EXECUTIVE SUMMARY/OVERVIEW

PART I: SURFACE AND GROUND WATER QUALITY

SURFACE WATER QUALITY

The assessment and protection of surface water in the semi-arid State of New Mexico is vitally important to the health and well being of humans, aquatic life, and wildlife. General uses of surface water in New Mexico include recreation, aquatic life habitat, propagation of fish, ceremonial purposes, irrigation, industrial application, municipal water supply, domestic water supply, livestock watering, and wildlife habitat. Surface water supply is limited in many portions of the state.

SURFACE WATER IMPAIRMENT INVENTORIES

Information about surface water quality throughout New Mexico is based on chemical/physical, biological, toxicological, and habitat data collected during the New Mexico Environment Department's (NMED) intensive surveys, water quality monitoring of projects under the state's Nonpoint Source Pollution Management Program, Total Maximum Daily Load (TMDL) surveys and studies, preliminary statewide studies of mercury in fish tissues, water quality compliance monitoring conducted under the National Pollutant Discharge Elimination System (NPDES) program, long-term water quality monitoring collected by the U.S. Geological Survey (USGS) at stream gages, and review of physical and chemical data entered by various agencies into the United States Environmental Protection Agency's (EPA) database (STORET).

From a total of over 6,561 primarily perennial stream miles, almost 2,612 assessed miles, or 40%, have identified impaired designated or attainable uses while 53,666 out of a total of 82,913 acres, or 65%, of significant identified lake, reservoir, or playas do not fully support designated uses.

CAUSES AND SOURCES OF SURFACE WATER IMPAIRMENT

Heavy metal contamination, stream bottom deposits (sedimentation/siltation), temperature, and turbidity are the major causes of surface water impairment based on current designated, existing, and/or attainable uses. Probable sources of surface water quality impairment in New Mexico are diverse and include grazing, habitat alteration, hydromodification, and runoff related to road construction and maintenance. Lack of proper grassland, woodland and forest management, as well as invasive riparian species, and increasing recreation, are additional probable sources of water quality impairment in New Mexico. Over 95% of all water quality impairment identified in New Mexico's rivers is due to nonpoint sources of water pollution (ADB 2004).

The State of New Mexico has issued fish consumption advisories for 23 lakes and reservoirs and one river due to elevated mercury concentrations in fish (NMDOH et al. 2001) Twenty-four lakes were included on the 2000 CWA §303(d) list fish consumption advisories for mercury, even though the water quality standard for mercury was not exceeded in these lakes.

United States Forest Service (USFS) estimates, based on comparing the extent of hydric soils in the state to the extent of present wetlands show that New Mexico's wetlands, which currently total approximately 481,900 acres, have been reduced over 33% since the 1780s. Due to these historical trends, point and nonpoint pollution and drainage, the status of all wetlands is

a primary concern in New Mexico. In response, the Watershed Protection Section of NMED's Surface Water Quality Bureau has recently received a USEPA grant to develop a wetlands protection program.

GROUND WATER QUALITY

Approximately 90% of New Mexico's population depends on ground water for its drinking water. The water quality for the 81% of the population utilizing ground water sources from public water supplies is monitored routinely. Nearly one half of the total water used for all purposes in New Mexico is ground water. In many locations, ground water is the only available supply.

GROUND WATER CONTAMINATION CASES

As of February 2004, around 200 out of approximately 1,500 facilities that have ground water discharge permits had confirmed ground water contamination. At least 135 additional sites had either confirmed ground water contamination or presented a threat to ground water. Ground water contamination most frequently occurs in vulnerable aquifer areas where the water table is shallow.

CAUSES AND SOURCES OF GROUND WATER CONTAMINATION

Ground water contamination in the state results from both non-point (diffuse) and point sources. Non-point source contamination is caused predominantly by concentrations of small household septic tanks or cesspools. Other non-point sources are residual minerals from evapotranspiration, areas disturbed by mineral exploration and/or storage of waste products, urban runoff, and runoff from agricultural operations. Point sources are discharges at specific identified locations such as surface impoundments, landfills, and injection wells. In New Mexico, accidental spills and leaking storage tanks account for almost half of all point source contamination events.

