PUBLIC DISCUSSION DOCUMENT
SUPPORTING

NOMINATION OF WATERS IN INVENTORIED ROADLESS AREAS AND WILDERNESS AREAS IN NEW MEXICO AS OUTSTANDING NATIONAL RESOURCE WATERS

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Introduction

On Earth Day 2008 Governor Bill Richardson announced the state's intention to seek Outstanding National Resource Water (ONRW) designation for surface waters within national forest wilderness and inventoried roadless areas in New Mexico. If successful, this will be the third ONRW designation for New Mexico.

This document supports nomination to the New Mexico Water Quality Control Commission of all waters within New Mexico's U.S. Forest Service Wilderness areas and inventoried roadless areas as ONRW. National forest wilderness and inventoried roadless areas include approximately 5,340 miles of the state's surface waters. Approximately 1,000 miles of these waters are perennial.

The proposed ONRW incorporates waters that are located within the exterior boundaries of designated wilderness and inventoried roadless areas. The USFS 2001 roadless inventory is the document that was relied upon to determine the geographic boundary of the roadless portion of this proposal[1]. Waters that are located along the edge of a wilderness or roadless area, such as the portion of the Rio Grande just upstream from Cochiti Reservoir along the Caja del Rio roadless area, are not included in the proposal.

Additionally, several waters included within this ONRW proposal originate outside of the ONRW designation area. That is, the headwaters of the nominated segment are not located within a wilderness or roadless area that is nominated for ONRW designation. (For example, the San Francisco River in the Gila region, the Chama River in the Chama region and the Canadian River in the Canadian Region.) In this situation, only the portions of the waterbody that are located within the exterior boundaries of a designated wilderness or inventoried roadless area will receive ONRW protection. Waters upstream and outside of the ONRW designated area will continue to be reviewed under existing procedures for Tier 1 waters (waters that do not meet or meet but are not better than the water quality standards for existing or designated uses) or Tier 2 waters (waters whose quality is better than necessary to protect the CWA Section 101.a.2 goals) under the state's antidegradation implementation procedures.[2]

The proposal's scope is divided into seven hydro-geographic regions: the Rio Chama, Upper Rio Grande, Lower Canadian, Middle Rio Grande, Upper Pecos, Greater Gila and the Greater Sacramento. The unique characteristics that warrant the designation of the waters in each region as ONRWs are described in Appendices 1 through 7.

This proposal addresses the criteria for nomination of ONRWs, and demonstrates that the nominated waters meet the criteria under subsection B of 20.6.4.9 NMAC.

This proposal also supports several state initiatives, including the Governor's "Year of Water," the New Mexico State Water Plan, the New Mexico Forest and Watershed Health Plan, the Comprehensive Wildlife Conservation Strategy For New Mexico and the New Mexico Climate Change Action Plan.

[1] http://roadless.fs.fed.us/documents/feis/data/gdata.shtml

[2] Antidegradation Policy Implementation Procedures, http://www.nmenv.state.nm.us/SWQB/cpp/2004cpp.pdf

Protecting the State's headwater streams from further degradation by designating them as ONRWs will establish a foundation for the long-term restoration and preservation of New Mexico's surface waters.

Regulatory Process

ONRW designations are approved by the Water Quality Control Commission (WQCC) as an amendment to the state's surface water quality standards. The approval process includes widely circulated notice to the public and an opportunity for the public to participate in the process in a full public hearing before the WQCC. After the hearing, the WQCC makes a determination on the ONRW designation. 20.6.4.9.D NMAC.

In 2007 the WQCC amended the antidegradation provisions of the surface water quality standards to ensure that ONRW designation does not pose an impediment to watershed restoration by amending a prohibition against degradation in ONRWs. The 2007 amendments allow temporary and short-term degradation if the project ultimately can be shown to result in restoration or maintenance of the chemical, physical or biological integrity of the ONRW. This exception to the strict no-degradation rule is intended to allow watershed protection and restoration projects to be implemented where needed in ONRW watersheds even if temporary water quality disruptions occur as a result. 20.6.4.9.A.3 NMAC.

Existing Land Use Activities

Land use activities in existence at the time an ONRW is designated will not be affected so long as they are controlled by best management practices and do not result in new or increased discharges of contaminants to the ONRW. New land uses or activities can proceed if they do not cause water quality degradation in the ONRW.

For example, designation should not result in a reduction of grazing activities in place at the time of designation as long as appropriate best management practices are implemented and the activity does not result in new or increased discharges of contaminants to the ONRW. Best management practices may include measures such as development of watering stations away from stream banks, fencing of riparian areas, and rotation of cattle. Grazing permit decisions for areas within national forest ONRW areas will continue to be made by the Forest Service under a Memorandum of Agreement with NMED.

Likewise, forest management decisions, such as implementation of controlled burns or thinning projects, will continue to be made by the Forest Service under a Memorandum of Agreement with NMED. Forest management is an integral part of watershed and water quality protection and these activities can be approved in accordance with 20.6.4.8.A(3) NMAC. ONRW designation should not restrict forest thinning or controlled burns as long as appropriate best management practices are implemented and any impacts to water quality are temporary and short term.

Review Process for Activities Within ONRWs

ONRW designation sets a higher bar for planning and management decisions. In situations where the Forest Service manages lands that contain ONRWs, the Forest Service will be required to consider whether a permit or project will degrade water quality either on a long-term, or short-term and temporary basis. This evaluation can be

done through existing NEPA and permitting activities. Proposed future activities with the potential to impact water quality in the ONRW would likely be reviewed under existing permitting programs, such as:

- Section 404 permits for discharge of dredge or fill material into a waterway;
- National Pollutant Discharge Elimination System (NPDES) permits; and
- Special-use permits on U.S. Forest Service lands or Bureau of Land Management lands.

What is an Outstanding National Resource Water?

ONRWs are waters that receive special protection against degradation under New Mexico's water quality standards and the federal Clean Water Act. They are designated by the Water Quality Control Commission. Waters eligible for ONRW designation include waters that are part of a national or state park, wildlife refuge or wilderness areas, special trout waters, waters with exceptional recreational or ecological significance, and high quality waters that have not been significantly modified by human activities.

The federal Clean Water Act (CWA) requires that each state implement an anti-degradation policy to protect water quality. This requirement provides a mechanism for protecting the nation's cleanest waters. Designation as an Outstanding National Resource Water is the highest tier of protection that water can receive under the CWA. New Mexico has adopted an anti-degradation policy in Section 20.6.4.8 NMAC. The Clean Water Act states:

> "Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected."[3]

Designating water as an ONRW ensures that its quality cannot be degraded below that at the time of designation. Designation is a way of preventing harm to the aquatic ecosystem and water supplies as well as avoiding pollution clean-up costs. However, ecologically or recreationally exceptional waters that are currently impaired may still be protected as ONRWs.

ONRWs are recognized under New Mexico's anti-degradation policy, which provides that no degradation, other than temporary and short-term under necessary to restore or maintain the chemical, physical or biological integrity of the ONRW, is allowed in ONRWs. 20.6.4.8.A NMAC. The anti-degradation policy is implemented through best management practices (BMPs) within watersheds to reduce or abate sources of water pollutants. 20.6.4.8 B NMAC.

[3] 40 C.F.R. §131.12

Why Designate Water as an Outstanding National Resource Water?

Outstanding National Resource Water designation is a precautionary measure for the future, and its emphasis is prevention of water quality degradation. Regardless of the threats that these waters may or may not face in the future, it is important for the economy and ecology of New Mexico to keep these waters clean.

ONRW designation provides the highest level of water quality protection. In limited circumstances, degradation that is temporary, short term and will ultimately result in restoration or maintenance of the chemical, physical or biological integrity of the ONRW may be allowed. ONRWs are recognized under New Mexico's water quality standards anti-degradation policy.[4] This policy is supported by the implementation plan, which encourages best management practices (BMPs) within watersheds to reduce or abate sources of water pollutants.[5] For example, the maintenance of culverts and bridges, or implementation of a forest health plan are activities that would ultimately improve the chemical, physical or biological integrity of the ONRW, and therefore may proceed, even though they may degrade water quality on a temporary and short term basis. A list of BMPs that have been successful in preventing or mitigating surface water contamination is included in Appendix 19.

ONRW designation benefits all users of the water, including any downstream users, by protecting against water quality degradation. ONRWs are often headwater streams that ultimately feed municipal drinking water systems and irrigation uses. Additionally, wildlife and aquatic species benefit from ONRW designation because headwater streams provide irreplaceable habitat. If watershed conditions along the ONRW need improvement, designation can help in the prioritization of restoration efforts.

Finally, ONRW designation does not limit or curtail existing or ongoing activities. Existing activities are permitted to continue as long as they are controlled by BMPs and there are no new or increased discharges or sources of degradation from the activity after designation of the Outstanding National Resource Water. 20.6.4.8 A(3)(e) NMAC.[6]

Proposal for Nomination of Waters in USFS Inventoried Roadless and Wilderness Areas of New Mexico to be Designated Outstanding National Resource Waters

Pursuant to the State of New Mexico *Standards for Interstate and Intrastate Surface* Waters, this proposal supports designation of all waters within United States Forest Service inventoried roadless and designated Wilderness areas as ONRWs by amending Subsection D of 20.6.4.9 NMAC.

Location of Nominated Waters

4 20.6.4.8 A. (3) NMAC

5 20.6.4.8 B. NMAC.

6 20.6.4.8 A. (3)(e) NMAC

All of the Nominated Waters lie within a national grassland, a federal wilderness area or an inventoried roadless area of the national forest system in New Mexico. Wilderness areas are designated pursuant to the federal Wilderness Act of 1964. inventoried roadless areas are portions of the National Forest System, generally more than 5,000 acres in size that were considered for inclusion in the National Wilderness System and did not contain roads at the time of the inventory.

Inventoried roadless areas and Wilderness areas are managed in different ways by the Forest Service, despite similar ecological characteristics. Because roadless forests are remote and often rugged, they have maintained a character and quality that more accessible lands have lost. Additionally, "roadless areas share many of the same ecological and economic values as legislatively designated Wilderness and other wildland areas."[7]

The flora and fauna that depend upon these areas do not recognize boundaries between management zones. In many instances, the overall ecosystem health of the Wilderness areas depends upon the quality of the nearby inventoried roadless areas. Inventoried roadless areas s buffer Wilderness areas because of their close proximity and shared boundaries. Plant communities regularly spread across the divide between Wilderness and roadless areas, and animals move seamlessly between the two land management designations.

Criteria for Designating Waters as Outstanding National Resource Waters

Section 20.6.4.9.B NMAC sets forth the criteria for designating ONRWs. That section provides:

> B. A surface water of the state, or a portion of a surface water of the state, may be designated as an ONRW where the commission determines that the designation is beneficial to the state of New Mexico, and:
>
> (1) The water is a significant attribute of a state gold medal trout fishery, national or state park, national or state monument, national or state wildlife refuge or designated Wilderness area, or is part of a designated wild river under the federal Wild and Scenic Rivers Act; or
>
> (2) The water has exceptional recreational or ecological significance; or
>
> (3) The existing water quality is equal to or better than the numeric criteria for protection of aquatic life uses, recreational uses, and human health uses, and the water has not been significantly modified by human activities in a manner that substantially detracts from its value as a natural resource.

[7] Loomis 2000, p. *iii*

The Petition for ONRW designation must demonstrate that designation of the Nominated Waters is beneficial to the State of New Mexico and the waters meet at least one of the three criteria in 20.6.4.9.B NMAC.

The Petition must also include the following documentation as required by 20.6.4.9.A NMAC:

1. A map of the surface water of the state, including the location and proposed upstream and downstream boundaries;
2. A written statement and evidence based on scientific principles in support of the nomination, including specific reference to one or more of the applicable ONRW criteria listed in Subsection B of 20.6.4.9 NMAC;
3. Water quality data, including chemical, physical, or biological parameters, where available, to establish a baseline condition for the proposed ONRW;
4. A discussion of activities that might contribute to reduction of water quality in the proposed ONRW;
5. Any additional evidence to substantiate such a designation, including a discussion of the economic impact of the designation on the local and regional economy within the state of New Mexico and the benefit to the state;

Common Attributes of Nominated Waters

The common characteristics of the nominated waters can be described based on the criteria listed in the Commission's Regulations: Benefit to New Mexico, Special Trout Waters, Location of Waters, Wild and Scenic Rivers, Exceptional Recreational Significance, Exceptional Ecological Significance and Water Quality. The nominated waters all meet criteria for designation as an ONRW.

Benefit to New Mexico

Much of the surface water in New Mexico flows from high mountain streams that originate in remote and relatively undisturbed areas within national forests. The Commission has recognized the high quality of waters in Wilderness areas and other protected forest lands. In its 2000 report to Congress, the Commission stated that the majority of waters determined to fully support designated uses "are in Wilderness areas or in watersheds protected from anthropogenic impacts." Roadless forests contribute significantly to maintaining a clean and abundant water supply for downstream uses by municipalities, irrigators and recreational interests.[8]

As the state's population grows and demand for clean water increases, the state will continue to see a shift toward surface water supplies. Cities such as Albuquerque, Santa Fe, and Las Vegas are currently diverting or are planning diversions from waters that are downstream of wilderness and roadless areas waters that would be more fully protected by ONRW designation. Protecting municipal supplies at their source helps to

[8] NMDGF 2006, p. 8

keep purification costs low. In addition, the waters used to irrigate the farms within many communities in New Mexico flow directly from inventoried roadless areas and Wilderness areas. The acequia agriculture system, a valued, traditional way of life, is dependent upon clean and abundant water from the national forests.

Watershed management has been a critical component of the Forest Service's duties since the Organic Act of 1897. Under the Act, the Forest Service is required "to improve and protect the forest" and to "secure[e] favorable conditions of water flows…"[9] In fact, "[t]he legislative history of the 1897 Organic Act indicates that many congressmen considered watershed protection to be the paramount, if not exclusive, purpose of established forest reserves."[10] Maintaining this commitment to clean water by protecting the forested watersheds allows the benefits from ONRWs to continue flowing to New Mexicans.

Wild and Scenic Rivers

The Wild and Scenic Rivers Act (WSRA) gives protection to rivers that are deemed by Congress to be particularly scenic and valuable. The designation is specifically intended to protect the free-flowing character of the nation's finest rivers. According to the Act, these rivers "possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

Portions of four of New Mexico's rivers have been designated Wild and Scenic including portions of the Rio Chama and the Pecos River. Despite the fact that only four of New Mexico's rivers are Wild and Scenic, many more rivers in the state have qualities that would meet the criteria for Wild and Scenic designations. In 1997 the Forest Service identified more than 500 miles of qualifying waterways.

WSRA and Outstanding National Resource Water designations are complimentary; each secures the protection of different qualities of land and water. Outstanding National Resource Water designation protects water quality, while the WSRA protects natural flows and scenic integrity. Neither designation displaces the other, if the goal is to protect a river's natural qualities; they are mutually reinforcing and not redundant.

Special Trout Waters

Special Trout Waters ("STW") are waters designated by the State of New Mexico as having special limitations on catch because they are considered unique fisheries.[11] For purposes of this proposal, these waters are considered the equivalent to state gold medal trout fisheries as referenced in 20.6.4.9 NMAC. According to the Game and Fish document *New Mexico Fishing Rules and Information*, Special Trout Waters have reduced bag limits or are catch-and-release only. These regulations give anglers a chance for high-quality fishing. Furthermore, the riparian ecosystem surrounding the water is indirectly protected by these regulations: disturbing rocks, plants, or sediment in special trout waters to attract fish is illegal. In order for these waters to remain valuable fishing

9 16 U.S.C. § 471

10 Wilkinson & Anderson 1987, p. 203

11 19.31.4.11 A. (4) NMAC

areas, the trout habitat must be protected. Many of the nominated streams are designated as Special Trout Waters, including portions of the Pecos River, the Chama River, the Red River, and others.

Exceptional Recreational Significance

The primary direct human use of the nominated waters, and the land surrounding them, is recreation. The nature of the recreation is varied and includes camping, hiking, horseback riding, hunting, fishing, backpacking, wildlife watching and bike riding (in inventoried roadless areas). Hiking, relaxing and watching wildlife are the top three reasons for visiting the national forests.[12]

Wilderness and roadless areas attract people because of their remote location and undeveloped character. Additionally, these areas offer popular recreation opportunities that are not available in more developed areas of national forests. Clean waters contribute extensively to visitors' experiences in these forests. Protecting water quality in these areas also enhances recreational experiences downstream from these areas, where the waters flow through national forests, national parks, or into recreationally popular rivers such as the Rio Grande.

Exceptional Ecological Significance

Though waterways represent only 2% of New Mexico's landscape, they are vital for more than 75% of all native fish and wildlife.[13] Eighty percent of all vertebrate species in the Southwest depend on riparian areas and over half of these species cannot survive without regular access to riparian zones.[14] In addition, about 80% of New Mexico's species with special classifications depend on riparian areas during some point in their life cycle.[15] More than half of threatened or endangered species in Arizona and New Mexico have declined because of the loss of riparian habitat.[16] Furthermore, more than 100 federal and state listed species are associated with the specific ecosystem of cottonwood-willow bosques.[17] Many more depend on other types of riparian and aquatic zones across the state. Southwestern riparian forests are the eighth most endangered ecosystem in the United States.[18] The waters nominated in this proposal are central for the survival of numerous species of plants, fish, birds, invertebrates and mammals in New Mexico.

Importance of Roadless Areas. The NMDGF document entitled *Comprehensive Wildlife Conservation Strategy for New Mexico* identifies "Species of Greatest Conservation Need." (SGCN) To protect these species, the document emphasizes the importance of protecting areas that currently lack long-term management plans or legal constraints that protect them from habitat conversion. Roadless areas are vulnerable to habitat degradation because they lack permanent, protective management plans.

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12 Stynes & White 2005, p. 6
13 Grahame & Sisk 2002a
14 Grahame & Sisk 2002a
15 NMDGF 2005, p. 45
16 Grahame & Sisk 2002a
17 Grahame & Sisk 2002a
18 Grahame & Sisk 2002a

Therefore, protecting the waters of inventoried roadless areas contributes to one of the key conservation actions recommended by the New Mexico Department of Game and Fish (NMDGF). Roadless areas are also important for protecting native trout species because "roads are one of the greatest single causes of trout habitat damage."[19]

Endangered Species. The state lists 118 resident species as threatened or endangered. These include 32 birds, 23 fish, 25 mollusks, 15 mammals, 6 amphibians and 2 crustaceans. Twenty-nine of New Mexico's wildlife species are listed on the federal endangered species list.[20] Roadless areas are crucial because "57% of threatened, endangered and proposed species under the federal Endangered Species Act, and 54% of U.S. Forest Service's Sensitive Species are dependent on habitat within or affected by Inventoried Roadless Areas."[21] In addition, 452 SGCNs have been identified by NMDGF. Of these species, eighty percent rely on riparian ecosystems during some part of their life cycle. Maintaining water quality is thus critically important for providing intact, healthy and functional biotic assemblages and may assist in preventing extinction or additional listings.

