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90th Percentile — Term used in conjunction with water sampling standards as required under the *Safe Drinking Water Act (SDWA)* and amendments thereto. The 90th percentile value is calculated by first placing all sample results in order from the lowest concentration to the highest concentration (i.e., concentration of specific contaminants). Next, assign each sample result a number, starting with the number 1 for the lowest (concentration) result up to the highest concentration being given the number equal to the total number of samples collected from a particular water supply system. Then multiply the total number of samples collected by 0.9. The sample result with the number corresponding to this calculated value is the 90th percentile.

Nadir — Refers to a low or the lowest point, as the lowest point of a lake or other body of water attained of a certain period of time (period of record).

Nanograms per Liter (ng/L) — A unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter (mg/L)

Nanoplankton — Very minute plankton not readily retained in ordinary plankton nets.

Nansen Bottle — An ocean-water sampling bottle with spring-loaded valves at both ends that are closed at an appropriate depth by a messenger device sent down the wire connecting the bottle to the surface.

Nappe, also Nap — (1) A sheet or curtain of water flowing over a dam or weir or similar structure. (2) (Geology) A large sheetlike body of rock that has been moved far from its original position.

Narghile — A water pipe that originated in the Near East.

Narrow — (1) A body of water with little width that connects two larger bodies of water. (2) A part of a river or an ocean current that is not wide. Often used in the plural, i.e., narrows.

Natant — Floating or swimming in water.

National Audubon Society — An American environmental interest group founded in 1905 that emphasizes natural resource and wildlife conservation and protection. Named in honor of John James Audubon (1785–1851), who was one of the first American conservationists and who gained recognition for his paintings of birds.

National Economic Development — One of the two main objectives of planning for water and related land resources by governmental agencies whose activities involve planning and development of water resources. Such activities are reflected in the increase in the nation's productive output, an output which is partly reflected in a national product and income accounting framework to measure the continuing flow of goods and services into direct consumption or investment.

National Energy Policy Act (EPAct) — See (*National Energy Policy Act (EPAct)*).

National Environmental Policy Act (NEPA) — A 1970 Act of Congress that requires all federal agencies to incorporate environmental considerations into their decision-making processes. The act requires an *Environmental Impact Statement (EIS)* for any “major federal action significantly affecting the quality of the human environment.”

National Estuary Program — (Water Quality) A nationwide program established under the *Clean Water Act (CWA)* Amendments of 1987 to develop and implement conservation and management plans for protecting estuaries and restoring and maintaining their chemical, physical, and biological integrity, as well as controlling point and nonpoint pollution sources. The program encompasses a watershed management approach to the identification and protection of nationally significant estuaries that are threatened by pollution, development, or overuse and to promote long-term planning and management processes that improve or protect water quality. If selected, the *Environmental Protection Agency (EPA)* will provide 75 percent of the funding for a three to five-year research and management effort to identify the various environmental problems in the “estuarine zone” and to develop a comprehensive conservation management plan.

National Flood Insurance Program (NFIP) — (1) The program under which communities may be eligible for federal flood insurance on the condition that they enact satisfactory *Floodplain Management Regulations*. (2) A federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. Participation in the NFIP is based on an

agreement between local communities and the federal government that if a community will implement and enforce measures to reduce future flood risks to new construction in Special Flood Hazard Areas (SFHA), then the federal government will make flood insurance available to protect against flood losses that do occur. The NFIP was established by Congress through the passage of the National Flood Insurance Act of 1968. Features of the program were modified and extended with the 1973 passage of the Flood Disaster Protection Act, and other legislative measures. The NFIP is administered by the Federal Insurance Administration (FIA), and the Mitigation Directorate (MT), which are components of the *Federal Emergency Management Agency (FEMA)*, an independent federal agency.

National Forest — A federal reservation, generally forest, range, or wildland, which is administered by the Forest Service, U.S. Department of Agriculture, under a program of multiple use and sustained yield for timber production, range, wildlife, watershed, and outdoor recreation purposes.

National Geodetic Vertical Datum (NGVD) — (1) As corrected in 1929, a vertical control measure used as a reference for establishing varying elevations. (2) Elevation datum plane previously used by the *Federal Emergency Management Agency (FEMA)* for the determination of flood elevations. FEMA currently uses the *North American Vertical Datum Plane*.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) — A geodetic datum derived from a general adjustment of the first order level nets of the United States and Canada. It was formerly called “Sea Level Datum of 1929” or “mean sea level” in the USGS series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Monument — An area owned by the federal government and administered by the National Park Service, U.S. Department of the Interior, for the purpose of preserving and making available to the public a resource of archaeological, scientific, or aesthetic interest.

National Municipal Plan — A policy created in 1984 by the *U.S. Environmental Protection Agency (EPA)* and the states to bring all *Publicly Owned Treatment Works (POTWs)* into compliance with *Clean Water Act (CWA)* requirements.

National Oceanic and Atmospheric Administration (NOAA) — An agency of the U.S. Department of Commerce, the National Oceanic and Atmospheric Administration was formed in 1970, but its origins may actually be traced as far back as 1807 when President Thomas Jefferson ordered a survey of the new nation’s coastline. Today, NOAA has translated the United States’ geographic, atmospheric, oceanic, and meteorological informational needs into an organization concentrating in the following principal areas:

- [1] **Research and Analysis** – NOAA researchers and scientists in the areas of oceanography, meteorology, biology, and physics explore the sea and air for new clues aimed at understanding or reversing environmental damage such as ozone depletion, the greenhouse effect, and possible global warming;
- [2] **Satellite Imaging and Mapping** – NOAA’s satellites provide essential information for accurate weather forecasts, monitor winter snowpack conditions across the country, and gauge the health of coastal estuaries;
- [3] **Data Compilation and Dissemination** – The results of NOAA’s data collection, satellite mapping, and research and analysis affords vast stores of information in NOAA’s global data centers available for climate, oceanographic and geophysical reports vital to the public and industry;
- [4] **Forecasting and Weather Warning** – Through the *National Weather Service (NWS)*, NOAA provides extensive information and warnings when severe weather threatens life and property.

The National Oceanic and Atmospheric Administration consists of a number of separate agencies to effect these research, analysis, monitoring, informational, and forecasting requirements.

- [1] **National Weather Service (NWS)** – The National Weather Service operates a vast network of automated weather stations around the nation equipped with sophisticated doppler radar systems on the ground as well as sophisticated satellites providing detailed imaging which provide meteorologists and citizens early warnings of severe weather conditions. In cooperation with the Federal Aviation Administration (FAA), the NWS is proceeding with establishing some 1,000 fully automated weather data collection sites, termed *Automated Surface Observing Systems (ASOS)*.
- [2] **National Ocean Service (NOS)** – The National Ocean Service charts and surveys America’s coastal waterways, providing safe passage for commerce and recreation interests. The NOS also plays a major role in managing America’s coastlines and NOAA’s *Coastal Zone Management Program* strives to protect wetlands, water quality, beaches, wildlife, and other important resources and uses of our coasts. As part of the NOS, NOAA’s *National Marine Sanctuaries*, the nation’s underwater national parks, provide unique undersea preserves to protect important coastal resources. The NOS monitors the health of the coast and

probes how our use of the nation's nearshore waters affects the environment.

