Appendix V. List of Acronyms and Abbreviations, and Glossary of Terms

List of Acronyms and Abbreviations

Ac	actinium
ac	acre
ac-ft	acre-feet
ACAA	American Coal Ash Association
AEA	Atomic Energy Act
AEC	Atomic Energy Commission
ALARA	As low as reasonably achievable
AMD	acid mine drainage
AML	abandoned mine lands
ARAR	Applicable or Relevant and Appropriate Requirement
ARD	acid rock drainage
As	arsenic
ATSDR	Agency for Toxic Substances and Disease Registry
ATV	All-terrain vehicle: A two-, three-, or four-wheeled vehicle capable of operation off paved roads.
Ba	barium
BASINS	Better Assessment Science Integrating Source and Non-point Sources (USGS computer model)
BAT	best achievable technology
Bi	bismuth
BPCT	best practicable control technology
Bq/kg	Becquerel/kilogram.
BRC	Bureau of Radiation Control
CAA	Clean Air Act
$CaSO_4$	calcium sulphate (formula for gypsum)
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
Ci	Curie(s) (unit of radioactivity, 3.7×10^{10} disintegrations per second)
cm	centimeter

COD	chemical oxygen demand
Cr	chromium
CRCPD	Conference of Radiation Control Program Directors
Cu	copper
CWA	Clean Water Act
D&D	decontamination and decommissioning
DOE	Department of Energy
DOI	Department of the Interior
dscm	dry standard cubic meter
E	used to denote exponents (3.7E+10)
EIA	Energy Information Administration (U.S. Department of Energy)
EPA	Environmental Protection Agency
ESRI	Environmental Systems Research Institute
^{o}F	degrees Fahrenheit
Fe	iron
$FeCl_3$	ferric chloride
FeP	ferro-phosphorus
FeS_2	pyrite
FIPR	Florida Institute of Phosphate Research
Fr	francium
ft	feet
G	gram
GIS	geographic information system
g/cm^3	gram per cubic centimeter
Gy	Gray
H	hydrogen
ha	hectare, 2.471 acres
HDS	high-density sludge
Hg	mercury
Hr	hour
ISL	in situ leaching
K	potassium

K_d	element-specific soil/water partition coefficient
Kg	kilogram
km	kilometer
L	liter
LTSP	long-term surveillance plan
µ	micro, 10^{-6}, used in combination with specific units of measurement or radiation
μg/m	microgram per meter
$\mu g/m^3$	microgram per cubic meter
μm	micrometer – one-millionth of a meter (micron)
μR/hr	microRoentgen per hour
m_	milli, 10^{-3}, used in combination with specific units of measurement or radiation
m	meter
m^2	square meter
m^2s	square meters per second
m^3	cubic meter
MAS/MILS	Minerals Availability System/Minerals Industry Location System (USGS database)
Mbd	million barrels per day
MCL	maximum contaminant level
MeV	Million Electron Volts
Mg	milligram
mL	milliliter
MMTs	millions of metric tons
Mn	manganese
Mo	molybdenum
MOU	memorandum of understanding
Mrem	millirem
mR/hr	milliRoentgen per hour
mSv	milliSievert
MT	metric ton(s), 1,000kg, or 2,200 lb
n	nano, 10^{-9} , used in combination with specific units of measurement or radiation

NAAQS	National Ambient Air Quality Standards
NAMLRP	Navajo Abandoned Mine Lands Reclamation Program
NARM	naturally occurring and accelerator-produced radioactive material
NAS	National Academy of Sciences
NCRP	National Council on Radiation Protection and Measurements
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFS	National Forest Service
NNEPA	Navajo Nation Environmental Protection Agency
NORM	naturally occurring radioactive material
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NSPS	New Source Performance Standards
O_2	oxygen
ORIA	Office of Radiation and Indoor Air (U.S. EPA)
OSHA	Occupational Safety and Health Administration
OSM	Office of Surface Mining
p	pico, 10^{-12}, used in combination with specific units of measurement or radiation
Pa	proactinium
Pb	lead
pCi/g	picocurie per gram
pCi/L	picocurie per liter
$pCi/m^2/s$	picocurie per meter squared per second
pH	negative log of hydrogen ion concentration (measure of acidity and alkalinity)
Po	polonium
ppb	parts per billion, 10^{-9}
ppm	parts per million, 10^{-6}
Pu	plutonium
PRGs	preliminary remediation goals

