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Aeration	The process of bringing about contact between air and water for the purpose of promoting biological degradation. Aeration is employed in several biological technologies including activated sludge, rotating biological contractors, trickling filters and biological lagoons. Assemblies include tanks, air diffusers, and reactors.
Air Sparging	A method used to remove VOCs from groundwater. Compressed air is forced through a well screen in the aquifer forcing contaminants into the soils above the groundwater where they may be removed by soil vapor extraction.
Air Stripping	The change of dissolved molecules from a liquid waste stream to a flowing gas. It is normally carried out as a continuous operation that employs a packaged tower. For air stripping, liquid waste is pumped near the top of stripping column and flows downward through the tower, concurrent to an upward air flow. As the air flow contacts the liquid wastes, the volatile organics are stripped from the liquid waste.
Aquifer	A layer of water mixed with permeable rock, sand, or gravel.
Backhoe	An excavating machine with a hoe-type or pull-type shovel. May be rubber-tired or tracked.
Biological Treatment	Biological treatment is the microbial transformation of organic compounds. Biological treatment processes can alter inorganic compounds such as ammonia and nitrate, and can change the oxidation state of certain metal compounds. Includes in-situ biological treatment such as land farming as well as activated sludge, composting, trickling filters, anaerobic, and aerobic digestion. Includes process equipment and chemicals required for treatment.
Bioremediation	An innovative technology in which bacteria are used to break down petroleum products in soil. It currently addresses only a few biodegradable compounds, but is still being developed.
Biosparging	An in situ technique which delivers oxygen to the saturated and unsaturated zones to stimulate the aerobic biodegradation of organic contaminants in the groundwater. Oxygen is delivered at a slow rate so biodegradation rather than volatilization is encouraged.
Bioventing	An innovative technology used to degrade VOCs.
Bulldozer	Crawler tractor with a hydraulic or cable-controlled front-mounted blade.

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Capping	The process of covering buried waste materials with a cover material (usually clay). Capping includes the construction of multilayered caps and bottom liners designed to contain solid waste in place, to prevent the migration of precipitation, or entry of vegetation or animals into the waste cell, and to collect and distribute any leachate generated by the waste. Includes procurement of materials, loading, hauling, spreading, compaction of cap layers, establishment and maintenance of turf, and containment systems (liners) beneath waste piles or landfills. Cap layers and bottom liners include impervious clay layers, bentonite layer, granular drainage layers, geotextile membrane, flexible membrane liners, random barrier, revegetation, erosion control, drainage and leachate collection system, manholes, sumps, lift stations, paving cover, blast protective cover and testing.
Carbon Adsorption-Liquids	Carbon adsorption use activated carbon to remove organic contaminants from liquid waste streams. Granular activated carbon is applied in stationary column or filter bed, where organic contaminants are adsorbed. Costs associated with carbon adsorption are isotherm tests, granular activated carbon columns, prefilters, and costs associated with regenerating the spent carbon.
Chemical Treatment	The process in which hazardous wastes are chemically changed to remove toxic contaminants from the environment. Type of treatment included in this account are oxidation, hydrolysis, photolysis, dechlorination, and electrolysis reactions. Includes process equipment and chemicals required for treatment.
Construction Completion	The point in the cleanup process at which physical construction is complete for all remedial and removal work required at the entire site. Construction is officially complete when a document has been signed by EPA stating that all necessary remediation has been finished. While no further construction is anticipated at the site, there may still be a need for long-term, on-site activity before specified clean-up levels are met (e.g., restoration of groundwater and surface water). Although physical construction may not be necessary at some sites, these sites are also included in this category to fully portray EPA's progress.
Dechlorination	A type of chemical treatment which results in the removal or replacement of atoms bonded to hazardous compounds.
Decontamination	The process of removing or neutralizing hazardous substances on personnel and equipment.

