

Appendix E

ACRONYM LIST AND GLOSSARY

COMMONLY USED ACRONYMS AT THE HANFORD SITE

AEA	<i>Atomic Energy Act</i>
AIP	agreement in principle
ALARA	as low as reasonably achievable
ALE	Fitzner-Eberhardt Arid Lands Ecology Reserve
AMEW	RL Assistant Manager for Environmental Restoration and Waste Management
ARAR	applicable or relevant and appropriate requirements
ATSDR	Agency for Toxic Substances and Disease Registry
BBC	Business, Budgets, and Contracts
BCP	Baseline Change Proposal
BHI	Bechtel Hanford, Inc.
BMOP	Business Management Overview Process
BMP	Business Management Practice
BNI	Bechtel National, Inc.
Board	Hanford Advisory Board
BPA	Bonneville Power Administration
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CFR	Code of Federal Regulations
CHG	CH2M Hill Hanford Group, Inc.
CONOPS	Conduct of Operations
CPP	CERCLA Past Practice
CRP	Community Relations Plan
D&D	decontamination and decommissioning
DCRT	double-contained Receiver Tank
DCG	derived concentration guide
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy-Headquarters
DQO	data quality objectives
DST	double-shell tank
DW	dangerous waste
DWP	Detailed Work Plan
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
EEA	Engineering Evaluation of Alternative
EE/CA	Engineering Evaluation/Cost Analysis
EIS	Environmental Impact Statement
EM	DOE Office of Environmental Management
EMSL	Environmental Molecular Sciences Laboratory
EPA	U.S. Environmental Protection Agency
ER	environmental restoration
ERA	Expedited Response Action
ERDF	Environmental Restoration Disposal Facility
ES&H	environment, safety, and health
FFTF	Fast Flux Test Facility
FH	Fluor Hanford, Inc.

Appendix E – Acronym List and Glossary

COMMONLY USED ACRONYMS AT THE HANFORD SITE

FS	Feasibility Study
FSUG	Future Site Uses Working Group
FY	fiscal year
HAMMER	Hazardous Material Management and Emergency Response (Training Center)
HCP-EIS	Hanford Comprehensive Land Use Plan-Environmental Impact Statement
HEHF	Hanford Environmental Health Foundation
HGET	Hanford General Employee Training
HLW	high-level waste
HMTC	Hanford Atomic Metal Trades Council
HRA-EIS	Hanford Remedial Action – Environmental Impact Statement
HSWA	Hazardous and Solid Waste Amendments (of 1984)
HSMA	Hazardous Waste Management Act
HWVP	Hanford Waste Vitrification Plant
IAMIT	Inter-Agency Management Integration Team
IM	Interim Measure
INEEL	Idaho National Engineering and Environmental Laboratory
IRA	Interim Response Actions
IRM	Information Records Management
ISMS	Integrated Safety Management System
ISS	Interim Safe Storage (of the reactors)
ISV	In-situ Vitrification
JIC	Joint Information Center
LDR	Land Disposal Restrictions
LERF	Liquid Effluent Retention Facility
LFI	Limited field investigation
LL	low level
LLBG	Low-level burial ground
LLMW	low-level mixed waste
LLW	low-level waste
LMSI	Lockheed Martin Services, Inc.
LWDF	Liquid Waste Disposal Facility
MB	Megabyte
MCL	maximum contaminant level
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MREM	Millirem
MSDS	Material Safety Data Sheet
MTCA	<i>Model Toxics Control Act</i>
MW	mixed waste
MYPP	Multi-Year Program Plan
MYWP	Multi-Year Work Plan
NEPA	<i>National Environmental Policy Act</i>
NCP	National Oil and Hazardous Substances Contingency Plan
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NRTC	National Resource Trustee Council

Appendix E – Acronym List and Glossary

COMMONLY USED ACRONYMS AT THE HANFORD SITE

O&M	Operation and Maintenance
OMB	Office of Management and Budget
ORNL	Oak Ridge National Laboratory
ORP	DOE Office of River Protection
OSHA	Occupational Safety and Health Administration
OU	operable unit
PA/SI	Preliminary Assessment and Site Investigation
PCHB	Pollution Control Hearings Board
pCi/L	pico curies per liter
PFP	Plutonium Finishing Plant
PHMC	Project Hanford Management Contractor
PI	Performance Indicator
PNNL	Pacific Northwest National Laboratory
PUREX	Plutonium Uranium Reduction Extraction (Facility)
QA	quality assurance
QC	quality control
RA	remedial action
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
R&D	research and development
RL	DOE-Richland Operations Office
ROD	Record of Decision
RPP	RCRA Past Practice
RPP	River Protection Project
S&H	safety and health
SAP	sampling and analysis plan
SARA	Superfund Amendments and Reauthorization Act of 1986
SEC	Senior Executive Committee
SEPA	<i>State Environmental Policy Act</i>
SMS	Site Management System
SNFP	Spent Nuclear Fuels Project
SNM	Special Nuclear Material
SOW	Statement of Work
SRS	Savannah River Site
SST	single-shell tank
STCG	Science and Technology Coordinating Group
SWMU	site waste management unit
TAG	Technical Assistance Grant
TBD	to be decided/determined
TPA	Tri-Party Agreement (<i>Hanford Federal Facility Agreement and Consent Order</i>)
TRIDEC	Tri-Cities Industrial Development Council
TRU	transuranic
TRUEX	Transuranic Extraction (process)
TRUSAF	Transuranic Waste Storage and Assay Facility
TSD	Treatment, storage and disposal
U.S.C.	U.S. Code
USDOE	U.S. Department of Energy
USEPA	U.S. Environmental Protection Agency
USQ	Unreviewed Safety Questions

