

## GLOSSARY

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**Acre-foot:** The volume (as of irrigation water) that would cover 1 acre to a depth of 1 foot (43,560 cubic feet).

**Action:** In the context of the National Environmental Policy Act (NEPA), describes actions proposed to meet a specific purpose and need and that may have effects on the environment, which are potentially subject to Federal control and responsibility. Federal actions generally fall into the categories of adoption of official policy, formal plans, and programs; or approval of specific projects. For this document, the term action applies to a specific project.

**Aesthetic quality:** A perception of the beauty of a natural or cultural landscape.

**Aggradation:** The deposition of sediment by running water, as in the channel of a stream.

**Air quality:** A measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.

**Air quality classes:** Classifications established under the Prevention of Significant Deterioration portion of the Clean Air Act that limit the amount of air pollution considered significant within an area. Class I applies to areas where almost any change in air quality would be significant, Class II applies to areas where the deterioration normally accompanying moderate, well-controlled growth would be permitted, and Class III applies to areas where industrial deterioration generally would be allowed.

**Alluvium:** A general term for clay, silt, sand, gravel, or similar consolidated material deposited during comparatively recent geologic time by a stream or other body of running water in the bed of the stream, river, or floodplain, or as a cone or fan at the base of a mountain slope.

**Alternative:** Any one of a number of options for a project.

**Alternative energy:** Renewable energy sources such as wind, flowing water, solar energy, and biomass, which create less environmental damage and pollution than fossil fuels, and offer an alternative to nonrenewable resources.

**Ambient.** Of the environment surrounding a body, encompassing on all sides. Most commonly applied to air quality and noise.

**American Indian tribe (or tribe):** Any American Indian group in the conterminous United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the Federal Register).

**Ancillary road:** Any road not classified as a primary road.

**Animal unit month:** The amount of forage necessary to sustain one cow and one calf (e.g., a 1,000-pound cow and calf) for a period of one month.

**Annual (ecology):** A plant that completes its development in one year or one season and then dies.

**Aquatic:** Growing or living in or near the water.

**Aquifer:** A water-bearing rock unit (unconsolidated or bedrock) that will yield water in a usable quantity to a well or spring.

**Aquitard:** Refers to any layer in an aquifer or aquifer system that is much less permeable than the aquifers themselves, but not impermeable.

**Archaeological site:** A discrete location that provides physical evidence of past human use.

**Archaeology:** the scientific study of the life and culture of past, especially ancient, peoples, as by excavation of ancient cities, relics, artifacts, etc.

**Archival:** Pertaining to or contained in documents or records that preserve information about an event or individual.

**Area of Critical Environmental Concern:** A Bureau of Land Management (BLM) designation pertaining to areas where specific management attention is needed to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish or wildlife resources, or other natural systems or processes, or to protect human life and safety from natural hazards.

**Arroyo:** A dry gully, or a stream in a dry region.

**Artifact:** Any object showing human workmanship or modification, especially from a prehistoric or historic culture.

**Ash:** The residue that remains when something is burned. Also, one component of coal; generally, high ash-content coal is considered to be low-grade.

**Assessment:** The act of evaluating and interpreting data and information for a defined purpose.

**Attainment area (air):** Designation of a geographical area by the U.S. Environmental Protection Agency (USEPA) where the air quality is deemed to be better than the National Ambient Air Quality Standards (NAAQS). This designation is based on the measured ambient criteria pollution data available for the geographic area. Areas where the measured ambient criteria pollution data are worse than the NAAQS are identified as nonattainment. An area can be designated as unclassified when there are insufficient ambient criteria pollutant data for the USEPA to form a basis for attainment status. An area can be in attainment for some pollutants but not others.

**Backfill:** The fill, often mine waste or rock, that replaces the void left from where a rock or ore has been removed. Also, the material used to fill in a trench in the groundbed (i.e., pipeline trench). The composition of the backfill varies based on the soil type being used and the component being covered.

**Background (visual):** That portion of the visual landscape lying from the outer limit of the middleground to infinity. Color and texture are subdued in this area, and visual sensitivity analysis here is primarily concerned with the two-dimensional shape of landforms against the sky.

**Baghouse:** An air pollution control device containing a large fabric bag, usually made of glass fibers, used to eliminate intermediate and large (greater than 20 PM [particulate matter] in diameter) particles. This device operates like the bag of an electric vacuum cleaner, passing the air and smaller particles while entrapping the larger ones.

**Base flow:** The contribution of stream discharge from groundwater seeping into the stream.

**Baseline:** The existing conditions against which impacts of the proposed action and its alternatives can be compared.

**Basin:** A depressed area having no surface outlet (topographic basin); a physiographic feature or subsurface structure that is capable of collecting, storing, or discharging water by reason of its shape and the characteristics of its confining material (water); a depression in the earth's surface, the lowest part often filled by a lake or pond (lake basin); a part of a river or canal widened (drainage, river, stream basin).