QA/QC	quality assurance/quality control
R	Roentgen
r^2	correlation coefficient
Ra	radium
RCRA	Resource Conservation and Recovery Act
Rem	Roentgen equivalent in man
RESRAD	computer model to evaluate risks/doses from RESidual RADiation materials
ROD	record of decision
s	second
SAB/RAC	Science Advisory Board/Radiation Advisory Committee (with U.S. EPA)
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
Se	selenium
SEO	State Engineer's Office
SIP	State Implementation Plans
SMCRA	Surface Mining Control and Reclamation Act
Sr	strontium
SSL	soil screening level, in pCi/g
STE	treatment, storage, and disposal
Sv	Sievert
TDS	total dissolved solids
TENORM	technologically enhanced, naturally occurring radioactive material
Th	thorium
Tl	thallium
TNRCC	Texas Natural Resources Conservation Commission (now Texas Commission on Environmental Quality)
tpd	tons per day
TRC	Texas Railroad Commission
TSS	total suspended solids
TWC	Texas Water Commission
U	uranium

U_3O_8	oxide of uranium
UIC	underground injection control
ULD	uranium location database
UMTRA	Uranium Mill Tailings Remedial Action program (U.S. DOE)
UMTRCA	Uranium Mill Tailings Radiation Control Act of 1978
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
UO_2	uranium dioxide
UO_2SO_4	uranium sulfate
$USiO_4$	coffinite (a uranium ore)
U.S. ACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
UTi_2O_6	brannerite (a uranium ore)
WL	working level
y^3	cubic yard(s)

Glossary of Terms

Adits	Horizontal or nearly horizontal passages driven from the surface for the working or dewatering of a mine. If driven through a hill or mountain to the surface on the other side, it would be a tunnel.
AIRDOS	An EPA computer program for calculating doses and risks from airborne emissions of radioactive materials.
ALARA	Acronym for As Low As (is) Reasonably Achievable: A basic concept of radiation protection which specifies that exposure to ionizing radiation and releases of radioactive materials should be managed to reduce collective doses as far below regulatory limits as is reasonably achievable considering economic, technological, and societal factors, among others.
Alpha Particle	A positively charged helium nucleus (two protons and two neutrons) emitted by some radioactive materials undergoing radioactive decay.
Applicable or Relevant and Appropriate Requirement (ARAR)	Under CERCLA, cleanups must follow two kinds of requirements: • Applicable requirements meaning those that directly apply to the situation, or • Relevant or appropriate requirements meaning those that apply to contaminants that are present at the site or apply to contaminated medium, such as water, at the site. For example, the standards for cleaning up uranium and thorium processing facility sites are frequently considered "relevant and appropriate" for radiologically contaminated sites that did not conduct such processing. • ARARs can be federal, state, or local requirements.
Aquifer	An underground geological formation or group of formations containing water. Source of groundwater for wells and springs.
Average Exposed Individual	The average individual in the regional population within a 50-mile (80-km) radius of the model mine.
Background Radiation	Is radiation from cosmic sources, naturally occurring radioactive material, including radon (except as a decay product of source or special nuclear material), and global fallout as it exists in the environment from the testing of nuclear explosive devices or from nuclear accidents like Chernobyl**.**
Beneficiation	The initial attempt at liberating and concentrating a valuable mineral from extracted ore. This is typically performed by employing various crushing, grinding, and froth flotation techniques. The remaining (beneficiated) material is often physically and chemically similar to the material (ore or mineral) that entered the operation, except that particle size reduction has often occurred.