Fishes. In New Mexico, protected waters provide vital habitat for a number of native fishes that survive mostly in streams with intact, functional riparian habitats rather than degraded ones.[22] These streams are often found in remote, high-elevation locales, such as those described in this proposal. Ninety-nine percent of the areas containing strong populations of the Gila trout are in roadless areas, Wilderness or Wilderness study areas. For the Rio Grande cutthroat trout, 39% of strong populations find habitat in these areas.[23]

Aquatic ecosystems in New Mexico support a relatively high number of endemic fish, for example, 30% of fish species in the Rio Grande are endemic.[24] However 30% of all fish species in New Mexico are threatened and regionally, "more than 48% of the fishes in the Southwest [are] jeopardized, compared with 19% in the Northwest and 10% in the Southeast."[25] There are several causes for the decline in native fish populations, including habitat degradation, loss of physical habitat and introduction of non-native species. Habitat conservation is an extremely important part of restoring native fish populations and is a significant benefit of the Outstanding National Resource Water designation. Small populations with narrow distributions would particularly benefit from habitat preservation.[26]

The New Mexico state fish, the Rio Grande cutthroat trout, an SGCN and Forest Service sensitive species, would benefit from protection of the nominated waters. There are few locations in five drainages that support genetically pure populations of the trout. Strong populations are currently found in less than three percent of its native range.[27] Despite its decline, there is potential for the trout to return to many areas of its former

19 WNTC 2001, p. 12
20 NMDGF 2005, p. 52
21 NMDGF 2005, p. 76
22 Grahame & Sisk 2002b
23 WNTC 2001, p. 7
24 Grahame & Sisk 2002c
25 Warren and Burr 1994, cited by Grahame & Sisk 2002c
26 Grahame & Sisk 2002c
27 WNTC 2001, p. 3

range given the proper management practices.[28] Outstanding National Resource Water designation can assist in the species' recovery: cutthroat trout habitats are located in streams of the Rio Chama Region, the Upper Rio Grande Region and the Upper Pecos Region of this nomination. ONRW designation will aid in trout conservation efforts by maintaining the relatively high quality water that already exists in the nominated streams.

Mammals. Riparian habitats are extraordinarily important for many mammal species in New Mexico. Several mammal SGCN that are associated with riparian habitats include several species of shrew, squirrel, bat and vole. Larger mammals that rely on riparian ecosystems include the black bear, river otter, bighorn sheep, beaver and Gunnison's prairie dog.

Many game species rely on riparian areas as well. They include elk, Rocky Mountain bighorn sheep, mountain lion, bobcat, black bear and deer. The nominated waters and their adjacent riparian systems provide indispensable habitat for these and many other mammalian species in the mountains and rivers of New Mexico.

Birds. Numerous bird species rely on the nominated waters, including Merriam's turkey, piñon jay, hairy woodpecker, bald eagle, mourning dove, Mexican spotted owl, boreal owl, white-tailed ptarmigan, willow flycatcher and northern goshawk. Overall, there are 63 bird SGCN associated with riparian habitats, including the osprey, several species of hummingbirds, warblers, quail, plover, thrasher, owl, hawk and bunting. Many need access to water during nesting seasons or rely on prey species that live near water. In addition, many are affected by human disturbances and thus their populations are most successful in areas that remain protected from ecological disruption.

Merriam's turkey, a popular game species, is abundant in mid-elevations of New Mexico's mountain ranges. Hens normally nest on the ground within a half mile of a water source. Protecting waters used by nesting hens from any further degradation is essential to protecting the reproductive cycle of this species.[29]

The peregrine falcon (SGCN; state threatened) also lives and breeds near the nominated waters. This predatory bird has been recovering from near extinction since the 1940s. The falcon primarily hunts other birds, many of which congregate near riparian areas. It nests on cliffs and these sites are often located near water. Protecting the quality of waters in the nominated regions, and thus the quality of habitat for the prey species, would contribute to the falcon's continued recovery.

Invertebrates. A number of water-dependent invertebrates are identified as SGCN in New Mexico. These include numerous snails, several clams and a number of shrimp species. Fifty-seven percent of SGCN mollusks and crustaceans are considered both state and federally vulnerable, imperiled, or critically imperiled.[30] The populations of these species are likely to be supported by the protection of water quality in the nominated streams.

Reptiles: A number of riparian reptiles have been designated as SGCN including several species of turtles, snakes and lizards, as well as a species of skink. While there are no exclusively endemic SGNC, many reptilian species found within the proposed nomination are classified for protection.

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28 USFS 2004

29 USFS 2004

30 NMDGF 2005, p. 58

Riparian snake species, such as the Mexican Garter Snake (SGCH, State: Endangered) and the Western Ribbon Snake (SGCN, State: Threatened), and turtle species such as the Painted Western Turtle (SGCN), the Sonoran Mud Turtle (SGCN) and the Ornate Box Turtle (SGCN) have been affected by changes in their aquatic habitat. Competition with, and predation by, non-native species in conjunction with riparian habitat loss has led to smaller populations of these species with more limited ranges. By protecting rivers of an outstanding quality, some riparian habitats required by these species will also be protected.

Amphibians. A number of amphibians have been designated as SGCN and they include several species of frog, salamander, and toad. Two species of amphibian, both SGCN, are found exclusively in New Mexico: the Jemez Mountains salamander (Rio Chama Region) and the Sacramento Mountains salamander (in the Greater Sacramento Region).

The boreal toad (SGCN) is another amphibian native to New Mexico. The toad inhabits a variety of wet habitats (including marshes, wet meadows, streams, beaver ponds, glacial kettle ponds, and lakes interspersed in subalpine forest) at altitudes primarily between 8,000-11,500 feet.[31] In the past 30 years, there has been a significant decline in the Rocky Mountain population of boreal toads.

The northern leopard frog (USFS sensitive) is found along permanent water from desert lowlands to high elevation pine forests. Leopard frog populations have been declining owing in part to competition from introduced species. Maintaining the quality of the frog's riparian habitat would reduce the likelihood of dominance by introduced species.

In a dry land like New Mexico, riparian areas support a concentration of the region's biodiversity. By protecting the quality of the nominated regions, the State will be maintaining its biodiversity and preventing more species from becoming endangered or extinct.

Plants. The most well-known specially protected plant that has habitat adjacent to a portion of the nominated waters is the Holy Ghost ipomopsis (federal endangered; USFS sensitive). Other sensitive plants include Arizona willow and Chiricahua dock. The riparian woodlands and wet meadows inhabited by these plants are increasingly rare throughout the Southwest.

The Arizona willow (USFS sensitive) is found in high mountain sedge meadows and wet drainages in subalpine coniferous forests above 10,000 feet. These types of environments are common in the Upper Pecos Region and near other nominated waters. A disruption of Arizona willow habitat could have a negative impact on the feeding patterns of the elk.

The Chiricahua dock (USFS sensitive) grows in marshy wetlands at lower elevations. According to the USFS, "the species is highly palatable to livestock and can be heavily impacted by grazing where it occurs" and "is also sensitive to water diversion, development, road construction, wildfire, and recreation."[32] Outstanding National Resource Water designation would benefit populations of Chiricahua dock, which are already highly affected by various human influences.

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31 IUCN 2006

32 USFS 2004

Water Quality

Many of the nominated waters have been monitored and assessed by the Surface Water Quality Bureau of the New Mexico Environment Department. A large majority of these assessments indicate that the waters are at or above the applicable standards; in other words, the waters are meeting their designated uses. In meeting these uses, these waters are by definition meeting the criteria for aquatic life, recreational or human health uses.

A small number of the nominated waters do not support one or more designated uses. These waters, considered impaired, are classified as Section 303(d) waters under the CWA. In headwater streams, the most common use that is not supported is high-quality aquatic life. Other uses that are not supported may include coldwater aquatic life, warmwater aquatic life, wildlife habitat, secondary contact and livestock watering. The most common reasons for impairment are water temperature, turbidity, and the presence of aluminum. Other contributing reasons include selenium, low dissolved oxygen, sedimentation, siltation and fecal coliform. These waters nonetheless should be designated as ONRWs because their impairment does not substantially detract from their value as a natural resource.

Economic Significance

Healthy watersheds are economically valuable in many ways. The most obvious economic benefits come from water production and recreation, but ecological services also provide economic benefits.

Perhaps the most significant of the ecological services performed by healthy watersheds is maintaining the quality of water supplied to downstream users. In 1997, 136 scientists asserted that inventoried roadless areas "typically provide supplies of the purest water, untainted by chemical pollutants."[33] The Forest Service estimates that one acre-foot of water is worth between $26 and $75. The forests surrounding mountain streams are performing important and economically valuable services by purifying the waters that flow through them.

Any increase in sediment in rivers and streams augments the cost of treating water for consumption; thus, eliminating the possibility of pollution can prevent significant expenditures. Watersheds purify the waters that flow from them at no cost to downstream municipalities, thus saving these municipalities millions of dollars in avoided treatment costs. In New Mexico, at least 10 municipalities rely on streams that are protected by Wilderness and roadless areas. Protecting these streams will provide significant economic benefits by helping to maintain low costs associated with water purification.

Many municipalities across the country have chosen to spend funds to protect their watersheds in an effort to keep treatment costs low. In New Mexico, the forested area above the City of Santa Fe was designated a municipal watershed and closed to public entry in 1932 to prevent any damage to Santa Fe's water supply. Preemptively protecting these areas could prevent the need to restrict access to municipal watersheds in the future. New Mexico is in a position to protect the water supplies of a number of municipalities by designating a network of ONRWs.

Recreational activities in roadless and Wilderness areas of New Mexico's national

[33] Loomis & Richardson 2000, p. *ii*

forests draw people from across the state and nation. Because of the large number of people who visit these wild areas, national forests are a significant source of income for the local economy. According to the Forest Service, "visits to National Forest Service lands generated over $7.5 billion annually in direct spending in communities near those forests. Visits by people from outside the local area generated nearly 64 percent of that spending total. The bulk of that spending was for lodging, food, and gasoline. These tourist dollars provide an important economic stimuli to towns located near NFS lands."[34]

Across the United States, human uses of national forest lands are increasing. In a 2006 survey by the U.S. Fish and Wildlife Service of "fishing, hunting, and wildlife-associated recreation," 87.5 million people, or 38% of the over-16 population, participated in wildlife-related recreation. Collectively, they spent over $122 billion.[35] Overall expenditures for these activities increased slightly in comparison to data from 2001.

In New Mexico, 39% of citizens participate in wildlife activities, amounting to 480,000 people each year. The amount spent is significant: $295 million was spent on fishing, $159 million on hunting, and $353 million on wildlife watching.[36] Outdoor recreation will continue to draw people to wild areas, and it is only increasing in popularity. Protecting the waters of these areas is important for both visitors and local economies.

The maintenance of water quality is important for recreational value. People enjoy visiting waterways and their experiences are directly affected by degraded water quality.[37] Protecting species and ensuring that they have access to clean water also enables people to continue to enjoy hunting, fishing and wildlife viewing experiences.

Outstanding National Resource Waters in Neighboring States

Numerous states, including New Mexico's immediate neighbors, have designated networks of ONRWs or the equivalent. Several of these states had the foresight to designate statewide networks of ONRWs within the boundaries of federally protected lands.

EPA Region VIII: In *Colorado,* thirty-three water segments, divided into seven basins, had been designated as "Outstanding Waters" as of May 2007. On June 12, two additional stream segments in the Rio Grande and Arkansas River Basins were designated. Seven segments had been designated before 1993. The Water Quality Control Division routinely searches for waters that would meet the criteria of "outstanding waters." The protected waters are all located in Wilderness areas or in Rocky Mountain National Park.

In *Wyoming,* "Class 1" waters are the state's equivalent to the ONRWs designation. The vast majority of Class 1 waters were designated in **1979** in a rule-making by the NMDGF, and one was added in 1990. The designated waters include "all surface waters located within the boundaries of national parks and congressionally designated Wilderness areas,"[38] (emphasis added) a number of individual river segments,

34 Stynes & White 2005, p. 9
35 USFWS 2006, p. *vi*
36 AP 2007.
37 Loomis 1998
38 WDEQ 2001, p. A-1

and wetlands adjacent to all listed waters. Class 1 waters are protected completely from point-source pollutants and non-point pollution sources must be controlled by best management practices.

In *Utah*, "High Quality Waters" are defined as all waters within the outer boundaries of national forests, (emphasis ours) and more than fifty other segments of rivers have also been designated. The designated stream segments were classified as high-quality waters in 1974 when the state wrote its Clean Water Act regulations.

In *Montana*, "Outstanding Resource Waters" include "all state surface waters located wholly within the boundaries of designated national parks or Wilderness areas."[39] (emphasis ours). The administrative rule designating these waters was made in 1995.

EPA Region IX: In *Arizona*, nineteen "unique" or "Outstanding Arizona Waters" are listed. These waters have the following characteristics: they are free-flowing and have water quality that meets or exceeds applicable water quality standards. In addition, the waters are of "exceptional recreational or ecological significance" and/or threatened or endangered species" are associated with the water body.

[39] 75-5-103 Montana State Code

Appendix 1: Rio Chama Region

Physical Setting

The Rio Chama is the largest tributary of the Rio Grande in New Mexico and flows from its headwaters in southern Colorado to its confluence with the Rio Grande just north of Española. Spectacular sandstone formations in classic southwestern hues of orange and red are the signature of this region including the Abiquiu Reservoir. The region provides unparalleled hunting and wildlife viewing opportunities. Heron Lake, Abiquiu Reservoir, and El Vado Reservoir are located within the watershed and receive water from the Rio Chama and tributaries throughout the region. All three of these lakes supply water for several cities, villages and towns, including Santa Fe.

The Rio Chama Region spans two of New Mexico's national forests, the Carson and the Santa Fe. The Rio Chama in the Gorge or Canyon is of such a unique and special nature that twenty-five miles of the river have been designated Wild and Scenic. This region includes the Chama River Canyon Wilderness, the northern half of the San Pedro Parks Wilderness, and a number of IRAs in both the Santa Fe National Forest (SFNF) and Carson National Forest (CNF).

The Chama River Canyon Wilderness (SFNF and CNF) contains over 50,000 acres of ponderosa pine, willows, cottonwoods, forbs and grasses. This area provides habitat for nearly 80 species of bird and a variety of other wildlife, including deer, elk and black bear. The Continental Divide National Scenic Trail, a very popular hiking and backpacking trail, passes through this Wilderness.

In San Pedro Parks Wilderness (SFNF), stately and cool stands of spruce and mixed conifer forest surround mountain meadows. Streams in the Wilderness support populations of Rio Grande cutthroat trout and some feed into San Gregorio Lake.

Thirteen IRAs are contained in this region of the nomination. Two IRAs are directly adjacent to the Rio Chama and the Chama River Canyon Wilderness. One IRA lies on the west side of the San Pedro Parks Wilderness. The remaining 10 IRAs are found throughout the Jemez Mountains. Two IRAs are directly adjacent to the Rio Chama near the segment designated Wild and Scenic. The Rio Chama Gorge, which is surrounded by these two IRAs, is renowned for its recreational activities.

The Jemez Mountains include high mountain peaks, alpine meadows, a variety of forest environments and a multitude of creeks. The forest types within the Jemez Mountains vary with altitude, but primarily include Ponderosa pine and spruce-fir intermixed with colorful aspen at upper elevations. Grassy meadows with willows, cottonwoods and sage are common in lower elevations and riparian areas.

Outstanding National Resource Water Qualifications

The nominated stretches of the Rio Chama and its tributaries meet all three of the State's requirements found in 20.6.4 NMAC: (1) the Rio Chama is a Wild and Scenic River, and many waters in this region flow through Wilderness areas; (2) these waters are of exceptional quality; and (3) they possess exceptional ecological and recreational significance.

Recreational Significance

The Rio Chama, its gorge and tributaries are well known throughout the country for a variety of recreational and outdoor activities, most notably water sports. Popular activities include hunting, fishing, whitewater rafting, kayaking, hiking as well as bird and wildlife watching. The Rio Chama supports many wildlife species and serves as the principal source of domestic and irrigation water for the human communities of the watershed.

The Wilderness areas provide miles of hiking trails, including the Continental Divide National Scenic Trail and others. Winter activities like skiing and snowshoeing are also popular in these Wilderness areas. Especially in summer, backpackers and hikers will rely on these waters as sources of drinking water and shade.

The most popular area for low-impact recreation in this region is the Rio Chama Gorge. Hikers, whitewater rafters, anglers and many others come to the Gorge to enjoy the spectacular beauty and excellent recreational opportunities. The Rio Chama Gorge is one of the premier places in New Mexico for whitewater activities. Anglers catch Kokanee salmon, black crappie as well as brown and rainbow trout in the Rio Chama and the reservoirs. Protecting the headwaters of the Rio Chama Region will ensure that people continue to prosper from it resources as well as visit and enjoy this impressive area.

Ecological Significance

Game species that rely on water in this region include Rocky Mountain elk, deer, black bear and mountain lion. Examples of avian species include the red-tailed hawk, Mexican spotted owl, Southwestern willow flycatcher, Merriam's turkey, Cooper's hawk, American kestrel, prairie falcon, golden eagle, bald eagle and peregrine falcon. Fish species that inhabit the waters of this region include the Rio Grande chub, the Rio Grande sucker and the Rio Grande cutthroat trout.

The Jemez Mountains salamander (SGCN, State Endangerd), a species that is endemic to the Jemez Mountains, is found in the mixed conifer forests of the Jemez Mountains. It has been listed by the Forest Service as 'sensitive' and by the State of New Mexico as 'threatened'. Much of the upper elevations of the Rio Chama Region are either occupied habitat or potential habitat for this vulnerable species. The salamander is threatened by wildfire, logging, road construction, disease and mining.

The Southwestern willow flycatcher has been in decline as a result of the loss of riparian habitat. It is on the state and federal endangered species lists. In 2006, there were fewer than 315 pairs in New Mexico.[1] These flycatchers, keeping in check populations of insects, are important to vegetation, wildlife and humans in riparian areas. Inhabiting mountain riparian zones between elevations of about 3,000 to 9,000 feet, the flycatchers live near many of the nominated streams. Mountain riparian habitat is important to the flycatchers in the spring, summer and fall. They live and breed along creeks in the Carson and Santa Fe National Forests as well as other national forests in the state.

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[1] Ellis 2008, p. 23

For a selected list of wildlife species that live in or near the waters of the Rio Chama Region, see Appendix 12 (Carson National Forest) and Appendix 16 (Santa Fe National Forest).

Appendix 2: Upper Rio Grande Region

Physical Setting

The Upper Rio Grande Region includes tributaries of the Rio Grande that flow through five Wilderness areas and a number of IRAs in the Santa Fe, Carson and Cibola National Forests as well as a portion of the upper Canadian River watershed on the Carson. The Wilderness areas in this region include Latir Peak Wilderness, Wheeler Peak Wilderness, Cruces Basin Wilderness, Dome Wilderness, the northern portion of the Pecos Wilderness and the east side of the Sandia Mountains Wilderness.

Latir Peak Wilderness (CNF) encompasses three peaks over 12,500 feet and a large area of alpine country. The rugged areas give rise to a number of pristine streams, including Cabresto Creek.

Wheeler Peak Wilderness (CNF) protects the state's highest point, Wheeler Peak, at 13,161 feet. Rocky slopes, open meadows and dense stands of forest give way to alpine lakes and riparian areas throughout the Wilderness area.