PUBLIC DRINKING WATER SYSTEMS

The 1996 reauthorization of the federal Safe Drinking Water Act (SDWA) mandated that EPA set new or revised standards for some naturally occurring ground water chemical constituents in New Mexico such as radon, radionuclides, and arsenic. According to the 1996 amendments, EPA should have promulgated a standard for radon by December 2000, with a proposal by August 1999.

However, there is no drinking water standard for radon at the present time. Although the primary risk from radon is through breathing it in indoor air, present sampling data suggest that radon could occur in 84% of New Mexico's water supply wells. Annual treatment costs to remove radon from water supplies could be substantial, depending on the level at which EPA sets the standard. In the draft EPA regulation, states are encouraged to adopt a Multi Media Mitigation (MMM) program. A MMM program would require the state Indoor Radon and Drinking Water programs to work together to decrease radon levels in homes. As a result, states with MMM programs for indoor air will only be required to meet a less stringent alternate MCL for drinking water.

EPA promulgated a revised regulation for arsenic in October 2001 setting a national maximum contaminant level of 10 μg/L. Like radon, the costs to remove arsenic will be substantial.

PART 2: WATER QUALITY MANAGEMENT

THE STATE ROLE IN WATER QUALITY MANAGEMENT

Water quality management in New Mexico has both state and federal aspects. The state establishes standards for state and interstate water bodies and for ground water, assesses the quality of surface and ground waters, adopts regulations, and takes actions to protect and maintain surface and ground water quality. The state also coordinates with EPA in implementing the federal Clean Water Act (CWA) [33 U.S.C. 1288] and other federal acts which contain water quality protection provisions.

At the state level, the New Mexico Water Quality Control Commission (WQCC), under the authority of the New Mexico Water Quality Act, has adopted the basic framework for water quality management. Major components of this framework include surface and ground water quality standards, regulations, and the state's Nonpoint Source Management Program.

PROGRAMS FOR SURFACE WATER POLLUTION CONTROL

New Mexico uses a variety of mechanisms including state, federal, and/or local components to protect its surface waters from becoming polluted. The principal mechanism used to protect waters from municipal and non-municipal point source discharges is the federal NPDES program. While EPA issues and enforces NPDES permits for discharges in New Mexico, the state plays a significant role in this permit program, by providing water quality certification for these permits as well as inspecting the facilities for compliance permit requirements. NMED administers and enforces Surface Water Protection and Utility Operator Certification regulations for the WQCC.

The state Nonpoint Source Water Pollution Management Program addresses nonpoint source surface water pollution. NMED is the lead agency for this program, which utilizes a variety of state, local, and federal agency programs to achieve implementation of Best Management Practices to prevent and abate nonpoint source pollution. As part of this program, the state assures that water quality standards are maintained and wetlands are protected through the water quality certification process for CWA §404 dredge-and-fill permits issued by the United States Army Corps of Engineers (ACE). The recently acquired wetlands grant will also be administered as part of this program.

PROGRAMS FOR GROUND WATER POLLUTION CONTROL

Programs established under the New Mexico Water Quality Act, Oil and Gas Act, Hazardous Waste Act, Ground Water Protection Act, Solid Waste Act, Emergency Management Act, Voluntary Remediation Act, and Environmental Improvement Act are designed to maintain ground water quality.

Water Quality Act programs include a ground water discharge permit program that protects ground water quality through the issuance of ground water pollution prevention permits; an abatement program that includes requirements for the assessment and abatement of releases that cause or threaten to cause exceedences of ground water quality standards; and a spill response program that includes provisions for the reporting and cleanup of spills that impact ground water quality. Regulations under the Oil and Gas Act "regulate the disposition of water produced or used in connection with the drilling for or producing of oil and gas....". The Oil and Gas Act also regulates disposition of non-domestic and non-hazardous solid waste produced by

the oil and gas industry. Hazardous Waste Act regulations include requirements for preventing and cleaning up releases of hazardous waste and releases from storage tanks. The Ground Water Protection Act provides a state cleanup fund for corrective action at sites contaminated by leaking storage tanks. The Emergency Management Act provides for the Hazardous Materials Emergency Response Plan, which gives NMED the responsibility for providing necessary information to first responders at hazardous materials and radiological incidents. Under the authority of the Environmental Improvement Act, regulations have been adopted that cover liquid waste disposal, septage, and public water supply. The Voluntary Remediation Act's goal is to facilitate the expeditious, voluntary cleanup of contaminated properties, thereby promoting their redevelopment and productive use.