Berm	A horizontal shelf or ledge built into the embankment or sloping wall of an open pit, quarry, or ground surface to break the continuity of an otherwise long slope and to strengthen its stability or to catch and arrest slide material.
Beta Particle	An electron emitted from an atom's nucleus during radioactive decay.
Bioremediation	The use of biological agents, such as bacteria or plants, to remove or neutralize contaminants, as in polluted soil or water.
Brannerite	A radioactive, uranium-bearing mineral, $(U,Ca,Y,Ce)(Ti,Fe)_2O_6$.
Breccia	A coarse-grained clastic rock, composed of angular broken rock fragments held together by a mineral cement or in a fine-grained matrix. Breccia may originate as a result of talus accumulation, explosive igneous processes, collapse of rock material, or faulting.
Byproduct Materials	Tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by such solution extraction operations do not constitute byproduct materials within this definition.
Carbonates	A sediment or sedimentary rock formed by the organic or inorganic precipitation from aqueous solution of carbonates of calcium, magnesium, or iron; e.g., limestone and dolomite.
Cleanup	Actions taken to deal with a release or threatened release of hazardous substances that could affect public health or the environment. The term is often used broadly to describe various Superfund response actions or phases of remedial responses, such as remedial investigation/feasibility study. Cleanup is sometimes used interchangeably with the terms remedial action, response action, or corrective action.
Coffinite	A naturally occurring uranium mineral, $U(SiO_4)_{1-x}(OH)_{4x}$.
Consolidated materials	In geology, any or all of the processes whereby loose, soft, or liquid earth become firm and coherent, either cemented or non-cemented together.
Contamination	The presence of residual radioactivity, heavy metals, or other pollutants in excess of levels that are acceptable for release of a site or facility for unrestricted use.
Conventional Mining	Mining which uses either mechanical open-pit surface mining methods, underground mining methods, or a combination of both, to extract ore from the ground. This is opposed to unconventional or solution mining methods.
Core Sample	A soil, rock, or sediment sample taken by core drilling.

Curie (Ci)	The customary unit of radioactivity. One curie (Ci) is equal to 37 billion disintegrations per second (3.7×10^{10} dps = 3.7×10^{10} Bq), which is approximately equal to the decay rate of one gram of Ra-226. Fractions of a curie, e.g. picocurie (pCi) or 10^{-12} Ci and microcurie (μCi) or 10^{-6} Ci, are levels typically encountered in radiation measurements of NORM or TENORM.
Decline	A downward ramp.
Decommissioning	The process of removing a facility or site from operation, followed by decontamination, and license termination (or termination of authorization for operation) if appropriate. The objective of decommissioning is to reduce the residual radioactivity or contaminants in structures, materials, soils, groundwater, and other media at the site so that the concentration of each radionuclide contaminant that contributes to residual radioactivity is within the cleanup limits established for the site.
Distribution Coefficient	(Soil/Water Distribution Coefficient, K_d) The ratio of the concentration of a substance in soil or rock (g^{-1}) to the concentration of that substance in water ($(mL)^{-1}$). It has units of volume/mass, e.g., mL/g.
Dose	A general term used to refer to the amount of energy absorbed by a material exposed to radiation**.**
Drill Cuttings	The particles of rock produced in a borehole or drill hole by the abrasive or percussive action of a drill bit; erosive effect of the circulating liquid; or cavings from the borehole. At some mines and operations sites, cores of rock from a well or borehole may be left behind as waste, referred to in this report as drill cuttings for convenience.
Drilling Wastes	Wastes associated with a drillhole operation at a mine or extraction facility that are not considered cuttings or cores. May include drill muds or other drilling fluids, sludges, or evaporation products collected in excavated pits from wastewater produced during drilling.
Ecosystem	A specialized community, including all the component organisms, that forms an interacting system; for example, a marsh, a shoreline, or a forest; encompassing air, water, and land or habitats supporting plant and animal life.
Effective Porosity	The volume of the void spaces through which water or other fluids can travel in a rock or sediment divided by the total volume of the rock or sediment.
Electrodialysis	A means of extracting one or more dissolved materials from a liquid mixture, the process is dialysis assisted by the application of an electric potential across a semi-permeable membrane.
Elution	The process of removing an economic substance (e.g.**,** uranium) from an ion exchange filter or resin.

