
Waste Area Groups- Future Work Plans

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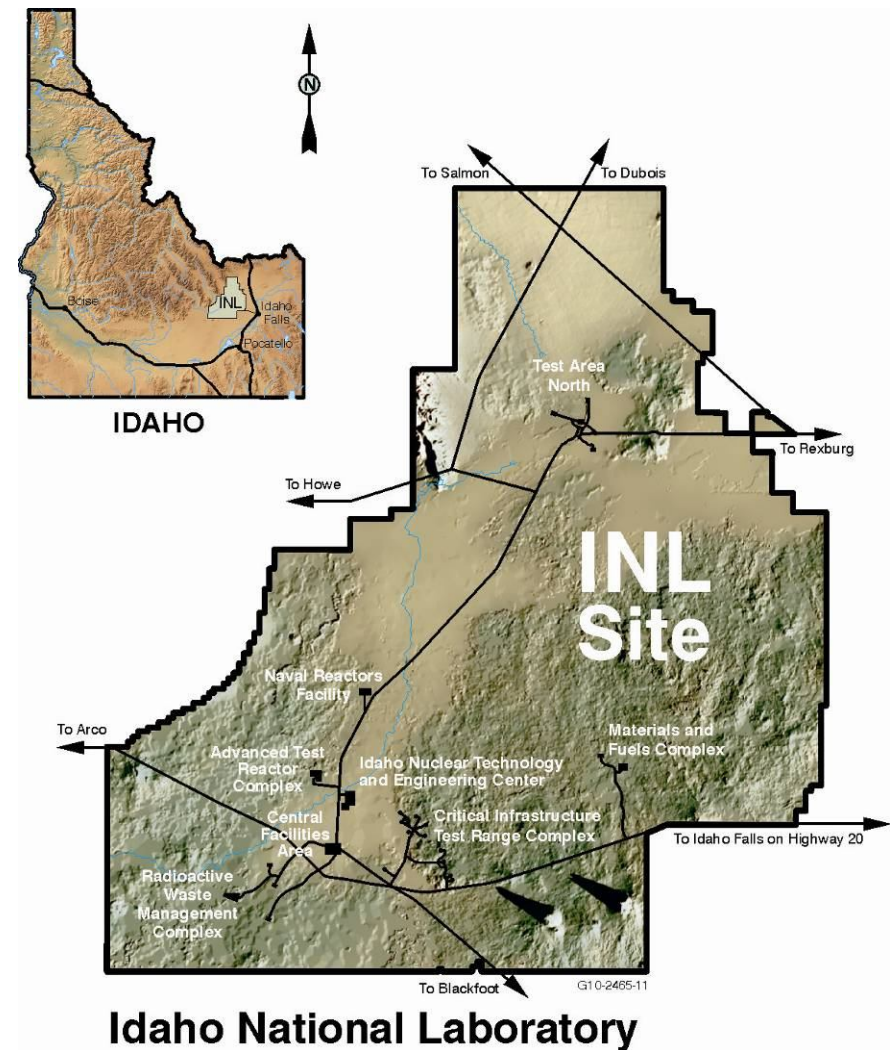


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CERCLA Review

- The INL was placed on the National Priorities List in 1989
- In December 1991, DOE, EPA, and the state of Idaho signed the Federal Facility Agreement and Consent Order and Action Plan, which is referenced in the 1995 Settlement Agreement
- Idaho Cleanup Project remediates past releases to the environment under CERCLA