Cruces Basin Wilderness (CNF) protects a rolling mesa that ranges from 8,600 to 10,900 feet. Perennial streams make the area popular for fishing and the surrounding forests and grasslands support a robust population of elk.

The Sandia Mountains Wilderness (Cibola National Forest) includes stretches of piñon-juniper and ponderosa forests, with fir and spruce at higher elevations. This arid region supports a number of ephemeral streams, a few perennial streams and recreation opportunities for people coming from nearby Albuquerque. The Sandia Mountains are the most-visited mountains in New Mexico.

In the SFNF, the Pecos Wilderness (in which the northernmost streams flow to the Rio Grande) contains 223,667 acres of high-elevation forests, meadows and streams. Truchas Peak, over 13,000 feet in elevation, marks the highest point in the Wilderness. Fifteen lakes, eight major streams and countless small tributaries provide riparian and aquatic habitat for many species. Populations of the Rio Grande cutthroat trout live in waters of the Pecos Wilderness. Ponderosa pine, mixed conifer forests, small meadows and rugged, rocky terrain characterize this area.

The Dome Wilderness (SFNF), near Bandelier National Monument, includes rugged canyons and cliffs of volcanic tuff that are similar to the areas within the national monument. Ponderosa pines, dry, shrubby hillsides and cottonwood/willow riparian zones are representative of this region's ecosystem diversity.

The IRAs of this nomination can be divided into five separate zones. Two zones are located in the SFNF. The Western SFNF zone contains five IRAs. The Eastern SFNF zone includes a large IRA east of the city of Santa Fe and two smaller IRAs northeast of the villages of Nambé and Chimayo. The third, fourth and fifth zones lie within the CNF. The third zone is in the southern stretch of the CNF and it contains three IRAs. The fourth zone lies just northeast of the town of Taos and contains one large IRA and four small ones. The fifth zone includes the three roadless areas adjacent to the Cruces Basin Wilderness.

Eastern SFNF. The overall landscape of the eastern SFNF nomination is characterized by deep, narrow mountain valleys intersecting rugged mountains. The forest vegetation is a mixture of primarily ponderosa pine, mixed conifer and spruce-fir

forests, and some aspen. Pinion-juniper woodland and oak shrub occur at lower elevations. High-elevation meadows and riparian vegetation are common along the river corridors.

IRAs encircle the Santa Fe watershed, which provides 40% of Santa Fe's domestic water supply. McClure and Nichols reservoirs collect water for the city and border two IRAs. The northern-most IRA in this zone lies above the village of Chimayo. The waters used to irrigate the acequias and ditches of this well-known farming community flow directly from an IRA.

Western SFNF. The western section of the SFNF nomination includes IRAs near Bandelier National Monument, the Dome Wilderness and other acclaimed areas. The Jemez IRAs consist of a series of high mesas and deep river canyons that drain southeast into the Rio Grande above Cochiti Reservoir.

Southern CNF. Within the inventoried roadless and Wilderness areas of this zone, high mountain peaks above 12,000 feet, deep valleys, rugged canyons, alpine meadows and waterfalls are common features of the landscape. A mixture of ponderosa pine and spruce-fir forests grows at high elevations, along with some aspen. Piñon-juniper woodland and oak shrub field occurs at lower elevations.

Northern CNF. The northern IRAs are typically populated with piñon pine and rocky mountain juniper at middle elevations. In upper elevations, Ponderosa pine, white fir, Douglas fir, and aspen dominate the landscape. Willow and aspen grow along riparian areas and drainages at high elevations. In lower elevation riparian areas one can find narrow leaf cottonwoods, alders, box elders and willows.

The famous Valle Vidal is adjacent to the northernmost IRA of this nomination. The waters of the Valle Vidal have already been designated as Outstanding National Resource Waters. The proximity and similar character of these two areas demonstrates the spectacular recreational and ecologic significance of the inventoried roadless and Wilderness areas of the northern CNF nomination.

Cruces Basin. The final zone includes three IRAs that are located adjacent to the Cruces Basin Wilderness Area. They are characterized by spruce-fir forests intermixed with aspens and open meadows. The area is characterized by wide valleys and gently sloping hillsides. The lack of a developed trail system renders the area accessible only by horse or foot, and this region remains one of the most remote areas in the state.

Outstanding National Resource Water Qualifications

The waters of the IRAs and Wilderness areas of the Upper Rio Grande Region meet all three of the State's requirements found in 20.6.4 NMAC 6: (1) The Red River is designated Wild and Scenic from its confluence with the Rio Grande four miles upstream and a number of these waters are located in Wilderness areas; (2) they are of exceptional quality; and, (3) they possess exceptional ecological and recreational significance.

Recreational Significance

The streams in this section contribute to the recreational experience and support populations of game and fish in the nominated segments and farther downstream. Some of the nominated streams in this section are close to the protected Valle Vidal, which

receives much attention for its outstanding beauty and recreation opportunities. As people explore further from developed recreation sites in the popular Valle Vidal, protected waters in surrounded roadless areas could gain even more recreational importance.

The IRAs and Wilderness areas in this region are close to the population centers of Taos, Espanola and Santa Fe, and offer phenomenal opportunities for outdoor recreation for the people who live in and visit these areas. In the southernmost stretch of the Rocky Mountains, people can experience remote, high-elevation environments that are unlike anywhere else in the state. Truchas and Wheeler peaks provide challenges for the ambitious hiker. The CNF maintains over 100 miles of Wilderness hiking trails for access to these remote areas.

The Rio Grande, into which the nominated streams flow, provides invaluable habitat for wildlife and prized recreation for visitors. The Rio Grande Gorge provides a wide variety of recreational opportunities, attracting anglers, hikers, artists, and whitewater enthusiasts. Keeping the tributaries to the Rio Grande clean and healthy will only enhance the recreational opportunities along the river.

Ecological Significance

The Upper Rio Grande region is home to a multitude of wildlife. Birds include the American dipper, warbling vireo, black headed grosbeak, Cordilleran flycatcher, orange-crowned warbler, MacGillivray's warbler, Wilson's warbler and Swainson's thrush. Mammals, including species such as mountain lion, black bear, elk and deer use the nominated waters ad adjacent habitat. Fish species that inhabit the waters of this region include the Rio Grande chub, the Southern redbelly dace, the Rio Grande sucker and the Rio Grande cutthroat trout. The roadless and Wilderness areas of this section also provide habitat for the Mexican spotted owl.

For a selected list of species in the Upper Rio Grande Region, see Appendix 12 (Carson National Forest), Appendix 13 (Cibola National Forest), and Appendix 16 (Santa Fe National Forest).

Appendix 3: Lower Canadian Region

Physical Setting

The lower Canadian River, which flows through two IRAs in the Kiowa National Grassland (KNG), is the largest tributary of the Arkansas River. Mill's Canyon, east of the city of Las Vegas, where IRAs lie on both banks of the river, is a spectacular chasm providing refuge from the plains of eastern New Mexico. Much restoration work has been done in the grasslands to facilitate recovery from the ecological catastrophes of the dust bowl. Now, acres of rolling prairie are inhabited by diverse plant and animal species in this unique region.

Outstanding National Resource Waters Qualifications

The Canadian River, where it flows through IRAs in the KNG, meets two of the three requirements found in 20.6.4 NMAC 6: (2) The water is of exceptional quality; and (3) it possess exceptional ecological and recreational significance.

Recreational Significance

Visitors come to the KNG to participate in a number of different activities. Many people come to learn about and enjoy the unusual ecology of the region. Other visitors come simply to hike, hunt, fish and picnic. Perhaps one of the biggest draws is Mill's Canyon. This canyon is an ideal and popular place for wildlife watching and kayaking.

Mill's Canyon, which encloses the nominated segment of the Canadian River, is truly spectacular. The Harding County website describes the canyon's beauty: "below a precipitous, pine-clad rim, the stately, curving canyon walls stair-step down through sandstone cliffs and slopes to a broad flood plain."[1] Mill's Canyon is ideal for people searching for a distinctive outdoor experience. Maintaining high quality water in the Canadian River through a designation as an Outstanding National Resource Water would ensure that people will continue to enjoy the unique beauty and experiences of the region.

Ecological Significance

A small flowering plant, the horrid herrickia, grows throughout the Canadian River canyon. It is only found in two other river canyons. Spellenberg's groundsel, a small perennial herb, grows on the open prairies of northeastern New Mexico. This species prefers calcareous soils (found in the Canadian River Canyon) and is sensitive to road building. The third sensitive plant species found on the Kiowa National Grasslands is the plains feverfew, a small perennial herb. The plant's preferred habitat is on slopes with calcareous composition.[2] Protecting the waters of Mill's Canyon would help to protect the habitat of these sensitive plant species.

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1 Harding County 2007

2 USGS 2007

The paper pondshell mussel, considered imperiled in New Mexico, inhabits the Canadian River. The Canadian River population is the westernmost population of the paper pondshell mussel in the United States.

Suckermouth minnow live in the Canadian River in Mills canyon. Protecting the waters of the Canadian River where it flows through Mill's Canyon would further the protection of this sensitive fish species, meeting the state's conservation goals.

For a selected list of aquatic and riparian wildlife that live in the Lower Canadian Region, see Appendix 13 (Cibola National Forest) and Appendix 17 (Kiowa National Grassland).

Appendix 4: Middle Rio Grande Region

Physical Setting

The Middle Rio Grande Region encompasses the western Sandia Mountains Wilderness, all the ephemeral waters of the Manzano Mountains Wilderness and several IRAs in the Cibola National Forest. This relatively arid region of the state gets significant use because of its proximity to Albuquerque. Though the waters are largely ephemeral significant flows are apparent in wetter years and during monsoonal events. The IRAs of the Cibola National Forest are divided into northern and southern sections based on their ecological character.

The Sandia Mountains Wilderness includes stretches of piñon-juniper and ponderosa pine forests and spruce-fir at high elevations. Many people visit the Wilderness area from nearby Albuquerque.

The Manzano Mountains Wilderness, also close to Albuquerque, encompasses similar high-elevation desert ecosystems. Located for the most part in Torrance County, the Manzano Mountains Wilderness provides recreational opportunities for the county's growing population, respite from the heat and much-needed income for its economy.

Southern IRAs. The four IRAs of the southern area include four mountain ranges: the Bear/Gallinas Mountains, the Magdalena Mountains, the Datil Mountains and the San Mateo Mountains. Elevations in this area range from just over 5,000 feet to nearly 11,000 at the top of South Baldy peak. The region is extremely arid. Rainfall on the Cibola National Forest near the nominated waters averages about 18 inches annually. Most of these areas are covered by piñon-juniper woodland, and some Douglas fir and ponderosa pine grow along ridgelines.

Northern IRAs. There are five small IRAs in the northern Cibola National Forest that include waters in this nomination. These IRAs are composed mostly of ponderosa pine forests that transition to spruce-fir and aspen at higher elevations. At lower elevations piñon-juniper woodland dominates the landscape. Elevations in this area range from approximately 5,000 feet to 11,301 at the top of Mount Taylor.

Outstanding National Resource Water Qualifications

The waters of the Wilderness areas and IRAs in the Middle Rio Grande Region meet all of the three of the State's requirements found in 20.6.4 NMAC 6: (1) Many waters flow through Wilderness areas; (2) they are of exceptional quality; and, (3) they possess exceptional ecological and recreational significance.

Recreational Significance

The Cibola National Forest offers excellent recreational opportunities. Hiking, mountain biking, backpacking, horseback riding, fishing and hunting are a few of the activities that people come to enjoy each year.

According to the Cibola National Forest, the Sandia Mountains "serve as a premier open space refuge to a population of over 700,000 people in the extended metropolitan area."[1]

The influx of people to these forests, including roadless and Wilderness areas, has a significant effect on the region's economy. Especially in Torrance County, where the Manzano Mountains Wilderness is located, enhancing the economic impact of outdoor recreation is actively sought by the Forest Service and local communities. According to Cibola National Forest, "Torrance County has been active in planning to diversify its economy, searching for ways to use its natural resources….Torrance County [has] focused on tourism and recreation."[2] Maintaining the high quality of the waters in the region will only further the recreational and economic importance of the Wilderness and roadless areas.

Ecological Significance

There are a number of threatened and sensitive species found in and near this region's nominated streams. All the IRAs and Wilderness areas surrounding the nominated waters in this region are current or potential Mexican spotted owl habitat. The peregrine falcon also lives and breeds in this region.

The Zuni milkvetch (USFS sensitive) and Zuni fleabane (threatened) are plants found only on 50,000 acres on the Cibola National Forest. Threats to these species include potential uranium mining and livestock grazing. Livestock do not eat Zuni fleabane, but habitat sites can be adversely impacted when used as holding pastures or near stock tanks or salting stations.[3]

The flammulated owl (USFS sensitive) lives throughout the western US. This species is affected by loss of habitat due to logging and pesticide use. These owls usually prefer open conifer forests containing pine, with some brush or saplings, and such topography is typical of the IRAs and Wilderness areas of this nomination. Montane riparian areas, like those of this region's nominated waters, are considered important for this species.[4]

Popular game animals within the areas of this nomination include Rocky Mountain elk, mule deer, Merriam's turkey, javelinas, bear and antelope. All of these game species rely on open sources of water in this arid region, especially the pronghorn antelope, a particularly popular game species. New Mexico is known as one of the best areas for hunting prize pronghorn.

For a selected list of wildlife species found in the Middle Rio Grande region, see Appendix 13 (Cibola National Forest).

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1 USFS 2007a
2 USFS 2007a
3 USFWS 2002
4 NM BISON-M 2007

Appendix 5: Upper Pecos Region

Physical Setting

The Upper Pecos Region is characterized by the monumental Pecos Valley, its surrounding high mountain peaks and coldwater streams. The region includes the Pecos Wilderness Area and surrounding IRAs of the SFNF. The Pecos River originates as a high mountain stream which grows as numerous small tributaries join it. Snow-capped peaks, mountain meadows, waterfalls and rugged canyons are some of the features of the landscape that influence the Pecos River and have been shaped by the river. The forests that flank the nominated waters in this region transition from piñon-juniper woodland to ponderosa pine forest, and ultimately a mixed conifer forest and scattered aspen groves.

The upper portion of the Pecos River is fed by dozens of small creeks. Portions of these streams fall within the boundaries of the congressionally designated Pecos Wilderness Area. This Outstanding National Resource Water petition nominates the headwaters of the Pecos River and its tributaries within the Pecos Wilderness Area and the nearby IRAs.

Outstanding National Resource Water Qualifications

Below the areas of this nomination, pollution has significantly degraded the quality of the Pecos River. According to the Forest Service "the New Mexico Environment Department should take a proactive role in recommending mitigation measures in the Pecos Canyon area to insure [sic] a healthy fishery."[1] Specific causes of degradation of water quality include both natural and human-created sources. Road maintenance, construction, septic systems and unauthorized spills all contribute to an increased level of pollutants in the river system below the nominated waters.[2]

The waters of the region's IRAs and the Pecos Wilderness meet all three of the State's requirements found in 20.6.4 NMAC 6. (1) The Pecos River is considered Wild and Scenic, and some waters are located within Wilderness areas; and, (2) the waters are of exceptional quality; and, (3) they possess exceptional ecological and recreational significance.

Recreational Significance

The IRAs and Wilderness areas in the Pecos headwaters offer unique recreational opportunities. More than 20 local outfitters lead excursions into the Upper Pecos Region. Recreational activities include hiking, horseback riding, mountain biking, hunting, fishing, camping, backpacking and wildlife watching. The Pecos Wilderness is a particularly important area for recreation: that Wilderness area alone receives approximately 48,000 site visits annually. This high visitation rate results in more than $2.6 million net benefits to the state annually.[3]

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1 USFS 2004

2 USFS 2004

3 Berrens et al. 2006

During summer months, the Pecos River corridor is particularly popular for anglers, picnickers and campers. Most campsites along the river are filled to capacity each weekend during summer months.[4] High water quality certainly contributes to the enjoyment of these social outings.

The waters in the Pecos River Headwaters are among New Mexico's greatest aquatic resources. Over 20 miles of the Pecos River have been designated Wild and Scenic, protecting the scenic values of the river from Terrero to its headwaters. Four waters in the Upper Pecos region have been designated Special Trout Waters, including the Pecos River itself (see Table 1 of the nomination). Designating the Pecos headwaters as Outstanding would help to maintain the high quality of the popular Pecos River and surrounding streams.

Ecological significance

The Pecos River Headwaters supports a large variety of wildlife species, including threatened or endangered species. The Pecos River is a productive fishing stream. Mammal species include elk, deer, mountain lion, black bear and many others. A rare plant, the Holy Ghost ipomopsis (federal and state endangered), grows in a limited location near a roadless area. Other sensitive plants in the area include the Arizona willow and the Chiricahua dock. Bird species, including Merriam's turkey, piñon jay, hairy woodpecker, bald eagle, mourning dove, Mexican spotted owl, boreal owl, white-tailed ptarmigan and Northern goshawk are all found in the upland and riparian areas of the Upper Pecos Region.

The limited habitat of the Holy Ghost ipomopsis is located just outside an IRA near the Pecos headwaters. There are multiple potential habitats throughout many of the IRAs for this endangered species. This plant is highly sensitive to all habitat disturbances and potential threats include road maintenance, recreation impacts and catastrophic fire.

There is potential and occupied habitat for the hairy woodpecker across the entire Pecos River Headwaters. The undeveloped character and generally remote nature of the Wilderness and roadless areas aids in the maintenance of hairy woodpecker habitat.

The Rio Grande cutthroat trout historically inhabited many of the drainages within the Pecos River Headwaters. Historically, all of these waters were habitats for the Rio Grande cutthroat trout. According to the Forest Service, there is the potential for this native fish to return to all areas of its former habitat given proper management practices.[5] However, its current habitat in this region is limited to the Pecos River above Pecos Falls. The designation of the waters of the IRAs and Wilderness area as Outstanding will aid in this conservation effort.

For a full list of aquatic and riparian wildlife species that live near the waters of the Upper Pecos Region, see Appendix 16 (Santa Fe National Forest).

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4 USFS 2004

5 USFS 2004

Appendix 6: Greater Gila Region

Physical Setting

The Chihuahuan Desert is the largest desert ecosystem in North America. In New Mexico, all but the highest Chihuahuan peaks receive less than 12 inches of precipitation annually. The protection of water in this desert corner of New Mexico is necessary for maintaining the high numbers of rare species that call it home. Five Wilderness areas (the Gila, Blue Range, Aldo Leopold, Apache Kid and Withington) contain waters that are nominated in this petition. A number of surrounding roadless areas managed by Gila, Cibola and Coronado National Forest also contain nominated waters.

The unusual character of the Gila sets it apart from other National Forests in the state. Great volcanic spires, spectacular cliff formations, steep mountain valleys, shallow desert streams and snowy peaks make this area a beautiful part of the landscape. The lowest elevations (around 4,500 feet) are along the desert floors of canyons and valleys. Here, the climate is arid and the environment consists mostly of piñon-juniper-oak woodlands. Mountain elevations range up to nearly 11,000 feet and ponderosa pine forests are most common between 5,500 and 6,500 feet. In the upper elevations, pine forests transition to spruce, fir and aspen groves.