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Decontamination & Decommissioning (D&D)	Activities associated with shutdown and final cleanup of a nuclear or other facility. Includes facility shutdown and dismantling activities, preparation of decommissioning plans, procurement of equipment and materials, research and development, spent fuel handling, and hot cell cleanup.
Ex Situ Bioremediation: Biomounding	Removes biodegradable contaminants from excavated mounds of soil. Nutrients are added to the soil mounds to facilitate bioremediation. Aeration conduits and irrigation systems are constructed in the mound.
Ex Situ Bioremediation: Land Farming	Removes biodegradable contaminants from excavated soil by spreading the excavated soil and added nutrients over a lined treatment area which is periodically cultivated to expedite the natural release of VOCs and breakdown of the contaminants.
Facility Shutdown Activities	Any activities that are necessary for the closing of a nuclear or other facility. These include sampling, defueling, plant decontamination, inspections, and buildings entombment.
Feasibility Study	Performed at the same time as the remedial investigation, this is the stage where EPA/contractors decide if the remedial designs which they are thinking of doing, are feasible for that particular site.
Fiscal Year	Government fiscal year, from October 1 through September 30.
Fuming Gasification	A thermal treatment process which removes contaminants from solids and soils as metal fumes and organic vapors. Organic fumes can then be burned as fuel, and metal fumes can be recovered and recycled.
Groundwater	Water within the earth that supplies wells and springs.
Hazardous Materials Emergency Response	Response to any substance or material in any form or quality which poses an unreasonable risk to safety and health and property, or poses a threat to waterways and the environment when released.
Hazardous Ranking System	Used by EPA as criteria to determine if a site should be placed on the National Priorities List. A numerically based system, it evaluates the relative risks posed by a site to both human health and the environment.
Hazardous Substance Emergency	Uncontrolled or illegal releases or threatened releases of chemicals or their hazardous byproducts.

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Incineration	The process of burning soils or sludges to destroy contaminants.
Innovative Technology	Treatment methods used which, to date, have not been proven by performance and cost data.
In Situ	Within place, refers to the location of activities.
In Situ Air Sparging with Soil Vapor Extraction	Removes dissolved volatile contaminants from groundwater by injecting air into the saturated area. Air forms bubbles that rise into the unsaturated area, carrying trapped and dissolved contaminants. Extraction wells in the unsaturated area capture trapped air, which can be treated through a variety of vapor treatment options.
In Situ Bioremediation	Removes biodegradable contaminants from groundwater by using microorganisms and supplemental oxygen and nutrients to break down petroleum products in the groundwater.
In Situ Bioremediation: Bioventing	Removes biodegradable contaminants from unsaturated soils by injecting oxygen into the soil, which stimulates the aerobic biodegradation of the organic contaminants in the soil. Oxygen is delivered at a low rate which encourages biodegradation rather than volatilization.
In Situ Passive Biodegradation (Natural Attenuation)	Removes biodegradable contaminants from soil by using microorganisms to break down petroleum products in the soil.
In Situ Radio Frequency (RF) Heating Process	The in situ radio frequency heating process utilizes electromagnetic energy in the radio frequency band to heat soil rapidly. The process can be used to heat the soil to a temperature range of 150-250°C. The contaminants are vaporized and/or boiled out along with water vapor formed by the boiling of native soil moisture. The gases and vapors formed upon heating the soil are recovered and treated on site.
In Situ Soil Vapor Extraction	Removes contaminants from unsaturated soils by using a vacuum pump to bring fresh air into the ground, pushing the contaminants to the surface where they may be treated.
In Situ Vitrification	The in-place encapsulation of contaminated soils and sludges into a solid glassy matrix by melting the soil using large amounts of electrical current. Assemblies include electrical power distribution, electrodes, graphite placed over the soil to establish a conductive path and exhaust hood system to capture gaseous wastes.

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Land Farming	Removes petroleum compounds from soils. Contaminated soils are removed from the ground, spread over a given area, and periodically cultivated to speed up the release of VOCs and breakdown of the contaminants.
On-Site Low Temperature Thermal Desorption	Removes contaminants from volumes of soil over 1,000 cubic yards by heating contaminated soils at less than 1,000 degrees Fahrenheit which causes contaminants to vaporize. The vaporized contaminants are then treated by air emissions treatment systems.
Operable Unit	A discrete action that comprises an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of release, or pathway of exposure. The cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may address geographical portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site.
Operation & Maintenance	This phase, if necessary, follows the Remedial Action. It may include actions such as monitoring groundwater or periodic site inspections to ensure that the remedial actions are effective.
Physical Treatment	Hazardous constituents in wastes are not destroyed, but instead are separated and two waste streams are produced. One is a concentrated volume of hazardous material and a second is a nonhazardous soil or liquid.
Pollution Prevention	Pollution prevention means reducing the volume and/or toxicity of pollution at the source of its generation.
Preliminary Assessment	The phase in which EPA determines whether the site poses potential threats to human health or the environment.
Presumptive Remedy	Preferred technologies for common categories of sites for common categories of sites, based on historical patterns of remedy selection and EPA's scientific and engineering evaluation of performance data on technology implementation.
Pump & Treat	Through the use of extraction wells, brings contaminated groundwater above the ground. Water is then treated through granulated activated carbon, air stripping, or bioremediation.