Several federal programs contribute to ground water quality protection in New Mexico. The federal Superfund program provides funds to the state, and NMED's Superfund Oversight Section identifies, investigates, and oversees remediation of abandoned and uncontrolled hazardous waste sites under a Superfund Memorandum of Agreement with EPA.

The New Mexico State Legislature has given extensive authority to counties and municipalities for land use and protection of public health and safety, areas with substantial implications for ground water quality protection. Most have not taken full advantage of this authority. The present zoning authority of the counties can be coupled with a wellhead protection program to effectively protect ground water drinking water sources in partnership with NMED and EPA. Many small systems, which rely on surface water for their drinking water, may establish a watershed protection program for their surface water sources.

PROGRAMS FOR WATER QUALITY ASSESSMENT

SURFACE WATER QUALITY ASSESSMENTS

The state uses a wide variety of methods for assessment of its surface water quality. Second-party data including discharger's reports, published literature, data stored in EPA's database as well as data generated by the United States Geological Survey (USGS) are routinely reviewed. NMED generates large amounts of data through intensive surveys, assessment of citizen complaints, special studies aimed at areas of special concern (e.g., mercury concentration in fish), volunteer monitoring programs, short and long-term nonpoint source pollution monitoring and effluent monitoring. The process of assessing recent surface water quality data against current water quality standards is detailed in Chapter 4 and the Assessment Protocol (SWQB/NMED 2004b).

GROUND WATER MONITORING AND DATA MANAGEMENT

Ground water quality monitoring is carried out under many of the state ground water quality protection and remediation programs and by the USGS. The scope and variety of ground water quality investigations in New Mexico has created the need for computerized data management. NMED has purchased and is continuing to implement a department-wide database that is capable of storing all ground water quality data. NMED has experienced problems because analytical data are received from a wide variety of sources and the data are not in a consistent format that is readily uploaded into the new database. Until a solution has been identified and implemented, ground water data will not all reside in a single repository at NMED. Once a data input solution is realized, vast improvements will be made in the way the public and the NMED accesses environmental quality data for ground water.

PROGRAM EVALUATION

SURFACE WATER

EPA, the states, and others have used various qualitative and quantitative measures to measure the effectiveness of water quality management programs. The cost of administering these programs continues to grow at a steady rate. These programs' primary function is to maintain suitable water quality necessary to protect existing, designated, and attainable uses. New Mexico was one of the first states to have all of its municipalities achieve secondary treatment capability. In general, "major" dischargers normally do a good job of meeting permit requirements while "minor" dischargers continue to have noncompliance problems that are not being completely addressed due to EPA enforcement policies.

Nonpoint source water pollution in New Mexico is receiving ever more attention. The United States Forest Service (USFS) and other land management agencies in cooperation with NMED have initiated significant efforts in a large number of different settings, to reduce and eliminate such pollution in a number of the state's highest quality waters. These efforts have led in several cases to the elimination of longstanding nonpoint source problems.

GROUND WATER

Ground water protection program effectiveness is documented through site-specific monitoring at permitted facilities and facilities that are abating ground water contamination. Although there is no overall index to determine the rate at which ground waters are polluted or remediated, state and federal programs that ensure the quality of the state's ground water have been successful in both ground water quality protection and clean-up efforts.

RECOMMENDATIONS FOR GROUND AND SURFACE WATER QUALITY MANAGEMENT

The following recommendations are divided into two groups: first, recommendations are made to the United States Congress on desirable legislation and necessary funding of water quality management; and second, recommendations are made to the EPA on administration of the CWA and other federal acts contain water quality protection provisions.