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Mission

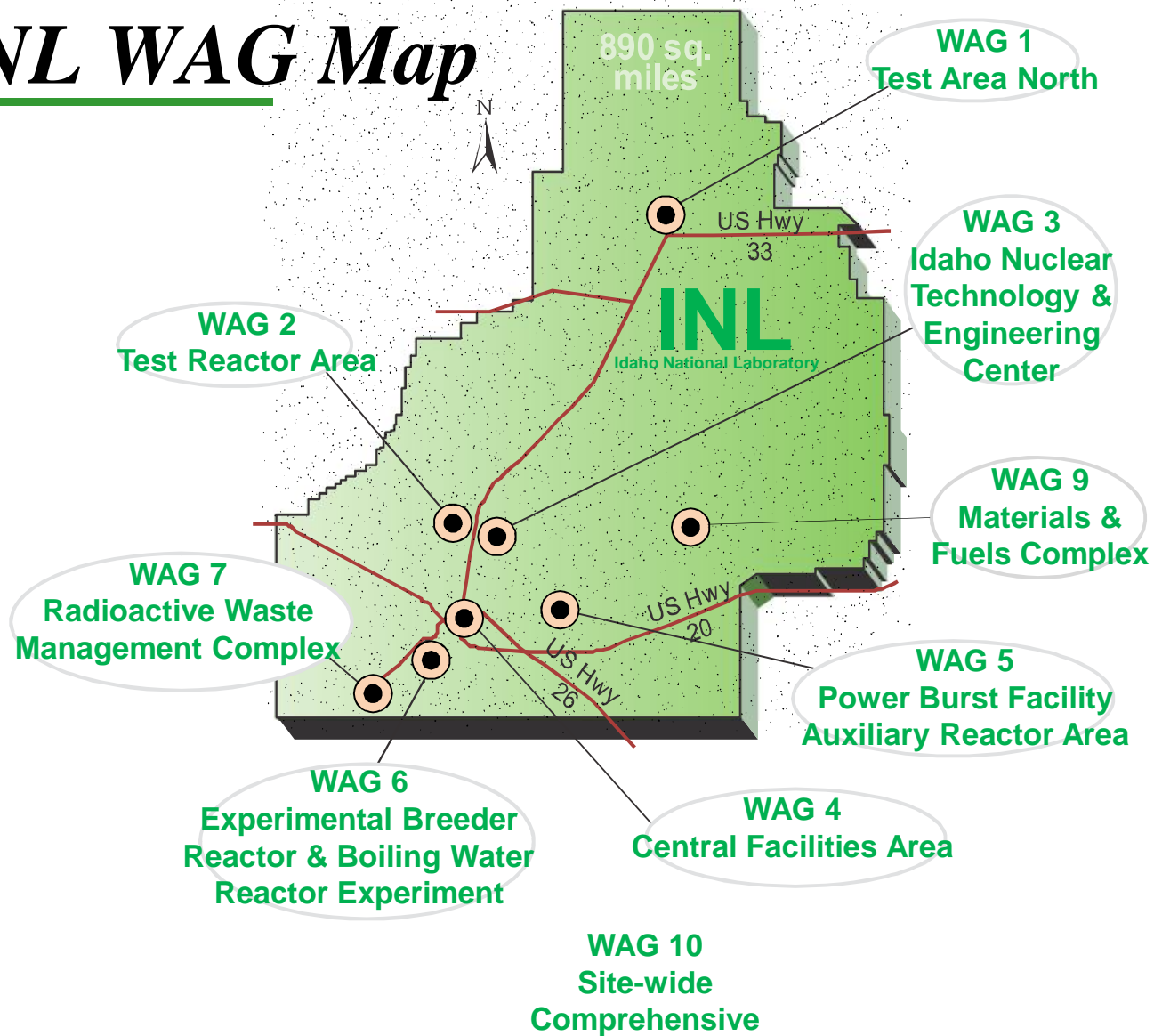
Ensure that releases to the environment associated with past and present activities at the INL are thoroughly investigated and appropriate remedial actions are taken to protect public health and welfare and the environment



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Site-wide INL WAG Map



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Waste Area Group 1 -- Test Area North

Missions: Developed and tested designs for nuclear-powered aircraft engines. Supported reactor, and nuclear fuels safety tests. Investigated core materials from the Three-Mile Island Reactor accident.