**Best management practices:** A suite of techniques that guide, or may be applied to, management actions to aid in achieving desired outcomes and help to protect the environmental resources by avoiding or minimizing impacts of an action.

**Big game:** Large species of wildlife that are hunted (such as elk, deer, pronghorn antelope).

**Biological assessment:** Information prepared by, or under the direction of, a Federal agency to determine whether a proposed action is likely to (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of species that are proposed for listing; or (3) adversely modify proposed critical habitat.

**Biological opinion:** A document that is the product of formal consultation, stating the opinion of the U.S. Fish and Wildlife Service (FWS) on whether or not a Federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

**Black Mesa Complex:** Comprises two separate mining operations surface coal-mining operation—the Kayenta mining operation and the Black Mesa mining operation—on Black Mesa in Navajo County, Arizona. The Black Mesa Complex is located on contiguous coal leases within the boundaries of the Hopi and Navajo Indian Reservations.

**Boiler:** Any device used to burn coal fuel to heat water for generating steam.

**Butte:** A steep hill standing alone in a plain.

**Candidate species:** A plant or animal species not yet officially listed as threatened or endangered, but which is undergoing status review by the FWS.

**Capital cost:** The total investment needed to complete a project and bring it to a commercially operable status. The cost of construction of a new plant. The expenditures for the purchase or acquisition of existing facilities.

**Carbon dioxide:** An atmospheric gas composed of one carbon and two oxygen atoms. Carbon dioxide results from the combustion of organic matter if sufficient amounts of oxygen are present. Liquid carbon dioxide is a good solvent for many organic compounds (for example, it is used to remove caffeine from coffee).

**Centrifuge:** An apparatus consisting essentially of a compartment spun about a central axis to separate contained materials of different specific gravities, or to separate colloidal particles suspended in a liquid. In the case of this project, the centrifuge would remove water from the slurry.

**Chapter (Navajo):** Navajo unit of local government; nearly all Navajo land is assigned to chapters. There are 110 Chapters on the Navajo Reservation.

**Clean Air Act of 1990:** Federal legislation governing air pollution. The Clean Air Act established NAAQS for carbon monoxide, nitrogen oxide, ozone, particulate matter, sulfur dioxide, and lead. Prevention of Significant Deterioration classifications define the allowable increased levels of air quality deterioration above legally established levels and include the following:

**Class I** – minimal additional deterioration in air quality (certain national parks and wilderness areas)

**Class II** – moderate additional deterioration in air quality (most lands)

**Class III** – greater deterioration for planned maximum growth (industrial areas)

**Clean Water Act of 1987:** National environmental law enforced by the USEPA that regulates water pollution.

**Cliff dwelling:** A rock and adobe dwelling built on sheltered ledges in the sides of a cliff; cliff dwellings are ruins that represent the abandoned homes of ancient cultures.

**Coal:** A fossil fuel extracted from the ground by deep mining. It is a readily combustible black or brownish-black sedimentary rock composed primarily of carbon and hydrocarbons along with other elements including sulfur. Coal is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time. It is primarily used as a solid fuel to produce heat through combustion and is the most common source of electricity generation worldwide.

**Coal resource area:** An area of high potential for unmined coal.

**Coal washing:** The process of separating undesirable materials from coal based on differences in densities. For example, pyritic sulfur, or sulfur combined with iron, is heavier and sinks in water; coal is lighter and floats.

**Collection area:** Geographic location or specific area in which native plants that have cultural significance to the Hopi and Navajo people are collected for use as food and medicine, in rituals, and other uses such as for tools, construction, and baskets.

**Commercial area:** A land use zoning term used to describe or designate areas in which business facilities, rather than residential uses, are concentrated.

**Compaction:** Process by which the volume or thickness of rock is reduced due to pressure from overlying layers of sediment.

**Conduit:** A pipe, usually made of metal, ceramic, or plastic, that protects buried cables or wires.

**Consent decree:** A legal document, approved by a judge, that formalizes an agreement reached between USEPA and potentially responsible parties through which potentially responsible parties will conduct all or part of a cleanup action at a Superfund site; cease or correct actions or processes that are polluting the environment; or otherwise comply with USEPA initiated regulatory enforcement actions to resolve the contamination at the Superfund site involved. The consent decree describes the actions potentially responsible parties will take and may be subject to a public comment period.

**Construction, operation, and maintenance plan (COMP):** A detailed plan depicting engineering, access, construction, environmentally sensitive areas, and reclamation that is prepared prior to construction and operation.

**Contrast rating:** A method of determining the extent of visual impact for an existing or proposed activity that would modify any landscape feature (land and water form, vegetation, and structures).

**Conveyor:** An apparatus for moving material from one point to another in a continuous fashion. This is accomplished with an endless (that is, looped) procession of hooks, buckets, or wide rubber belt, etc. In the case of this project, a conveyor moves coal from the Kayenta mining operation to the area where the coal is loaded onto the Black Mesa and Lake Powell Railroad, which transports the coal to the Navajo Generating Station.