RECOMMENDATIONS TO THE CONGRESS OF THE UNITED STATES

NONPOINT SOURCE CONTROLS

1. New Mexico's Nonpoint Source Control Program was first fully approved by EPA in September 1989. Consequently, the state has been implementing the program for only 15 years. We believe that it cannot yet be determined to what extent the state's largely voluntary approach is having in controlling nonpoint source pollution. Depending on the specific sources of impairment, it can take decades to realize the effects of BMPs designed to control nonpoint source pollution.

> ***The states should have an adequate period of time to fully determine the efficacy of their existing nonpoint source control programs. Only after such time should federal mandates be developed and then only for those elements of a state's program that are not making adequate progress toward meeting a state's water quality standards.***

2. Language in some proposed federal legislation calls for the states to adequately treat all of their nonpoint source concerns such that runoff from these areas would meet state water quality standards in some arbitrary period of time. Due to vast differences in the types of nonpoint source problems faced by individual states, any such artificial deadline may be adequate for one state yet impossible to meet for its neighbor. Secondly, in the West, where the majority of the nonpoint source concerns identified to date are associated with runoff from vast areas of mountains, rangelands, irrigated farmlands, extensive road networks, et cetera, the sheer magnitude of the problem will preclude attainment of standards unless exorbitant commitments of limited financial resources are dedicated to these problems. Finally, even the expenditure of such vast resources may not have immediate benefit in the arid portions of the West because establishment and/or reestablishment of adequate groundcover to prevent overland flows of sediment-laden waters is dependent upon adequate precipitation, proper land management, and other factors that may be beyond the control of water quality and land management agencies.

> ***In every instance in which a deadline is established requiring the attainment of water quality standards by nonpoint sources of pollution (except in cases related to septic tanks), remove the deadline and substitute the following phrase:***
>
> **..."as rapidly as possible based on the area's ecological potential as determined by the state."**

3. Over one-third of New Mexico's lands are owned by the federal government where most nonpoint source pollution in the state occurs. The majority of New Mexico's Category I watersheds as determined in the Clean Water Action Plan (CWAP) Unified Watershed Assessment (UWA) are located within federal land boundaries. These are the watersheds where new CWA § 319 monies under the CWAP will be directed. Most of New Mexico's high quality coldwater fisheries are contained within these federal lands. The USFS and the Bureau of Land Management (BLM) have been designated by the WQCC as management agencies for water quality protection within the context of the New Mexico Water Quality Management Plan and the state's Nonpoint Source Management Program. It is difficult, however, for these federal agencies to apply for § 319 funding due to the EPA requirement for a 40% non-federal match for any § 319 funds. This situation discourages the federal agencies from applying for § 319 grant funds for important water quality improvement projects.

> ***The EPA language requiring a "non-federal" match of 40% for all CWA § 319 grant awards should be changed to allow for the utilization of federal match dollars. The federal land management agencies and other agencies with federal land management authorization should be directed and funded to immediately commence meaningful restoration treatments on the watersheds and riparian areas under their jurisdiction. This should include, but not be limited to, reduction of tree densities and forest litter removal, removal of invasive non-native riparian vegetation and reduction of woodland trees and woody vegetation that has invaded grasslands.***

4. The required 40% non-federal match for any § 319 funds is cost prohibitive in states with large land areas and small populations, such as New Mexico. These states do not have the tax base to provide the 40% match. The 40% match is also cost prohibitive to Indian tribes that do not have a tax base with which to provide the match.

> ***CWA § 319(h) and 40 CFR 35.265 requiring a match of 40% for all CWA § 319 grant awards should be changed to a formula that acknowledges states with large land areas and modest populations and tax bases. The 40% match should be lowered for Indian tribes.***

FUNDING

1. Technical information in many areas is essential to any state water pollution control program. These areas include sampling and monitoring technology, containment and remediation technology, risk assessment, and standards development. Such information is of wide applicability and would be useful to all states. It is more desirable for federal agencies to assemble and disseminate this information than for states to utilize their limited resources on such projects.