Appendix E – Acronym List and Glossary

COMMONLY USED ACRONYMS AT THE HANFORD SITE

UST	underground storage tank
WAC	Washington Administrative Code
WBS	Work Breakdown Structure
WESF	Waste Encapsulation and Storage Facility
WIPP	Waste Isolation Pilot Project
WM	waste management
WRAP	Waste Receiving and Processing
WTF	Water Treatment Facility
YN	Yakama Nation

GLOSSARY

Administrative Record: The administrative record is a library of documents which includes information from Tri-Party Agreement activities such as remedial action, interim response action (i.e. removal action), corrective measure, interim measure, RCRA permit, or approved RCRA closure plan. There are two Administrative Records, managed by the U.S. Department of Energy in Richland, Washington and the Washington State Department of Ecology in Kennewick, Washington.

Agency (Agencies): The U.S. Department of Energy, Washington State Department of Ecology, and the U.S. Environmental Protection Agency.

Agency for Toxic Substances and Disease Registry: The agency under the Department of Health and Human Services, Public Health Service, that is responsible for conducting health assessments at Superfund sites for EPA.

Alpha-Emitter: A radioactive substance, such as plutonium, that emits alpha particles. Alpha radiation is much less penetrating than gamma or beta radiation, but is much more ionizing, and therefore potentially extremely toxic.

Applicable or Relevant and Appropriate Requirement (ARAR): Any standard, requirement, criteria or limitation as provided in Section 121(d)(2) of CERCLA.

Aquifer: A geologic formation, group of formations, or part of a formation capable of yielding significant quantities of groundwater to wells, springs, or other points of discharge.

Aquifer System: A logical grouping of aquifers in a region, grouped on the basis of characteristics such as superficial geology, water quality, and vulnerability.

As Low As Reasonably Achievable (ALARA): A radiation protection principle applied to radiation exposure, with costs and benefits taken into account.

Authority: Legal jurisdiction enabling a governmental agency to administer and implement federal or state laws and regulations.

Appendix E – Acronym List and Glossary

B Plant: Old Hanford plutonium recovery and separations facility converted in 1968 for waste fractionation.

Barrier: A manmade addition to a disposal site that is designed to retard or preclude contaminant transport and/or to preserve the integrity of the disposal site.

Basalt: A dark, fine-grained, extrusive igneous rock. Within the geologic structure beneath the Hanford Site, there are three distinct formations. Basalt flows that have been warped and folded make up the deepest level.

Basalt Waste Isolation Project (BWIP): Program to study Hanford as a possible location for the high-level nuclear waste repository. This project was discontinued in the late 1980s.

Base RCRA Program: Those elements of the federal Resource Conservation and Recovery Act of 1976, as amended, for which the state of Washington has received authorization to implement. The state implements its own dangerous waste program in lieu of the base RCRA program.

Beta Radiation: Essentially weightless charged particles (electrons or positrons) emitted from the nucleus of atoms undergoing nuclear transformation.

Bottoms (tank bottoms): The concentrated material remaining in the waste tanks after most of the contents have been pumped out for solidification or transfer to other storage tanks; refers also to specific tanks used to collect such bottoms waste from several other tanks.

Burial Ground: Land area specifically designated to receive contaminated waste packages and equipment, usually in trenches covered with overburden.

Byproduct Material: Waste produced by extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface waste resulting from uranium solution extraction processes; excludes fission products and other radioactive material covered in 10 CFR Part 20.3(3).

Carbon Tetrachloride: A chlorinated organic solvent used in the plutonium extraction process at the Plutonium Finishing Plant. Carbon tetrachloride is a known human liver carcinogen via inhalation and ingestion. Other toxic effects include central nervous system damage.

Chromium: An inorganic element, found in the environment in two forms: hexavalent and trivalent. Hexavalent chromium is carcinogenic via inhalation; hexavalent and trivalent chromium are less toxic via ingestion. Hexavalent chromium is a primary contaminant in groundwater beneath the 100 Area at Hanford.

Central Plateau: Hanford's 200 East and 200 West Areas are located in this area of the Hanford Site. The area has approximately 53 million gallons of high-level radioactive waste in aging underground tanks. In addition, there are principal nuclear chemical processing and waste management facilities located in the Central Plateau.

CERCLA Past Practice (CPP): A process by which a past practice unit containing hazardous substances will be addressed for response action (as opposed to RCRA past practice).