**Cooperating agency:** Assists the lead Federal agency in developing an environmental assessment or environmental impact statement. The Council on Environmental Quality regulations implementing NEPA define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any Federal, state, or local government jurisdiction with such qualification may become a cooperating agency by agreement with the lead agency.

**Corridor:** As discussed in this document, a wide strip of land within which a proposed linear facility (e.g., pipeline, transmission line) could be located.

**Cost/benefit ratio:** The number that results from a quantitative evaluation of the costs which would have incurred by implementing an environmental regulation versus the overall benefits to society of the proposed action.

**Council on Environmental Quality (CEQ):** An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews Federal programs for their effort on environmental studies, and advises the President on environmental matters.

**Criteria:** Standards on which a judgment or decision can be based.

**Cubic foot/feet per second (cfs):** As a rate of stream flow, a cubic foot of water passing a reference section in one second of time. One cfs flowing for 24 hours will yield 7.983 acre-feet of water.

**Cultural resources:** Remains of human activity, occupation, or endeavor as reflected in districts, sites, buildings, objects, artifacts, ruins, works of art, architecture, and natural features important in human events.

**Cumulative effect (or impact):** The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions. Cumulative impacts are evaluated as part of the environmental impact statement (EIS), and may include consideration of additive or interactive effects regardless of what agency or person undertakes the other actions.

**Decibel:** A unit for expressing the relative intensity of sounds on a logarithmic scale from zero for the average least perceptible sound to about 130 for the average level at which sound causes pain to humans. For traffic and industrial noise measurements, the A-weighted decibel, a frequency-weighted noise unit, is widely used. The A-weighted decibel scale corresponds approximately to the frequency response of the human ear and thus correlates well with loudness.

**Degradation:** The wearing down or away, and general lowering or reducing, of the earth's surface by the processes of weathering and erosion.

**Diné Bikeyah:** The traditional land of the Navajo covers parts of northeastern Arizona, northwestern New Mexico, southeastern Utah, and southwestern Colorado between four sacred mountains (Mount Hesperus, Blanca Peak, Mount Taylor, and the San Francisco Peaks).

**Discharge:** Outflow of surface water in a stream or canal (water). Discharge from an industrial facility that may contain pollutants harmful to fish or animals if it is released into nearby water bodies usually requires a permit issued by the USEPA and is monitored.

**Distance zone:** A visibility threshold distance where visual perception changes. They usually are defined as foreground, middleground, and background.

**Diversion:** A channel, embankment, or other manmade structure constructed to divert water from one area to another; the process of using these structures to move water.

**Drainage:** The natural or artificial removal of surface water and groundwater from a given area. Many agricultural soils need drainage to improve production or to manage water supplies.

**Drawdown:** The decrease in elevation of the water surface in a well, the local water table or the pressure head on an artesian well due to extraction of groundwater or decrease in recharge to the aquifer.

**Easement:** A right afforded a person, agency, or organization to make limited use of another's real property for access or other purposes.

**Ecology:** The relationship between living organisms and their environment.

**Ecosystem:** A complex system composed of a community of plants and animals, and that system's chemical and physical environment.

**Effect (or impact):** A modification of the existing environment as it presently exists, caused by an action (such as construction or operation of facilities). An effect may be direct, indirect, or cumulative. The terms effect and impact are synonymous under the NEPA. A direct effect is caused by an action and occurs at the same time and same place (40 CFR 1508.8(a)). An indirect effect is caused by the action later in time or farther removed in distance, but still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

**Emission:** Effluent discharged into the atmosphere, usually specified by mass per unit time, and considered when analyzing air quality.

**Endangered species:** A plant or animal that is in danger of extinction throughout all or a significant portion of its range. Endangered species are rarely identified by the Secretary of the Interior in accordance with the Endangered Species Act (ESA) of 1973.

**Endangered Species Act of 1973:** Provides a means whereby the ecosystems upon which threatened and endangered species depend may be conserved and to provide a program for the conservation of such threatened and endangered species. The ESA requires all Federal agencies to seek to conserve threatened and endangered species, use applicable authorities in furtherance of the purposes of the ESA, and avoid jeopardizing the continued existence of any species that is listed or proposed for listing as threatened and endangered or destroying or adversely modifying its designated or proposed critical habitat. The FWS is responsible for administration of this act.

**Energy conservation:** A means of saving energy.

**Environment:** The surrounding conditions, influences, or forces that affect or modify an organism or an ecological community and ultimately determine its form and survival.

**Environmental impact statement (EIS):** A document prepared to analyze the impacts on the environment of a proposed action and released to the public for review and comment. An EIS must meet the requirements of NEPA, CEQ, and the directives of the agency responsible for the proposed action.

**Environmental justice:** The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies (see Executive Order 12898).

**Ephemeral range:** A rangeland that does not consistently produce enough forage to sustain a livestock operation but may briefly produce unusual volumes of forage that may be utilized by livestock.