- [3] **National Environmental Satellite, Data and Information Service (NESDIS)** – The NESDIS operates the world's largest environmental data storage and distribution facility providing extensive and highly detailed data on weather, the oceans and geophysics. The NESDIS is also responsible for NOAA's polar orbiting and geostationary satellites which provide important information on the oceans and atmosphere. Other NESDIS satellites collect images of cloud and storm patterns which are then relayed to NOAA's National Weather Service and are extensively used by the nation's meteorologists for local weather reporting and forecasting.
- [4] **National Marine Fisheries Service (NMFS)** – The NMFS serves as steward for America's living marine resources, conducting research necessary to manage these valuable resources and enforces fishery regulations, maintains the wholesomeness of U.S. seafood products, and protects coastal fishery habitats and nurseries. The NMFS manages the 32 federal fishery resource plans, covering more than 230 species, and plays a key role in protecting coastal habitats, marine mammals and endangered and threatened species per the *Endangered Species Act (ESA)*.
- [5] **Office of Oceanic and Atmospheric Research** – NOAA's scientists conduct leading edge research on weather, climate, air quality, the oceans and the Great Lakes through a network of environmental laboratories and monitoring stations as well as through university researchers supported by NOAA through the *National Sea Grant College Program* and the *National Undersea Research Program*.
- [6] **NOAA Corps** – NOAA also operates the nation's smallest uniformed service consisting of some 400 officers commanding NOAA's fleet of hurricane hunter aircraft and environmental research ships providing in a variety of scientific and research operations.

National Oil and Hazardous Substances Contingency Plan (NOHSCP/NCP) — The federal regulation that guides determination of the sites to be corrected under both the Superfund program and the program to prevent or control spills into surface waters or elsewhere.

National Park — An area of unusual scenic or historic interest owned by the federal government and administered by the National Park Service, U.S. Department of the Interior, to conserve the scenery, the flora and fauna, and any natural and historical objects within its boundaries for public enjoyment in perpetuity.

National Pollutant Discharge Elimination System (NPDES) — The program established by the *Clean Water Act (CWA)* that requires all *Point Sources (PS)* of pollution discharging into any "waters of the United States" to obtain a permit issued by the *U.S. Environmental Protection Agency (EPA)* or a state agency authorized by the federal agency. The NPDES permit lists permissible discharges and/or the level of cleanup technology required for wastewater.

National Primary Drinking Water Regulations (NPDWR) — Regulations for public drinking water supply systems that include health-based standards for various contaminants, and monitoring and analysis requirements. Issued by the *U.S. Environmental Protection Agency (EPA)* under authority of the *Safe Drinking Water Act (SDWA)*. While the NPDWR set standards protective of the public health, the *National Secondary Drinking Water Regulations (NSDWR)* set aesthetic standards for drinking water, i.e., color, odor, taste, etc. Also see *Drinking Water Standards, Drinking Water Standards [Nevada], Maximum Contaminant Level (MCL)*, and *Maximum Contaminant Level Goal (MCLG)*.

National Priorities List (NPL) — A list of the hazardous waste disposal sites most in need of cleanup. The list is updated annually by the *U.S. Environmental Protection Agency (EPA)* based primarily on how a site scores using the *Hazard Ranking System*. A site must be on the NPL to receive money from the trust fund for remedial action. Also referred to as the *Superfund List*.

National Reclamation Act — See *Reclamation Act*.

National Response Center (NRC) — The U.S. Coast Guard unit that receives reports of hazardous chemical spills and is responsible for notifying other agencies which will help plan, coordinate, and respond to the release.

National Response Team (NRT) — An organization of the federal government under the leadership of the *U.S. Environmental Protection Agency (EPA)* that includes representatives of 10 other federal agencies. The team serves as an umbrella organization at the federal level, and its functions include, among others, evaluating methods to respond to discharges or releases; recommending needed changes in the response organization; making recommendations relative to the training, equipping, and protection of response teams; evaluating response capabilities; reviewing regional responses to discharges; and coordinating the activities of federal, state, and local governments as well as private organizations in response to discharges.

National Secondary Drinking Water Regulations (NSDWR) — Regulations governing the operation of public water supply systems under the *Safe Drinking Water Act (SDWA)*. The regulations define secondary maximum contaminant levels, the maximum concentrations of certain substances in drinking water that affect its aesthetic

quality. While the NSDWR set aesthetic standards for drinking water, i.e., color, odor, taste, etc., the *National Primary Drinking Water Regulations (NPDWR)* set standards protective of the public health.

National Stream Quality Accounting Network (NASQAN) — A data system operated by the *U.S. Geological Survey (USGS)* that compiles measurements of water pollutants concentrations taken at the downstream ends of all major water basins in the United States.

National Strike Force (NSF) — An organization under the leadership of the U.S. Coast Guard that responds to spills of oil or hazardous substances in waters of the United States. The NSF operates through various teams organized in different regions of the country. They provide, among other services, communications support, advice, and assistance in the event of discharges; shipboard damage control; containment and removal of discharges; and diving activities related to damage assessment and surveys.

National Weather Service (NWS) — An agency of the (U.S. Department of Commerce) *National Oceanic and Atmospheric Administration (NOAA)*, the primary mission of the National Weather Service is to protect life and property and enhance the nation's economy by providing warnings and forecasts of hazardous weather, including thunderstorms, flooding, hurricanes, tornadoes, winter weather, and tsunamis. The primary customer of the NWS is the private weather industry whose meteorologists receive data and information directly from the NWS and incorporate it into local news reports. The NWS also operates its own radio network; the *NOAA Weather Radio* is the sole government radio system providing direct warnings of hazardous weather conditions and natural disasters to private citizens through a network of 390 transmitters across the nation. The NWS provides short and long-range forecasts, severe weather warnings, and atmospheric data continually to private weather vendors for a fee using a telephone data transmittal system called *Family of Services*. NWS Doppler radar data is provided through the *NWS NEXRAD Information Dissemination Service (NIDS)* and is available from commercial weather vendors under an agreement with the NWS. The *NOAA Weather Wire Service* is the primary NWS telecommunications network for NWS forecasts, warnings, and other products to the mass media (TV, radio, newspaper) and emergency management agencies. It consists of a satellite communications system operated under contract by GTE/Contel. In a joint effort with the Federal Aviation Administration (FAA), some 250 NWS manual data collection field offices will be replaced with approximately 1,000 automated data collections sites, termed *Automated Surface Observing Systems (ASOS)*, thereby greatly enhancing both the timeliness and frequency of the NWS weather reporting capabilities.

National Wilderness Preservation System — All lands covered by the *Wilderness Act* of 1964 and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.

National Wildlife Refuge (NWR) System — The mission of the National Wildlife Refuge System is to provide, preserve, restore, and manage a national network of lands and waters sufficient in size, diversity, and location to meet society's needs for areas where the widest possible spectrum of benefits associated with wildlife and wildlands is enhanced and made available. The system comprises a unique and diverse network of over 92 million acres of lands and waters in the United States. This system spans the continent from the north coast of Alaska to the Florida Keys and beyond to tropical islands in the Caribbean and Central Pacific. Over 500 national wildlife refuges are included in the Refuge System. They are managed by the Department of the Interior, *U.S. Fish and Wildlife Service (USFWS)* for the conservation and enhancement of fish and wildlife and their habitats. Refuges may range in size from Minnesota's tiny Mille Lacs (less than an acre) to Alaska's sprawling Yukon Delta (almost 20 million acres). Refuges provide habitat — food, water, shelter, and space — for more than 60 endangered species and hundreds of other species of birds, mammals, reptiles, amphibians, fish, and plants. The first national wildlife refuge was Florida's Pelican Island, established in 1903 by President Theodore Roosevelt to protect egrets, herons, and other birds that were being killed for feathers used in the fashions of the time. Also see *National Wildlife Refuges [Nevada]*.

National Wildlife Refuges (NWR) [Nevada] — There are currently nine (9) *National Wildlife Refuges (NWR)* in the State of Nevada, including the largest refuge located within the 48 contiguous states — the Desert National Wildlife Refuge. One refuge — the Sheldon National Wildlife Refuge — is contained mostly in Nevada with a small portion of its northern tip extending up into the State of Oregon. Nevada's National Wildlife Refuges, all of which are managed by the *U.S. Fish and Wildlife Service (USFWS)*, include:

[1] **Anaho Island National Wildlife Refuge** – Established in 1913 by President Woodrow Wilson to protect the white pelican nesting colonies, the Anaho NWR consists of the 750-acre (1.2 square mile) Anaho Island in Pyramid Lake, which is wholly contained within the Pyramid Lake Paiute Indian Reservation. Located approximately 45 northeast of Reno, Nevada, the Anaho NWR contains one of the largest white pelican nesting colonies in North America, as well as cormorant, great blue heron, and gull nesting colonies. This refuge is closed to the public for the protection of the colony nesting birds.