> ***The United States Congress should provide adequate funding to federal and state agencies including universities and other publicly-funded institutes to foster and support basic ecological, hydrologic, medical, public health, and other research efforts relevant to water quality protection and to support technical assistance and technology transfer to the states.***

2. The USGS used to have an extensive network of stream gages around the United States. Their funding has been drastically cut over the years, to the point that only a handful of gages can be operated with financial assistance from cooperators (such as state agencies and municipalities). Water quantity and quality information from long-tern USGS gages is of wide applicability and is extremely useful when attempting to identify long-term trends and to determine total maximum daily loads of specific pollutants.

The United States Congress should re-instate adequate funding to the USGS to foster and support collection and analysis of water quantity and water quality data.

3. The CWA requires all municipal wastewater treatment plants to meet secondary treatment standards as defined by federal regulations. Over the past two decades, an enormous investment of public funds has been made by federal, state, and local governments to construct a national wastewater treatment infrastructure that would meet this goal. However, once constructed, the wastewater infrastructure's effectiveness and longevity is heavily dependent upon the skill and competence of the operators who maintain it. In fact, the absence of effective operation and maintenance programs has been implicated as the primary cause of most NPDES permit noncompliance nationwide as well as in New Mexico. Thus, the lack of good operation and maintenance at treatment facilities both jeopardizes the attainment of secondary treatment and reduces the benefit of the huge expenditure of public funds made to achieve this goal.

The United States Congress should provide additional dedicated funding to state-operated programs that address the operation and maintenance of wastewater treatment facilities in order to prevent water pollution and National Pollutant Discharge Elimination System permit noncompliance.

HAZARDOUS AND RADIOLOGICAL WASTE

CWA § 303(c) and its implementing regulations at 40 CFR Part 131 require states to develop and implement water quality standards with sufficient criteria to protect designated uses. Among the pollutants of ecological and human health concern are natural and manmade or concentrated radioactive compounds. CWA § 502(6) currently recognizes 'radioactive materials' as a 'pollutant'; yet the Atomic Energy Act (42 U.S.C. §2011 et seq.) exempts certain of these compounds. Consequently, pollutants such as plutonium and enriched uranium are not yet regulated under the NPDES system.

The Atomic Energy Act should be amended to require the NPDES permit to be the sole regulatory vehicle for any point source discharge of any pollutant to "waters of the United States."

FEDERAL FACILITIES

1. Federal agencies have an obligation to protect water quality at their facilities and in their projects and to remediate pollution that occurs. There are known instances of surface and ground water contamination, sometimes of a very serious nature, caused by federal facilities in New Mexico and elsewhere.

Federal installations and projects should not only be required to comply with all pertinent federal and state laws and regulations but should also be expected to lead in the area of environmental protection by prevention of adverse impacts during construction and operation and by cleanup or reclamation upon discovery of a problem.

2. Federal laws, such as the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly known as Superfund, place responsibility on federal agencies for investigating and remediating old hazardous waste sites on federal lands. The Department of Defense (DoD) has responded positively to this mandate by initiating and continuing work at active defense installations in New Mexico and nationwide. DoD/state Memoranda of Agreement provide funds to states to participate in investigation and cleanup work. Left out of these efforts, however, are formerly used defense sites that are not presently the property of DoD. Several such sites in New Mexico are known or suspected to be contributing to ground water pollution and other environmental problems.

The United States Congress should encourage the Department of Defense to aggressively investigate and remediate formerly used defense sites, to include states as partners, and to use existing mechanisms such as DoD/state Memoranda of Agreement to provide monies to states for required site-specific tasks such as review of work for compliance with state environmental laws.

GROUND WATER QUALITY MANAGEMENT

1. Prevention of ground water pollution is always more protective of public health and environmental quality as well as being more cost-effective than trying to cleanup an aquifer once it has become contaminated. Cleanup is always expensive, often costing hundreds of thousands or even millions of dollars, and often taking decades to accomplish. Cleanup to natural background levels is often impossible at any price. In addition, the health effects of chronic exposure to even low-level contamination are poorly quantified but may be significant. Therefore, it is a more prudent use of public funds to prevent exposure of the nation's citizens to contaminated water supplies than to restore the ground water to its original condition.

The primary focus of federal ground water pollution prevention efforts should be to support state pollution control programs and initiatives.