There are three different Wilderness areas in the Gila National Forest: the Gila (558,065 acres), the Aldo Leopold (202,016 acres) and the Blue Range Wilderness (29,304 acres). Most of the IRAs containing nominated waters are located nearby these three Wilderness areas.

In the Cibola National Forest, a large roadless area nearly surrounds the Apache Kid Wilderness and another lies to the west of the Withington Wilderness. Another large IRA in the Cibola National Forest is located to the northeast of these two Wilderness areas.

A small section of IRAs in the very southwest corner of New Mexico is managed by the Coronado National Forest. These four IRAs exemplify the Chihuahuan desert environment described above.

Outstanding National Resource Water Qualifications

The waters of the IRAs and Wilderness areas in the Greater Gila Region meet all three of the State's requirements found in 20.6.4 NMAC 6: (1) Many waters flow through Wilderness areas; (2) the waters are of exceptional quality; and, (3) they possess exceptional ecological and recreational significance.

Recreational Significance

The chief human use of the Gila National Forest and Wilderness areas is recreation. The nature of that recreation is varied and includes camping, hiking, birding, rock hounding, swimming, boating, horseback riding, hunting, fishing, backpacking, cross-country skiing, snowshoeing and bike riding. These recreational opportunities draw

people from across the country and are a significant source of income for the local economy.[1] More than 20 local outfitters lead excursions into the Gila region.

At the west end of the Gila Wilderness, the Catwalk National Recreation Trail offers opportunities for walking, fishing and camping. Whitewater Creek, which flows beneath the catwalk, flows through an IRA just upstream from the catwalk.

Quemado Lake is a developed site for fishing and camping. The water that feeds this popular manmade lake comes in part from the surrounding IRAs. Ensuring the water quality of the lake for trout fishing and other recreational activities is important for the upkeep of this recreation area.

The Gila Cliff Dwelling National Monument is located near the middle of the Gila Wilderness. This 46-room enclosure was inhabited by Native American's from the late 13th to early 14th centuries. Because the dwellings are surrounded by Wilderness areas, the environment appears much as it did when it was inhabited. Retaining the original character of the place is important to the continued significance of this National Monument. Protecting the waters of the nation's first Wilderness area and the surrounding Wilderness and IRAs would help to ensure that these areas remain great assets of the State for many generations to come.

Ecological Significance

The Greater Gila Region supports many important wildlife species. Black bear, cougar, elk, deer, porcupine, over 30 species of fish (9 native) as well as species of cacti, grasses, shrubs and trees populate the areas near the nominated waters. 453 species of vertebrates, of which 291 are birds and 35 of which are classified sensitive, threatened, or endangered, inhabit the region. The region's fish are in particular need of conservation actions. "The Gila River is the only U.S. river basin with all 47 of its freshwater fish species extinct, listed as threatened or endangered, or recommended as candidates of such listings."[2]

The Mexican gray wolf (endangered) was extirpated from the United States by the mid-1920s and reintroduced to Blue Range Wolf Recovery Area in eastern Arizona in 1998.[3] Part of the reintroduced population is now located in the Gila National Forest. Despite reintroduction the wolf is still listed as endangered. Wolves prey mostly on large ungulates such as elk, deer and sheep. They are also known to hunt rabbit, beaver and other small rodents when ungulates are scarce. Protection of IRAs and of the wolf's prey,

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1 Stynes 2005
2 Floyd 2006
3 CBD 2007

which relies heavily on riparian areas, is integral to the reintroduction success of this species.

The Mexican spotted owl (threatened) lives in the Greater Gila Region. Thirty to forty percent of the Gila National Forest has been designated Critical Mexican Spotted Owl Habitat. Much of this critical habitat falls on IRAs in the Gila National Forest. Habitat loss is one of the principal causes of the owl's threatened status. Much of the prey base of this species relies on riparian habitat and associated meadows. Safeguarding the water that is necessary for the existence of owl habitat and its prey species is crucial to the improvement of the situation of this species.

Gila Trout (threatened) is endemic to the Gila drainage of New Mexico and Arizona, but by mid-20th century these trout occurred in only four streams in the upper Gila River system. Strong populations exist in less than 0.7% of the trout's native range.[4] The population decline is attributed to erosion, sedimentation, nonnative fishes and overfishing. The nominated waters provide important habitat in the historic range of this species, particularly because these waters are free from the impacts of roads. Ninety-nine percent of strong Gila trout populations exist in roadless or Wilderness areas.[5] Gila trout are found in perennial mountain streams above 5,400 feet in elevation. Suitable streams, like those in the Greater Gila Region, typically flow through narrow, steep-sided canyons and valleys. Adequate habitat for this species requires water temperatures below 77 degrees Fahrenheit, clean gravel substrates for spawning, continuous stream flow of sufficient quantity to maintain adequate water depth and temperature, a healthy riparian corridor providing abundant cover and pool habitat that provides refuge during low flow conditions and periods of thermal extremes. These very specific requirements for species survival make the protection of remaining or potential habitat particularly vital.[6]

The spikedace (threatened) has critical habitat designated in Gila National Forest and Gila Wilderness, which includes some of the waters of this nomination. It is endemic to the Gila River drainage. Stream flow depletion, diversion, habitat alteration and competition with nonnative fishes are responsible for the decline of this species.

For a list of aquatic and riparian species of the Greater Gila Region, see Appendix 14 (Gila National Forest).

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4 WNTC 2001

5 WNTC 2001

6 NatureServe 2007

Appendix 7: Greater Sacramento Region

Physical Setting

The Greater Sacramento Region is dominated by the Sacramento and Guadalupe Mountains, rising dramatically from the desert floor to snow-covered peaks. The climate of southern New Mexico is characterized by great aridity and water is precious. Some of the waters nominated in this petition are located in the Sacramento Mountains and others in the Guadalupe Mountains, near the Texas border. All nominated waters in this section are located within the Lincoln National Forest, including two Wilderness areas and a number of IRAs.

Capitan Mountains Wilderness, an area of about 35,000 acres, ranges in elevation from about 6,500 to over 10,000 feet. A variety of ecosystems is supported here, ranging from piñon-juniper woodlands to ponderosa and mixed conifer forests. Aspen groves cover some slopes. An IRA runs adjacent to this Wilderness along its south side.

The White Mountains Wilderness protects a high ridge that runs north-south. The west side is rugged, rocky and steep. The forested east side slopes more gently, supporting a few small streams. Four forest ecosystems are found in the White Mountains: piñon-juniper, ponderosa pine, mixed conifer and sub-alpine forest.

The West Slope Sacramentos. In this particular area less than 15 inches of rain falls annually. Here, a unique association of different forest and desert types is cut by deep, rugged canyons and is interspersed with limestone spires, cliffs and peaks. Upper mountain areas, like the IRAs of the Sacramentos, are ecological gems – part of the "sky island" ecosystem.[1] These mountains also provide important habitat for scores of species that cannot survive in the surrounding ecosystems. Two IRAs are found in this region.

The Guadalupes. Four IRAs lie in the Guadalupe Mountains. The nominated waters in this area are tributaries of the Pecos River. The northern part of the Guadalupes includes mesas and gentle canyons, and the southern portion consists of deep canyons and sheer cliffs. The southernmost IRA is contiguous to Carlsbad Caverns National Park and the Guadalupe National Park in Texas. Elevations in this area range from approximately 3,900 feet to nearly 6,000 feet. At lower elevations the environment is dominated by piñon-juniper woodland.

Outstanding National Resource Water Qualifications

The waters of the inventoried roadless and Wilderness areas of the Greater Sacramento Region meet all three of the State's requirements found in 20.6.4 NMAC 6. (1) Many flow through Wilderness areas (2) they are of exceptional quality, and, (3) they

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[1] According to the Sky Island Alliance (2007), "These mountain 'islands,' forested ranges separated by vast expanses of desert and grassland plains, are among the most diverse ecosystems in the world because of their great topographic complexity and unique location at the meeting point of several major desert and forest biological provinces. The region [harbors] well over half the bird species of North America, 29 bat species, over 3,000 species of plants, and 104 species of mammals--a diversity exceeding anywhere else in the U.S. This diversity is among the most threatened in North America by land development, climate change, poor livestock grazing practices, fire suppression, off-road vehicles, and resource extraction."

possess exceptional ecological and recreational significance.

Recreational Significance

The quality of the scenery in the Sacramento Mountains is extraordinary. The beauty of this region is so significant that some parts of the forest (mostly IRAs) have been considered for Wilderness designation based on their aesthetic value alone. As the forest is managed to enhance this quality, there will be an increase in the number of people who come to visit the region every year. Opportunities for hiking, hunting, limited fishing, camping, backpacking and wildlife watching are available throughout this region.

In Capitan Mountains Wilderness, fall hunting opportunities – for deer, bear and turkey – are particularly popular. Though the range of trout habitat is limited due to the dry environment, some streams are popular for fishing. The White Mountains also support a wide variety of game species, including deer, bear and turkey among others. Over 50 miles of hiking trails provide access to the White Mountains.

The Sacramentos are a prime place for recreation because of their proximity to the cities of Alamogordo, Las Cruces and El Paso. Visitors have all the amenities of the city and are less than an hour's drive away.

The Guadalupes also offer many opportunities for primitive recreation. The ruggedness of the canyons, peaks and mesas of the area has kept out nearly all development. Hunting is by far the most popular recreational activity that takes place on this part of the Lincoln National Forest. The grasslands in the Guadalupes are home to herds of mule deer, turkey and the occasional black bear.

Protecting the waters of the roadless and Wilderness areas of the Lincoln National Forest will ensure that people continue to visit and enjoy these extraordinary places.

Ecological Significance

The waters of the Greater Sacramento region support a number of important species. In addition, the remote and undeveloped character the region provides important habitat for less water-dependent species. In the Greater Sacramento Region, Todsen's pennyroyal, mountain lily, Sacramento prickly poppy and the Sacramento Mountains thistle are all State endangered plant species.

In the White Mountains Wilderness, five species of bird, the northern three-toed woodpecker, the Clark's nutcracker, the red-breasted nuthatch, the Townsend's solitaire and the golden-crowned kinglet have crucial habitats within the Wilderness, mainly in the spruce-fir zone – there is little spruce-fir forest this far south.

The Sacramento Mountains Salamander occupies upper elevations near sources of moisture. Valley bottoms, under dead-down logs, in riparian areas or arroyo bottoms are common locations for this species as well. Given the aridity of the region and the dearth of perennial waters, protection of all such sources is paramount to the continued existence of these rare amphibians.

The Guadalupe Mountains contain perhaps the best example of Chihuahuan desert in the Southwest. There are a number of threatened, endangered and sensitive species found this bioregion. State-endangered birds known to use the area include Bell's and gray vireos. In addition, potential nesting habitat for the American peregrine falcon and

potential reintroduction sites for desert bighorn sheep exist here.[2] Elk, mule deer, bears, mountain lions and bobcats all find suitable habitat in the Guadalupes. Steep cliffs offer excellent raptor nesting habitat. The Guadalupes are also well known for their large bat populations.

According to the New Mexico Wilderness Alliance, "the flora and fauna of the Guadalupe Mountains are some of the most unusual and diverse in the southwestern US, containing many endemic and threatened or endangered species."[3] In the Last Chance IRA, there is a plant association of walnut-cottonwood-Gooding willow, a rare association for the area, providing a unique habitat. According to the New Mexico Wilderness Alliance, "Over 150 species of birds have been noted in the riparian area, which also provides an important nesting area to many neotropical migrants."[4] Protection of these rare ecological communities through Outstanding National Resource Water nomination is warranted by the extraordinary environment of these desert mountains.

For a selected list of important wildlife that lives in the Greater Sacramento Region, see Appendix 15 (Lincoln National Forest).

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2 NMWA 2007

3 NMWA 2007

4 NMWA 2007

Section X: Baseline Water Quality Data

Introduction

The New Mexico Environment Department (NMED) has monitored water quality in all seven ONRW nomination regions. Most of the data collected are from perennial waters. Data are rarely collected in intermittent or ephemeral waters.

NMED categorizes streams into large groupings called segments. These are detailed in the the State of New Mexico Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC. Each segment is given designated uses and criteria to meet those uses. Each segment is in turn divided into relatively homogenous sections called Assessment Units (AU). Each AU has at least one sampling station. In the assessment process, water quality measurements taken in the AU are compared to applicable criteria to determine if the waters are meeting all their designated uses, such as high quality coldwater aquatic life or primary contact. AUs not meeting a designated use are said to be impaired for that use. The impairment applies to the entire AU. Impairments are detailed in the State of New Mexico 303d/305b Integrated Report.

Designated uses and criteria apply to the entire WQS segment, but each AU within a segment has its own impairment cause (aluminum, turbidity, etc.) and designated use status (Supporting or Not Supporting). The aquatic life designated use has several subcategories, including high quality coldwater, coldwater, marginal coldwater, warmwater, marginal warmwater, and limited. The contact designated use has two subcategories, primary and secondary. Occasionally an AU will be given two subcategories. The other designated uses do not have subcategories.

Many AUs cross the boundary of a Forest Service roadless or wilderness area. Only that section of the AU that is within the roadless or wilderness area is nominated. Data are presented if the monitoring station is on the nominated section of the AU, or less than ½ mile downstream.

Water quality is measured for a number of chemical, physical and biological parameters. There is only one permitted point source discharge into a nominated water.[1] Water quality problems in rural and headwater streams, such as the ones nominated in this ONRW proposal, are more likely caused by nonpoint sources. These are dispersed sources usually related to land use. The following parameters were selected for inclusion in this data presentation, because they can be indicators of nonpoint source pollution.

- Dissolved oxygen (DO) is measured in mg/L. DO criteria apply to the aquatic life designated uses. DO can be measured directly in the field.
- Temperature is measured in degrees Celsius. Temperature criteria apply to the aquatic life designated uses. It can be measured directly in the field.
- pH measures the acidity of water. pH criteria apply to the aquatic life designated uses. It can be measured directly in the field.
- Turbidity is the amount of suspended sediment in the water, expressed as nephelometric turbidity units (ntu). High turbidity is detrimental to certain aquatic life. Turbidity has general narrative criteria. It can be measured directly in the field.
- Specific conductance (SC) or electroconductance (EC) criterion is measured in mS/cm. It measures salts in the water. SC criteria apply only to the high quality coldwater aquatic life

[1] Glenwood Fish Hatchery on the San Francisco River

use. Excess SC is detrimental to certain aquatic life. It can be measured directly in the field.

- Aluminum (Al) is a frequent impairment of New Mexico waters. Aluminum criteria apply to the irrigation and aquatic life designated uses.

- Bacteria (E. coli or fecal coliform) criteria apply to the primary and secondary contact designated uses and is an indicator of how safe the water is for human contact.

- Ammonia is a nutrient with criteria that apply to the aquatic life designated uses. Nutrients are necessary but excess nutrients are detrimental to aquatic life.

- Nitrogen (N) and phosphorus (P) are nutrients that have general narrative criteria.

- Aquatic macroinvertebrates are aquatic insects which are indicators of water quality. Total taxa is the number of a specific grouping such as species or genus. The higher number of total taxa usually indicates better water quality. Macroinvertebrate sampling may be conducted at a different location from field and chemical sampling stations.

- Riparian and aquatic habitat quality is measured using the Environmental Monitoring and Assessment Program (EMAP). EMAP data are available from NMED by request, since the EMAP survey generates a very large and detailed data set.

Data may also be available from a USGS water sampling gauge. See http://nwis.waterdata.usgs.gov/nwis/qwdata?search_criteria=search_site_no&submitted_form=introduction Several nominated waters have a USGS gauge. However, most of these data are older than that collected by NMED.

Continuous logging devices (sondes and thermographs) may be deployed to measure diurnal and seasonal fluctuations in temperature and other parameters.

Data are also solicited from outside entities. As long as these data meet NMED's data quality control, they are incorporated into the current assessment. (A 30-day data solicition was posted in 2007; however, NMED's records show no data were received.)

The following is an overview of the AUs, stations, and years data were collected.

Region	Nominated AUs (all or partial)	No. of AUs with impairment	Stations in nominated parts	Data years
Canadian	6	1	1	2004, 05, 07
Chama	16	8	5	1999
Upper Pecos	20	1	11	2001
Upper Rio Grande	31	5	13	2000-07
Middle Rio Grande	8	3	3	2004-05
Gila	43	16	16	2001-07
Sacramento	6	3	2	2004-05

Assessment and Data Tables

The following tables give more details regarding the nominated AUs. As described previously, all or just part of an AU may be nominated, depending on its location.

For each region, Table 1 shows the nominated AUs or parts of AUs which have data collected *within* the nominated portion. Table 2 shows the nominated AUs or parts of AUs which do *not* have data collected within the nominated portion. The impairment status is based on data collected at a station *outside* the nominated portion.

The remaining tables present the actual data for the AUs listed in Table 1.

Key:

- **HUC** is hydrologic unit code, or watershed number, which enables the reader to easily locate the AU in NMEDs 303d/305b Integrated Report.
- **WQS** is the segment number containing the AU.
- **Yellow field** means the entire AU is within a roadless or wilderness area, and therefore the entire AU is nominated.
- **Pink field** means the designated use is impaired.
- **Blank** means the designated use does not apply to the segment.
- **NA** means the designated use was not assessed.
- **ND/NA** means there are no data and therefore the AU was not assessed.
- **Legacy data** means the data is pre-2000 and stored in NMED's administrative record. It is available by request.
- **HQCW** means high quality coldwater.

Canadian Region

Assessment Units

Table 1. Nominated AUs with data

			Designated Uses									
HUC	**AU**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
11080003	Canadian River (Mora River to Cimarron River)	305	Marginal warmwater, Fully supporting		Fully supporting	Fully supporting	Fully supporting				Secondary, Fully supporting	

Table 2. Nominated AUs without data

			Designated Uses									
HUC	**AU**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
11080004	Rito de Gascon	307	Marginal coldwater, warmwater, NA		NA	NA	NA				Secondary, NA	
11080004	Rito San Jose	307	Marginal coldwater, Not Supporting Warmwater, Fully supporting		Fully supporting	Fully supporting	Fully supporting				Secondary, NA	Low flow alterations
11080004	Manuelitas Creek	307	Marginal coldwater, warmwater, Fully supporting		Fully supporting	Fully supporting	Fully supporting				Secondary, NA	
11080004	Santiago Creek	307	Marginal coldwater, warmwater, Fully supporting		Fully supporting	NA	Fully supporting				Secondary, NA	
11080004	Sapello River	307	Marginal coldwater, warmwater, Fully supporting		Fully supporting	Fully supporting	Fully supporting				Secondary, NA	

MONITORING DATA

One survey station is on a nominated water.

Table 3. Field and chemical monitoring results

ONRW Parcel	Station ID	Station	Date	pH	EC	Temp	DO	Turb	ammonia	Total P	Total Kjehldal N
					uS/cm	*°C*	*mg/L*	*Ntu*	*mg/L*	*mg/L*	*mg/L*
Canadian River IRA	06Canadi305.0	Canadian River @ Mills Canyon	10/28/2004	7.51	1209	14.58	8.9	46.2	0.1	0.037	0.56
Canadian River IRA	06Canadi305.0	Canadian River @ Mills Canyon	9/21/2005	8.24	1285	21.3	8.22	17.6	0.1	0.034	0.58
Canadian River IRA	06Canadi305.0	Canadian River @ Mills Canyon	9/27/2007	8.26	1417	16.5	13.7	18.3	0.1	0.03	0.277

An EMAP survey was conducted at this station.