[2] **Ash Meadows National Wildlife Refuge** – Located approximately 90 miles northwest of Las Vegas in Nye

- County, Nevada, the Ash Meadows NWR, established in 1984, encompasses some 14,000 acres (approximately 22 square miles) and provides critical habitat for 25 plant and animal species found nowhere else in the world. This distinguishes the Ash Meadows NWR as having the greatest concentration of endemic species of any other local area in the United States. Of the 25 unique species, 12 have been listed as either *Threatened* or *Endangered*. Water is the key natural resource which makes the Ash Meadows NWR a unique *Ecosystem* in the dry Mojave Desert. In this area, water-bearing strata come to the surface in approximately 30 seeps and springs, providing a rich and complex variety of habitat. The earliest efforts to protect this area were undertaken by *The Nature Conservancy*, which purchased 12,613 acres of land in 1984 and subsequently sold it to the USFWS specifically to establish a wildlife refuge.
- [3] ***Desert National Wildlife Refuge*** – Established in 1936, the Desert NWR covers 1,588,459 acres (2,482 square miles) of the diverse Mohave Desert in southern Nevada and is the largest National Wildlife Refuge in the 48 contiguous United States. The Desert NWR’s most important objective is the perpetuation of the desert bighorn sheep and its habitat. The refuge contains six major mountain ranges, the highest rising from a 2,500 foot elevation valley floor to nearly 10,000 feet. The dry climate and varying elevations provide varied plant life with creosote bush and white bursage dominant in the lower elevations, Mojave yucca and cactus dominant in the mid-elevations, blackbrush and Joshua trees prevalent near 6,000 feet, and single-leaf pinyon and Utah juniper become prominent at 6,000 feet. From 7,000–9,000 feet Ponderosa pine and white fir become dominant and near 10,000 feet the only remaining tree is the bristlecone pine. Throughout this area the big sagebrush is the most common shrub. Within this refuge, and in stark contrast to the typical habitat and wildlife prevalent throughout the refuge, are the numerous and diverse plant and animal communities at Corn Creek. Here springs turn the desert into an oasis attracting over 200 species of birds alone.
- [4] ***Fallon National Wildlife Refuge*** – Established in 1931, the Fallon NWR encompasses approximately 17,900 acres (28 square miles) where the Carson River terminates in the Carson Sink and is situated within the northwest portion of the *Stillwater Wildlife Management Area*. Due to typically limited and uncertain flows of the Carson River at its terminus, generally not enough water enters this refuge to maintain it as a viable wetlands. The area is currently managed by the USFWS along with the *Stillwater National Wildlife Refuge* and is included as part of the Stillwater Wildlife Management Area.
- [5] ***Moapa National Wildlife Refuge*** – The Moapa NWR was established in 1979 in order to protect and secure habitat for the Endangered Moapa dace and a candidate for listing, the White River springfish. The refuge contains 32 acres (0.05 square mile) and is located just north of the Moapa River Indian Reservation, 5 miles northwest of Moapa, Nevada, located in Clark County.
- [6] ***Pahranagat National Wildlife Refuge*** – Located approximately 90 miles north of Las Vegas, Nevada, the Pahranagat NWR is located at the northern end of the Desert NWR and consists of 5,380 acres (8.4 square miles) of marshes, open water, native grass meadows and cultivated croplands. Established in 1964, the Pahranagat NWR hosts numerous waterfowl and other migratory birds on the Pacific Flyway, which stretches from Alaska and Canada to Mexico. The name “Pahranagat” comes from the Paiute Indian word meaning “place of many waters.”
- [7] ***Ruby Lake National Wildlife Refuge*** – This NWR, which was established in 1938, covers an area of 37,632 acres (58.8 square miles) consisting of marshes, open ponds and islands, bordered by wet meadows and grass/sagebrush-covered uplands. The Ruby Lake NWR, which collects the waters from over 160 springs along the base of the Ruby Mountains, lies within a closed drainage basin in Ruby Valley of northeastern Nevada approximately 65 miles southeast of the town of Elko along the eastern flank of the rugged and scenic Ruby Mountains at an elevation of 6,000 feet above sea level. During the Pleistocene Epoch, the Ruby Marshes were part of a much larger body of water known as Franklin Lake, an Ice Age lake which covered some 470 square miles and was over 200 feet deep; however, today, only the Ruby and Franklin Lake marshes remain and provide an important refuge to nesting and migratory waterfowl and water birds using the migration corridors of both the Pacific and Central Flyways.
- [8] ***Sheldon National Wildlife Refuge*** – Located in the northwestern corner of Nevada, the Sheldon NWR manages over 575,000 acres (approximately 900 square miles) of high-desert habitat as a representative area for native plants and wildlife. The Sheldon NWR was formally established in 1978 and represented a consolidation of two refuge and range protection areas: (1) the Charles Sheldon Wildlife Range, created in 1931 by President Herbert Hoover from the purchase of the 30,000–acre Last Chance Ranch by the Boone and Crockett Club and the National Audubon Society; and (2) the Charles Sheldon Antelope Range, an area of over one-half million acres created in 1936 by President Franklin D. Roosevelt for the conservation and

development of natural wildlife resources. Today, this area encompasses remote settings, scenic vistas, numerous natural geothermal hot springs, old ranches and homesteads plus sites of archaeological significance. Some 20 million years ago this area was covered with pine forests and lush grasslands, nurtured by a mild climate and more than 50 inches of annual rainfall. Today, this area receives only from 4–8 inches of precipitation, primarily in the form of snowfall, and the prominent geological characteristic of this refuge is the subsequent volcanic activity which spewed rhyolitic magma over much of its area with basalt flows up to 100 feet thick. These have formed the large, broad tables prevalent in this area today.

- [9] **Stillwater National Wildlife Refuge** – Located approximately 15 miles east of Fallon, Nevada within Churchill County on the edge of the Carson Sink, the Stillwater NWR was formally established in 1991 when 77,500 acres (121 square miles) of the *Stillwater Wildlife Management Area* were set aside to preserve critical nesting and habitat for migratory waterfowl and other birds using the Pacific Flyway in western Nevada. In 1948, in order to preserve a shrinking wetland system, the U.S. Fish and Wildlife Service and the Nevada Fish and Game Commission entered into an agreement with the *Truckee–Carson Irrigation District (TCID)* to develop and manage 224,000 acres (350 square miles) of *U.S. Bureau of Reclamation (USBR)–Newlands (Irrigation) Project* lands, designated as the Stillwater Wildlife Management Area, for wildlife habitat protection and preservation. Today, the Stillwater NWR includes a variety of habitats, from freshwater sloughs and marshes to brackish-water marshes and alkali flats. Each habitat hosts a unique assemblage of plants and invertebrates, which in turn attracts more than 160 bird species and many other animals.

Native Species — A species that is a part of an area’s original fauna or flora.

Natural Attenuation — The process of *Microbiological Anaerobic Degradation* in which hazardous wastes and toxic compounds are treated while not involving the addition of foreign microbes to the site but rather using naturally-occurring microbes already present. Also see *Attenuation*.

Natural Conditions — Conditions under which hydrologic processes and variables are not affected by man. For water budgets, such conditions commonly are assumed to represent long-term, steady state conditions.

Natural Control — A stream-gaging control which is natural to the stream channel, in contrast to an artificial control constructed by man.