**Ephemeral stream:** A stream that flows only in direct response to precipitation in the immediate watershed or in response to the melting of a cover of snow and ice and has a channel bottom that is always above the local water table.

**Erosion:** The wearing away of the land surface by running water, wind, ice, or other geologic agents and by such processes as “gravitation creep.”

**Extirpation:** To destroy completely.

**Extraction:** The act of extracting or drawing a substance out of the earth (e.g., mining).

**Federal Register:** Published by the Office of the Federal Register, National Archives and Records Administration, the Federal Register is the official daily publication for rules, proposed rules, and notices of Federal agencies and organizations, as well as executive orders and other presidential documents.

**Floodplain:** That portion of a river or stream valley, adjacent to a river channel, that is built of sediments and is inundated with water when the stream overflows its banks.

**Foreground:** The visible area from a viewpoint or use area out to a distance of 0.5 mile. The ability to perceive detail in a landscape is greatest in this zone.

**Fossil:** Any remains, trace, or imprint of a plant or animal that has been preserved by natural process in the earth's crust since some past geologic time.

**Game management unit:** A land management classification used by the Arizona Game and Fish Department to assist in managing hunting, such as hunting seasons allowed and number of permits to be issued for specific species, within the State of Arizona.

**Geochemistry:** The study of the chemical components of the earth's crust and mantle. Geochemistry is applied to mining exploration to detect sites that indicate abnormal concentrations of either the elements being sought or of their more readily detected associate elements. Depending on circumstance, geochemical exploration samples soils, rock, and lake and stream sediments.

**Geographic information system:** A system of computer hardware, software, data, people and applications that capture, store, edit, analyze, and graphically display a potentially wide array of geospatial information.

**Geologic formation:** A rock unit distinguished from adjacent deposits by some common character, such as its composition, origin, or the type of fossil associated with the unit.

**Geology:** The science that relates to the earth, the rocks of which it is composed, and the changes that the earth has undergone or is undergoing.

**Geothermal resource:** Heat found in rocks and fluids at various depths that can be extracted by drilling or pumping for use as an energy source. This heat may be residual heat, friction heat, or a result of radioactive decay.

**Global warming:** An increase in the average temperature of the earth's atmosphere and oceans. The term also is used to describe the theory that increasing temperatures are the result of a strengthening greenhouse effect caused primarily by manmade increases in carbon dioxide and other greenhouse gases.

**Gray water:** Any nonsewage water that is nonpotable because it has been used in some way; for example, water from sinks, bathtubs, showers, or laundry operations. It may be recycled for toilet and outside water uses including irrigation.

**Greenhouse gas:** A component of the atmosphere that contributes to the greenhouse effect, or the process by which an atmosphere warms a planet. The major natural greenhouse gases are water vapor, carbon dioxide, and ozone. Minor greenhouse gases include methane, nitrous oxide, sulfur hexafluoride, and chlorofluorocarbons.

**Groundwater:** Subsurface water that fills available openings in rock or soil materials to the extent that they are considered water saturated.

**Grubbing:** To dig up and remove all plants (roots and stems or trunk) in order to clear the land.

**Gypsum:** A soft white mineral, the most common sulfate mineral.

**Habitat:** A specific set of physical conditions in a geographic area(s) that surrounds a single species, group of species, or large community. In wildlife management, the major components of habitat are food, water, cover, and living space.

**Halite:** A white and colorless mineral, sodium chloride or rock salt.

**Historic property:** Any prehistoric or historical district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. The term includes artifacts, records, and remains that are related to and located within such properties; the term also includes properties of traditional religious and cultural importance to an American Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

**Hydrology:** The study of the movement, distribution, and quality of water throughout the earth, addresses both the hydrologic cycle and water resources.

**Impact (or effect):** A modification of the existing environment as it presently exists, caused by an action (such as construction or operation of facilities). An impact may be direct, indirect, or cumulative. The terms effect and impact are synonymous under NEPA.

**Impoundment:** A closed basin, naturally formed or artificially built, which is dammed or excavated for the retention of water, sediment, or waste.

**Indian Lands Program:** The program's emphasis is addressing environmental impacts on Indian lands that are not currently addressed by other programs. The Office of Surface Mining Reclamation and Enforcement (OSM) is the regulatory authority for coal-mining operations that occur on Indian lands in the western United States. As such, OSM is responsible for the review and decisions on all applications to conduct mining operations and, if a mining permit is issued, OSM is responsible for inspection of the mines to ensure that the public and the environment are protected. Ultimately, OSM is responsible for ensuring that mining operations are fully reclaimed before the lands are returned to the tribes.

**Indirect effect (or impact):** Secondary effects that occur in locations other than the initial action or later in time, but that are caused by the proposed action.

**Indurated rock:** Hardened or cemented sedimentary rock.

**Industrial area:** A land use zoning term used to describe or designate areas in which heavy industry is concentrated or allowed.