Appendix E – Acronym List and Glossary

Closure: Actions taken to reduce the human health and environmental threats posed by a hazardous waste treatment, storage and/or disposal (TSD) facility or unit (along with its structures and contiguous land) after the facility or unit has received its final volume of hazardous waste. Closure must satisfy applicable requirements of 40CFR Part 264, subpart G, and of WAC 173-303-610. For purposes of this Agreement, use of the word closure also includes actions necessary for the facility or unit to meet post closure requirements.

Code of Federal Regulations (CFR): Regulations developed by the federal government to implement statutory requirements.

Cold Standby: A condition whereby a reactor is defueled and maintained in a state that will allow the reactor to be restarted, if necessary.

Community Relations Plan (CRP): A public document that provides information on public participation opportunities and information resources. The CRP also encourages and ensures two-way communication between an affected community and the public agency overseeing the site cleanup.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund: The federal statute enacted in 1980 and reauthorized in 1986, which provides the statutory authority for cleanup of hazardous substances that could endanger public health or welfare or the environment.

Confined Aquifer: An aquifer having defined, relatively impermeable upper and lower boundaries and the pressure of which is significantly greater than atmospheric.

Containment Building (for the purposes of RCRA Interim Status Standards): A completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the units. It has a primary barrier designed to be: 1) sufficiently durable to withstand the movement of personnel and the handling of equipment within the unit and 2) operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment. (Ref. 40 CFR 265.1100)

Contamination (Groundwater and Surface Water): An impairment of quality by biological, chemical, or radiological materials that lowers the water quality to a degree which creates a potential hazard to the environment, public health, or interferes with a beneficial use.

Corrective Action: The RCRA processes of interim and corrective measures. See definitions for Interim Measure and Corrective Measure.

Corrective Measure: An action taken under RCRA authority to permanently resolve a hazardous waste release or to significantly reduce the potential for a future release from a unit or group of units.

Corrective Measures Implementation (CMI): The step in RCRA past practice process in which a corrective action system is designed and implemented; comparable to the Remedial Design and Remedial Action phases of the CERCLA process.

Corrective Measures Study (CMS): The step in the RCRA past practice process in which alternatives for a corrective action system are investigated and screened; comparable to the Feasibility Study phase of the CERCLA process. (see Section 7.4)

Appendix E – Acronym List and Glossary

Crib: An underground structure designed to receive liquid waste that can percolate into the soil directly and/or after travelling through a connected tile field.

Cradle-to-grave: The Resource Conservation and Recovery Act requires management of hazardous wastes from the first point of waste generation until final disposal by all generators, transporters, and owners/operators of treatment, storage, and disposal facilities that handle hazardous waste.

Criteria: Numerical or narrative values which represent the maximum level a contaminant must not exceed to maintain a given beneficial use.

Curie (Ci): The basic unit used to describe the intensity of radioactivity.

Cyanide: An extremely hazardous substance used in the extraction of ores, treatment of metals, and in the manufacture of pharmaceuticals.

Dangerous Waste (DW): Those solid wastes designated in WAC 173-303-070 through 173-303-103 as dangerous or extremely hazardous wastes.

Data Quality Objective (as used for a planning process): The formal decision-making process between the laboratory and the client that defines necessary analytical requirements based on the end-use of the data.

Deactivation: Activities associated with removing facility systems and/or areas from operational service with the intent of being ready for facility transition to either convert the facility for another use or move to permanent shutdown. These activities could include the removal of fuel, draining and/or de-energizing of systems, removal of accessible stored radioactive and hazardous materials and other actions to place the facility systems and/or areas in a safe and stable condition. Once this is completed, a surveillance and maintenance program will be able to most cost-effectively prevent any unacceptable risk to the public or the environment until ultimate disposition of the facility. (Note: These activities are usually conducted during the facility transition phase.)

Decontamination: The process of removing radioactive and/or hazardous contamination from facilities, equipment, or soils by physical removal, washing, heating, chemical action, mechanical cleaning or other techniques to achieve a stated objective or end condition.

Decommissioning: Actions taken to reduce the potential health and safety impacts of USDOE contaminated facilities, including activities to stabilize, reduce, or remove radioactive materials or to demolish the facilities.

Defense Waste: Radioactive waste from any activity performed in whole or in part in support of USDOE atomic energy defense activities; term excludes waste under purview of the Nuclear Regulatory Commission or generated by the commercial nuclear power industry.

Definitive Design: USDOE's design phase in which detailed construction drawings and specifications are prepared following conceptual design for a new, or modification to a facility or unit.

Dismantlement: The process of disassembly and/or demolition of all or portions of a facility, and appropriate disposal of the residue.

Appendix E – Acronym List and Glossary

Ditch: An unlined conveyance for transport of liquid wastes to a pond or trench structure designed for percolation.

Double Shell Tank (DST): A reinforced concrete underground vessel with two inner steel liners to provide containment and backup containment of liquid wastes; annulus is instrumented to permit detection of leaks from inner liner.

Drywell: A drainage receptacle constructed by digging a hole and refilling with coarse gravel; also a watertight well casing used for inserting monitoring equipment.

Ecology: The Washington State Department of Ecology.