Evaporative Ponds	Areas where mine water or other produced water is placed and dried by evaporation, leaving a residue of solids or sludges.
Evaporite	An inorganic chemical sediment that precipitates when the salty water in which it had dissolved evaporates.
Excavated Wall	A wall of mineral ore that has been exposed by mining over a considerable width at one time.
Exposure Pathway	The route by which radioactivity travels through the environment to eventually cause radiation exposure to a person or group (e.g., air or water). Also, the route by which a member of the public is exposed (e.g., ingestion, inhalation).
Exposure Scenarios	A set of conditions used in calculating exposure to a toxic material. Typical parameters in an exposure scenario include: duration of exposure, distance from the source of the material, breathing rate, and nature of any liquid or food consumption. Exposure scenarios are often named for a set of conditions for a particular activity, such as residential scenario, occupational scenario, or recreational scenario.
External Radiation	Radiation from a source outside the body.
Extraction Facility	An industrial complex and land on which are located buildings, wells and pipelines, mechanical and chemical equipment, storage and transportation equipment licensed by the Nuclear Regulatory Commission or its Agreement States for the purposes of extracting uranium (source material) in accordance with the Atomic Energy Act.
Extraction Process	A process used to extract uranium from ore, either by milling and chemically treating the ore, or using chemical solutions to treat underground ore (in situ leaching), or by treating mined and crushed ore on the surface (heap leaching). These processes are licensed activities by the Nuclear Regulatory Commission or its Agreement States in accordance with the Atomic Energy Act.
Gamma Radiation	Penetrating high-energy, short-wavelength electromagnetic radiation (similar to X-rays) emitted during radioactive decay. Gamma rays are very penetrating and require dense materials (such as lead or steel) for shielding.
Gangue	The valueless minerals in an ore; that part of an ore that is not economically desirable but cannot be avoided in mining. It is separated from the ore minerals during concentration.
Garnet	A group of silicate minerals found in igneous rocks, usually red in color, used as a semi-precious stone in crystalline form, or ground into smaller particles and used for abrasives such as in sandpaper coating.
Geographic Information System (GIS)	A computer system capable of integrating, storing, editing, analyzing, sharing, and Information displaying geographically referenced information.

Graded screening approach	Uses three tiers becoming progressively more rigorous and detailed: a scoping assessment, a screening ERA, and a more detailed ERA that uses site-specific information.
Half-life ($\mathbf{t_{1/2}}$)	The time required for one-half of the atoms of a particular radionuclide present to disintegrate.
Heap leaching	A method of extraction by which mineral bearing ores are leached on the ground surface from weathered low-grade ore. The crushed material is laid on a slightly sloping, impervious pad and uniformly leached by the percolation of leach liquor trickling through the beds by gravity to ponds. The metals are recovered by conventional methods from the solution.
Hogan	The typical dwelling of the Navajo Indians, built of earth walls supported by timbers.
Igneous Rock	Rock or mineral that solidified from molten or partly molten material, i.e., lava or magma. These rocks constitute one of the three main classes into which all rocks are divided: igneous, metamorphic, and sedimentary.
Ilmenite	An iron-black, opaque mineral ($FeTiO_3$) which is the principal ore of titanium.
Incline	A slanting shaft from the surface into an underground mine. Most commonly referring to an upward slope.
Infiltration rate	The velocity at which water enters into the soil. It is usually measured by the depth (in mm) of the water layer that can enter the soil in one hour.
In Situ Leaching (ISL)	A method of extraction by which mineral bearing ores are leached underground by the introduction of a solvent solution, called a lixiviant, through injection wells drilled into the ore body. The process does not require the extraction of ore from the ground. The lixiviant is injected, passes through the ore body, and mobilizes the mineral, and the mineral-bearing solution is pumped to the surface from production wells. The pregnant leach solution is processed to extract the mineral sought after.
Ion Exchange	A common water-softening method often found on a large scale at water purification plants that remove some organics and radium by adding calcium oxide or calcium hydroxide to increase the pH to a level where the metals will precipitate out.
Lab Waste	Wastes of any kind generated by a laboratory, usually on-site, analyzing rock, sediment, water, or other samples obtained at the mine or extraction facility, or its vicinity.
Leachate	A solution obtained by leaching; e.g., water that has percolated through soil containing soluble substances and that contains certain amounts of these substances in solution.
Leach Liquor	Lixiviant which contains minerals dissolved from host rocks.