Contaminants of Concern:

- Soils
 - Radionuclides (cesium-137, radium-226)
 - Metals (mercury, lead, manganese, arsenic)
 - Hydrocarbons
 - Organic compounds
 - Polychlorinated biphenyls (PCBs)
- Groundwater
 - Organic compounds
 - Radionuclides (Strontium-90)



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Waste Area Group 1 -- Test Area North

Major Cleanup Actions Completed for Soils

- CERCLA cleanup actions defined by the Record of Decision (ROD) are complete
- Removal of 34 facilities and structures as Non-Time Critical Removal Actions (NTCRAs)

Active Remedial Actions

- In-Situ Bioremediation and pump and treat system is operated to treat groundwater plume
- Groundwater monitoring

Long-Term Stewardship Components

- Institutional Controls (ICs)
- Operations and Maintenance (O&M)



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Waste Area Group 2 – Advanced Test Reactor Complex

Missions: Studied the effects of radiation on materials, fuels, and equipment. Operated the Advanced Test Reactor, Engineering Test Reactor, and Materials Test Reactor. Produced isotopes for medicine and industry, and stored spent fuel

Contaminants of Concern:

- Soils
 - Radionuclides (cesium-137, strontium-90, americium-241, plutonium-238, -239)
 - Metals (mercury, chromium, beryllium, arsenic)
 - Polychlorinated biphenyls (PCBs)
- Groundwater
 - Organic compounds
 - Radionuclides



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Waste Area Group 2 – Test Reactor Area

Major Cleanup Actions Completed

- CERCLA cleanup actions defined by the ROD are complete
- Removal of 31 buildings and structures as NTCRAAs

Active Remedial Actions

- None
- Currently evaluating new sites at former Hot Cell area and immediate vicinity

LTS Components

- ICs
- O&M
- Groundwater monitoring



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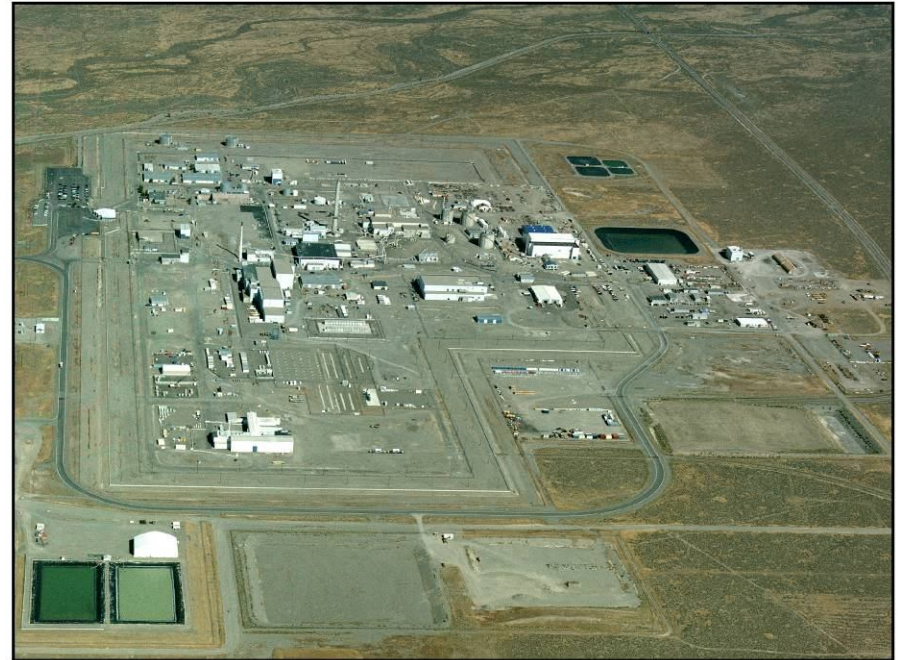
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Waste Area Group 3 -- Idaho Nuclear Technology and Engineering Center

Missions: Reprocessed spent nuclear fuels; stored spent nuclear fuel in both wet and dry storage; treated high-level liquid waste.