Entombment: The remedial process to encapsulate a facility in place as a method of final disposition once cleanout has been completed.

Ethylene Glycol: An organic compound used primarily as an anti-freeze. Ethylene glycol is moderately toxic when ingested.

Evapotranspiration: The combined loss of water from soil by evaporation and from the surfaces of plant structures.

Environmental Restoration Disposal Facility (ERDF): The Environmental Restoration Disposal Facility is a large-scale, evolving landfill, complete with ancillary facility, located on the Central Plateau. It is designed to receive and isolate low-level radioactive, hazardous and mixed wastes from Hanford Site cleanup activities only. The ERDF is designed to provide disposal capacity to accommodate projected Hanford wastes volumes over the next 20-30 years.

Expedited Response Action: A general term referring to either an interim response action (i. e. removal action) under authority of CERCLA, or an interim measure under the authority of the Hazardous and Solid Waste Amendments (of 1984).

Extremely Hazardous Waste (EHW): Those solid wastes designated in WAC 173-303-070 through 173-303-103 as dangerous or extremely hazardous wastes.

Facility (as applied to the Facility Decommissioning Process): A free-standing building, plant, laboratory, or other enclosure and associated buildings and disposal sites under its responsibility that fulfills, or fulfilled, a specific purpose, and is owned by or otherwise under the responsibility of the USDOE-HQ. (Note: This usage differs substantially from that in the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] and RCRA).

Facility Startup: The time at which the Department of Energy has completed their readiness assessment and has provided the operating contractor approval via letter to start initial operations. At this time the contractor has completed their readiness review verifying that: 1) all operability tests have been completed, 2) operating procedures are available for use, and 3) a trained operating staff capable of operating the facility is in place.

Facility Surveillance and Maintenance (S&M) Phase: Period in the life of a facility following completion of the transition phase until such time as the facility is dispositioned for other use, or facility disposition has commenced.

Appendix E – Acronym List and Glossary

Facility Transition Phase: A period of time during which activities necessary to place the subject facility in a safe, stable, and environmentally sound condition, suitable for an extended period of surveillance and maintenance pending final disposition are completed. Facility transition starts with termination of operations, includes the establishment of a S&M program, and ends with the achievement of facility-specific end point criteria.

Fast Flux Test Facility (FFTF): The Fast Flux Test Facility (FFTF) is a 400-megawatt (thermal) liquid-metal (sodium) cooled fast neutron flux nuclear test reactor owned by the U.S. Department of Energy (USDOE). The facility is located in the 400 Area of the Hanford Site. FFTF was completed in 1978 and initial operation began in 1980. From April 1982 to April 1992, the FFTF operated as a national research facility to test advanced nuclear fuels, materials, components, nuclear power plant operations and maintenance protocols, and reactor safety designs. The U.S. Department of Energy announced in December 2001 that the reactor will be shut down.”

Feasibility Study (FS): The step in the CERCLA process in which alternatives for a remedial action system are investigated and screened (see Section 7.3).

Final Disposition of the Reactors: Final disposition of the reactors will consist of removing the reactor cores from their present location at or before the end of the 75-year safe storage period to a disposal facility in the 200 Area of the Hanford Site. Associated structure(s) and residual wastes will be removed so as to meet established cleanup requirements pertaining to Hanford’s 100 Area. Resulting wastes will be disposed at Hanford’s Environmental Restoration Disposal Facility, or other disposal facility as may be approved by the parties. USDOE’s schedule for this activity will be included in an engineering evaluation/cost analysis due to the regulators in September 2005.

Fiscal Year (FY): The federal government uses the fiscal year for planning-October 1 through September 30. The State of Washington’s fiscal year is July 1 through June 30.

Fitzner-Eberhardt Arid Lands Ecology Reserve (ALE): Located southwest on the Hanford Site, the ALE covers 120 square miles and is managed for the USDOE by the U.S. Fish and Wildlife Service, part of the Department of Interior, and is used for ecological research and preservation.

Focused Feasibility Study: A study conducted such that a limited number of alternatives are evaluated that are focused to the scope of the response action planned.

French Drain: A rock-filled encasement with an open bottom to allow seepage of liquid waste into the ground.

Future Site Uses Working Group: A former working group of representatives from tribal, government, business, economic development, labor, agriculture, environmental groups, and Hanford public interest groups. The group was charged with the task of articulating a range of visions for the future use of the Hanford Site, discussing the implications of those visions on cleanup, and searching for common visions of cleanup scenarios and priorities.

Groundwater: Water which fills the spaces between soil, sand, rock, and gravel particles beneath the earth’s surface. Rain that does not immediately flow to streams and rivers slowly percolates down through the soil to a point of saturation to form groundwater reservoirs. Groundwater flows at a very slow rate, compared to surface water, along gradients which often lead to river systems. If occurring in significant quantities, groundwater can be withdrawn for domestic, industrial, and agricultural purposes.

Appendix E – Acronym List and Glossary

Grout: A fluid mixture of cementitious materials and liquid waste that sets up as a solid mass and is used for waste fixation and immobilization.