Natural Erosion — Wearing away of the earth’s surface by water, ice, or other natural agents under natural environmental conditions of climates and vegetation. Also see *Erosion*.

Natural Flow — The rate of water movement past a specified point on a natural stream from a drainage area for which there have been no effects caused by stream diversion, storage, import, export, return flow, or change in *Consumptive Use* caused by man-controlled modification to land use. Natural flow rarely occurs in a developed county.

Natural Heritage Program [Nevada] — As a statewide program, the Nevada Natural Heritage Program serves as a centralized repository containing detailed and computer-retrievable information on sensitive (threatened or endangered) species of animals, plants, and communities. Species information includes biology, habitats, locations, population and conservation status, and management needs. [See Appendix D–1, Nevada’s Endangered and Threatened Species.]

Natural Logarithm (LN) — (Mathematics) The value of the exponent that the base, e , must have to equal a given number. It is calculated as $e^x = y$, where x is the logarithm. For example, the natural logarithm of 5 is the power (x) to which e (approximately equal to 2.718282) must be raised to equal 5, or $e^x = 5$, which is equivalent to approximately 1.60944. Also written as $\ln 5 = 1.60944$. Also see *Logarithm (Log)*.

Natural Precipitation — Represents the average annual precipitation (rainfall, snow, and sleet) measured at a number of different weather stations.

Natural Recharge — The replenishment of groundwater storage from naturally-occurring surface water supplies such as precipitation and stream flows. Also see *Artificial (or Induced) Recharge*, *Incidental Recharge*, and *Perennial Yield*.

Natural Resource — A material source of wealth, such as timber, fresh water, or a mineral deposit, that occurs in a natural state and has economic and/or value. Natural resources are considered *Nonrenewable* when they do not naturally replenish themselves within the limits of human time or *Renewable* when they are more or less continuously replenished in the course of natural events within the limits of human time.

(United States) Natural Resources Conservation Service (NRCS) — Formerly known as the *Soil Conservation Service (SCS)*, an agency of the U.S. Department of Agriculture, the Natural Resources Conservation Service (NRCS) had its beginnings with a 1929 emergency act of Congress in response to the famous Dust Bowl when land practices, primarily in the Midwest Farm Belt, caused extensive soil erosion and threatened the food production of the United States. Initially, ten experiment stations were established to work with Land Grant Universities to study

soil erosion and ways to prevent it. As a result of these initial efforts, the Soil Erosion Service was established in 1933 to show American farmers new ways of preventing and recovering from soil erosion. In 1935 Congress changed the Soil Erosion Service into the Soil Conservation Service and made it a permanent agency of the U.S. Department of Agriculture. In 1994 the name was changed to Natural Resources Conservation Service to denote a broader role of responsibility in natural resource conservation. Presently, the NRCS works in three primary areas: (1) soil and water conservation; (2) resource inventories; and (3) rural community development. These activities are covered under a number of direct NRCS programs, involving only NRCS resources, and NRCS assisted programs, involving the NRCS and at least one other government agency.

Direct NRCS Programs:

- [1] Technical Assistance
- [2] Great Plains Conservation Program
- [3] Watershed Protection, Long-Term Contracts (Public Law 566)
- [4] USDA Compliance Plans

NRCS Assisted Programs:

- [1] Agriculture Conservation Program
- [2] Water Bank Program
- [3] Colorado River Salinity Control Program
- [4] Conservation Reserve Program
- [5] Water Quality Incentive Program
- [6] Emergency Conservation Program
- [7] Wetlands Reserve Program

Natural Resources Defense Council (NRDC) — A private American environmental organization emphasizing the proper management of natural resources. The NRDC has been an active participant in numerous precedent-setting lawsuits concerning national environmental policies.

Natural Sink — A habitat that serves to trap or immobilize chemicals such as plant nutrients, organic pollutants, or metal ions through natural processes. For example, a river that enters a swamp may carry a substantial amount of dissolved plant nutrients. The natural biological activity of the swamp may remove these nutrients to such an extent that the water exiting the swamp is relatively low in nutrient concentrations. The swamp has then served as a sink to trap the nutrients that are no longer available for subsequent plant growth downstream from the swamp. Also referred to as a *Nutrient Sink*.

Natural Substrate — Any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

[The] Nature Conservancy — An international conservation organization incorporated in 1951 in the District of Columbia for scientific and education purposes. The mission of *The Nature Conservancy* is to preserve plants, animals and natural communities that represent the diversity of life on earth by protecting the lands and waters they need to survive. Current resource conservation efforts cover Canada, the United States, Latin America, and the Caribbean. Through private donations, The Nature Conservancy purchases lands and then either retains ownership or transfers ownership for management to other conservation groups, both public and private.

Naturopathy — A system of treatment of disease that avoids drugs and surgery and emphasizes the use of natural agents (as air, water, and sunshine) and physical means (as manipulation and electrical treatment).

Nauplius — The free-swimming microscopic larval stage characteristic of many crustaceans, barnacles, etc.

Nautical — Of, relating to, or characteristic of ships, shipping, sailors, or navigation on a body of water.

Nautical Mile — A unit of length used in sea and air navigation, based on the length of one minute of arc of a great circle, especially an international and U.S. unit equal to 1,852 meters (about 6,076 feet). Also called *Sea Mile*.

Navigable — Capable of being navigated; deep enough and wide enough to afford passage to vessels. In the United States, for the purpose of defining the rights of ownership, some states have adopted the common-law test of flow of the tide, others that of actual navigability. For determining the right of the public to the use of a body of water as a public highway, however, the test in the U.S. is as to whether the water is navigable in fact or not. And waters are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. In truth, the law has a number of different and frequently confusing definitions of “navigable” rivers and lakes, although agreement exists that all tidal areas are considered navigable. For purposes of determining state title to the beds of rivers and lakes, they must have been capable of carrying commerce at the time the state entered the union. “Commerce” for this purpose includes more than boats carrying persons and cargo. The courts have found streams to be “navigable” where they have carried saw logs or shingle bolts. For purposes of some federal regulatory

programs, a waterway must have carried, or be capable of carrying, interstate commerce. Other federal regulatory programs, for example, the *Federal Power Act*, include waterways which could carry interstate commerce with reasonable modifications. And finally, the *Clean Water Act (CWA)* defines “navigable” waters to include all waters of the United States which may affect or be affected by interstate commerce. Consequently, this encompasses most water bodies in the nation.

Navigable Waters — (1) Generally, those waters capable of supporting commerce. (2) The waters of the United States, including the territorial seas, and intrastate waters, which is any body of water with any connection to interstate waters or commerce and this includes virtually all surface water and wetlands. Despite its name, there is no requirement for vessels to be able to navigate these waters. Provisions of the *Clean Water Act (CWA)* apply to all such waters, including wetlands.

Navigable Waters [Nevada] — In Nevada bodies of water are navigable if they are used, or are susceptible of being used, in their ordinary condition as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. In Nevada, this test of navigability (*State of Nevada v. Julius Bunkowski, et al., 1972*) held that the Carson River was navigable, and therefore the State of Nevada owned its bed, as logs were floated down the river from about 1860 to 1895 (the commerce requirement).

Navigate — (Nautical) To voyage over water in a boat or ship; to travel by water; sail.

Navigational Water Use — Water utilized as a means of commercial (and sometimes recreational) transportation. Includes water used to lift a vessel in a lock, or maintain a navigable channel level. Navigational water use is considered a non-consumptive instream use of water and is generally not measured or accounted for.

Neap Tide — A tide that occurs when the difference between high and low tide is least; the lowest level of high tide. Neap tide comes twice a month, in the first and third quarters of the moon. Contrast with *Spring Tide*.

Nebraskan — (Geology) Of or relating to one of the glacial stages of the *Pleistocene* epoch which occurred in North America, which consisted of the *Nebraskan* (first stage), *Kansan* (second stage), *Illinoian* (third stage), and *Wisconsin* (fourth stage).