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Record of Decision	A document which shows the results of the RI/FS. It then specifies the chosen as well as the alternative remedies for the site.
Remedial Action	The phase in which the waste is actually treated, removed or contained.
Remedial Design	The phase in which engineers come up with detailed specifications for the selected remedy.
Remedial Investigation	The phase in which EPA/contractors determine the extent of contamination to a site is assessed, treatment alternatives are evaluated.
Removal Action	Short-term actions which stabilize or cleanup a hazardous site that poses a threat to human health or the environment. Typical removal actions include removing tanks or drums of hazardous substances on the surface, installing fencing or other security measures, and providing a temporary alternate source of drinking water.
Resource Conservation and Recovery Act	Regulatory system which tracks hazardous wastes from the time they are generated until final disposal. Requires safe hazardous waste management and dictates standards for treating, transporting, storing, and disposing of hazardous waste. Designed to prevent the creation of new hazardous waste sites.
Site Restoration	Includes, topsoil, seeding, landscaping, restoration of roads and parking, and other hardscaping disturbed during site remediation. Note that all vegetation and planting is to be included as well as the installation of any site improvement damaged or altered during construction.
Slurry Wall	Narrow vertical trenches, typically 24-36 inches wide, excavated through previous materials to a relatively impervious underlying strata and backfilled with a soil/bentonite or cement/bentonite slurry mixture. This provides a vertical barrier to reduce the horizontal permeability of soil. Slurry wall displacement. The operation of batch plant equipment such as storage tanks, ponds, grout plants, circulation pumps and batchers are also included.
Soil Aeration	Process by which contaminated soil is exposed to air through tilling or with a submerged pump. The air reacts with the waste to detoxify or decontaminate it.

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Soil Flushing	An in-situ treatment of soils, sludges and sediments with water (with or without additives) to remove hazardous, toxic or radioactive contaminants. The wastewater is the recovered and treated. Assemblies include infiltration basins, water storage tanks with associated pumps, valves, and piping, groundwater recovery wells, and treatment for the recovered water.
Soil Vapor Extraction (SVE)	Uses a vacuum pump to draw fresh air into the ground causing toxic substances to rise to the surface where they may be treated. Most frequently used technology for chlorinated and nonchlorinated VOCs in soil.
Soil Venting	Technology used to remove gasoline vapors from soil without excavation. This method may be applied either passively (with vents that are open to the atmosphere) or actively (using pressure or vacuum pumps).
Soil Washing	Mechanical action and water which sometimes has additives physically removes contaminants from soil particles. In addition, agitation of the soil particles allows the smaller diameter, more highly contaminated fines to separate from the larger particles, thereby reducing the volume of material requiring further treatment.
Solid Waste Management Unit	Any unit where solid wastes have been placed at any time, irregardless of whether the unit was intended for the management of solid waste.
Solidification	Stabilizes and prepares non-solid radioactive waste for disposal through methods such as calcining (burning).
Solvent Extraction	Using the correct solvent for the particular waste to be treated, organic contaminants are solubilized singularly and removed from the waste.
Stabilization/Solidification Fixation	Wastes are mixed with a hardening or binding agent, called a fixative, to reduce the mobility of the wastes or to solidify them.
Tank	A stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.
Thermal Desorption	An innovative technology that treats a vast array of VOCs and SVOCs. A way to separate or concentrate organic waste for further treatment.
Uranium Mill Tailings	Naturally occurring radioactive rock and soil that result from uranium mining.

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Vacuum Enhanced Pump & Treat	A process than increases the rate of pumping (reducing remediation time) by using a surface-mounted vacuum pump to remove contaminated soil vapors.
Vapor Extraction	A remediation technology which removes volatile organic compounds from soil by pulling air through the soil and venting it through an off-gas treatment system, condensate handling system, instrumentation and controls. Vapor extraction assemblies include drilling withdrawal and air injection wells, packing, capping, gravel and bentonite, positive displacement air blowers, manifold piping, vapor phase carbon adsorption units and well screens.
Vitrification	Mixing high-level liquid waste with molten glass in order to convert it into a stable solid form.
Volatile Organic Compound (VOC)	Carbon-containing compounds that readily change from liquid to gas as normal temperatures and pressures.