Half-life: The time required for a radionuclide's activity to decay to half its value, used as a measure of the persistence of radioactive materials; each radionuclide has a characteristic constant half-life.

Hanford Advisory Board: Created in 1994 by the Tri-Parties, the Board advises all three agencies on major cleanup policy decisions. The Board consists of 31 members and their alternates who represent a broad range of stakeholder interests. Two of the three affected tribal governments are represented on the Board. One of the tribal governments participates on the Board in an ex-officio status.

Hanford formation: Within the geologic structure beneath the Hanford Site, there are three distinct formations. This is the uppermost level and it consists of gravel and sands deposited by catastrophic floods. The second layer, Ringold formation, consists of layers of silt, gravel and sand. The deepest level is a thick series of basalt flows that have been warped and folded and crop out as rock ridges in some places.”

Hanford Operable Units Report: Documents the assignment of individual units to operable units and provides the rationale and justification for the prioritization of the operable units for the remedial investigation process.

Hanford Reach National Monument: Managed by the U.S. Fish and Wildlife Service and USDOE, the Hanford Reach consists of a 51-mile stretch through the Hanford Site. It is located on each side of the Columbia River with approximately at 0.25-mile corridor. Many types of plant-life and wildlife live on the land.

Hanford Site: Also referred to as “Hanford” or “Site”, the approximately 586 square miles in Southeastern Washington State, excluding leased lands, and State and Bonneville Power Administration owned lands, which is owned by the United States and which is commonly known as the Hanford Reservation.

Hanford Waste Vitrification Plant (HWVP): A facility to be constructed for treatment of high level liquid radioactive waste. Liquids are vitrified or glassified in order to reduce the potential for radioactive and hazardous contamination leaching into the environment. This unit will be regulated under RCRA.

Hazardous and Solid Waste Amendments of 1984, P.L. 98-616 (HSWA): The reauthorization of the RCRA program, enacted by Congress on November 8, 1984.

Hazardous Substance: Substances regulated under CERCLA, as defined in CERCLA Sec. 101(14).

Hazardous Waste: Those wastes included in the definitions of RCRA 1004(5) and RCW 70.105.010(15).

Hazardous Waste Management Act (HWMA): A state program, commonly referred to as the State Dangerous Waste Program, which regulates the generation, treatment, storage and/or disposal of hazardous wastes in cooperation with RCRA.

In-Situ Vitrification (ISV): A process by which electrical current is passed through contaminated soils in-place heating the soil to a molten state. While cooling the soils become a homogenous glass-like block thereby minimizing the leachability of contaminants.

Appendix E – Acronym List and Glossary

Interagency Management Integration Team (IAMIT): A committee of the Executive Managers from each agency with the functions of negotiation of new milestones, adjustment of scope and schedule of existing interim milestones, and Tri-Party Agreement Issue Resolution/Dispute Resolution. The IAMIT also serves as the interface with the Hanford Advisory Board (HAB).

Interim Measure (IM): An expedited response action taken under RCRA authority to mitigate a hazardous waste release or to reduce the potential for a future release from a unit.

Interim Response Action (IRA): An expedited response action taken under CERCLA authority to mitigate a hazardous substance release or to reduce the potential for a future release from a unit.

Interim Safe Storage (ISS) of the Reactors: Interim Safe Storage (ISS) is the first stage of final disposition. It consists of 1) ensuring that facility hazardous substances are and will remain safe and secure, and 2) reducing the footprint of the reactor building to the primary shield wall, and sealing all openings such that the facility is in an environmentally safe and secure condition prior to initiation of disposition phase II.

Interim Stabilization (as pertains to Single-Shell Tanks): It is the removal of pumpable supernatant and interstitial liquid from single-shell tank systems into double-shell tank systems. As much liquid as practicable will be removed. Supernatant is free standing liquid. Interstitial liquid is that liquid in the waste matrix contained within the pore spaces of the salts and sludges, some of which is capable of gravity drainage while the rest is held by capillary forces.

Interim Status: A RCRA provision which grants a facility the right to continue to operate (treat, store, or dispose of hazardous waste) in accordance with applicable RCRA or state regulations until a RCRA permit is issued.

Iodine: A gaseous inorganic chemical produced in the plutonium production reactors at Hanford. Radioactive isotopes of iodine are found in most radioactive waste streams at Hanford.

Ion Exchange: Process for selectively removing a hazardous constituent from a waste stream by reversibly transferring ions between an insoluble solid and the waste stream; the exchange medium (usually from a column of resin) can then be washed to collect the waste or taken directly to disposal. Both the residue and liquid stream from this process may still be a hazardous waste.

Isotope: Any of two or more forms of a chemical with the same atomic number and nearly identical chemical behavior but different atomic mass and physical (e.g. radioactive) properties.

Land Disposal Restriction Waste (LDR): RCRA hazardous wastes, subject to Section 3004(d) through (m) of RCRA and 40 CFR 268.

Leachate: The product obtained from the passage of water through landfills or storage piles.

Lead: A heavy metal used for shielding material in nuclear reactors. Lead can be toxic when ingested or inhaled. Lead can impair nervous system development in children and can cause nervous system damage in adults. Lead is also a reproductive toxin.