**Infrastructure:** The facilities, services, and equipment needed for a community or facility to function, such as and including roads, sewers, water lines, and electric lines.

**Initial Program:** A transitional program designed by Congress to implement the requirements of the Surface Mining Control and Reclamation Act of 1977, established as a nationwide program to protect society and the environment from the adverse effects of surface coal-mining operations and to assist the states in developing and implementing a program to achieve the purposes of the Act. The Initial Program took effect six months after the enactment of the Act and created a dual inspection and enforcement role for OSM and the states in ensuring compliance with certain key provisions of the Act at all surface-coal-mining and reclamation operations. The Initial Program was to be replaced by a permanent state regulatory program as approved by the Secretary of the Interior based on findings that the program provisions met the purposes of the Act and the state had the capability of carrying them out; or, where a state did not submit an application for a state program, upon promulgation and implementation of a Federal program.

**Intermittent:** A river or stream that flows for a period of time, usually seasonally during rainy periods, and stops during dry periods. In arid regions, dry periods may be interrupted by occasional flash floods from brief but intense rain storms.

**Invasive species:** Describes a large number of nonnative plant species whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

**Issue:** Describes the relationship between actions (proposed, connected, cumulative, similar) and environmental (natural, cultural, and socioeconomic) resources. Issues may be questions, concerns, problems, or other relationships, including beneficial ones. Issues do not predict the degree or intensity of harm the action might cause, but simply alert the reader as to what the environmental problems might be. The NEPA document should address issues identified through interaction with agencies and/or the public, and/or through resource studies.

**Labor force:** All persons 16 years of age or over who are either employed or unemployed and actively looking for a job.

**Land use plan:** A plan or document developed by a government entity, which outlines specific functions, uses, or management-related activities of an area, and may be identified in combination when joint or seasonal uses occur and may include land used for support facilities that are an integral part of the use.

**Landform:** A term used to describe the many land surfaces that exist as a result of geologic activity and weathering (e.g., plateaus, mountains, plains, and valleys).

**Landscape:** An area composed of interacting ecosystems that are repeated because of geology, landform, soils, climate, biota, and human influences throughout the area. Landscapes are generally of a size, shape, and pattern, which are determined by interacting ecosystems.

**Landscape character:** Particular attributes, qualities, and traits of a landscape that give it an image and make it identifiable or unique.

**Lawsuit:** A civil action brought before a court in which the party commencing the action, the plaintiff, seeks a legal remedy. If the plaintiff is successful, judgment will be given in the plaintiff's favor, and a range of court orders may be issued to enforce a right, impose a penalty, award damages, impose an injunction to prevent an act or compel an act, or to obtain a declaratory judgment to prevent future legal disputes.

**Lease:** An authorization or contract by which one party (lessor) conveys the use of property to another (lessee) in return for rental payments. In cases of resource production, lessees pay royalties to the lessor in addition to rental payments.

**Life of mine:** The estimated time period within which a mine is expected to operate, which also is the duration for which a permit is issued. The adjective "life-of-mine (LOM)" is used with "plan" or "permit." Relevant Federal or state agencies have the authority to approve a modification of a LOM permit or a transfer of a LOM permit from one company to another.

**Lifestyle:** A way of living based on identifiable patterns of behavior based on an individual's choice, and influenced by the individual's personal characteristics, their social interactions, socioeconomic and environmental factors, and cultural, ethnic, or religious background.

**Locomotive:** A railway vehicle that provides the motive power for a train and has no payload capacity of its own; its sole purpose is to move the train along the tracks.

**Management indicator species:** Designated by the U.S. Forest Service, these species are selected because their population changes are believed to indicate the effects of management activities.

**Megawatt:** A unit for measuring power equal to one million watts. The productive capacity of electrical generators is measured in megawatts.

**Mesa:** An isolated, nearly level land mass, formed on nearly horizontal rocks, standing above the surrounding country and bounded with steep sides.

**Methane:** A colorless, nonpoisonous, flammable gas created by anaerobic decomposition of organic compounds. A major component of natural gas used in the home.

**Methanol:** An alcohol that can be used as an alternative fuel or as a gasoline additive. It is less volatile than gasoline; when blended with gasoline it lowers the carbon monoxide emissions but increases hydrocarbon emissions. Used as pure fuel, its emissions are less ozone-forming than those from gasoline. Poisonous to humans and animals if ingested.

**Mineral resources:** Any inorganic or organic substance occurring naturally in the earth that has a consistent and distinctive set of physical properties. Examples of mineral resources include coal, nickel, gold, silver, and copper.

**Mitigation:** The abatement or reduction of an impact on the environment by (1) avoiding a certain action or parts of an action, (2) employing certain construction measures to limit the degree of impact, (3) restoring an area to preconstruction conditions, (4) preserving or maintaining an area throughout the life of a project, (5) replacing or providing substitute resources to the environment, or (6) gathering data (e.g., archaeological or paleontological) prior to disturbance.