Neck Cutoff — The breakthrough of a river across the narrow neck separating two meanders, where downstream migration of one has been slowed and the next meander upstream has overtaken it. Compare with *Chute Cutoff*.

Needle-Leaved Deciduous — Woody *Gymnosperms* (trees or shrubs) with needle-shaped or scale-like leaves that are shed during the cold or dry season; e.g., bald cypress (*Taxodium distichum*).

Needle-Leaved Evergreen — Woody *Gymnosperms* with green, needle-shaped, or scale-like leaves that are retained by plants throughout the year; e.g., black spruce (*Picea mariana*).

Negotiated Settlement (Public Law 101–618) [Nevada and California] — Omnibus legislation passed by the 101st Congress at the end of its 1990 session intended to settle a number of outstanding disputes concerning the Truckee and Carson Rivers. The legislation authorized an ambitious environmental restoration program to benefit the *Lahontan Valley Wetlands* and Pyramid Lake and the lower Truckee River. It also established a framework for resolving separate but closely-related water-resource conflicts involving the Pyramid Lake Paiute and Fallon Paiute–Shoshone Tribes, the cities of Reno and Sparks (Nevada), the states of Nevada and California, and (pending the resolution of several as-yet unsatisfied controversies) the *Newlands Project*. The legislation contains two primary titles: *TITLE I – The Fallon Paiute–Shoshone Indian Tribal Settlement Act*; and *TITLE II – The Truckee–Carson–Pyramid Lake Water Rights Settlement Act*. Collectively, the legislation can be referred to as the *Negotiated Settlement*. The seven (7) main elements covered by the legislation include:

- [1] **Promote the Enhancement and Recovery of Endangered and Threatened Fish Species** – A recovery program is to be developed for the Pyramid Lake endangered fish species cui-ui (*Chasmistes cujus*) and the threatened fish species Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) in compliance with the *Endangered Species Act (ESA)* and the Truckee–Carson–Pyramid Lake Water Rights Settlement Act. Water rights acquisitions are authorized for this purpose.
- [2] **Protect Wetlands from Further Degradation** – A water rights purchase program is authorized for *Lahontan Valley Wetlands*, with the intent of sustaining an average of 25,000 acres of wetlands (*Stillwater National Wildlife Refuge*: 14,000 acres; Carson Lake and Pasture: 10,200 acres; and Fallon Reservation and Indian Lakes: 800 acres) to both prevent further degradation and improve the habitat of the fish and wildlife which depend on those wetlands. The *U.S. Fish and Wildlife Service (USFWS)* has estimated that this will require up to 125,000 acre-feet (AF) of water per year.
- [3] **Encourage the Development of Solutions for Demands on Truckee River Waters** – An operating agreement is to be negotiated for the Truckee River – *The Truckee River Operating Agreement (TROA)* – covering procedures for using storage capacity in upstream reservoirs in California consistent with recovery objectives for listed Pyramid Lake fishes. This includes the implementation of the terms and conditions of the *Primary*

Settlement Agreement (PSA) between SPPCo and the Pyramid Lake Paiute Tribe.

- [4] **Improve Management and Efficiency of the Newlands Project** – The Secretary of the Interior is authorized to operate and maintain the *Newlands Project* to serve additional purposes, including recreation, improved water quality flowing to the wetlands, improved fish and wildlife habitat, and municipal water supply for Lyon and Churchill counties. A project efficiency study is required. The 1973 Gesell Decision is recognized and the 1988 *Operating Criteria and Procedures (OCAP)* is to remain in effect at least through 1997.
- [5] **Fallon Paiute–Shoshone Water Issues Settlement** – Establishment of a settlement fund for the Fallon Paiute-Shoshone Tribe totaling \$43 million. The Tribe is authorized to purchase land and water rights to consolidate tribal holdings within the reservation. Specific litigation filed by the Tribe is to be dismissed.
- [6] **Pyramid Lake Paiute Tribe Issues Settlement** – A tribal economic development fund of \$40 million was established for the Pyramid Lake Paiute Indian Tribe to provide for the settlement of water, fish, and other issues. Another fund of \$25 million was established for the Pyramid Lake fishery.
- [7] **Interstate Water Apportionment Settlement** – Facilitate an interstate allocation of the waters of the Truckee River, Carson River, and Lake Tahoe between the states of California and Nevada.

Also see *Newlands Project [Nevada]*, *Truckee River Agreement [Nevada and California]*, *Truckee River Operating Agreement (TROA) [Nevada and California]*, and *Operating Criteria and Procedures (OCAP) [Nevada]*.

Nekton — (1) Macroscopic organisms swimming actively in water, such as fish. (2) The consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility. Contrast to *Plankton*.

NEPA — See *National Environmental Policy Act (NEPA)*.

Nephelometer — A device which measures the intensity of light scattered at right angles to its path through a sample. It is used to measure turbidity, and the results are expressed in *Nephelometric Turbidity Units (NTUs)*.

Nephelometric — A method of measuring turbidity in a water sample by passing light through the sample and measuring the amount of the light that is deflected.

Nephelometric Turbidity Unit (NTU) — (1) A unit of measure for the turbidity of water resulting from the use of a *Nephelometer* and based on the amount of light that is reflected off the water. (2) The measurement for reporting turbidity that is based on the use of a standard suspension of Formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample. This unit is not identical to the *Jackson Turbidity Unit (JTU)*.

Neritic — Of the shallow regions of a lake or ocean that border the land. The term is also used to identify the biota that inhabit the water along the shore of a lake or ocean.

Neritic Zone — The relatively shallow water zone that extends from the high tide mark to the edge of the *Continental Shelf*. May also refer to such shallow water regions of lakes.

Net Consumptive Use — The *Consumptive Use* decreased by the estimated contribution by rainfall toward the production of irrigated crops. Net consumptive use is sometimes called the *Crop Irrigation Requirement*.

Net Depletion — The total water consumed by irrigation, or another use in an area, which is equal to the water withdrawn minus the return flow.

Net Duty of Water — The amount of water delivered to the land to produce a crop, measured at the point of delivery to the field. Also see *Gross Duty of Water*.

Net Economic Benefits — Economic benefits minus economic costs.

Net Precipitation — (1) The amount of precipitation reaching the ground under a vegetative cover, thus, gross precipitation minus interception loss, corrected for stemflow. (2) (Water Quality) The potential for *Leachate* generation from a waste disposal site. It is computed for a specific location by subtracting the annual evaporation from lakes in the region from the normal annual rainfall.

Net (Storm) Rain — The portion of rainfall during a storm which reaches a stream as direct surface flow.

Net Reservoir Evaporation — The difference between the total evaporation from the reservoir water surface and the *Evapotranspiration* from the reservoir area under pre-reservoir conditions, with identical precipitation considered for both conditions.

Net Water Demand — The amount of water needed in an irrigation or water service area to meet all requirements. It is the sum of *Evapotranspiration of Applied Water (ETAW)* in an area, the *Irrecoverable Losses* from the distribution system, and the outflow leaving the irrigation area. It excludes, however, the water reused in the area. Sometimes used interchangeably with *Net Water Use*.

Net Water Use — Refers to water withdrawals plus or minus water transfers. In most areas, the net water use and water withdrawals are equal. However, in areas involved in water transfers (imports and exports), the net water use represents the actual amount of water used regardless of the amount of water actually withdrawn. Sometimes used

interchangeably with *Net Water Demand*.

Net Water Yield — The available water runoff at a given location, both surface and subsurface, after the upstream uses by man's activities, use by *Phreatophytes*, and evaporation from upstream free water surfaces.

Neuston — (1) The collection of minute or microscopic organisms that inhabit the surface layer of a body of water. (2) Organisms resting or swimming on the surface of still bodies of water.