Appendix E – Acronym List and Glossary

Lead Regulatory Agency: The agency (EPA or Ecology) which is assigned regulatory oversight responsibility with respect to actions under this Agreement regarding a particular Operable Unit; treatment, storage, and disposal group/unit; or, Tri-Party Agreement milestone. The designation of a Lead Regulatory Agency does not change the jurisdictional authorities of the Tri-Parties.

Level of Detection: The level at which a constituent can be detected by a department approved method of analysis.

Liquid Waste Disposal Site: Units used for discharge of contaminated liquids to the ground.

Low-Level Waste (LLW): Typically contains small amounts of radioactivity in large volumes, and most can be handled without protective shielding. Solid low-level waste consists of trash such as clothing, tools, and glassware. Liquid waste consists primarily of water circulated as cooling water.

Maximum Contaminant Level (MCL): The maximum level of a contaminant in water that can exist without harming the beneficial use of drinking water. Defined specifically in the Safe Drinking Water Act.

Model Toxics Control Act (MTCA): This Washington State law establishes administrative processes and standards to identify, investigate, and cleanup facilities where hazardous substances are located.

N Reactor: N Reactor is a dual purpose reactor, generating electricity from its steam by-product in addition to producing plutonium. It is the only plutonium production reactor at Hanford that has operated since 1971. It is currently in standby status.

National Pollutant Discharge Elimination System (NPDES): Grants authority to EPA and authorized states to issue permits for discharge of wastewaters into certain surface water bodies within prescribed limits for constituents, concentrations and volumes.

National Priorities List (NPL): EPA's list of priority waste sites containing hazardous substances that will be investigated and cleaned up under the Superfund program.

Operable Unit: An operable unit at Hanford is a group of land disposal sites placed together for the purposes of doing a Remedial Investigation/ Feasibility Study (RI/FS) and subsequent cleanup actions. The primary criteria for placement of a site into an operable unit includes geographic proximity, similarity of waste characteristics and site type, and the possibility for economies of scale.

Office of River Protection (ORP): The U.S. Department of Energy Office of River Protection manages the tank waste program on the Hanford Site.

Parties: The U.S. Environmental Protection Agency, the Washington State Department of Ecology, and the U.S. Department of Energy.

Percolation: Gravity flow of water through pore spaces in rock or soil.

pH: A measure of acidity and alkalinity.

Plume: A defined area of groundwater contamination.

Appendix E – Acronym List and Glossary

Plutonium: A radioactive element used as the primary fuel in nuclear weapons. Plutonium is purified during various production operations at Hanford.

Plutonium Uranium Extraction (PUREX): Latest in a line of separation technologies, preceded by bismuth phosphate and REDOX.

Ponds: Surface impoundments used to contain low-level liquid radioactive wastes, mixed wastes, or hazardous wastes.

Preliminary Assessment and Site Inspection (PA/SI): Normally the first step in analyzing the nature and severity of contamination at a potential CERCLA site and is used to determine if a site should be nominated for the NPL. Based upon extensive documentation previously submitted to EPA by USDOE, this requirement is considered to have been satisfied for the Hanford Site.

Project Manager: The individual responsible for implementing the terms and conditions of the Agreement at the specific operable unit level on behalf of his/her respective Party. The project manager has direct responsibility for completion of targets and milestones and has authority to agree to modifications of scope and schedule, in accordance with Section 12.0 of the Action Plan.

Public Information Repositories: A library of documents which includes information from Tri-Party Agreement activities such as remedial action, interim response action (i.e. removal action), corrective measure, interim measure, RCRA permit, or approved RCRA closure plan. There are four Public Information Repositories, located in Richland, Washington; Seattle, Washington; Portland, Oregon; and, Spokane, Washington.

Pump and Treat: Active method of treating groundwater that involves pumping the water to the surface, processing the water to remove the contaminants from the water to a levels that meets regulatory requirements, and returning the treated water to the aquifer.

Quality Assurance (QA): The systematic actions necessary to provide adequate confidence that a material, component, system, process, or facility performs satisfactorily, or as planned in service.

Quality Control (QC): The quality assurance actions that control the attributes of a material, process, component, system, or facility in accordance with predetermined quality requirements.

Radioactive Mixed Waste: Also called “mixed waste”, wastes that contain both hazardous waste subject to RCRA, as amended, and radioactive waste subject to the Atomic Energy Act of 1954, as amended. Mixed waste is regulated under the State Dangerous Waste Program.

Radioactive Waste: A solid, liquid, or gaseous material of negligible economic value that contains radionuclides in excess of threshold quantities except for radioactive material from post-weapons-test activities.

Radionuclide: A species of atoms having a particular number of protons (Z), a particular number of neutrons (A), and a particular atomic weight ($N=Z+A$) that happens to emit radiation.

Receptor: Any living entity potentially affected by release of substances to the environment from Hanford operations.

Appendix E – Acronym List and Glossary

Record of Decision (ROD): The CERCLA document used to select the method of remedial action to be implemented at a site after the Feasibility Study/Proposed Plan process has been completed.