**National Ambient Air Quality Standards:** The allowable concentrations of air pollutants in the air specified by the Federal government. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public welfare) from any unknown or expected adverse effects of air pollutants.

**National Environmental Policy Act of 1969:** Our nation's basic charter for protection of the environment. It establishes policy, sets goals, and provides means for carrying out the policy. In accordance with NEPA, all Federal agencies must prepare a written statement on the environmental impacts of a proposed action. The provisions to ensure that Federal agencies act according to the letter and spirit of NEPA are in the CEQ regulations for implementing NEPA (43 CFR 1500-1508).

**National Register of Historic Places.** A listing, maintained by the Secretary of the Interior, of districts, sites, buildings, structures, and objects worthy of preservation. To be eligible a property must normally be at least 50 years old, unless it has exceptional significance, and have national, State, or local significance in American history, architecture, archaeology, engineering, or culture; and possess integrity of location, design, setting, material, workmanship, feeling, and association; and (a) be associated with events that have made a significant contribution to the broad patterns of history, (b) be associated with the lives of persons significant in our past, or (c) embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction; or (d) have yielded, or may be likely to yield, information important to prehistory or history.

**Noise:** Loud, unpleasant, unexpected, or undesired sound that disrupts or interferes with normal human activities.

**Noxious weed:** Nonnative plant species that negatively impact crops, native plant communities, and/or management of natural or agricultural systems. Noxious weeds are officially designated by a number of states (including Arizona and Nevada) and Federal agencies.

**Operating cost:** The expense of maintaining property or a facility (e.g., paying property taxes, wages, utilities, supplies, and insurance); it does not include depreciation or the cost of financing or income taxes.

**Perennial stream:** A stream or that part of a stream that flows continuously during all of the calendar year as a result of groundwater discharge or surface runoff.

**Pipeline:** A continuous pipe conduit for transporting fluids such as natural gas and/or supplemental gaseous fuels, oil, or water from one point to another, usually from a point in or beyond the producing field or processing plant to another pipeline or to points of use. Pipelines require associated equipment as valves, compressor stations or booster pumps, communications systems, and meters.

**Plateau:** In geology and earth science, a plateau is an area of high land, usually consisting of relatively flat open country if the uplift was recent in geologic history. Plateaus, like mesas and buttes, are formed when land has been uplifted by tectonic activity and then eroded by wind or water.

**Prime farmland:** A special category of highly productive cropland that is recognized and described by the U.S. Department of Agriculture's Soil Conservation Service and receives special protection under the Surface Mining Law of 1977.

**Public land:** Land or interest in land owned by the United States and administered through the Secretary of the Interior through the BLM without regard to how the United States acquired ownership, except lands on the Outer Continental Shelf, and land held in trust for the benefit of American Indians, Aleuts, and Eskimos.

**Pump station:** Mechanical device installed in sewer or water system or other liquid-carrying pipelines to move the liquids to a higher level so gravity can assist with moving the liquid across long distances.

**Range:** A large, open area of land over which livestock can wander and graze.

**Raptor:** A bird of prey.

**Rare:** A plant or animal restricted in distribution. May be locally abundant in a limited area or few in number over a wide area.

**Recharge:** Replenishment of a groundwater reservoir (aquifer) by the addition of water, through either natural or artificial means.

**Reclaimed water:** Treated, recycled wastewater not safe for consumption. Also known as nonpotable water. Reclaimed water is often used for irrigation and other nonconsumptive purposes.

**Reclamation:** Restoration of land disturbed by natural or human activity (e.g., mining, pipeline construction) to original contour, use, or condition. Also describes the return of land to alternative uses that may, under certain circumstances, be different from those prior to disturbance.

**Recontouring:** Return a surface to or near to its original form through some type of action such as grading.

**Record of Decision:** A document separate from, but associated with, an EIS that publicly and officially discloses the responsible official's decision on a proposed action.

**Recreation Opportunity Spectrum:** The Recreation Opportunity Spectrum (ROS) provides a framework that allows forest managers to plan for and provide a variety of recreational environments. It allows managers to describe and provide a range of recreational opportunities from highly developed areas (Urban, Rural, Roaded Natural, Roaded Modified) to areas with little or no development (Semi-Primitive

Motorized and Nonmotorized, Primitive). Attributes typically considered in describing the setting are size, scenic quality, type and degree of access, remoteness, level of development, social encounters, and the amount of onsite management. By providing and maintaining this spectrum of recreational settings and opportunities, a broad segment of the public can find quality recreational opportunities for a variety of recreational activities and experiences, now and in the future. Change in a national forest's mix of ROS classes affect the recreational opportunities offered (USDA, USFS 1986).

**Refuse:** Nonliquid, nonsoluble materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Refuse also includes sewage sludge, agricultural refuse, demolition wastes, and mining residues. Also referred to as solid waste. In the case of this project, refuse refers to the waste that would remain after coal washing.