Neutralization — (1) (Chemistry) A reaction between an acid and a base that yields a salt and water. (2) The equalization of hydrogen and hydroxyl ion concentrations such that the resulting solution is neither acidic nor basic; also, decreasing the acidity or alkalinity of a substance by adding alkaline or acidic materials, respectively.

Neutral Soil — A soil in which the surface layer, at least to normal plow depth, is neither acid nor alkaline in reaction, approximately 7.0 pH.

Nevada Natural Heritage Site [Nevada] — Areas of land or water which either: (1) retain to some degree, or have re-established, a natural character (although it need not be completely undisturbed); or (2) have unusual flora, fauna, geological, scenic, or similar features or scientific, educational or recreational interest.

Nevada Project WET [Nevada] — See *Water Education for Teachers (Project WET) [Nevada]*.

Névé — (1) The upper part of a glacier where the snow turns into ice. (2) A snow field at the head of a glacier. Also, the granular snow typically found in such a field.

New Construction — (FEMA) As used in reference to the *National Flood Insurance Program (NFIP)*, any structures on which construction or substantial improvement was started on or after the effective date of a community's *Floodplain Management Regulations*.

Newlands (Irrigation) Project [Nevada] — One of the first Department of the Interior, *U.S. Bureau of Reclamation (USBR)* (U.S. Reclamation Service at that time) irrigation projects completed in the United States. The project was authorized originally as the *Truckee-Carson Irrigation Project* on March 14, 1903 by the Secretary of the Interior and was renamed the Newlands Project in 1919 in honor of Nevada Senator Francis G. Newlands, who originally sponsored the 1902 Reclamation Act. Derby Dam, located on the lower Truckee River, was completed in June 1905 to divert waters from the Truckee River Basin to the Carson River. In August 1906 the Truckee Canal was completed between the Truckee and Carson rivers. Waters began flowing through this canal in 1906 while 1907 proved to be the first full year of irrigation. Lahontan Reservoir was completed in 1915 on the Carson River to receive Truckee River waters through the Truckee Canal and provided a more stable supply of water for irrigation needs to a defined service area in the Town of Fernley and the lower Carson River Basin near the City of Fallon, Churchill County, in western Nevada. The project originally (1902) called for the possible irrigation of up to 450,000 acres; however, this figure was continually reduced, finally to approximately 73,000 acres when it was found, after much legal controversy, that the full use of the waters of Lake Tahoe would not be available. Soon after the project was authorized, this figure of irrigable acreage was reduced to 210,000 acres in 1904, to 172,000 acres in 1910, and to 97,400 acres in 1925, of which 73,301 acres were determined to be irrigable in 1926. The project's service area currently consists of approximately 73,800 acres of land that are entitled to receive irrigation water, of which only approximately 58,000–60,000 acres are actually irrigated. Water for these lands is supplied from the Truckee and Carson rivers. Water from the Truckee River is diverted to the Carson River Basin at Derby Dam via the 32.5-mile long Truckee Canal. Since its completion, the Newlands Project has been embroiled in controversy resulting from intense competition for the limited water from these two rivers. Controversy has centered on the actual number of acres with legal water rights, the classification of irrigation lands as *Bench Land* or *Bottom Land* (which determines the applicable water duty — 4.5 AF/year or 3.5 AF/year, respectively), the maximum allowable water duty, the efficiency of project operations, and the volume of water diverted from the Truckee River's terminus, Pyramid Lake. In 1967, *Operating Criteria and Procedures (OCAP)* were first instituted in order to maximize the use of Carson River flows to satisfy project requirements and to minimize water diversions from the Truckee River at Derby Dam. Even so, controversy continued and in 1973, the Federal District Court in Washington, D.C. ordered the implementation of a new OCAP for this project. Amid continued controversy, in 1985 the Bureau of Reclamation published an *Environmental Assessment (EA)* which examined an alternative OCAP. Based on comments to this 1985 EA, the Bureau of Reclamation made the decision to initiate an *Environmental Impact Statement (EIS)*. A final OCAP was approved in 1988. *Public Law 101-618*, enacted on November 16, 1990, (also referred to as the *Negotiated Settlement*), requires the current OCAP to remain in effect at least through December 31, 1997, and is intended to allow all principal parties to develop a new *Truckee River Operating Agreement (TROA)*. A major issue in the current litigation has been to secure an adequate water supply (both as to quantity and quality) to preserve Pyramid Lake and protect its environmentally sensitive fish species, the endangered cui-ui (*Chasmistes cujus*) and the threatened Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*).

Newlands (Irrigation) Project Efficiency [Nevada] — The ratio of irrigation delivery demand to Lahontan Reservoir

releases, excluding spills.

Newlands Water Protective Association (NWSA) [Nevada] — A water right owners association formed to protect the Newlands Irrigation Project water rights and supply.

New Source Performance Standards (NSPS) — Effluent limitations set by the *U.S. Environmental Protection Agency (EPA)* for new *Point Sources (PS)* of water pollution. The standards are applied to industry categories (*Standard Industrial Classification [SIC] Codes*), such as petroleum refineries and phosphate manufacturers.

Nick Point (Bedscarp) — (1) The point at which a stream is actively eroding the streambed to a new base level. (2) An abrupt change in grade in the bottom of a stream channel that moves progressively upstream; the change in grade forms a waterfall. Also, the location where a streambed is actively eroding downward to a new base level.

Nimbostratus Clouds — Rain clouds in layers that are generally spread across the sky; a low, gray, often dark cloud that precipitates rain, snow, or sleet. Also see *Cloud*.

Nimbus Clouds — A rain-producing cloud; storm clouds that are usually dark in color. Also see *Cloud*.

Ninetieth Percentile — See *90th Percentile* (first entry under the letter “N”).

NIPDWR — National Interim Primary Drinking Water Regulations.

Nitrates — Nitrates represent a class of chemical compounds having the formula NO_3^- . Nitrate salts are used as fertilizers to supply a nitrogen source for plant growth. Nitrate additions to surface waters can lead to excessive growth of aquatic plants. The presence of nitrates in groundwater occurs from the conversion of nitrogenous matter into nitrates by bacteria and represents the process whereby ammonia in wastewater, for example effluent discharges from septic tank systems, is oxidized to nitrite and then to nitrate by bacterial or chemical reactions. High groundwater nitrate levels can cause methemoglobinemia in infants.

Nitrification — The conversion of nitrogenous matter into *Nitrates* by bacteria; the process whereby ammonia in wastewater is oxidized to nitrite and then to nitrate by bacterial or chemical reactions.

Nitrogen — (1) (General) Chemical symbol N, the gaseous, essential element for plant growth, comprising 78 percent of the atmosphere, which is quite inert and unavailable to most plants in its natural form. (2) One of the three primary nutrients in a complete fertilizer and the first one listed in the formulation on a fertilizer label: 10-8-6 (nitrogen, phosphorus, potassium). (3) (Water Quality) A nutrient present in ammonia, nitrate or nitrite or elemental form in water due possibly to *Nonpoint Source (NPS)* pollution or improperly operating wastewater treatment plants.

Nitrogen Cycle — (Ecology) The circulation of *Nitrogen* in nature, consisting of a cycle of chemical reactions in which atmospheric nitrogen is compounded, dissolved in rain, and deposited in the soil, where it is assimilated and metabolized by bacteria and plants, eventually returning to the atmosphere by bacterial decomposition of organic matter. Also, a model illustrating conversion of nitrogen from one form to another through a combination of biological, geological, and chemical processes. The process is continuous, with atmospheric nitrogen, N_2 , being converted to forms usable by biota and then ultimately returning to the atmosphere as N_2 .