Leuxocene	General term for a fine-grained, opaque, whitish alteration (weathering) product of ilmenite in mineral form.
Lithologic	Character of a rock described in terms of its structure, color, mineral composition, grain size, and arrangement of its component parts; all those visible features that in the aggregate impart individuality to the rock. Lithology is the basis of correlation in coal mines and commonly is reliable over a distance of a few miles.
Lixiviant	A liquid medium that selectively extracts the desired metal from the ore or material to be leached rapidly and completely, and from which the desired metal can then be recovered in a concentrated form.
Longwall	A method of mining flat-bedded deposits, in which the working face is mined.
Million ElectronVolts (MeV)	A unit of energy used for photons and particles emitted in nuclear and atomic decay processes.
Mill Tailings	Residue of raw material or waste separated out during the processing of uranium mineral ores. Byproduct material as defined in accordance with Sec. 11e.(2) of the AEA.
Mine Footprint	The areal extent of land physically disrupted by a mine operation.
Mineral Sands	Eroded and generally unconsolidated sedimentary particles of rock minerals of sand size which have accumulated in a geologic deposit, and may be exploited or concentrated for economic purposes.
Mining	Mining is the mechanical process by which mineral ores are extracted from the earth.
NORM	Naturally Occurring Radioactive Materials. Materials which may contain any of the primordial radionuclides or radioactive elements as they occur in nature, such as radium, uranium, thorium, potassium, and their radioactive decay products, that are undisturbed as a result of human activities.
Ore	The naturally occurring material from which a mineral or minerals of economic value can be extracted profitably or to satisfy social or political objectives. The term is generally but not always used to refer to metalliferous material, and is often modified by the names of the valuable constituent; e.g., iron ore; ore mineral.
Overburden	Designates material of any nature, consolidated or unconsolidated, that overlies a deposit of useful materials or ores, especially those deposits that are mined from the surface by open cuts or open-pit methods.

Permeable Reactive Barrier	An emplacement of reactive materials in the subsurface designed to intercept a contaminant plume, provide a preferential flow path through the reactive media, and transform the contaminant(s) into environmentally acceptable forms to attain remediation concentration goals at points of compliance.
Picocurie	A unit of the rate of radioactive decay. One picocurie is 10^{-12} curies or 0.037 disintegrations per second or 0.037 Becquerels.
Pillar	A column of ore left to support the overlying strata or hanging wall in a mine, generally resulting in a "room and pillar" array. Pillars are normally left permanently to support the surface or to keep old workings water tight.
Pit Lake	A lake which has formed by accumulation of water in an open-pit mine excavation.
Pit Lake Water	Water which has filled an open-pit mine excavation, usually derived as water underground workings of the mine.
Preliminary Remediation Goals (PRGs)	Risk-based concentrations, derived from standardized equations similar to those found in the Soil Screening Guidance for Radionuclides (U.S. EPA 2000a). PRGs are intended to be used as initial guidelines, and not necessarily as final cleanup levels. An Internet-based PRG calculator and tables of default values for radionuclides can be found at http://epa-prgs.ornl.gov/radionuclides.
Process ore	Treating the ore, or using chemical solutions to treat underground ore (*in situ* leaching), or by treating mined and crushed ore on surface (heap leaching). These processes are licensed activities by the Nuclear Regulatory Commission or its Agreement States in accordance with the Atomic Energy Act.
Protore	Mineral-bearing rock that cannot be further processed at a profit under existing conditions, but that may become profitable with technological advances or price increases.
Pseudomorph	A mineral whose outward crystal form is that of, or which resembles another mineral species: it has developed by alteration, substitution, incrustation, or other mineral process.
Radiation or Radiological Survey	Measurements of radiation levels associated with a site together with appropriate documentation and data evaluation.
Radioactive Decay	The spontaneous transformation of an unstable atom into one or more different nuclides accompanied by either the emission of energy and/or particles from the nucleus, nuclear capture or ejection of orbital electrons, or fission. Unstable atoms decay into a more stable state, eventually reaching a form that does not decay further or has a very long half-life.