**Reservation:** Land set aside to achieve a particular land use or conservation objective. For the purposes of this document, reservation refers to those lands managed by an American Indian tribe under the U.S. Department of the Interior's Bureau of Indian Affairs. The reservation land is Federal territory held in trust for tribes. The American Indian tribes have limited national sovereignty.

**Retention pond:** Wastewater pond, or retention area, in which floating wastes are skimmed off and settled solids are removed for disposal before the water leaves the permit area. Also called a sediment pond.

**Revegetation:** The re-establishment and development of self-sustaining plant cover. On disturbed sites, this normally requires human assistance such as reseeding.

**Right-of-way:** Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project, such as a road or utility.

**Riparian:** Referring or relating to areas adjacent to water or influenced by free water associated with streams or rivers on geologic surfaces occupying the lowest position of a watershed. Pertaining to, living or situated on banks of rivers, streams, or other body of water. Normally used to refer to the plants of all types that grow along, around, or in wet areas.

**Rolling stock:** Rail-borne railroad equipment such as locomotives, freight cars, passenger cars, and maintenance-of-way work cars that can be assembled into a train.

**Royalty:** A percentage of value of the resource production of a facility or project paid in the instance of a leasing situation, from a lessee to a lessor. Terms of royalties are determined in and outlined within the lease.

**Rural:** Sparsely settled places away from the influence of large cities and towns. Such areas are distinct from more intensively settled urban and suburban areas, and also from unsettled lands such as outback or wilderness. People tend to live in villages, on farms, and in other isolated houses on large plots of land.

**Salinity:** A measure of the amount of dissolved salts given a volume of water.

**Scoping:** The process open to the public early in the preparation of an EIS for determining the scope of issues related to a proposed action and identifying significant issues to be addressed in an EIS.

**Screen:** An initial assessment performed with few data and many assumptions to identify alternatives that should be evaluated more carefully.

**Scrubber:** Any of several forms of chemical/physical devices that remove sulfur compounds formed during coal combustion. These devices, technically known as flue gas desulfurization systems, combine the sulfur in gaseous emissions with another chemical medium to form inert “sludge,” which must then be removed for disposal. Scrubbers are used as air pollution control devices to trap pollutants in emissions.

**Sediment:** Solid fragmental material, either mineral or organic, that is transported or deposited by air, water, gravity, or ice.

**Sediment pond:** Wastewater pond, or retention area, in which floating wastes are skimmed off and settled solids are removed for disposal before the water leaves the permit area.

**Sedimentation:** The result when soil or mineral is transported by moving water, wind, gravity, or glaciers and deposited in streams or other bodies of water, or on land. Also, letting solids settle out of wastewater by gravity during treatment.

**Seismicity:** The geographic and historical distribution of earthquakes.

**Sensitive receptor:** In terms of noise, people or animals that may hear a noise or be sensitive to increased noise levels within their range of hearing.

**Sensitivity:** The state of being readily affected by the actions of external influence.

**Significant (impact):** “Significant” has been used in this document to describe any impact that would cause a substantial adverse change or stress to one or more environmental resources.

**Sinkhole:** A depression in the earth’s surface caused by dissolving of underlying limestone, salt, or gypsum. Sinkholes also form from human activity, such as the collapse of abandoned mines, due to water main breaks in urban areas, or from the overpumping and extraction of groundwater and subsurface fluids.

**Slurry:** In the case of this project, the slurry is a mixture of 50 percent water and 50 percent finely ground coal. The coal from the Black Mesa Mine is transported in this slurry mixture via pipeline to the Mohave Generating Station.

**Special status species:** Wildlife and plant species either federally listed or proposed for listing as endangered or threatened; state-listed; or priority species of concern to Federal agencies or tribes.

**Spoil:** The dirt or rock removed from its original location through excavation as in strip-mining, trenching, dredging, or construction.

**Spur:** A road, pipeline, or rail line that diverges from its primary path or route (i.e., a larger arterial or pipeline) to serve a specific area or connect to another road, pipeline, or rail line.

**Storage coefficient:** The volume of water the aquifer releases from or takes into storage per unit of surface area of the aquifer per unit decline or rise of head.

**Subsidence:** The lowering of the land-surface elevation from changes that take place underground. Common causes of land subsidence from human activity are pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils (hydrocompaction).

**Substation:** A facility with a collection of equipment for the purpose of raising, lowering, and regulating the voltage of electricity.

**Suburban area:** Inhabited districts located either on the outer rim or outside the official limits of a city. Although suburbs may be located within city limits, the density of habitation is usually lower than in an inner city area and there is generally a transportation system(s) that allows commuting into more densely populated areas with higher levels of commerce.

**Surface Mining Control and Reclamation Act:** Requires mine operators to minimize disturbances and adverse effects on fish, wildlife, and related environmental values, and to restore land and water resources.

**Surface water:** All bodies of water on the surface of the earth and open to the atmosphere such as rivers, lakes, reservoirs, ponds, seas, and estuaries.