Rio Chama Region

Assessment Units

Table 1. Nominated AUs with data

			Designated Uses									
HUC	**AU**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13020102	Cañones Creek	119	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, Not supporting	Aluminum, fecal coliform, turbidity
13020102	Chihuahuenos Creek	119	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13020102	Rio Chama (Abiquiu Reservoir to El Vado Reservoir)	118	Coldwater and warmwater, Fully supporting		Fully supporting	Fully supporting	Fully supporting				Secondary, NA	
13020102	Rio del Oso	115	HQCW, NA		NA	NA	Fully supporting	NA			Secondary, NA	

Table 2. Nominated AUs without data

			Designated Uses									
HUC	**AU**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13020102	Abiquiu Creek	116	Coldwater, Not supporting		Fully supporting	NA	Fully supporting				Secondary, Fully supporting	Dissolved oxygen
13020102	Cecilia Canyon	119	HQCW, Not supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	Sedimentation/siltation
13020102	Clear Creek	119	HQCW, Not supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	Sedimentation/siltation
13020102	Jarosa Creek	115	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	

			Designated Uses									
HUC	**AU**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13020102	Polvadera Creek	119	HQCW, Not supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	Sedimentation/siltation, temperature
13020102	Rio Capulin	119	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13020102	Rio Cebolla	119	HQCW, NA	NA	NA	NA	Fully supporting	NA			Secondary, NA	
13020102	Rio Gallina (Rio Capulin to headwaters)	119	HQCW, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	
13020102	Rio Nutrias	119	HQCW, Not supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	Turbidity
13020102	Rio Puerco de Chama (Poleo Creek to headwaters)	119	HQCW, Not supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	Sedimentation/siltation
13020102	Rito Redondo	119	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13020102	Rito Resumidero	119	HQCW, Not supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	Sedimentation/siltation

MONITORING DATA

Table 3. Field monitoring results

ONRW parcel	Station ID	Station	Date	pH	EC	temp	DO	Turb
					uS/cm	*°C*	*mg/L*	*Ntu*
Unnamed IRA	29Canone007.1	Canones Creek above Chihuahuenos Creek	4/19/1999	7.5	88	8.8	9.2	3.63
Unnamed IRA	29Canone007.1	Canones Creek above Chihuahuenos Creek	4/20/1999	7.8	84.4	10	9	4.6
Unnamed IRA	29Canone007.1	Canones Creek above Chihuahuenos Creek	4/21/1999	7.6	82.3	8.2	9.1	4.38
Unnamed IRA	29Canone007.1	Canones Creek above Chihuahuenos Creek	4/22/1999	7.9	79.9	9.1	9.45	5.3
Unnamed IRA	29Canone007.1	Canones Creek above Chihuahuenos Creek	7/27/1999	8.42	107	17.2	7.6	2.35

ONRW parcel	Station ID	Station	Date	pH	EC	temp	DO	Turb
					uS/cm	*°C*	*mg/L*	*Ntu*
Unnamed IRA	29Canone007.1	Canones Creek above Chihuahuenos Creek	7/28/1999	8.44	111.2	17	8.25	1.28
Unnamed IRA	29Canone007.1	Canones Creek above Chihuahuenos Creek	10/5/1999	8.46	122.6	8.9	7.61	13.9
Unnamed IRA	29Canone007.1	Canones Creek above Chihuahuenos Creek	10/6/1999	8.37	122.9	10.5	8.55	0.8
Unnamed IRA	29Chihua000.1	Chihuahuenos Creek above Canones	4/19/1999	7.4	69.8	7.4	9.6	2.01
Unnamed IRA	29Chihua000.1	Chihuahuenos Creek above Canones	4/20/1999	7.4	65.3	9	9.2	3.71
Unnamed IRA	29Chihua000.1	Chihuahuenos Creek above Canones	4/21/1999	7.5	60.9	7	9.8	6.38
Unnamed IRA	29Chihua000.1	Chihuahuenos Creek above Canones	4/22/1999	7.5	58.5	8.4	9.9	6.71
Unnamed IRA	29Chihua000.1	Chihuahuenos Creek above Canones	7/27/1999	8.47	71.9	14.4	7.8	4.41
Unnamed IRA	29Chihua000.1	Chihuahuenos Creek above Canones	7/28/1999	8.5	78.2	14.2	7.9	2.85
Unnamed IRA	29Chihua000.1	Chihuahuenos Creek above Canones	10/5/1999	8.25	80.7	10.1	6.85	3.26
Unnamed IRA	29Chihua000.1	Chihuahuenos Creek above Canones	10/6/1999	8.1	74.4	11.9	8.16	3.58
Chama Wild and Scenic River IRA	29RChama089.7	Rio Chama @ monastery	4/19/1999	8.31	314.9	11.8	8.4	54.9
Chama Wild and Scenic River IRA	29RChama089.7	Rio Chama @ monastery	4/20/1999	8.44	322.9	11.2	6.65	73.8
Chama Wild and Scenic River IRA	29RChama089.7	Rio Chama @ monastery	4/21/1999	7.9	307.9	9.4		83.1
Chama Wild and Scenic River IRA	29RChama089.7	Rio Chama @ monastery	7/27/1999	8.23	298.5	13.8	7.25	800
Chama Wild and Scenic River IRA	29RChama089.7	Rio Chama @ monastery	7/28/1999	8.02	617	13.6	7.6	1000
Chama Wild and Scenic River IRA	29RChama089.7	Rio Chama @ monastery	10/5/1999	7.77	244.9	13.3	8.4	88.1
Chama Wild and Scenic River IRA	29RChama089.7	Rio Chama @ monastery	10/6/1999	7.88	230.7	12.1	7.45	89.1
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	4/19/1999	8.5	329.7	13.9	8.7	72.1
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	4/20/1999	8.55	328.4	13.3	7.9	71.3
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	4/21/1999	8	331.6	10.2	8.81	85.5
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	7/27/1999	8.36	237.4	16.7	7.4	800
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	7/28/1999	8.18	212.6	16.4	7.7	785
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	10/5/1999	8.42	241.8	13.9	8.9	78.1
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	10/6/1999	8.39	244.75	11.9	8.55	87
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	9/20/2005	7.25	150	12.04	8.98	63.6

ONRW parcel	Station ID	Station	Date	pH	EC	temp	DO	Turb
					uS/cm	*°C*	*mg/L*	*Ntu*
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	8/29/2006	8.45	365	23.76	7.58	110.4
Chama Wild and Scenic River IRA	29RChama079.5	Rio Chama above Abiquiu Reservoir @ USGS gage	10/3/2007	8.35	501	15.9	8.99	880.1
Unnamed IRA	29RioOso001.9	Rio del Oso upstream from Canoncito	4/19/1999	8.49	223.5	18.3	7.25	4.05
Unnamed IRA	29RioOso001.9	Rio del Oso upstream from Canoncito	4/20/1999	8.26	258.5	4.5	10.4	3.68
Unnamed IRA	29RioOso001.9	Rio del Oso upstream from Canoncito	4/21/1999	8.2	255.8	14.7	8.1	4.68
Unnamed IRA	29RioOso001.9	Rio del Oso upstream from Canoncito	4/22/1999	8.2	183.9	19.6	7.2	10.5
Unnamed IRA	29RioOso001.9	Rio del Oso upstream from Canoncito	7/27/1999	8.46	183.9	20.5	6.5	72.1
Unnamed IRA	29RioOso001.9	Rio del Oso upstream from Canoncito	7/28/1999	8.5	190.2	32.6	5.45	63.6
Unnamed IRA	29RioOso001.9	Rio del Oso upstream from Canoncito	10/5/1999	8.38	152.8	18.3	7.45	6.64
Unnamed IRA	29RioOso001.9	Rio del Oso upstream from Canoncito	10/6/1999	8.27	173.8	19.1	7.25	6.77

Table 4. Thermograph results in °C for 29Canone007.1 (Canones Creek above Chihuahuenos Creek)

Dates	4/30/99-10/13/99
No. of readings	3984
Min	1.54
Max	26.19

Table 5. Macroinvertebrate sampling results

Station ID	Location	Coll Date	Total Taxa
29RChama089.5	Chama River below Rio Gallina	07/28/1991	25
29RChama089.5	Chama River below Rio Gallina	07/28/1991	17
29RChama089.5	Chama River below Rio Gallina	11/09/1991	15
29RChama089.5	Chama River below Rio Gallina	11/09/1991	18
29RChama079.5	Chama River near gage above Abiquiu Reservoir	10/10/1999	10
29RChama079.5	Chama River near gage above Abiquiu Reservoir	10/10/1999	20
29RChama079.5	Chama River near gage above Abiquiu Reservoir	09/20/2005	30
29Chihua001.3	Chihuahuenos Creek above Canones	09/07/1999	32
29Chihua001.3	Chihuahuenos Creek above Canones	09/07/1999	32

Station ID	Location	Coll Date	Total Taxa
29RioOso004.7	Rio del Oso	08/17/1999	4
29RioOso004.7	Rio del Oso	09/24/1999	12
29RioOso004.7	Rio del Oso	09/24/1999	21
29RioOso004.7	Rio del Oso	10/22/2001	5
29RioOso004.7	Rio del Oso	10/22/2001	8
29RioOso004.7	Rio del Oso	10/22/2001	9
29RioOso004.5	Rio del Oso, outside exclosure (downstream)	05/22/1989	14
29RioOso004.5	Rio del Oso, outside exclosure (downstream)	11/04/1989	11
29RioOso004.5	Rio del Oso, outside exclosure (downstream)	11/01/1990	12
29RioOso008.8	Rio del Oso, within exclosure	05/22/1989	18
29RioOso008.8	Rio del Oso, within exclosure	11/04/1989	8
29RioOso008.8	Rio del Oso, within exclosure	11/01/1990	14
29RGalli005.5	Rio Gallina above Chama River and Skull Ranch	09/29/1999	2
29RGalli005.5	Rio Gallina above Chama River and Skull Ranch	09/29/1999	10

Table 6. Chemical Analyses

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/19/1999	Ammonia	0.1	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/19/1999	Phosphorus, Total	0.05	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/19/1999	Total Kjehldal Nitrogen	0.43	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/20/1999	Ammonia	0.1	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/20/1999	Phosphorus, Total	0.05	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/20/1999	Total Kjehldal Nitrogen	0.42	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/21/1999	Ammonia	0.1	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/21/1999	Phosphorus, Total	0.05	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/21/1999	Total Kjehldal Nitrogen	0.48	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/22/1999	Ammonia	0.1	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/22/1999	Phosphorus, Total	0.05	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	4/22/1999	Total Kjehldal Nitrogen	0.53	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	7/27/1999	Aluminum	0.02	Metals (dissolved)
Canones Creek above Chihuahuenos Creek	29Canone007.1	7/27/1999	Ammonia	0.1	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	7/27/1999	Phosphorus, Total	0.05	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Canones Creek above Chihuahuenos Creek	29Canone007.1	7/27/1999	Total Kjehldal Nitrogen	0.23	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	7/28/1999	Aluminum	0.01	Metals (dissolved)
Canones Creek above Chihuahuenos Creek	29Canone007.1	7/28/1999	Ammonia	0.1	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	7/28/1999	Phosphorus, Total	0.06	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	7/28/1999	Total Kjehldal Nitrogen	0.27	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	10/5/1999	Aluminum	0.01	Metals (dissolved)
Canones Creek above Chihuahuenos Creek	29Canone007.1	10/5/1999	Ammonia	0.1	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	10/5/1999	Phosphorus, Total	0.03	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	10/5/1999	Total Kjehldal Nitrogen	0.26	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	10/6/1999	Aluminum	0.01	Metals (dissolved)
Canones Creek above Chihuahuenos Creek	29Canone007.1	10/6/1999	Ammonia	0.1	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	10/6/1999	Phosphorus, Total	0.03	Nutrients (total)
Canones Creek above Chihuahuenos Creek	29Canone007.1	10/6/1999	Total Kjehldal Nitrogen	0.15	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/19/1999	Ammonia	0.1	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/19/1999	Phosphorus, Total	0.05	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/19/1999	Total Kjehldal Nitrogen	0.28	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/20/1999	Ammonia	0.1	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/20/1999	Phosphorus, Total	0.05	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/20/1999	Total Kjehldal Nitrogen	0.2	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/21/1999	Ammonia	0.1	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/21/1999	Phosphorus, Total	0.05	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/21/1999	Total Kjehldal Nitrogen	0.3	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/22/1999	Ammonia	0.1	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/22/1999	Phosphorus, Total	0.03	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	4/22/1999	Total Kjehldal Nitrogen	0.41	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	7/27/1999	Ammonia	0.1	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	7/27/1999	Phosphorus, Total	0.03	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	7/27/1999	Total Kjehldal Nitrogen	0.26	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	7/28/1999	Ammonia	0.1	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	7/28/1999	Phosphorus, Total	0.06	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	7/28/1999	Total Kjehldal Nitrogen	0.14	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	10/5/1999	Ammonia	0.1	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	10/5/1999	Phosphorus, Total	0.05	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	10/5/1999	Total Kjehldal Nitrogen	0.14	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Chihuahuenos Creek above Canones	29Chihua000.1	10/6/1999	Ammonia	0.1	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	10/6/1999	Phosphorus, Total	0.05	Nutrients (total)
Chihuahuenos Creek above Canones	29Chihua000.1	10/6/1999	Total Kjehldal Nitrogen	0.37	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	4/19/1999	Ammonia	0.1	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	4/19/1999	Phosphorus, Total	0.13	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	4/19/1999	Total Kjehldal Nitrogen	0.4	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	4/20/1999	Ammonia	0.1	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	4/20/1999	Phosphorus, Total	0.07	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	4/20/1999	Total Kjehldal Nitrogen	0.32	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	4/21/1999	Ammonia	0.1	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	4/21/1999	Phosphorus, Total	0.08	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	4/21/1999	Total Kjehldal Nitrogen	0.42	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	7/27/1999	Ammonia	0.1	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	7/27/1999	Phosphorus, Total	1.03	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	7/27/1999	Total Kjehldal Nitrogen	1.93	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	7/28/1999	Ammonia	0.1	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	7/28/1999	Phosphorus, Total	1.26	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	7/28/1999	Total Kjehldal Nitrogen	2.07	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	10/5/1999	Ammonia	0.1	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	10/5/1999	Phosphorus, Total	0.1	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	10/5/1999	Total Kjehldal Nitrogen	0.46	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	10/6/1999	Ammonia	0.1	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	10/6/1999	Phosphorus, Total	0.08	Nutrients (total)
Rio Chama @ monastery	29RChama089.7	10/6/1999	Total Kjehldal Nitrogen	0.4	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/19/1999	Aluminum	0.01	Metals (dissolved)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/19/1999	Ammonia	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/19/1999	Phosphorus, Total	0.12	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/19/1999	Total Kjehldal Nitrogen	0.34	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/20/1999	Aluminum	0.02	Metals (dissolved)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/20/1999	Ammonia	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/20/1999	Phosphorus, Total	0.07	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/20/1999	Total Kjehldal Nitrogen	0.29	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/21/1999	Aluminum	0.02	Metals (dissolved)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/21/1999	Ammonia	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/21/1999	Phosphorus, Total	0.08	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	4/21/1999	Total Kjehldal Nitrogen	0.44	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	7/27/1999	Aluminum	0.6	Metals (dissolved)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	7/27/1999	Ammonia	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	7/27/1999	Phosphorus, Total	2.52	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	7/27/1999	Total Kjehldal Nitrogen	2.03	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	7/28/1999	Aluminum	0.2	Metals (dissolved)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	7/28/1999	Ammonia	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	7/28/1999	Phosphorus, Total	0.99	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	7/28/1999	Total Kjehldal Nitrogen	2.59	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/5/1999	Aluminum	0.08	Metals (dissolved)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/5/1999	Ammonia	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/5/1999	Phosphorus, Total	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/5/1999	Total Kjehldal Nitrogen	0.53	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/6/1999	Aluminum	0.03	Metals (dissolved)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/6/1999	Ammonia	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/6/1999	Phosphorus, Total	0.08	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/6/1999	Total Kjehldal Nitrogen	0.38	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	9/20/2005	Ammonia	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	9/20/2005	Phosphorus, Total	0.119	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	9/20/2005	Total Kjehldal Nitrogen	0.5	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	8/29/2006	Ammonia	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	8/29/2006	Phosphorus, Total	0.093	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	8/29/2006	Total Kjehldal Nitrogen	0.39	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/3/2007	Ammonia	0.1	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/3/2007	Phosphorus, Total	0.457	Nutrients (total)
Rio Chama above Abiquiu Reservoir @ USGS gage	29RChama079.5	10/3/2007	Total Kjehldal Nitrogen	1.35	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/19/1999	Ammonia	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/19/1999	Phosphorus, Total	0.11	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/19/1999	Total Kjehldal Nitrogen	0.3	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/20/1999	Ammonia	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/20/1999	Phosphorus, Total	0.09	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/20/1999	Total Kjehldal Nitrogen	0.26	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/21/1999	Ammonia	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Rio del Oso upstream from Canoncito	29RioOso001.9	4/21/1999	Phosphorus, Total	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/21/1999	Total Kjehldal Nitrogen	0.35	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/22/1999	Ammonia	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/22/1999	Phosphorus, Total	0.12	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	4/22/1999	Total Kjehldal Nitrogen	0.52	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	7/27/1999	Ammonia	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	7/27/1999	Phosphorus, Total	0.2	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	7/27/1999	Total Kjehldal Nitrogen	0.49	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	7/28/1999	Ammonia	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	7/28/1999	Phosphorus, Total	0.24	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	7/28/1999	Total Kjehldal Nitrogen	0.53	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	10/5/1999	Ammonia	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	10/5/1999	Phosphorus, Total	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	10/5/1999	Total Kjehldal Nitrogen	0.34	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	10/6/1999	Ammonia	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	10/6/1999	Phosphorus, Total	0.1	Nutrients (total)
Rio del Oso upstream from Canoncito	29RioOso001.9	10/6/1999	Total Kjehldal Nitrogen	0.24	Nutrients (total)

EMAP data are available for 29RChama079.5.

Data for USGS gauge number 08286500 (RIO CHAMA ABOVE ABIQUIU RESERVOIR) are available for 1962-1985.

