



US Army Corps
of Engineers®
Buffalo District

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM (DERP) FORMERLY USED DEFENSE SITES (FUDS)

ACRONYMS and GLOSSARY

This glossary has been prepared as part of the effort to familiarize the public with the specific vocabulary and acronyms used in discussions about environmental restoration in the Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS).

aquifer - A permeable body of rock capable of yielding quantities of groundwater to wells and springs.

AR - administrative record... A required, comprehensive file of documents that forms the basis of decisions made regarding cleanup.

ARARs - applicable or relevant and appropriate requirements... A comprehensive set of laws and regulations that are relevant to guide the selection of cleanup activity at a particular site.

ATSDR – Agency for Toxic Substances and Disease Registry

baseline risk assessment - See **BRA**

BRA - baseline risk assessment... The study and estimation of risk from taking no activity. Involves estimates of probability and consequence.

BTU – British thermal unit... The quantity of heat required to raise the temperature of one pound (16 ounces) of water one degree Fahrenheit at or near 39.2°F, its temperature of maximum density, being equal to about 0.252 kilogram calorie.

carcinogen – A chemical, or complex mixture of closely related chemicals--also known to be a cancer-causing agent.

CEP – catalytic extraction processing

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act (also known as Superfund)... The federal law that guides cleanup of hazardous waste sites.

CFR - Code of Federal Regulations

characterization - Facility or site sampling, monitoring and analysis activities to determine the extent and nature of a release. Characterization provides the basis for acquiring the necessary technical information to develop, screen, analyze, and select appropriate cleanup techniques.

cleanup - The general term for environmental restoration, the process designed to ensure that risks to the environment and to human health and safety from waste sites either are eliminated or reduced to prescribed, safe levels.

closure plan - Documentation prepared to guide the deactivation, stabilization and surveillance of a waste management unit or facility under the Resource Conservation and Recovery Act.

contaminant – Any solid, liquid, or gaseous matter, any odor, or any form of energy, from whatever source.

contamination - The presence of foreign materials, chemicals or radioactive substances in the environment (soil, sediment, water or air) in significant concentrations.

comment period - Time provided for the public to review and comment formally on a proposed action or decision.

community relations - The effort to establish two-way communication with the public to ensure public input into the decision-making process related to Superfund and environmental restoration.

cubic meters - A unit equal to the volume of a cube measuring one meter in each dimension.

cubic yards - A unit equal to the volume of a cube measuring one yard in each dimension.

CWM – **C**hemical **W**aste **M**anagement

CWS – chemical waste sewer

DEC – **D**epartment of **E**nvironmental **C**onservation, State of New York

decontamination -- The removal of unwanted material from facilities, soils, or equipment by washing, chemical action, mechanical cleansing or other techniques.

defense wastes – The wastes resulting from weapons research and development.

DERA – **D**efense **E**nvironmental **R**estoration **A**ccount

DERP – **D**efense **E**nvironmental **R**estoration **P**rogram

DERP-FUDS – **D**efense **E**nvironmental **R**estoration **P**rogram for **F**ormerly **U**sed **D**efense **S**ites

detection -- the ability of an instrument to sense a specific amount or quantity, of the presence or past presence of a liquid, gas, or element in the local air, ground, or water. (*see also non-detect*)

disposal - Waste emplacement designed to ensure isolation of waste from the biosphere, with no intention of retrieval for the foreseeable future.

DOD – U. S. **D**epartment of **D**efense

DOE - U.S. **D**epartment of **E**nergy

DOH – **D**epartment of **H**ealth

effluent - A waste discharged as a liquid.

EE/CA - **e**ngineering **e**valuation and **c**ost **a**nalysis... A CERCLA document prepared to address interim cleanup activities.

element - Any of the 109 substances that cannot be broken down further without changing its chemical properties. Singly or in combination, the elements constitute all matter.

environmental restoration -- The process of environmental cleanup designed to ensure that risks to the environment and to human health and safety from waste sites either are eliminated or reduced to prescribed, safe levels.

EPA – see USEPA

erosion control - Methods to control land surface features to prevent erosion by surface water or precipitation runoff.

FAQ – frequently asked question

FEIS – **F**inal **E**nvironmental **I**mpact **S**tatement

final disposition -- Methods for permanent disposal of waste or contaminated media residuals following excavation/treatment.

FR -- **Federal Register**

FS - **feasibility study**... The Superfund study following a remedial investigation which identifies, develops, evaluates and selects remedial action alternatives.