Nitrogen Fixation — The conversion of elemental nitrogen in the atmosphere (N_2) to a reduced form (e.g., ammonia and amino groups of amino acids) that can be used as a nitrogen source by organisms. The process is important since all organisms require a source of nitrogen for nutrition, and N_2 cannot be used by the great majority of the biota to satisfy that need. Biological nitrogen fixation is carried out by a variety of organisms; however, those responsible for most of the fixation are certain species of bluegreen algae, the soil bacterium *Azotobacter*, and the symbiotic association of plants of the legume variety and the bacterium *Rhizobium*.

Nitrogen-Fixing Plants — Plants that can assimilate and fix the free nitrogen of the atmosphere with the aid of bacteria living in the root nodules. Legumes with the associated rhizobium bacteria in the root nodules are the most important nitrogen-fixing plants.

Nitrogen Narcosis — A state of euphoria and exhilaration that occurs when nitrogen in normal air enters the bloodstream at approximately seven times atmospheric pressure (as in deep-water diving). Also called *Rapture of the Deep*.

Nitrogenous BOD — (Water Quality) The amount of molecular oxygen required for the microbial oxidation of ammonia and nitrite contaminants in a specified volume of wastewater. This type of oxygen demand can complicate the interpretation of data obtained from the determination of the *Biochemical Oxygen Demand (BOD)* of treated sewage, although a chemical can be added to the BOD test to prevent ammonia oxidations. Ammonia and nitrite are oxidized by *Chemoautotrophic Bacteria*.

Nitrogenous Waste — (Water Quality) Wastewater that contains inorganic forms of nitrogen, including ammonia and nitrite.

Nitrogen Supersaturation — A condition of water in which the concentration of dissolved nitrogen exceeds the saturation level of water. Excess nitrogen can harm the circulatory systems of fish.

- Nival** — Of, relating to, or growing in or under snow.
- Niverous** — Resembling snow; snowy.
- No Action Alternative** — Projected baseline condition, or anticipated future condition without a given action being taken. The expected future condition if no action is taken—not necessarily the same as the present condition. The effects of action alternatives are measured against this baseline condition.
- NOAA** — See *National Oceanic and Atmospheric Administration (NOAA)*.
- Noble Metal** — A chemically inactive metal such as gold; does not corrode (oxidize) easily.
- Noggin** — A unit of liquid measure equal to one quarter of a pint.
- Non-Aqueous-Phase Liquids (NAPLs)** — (Water Quality) Organic chemicals (contaminants) that are *immiscible* with water. Also, NAPLs are frequently toxic to many microorganisms used in *Bioremediation*. Such organic contaminants may be lighter than water (LNAPLs) or denser than water (DNAPLs). DNAPLs have proven to be one of the most difficult remediation problems to surmount and frequently constitute the more common pollutants found in water.
- Noncohesive Soil** — Soil particles that have no natural resistance to being pulled apart at their point of contact, for example, silt, sand, and gravel.
- Non-Community Water System (NCWS)** — A public water system that is not a community water system, e.g., the water supply at a camp site or national park.
- Non-Consumptive Water Use** — Nonconsumptive water use includes water withdrawn for use that is not consumed, for example, water withdrawn for purposes such as hydropower generation. This also includes uses such as boating or fishing where the water is still available for other uses at the same site. The terms *Consumptive Use* and *Nonconsumptive Use* are traditionally associated with water rights and water use studies, but they are not completely definitive. No typical consumptive use is 100 percent efficient; there is always some return flow associated with such use either in the form of a return to surface flows or as a ground water recharge. Nor are typically nonconsumptive uses of water entirely nonconsumptive. There are evaporation losses, for instance, associated with maintaining a reservoir at a specified elevation to support fish, recreation, or hydro-power, and there are conveyance losses associated with maintaining a minimum streamflow in a river, canal, or ditch.
- Non-Contact Cooling Water** — Water used for cooling which does not come into direct contact with any raw material, product, byproduct, or waste.
- Non-Contact Recreation** — Recreational pursuits not involving a significant risk of water ingestion, including fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity.
- Non-Contributing Area** — An area within a drainage basin having no direct connection with the basin's principal drainage system.
- Non-Conventional Pollutants** — Under the *Clean Water Act (CWA)*, water pollutants not listed as conventional pollutants, toxic pollutants, or thermal discharges. These include chloride, iron, ammonia, color, and total phenols.
- Non-Degradation Policy** — An environmental policy which disallows any lowering of naturally occurring quality regardless of preestablished health standards.
- Nondestructive Testing (NDT)** — In geophysical surveying, methods used to detect subsurface water, subsurface containers, or the areal extent of groundwater contamination without soil borings. The testing involves the use of acoustic soundings, infrared radiation, x-rays, magnetic field perturbations, and electrical resistivity, among other methods.
- Nondischarging Treatment Plant** — A treatment plant that does not discharge treated wastewater into any stream or river. Most are pond systems that dispose of the total flow they receive by means of evaporation or percolation to groundwater, or facilities that dispose of their effluent by recycling or reuse, for example spray irrigation or groundwater discharge.
- Non-Filtrable Residue** — The total quantity of substances in a sample which can be removed by filtration through a 0.45 μm membrane filter. Reported in milligrams per liter (mg/l), and sometimes referred to as *Suspended Solids*.
- Nonfull-Cost Entitlement (USBR)** — Maximum acreage, whether held directly or indirectly, that a landholder may irrigate with Reclamation irrigation water at less than the *Full-Cost Rate*.
- Nonhazardous Oil Field Waste (NOW)** — Wastes generated by drilling of and production from oil and gas wells that are not classified by the *U.S. Environmental Protection Agency (EPA)* regulations as hazardous wastes. Typical NOW's include drilling muds, cuttings, drilling fluids, and *Produced Water*.
- Non-Irrigated Cropland** — Those non-irrigated cultivated lands that are used for the production of grain crops (harvested and/or grazed), orchard, and field crops.
- Nonpersistent Emergents** — *Emergent Hydrophytes* whose leaves and stems break down at the end of the growing season so that most above-ground portions of the plants are easily transported by currents, waves, or ice. The

breakdown may result from normal decay or the physical force of strong waves or ice. At certain seasons of the year there are no visible traces of the plants above the surface of the water; e.g., wild rice (*Zizania aquatica*), arrow arum (*Peltandra virginica*).

Nonpersistent Pollutant — A substance that can cause damage to organisms when added in excessive amounts to the environment but is decomposed or degraded by natural biological communities and removed from the environment relatively quickly. Contrast with *Persistent Pollutant*.

Non-Point Source (NPS) Pollution — (1) Pollution discharged over a wide land area, not from one specific location. (2) Water pollution caused by diffuse sources with no discernible distinct point of source, often referred to as runoff or polluted runoff from agriculture, urban areas, mining, construction sites and other sites. These are forms of diffuse pollution caused by sediment, nutrients, organic and toxic substances originating from land use activities, which are carried to lakes and streams by surface runoff. Technically, non-point source pollution, also referred to as *Non-Point Water Pollution*, means any water contamination that does not originate from a “point source,” which is designated in the *Clean Water Act (CWA)* as pollution that can be clearly identified as a discharge from a pipe, ditch, or other well-defined source. Non-point source pollution, by contrast, is contamination that occurs when rainwater, snowmelt, or irrigation washes off plowed fields, city streets, or suburban backyards. As this runoff moves across the land surface, it picks up soil particles and pollutants such as nutrients and pesticides. Some of the polluted runoff infiltrates into the soil to contaminate (and recharge) the groundwater below. The rest of the runoff deposits the soil and pollutants in rivers, lakes, wetlands, and coastal waters. Originating from numerous small sources, non-point source pollution is widespread, dispersed, and hard to pinpoint. Compared with point source pollution, it is diffuse and difficult to control or prevent. It has been estimated that non-point source pollution accounts for more than one-half of the water pollution in the United States today.

Non-Point Water Pollution — See *Non-Point Source (NPS) Pollution*.

Nonporous — Something which does not allow water to pass through it. More specifically, a material with no void spaces.