Contaminants of Concern:

- Soils
 - Radionuclides (cesium-137, strontium-90, iodine-129, americium-241, plutonium-238)
 - Metals (chromium, mercury)
 - Organic compounds
 - Other (fluoride, nitrate, oil/grease)
- Groundwater
 - Radionuclides (strontium-90, iodine-129, Technetium-99)
 - Nitrate



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Waste Area Group 3 -- Idaho Nuclear Technology and Engineering Center

Major Cleanup Actions Completed

- **OU 3-13 Record of Decision, 1999**
 - Completed all remedial actions identified in OU 3-13 ROD, except Group 2 (contaminated soils under buildings)
 - Removal of 97 buildings and structures as NTCRAs
- **OU 3-14 Record of Decision, 2007**
 - Completed Phase I
 - Low permeability pavement over Recharge Control Zone (RCZ) outside Tank Farm
 - Other water control measures (e.g. ditches)
 - Completed Design for Phase II low permeability pavement over RCZ inside Tank Farm
 - Significantly reduced recharge of perched water zone
 - Groundwater monitoring, installed telemetry



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Waste Area Group 3 -- Idaho Nuclear Technology and Engineering Center

Active Remedial Actions

- Accelerate installation of Tank Farm ET/CB CAP (FY19)
- Install Tank Farm low permeability pavement as contingency
- Continue recharge control measures to reduce perched water
- Groundwater monitoring
- O&M

LTS Components

- ICs



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Waste Area Group 4 -- Central Facilities Area

Missions: Originally housed U.S. Navy gunnery range personnel; currently treats and disposes of non-hazardous commercial industrial waste and provides centralized support for the INL.

Contaminants of Concern:

- Soil
 - Radionuclides (cesium-137)
 - Heavy metals (mercury and lead)
- Groundwater
 - Nitrate



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Waste Area Group 4 -- Central Facilities Area

Major Cleanup Actions

- CERCLA cleanup actions defined by the ROD are complete

Active Remedial Actions

- None

LTS Components

- ICs
- O&M
- Groundwater monitoring



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Waste Area Group 5 -- Power Burst Facility/Auxiliary Reactor Area

Missions: Conducted research on small power reactors and reactor safety; stored spent fuel, treated and stored mixed low-level and low-level waste, and conducted volume reduction research on hazardous and mixed waste



Contaminants of Concern

- Soil
 - Radionuclides (cesium-137, uranium-235)
 - Metals (chromium, silver)
 - PCBs



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Waste Area Group 5 -- Power Burst Facility/Auxiliary Reactor Area

Major Cleanup Actions Completed

- CERCLA cleanup actions defined by the ROD are complete
- Removal of 4 buildings and structures as NTCRAs

Active Remedial Actions

- None

LTS Components

- ICs
- O&M



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Waste Area Group 7 -- Radioactive Waste Management Complex

Missions: Established for the disposal of radioactive and hazardous waste. Current disposal of solid, remote-handled, low-level waste. Ongoing remediation includes retrieving, characterizing, and packaging stored waste and targeted buried waste to support disposal, and shipping of waste for disposal off the INL site.

Contaminants of Concern:

- Surface exposure pathwaysoil
 - Transuranics (Am-241, Pu-239, Pu-240)
 - Fission and activation products (C-14, Cs-137, Sr-90, and Tc-99)
- Groundwater
 - Volatile Organic Compounds
 - Mobile fission and activation products (C-14, I-129, Tc-99)
 - Nitrate



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Waste Area Group 7 -- Radioactive Waste Management Complex

Major Cleanup Actions

- Completed targeted waste retrieval in Pits 4, 5, 6, and 9
- Completed in situ grouting of 21 locations (0.13 acres) in the RWMC



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Waste Area Group 7 -- Radioactive Waste Management Complex

Active Remedial Actions

- As of January 2012, completed retrieval of targeted waste from 2.96 acres (52%), packaged 5,525.7 m³ (73.8%) and shipped 5,476.0 (73.2%) out of Idaho.
- Targeted waste retrieval in ARP VII (Pit 10).
- Exhumation of 10 additional grid in ARP III.
- Construction on ARP VIII, exhumations begin fall of 2013.
- Demolition of ARP I and VI completed November 2012.
- Construction of ARP IX, the final ARP, begin in 2013 and exhumation in 2015.
- Following the completion of ARP IX exhumations (2016), the ARP structures will be removed to focus on RWMC cap design and construction.
- Vapor vacuum extraction and treatment of solvents in the vadose zone.
- Environmental monitoring of vadose zone vapor, soil moisture, and groundwater.
- Monitoring will continue after cap installation.