Gila Region

Assessment Units

Table 1. Nominated AUs with data

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
15040001	Black Canyon Creek	503	HQCW, Not supporting		Fully supporting	NA	NA	Fully supporting			Secondary, NA	Temperature
15040001	Canyon Creek	97	HQCW, Not supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Turbidity, nutrients
15040001	Diamond Creek	98	Aquatic life, NA			NA	Fully supporting				Secondary, NA	
15040002	Gila River (Red Rock to Mangas Creek)	502	Marginal coldwater, warmwater, Fully supporting		Fully supporting	NA	NA			Fully supporting	Primary, NA	
15040001	Gilita Creek (Middle Fork Gila R to Willow Creek)	503	HQCW, Not supporting		Fully suporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Aluminum, temperature
15040001	Iron Creek	503	HQCW, Fully supporting		Fully supporting	NA	NA	Fully supporting			Secondary, NA	
13030202	McKnight Canyon	804	HQCW, Fully supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting			Fully supporting	
15040001	Middle Fork Gila River	503	HQCW, Not supporting		Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	Temperature
15040004	Negrito Creek (Tularosa River to confl of N and S forks)	603	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Temperature
13030101	Palomas Creek	103	Marginal coldwater, warmwater, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting				Secondary, NA	

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
15040001	Snow Canyon Creek	97	Aquatic life, NA			Fully supporting	Fully supporting				Secondary, NA	
15040001	Turkey Creek	503	HQCW, Not supporting		Fully supporting	NA	NA	Fully supporting			Secondary, NA	Dissolved oxygen, temperature
15040001	West Fork Gila R (Cliff Dweller Cyn to headwaters)	503	HQCW, NA		NA	NA	NA	NA			Secondary, NA	
15040004	Whitewater Creek (Whitewater Campgrd to headwaters)	603	HQCW, Not supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	Aluminum

Table 2. Nominated AUs without data

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13030202	Allie Canyon (Mimbres River to headwaters)	804	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13030202	Bear Canyon (Mimbres River to headwaters)	804	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
15040001	Beaver Creek (Taylor Creek to headwaters)	503	HQCW, NA		NA	NA	NA	NA			Secondary, NA	
15040004	Centerfire Creek (San Francisco R to headwaters)	603	HQCW, Not supporting	Fully supporting	Fully supporting	NA	NA	Fully supporting			Secondary, NA	pH, specific conductance, temperature, nutrient/ eutrophication biological indicators
13030202	Cold Springs Creek (Hot Springs Creek to headwaters)	803	Coldwater, NA		NA	Fully supporting	NA				Secondary, NA	
15040004	Dry Blue Creek (AZ bnd to headwaters)	603	HQCW, NA	NA	NA	NA	NA	NA			Secondary, NA	

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
15040001	East Fork Gila River (Gila River to headwaters)	503	HQCW, Not supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Aluminum
13030202	Gallinas Creek (Mimbres River to headwaters)	98	Marginal warmwater, aquatic life, NA			Fully supporting	Fully supporting				Secondary, NA	
15040001	Gila River (Mogollon Creek to confl East and West Forks)	502	Marginal coldwater, warmwater, Fully supporting		Fully supporting	NA	NA			Fully supporting	Primary, NA	
13030202	Hot Springs Creek (Mimbres River to headwaters)	803	Coldwater, NA		NA	NA	NA				Secondary, NA	
15040001	Hoyt Creek (Wall Lake to headwaters)	98	Marginal warmwater, aquatic life, NA			NA	NA				Secondary, NA	
13030101	Las Animas Creek (perennial portion R Grande to headwaters)	103	Marginal Coldwater, warmwater, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting				Secondary, NA	
15040001	Little Creek (West Fork Gila River to headwaters)	503	HQCW, NA		NA	NA	NA	NA			Secondary, NA	
13030202	Mimbres R (Perennial reaches Willow Sprs Cyn to Cooney Cyn)	804	HQCW, Not supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting			Fully supporting	Nutrients, dissolved oxygen, temperature
13030202	Mimbres R (Perennial reaches Cooney Cyn to hdwts)	804	HQCW, Fully supporting		NA	NA	NA	NA			Secondary, NA	
15040004	Mineral Creek (San Francisco R to headwaters)	98	Marginal warmwater, NA			Fully supporting	Fully supporting				Secondary, NA	
15040001	Mogollon Creek (Perennial reaches abv USGS gage)	503	HQCW, Not Supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Aluminum
15040004	Mule Creek (San Francisco R to Mule Springs)	601	Marginal coldwater, marginal warmwater,		Fully supporting	Fully supporting	Fully supporting				Secondary, NA	

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
			Fully supporting									
15040004	San Francisco River (AZ border to Dry Creek)	601	Marginal coldwater, marginal warmwater, Fully supporting		Fully supporting	Fully supporting	Fully supporting				Secondary, NA	
15040004	San Francisco River (Dry Creek to Whitewater Creek)	601	Marginal coldwater, marginal warmwater, Fully supporting		Fully supporting	Fully supporting	Fully supporting				Secondary, NA	
15040004	San Francisco River (Whitewater Creek to NM 12 at Reserve)	601	Marginal coldwater, marginal warmwater, Fully supporting		Fully supporting	Fully supporting	Fully supporting				Secondary, NA	
15040004	San Francisco River (NM 12 at Reserve to Centerfire Creek)	602	Coldwater, fully supporting		Fully supporting	Fully supporting	Fully supporting				Primary, NA	
15040001	Sapillo Creek (Gila River to Lake Roberts)	503	HQCW, Not supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Turbidity
15040001	Taylor Creek (Beaver Creek to Wall Lake)	503	HQCW, Not supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Aluminum, temperature, turbidity
15040001	Taylor Creek (Perennial reaches abv Wall Lake)	503	HQCW, Not supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Aluminum, temperature, turbidity
15040004	Tularosa River (San Francisco R to Apache Creek)	603	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Specific conductance
15040001	White Creek (West Fork Gila River to headwaters)	503	HQCW, NA		NA	NA	NA	NA			Secondary, NA	
15040004	Whitewater Creek (San Francisco R to Whitewater Campground)	603	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Turbidity

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
15040001	Willow Creek	503	HQCW, Fully supporting		Fully supporting	NA	NA	Fully supporting			Secondary, NA	

Monitoring Data

Sixteen monitoring stations with data were on a nominated water, or within ½ mile downstream.

Table 3. Field and bacteria monitoring results

ONRW parcel	STATION ID	STATION	Date	pH	EC	temp	DO	turb	E. coli
					uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*
Aldo Leopold wilderness	77BlackC016.5	Black Cny Creek @ Lower Black Cny Campground	Legacy						
Canyon cr IRA	77Canyon007.5	Canyon Creek	Legacy						
Aldo Leopold wilderness	77Diamon013.8	Diamond Creek at Wilderness Boundary	Legacy						
Gila box IRA	78GilaRi069.2	Gila River below Mangas Creek	3/21/2007	8.03	243	11.74	9.87	16.8	22.8
Gila box IRA	78GilaRi069.2	Gila River below Mangas Creek	4/24/2007	8.36	333	19.22	8.86	6.6	
Gila box IRA	78GilaRi069.2	Gila River below Mangas Creek	5/22/2007	8.32	320	23.71	8.58	15.6	34.5
Gila box IRA	78GilaRi069.2	Gila River below Mangas Creek	6/19/2007	8.36	391	26.05	8.28	3	
Gila box IRA	78GilaRi069.2	Gila River below Mangas Creek	7/17/2007	8.21	380	28.62	6.31	181.5	248.1
Gila box IRA	78GilaRi069.2	Gila River below Mangas Creek	8/22/2007	8.07	421	26.05	7.54	44.4	
Gila box IRA	78GilaRi069.2	Gila River below Mangas Creek	9/18/2007	8	362	26.31	7.36	22.4	
Gila box IRA	78GilaRi069.2	Gila River below Mangas Creek	10/16/2007	9.6	401	20.13	10.64	7	16
Gila box IRA	78GilaRi069.2	Gila River below Mangas Creek	11/8/2007	8.22	428	11.31	8.95	19.8	

ONRW parcel	STATION ID	STATION	Date	pH	EC	temp	DO	turb	E. coli
					uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*
Unnamed IRA	77Gilita000.2	Gilita Creek above Snow Canyon Creek	Legacy						
Gila wilderness	77IronCr009.7	IRON CREEK @ FOREST TRAIL 151	10/7/2004	7.12	43	10.49	7.88	0.1	
Gila wilderness	77IronCr009.7	IRON CREEK @ FOREST TRAIL 151	9/29/2005	7.37	55	14.45	6.7	0	
Gila wilderness	77IronCr009.7	IRON CREEK @ FOREST TRAIL 151	10/26/2006	7.73	60	5.08	8.85	1	
Gila wilderness	77IronCr000.1	Iron Creek above Middle Fork Gila	Legacy						
Gila wilderness	77Diamon033.2	Main Diamond Creek @ Trail 42	10/8/2004	7.91	72	8.25	8.71	0.9	
Unnamed IRA	45McKnig011.9	McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres	3/5/2002	8.2	105	3.8	9.25	1.16	
Unnamed IRA	45McKnig011.9	McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres	4/9/2002	7.99	62	8.67	10.52	1	
Unnamed IRA	45McKnig011.9	McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres	4/11/2002						1
Unnamed IRA	45McKnig011.9	McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres	6/19/2002	7.67	161	12.53	6.34	0.6	
Unnamed IRA	45McKnig011.9	McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres	7/24/2002	7.39	147	14.3	7.28	0.1	
Unnamed IRA	45McKnig011.9	McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres	8/6/2002	6.39	147	13.82	6.85	0.1	
Unnamed IRA	45McKnig011.9	McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres	10/23/2002	7.42	133	9.44	8.56	0.1	
Unnamed IRA	45McKnig011.9	McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres	12/4/2002	7.21	125	3.45	9.53	0.2	
Gila wilderness	77MFkGil000.1	Middle Fork Gila above West Fork	3/20/2007	7.82	105	12.23	6.35	39.2	2.00
Gila wilderness	77MFkGil000.1	Middle Fork Gila above West Fork	4/23/2007	7.75	161	17.19	8.1	3.8	
Gila wilderness	77MFkGil000.1	Middle Fork Gila above West Fork	5/21/2007	7.71	147	21.49	7.4	8.6	40.40
Gila wilderness	77MFkGil000.1	Middle Fork Gila above West Fork	6/20/2007	8.3	255	26.74	7.54	1.2	
Gila wilderness	77MFkGil000.1	Middle Fork Gila above West Fork	7/16/2007	7.11	131	25.41	6.51	2355	2420.00
Gila wilderness	77MFkGil000.1	Middle Fork Gila above West Fork	8/20/2007	7.75	171	24.26	7.18	84.1	
Gila wilderness	77MFkGil000.1	Middle Fork Gila above West Fork	9/19/2007	8.23	209	21.34	7.91	7.1	
Gila wilderness	77MFkGil000.1	Middle Fork Gila above West Fork	10/15/2007	8.56	247	18.09	9.26	2.6	21.60
Eagle Peak IRA	80Negrit000.1	Negrito Creek above Tularosa River	Legacy						

ONRW parcel	STATION ID	STATION	Date	pH	EC	temp	DO	turb	E. coli
					uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*
Unnamed IRA	77SnowCa000.2	Snow Canyon Creek above Gilita Creek	Legacy						
Brushy Mtn IRA	41SPalom019.1	South Fork Palomas Creek near Hermosa	9/7/2004	7.86	425	15.8	7.67	0.01	
Gila wilderness	77Turkey001.8	Turkey Creek (at Wilderness Boundary Forest Trail 155)	10/19/2004	8.95	276	11.17	9.2	0.3	
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	10/20/2004	8.18	143	13.41	9.1	0.01	
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	9/28/2005	7.73	148	14.65	7.92	2.7	
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	10/25/2006	7.13	120	9	9.51	0.4	
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	3/20/2007	7.63	82	10.69	10.48	3.4	1.00
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	4/23/2007	7.16	103	13.45	7.98	1.1	
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	5/21/2007	7.12	115	17.84	7.59	1.2	2.00
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	6/20/2007	7.52	137	23.05	7	0	
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	7/16/2007	7.09	138	22.48	7.73	1.3	204.60
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	8/20/2007	7.7	140	23.1	6.94	3.4	
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	9/19/2007	7.53	147	18.72	7.67	9.2	
Gila wilderness	77WFkGil010.0	West Fork Gila abv Cliff Dwelling Cyn	10/15/2007	7.24	143	14.2	9.53	0	25.90
Unnamed IRA	80WhiteW008.8	Whitewater Creek abv campground	10/6/2004	8.28	81	10.66	9.02	0.4	
Unnamed IRA	80WhiteW008.8	Whitewater Creek abv campground	3/22/2007	7.4	64	6.93	9.98	16.6	17.50

Table 4. Thermograph results in °C

Station ID	Station	Dates	No. of Readings	Min	Max
45McKnig011.9	McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres	6/6/03-10/4/03	2885	8.41	21.16
78GilaRi069.2	Gila River below Mangas Creek	5/22/07-9/18/07	2856	14.55	30.55
77MFkGil000.1	Middle Fork Gila above West Fork	5/21/07-9/19/07	2903	12.51	31.97

Table 5. Sonde results

West Fork Gila abv Cliff Dwelling Cyn (77WFkGil010.0) 9/20/07-9/27/07					
Parameter	**Temp**	**SpCond**	**DO Conc**	**pH**	**Turbidity**
Unit	***°C***	***mS/cm***	***mg/L***		***NTU***
Min	12.63	133.8	8.45	7.56	2
Max	21.12	225.4	10.27	7.96	815.1

Table 6. Macroinvertebrate sampling results

Station ID	Location	Coll Date	TotalTaxa
77BlackC000.1	Black Canyon above East Fork Gila River	05/21/1992	25
77BlackC000.1	Black Canyon above East Fork Gila River	03/26/1993	12
77BlackC000.1	Black Canyon above East Fork Gila River	05/20/1997	36
77BlackC000.1	Black Canyon above East Fork Gila River	10/07/1997	7
77BlackC028.3	Black Canyon above East Fork Gila River	07/29/2000	19
77BlackC028.3	Black Canyon above East Fork Gila River	07/29/2000	21
77BlackC028.3	Black Canyon above East Fork Gila River	09/13/2000	27
77BlackC028.3	Black Canyon above East Fork Gila River	09/13/2000	24
77BlackC028.3	Black Canyon above East Fork Gila River	11/06/2001	23
77BlackC028.3	Black Canyon above East Fork Gila River	11/06/2001	34
77BlackC028.3	Black Canyon above East Fork Gila River	11/06/2001	26
78GilaRi003.5	Gila River 1 mile west of Virden	07/28/1992	29
77GilaRi088.0	Gila River 300 meters above Turkey Creek	10/19/2004	41
77GilaRi088.0	Gila River 300 meters above Turkey Creek	11/07/2005	51
78GilaRi074.8	Gila River above Gila	07/22/1987	19
78GilaRi074.8	Gila River above Gila	08/16/1991	23
78GilaRi074.8	Gila River above Gila	07/18/2000	23
78GilaRi074.8	Gila River above Gila	07/18/2000	34
78GilaRi074.8	Gila River above Gila	09/12/2000	18
78GilaRi074.8	Gila River above Gila	09/12/2000	18
78GilaRi074.8	Gila River above Gila	09/15/2000	27
78GilaRi074.8	Gila River above Gila	11/07/2001	31

Station ID	Location	Coll Date	TotalTaxa
78GilaRi074.8	Gila River above Gila	11/07/2001	25
78GilaRi074.8	Gila River above Gila	11/07/2001	29
78GilaRi074.8	Gila River above Gila	11/07/2001	41
78GilaRi052.6	Gila River above Mangas Creek, near Bill Evans Lake	09/22/2000	29
78GilaRi052.6	Gila River above Mangas Creek, near Bill Evans Lake	09/22/2000	22
77GilaRi092.0	Gila River above Turkey Creek	09/16/2000	28
77GilaRi092.0	Gila River above Turkey Creek	09/16/2000	17
78GilaRi026.1	Gila River at Red Rock	09/18/2000	6
78GilaRi026.1	Gila River at Red Rock	09/18/2000	15
78GilaRi026.1	Gila River at Red Rock	09/19/2000	12
78GilaRi026.1	Gila River at Red Rock	09/19/2000	23
78GilaRi026.1	Gila River at Red Rock	09/19/2000	24
78GilaRi026.1	Gila River at Red Rock	11/09/2001	27
78GilaRi026.1	Gila River at Red Rock	11/09/2001	25
78GilaRi026.1	Gila River at Red Rock	11/09/2001	18
78GilaRi026.1	Gila River at Red Rock	11/09/2001	26
77GilaRi131.3	Gila River below East Fork Gila River	07/22/1987	24
78GilaRi025.5	Gila River blw Blue Creek at USGS gage	11/09/2004	22
78GilaRi025.5	Gila River blw Blue Creek at USGS gage	11/08/2005	22
77Gilita000.1	Gilita Creek above Middle Fork Gila River (Snow Canyon Creek)	08/03/1992	16
77IronCr000.1	Iron Creek above Middle Fork Gila River	08/03/1992	20
77IronCr009.7	Iron Creek at Forest Trail 151	10/07/2004	42
77IronCr009.7	Iron Creek at Forest Trail 151	09/29/2005	33
77Diamon039.3	Main Diamond Creek at junction of trails 40 & 42 near James Brothers spring	09/13/1997	30
77Diamon033.2	Main Diamond Creek at Trail 42	10/08/2004	39
77Diamon040.1	Main Diamond Creek, 0.5 mile above junction of trails 40 &43	09/13/1997	21
77Diamon038.2	Main Diamond Creek, 0.5 mile below junction of trails 40 &43	08/02/1994	28
77Diamon038.1	Main Diamond Creek, 0.5 mile below junction of trails 40 &43	09/13/1997	29
45McKnig011.9	McKnight Canyon Creek (aka East Fork Mimbres) above the Mimbres	10/10/2002	39
77MFkGil055.0	Middle Fork Gila below Snow Lake	07/30/1992	24
77MFkGil028.3	Middle Fork Gila River	08/12/2000	27
77MFkGil028.3	Middle Fork Gila River	08/12/2000	23
77MFkGil054.8	Middle Fork Gila River, Gila National Forest, Catron Co., NM	08/03/1992	20
77MFkGil000.5	Middle Fork Red River 0.5 mile above East Fork	09/15/1999	32

Station ID	Location	Coll Date	TotalTaxa
77Taylor004.2	Taylor Creek below Wall Lake	08/04/1992	27
80Tularo001.3	Tularosa River above San Francisco River	07/12/1990	29
77Turkey001.8	Turkey Creek above Gila River at Wilderness Boundary	08/05/1992	23
77Turkey001.8	Turkey Creek above Gila River at Wilderness Boundary	08/05/1992	23
77Turkey001.8	Turkey Creek above Gila River at Wilderness Boundary	08/05/1992	23
77Turkey001.8	Turkey Creek above Gila River at Wilderness Boundary	10/19/2004	47
77Turkey001.8	Turkey Creek above Gila River at Wilderness Boundary	10/19/2004	47
77Turkey001.8	Turkey Creek above Gila River at Wilderness Boundary	10/19/2004	47
77WFkGil000.3	West Fork Gila River above East Fork	07/22/1987	19
77WFkGil000.3	West Fork Gila River above East Fork	08/15/1992	29
77WFkGil000.3	West Fork Gila River above East Fork	08/15/1992	29
77WFkGil038.1	West Fork Gila River above White Creek	08/09/2000	29
77WFkGil038.1	West Fork Gila River above White Creek	08/09/2000	31
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	08/15/1991	23
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	08/15/1991	23
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	08/15/1991	23
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	10/20/2004	39
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	10/20/2004	39
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	10/20/2004	39
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	09/28/2005	38
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	09/28/2005	38
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	09/28/2005	38
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	10/25/2006	42
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	10/25/2006	42
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	10/25/2006	42
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	10/25/2006	68
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	10/25/2006	68
77WFkGil010.0	West Fork Gila River at Gila Cliff Dwellings	10/25/2006	68
80WhiteW008.8	Whitewater Creek at Catwalk	09/01/1998	27
80WhiteW008.8	Whitewater Creek at Catwalk	09/01/1998	27
80WhiteW008.8	Whitewater Creek at Catwalk	10/06/2004	44
80WhiteW008.8	Whitewater Creek at Catwalk	10/06/2004	44