Radioactive Decay Rate	The mean number of nuclear transformations occurring in a given quantity of radioactive material per unit time. The International System (SI) unit of radioactivity is the Becquerel (Bq, 1 Bq = 1 disintegration per second). The special unit is the Curie (Ci, 1 Ci = 3.7×10^{10} disintegrations per second).
Radionuclide	An unstable nuclide that undergoes radioactive decay.
Radon-222 Emanation	The release of gaseous ^{222}Rn from the radioactive decay of ^{226}Ra.
Reclamation	Restoration of mined land to its original contour, use, or condition.
Recreational Scenario	A set of exposure conditions applicable to a person that is an occasional, not full-time, occupant who does not reside or work at the location of interest and engages in recreational activities.
Reductant or Reduction	The addition of hydrogen, removal of oxygen, or addition of electrons to an element or compound.
Refuse	Solid waste. Non-liquid, non-soluble materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, mining equipment and mining residues. Technically, solid waste also refers to liquids and gases in containers.
Regulation	A rule, law, order, or direction from federal, state, or Tribal governments regulating action or conduct. Regulations concerning radionuclides in the environment in the United States are shared by EPA, NRC, DOE, and state and Tribal governments.
Rem	Radiation Equivalent in Man. The special unit of dose equivalent. The corresponding International System (SI) unit is Sievert (Sv): 1 Sv = 100 rem.
Remediation	Cleanup or other methods used to remove or contain a toxic spill or hazardous materials from a Superfund site, or uranium mine or extraction facility, including those included under the Uranium Mill Tailings Radiation Control Act (UMTRCA).
Removal	The cleanup or removal of released hazardous substances, or pollutants or contaminants which may present an imminent and substantial danger; such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment; such actions as may be necessary to monitor, assess, and evaluate the threat of release of hazardous substances; the removal and disposal of material, or the taking of other such actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or the environment.

RESRAD	A computer program developed that is used for calculating radiation doses and risks from RESidual RADioactivity in or on soil.
RESRAD- BUILD	A computer program that is used for calculating radiation doses and risks from radioactive materials in or on buildings and other structures.
Retardation	In groundwater, the slower movement of a solute than the velocity of the fluid due to absorption, adsorption, and ion exchange with the soil matrix.
Retardation Factor/Coefficient	A measure of the capability of adsorption within the porous media to impede the movement of a particular radionuclide being carried by the fluid.
Retreat Mining	A system of removing underground pillars for their ore from a room and pillar mine operation. The mined room collapses once the pillar is removed; the operation retreats from the excavated boundary toward the shaft or mine mouth.
Rill	A small channel, as one formed by erosion.
Riparian Animal	An animal that lives both on land and in water, e.g., a muskrat.
Risk	The probability of injury, disease, or death under specific circumstances. Risk can be expressed as a value that ranges from zero (no injury or harm will occur) to one hundred percent (harm or injury will definitely occur). Risk-based standards limit the risk that releasing a contaminant to the environment may pose, rather than limiting the quantity that may be released. • Absolute risk, the excess risk attributed to irradiation and usually expressed as the numeric difference between irradiated and non-irradiated populations (e.g., 1 case of cancer per million people irradiated annually for each rad). Absolute risk may be given on an annual basis or lifetime basis. • Relative risk, the ratio between the number of cancer cases in the irradiated population to the number of cases expected in the unexposed population. A relative risk of 1.1 indicates a 10 percent increase in cancer due to radiation, compared to the "normal" incidence.
Risk Assessment	Qualitative and quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence and/or use of specific pollutants.
Room and Pillar	A conventional method of underground mining in which natural pillars are left and unmined for support between the mined rooms.
Rutile	A usually reddish-brown mineral (TiO_2) that is an ore of titanium.

Saturated Zone	A subsurface zone of soil or rock in which all the pore spaces are filled with water under pressure greater than that of the atmosphere. This zone is separated from the zone of aeration (above) by the water table.
Saturation Ratio	The fraction of the interstitial spaces between soil grains that is filled with water.
Scanning	An evaluation technique performed by moving a detection device over a surface at a specified rate to create visual images of minute particles.
Scenario	A set of conditions that describe the situation of a person's exposure to a pollutant. These conditions typically include source-to-receptor distance speed, and distance above the surface to detect radiation. It also includes duration of exposure, exposure pathways, food consumption, and air and water intake. Scenarios are commonly named for the person or activity being assessed, e.g., resident farmer scenario, recreational scenario, transportation scenario, residential scenario, and worker scenario.
Secular Equilibrium	A state of parent-daughter equilibrium that is achieved when the half-life of the parent radionuclide is much longer than the half-life of the radionuclide decay product. In this case, if the two are not separated, the decay product will eventually decay at the same rate at which it is being produced. At this point, both parent and daughter will decay at the same rate until the parent is essentially exhausted.
Sievert (Sv)	The special name for the International System (SI) unit of dose equivalent. 1 Sv = 100 rem = 1 Joule per kilogram.
Site	Any mine or extraction facility installation, or discrete, physically separate parcel of land or lands disturbed by mining or uranium extraction, or any building or structure or portion thereof.
Soils	All unconsolidated materials above bedrock.
Soil Screening Guidance (SSG)	A tool developed by EPA to help standardize and accelerate the evaluation and cleanup of contaminated soils at sites on the National Priorities List (NPL).
Solution Process	A method of extracting sought-after underground elements or minerals from in-place ore, or elements or minerals from ore previously mined and crushed. This is accomplished through the use of fluids that dissolve the mineral from the rock, putting it into liquid solution which is then processed or evaporated to obtain the desired element or mineral.
Solvent Extraction	A process for extracting a mineral or element (e.g., uranium) from ore by soaking rock with a (solvent) that dissolves the target element from the rock and putting it into liquid solution. The liquid is then processed or evaporated to obtain the desired element.