Reduction/Oxidation (REDOX): A facility and/or processes for separating plutonium from irradiated reactor fuels by using successive steps of chemical reduction/oxidation together with solvent extraction.

Remedial Action: An action taken under CERCLA authority to permanently resolve a hazardous substance release or to significantly reduce the potential for a release from a unit or group of units.

Remedial Design (RD): The CERCLA process of design for the remedial action alternative that was selected in the Record of Decision.

Remedial Investigation (RI): The CERCLA process of determining the extent of hazardous substance contamination and, as appropriate, conducting treatability investigations. The RI is done in conjunction with the Feasibility Study.

Resource Conservation and Recovery Act (RCRA): A federal law enacted in 1976 that regulates the generation, transportation, treatment, storage, and disposal of hazardous wastes.

Response Action: The CERCLA processes of interim response and remedial actions. See definitions for Interim Response Action and Remedial Action.

RCRA Facility Assessment (RFA): The initial RCRA process to determine whether corrective action for a RCRA past practice unit is warranted, or to define what additional data must be gathered to make this determination; analogous to a CERCLA Preliminary Assessment and Site Inspection

RCRA Facility Investigation (RFI): The RCRA process of determining the extent of hazardous waste contamination; analogous to the CERCLA Remedial Investigation.

RCRA Past Practice (RPP): A process by which a past practice unit containing hazardous wastes or hazardous constituents will be addressed for corrective action, regardless of the date waste was received or discharged at a unit.

RCRA Permit: A permit under RCRA and/or HWMA for treatment, storage or disposal of hazardous waste.

Reverse Well: Liquid waste disposal structure consisting of a well (sometimes drilled into the water table) into which waste solutions were pumped.

Revised Code of Washington (RCW): The Washington State statutes.

Ringold formation: Within the geologic structure beneath the Hanford Site, there are three distinct formations. This is the second layer, consisting of layers of silt, gravel, and sand. The uppermost level is known as the Hanford formation and consists of gravel and sands deposited by catastrophic floods. The deepest level is a thick series of basalt flows that have been warped and folded and crop out as rock ridges in some places.

Appendix E – Acronym List and Glossary

Risk Assessment: An analysis of the potential adverse effects to human health and/or the environment (current or future) caused by radionuclide and/or hazardous substance releases from a site in the absence of any actions to control or mitigate these releases.

River Protection Project (RPP): The River Protection Project consists of the Hanford contractor staff who support the tank waste program.

Salt Cake: Crystallized nitrate and other salts deposited in waste tanks, usually after active measures are taken to remove moisture.

Sanitary Landfill: A burial operation for disposing of nonradioactive, nonhazardous waste or garbage.

Signatories: The Signatories are: For the USDOE, the signatory shall be the Manager, Richland Operations Office. For the EPA, the Signatory shall be the Regional Administrator for Region X. For the Washington State Department of Ecology, the signatory shall be the Director.

Single-Shell Tank (SST): At Hanford, 149 single-shell carbon steel tanks (ranging in size from 55,000 to 1 million gallons) that have been used to store high-level radioactive wastes.

Skyshine: Gamma radiation emitted from a source that is reflected off particles in the air, sometimes landing several hundred meters from their point of origin.

Solid Waste (radioactive): Either solid radioactive material or solid objects that contain radioactive material or bear radioactive surface contamination.

Stabilization: The combination of steps or activities to secure, convert and/or confine radioactive and/or hazardous material within enclosures, exhaust ducts, and process equipment within a facility. These activities may include; removal of loose equipment items, draining process fluids to the maximum extent practicable, coating internal surfaces with a fixative coating, removal of waste materials, installing seals and blank flanges, termination of nonessential energy sources, and/or conversion of reactive residues to a stable form suitable for extended safe storage.

State Waste Discharge Permit: A permit issued pursuant to Chapter 173-216 WAC.

Strontium 90: A highly radioactive isotope common in most radioactive waste streams at Hanford.

Sulfuric Acid: A highly corrosive inorganic acid used in various production processes at Hanford.

Superfund Amendments and Reauthorization Act of 1986 (SARA): The reauthorization of the CERCLA statute, enacted by Congress in December 1986.

Support Agency: The regulatory agency (EPA or Ecology) which is not designated as the lead regulatory agency at an operable unit. The support agency will provide assistance to the lead regulatory agency, as needed.

Surplus Facility: Any facility or site (including equipment) that has no identified programmatic use and may or may not be radioactively contaminated to levels that require controlled access.

Appendix E – Acronym List and Glossary

Surveillance and Maintenance: Activities conducted to assure that a site or facility remains in a physically safe and environmentally secure condition, and includes periodic inspections and monitoring of the property, appropriate contamination control actions, and required maintenance of barriers controlling access.

Tank Farm: An installation of multiple adjacent tanks, usually interconnected, for storage of liquid waste, or substances used in Hanford operations. Major tank farms at Hanford are at underground.

Tank Waste Task Force: A former group of representatives from tribal, government, business, economic development, labor, agriculture, environmental groups, and public interest groups focused on Hanford, labor, and public health. The task force was charged with providing values relative to the Tank Waste Remediation System and with principles for the overall Tri-Party Agreement package during the renegotiations of the Tri-Party Agreement, Summer 1993.

