now referenced as a separate operable unit, OU 3-14. The OU 3-14 RI/FS will further investigate contamination at the Tank Farm and develop alternatives for a final remedy. Use of a permanent solution or alternative treatment technologies will be considered in the development of alternatives in the Tank Farm RI/FS.

The selected remedy for the Soils under Buildings and Structures, Alternative 2, is a permanent solution but does not use alternative treatment technologies. Since the contaminated soils will remain isolated onsite for up to 1,000 years, the selected remedy will result in a permanent solution for the release sites. The sites will be covered with natural earthen materials to isolate the contaminated soils and prevent exposure to humans or the environment. The barrier system will be designed to prevent future exposure for up to 1,000 years, which will allow natural radioactive decay to reduce contaminant concentrations over time to levels that are not a risk to human health or the environment. The barrier design will also minimize contaminant migration by inhibiting water infiltration. Long-term isolation will provide an effective permanent solution for these sites. Although treatment technologies exist for the nonradionuclide COCs, arsenic, mercury, and chromium, the primary COCs at these sites are radionuclides. Effective treatment technologies for radionuclides are currently unavailable. The treatment technologies evaluated were determined not to be practicable because they were ineffective, difficult to implement, or very costly. Therefore, the use of alternative treatment technologies also cannot be met except through natural radioactive decay over time.

The selected remedy for the Other Surface Soils, Alternative 4A, provides a permanent solution because the contaminated soils will be permanently removed and contained at the ICDF. Contaminated soils present at the release sites will be excavated to a minimum depth of 10 feet below ground and disposed in an engineered facility designed for long-term isolation and protection. Although treatment technologies exist for the nonradionuclide COCs, mercury, lead, and chromium, present at some of these sites, the primary COCs at these sites are radionuclides. The treatment technologies evaluated were determined not to be practicable because they were ineffective, difficult to implement, or very costly. Therefore, the use of alternative treatment technologies will not be met.

The selected remedy for the Perched Water, Alternative 2, provides a permanent solution but does not use alternative treatment technologies. Alternative 2 is comprised of existing and additional institutional controls to restrict perched water use and implementation of initial phased remedies to control water infiltration and perched water releases to the SRPA. The proposed initial phased remedies are permanent actions that control sources supplying water to the perched zone. These actions are designed to reduce leaching and transport of soil contaminants to perched water, to reduce the volume of water in the perched zone, and to minimize the potential for perched water releases to the SRPA. The low yield of the perched zone limits implementation of active remediation. The inability to implement active

remediation because of perched zone characteristics eliminates the need for alternative treatment technologies. Therefore, this remedy will not meet the statutory requirement for alternative treatment technologies.

The Snake River Plain Aquifer Interim Action, Alternative 2B, is not a permanent solution and does not use alternative treatment technologies unless active remediation is implemented. The SRPA action outside the current INTEC security fence is a final action. SRPA groundwater actions inside the current INTEC security fence, if needed, will be addressed in OU 3-14. If groundwater remediation is implemented, treatability studies will be implemented to evaluate and select appropriate treatment technologies. Alternative treatment technologies will be considered in the treatability studies. Active groundwater remediation would provide a permanent solution by removing groundwater from the zone of maximum contamination. Because current information regarding the nature and extent of contamination at the SRPA inside the current INTEC security fence is inadequate to support selection of a final remedy, a separate RI/FS that includes this portion of SRPA will be implemented. Further evaluation of the SRPA inside the current INTEC security fence will be deferred to OU 3-14. The OU 3-14 RI/FS will further investigate contamination in the SRPA inside the current INTEC security fence and develop alternatives for a final remedy. Use of a permanent solution or alternative treatment technologies will be further considered in the development of alternatives in the OU 3-14 RI/FS.

The selected remedy for the Buried Gas Cylinders, Alternative 2, provides a permanent solution and uses treatment technologies, where necessary, as the principal remedy. Alternative 2 consists of the excavation and permanent removal of the gas cylinders, treatment of the tank contents, if necessary, and recycling of the gas cylinders. Excavation will be conducted to minimize the potential for any gas releases to the environment. The gases in the cylinders will be vented to the atmosphere if they are benign or treated using a method suitable for a particular gas. The specific treatment methods will be selected during RD/RA.

The selected remedy for the SFE-20 Hot Waste Tank System, Alternative 4, provides a permanent solution and uses treatment technologies, where necessary, as the principal remedy. Alternative 4 will permanently remove the tank and associated structures for disposal on-Site. The tank liquid will be removed and treated at the PEW Evaporator. The tank sludge will be removed and treated ex-situ using a suitable grout to solidify and stabilize the contaminants in the sludge. The sludge will be drummed and either disposed on-Site or off-Site at a suitable engineered disposal facility. Depending on waste characteristics, the remaining components of the tank system will be permanently excavated, removed, and disposed at either the ICDF or off-Site, depending on the ICDF waste acceptance criteria.

12.5 Preference for Treatment as a Principal Element

This ROD meets the statutory requirement to utilize permanent solutions and treatment technologies to the maximum extent practicable, given the nature and extent of contamination present at OU 3-13. OU 3-13 COCs are primarily radionuclides. Treatment technologies exist to reduce radionuclide mobility, and the volumes of radionuclide-contaminated media, however no viable technology exists to reduce radionuclide toxicity. The Group 1, 2, and 3 radiologically contaminated soils which represent principal threat wastes will not be treated under this action. Natural radioactive decay is the only means by which toxicity reduction occurs. Technologies to reduce mobility and volume (soil washing, groundwater pump and treat) of contaminated media were considered in this FS and utilized to the extent they were determined to be technically feasible and cost-effective.

Risks presented by Soils under Buildings and Structures were determined to be most cost-effectively addressed through containment in situ, since they are presently under buildings and structures,

and are almost exclusively contaminated with radionuclides. Containment of radionuclides, either in situ or at an engineered facility, will effectively provide isolation from the environment, allowing for radioactive decay to continue while inhibiting exposures to human and ecological receptors. However, containment is not considered treatment, since no technologies to permanently reduce toxicity, mobility or volume are directly implemented.

Treatment of radionuclide-contaminated soils at the Other Surface Soils sites to reduce volume prior to disposal was not found to be cost-effective. Disposal at the proposed ICDF, without treatment, was determined to have equivalent long-term effectiveness, higher short-term effectiveness and lower cost.

Groundwater pumping and treatment was selected as a contingent remedy to reduce mobility and volume of COCs in the SRPA, if action levels are exceeded before 2095. Both pumping and treatment aspects of this alternative would require treatability study evaluation prior to implementation. The treatment study will also need to address tritium and mercury that are present in SRPA groundwater, but are not predicted to exceed risk-based levels following institutional control.

Hazardous constituents in gases at the Buried Gas Cylinder sites will be treated by neutralization or other means to render them non-hazardous. Immobilization by grouting to reduce radionuclide mobility was selected for the SFE-20 tank contents only. These are regarded as relatively permanent treatment technologies.

12.6 Five-Year Review

The entire area of INTEC covered by this ROD will be included in a single periodic 5-year review. The CERCLA 5-year review process will ensure the protectiveness of the remedial actions taken under the ROD where contaminants remain at the sites that requires access controls or land use restrictions. Five-year reviews will also ensure that any changes in the physical configuration of any INTEC facility or site where there is suspicion of a release of hazardous or radioactive substances (such as D&D) will be managed to achieve remediation goals established in the ROD. As part of the 5-year review process, the Agencies will periodically review the protectiveness of their decisions and adjust to updates in public protectiveness levels.