Table 7. Selected chemical monitoring results

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Gallinas Creek at Lower Gallinas Camground near Hwy 152	45Gallin021.5	3/5/2002	Aluminum	0.01	Metals (dissolved)
Gallinas Creek at Lower Gallinas Camground near Hwy 152	45Gallin021.5	3/5/2002	Ammonia	0.1	Nutrients (total)
Gallinas Creek at Lower Gallinas Camground near Hwy 152	45Gallin021.5	3/5/2002	Phosphorus, Total	0.03	Nutrients (total)
Gallinas Creek at Lower Gallinas Camground near Hwy 152	45Gallin021.5	3/5/2002	Total Kjehldal Nitrogen	0.17	Nutrients (total)
Gallinas Creek at Lower Gallinas Camground near Hwy 152	45Gallin021.5	4/9/2002	Aluminum	0.01	Metals (dissolved)
Gallinas Creek at Lower Gallinas Camground near Hwy 152	45Gallin021.5	4/9/2002	Ammonia	0.1	Nutrients (total)
Gallinas Creek at Lower Gallinas Camground near Hwy 152	45Gallin021.5	4/9/2002	Phosphorus, Total	0.03	Nutrients (total)
Gallinas Creek at Lower Gallinas Camground near Hwy 152	45Gallin021.5	4/9/2002	Total Kjehldal Nitrogen	0.115	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	3/21/2007	Aluminum	0.09	Metals (dissolved)
Gila River below Mangas Creek	78GilaRi069.2	3/21/2007	Ammonia	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	3/21/2007	Phosphorus, Total	0.127	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	3/21/2007	Total Kjehldal Nitrogen	0.255	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	4/24/2007	Aluminum	0.02	Metals (dissolved)
Gila River below Mangas Creek	78GilaRi069.2	4/24/2007	Ammonia	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	4/24/2007	Phosphorus, Total	0.044	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	4/24/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	5/22/2007	Aluminum	0.03	Metals (dissolved)
Gila River below Mangas Creek	78GilaRi069.2	5/22/2007	Ammonia	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	5/22/2007	Phosphorus, Total	0.075	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	5/22/2007	Total Kjehldal Nitrogen	0.16	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	6/19/2007	Aluminum	0.02	Metals (dissolved)
Gila River below Mangas Creek	78GilaRi069.2	6/19/2007	Ammonia	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	6/19/2007	Phosphorus, Total	0.078	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	6/19/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	7/17/2007	Aluminum	0.02	Metals (dissolved)
Gila River below Mangas Creek	78GilaRi069.2	7/17/2007	Ammonia	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	7/17/2007	Phosphorus, Total	0.311	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	7/17/2007	Total Kjehldal Nitrogen	0.204	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	8/22/2007	Aluminum	0.05	Metals (dissolved)
Gila River below Mangas Creek	78GilaRi069.2	8/22/2007	Ammonia	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	8/22/2007	Phosphorus, Total	0.15	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Gila River below Mangas Creek	78GilaRi069.2	8/22/2007	Total Kjehldal Nitrogen	0.15	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	9/18/2007	Aluminum	0.02	Metals (dissolved)
Gila River below Mangas Creek	78GilaRi069.2	9/18/2007	Ammonia	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	9/18/2007	Phosphorus, Total	0.078	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	9/18/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	10/16/2007	Aluminum	0.01	Metals (dissolved)
Gila River below Mangas Creek	78GilaRi069.2	10/16/2007	Ammonia	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	10/16/2007	Phosphorus, Total	0.119	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	10/16/2007	Total Kjehldal Nitrogen	0.49	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	11/8/2007	Ammonia	0.1	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	11/8/2007	Phosphorus, Total	0.092	Nutrients (total)
Gila River below Mangas Creek	78GilaRi069.2	11/8/2007	Total Kjehldal Nitrogen	0.251	Nutrients (total)
IRON CREEK @ FOREST TRAIL 151	77IronCr009.7	10/7/2004	Ammonia	0.1	Nutrients (total)
IRON CREEK @ FOREST TRAIL 151	77IronCr009.7	10/7/2004	Phosphorus, Total	0.045	Nutrients (total)
IRON CREEK @ FOREST TRAIL 151	77IronCr009.7	10/7/2004	Total Kjehldal Nitrogen	0.1	Nutrients (total)
IRON CREEK @ FOREST TRAIL 151	77IronCr009.7	9/29/2005	Ammonia	0.1	Nutrients (total)
IRON CREEK @ FOREST TRAIL 151	77IronCr009.7	9/29/2005	Phosphorus, Total	0.04	Nutrients (total)
IRON CREEK @ FOREST TRAIL 151	77IronCr009.7	9/29/2005	Total Kjehldal Nitrogen	0.14	Nutrients (total)
IRON CREEK @ FOREST TRAIL 151	77IronCr009.7	10/26/2006	Ammonia	0.1	Nutrients (total)
IRON CREEK @ FOREST TRAIL 151	77IronCr009.7	10/26/2006	Phosphorus, Total	0.048	Nutrients (total)
IRON CREEK @ FOREST TRAIL 151	77IronCr009.7	10/26/2006	Total Kjehldal Nitrogen	0.23	Nutrients (total)
Main Diamond Creek @ Trail 42	77Diamon033.2	10/8/2004	Ammonia	0.1	Nutrients (total)
Main Diamond Creek @ Trail 42	77Diamon033.2	10/8/2004	Phosphorus, Total	0.008	Nutrients (total)
Main Diamond Creek @ Trail 42	77Diamon033.2	10/8/2004	Total Kjehldal Nitrogen	0.1	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	3/5/2002	Aluminum	0.04	Metals (dissolved)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	3/5/2002	Ammonia	0.1	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	3/5/2002	Phosphorus, Total	0.044	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	3/5/2002	Total Kjehldal Nitrogen	0.103	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	4/9/2002	Aluminum	0.03	Metals (dissolved)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	4/9/2002	Ammonia	0.1	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	4/9/2002	Phosphorus, Total	0.047	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	4/9/2002	Total Kjehldal Nitrogen	0.1	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	6/19/2002	Aluminum	0.01	Metals (dissolved)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	6/19/2002	Ammonia	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	6/19/2002	Phosphorus, Total	0.051	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	6/19/2002	Total Kjehldal Nitrogen	0.2	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	7/24/2002	Aluminum	0.02	Metals (dissolved)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	7/24/2002	Ammonia	0.1	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	7/24/2002	Phosphorus, Total	0.054	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	7/24/2002	Total Kjehldal Nitrogen	0.159	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	8/6/2002	Aluminum	0.01	Metals (dissolved)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	8/6/2002	Ammonia	0.1	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	8/6/2002	Phosphorus, Total	0.03	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	8/6/2002	Total Kjehldal Nitrogen	0.165	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	10/23/2002	Aluminum	0.01	Metals (dissolved)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	10/23/2002	Ammonia	0.1	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	10/23/2002	Phosphorus, Total	0.03	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	10/23/2002	Total Kjehldal Nitrogen	0.26	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	12/4/2002	Aluminum	0.02	Metals (dissolved)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	12/4/2002	Ammonia	0.1	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	12/4/2002	Phosphorus, Total	0.05	Nutrients (total)
McKnight Canyon Creek (AKA East Fork of Mimbres) above the Mimbres.	45McKnig011.9	12/4/2002	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	3/20/2007	Aluminum	0.21	Metals (dissolved)
Middle Fork Gila above West Fork	77MFkGil000.1	3/20/2007	Ammonia	0.1	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	3/20/2007	Phosphorus, Total	0.134	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	3/20/2007	Total Kjehldal Nitrogen	0.551	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	4/23/2007	Aluminum	0.02	Metals (dissolved)
Middle Fork Gila above West Fork	77MFkGil000.1	4/23/2007	Ammonia	0.1	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	4/23/2007	Phosphorus, Total	0.047	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	4/23/2007	Total Kjehldal Nitrogen	0.292	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	5/21/2007	Aluminum	0.06	Metals (dissolved)
Middle Fork Gila above West Fork	77MFkGil000.1	5/21/2007	Ammonia	0.1	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	5/21/2007	Phosphorus, Total	0.084	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	5/21/2007	Total Kjehldal Nitrogen	0.19	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	6/20/2007	Aluminum	0.01	Metals (dissolved)
Middle Fork Gila above West Fork	77MFkGil000.1	6/20/2007	Ammonia	0.1	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	6/20/2007	Phosphorus, Total	0.081	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	6/20/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Middle Fork Gila above West Fork	77MFkGil000.1	7/16/2007	Aluminum	11	Metals (dissolved)
Middle Fork Gila above West Fork	77MFkGil000.1	7/16/2007	Ammonia	0.129	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	7/16/2007	Phosphorus, Total	3.6	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	7/16/2007	Total Kjehldal Nitrogen	9.6	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	8/20/2007	Aluminum	0.1	Metals (dissolved)
Middle Fork Gila above West Fork	77MFkGil000.1	8/20/2007	Ammonia	0.1	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	8/20/2007	Phosphorus, Total	0.177	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	8/20/2007	Total Kjehldal Nitrogen	0.24	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	9/19/2007	Aluminum	0.04	Metals (dissolved)
Middle Fork Gila above West Fork	77MFkGil000.1	9/19/2007	Ammonia	0.1	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	9/19/2007	Phosphorus, Total	0.082	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	9/19/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	10/15/2007	Aluminum	0.01	Metals (dissolved)
Middle Fork Gila above West Fork	77MFkGil000.1	10/15/2007	Ammonia	0.1	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	10/15/2007	Phosphorus, Total	0.162	Nutrients (total)
Middle Fork Gila above West Fork	77MFkGil000.1	10/15/2007	Total Kjehldal Nitrogen	0.26	Nutrients (total)
South Fork Palomas Creek near Hermosa	41SPalom019.1	9/7/2004	Aluminum	0.01	Metals (dissolved)
South Fork Palomas Creek near Hermosa	41SPalom019.1	9/7/2004	Ammonia	0.1	Nutrients (total)
South Fork Palomas Creek near Hermosa	41SPalom019.1	9/7/2004	Phosphorus, Total	0.065	Nutrients (total)
South Fork Palomas Creek near Hermosa	41SPalom019.1	9/7/2004	Total Kjehldal Nitrogen	0.212	Nutrients (total)
Turkey Creek (at Wilderness Boundary Forest Trail 155)	77Turkey001.8	10/19/2004	Ammonia	0.1	Nutrients (total)
Turkey Creek (at Wilderness Boundary Forest Trail 155)	77Turkey001.8	10/19/2004	Phosphorus, Total	0.036	Nutrients (total)
Turkey Creek (at Wilderness Boundary Forest Trail 155)	77Turkey001.8	10/19/2004	Total Kjehldal Nitrogen	0.16	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/20/2004	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/20/2004	Phosphorus, Total	0.022	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/20/2004	Total Kjehldal Nitrogen	0.11	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	9/28/2005	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	9/28/2005	Phosphorus, Total	0.033	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	9/28/2005	Total Kjehldal Nitrogen	0.22	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/25/2006	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/25/2006	Phosphorus, Total	0.03	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/25/2006	Total Kjehldal Nitrogen	0.26	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	3/20/2007	Aluminum	0.18	Metals (dissolved)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	3/20/2007	Ammonia	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	3/20/2007	Phosphorus, Total	0.04	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	3/20/2007	Total Kjehldal Nitrogen	0.168	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	4/23/2007	Aluminum	0.03	Metals (dissolved)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	4/23/2007	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	4/23/2007	Phosphorus, Total	0.026	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	4/23/2007	Total Kjehldal Nitrogen	0.18	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	5/21/2007	Aluminum	0.02	Metals (dissolved)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	5/21/2007	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	5/21/2007	Phosphorus, Total	0.028	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	5/21/2007	Total Kjehldal Nitrogen	0.17	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	6/20/2007	Aluminum	0.01	Metals (dissolved)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	6/20/2007	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	6/20/2007	Phosphorus, Total	0.034	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	6/20/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	7/16/2007	Aluminum	0.01	Metals (dissolved)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	7/16/2007	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	7/16/2007	Phosphorus, Total	0.043	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	7/16/2007	Total Kjehldal Nitrogen	0.165	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	8/20/2007	Aluminum	0.02	Metals (dissolved)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	8/20/2007	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	8/20/2007	Phosphorus, Total	0.039	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	8/20/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	9/19/2007	Aluminum	0.01	Metals (dissolved)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	9/19/2007	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	9/19/2007	Phosphorus, Total	0.031	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	9/19/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/15/2007	Aluminum	0.01	Metals (dissolved)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/15/2007	Ammonia	0.1	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/15/2007	Phosphorus, Total	0.03	Nutrients (total)
West Fork Gila abv Cliff Dwelling Cyn	77WFkGil010.0	10/15/2007	Total Kjehldal Nitrogen	0.24	Nutrients (total)
Whitewater Creek abv campground	80WhiteW008.8	10/6/2004	Ammonia	0.1	Nutrients (total)
Whitewater Creek abv campground	80WhiteW008.8	10/6/2004	Phosphorus, Total	0.047	Nutrients (total)
Whitewater Creek abv campground	80WhiteW008.8	10/6/2004	Total Kjehldal Nitrogen	0.12	Nutrients (total)
Whitewater Creek abv campground	80WhiteW008.8	3/22/2007	Aluminum	0.16	Metals (dissolved)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Whitewater Creek abv campground	80WhiteW008.8	3/22/2007	Ammonia	0.1	Nutrients (total)
Whitewater Creek abv campground	80WhiteW008.8	3/22/2007	Phosphorus, Total	0.05	Nutrients (total)
Whitewater Creek abv campground	80WhiteW008.8	3/22/2007	Total Kjehldal Nitrogen	0.544	Nutrients (total)

EMAP data are available for 78GilaRi069.2, 77IronCr009.7, and 77WFkGil010.0

Water quality data from USGS gauge number 09430600 MOGOLLON CREEK NEAR CLIFF, NM are available for 1901-1996.

Middle Rio Grande Region

Assessment Units

Table 1. Nominated AUs with data

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13020204	La Jara Creek (Perennial reaches abv Arroyo San Jose)	108	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, Fully supporting	Aluminum
13020202	Rio de las Vacas (Clear Creek to headwaters)	108	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, Fully supporting	Aluminum
13020202	San Gregorio lake	108	HQCW, NA	NA	NA	NA	NA	NA			Secondary, NA	

Table 2. Nominated AUs without data

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13020202	Clear Creek (Rio de las Vacas to San Gregorio Lake)	108	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, Fully supporting	Bioassessment, Turbidity
13020204	Rio Puerco (northern bnd Cuba to headwaters)	98	Aquatic life, Fully supporting			Fully supporting	Fully supporting				Secondary, NA	
13020202	Rito de las Palomas (Rio de las Vacas to headwaters)	108	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Fully supporting	Sediment/siltation, Temperature
13020204	Rito de los Pinos (Arroyo San Jose to headwaters)	98	Aquatic life, Fully supporting			Fully supporting	Fully supporting				Secondary, NA	
13020204	Rito Leche (Perennial reaches above HWY 126)	109	Coldwater aquatic life, Not supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting			Primary, NA	Low flow alterations

Monitoring Data

Three monitoring stations were in nominated waters, or within a half-mile downstream.

Table 3. Field and bacteria monitoring results

ONRW parcel	Station ID	Station	DATE	pH	EC	temp	DO	turb	E. coli	Fecals
					uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*	
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	3/30/2004	6.9	79	1.75	11.74	12.6		
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	4/14/2004	6.9	88	2.44		3.3		
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	5/13/2004							2.00
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	5/25/2004	7	45	4.5	10.8	5.2		
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	6/22/2004	7.6	92	11.01	8.67	0.1		
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	6/23/2004							1.00
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	6/29/2004	6.7	98	9.31	10.7	13		
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	7/27/2004	7.02	119	10	8.76	0		
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	9/1/2004	7.76	153	9.8	9.91	16.6		
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	10/13/2004	8.3	155	5.54	9.62	0.01		
San Pedro Parks IRA	33LaJara009.7	La Jara Creek abv irrigation diversion	10/21/2004							1.00
San Pedro Parks	33LaJara009.7	La Jara Creek abv irrigation diversion	11/18/2004	6.67	160	2.03	10.66	0.6		
San Pedro Parks wilderness	31RVacas026.5	Rio de las Vacas abv FR 70	8/29/2005	6.98	60	11.63	8.31			
San Pedro Parks wilderness	31RVacas026.5	Rio de las Vacas abv FR 70	9/6/2005	7.27	67	14.1	7.91	0.01		
San Pedro Parks wilderness	33SanGregorLk	San Gregorio Deep	7/21/2004							1.00

Table 4. Macroinvertebrate sampling results

Station ID	Location	Coll Date	TotalTaxa
31RVacas026.5	Rio de las Vacas above FR 70	09/01/2005	22
33lahara009.7	La Jara Creek above Irrigation Diversion	10/13/2004	42

Table 5. Selected chemical monitoring results

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
La Jara Creek abv irrigation diversion	33LaJara009.7	3/30/2004	Aluminum	0.26	Metals (dissolved)
La Jara Creek abv irrigation diversion	33LaJara009.7	3/30/2004	Ammonia	0.1	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	3/30/2004	Phosphorus, Total	0.044	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	3/30/2004	Total Kjehldal Nitrogen	0.216	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	4/14/2004	Aluminum	0.16	Metals (dissolved)
La Jara Creek abv irrigation diversion	33LaJara009.7	4/14/2004	Ammonia	0.1	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	4/14/2004	Phosphorus, Total	0.03	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	4/14/2004	Total Kjehldal Nitrogen	0.222	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	5/25/2004	Aluminum	0.4	Metals (dissolved)
La Jara Creek abv irrigation diversion	33LaJara009.7	5/25/2004	Ammonia	0.1	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	6/29/2004	Aluminum	0.01	Metals (dissolved)
La Jara Creek abv irrigation diversion	33LaJara009.7	6/29/2004	Ammonia	0.1	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	6/29/2004	Phosphorus, Total	0.03	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	6/29/2004	Total Kjehldal Nitrogen	0.14	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	7/27/2004	Aluminum	0.01	Metals (dissolved)
La Jara Creek abv irrigation diversion	33LaJara009.7	7/27/2004	Ammonia	0.1	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	7/27/2004	Phosphorus, Total	0.03	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	7/27/2004	Total Kjehldal Nitrogen	0.158	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	9/1/2004	Aluminum	0.01	Metals (dissolved)
La Jara Creek abv irrigation diversion	33LaJara009.7	9/1/2004	Ammonia	0.1	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	9/1/2004	Phosphorus, Total	0.03	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	9/1/2004	Total Kjehldal Nitrogen	0.192	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	10/13/2004	Ammonia	0.1	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	10/13/2004	Phosphorus, Total	0.031	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	10/13/2004	Total Kjehldal Nitrogen	0.153	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	11/18/2004	Aluminum	0.01	Metals (dissolved)

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
La Jara Creek abv irrigation diversion	33LaJara009.7	11/18/2004	Ammonia	0.1	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	11/18/2004	Phosphorus, Total	0.003	Nutrients (total)
La Jara Creek abv irrigation diversion	33LaJara009.7	11/18/2004	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	6/28/2005	Ammonia	0.1	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	6/28/2005	Phosphorus, Total	0.03	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	6/28/2005	Total Kjehldal Nitrogen	0.28	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	7/18/2005	Ammonia	0.1	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	7/18/2005	Phosphorus, Total	0.02	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	7/18/2005	Total Kjehldal Nitrogen	0.36	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	8/29/2005	Ammonia	0.1	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	8/29/2005	Phosphorus, Total	0.011	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	8/29/2005	Total Kjehldal Nitrogen	0.13	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	9/6/2005	Ammonia	0.1	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	9/6/2005	Phosphorus, Total	0.011	Nutrients (total)
Rio de las Vacas abv FR 70	31RVacas026.5	9/6/2005	Total Kjehldal Nitrogen	0.58	Nutrients (total)
San Gregorio Deep	33SanGregorLk	7/21/2004	Aluminum	0.03	Metals (dissolved)
San Gregorio Deep	33SanGregorLk	7/21/2004	Ammonia	0.1	Nutrients (dissolved)
San Gregorio Deep	33SanGregorLk	7/21/2004	Ammonia	0.1	Nutrients (total)
San Gregorio Deep	33SanGregorLk	7/21/2004	Phosphorus, Total	0.03	Nutrients (dissolved)
San Gregorio Deep	33SanGregorLk	7/21/2004	Phosphorus, Total	0.075	Nutrients (total)
San Gregorio Deep	33SanGregorLk	7/21/2004	Total Kjehldal Nitrogen	1.3	Nutrients (total)

There are no EMAP or USGS data for stations in this nomination area.