Technical Assistance Grant (TAG): A grant available from EPA designed to enhance public participation as described in Section 117 of CERCLA. A maximum of \$50,000 per NPL site is available. Grant money must be used for the purpose of interpreting information regarding CERCLA activity at the site.

Transuranic (TRU) Waste: Waste contaminated with long-lived transuranic elements in concentrations within a specified range established by USDOE, EPA, and the Nuclear Regulatory Commission (NRC). These are elements shown above uranium on the chemistry periodic table, such as plutonium, americium, and neptunium.

Treatment, Storage, or Disposal (TSD): A RCRA term referring to the treatment, storage, or disposal of hazardous waste. Under RCRA, TSD activity can occur only at units which received or stored hazardous waste after November 19, 1980, the effective date of the RCRA regulations.

Treatment, Storage, or Disposal (TSD) Unit: A unit used for treatment, storage, or disposal of hazardous waste and is required to be permitted and/or closed pursuant to RCRA requirements.

Trend Analysis: A statistical methodology used to detect net changes or trends in contaminant levels over time.

Tribal Government: The Hanford Site is located on land at one time ceded to the United States under separate treaties with Indian Nations. As a result of the treaties with the United States, the Confederated Tribes of the Umatilla Indian Reservation, the Yakama Nation, and the Nez Perce Tribe retained certain rights at the Hanford Site. These are known as the “affected tribal governments.”

Tri-Parties: The U.S. Department of Energy, the Washington State Department of Ecology, and the U.S. Environmental Protection Agency.

Tritium: A radioactive isotope of hydrogen used in nuclear weapons to increase the efficiency of the nuclear reaction.

Tunnel: A large underground storage structure for large pieces of equipment, often on railroad cars; PUREX storage tunnels.

Appendix E – Acronym List and Glossary

Unconfined Aquifer: An aquifer overlain with permeable material and sensitive to contamination; also, an aquifer that has a water table or surface at atmospheric pressure.

United States Department of Energy (USDOE): The United States Department of Energy, its employees and Authorized Representatives.

United States Environmental Protection Agency (EPA): The United States Environmental Protection Agency, its employees and Authorized Representatives.

Unplanned Release: An unintentional release, including a spill, of hazardous waste or hazardous substance into the environment.

Vadose Zone: The unsaturated region of soil between the ground surface and the water table.

Vault: A RCRA approved, subsurface structure designed for permanent disposal of low-level mixed wastes in grout.

Vitrification: See Hanford Waste Vitrification Plant (HWVP) or In-Situ Vitrification.

Wahluke Slope: Also known as the North Slope, this area is located across the Columbia River and is managed by the U.S. Fish and Wildlife Service as a wildlife refuge. The Wahluke Slope and the Fitzner-Eberhardt Arid Lands Ecology Reserve is approximately 45 percent of the Hanford Site and has been cleaned and removed from EPA's Superfund list.

Washington Administrative Code (WAC): The Washington State regulations.

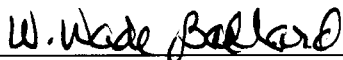
Waste Isolation Pilot Project (WIPP): Located in New Mexico, it is the permanent repository for wastes. The Hanford Site began shipping solid wastes to WIPP.

Water Table: The upper boundary of an unconfined aquifer surface below which soil saturated with groundwater occurs; defined by the levels at which water stands in wells that barely penetrate the aquifer.

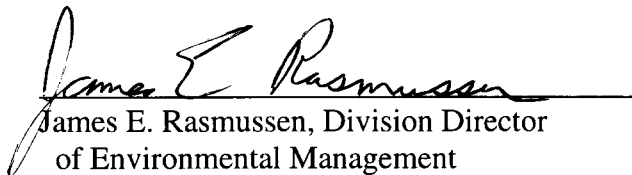
200 Areas Plateau: The highest portion (aside from Rattlesnake and Gable Mountains) on the Hanford Site, containing most of the waste processing and storage facilities.

Approved for implementation consistent with the Hanford Federal Facility Agreement and Consent Order.

FOR THE UNITED STATES DEPARTMENT OF ENERGY:

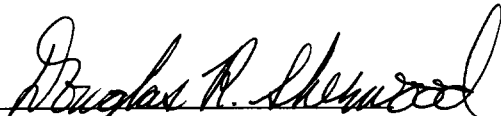


W. Wade Ballard, Assistant Manager
for Planning and Integration
U.S. Department of Energy, Richland Operations Office



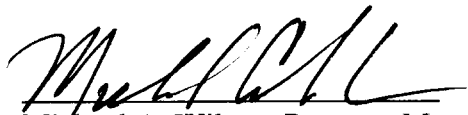
James E. Rasmussen, Division Director
of Environmental Management
U.S. Department of Energy, Office of River Protection

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:



Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency, Region 10

FOR THE STATE OF WASHINGTON DEPARTMENT OF ECOLOGY:



Michael A. Wilson, Program Manager
Nuclear Waste Program
Washington State Department of Ecology