FSP – **field sampling plan**

FUDS – **Formerly Used Defense Sites**

FUSRAP - **Formerly Utilized Sites Remedial Action Program**...A program created in 1974 to study sites used during World War II through the '50s as part of the nation's atomic energy program. These early sites were decontaminated under guidelines in effect during that period. Using today's more-stringent environmental laws and better technology, the Corps of Engineers will restore these environmentally damaged sites.

groundwater - Water beneath the earth's surface that fills pores between materials such as sand, soil or gravel. Groundwater is a major source of water for agricultural and industrial purposes and is an important source of drinking water for about half of all Americans.

hazardous waste - A solid waste or combination of solid wastes that, because of quantity, concentration or physical, chemical or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness or pose a substantial hazard to human health or the environment when improperly treated, stored, transported, disposed or otherwise managed. About 290 million tons of hazardous wastes are generated in the United States each year. A small percentage (about 4 percent) is recycled. The rest is treated, stored or disposed. Of the hazardous wastes

disposed, most are injected as a liquid into the ground in specially designed injection wells. A large quantity is placed in surface impoundments (pits, ponds and lagoons). A small portion is placed directly on the land or buried.

HCAFS – **Hanna City Air Force Station**

heavy metals - Metals that are dense. Examples include mercury, lead, silver, gold and uranium.

hydrogeologic - Pertaining to groundwater and its movements through the geologic environment.

hydrogeology - The science of how geology and groundwater interact.

IDNS – **Illinois Department of Nuclear Safety**

IEPA – **Illinois Environmental Protection Agency**

INPR – **inventory project report**

IR - **information repository**, where information relating to the Defense Environmental Restoration Program may be found.

IRA – **interim remediation action**

leachate - The solution formed when soluble components have been removed from a material.

leaching - To remove a soluble substance from a material by dissolving it in a liquid, and then removing the liquid from what is left.

LOD – **Lincoln Ordnance Depot**

LOOW – **Lake Ontario Ordnance Works**

LRB – **U.S. Army Corps of Engineers, Great Lakes and Ohio River Division, Buffalo District**

LRC – U.S. Army Corps of Engineers, Great Lakes and Ohio River Division, Chicago District

LRD – U.S. Army Corps of Engineers, Great Lakes and Ohio River Division Headquarters, Cincinnati, OH

LRL – U.S. Army Corps of Engineers, Great Lakes and Ohio River Division, Louisville District

LTSM – long-term surveillance and maintenance

MCL - maximum contaminant level... The regulatory limit for various constituents, usually organics and inorganics; there are different levels for different media, such as air, soil, and water. The MCL cannot be exceeded.

MED – Manhattan Engineer District, U.S. Army Corps of Engineers.

MDL – method detection limit... The minimum concentration of a substance that can be measured as reported with 99% confidence that the true value is greater than zero, pursuant to appropriate federal or state regulatory standards.

mixed waste - Contains both radioactive and chemical components.

mobility - The ability of a contaminant to move through food chains in the environment.

monitoring well - A hole drilled into the ground with a pipe inserted and filtering material added to allow for the collection of groundwater samples.

NAB – U.S. Army Corps of Engineers, North Atlantic Division, Baltimore District

NAD – U.S. Army Corps of Engineers, North Atlantic Division Headquarters, New York City, NY

NAN – U.S. Army Corps of Engineers, North Atlantic Division, New York District

NAS – National Academy of Sciences
natural radiation - Radiation that is always present in the environment from such sources as cosmic rays and radioactive materials in rocks and soils. Also known as background radiation.

NCP - National Oil and Hazardous Substances Pollution Contingency Plan, which implements CERCLA.

NEPA - National Environmental Policy Act... A regulatory policy that requires a study of the impacts of activities at federal facilities.

NFSS – Niagara Falls Storage Site

NH – nitration house

non-detect – The testing method is unable to measure an amount below the instrument's detection limit; it does not mean a zero concentration.

NPL - National Priorities List...The list of the nation's most contaminated Superfund sites.

NRC - Nuclear Regulatory Commission

NTS - Nevada Test Site, a repository for radioactive wastes.

NYSDEC – see DEC

ODNR – Ohio Department of Natural Resources

OEPA - Ohio Environmental Protection Agency

ORNL – Oak Ridge National Laboratory, Oak Ridge, TN.

OSHA - Occupational Safety & Health Act

OU – operable unit

PA – see preliminary assessment

PAH – polyaromatic hydrocarbons

pathways - The means by which contaminants move. Possible pathways include air, surface water, groundwater, plants and animals.