LTS Components

- ICs



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Waste Area Group 9 – Material and Fuels Complex

Missions: Established to test nuclear reactors and safety systems, including the EBR-II (1964-1994); stabilized, managed, and stored spent fuel, and stored transuranic waste.

Contaminants of Concern:

- Soils
 - Radionuclides (cesium-137)
 - Metals (mercury, chromium, zinc and selenium)



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Waste Area Group 9 – Material and Fuels Complex

Major Cleanup Actions

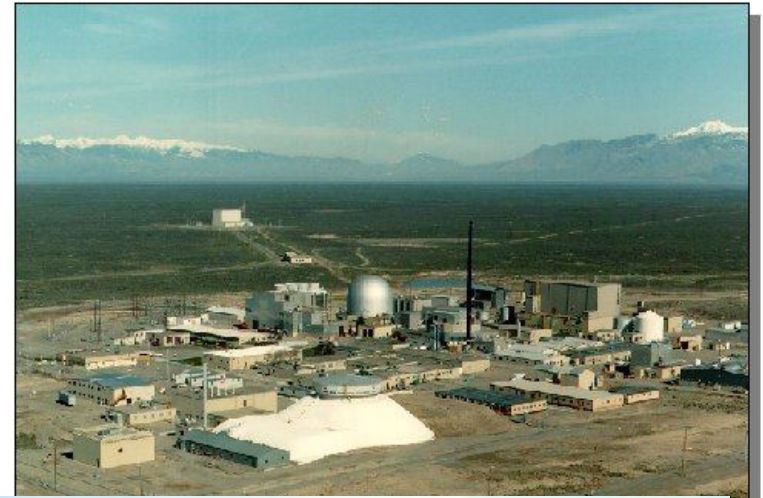
- CERCLA cleanup actions defined by the ROD are complete
- Removal of 3 buildings and structures as NTCRA's

Active Remedial Actions

- None

LTS Components

- ICs
- Groundwater monitoring



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Waste Area Group 6/10 -- EBR-1/BORAX-I; Aquifer/Miscellaneous Sites

Missions: WAG 6 was established for nuclear reactor research. Currently, EBR-1 is a National Historic Landmark. WAG 10 comprises miscellaneous sites throughout the INL that are not included within the other WAGs.

Contaminants of Concern:

- Soils
 - Radionuclides (cesium-137, strontium-90)
 - Metals (e.g., lead, mercury)
- Other
 - Munitions and Explosives of Concern
 - Unexploded ordnance
 - Explosive compounds (TNT, RDX)
- Groundwater
 - None



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Waste Area Group 6/10 -- EBR-1/BORAX; and Miscellaneous Sites

Major Cleanup Actions

- TNT and RDX remediation completed
- Completed remedial actions at TRA, CFA, and STF
- Numerous MEC sites remediated

Active Remedial Actions

- Identification of Future sites
- Munitions Response Area evaluation and clearance