2. Ground water protection is, and should remain, actively managed and implemented at the state and local levels. New Mexico and other states are taking the lead in developing and implementing ground water monitoring, protection, remediation, and management programs suited to their particular needs. Some of these programs have been in existence for decades and should be used as models for other states that are developing new ground water protection programs.

Any federal legislation dedicated to ground water protection should include a statement of a general national goal and then explicitly recognize the primary role of the states and local governments in all facets of ground water protection.

DRINKING WATER STANDARDS

The EPA has promulgated a new national drinking water standard for arsenic. This more stringent drinking water standard will be extremely costly to New Mexico's citizens. Capital costs will likely range from $250 million to over $500 million. Annual operating costs could range between 2 - 5% of capital costs.

The United States Congress should delay implementation of the new arsenic drinking water standard until EPA can demonstrate cost-effective technology for the removal of arsenic, and provide sufficient funding to the states for implementation.

RECOMMENDATIONS TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT PROGRAM

The CWA clearly states "it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." EPA relies heavily on biomonitoring tests performed on the effluent from wastewater treatment plants to determine attainment of that policy. The fish species that is normally tested, *Pimephales promelas* (Fathead minnow), is a warmwater species. Because coldwater species are generally more sensitive to pollutants, biomonitoring tests based only on a warmwater species may not be protective of coldwater ecosystems.

Coldwater species should be developed for biomonitoring discharges to coldwater fisheries with the same degree of accuracy as those currently performed with the Fathead minnow. Rainbow trout (Oncorhynchus mykiss) is readily available and culture techniques for it have been well developed. Although non-native, it is widespread and may prove to be a suitable surrogate for coldwater species, including native fishes. Rainbow trout are currently readily available from six state hatcheries for biomonitor-reporting purposes. Other widespread species, such as the Longnose Dace (northern part of the state) and the Speckled Dace (southern part of the state) (Rhinichthys cataractae and R. osculus, respectively) should also be considered. Coldwater species should be used for biomonitoring tests when discharges are to an aquatic system with an existing coldwater fisheries use.

PRETREATMENT

With the above-stated national policy of the CWA in mind, EPA has implemented its pretreatment program through the NPDES permit program. There are two ways that EPA implements the pretreatment program: 1) through regulations requiring certain municipalities to administer and enforce their own EPA-approved pretreatment programs; and 2) through EPA enforcement against industrial dischargers which discharge into publicly owned treatment works that are not regulated under approved pretreatment programs.

In New Mexico, five municipalities are currently required to fully develop pretreatment programs. The EPA has conducted a detailed pretreatment inspection of all pretreatment program municipalities in New Mexico once each year. Some local governments remain

reluctant to enforce pretreatment requirements effectively in cases where industrial sites are available in other cities without pretreatment programs. Other industries settle or relocate in areas served by private wastewater treatment plants not subject to the pretreatment regulations, since the treatment plants are not "Publicly Owned Treatment Plants."

EPA should continue to place greater emphasis on its pretreatment program, to ensure pretreatment programs are required where necessary regardless of the size or ownership of the plant, and to take adequate enforcement action to meet the federal Clean Water Act's policy of no discharge of toxic substances in toxic amounts into the environment. The Agency should apply its regulations evenly so that no municipality is granted an unintended economic advantage over another municipality with a pretreatment program.

SLUDGE MANAGEMENT

Beginning in 1993, EPA has incorporated by reference federal regulatory requirements of 40 CFR Part 503 into NPDES permits issued in New Mexico. The requirements of 40 CFR 503 set forth general categories for the beneficial reuse and disposal of sewage sludge and domestic septage and establishes numerical standards and management/operational practices to protect human health and the environment from risks associated with the handling of sludge. In the development of 40 CFR Part 503, the risk associated with many exposure pathways were considered including ingestion of soil, inhalation of vapor, dermal contact with skin, and ingestion of ground water. Although broadly considered, the protection of ground water quality was not the focus of 40 CFR Part 503. In contrast, New Mexico has well-developed ground water protection regulations (the New Mexico WQCC Regulations) adopted in 1977. The state regulations govern all wastewater discharges onto or below the ground surface – including sewage sludge; however, the regulations are limited with respect to public health protection to protection of ground water quality. In 2003, New Mexico initiated the practice of including provisions of 40 CFR Part 503 into ground water discharge permits for sludge and septage land application and disposal facilities to ensure broader protection of public health. This practice has resulted in more comprehensive management of sludge and septage within the state.