Source Materials	Uranium or thorium, or any combination thereof, in any physical or chemical form or ores that contain by weight one-twentieth of one percent (0.05%) or more of (1) uranium, (2) thorium or (3) any combination thereof. Source material does not include special nuclear material.
Special Nuclear Material	Plutonium, U^{233}, and uranium enriched in U^{235}, material capable of undergoing a fission reaction.
Stewardship	Institutional controls (private or public ownership or governmental) which may be put in place to ensure that a specific site meets its closure goals. Institutional controls can be either active, involving some form of continuous or intermittent human activity to maintain the condition of the site, or passive, which do not require human intervention and have an amount of redundancy built into them to deter or prevent disturbance of the closed site.
Stope	An excavation from which ore has been removed in a series of steps. Usually applies to mining of ore from steeply inclined or vertical veins.
Superfund Risk Criteria	The incremental cancer risk level of 10^{-6} is usually the baseline level of risk that is acceptable and 10^{-4} is typically at the highest end of the range of acceptability.
Survey	A systematic evaluation and documentation of radiological measurements with a correctly calibrated instrument or instruments that meet the sensitivity required by the objective of the evaluation.
Survey Plan	A plan for determining the radiological and other characteristics of a site.
TENORM	Acronym for Technically Enhanced Naturally Occurring Radioactive Material. Natural radioactive materials have been concentrated or exposed to the accessible environment as a result of human activities, such as manufacturing, mineral extraction, or water processing.
Transport Time	The time interval it takes for a contaminant to move through groundwater from a source to a potential receptor.
Unconsolidated Rocks	Rocks consisting of loosely coherent or uncemented particles, whether occurring at the surface or at depth.
Underflow	Flowing bottom waters containing dissolved or suspended solids.
Underground Injection	The method by which fluids are placed under pressure in a well such that the fluid enters an underground rock formation. A means by which ISL wells inject lixiviant to dissolve uranium from underground ore bodies.
Unsaturated Zone	The zone in which the pore openings of the functional permeable rocks are not (except temporarily) filled with water under hydrostatic pressure; the interstices are either not filled with water or are filled with water that is held by capillarity.

Uprate	The process of increasing the maximum power level at which a commercial nuclear power plant may operate.
Uranium (Mine) Location Database (ULD)	Uranium (Mine) Location Database. An EPA database containing data on the location of uranium mines and related facilities.
Volcaniclastic	A sedimentary rock containing volcanic material without regard to its origin or environment of deposition.
Waste Rock	Rock void of uranium ore that may have been set aside as waste after removal of top-soil, overburden and uranium ore or veins. Waste rock is defined as barren or submarginal rock or ore that has been mined, but is not of sufficient value to warrant treatment and is therefore removed ahead of the milling processes.
Wastewater	The spent or used water from a mine that contains dissolved or suspended matter.
Water table	The groundwater boundary between the saturated zone and the unsaturated or vadose zone.
Working Level	A special unit of radon exposure defined as any combination of short-lived radon daughters in 1 liter of air that will result in the ultimate emission of 1.3×10^5 MeV of potential alpha energy. This value is approximately equal to the alpha energy released from the decay of progeny in equilibrium with 100 pCi of Ra-222. The EPA recommended residential radon limit of 4 pCi/L is approximately equivalent to 0.02 WL.
Working-Level Month (WLM)	A person exposed to one WL for 170 hours is said to have acquired an exposure of one working-level month (WLM). This 170-hour value is based on the typical number of hours underground miners worked in one month.