PCB - Polychlorinated biphenyl, a synthetic, organic chemical once widely used in electrical equipment, specialized hydraulic systems, heat transfer systems, and other industrial products. Highly toxic and a potent carcinogen. Any hazardous wastes that contain more than 50 parts per million of PCBs are subject to regulation under the Toxic Substances Control Act (TSCA).

PE – program/project engineer

PEG – polyethylene glycol, a series of water-soluble polyether glycols
 $\text{HOCH}_2\text{CH}_2(\text{OCH}_2\text{CH}_2)_n\text{OH}$ higher than diethylene glycol and triethylene glycol that vary from water white liquids to waxy solids as the average molecular weight increases from 200 to 6000 or more, that are usually obtained as mixtures by condensation of ethylene oxide with water or diethylene glycol, and that are used chiefly as lubricants (as in the rubber & textile industries), solvents, softeners, bases for pharmaceutical ointments and cosmetic creams.

plume - A defined area of groundwater containing contamination that originates from a particular source such as a waste unit.

PM – program or project manager

potable – Meaning generally fit for human consumption in accordance with accepted water supply principles and practices.

PP - proposed plan... A CERCLA document on which the public comments that summarizes what cleanup remedy has been selected, and why.

PRAC – pre-placed remedial action contract

preliminary assessment – The review of existing information and/or an off-site reconnaissance, if appropriate, to determine if a release may require additional investigation or action. A PA may include an on-site reconnaissance, if appropriate.

PRP – potentially responsible party

public water supply – All mains, pipes, and structures through which water is obtained and distributed to the public, including wells, and well structures, intakes and cribs, pumping stations, treatment plants, reservoirs, storage tanks and appurtenances, collectively or severally, actually used or intended for use for the purpose of furnishing water for drinking or general domestic use. A public water supply is either a “community water supply” or a “non-community water supply.”

RA - risk assessment... The study and estimation of risk from a current or proposed activity. Involves estimates of the probability and consequence of an action.

RAB – Restoration Advisory Board

radon - A radioactive gas produced by the decay of one of the daughters of radium. Radon is hazardous in unventilated areas because it can build up to high concentrations and, if inhaled for long periods of time, may cause lung cancer.

RCRA - Resource Conservation and Recovery Act... The federal environmental law designed to account for and ensure proper management of hazardous wastes, from creation to disposition.

RDX – brand name blasting compound

remedial action - Long-term cleanup activities.

remedial design - A phase of remedial action that follows the remedial investigation/feasibility study and includes development of engineering drawings and specifications for a site cleanup.

remediation - Those activities performed to remove or treat hazardous waste sites or to relieve their effects.

removal action - Interim cleanup activities that are identified as needed to protect public health and the environment.

responsiveness summary – A document presenting formal comments received during the public comment period and responses to the comments.

restoration -- See **environmental restoration**

RI - remedial investigation... The CERCLA process of determining the extent of hazardous substance contamination and, as appropriate, conducting treatability investigations.

RI/FS – remedial investigation/feasibility study... Two distinct, but related studies. Together, they characterize environmental problems and outline remedial actions to solve those problems.

Risk assessment -- See **RA**

risk communication -- The exchange of information about health or environmental risks between risk assessors, risk managers, the general public, news media, interest groups, etc.

risk management - The process of evaluating alternative regulatory and non-regulatory responses to risk and selecting among them. The selection process necessarily requires the consideration of legal, economic and social factors.

ROD - record of decision... A written decision that identifies the selected method for long-term cleanup of contamination at a site.

SAP – sampling and analysis plan

SARA - Superfund Amendments and Reauthorization Act

scoping - In CERCLA, scoping is the initial planning phase of the cleanup process, when requirements are discussed and the projects defined. In the NEPA process, scoping relates to public involvement to help identify significant issues early so that efforts can be focused on those areas requiring resolution and to present a balanced environmental impact statement.

SVOC – semi-volatile organic compounds

SI – site inspection/investigation (see site inspection/investigation)

site – Meaning any location, place, tract of land and facilities, including but not limited to, buildings and improvements used for the purposes subject to regulation or control by the act or regulations thereunder.

site conceptual model – A written or pictorial representation of an environmental system and the biological, physical, and chemical processes that determine the transport of contaminant sources through environmental media (air, groundwater, surface water, sediment) to environmental and human receptors within the system.

site inspection/investigation – Meaning an on-site inspection/investigation to determine whether there is a release or potential release and the nature of the associated threats. The purpose is to augment the data collected in the preliminary assessment and to generate, if necessary, sampling and other field data to determine if further action or investigation is appropriate.

sludge - A semi-solid residue from any of a number of air or water treatment processes. Sludge can be a hazardous waste.

slurry - A watery mixture of insoluble matter that results from some pollution control techniques.

solidification - The conversion of either liquid or loose hazardous waste into a solid.

solubility - A measure of how much of a given substance will dissolve in a liquid. Usually measured in weight per unit volume.