Recent criticism of the adequacy of the risk assessment performed in the development of 40 CFR Part 503 regulations are of concern to New Mexico. EPA should follow-up on recommendations from the National Academy of Sciences to ensure public confidence in the adequacy of requirements of 40 CFR Part 503 and continue to strengthen provisions 40 CFR Part 503 with respect to public health, ground water, and surface water protection relating to management of sewage sludge and septage.

INDIAN TRIBES

The 1987 Amendments to the CWA and the 1986 Amendments to the SDWA allow EPA to treat Indian tribes in the same manner as states. The tribes have indicated a great interest in receiving technical assistance from EPA, especially for water quality standards development and implementation. Several tribes in New Mexico have developed or are in the process of developing surface water quality standards.

The CWA also provides that EPA shall provide a "*...mechanism for the resolution of any unreasonable consequences that may arise as a result of differing water quality standards that may be set by States and Indian Tribes located on common bodies of water*." In some cases, for example arsenic in the Middle Rio Grande Basin of New Mexico, tribal water quality standards have been adopted that are more stringent than existing background conditions, and may be unattainable. The CWA provides that EPA will take into account relevant factors include the effects of differing water quality permit requirements on upstream and downstream dischargers and economic impacts.

EPA should, in keeping with its trust responsibility to tribes and the dispute resolution mechanism mentioned above, work with tribes and states to ensure that water quality standards and programs adopted by tribes and states are scientifically defensible, technically achievable, and protective of downstream uses.

SURFACE WATER REPORTING CRITERIA

As part of the new integrated listing methodology, EPA revised and expanded its national standard list of causes of impairment and probable sources of impairment. Even so, several prevalent probable sources of impairment in the western states are not included on the list. For example, salt cedar invasion and infestation is one of the significant contributors to water quality impairment in New Mexico, yet no specific probable source code exists for this item.. Exotic vegetation invasion and displacement of native riparian vegetation poses a significant threat to maintenance of New Mexico's water quality.

EPA, with input from states and tribes, should review and amend the national standard list of probable sources to include:

1. **Sources codes for Fire Suppression, Management of Elk and Other Wildlife, Invasive Riparian Species, Watershed Runoff Following Forest Fire, and Fish Hatchery Operations;**
2. ***Source codes for* Exotic Noxious Weeds, Non-native Vegetation, and Salt Cedar Invasion.**

WATER QUANTITY

The Clean Water Act's (CWA) objective is to "restore and maintain the chemical, physical, and biological integrity of our nation's waters" (CWA Section 101[a]). In 1994, the Supreme Court reiterated that the CWA's intent is to ensure physical and biological integrity as well as chemical integrity. Recognizing that state water law, drought, and other natural conditions often limit the flow of surface water in the arid southwest, one aspect of maintaining physical integrity is to assure sufficient instream flow as necessary to maintain river form, function and processes. Also, several states, including New Mexico, are regularly developing total maximum daily loads (TMDL) for impaired surface water bodies. Target values are based on a numeric criterion or a surrogate numeric value that represents a narrative criterion. A water body's assimilative capacity varies with water quantity. Therefore, TMDLs are by definition related to water quantity because target values are calculated based on a flow, the current water quality criterion, and a conversion factor used to convert units into lbs/day. Instream flows, high flows, and the timing of these flows are critical components of water supply, water quality, and

the ecological integrity of stream systems. Unfortunately, the responsibilities to manage water quantity and water quality concerns are fragmented among a variety of state and federal agencies. This fragmentation adds to the challenge of developing and implementing effective TMDL planning documents to address surface water quality impairment.

> ***EPA should increase their agencies focus on restoring and maintaining the physical integrity of the nation's surface water by engaging various federal agencies charged with the management of water quantity. The connection between water quality and water quantity is intrinsic and an inherent part of the TMDL program and other aspects of the Clean Water Act.***