Non-Potable — Used to describe water that is not suitable for drinking because it contains pollutants, contaminants, minerals, or infective agents.

Nonreimbursable Costs — Water project costs allocated to general statewide or national beneficial purposes and funded from general fund revenues, rather than by water users.

Nonrenewable Resources — Natural resources that do not naturally replenish themselves within the limits of human time. Also see *Natural Resources* and *Renewable Resources*.

Nonstructural Measures — Measures for managing, utilizing, or controlling water and related lands without structural development to achieve the desired objective. Such measures include best management practices, flood plain zoning, flood warning systems, education and legal restraints, and preservation, as well as the more common land management measures.

Nonstructural Flood Control Measures — Measures such as zoning ordinances and codes, flood forecasting, flood proofing, evacuation and channel clearing, flood fight activities, and upstream land treatment or management to control flood damages without physically restraining flood waters. Also see *Nonstructural Floodplain Management Measures*.

Nonstructural Floodplain Management Measures — Those measures employed to modify the exposure of buildings to floods, e.g., floodproofing, land use planning, warning schemes, and insurance, as opposed to structural measures such as dams, levees, and channel modifications.

Non-Threshold Pollutant — A substance or condition harmful to a particular organism at any level or concentration.

Non-Transient Non-Community Water System — (1) A public water system that regularly serves at least 25 of the same non-resident persons per day for more than six months per year. (2) A public water system that is not a community water system and that regularly serves at least 25 of the same people over six months per year. Common types of such water systems are those serving schools, daycare centers, factories, restaurants, nursing homes, and hospitals.

Nonuniform Flow — (Hydraulics) Flow in which the mean velocity or cross-sectional area vary at successive channel cross-sections. If the velocity at a given cross-section is constant with time, it is referred to as *Steady Nonuniform Flow*. If the velocity changes with time at each cross-section, it is known as *Unsteady Nonuniform Flow*.

Non-Volatile Solids (NVS) — The quantity of solids in water, wastewater or other liquids, not lost by ignition of the dry solids at 600°C. Reported in milligrams per liter (mg/l).

Non-Volatile Suspended Solids (NVSS) — The quantity of solids in a sample which is removed by filtration but not lost by ignition at 600°C. Reported in milligrams per liter (mg/l).

Non-Velocity Coastal Flood Area — (FEMA) Any area that is subject to inundation by tidal waters which has lower

velocity or wave components than a *Coastal High Hazard Area*.

Nonwithdrawal Use — Use which does not require diversion. Navigation, recreation, waste disposal and conservation of fish and wildlife are examples of nonwithdrawal uses. Such uses are typically nonconsumptive uses of water. Also referred to as *Instream Use* and *In-Channel Use*.

Noria — A water wheel with buckets attached to its rim, used to raise water from a stream, especially for transfer to an irrigation channel.

Normal (Hydrologic) — A central value (such as an arithmetic average or median) of annual quantities for a 30-year period ending with the first year of a decade, e.g., 1931–1960, 1961–1990.

Normal Annual Precipitation — Average annual precipitation during a base period.

Normal Daily Temperature — The average daily mean temperature for a given date, computed for a specific 30-year period.

Normal Distribution — (Statistics) A fundamental underpinning of statistical and econometric analysis: that if repeated samples are drawn (observed) from a population, that as the sample size grows then the observed values will centralize around a non-random value, termed the expected value. A normal distribution of observations may be pictured as a “bell-shaped” curve, with a central peak and symmetrical “tails” on either side. In a normal distribution, the *(Arithmetic) Mean* (the average value of all observations) is also equal to the *Mode* (the most frequently occurring) and the *Median* (the middle-most with an equal number of observations appearing below and above).

Normal Fault — (Geology) A *Fault* in which the hanging wall appears to have moved downward relative to the footwall.

Normal Water Level — For a reservoir with a fixed overflow, the lowest crest level of that overflow. For a reservoir whose outflow is controlled wholly or partly by movable gates, siphons or other means, it is the maximum level to which water may rise under normal operating conditions, exclusive of any provision for flood surcharge.

Normal Year — A year during which the precipitation or streamflow approximates the average for a long period of record.

Normalized Demand — The process of adjusting actual water use in a given year to account for unusual events such as dry weather conditions, government interventions for agriculture, rationing programs, or other anomalies.

North American Vertical Datum Plane — Elevation datum currently used by the *Federal Emergency Management Agency (FEMA)* for the determination of flood elevations, replacing the *National Geodetic Vertical Datum (NGVD)* which had been used previously.

Notch — The opening in a dam or spillway for the passage of water.

No Till Farming — Planting crops without prior seedbed preparation, into an existing cover crop, sod, or crop residues, and eliminating subsequent tillage operations.

NO_x — Oxides of nitrogen, specifically NO (nitric oxide), NO₂ (nitrogen dioxide or nitrogen peroxide), and NO₃, nitrate.

Noxious Plant — A harmful plant species. Also see *Noxious Weed*.

Noxious Weed — A plant species that possesses one or more of the following attributes: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insect or disease and being native or new to or not common to the United States or parts thereof. Also referred to as *Noxious Plant*.

NPDES — See *National Pollutant Discharge Elimination System (NPDES)*.

NPDES Permit — A permit issued under the *National Pollutant Discharge Elimination System (NPDES)* for companies discharging pollutants directly into the waters of the United States.

NPS Pollution — See *Non-Point Source Pollution*.

NTU — A unit of measure for the turbidity water based on the amount of light that is reflected off the water. See *Nephelometric Turbidity Unit*.

Nucleating Agent — In cloud physics, any substance that serves to accelerate the *Nucleation* of cloud particles. Nucleating agents may themselves be nuclei (silver iodide, salt, sulfur dioxide, dust) or they may enhance the nucleation environment (dry ice, propane spray).

Nucleation — Any process by which the phase change of a substance to a more condensed state (condensation, sublimation, freezing) is initiated at certain loci, nuclei, within the less condensed state.

Nuisance Flooding — Flooding which causes public inconvenience, but little or no property damage. Also referred to as *Minor Flooding*. Also see *Major Flooding* and *Moderate Flooding*.

Nutrient — (1) An element or compound essential to life, including carbon, oxygen, nitrogen, phosphorus, and many others. (2) Animal, vegetable, or mineral substance which sustains individual organisms and ecosystems. (3) That portion of any element or compound in the soil that can be readily absorbed and assimilated to nourish growing

plants, e.g., nitrogen, phosphorus, potassium, iron.

Nutrient Cycle — The cyclic conversions of nutrients from one form to another within the biological communities. A simple example of such a cycle would be the production and release of molecular oxygen (O_2) from water (H_2O) during photosynthesis by plants and the subsequent reduction of atmospheric oxygen to water by the respiratory metabolism of other biota. The cycle of nitrogen is much more complex, with the nitrogen atom undergoing several changes in oxidation state (N_2 , NO_3^- , $R-NH_2$, and NH_4^+ , among others) during the cycling of this element through the biological community, and into the air, water, or soil, and back.

Nutrient Pollution — Contamination of water resources by excessive inputs of nutrients. In surface waters, excess algal production is a major concern. Although natural sources of nutrients exist, major sources are typically *Anthropogenic* (caused by man's activities) and include point sources such as municipal sewage-treatment plants and industrial outflows, and non-point sources such as commercial fertilizers, animal waste, and combustion emissions. Most of the recent legislation to curb nutrient pollution has been targeted towards such goals as updating sewage-treatment plants to reduce phosphorus and nitrogen in effluents, bans on phosphorous in laundry detergents, and controlling agriculture operations to control the flow of nitrogen and phosphorous from fertilizers entering natural waters.

Nutrient Sink — See *Natural Sink*.

Nutrient Spiraling — Recycling of nutrients between the water column and stream bed.

NWPA — See *Newlands Water Protective Association (NWPA)*.

NWS — See *National Weather Service (NWS)*.