**Terrain:** Used to describe the geophysiographic characteristics of land in terms of elevation, slope, and orientation.

**Thoroughfare:** A public road from one place to another.

**Threatened or Endangered Species:** Animal or plant species that are listed under the Federal Endangered Species Act of 1973, as amended (federally listed), or under similar state laws (state-listed).

**Total dissolved solids:** A term that describes the quantity of dissolved material in a sample of water.

**Total maximum daily load:** An estimate of the total quantity of pollutants (from all sources: point, nonpoint, and natural) that may be allowed into waters without exceeding applicable water-quality criteria.

**Traditional cultural lifeway/resources:** Resources that are significant for retention and transmission of traditional cultures. Biological resources that could have traditional cultural significance include plants collected for food, medicine, ceremonies, and other traditional uses, as well as raptors (e.g., eagles and hawks) collected for ceremonial uses. Other natural resources that could have traditional cultural significance include minerals or clay deposits and sources of surface water or shallow groundwater pumped for traditional purposes.

**Traditional cultural properties/landscape features:** These named places (landscape features) comprise the cultural landscape that provides the context for evaluating specific traditional cultural properties.

**Trans-basin:** Trans-basinal diversion of water is the change in location of a water use, by conveyance of that water, between water bodies not normally in hydrologic communication. This can be either an underground or aboveground water body. Because water is generally adjudicated by the courts, this use can only occur if judicial or administrative (Arizona Department of Water Resources) approval has been obtained.

**Transition zone:** The area between two discrete environmental areas, and thus containing elements of each. For example, the transition zone between an upland piñon forest and a lowland desert scrub environment.

**Transmissivity:** The rate at which water is transmitted through a unit width of the aquifer under a unit hydraulic gradient.

**Tribal Council:** A group of officials elected by tribal members to govern tribal affairs in accordance with a tribal constitution adopted pursuant to the Indian Reorganization Act of 1934.

**Tribe:** Any Indian tribe, band, group, or community having a governing body recognized by the Secretary of Interior.

**Tutsqwa:** The Hopi heartland, encompasses much of northeastern Arizona.

**Undertaking:** A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license, or approval; and those subject to State or local regulation administered pursuant to a delegation or approval of a Federal agency.

**Unit train:** A long train of between 60 and 150 or more hopper cars, carrying only coal between a single mine and destination.

**Urban:** An area where there is an increased density of human-created structures in comparison to the areas surrounding it. Urban areas are frequently referred to as cities or towns. The U.S. Census Bureau defines an urbanized area as: “Core census block groups or blocks that have a population density of at least 1,000 people per square mile and (386 per square kilometer) and surrounding census blocks that have an overall density of at least 500 people per square mile (193 per square kilometer).”

**Vegetation communities:** Species of plants that commonly live together in the same region or ecotone.

**Viewer sensitivity:** A measure of the degree of concern about change in the visual character of a landscape. It is determined by assessing the types of viewers, land uses on lands facing a project, numbers of viewers, duration of time spent looking at a view, and influence of adjacent land use on the view.

**Village (Hopi):** The Hopi unit of local government, but much Hopi land is not assigned to a village and is administered at the tribal level.

**Visibility:** The distance to which an observer can distinguish objects from their background. The determinants of visibility include the characteristics of the target object (shape, size, color, pattern), the angle and intensity of sunlight, the observer’s eyesight, and any screening present between the viewer and the object (i.e., vegetation, landform, even pollution such as regional haze).

**Visual resource management classes:** Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes, each of which has an objective that prescribes the amount of change allowed in the characteristic landscape.

**Volt:** The potential difference across a conductor when a current of one ampere dissipates one watt of power. Electrical potential difference can be thought of as the ability to move electrical charge through a resistance. In essence, the volt measures how much kinetic energy each electron carries. Between two points in an electric field, such as exists in an electrical circuit, the potential difference is equal to the difference in their electrical potentials. This difference is proportional to the electrostatic force that tends to push electrons or other charge-carriers from one point to the other. Potential difference, electrical potential, and electromotive force are measured in volts, leading to the commonly used term “voltage.”

**Waters of the United States:** All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce including adjacent wetlands and tributaries to water

of the United States; and all waters by which the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce.

**Watershed:** All land and water within the confines of a drainage divide.

**Well field:** Area containing one or more wells that produce usable amounts of water or oil.

**Wetlands:** Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Examples of wetlands include marshes, shallow swamps, lakeshores, bogs, muskegs, wet meadows, estuaries, and riparian areas.

**Wilderness, Wilderness Area:** An area formally designated by Congress as part of the National Wilderness Preservation System.

**Xeroriparian:** Riparian refers or relates to areas adjacent to water or influenced by free water associated with streams or rivers on geologic surfaces occupying the lowest position of a watershed. Pertaining to, living, or situated on, the banks of rivers and streams. “Xeroriparian” refers to being situated on dry washes (ephemeral streams).