Superfund - The program operated under the legislative authority of CERCLA and SARA that funds and carries out the EPA solid waste emergency and long-term removal remedial activities. These activities include establishing the National Priorities List, investigating sites for inclusion on the list, determining their priority level on the list, and conducting and/or supervising the ultimately determined cleanup and other remedial actions.

TACO – tiered approach to cleanup objectives

TCE – trichloroethene or trichloroethylene – A nonflammable liquid C_2HCl_3 used especially as a solvent and in dry cleaning and removal of grease from metal.

temporary well point – One-time only groundwater sample taken for analysis as opposed to a permanent monitoring well.

TERC – Total Environmental Restoration Contract

TNT – trinitrotoluene – flammable toxic symmetrical trinitro derivative $CH_3C_6H_2(NO_2)_3$ of toluene used either alone as bursting charge for shells, bombs, and grenades or as an ingredient of various explosives and is also used as an intermediate in chemical synthesis.

TOSC – Technical Outreach Services for Communities... A USEPA funded program that assists communities in participating effectively in the site clean up decision making through independent technical assistance and education.

toxic - Relating to a harmful effect by a poisonous substance on the human body by physical contact, ingestion or inhalation.

toxicology - The science that deals with poisons and their effects on plant, animal and human life.

tpd – tons per day

treatment - Any activity that alters the chemical or physical nature of a waste to reduce its toxicity or prepare it for disposal.

upgradient – The ground water upstream from a point of interest.

USACE – United States Army Corps of Engineers, the federal agency managing cleanup of the Formerly Utilized Sites Remedial Action Program. USACE was delegated by DOD as the chief executor for environmental restoration activities at FUDS.

USEPA - United States Environmental Protection Agency, sometimes referred to as EPA.

UST - underground storage tank... The associated piping containing hazardous materials.

UXO – unexploded ordnance

VOCs - volatile organic compounds, chemicals that contain carbon and commonly also contain hydrogen, oxygen and other elements. The prefix "volatile" means that the compound evaporates readily. Most industrial solvents are volatile and are found in some liquid and air waste releases.

WCS – waste containment structure

WWTP – waste water treatment plant

x-rays - Electromagnetic radiation used in medical diagnosis; a penetrating electromagnetic radiation, usually generated by accelerating atoms to high velocity and suddenly stopping them by collision with a solid body.

For More Information....

To get more information about DERP-FUDS issues, or to be added to the program's mailing list, contact:

U.S. Army Corps of Engineers
Public Affairs Office
1776 Niagara Street
Buffalo, NY 14207-3199
(716) 879-4134

You may also call the toll-free telephone number:

1-800-833-6390, then press "0"

The USACE-Buffalo District Web page addresses are:

<http://www.lrb.usace.army.mil>
<http://www.lrb.usace.army.mil/derpfuds>

Concentration Comparisons

Parts per million:

- One automobile in bumper-to-bumper traffic from Cleveland to San Francisco
- One drop of gasoline in a full-size car's tank full of gas
- One facial tissue in a stack taller than the Empire State Building
- One pancake in a stack four miles high

Parts per billion:

- One silver dollar in a roll of silver dollars stretching from Detroit to Salt Lake City
- One kernel of corn in enough corn to fill a 45 foot-silo, 16 feet in diameter
- One sheet in a roll of toilet paper stretching from New York to London

Parts per trillion:

- One square foot of floor tile on a kitchen floor the size of Indiana
- One drop of detergent in enough dishwasher to fill a train load of railroad tank cars 10 miles long
- One mile on a two-month journey at the speed of light

Parts per quadrillion:

- One postage stamp on a letter the size of California and Oregon combined
- The palm of one's hand resting on a table the size of the United States
- One human hair out of all the hair on all the heads of all the people in the world
- One mile in a journey of 170 light years

Sources:

- *Glossary of Environmental Restoration Terms and Acronym List* (EPA/OPA-87-017, August 1988)
- *Glossary of Environmental Restoration* (DOE, Office of Environmental Restorations and Waste Management, Oak Ridge Operations, October 1990 and October 1991)
- Definitions (Illinois Administrative Code, Title 35, subtitle F, chapter I, part 620.110, eff. 1 July 1997)