LTS Components

- ICs
- O&M
- Groundwater monitoring
- MEC ICs and Maintenance



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Long-Term Stewardship

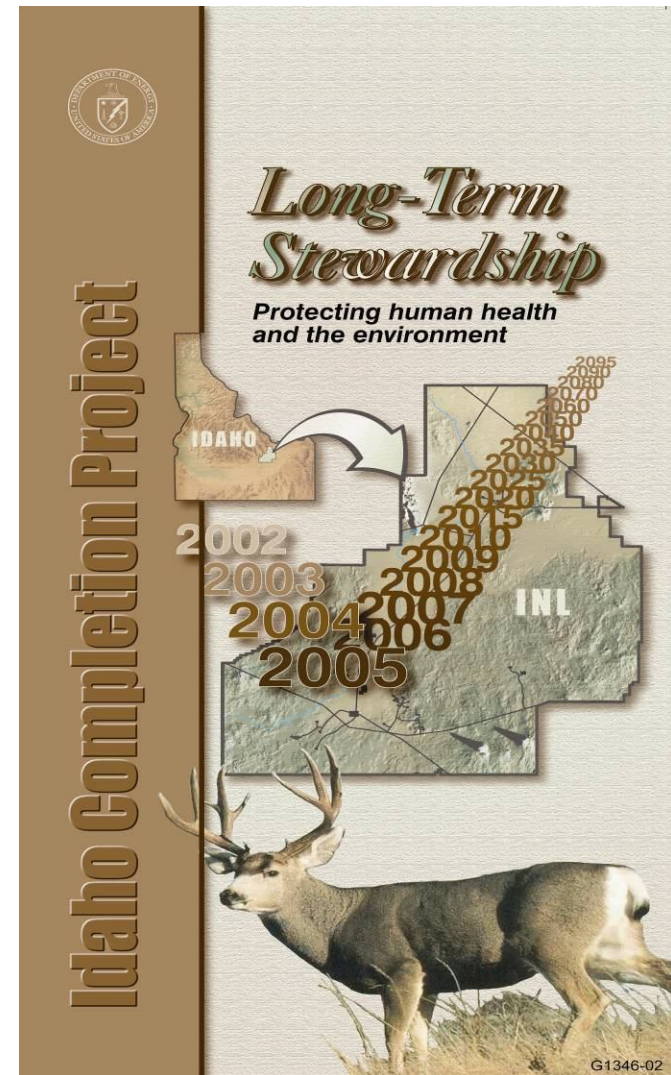
Mission: Ensure safe, informed and judicious use of the INL site for multiple generations following remediation through activities and decisions that:

- Protect human health and the environment
- Conserve ecological and cultural resources
- Respond to regulatory, political, and technological changes



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Institutional Controls

Types

- Governmental
- Proprietary
- Informational Devices:



Implementation Controls

- Site disturbance requirements
- Signage requirements
- Groundwater use requirements
- Physical security
- Property transfer/lease requirements
- Long Term Stewardship Tracking System
- MEC surface and subsurface surveys and removal

Back to WAG Home Security/PHS

INL Waste Area Group Institutional Controls Report

| | | |
|-----------------------|---|-------------------------|
| CERCLA Site: | TSF-39 | Waste Area Group: WAG 1 |
| Administrative WAG: | WAG 1 | |
| IC Termination Date: | NA | |
| IC Termination Notes: | Indefinite - 5-Yr Review, Table (DOEID-11429) | |
| Encapsulated by: | TSF Transite (Asbestos) Contamination (Near TSF Gravel Pit) | |
| Description: | TSF-39 is an area that contains small pieces of asbestos cement (transite) and is believed to be the result of the construction activities for LOFT. Field inspections have determined that the asbestos material is encapsulated in cement and is not likely to be released. As stated in the OU 1-10 ROD, this is a "No Further Action" site. | |

Reference Plane: NAD 27 - State Plane System

Institutional Controls

| | |
|--------------------------------------|--|
| ROD-Selected Remedy: | No further action and institutional controls. |
| Comments: | |
| Institutional Controls: | Governmental Informational Devices Proprietary |
| IC Implementation: | LTS Tracking System Physical Security Requirements Property Lease Transfer Requirements Signage Requirements Soil Disturbance Requirements |
| IC Source Reference: | OU 1-10 ROD (DOEID-10682) Table 12-2 |
| Contaminants of Concern: | Asbestos |
| Remedial Action Complete: | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Remedial Action Completion Date: | 9/24/1993 |
| Remedial Action Completion Document: | Track 1 (5556) |



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Operations and Maintenance

- Site inspections
 - Site conditions
 - Vegetative cover
 - Subsidence/erosion
 - Topographic surveys
- Maintenance and repair
 - Maintain integrity of remedial actions



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Groundwater Monitoring

- Aquifer sampling
- Vadose zone sampling
 - Vapor
 - Soil moisture
 - Water level
 - Perched water



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