Upper Pecos Region

Assessment Units

Table 1. Nominated AUs with data

			Designated Uses									
HUC	**Water (AU) Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13060001	Beaver Creek	215	HQCW, Fully supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, NA	
13060001	Burro Canyon	215	HQCW, Fully supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, NA	
13060001	Hollinger Creek	215	HQCW, Fully supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, NA	
13060001	Jack's Creek	217	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13060001	Panchuela Creek	217	HQCW, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	
13060001	Pecos River (Willow Creek to Jack's Creek)	217	HQCW, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	
13060001	Pecos River (Jack's Creek to headwaters)	217	HQCW, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	
13060001	Porvenir Creek	215	HQCW, Fully supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, NA	
13060001	Rio Mora	217	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13060001	Tecolote Creek (Blue Creek to headwaters)	215	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, NA	
13060001	Winsor Creek	217	HQCW, Fully supporting	Fully supporting	NA	NA	NA	Fully supporting			Secondary, NA	

Table 2. Nominated AUs without data

			Designated Uses									
HUC	**Water (AU) Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13060001	Blue Creek	215	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, NA	
13060001	Doctor Creek	217	HQCW ND/NA	ND/NA	ND/NA	ND/NA	ND/NA	ND/NA			Secondary, ND/NA	
13060001	Gallinas River (Las Vegas Diversion to headwaters)	215	HQCW, Not supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, NA	Temperature
13060001	Holy Ghost Creek	217	HQCW, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	
13060001	Indian Creek	217	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13060001	Macho Canyon	217	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13060001	North Fork Blue Creek	215	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, NA	
13060001	Rito del Oso*	217	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13060001	Willow Creek (Fish barrier above reclamation to headwaters)	217	HQCW, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	

*Data source for development of impairment status is unknown

Monitoring Data

Ten monitoring stations are on nominated waters, or within ½ mile downstream.

Table 3. Field monitoring results

ONRW parcel	STATION ID	Station	Date	pH	EC	temp	DO	turbidity
					uS/cm	*°C*	*mg/L*	*ntu*
Pecos wilderness	50Beaver000.1	Beaver Cr. abv El Porvenir Cr.	8/30/2001	8.22	177	11.12	8.51	0.7
Unnamed IRA	50BurroC000.5	Burro Cr. abv Gallinas Cr.	5/29/2001	7.81	102	9.38	9.37	2.7
Unnamed IRA	50BurroC000.5	Burro Cr. abv Gallinas Cr.	5/30/2001	8.27	93	9.93	8.54	2.6
Unnamed IRA	50BurroC000.5	Burro Cr. abv Gallinas Cr.	5/31/2001	8.27	94	12.94	8.06	1.8
Unnamed IRA	50BurroC000.5	Burro Cr. abv Gallinas Cr.	7/24/2001	7.86	146	14.16	8.29	2.5
Unnamed IRA	50BurroC000.5	Burro Cr. abv Gallinas Cr.	7/25/2001	7.92	135	12.54	9.8	5.2
Unnamed IRA	50BurroC000.5	Burro Cr. abv Gallinas Cr.	10/17/2001	8.34	142	4.67	9.53	0.7
Unnamed IRA	50BurroC000.5	Burro Cr. abv Gallinas Cr.	10/18/2001	8.3	139	4.4	9.76	0.001
Pecos wilderness	50Holing000.1	Hollinger Cr. abv El Porvenir Cr.	8/30/2001	8.21	168	11.09	8.68	0.2
Pecos wild & scenic IRA	50JacksC000.1	Jack's Creek above confluence with Pecos River	5/15/2001	8.23	136	6.25	9.06	20.8
Pecos wild & scenic IRA	50JacksC000.1	Jack's Creek above confluence with Pecos River	5/16/2001	8.07	133	6.88	10.03	25.4
Pecos wild & scenic IRA	50JacksC000.1	Jack's Creek above confluence with Pecos River	5/17/2001	8.45	129	8.07	9.72	29
Pecos wild & scenic IRA	50JacksC000.1	Jack's Creek above confluence with Pecos River	7/31/2001	8.35	244	11.9	9.35	4.3
Pecos wild & scenic IRA	50JacksC000.1	Jack's Creek above confluence with Pecos River	8/1/2001	8.34	243	12.11	8.84	2
Pecos wild & scenic IRA	50JacksC000.1	Jack's Creek above confluence with Pecos River	10/9/2001	8.2	279	7.26	9.5	0.2
Pecos wild & scenic IRA	50JacksC000.1	Jack's Creek above confluence with Pecos River	10/10/2001	8.14	282	5.16	9.95	0.001
Pecos wild & scenic IRA	50JacksC000.1	Jack's Creek above confluence with Pecos River	10/11/2001	8.15	284	2.98	10.88	0.001
Pecos wilderness	50Panchu001.5	Panchuela Cr. 100 m abv campground	5/15/2001	7.78	60	5.61	9.33	2.1
Pecos wilderness	50Panchu001.5	Panchuela Cr. 100 m abv campground	5/16/2001	7.78	62	6.41	9.94	10.7
Pecos wilderness	50Panchu001.5	Panchuela Cr. 100 m abv campground	5/17/2001	8.21	58	6.79	9.35	14
Pecos wilderness	50Panchu001.5	Panchuela Cr. 100 m abv campground	7/31/2001	8.21	122	11.41	9.12	2.4

ONRW parcel	STATION ID	Station	Date	pH	EC	temp	DO	turbidity
					uS/cm	*°C*	*mg/L*	*ntu*
Pecos wilderness	50Panchu001.5	Panchuela Cr. 100 m abv campground	8/1/2001	8.15	125	11.46	9.33	0.1
Pecos wilderness	50Panchu001.5	Panchuela Cr. 100 m abv campground	10/9/2001	8.24	136	6.27	9.98	0.001
Pecos wilderness	50Panchu001.5	Panchuela Cr. 100 m abv campground	10/10/2001	7.96	138	4.89	10.15	0.8
Pecos wilderness	50Panchu001.5	Panchuela Cr. 100 m abv campground	10/11/2001	8.19	139	3.12	10.92	0.1
Pecos wilderness	50PecosR812.2	Pecos River @ wilderness boundary	5/15/2001	8.17	116	4.2	8.66	14.5
Pecos wilderness	50PecosR812.2	Pecos River @ wilderness boundary	5/16/2001	8.03	120	4.57	13.79	28.3
Pecos wilderness	50PecosR812.2	Pecos River @ wilderness boundary	5/17/2001	8.26	113	5.23	10.9	37.6
Pecos wilderness	50PecosR812.2	Pecos River @ wilderness boundary	7/31/2001	8.38	219	12.05	9.89	2.3
Pecos wilderness	50PecosR812.2	Pecos River @ wilderness boundary	8/1/2001	8.35	224	12.26	8.75	0.1
Pecos wilderness	50PecosR812.2	Pecos River @ wilderness boundary	10/9/2001	8.2	245	6.37	10.02	0.1
Pecos wilderness	50PecosR812.2	Pecos River @ wilderness boundary	10/10/2001	8.24	243	4.15	10.25	0.001
Pecos wilderness	50PecosR812.2	Pecos River @ wilderness boundary	10/11/2001	8.22	250	1.59	11.37	0.001
Pecos wild & scenic IRA	50PecosR811.8	Pecos River below Jack's Creek	3/28/2001	7.46	199.4	0.8	12.13	7.76
Pecos wilderness	50ElPorv012.6	El Porvenir Cr. blw Beaver and Hollinger creeks	5/29/2001	7.9	106	12.16	9.21	5.8
Pecos wilderness	50ElPorv012.6	El Porvenir Cr. blw Beaver and Hollinger creeks	8/30/2001	8.2	170	11.29	8.3	0.5
Unnamed IRA	50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	5/15/2001	7.86	51	5.74	9.39	5.1
Unnamed IRA	50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	5/16/2001	7.66	55	7.22	9.58	21.2
Unnamed IRA	50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	5/17/2001	7.95	50	7.24	8.57	12.7
Unnamed IRA	50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	7/31/2001	8.12	105	14.95	8.7	0.1
Unnamed IRA	50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	8/1/2001	8.11	106	14.61	8.66	0.1
Unnamed IRA	50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	10/9/2001	8.11	111	7.46	9.72	0.001
Unnamed IRA	50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	10/10/2001	8.02	111	5.85	10.25	0.001

ONRW parcel	STATION ID	Station	Date	pH	EC	temp	DO	turbidity
					uS/cm	*°C*	*mg/L*	*ntu*
Unnamed IRA	50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	10/11/2001	8.13	112	2.92	10.71	0.001
Unnamed IRA	50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	9/29/2004	6.86	106	10.19	7.63	1
Unnamed IRA	50Tecolo078.0	Tecolote Cr. blw SFNF boundary - 50Tecolo078.0	5/29/2001	8.34	190	13.03	8.6	1.7
Unnamed IRA	50Tecolo078.0	Tecolote Cr. blw SFNF boundary - 50Tecolo078.0	5/30/2001	8.4	195	13.6	8.76	1
Unnamed IRA	50Tecolo078.0	Tecolote Cr. blw SFNF boundary - 50Tecolo078.0	5/31/2001	8.47	195	14.34	8.53	1.3
Unnamed IRA	50Tecolo078.0	Tecolote Cr. blw SFNF boundary - 50Tecolo078.0	7/24/2001	8.19	232	16.1	8.05	0.001
Unnamed IRA	50Tecolo078.0	Tecolote Cr. blw SFNF boundary - 50Tecolo078.0	7/25/2001	8.21	210	14.01	8.35	1.3
Unnamed IRA	50Tecolo078.0	Tecolote Cr. blw SFNF boundary - 50Tecolo078.0	10/17/2001	8.08	297	9.26	9.31	2.73
Unnamed IRA	50Tecolo078.0	Tecolote Cr. blw SFNF boundary - 50Tecolo078.0	10/18/2001	8.13	251	9.28	8.78	0.68
Pecos wild & scenic IRA	50Winsor000.2	Winsor Creek at Pecos River	5/16/2001	7.86	54	8.51	12.4	18
Pecos wild & scenic IRA	50Winsor000.2	Winsor Creek at Pecos River	7/31/2001	8.14	114	13.22	9.52	2.6
Pecos wild & scenic IRA	50Winsor000.2	Winsor Creek at Pecos River	10/9/2001	8.14	122	7.15	9.97	2.4

Table 4. Thermograph results in °C

STATION ID	Station	Dates	No. of Readings	Min	Max
50Panchu001.5	Panchuela Cr. 100 m abv campground	6/13/01-11/5/01	3478	1.35	15.53
50PecosR812.2	Pecos @ wilderness bndy	6/13/01-11/18/01	3804	-1.06	19.03

Table 5. Macroinvertebrate sampling results

STATION ID	Station	Date	Total Taxa
50Holing000.1	Hollinger Cr. abv El Porvenir Cr.	08/27/2001	27
50JacksC008.4	Jack's Creek above jct of trails 257 & 259	08/16/1992	27
50ElPorv012.6	El Porvenir Cr. blw Beaver and Hollinger creeks	08/27/2001	29
50PecosR828.4	Pecos River above Pecos Falls	08/25/1992	23

STATION ID	Station	Date	Total Taxa
50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	07/14/1991	18
50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	10/10/2001	37
50RioMor000.3	Rio Mora at USGS gage 08377900 abv Pecos campground	09/29/2005	19
50Winsor006.9	Winsor Creek, 50m above Winsor trail/Stewart Lake trail intersection	06/21/1988	32

Table 6. Selected chemical monitoring results

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Beaver Cr. abv El Porvenir Cr.	50Beaver000.1	8/30/2001	Aluminum	0.01	Metals (dissolved)
Beaver Cr. abv El Porvenir Cr.	50Beaver000.1	8/30/2001	Ammonia	0.1	Nutrients (total)
Beaver Cr. abv El Porvenir Cr.	50Beaver000.1	8/30/2001	Phosphorus, Total	0.03	Nutrients (total)
Beaver Cr. abv El Porvenir Cr.	50Beaver000.1	8/30/2001	Total Kjehldal Nitrogen	0.125	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/29/2001	Ammonia	0.1	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/29/2001	Phosphorus, Total	0.03	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/29/2001	Total Kjehldal Nitrogen	0.108	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/30/2001	Ammonia	0.11	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/30/2001	Phosphorus, Total	0.03	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/30/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/31/2001	Aluminum	0.02	Metals (dissolved)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/31/2001	Ammonia	0.1	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/31/2001	Phosphorus, Total	0.03	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	5/31/2001	Total Kjehldal Nitrogen	0.128	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	7/24/2001	Aluminum	0.01	Metals (dissolved)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	7/24/2001	Ammonia	0.1	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	7/24/2001	Phosphorus, Total	0.056	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	7/24/2001	Total Kjehldal Nitrogen	0.161	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	7/25/2001	Aluminum	0.03	Metals (dissolved)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	7/25/2001	Ammonia	0.1	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	7/25/2001	Phosphorus, Total	0.03	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	7/25/2001	Total Kjehldal Nitrogen	0.208	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	10/17/2001	Aluminum	0.01	Metals (dissolved)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	10/17/2001	Ammonia	0.1	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	10/17/2001	Phosphorus, Total	0.05	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Burro Cr. abv Gallinas Cr.	50BurroC000.5	10/17/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	10/18/2001	Aluminum	0.01	Metals (dissolved)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	10/18/2001	Ammonia	0.1	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	10/18/2001	Phosphorus, Total	0.03	Nutrients (total)
Burro Cr. abv Gallinas Cr.	50BurroC000.5	10/18/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
El Porvenir Cr. blw Beaver and Hollinger creeks	50ElPorv012.6	5/29/2001	Ammonia	0.147	Nutrients (total)
El Porvenir Cr. blw Beaver and Hollinger creeks	50ElPorv012.6	5/29/2001	Phosphorus, Total	0.03	Nutrients (total)
El Porvenir Cr. blw Beaver and Hollinger creeks	50ElPorv012.6	5/29/2001	Total Kjehldal Nitrogen	0.118	Nutrients (total)
El Porvenir Cr. blw Beaver and Hollinger creeks	50ElPorv012.6	8/30/2001	Aluminum	0.01	Metals (dissolved)
El Porvenir Cr. blw Beaver and Hollinger creeks	50ElPorv012.6	8/30/2001	Ammonia	0.12	Nutrients (total)
El Porvenir Cr. blw Beaver and Hollinger creeks	50ElPorv012.6	8/30/2001	Phosphorus, Total	0.03	Nutrients (total)
El Porvenir Cr. blw Beaver and Hollinger creeks	50ElPorv012.6	8/30/2001	Total Kjehldal Nitrogen	0.118	Nutrients (total)
Hollinger Cr. abv El Porvenir Cr.	50Holing000.1	8/30/2001	Aluminum	0.01	Metals (dissolved)
Hollinger Cr. abv El Porvenir Cr.	50Holing000.1	8/30/2001	Ammonia	0.1	Nutrients (total)
Hollinger Cr. abv El Porvenir Cr.	50Holing000.1	8/30/2001	Phosphorus, Total	0.03	Nutrients (total)
Hollinger Cr. abv El Porvenir Cr.	50Holing000.1	8/30/2001	Total Kjehldal Nitrogen	0.129	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	5/15/2001	Ammonia	0.1	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	5/15/2001	Phosphorus, Total	0.03	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	5/15/2001	Total Kjehldal Nitrogen	0.178	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	5/16/2001	Ammonia	0.1	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	5/16/2001	Phosphorus, Total	0.044	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	5/16/2001	Total Kjehldal Nitrogen	0.229	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	5/17/2001	Ammonia	0.1	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	5/17/2001	Phosphorus, Total	0.03	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	5/17/2001	Total Kjehldal Nitrogen	0.141	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	7/31/2001	Ammonia	0.1	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	7/31/2001	Phosphorus, Total	0.03	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	7/31/2001	Total Kjehldal Nitrogen	0.106	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	8/1/2001	Ammonia	0.1	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	8/1/2001	Phosphorus, Total	0.03	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	8/1/2001	Total Kjehldal Nitrogen	0.104	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	10/9/2001	Ammonia	0.1	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	10/9/2001	Phosphorus, Total	0.03	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	10/9/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Jack's Creek above confluence with Pecos River	50JacksC000.1	10/10/2001	Ammonia	0.1	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	10/10/2001	Phosphorus, Total	0.03	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	10/10/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	10/11/2001	Ammonia	0.1	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	10/11/2001	Phosphorus, Total	0.101	Nutrients (total)
Jack's Creek above confluence with Pecos River	50JacksC000.1	10/11/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/15/2001	Aluminum	0.15	Metals (dissolved)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/15/2001	Ammonia	0.1	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/15/2001	Phosphorus, Total	0.036	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/15/2001	Total Kjehldal Nitrogen	0.165	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/16/2001	Aluminum	0.18	Metals (dissolved)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/16/2001	Ammonia	0.1	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/16/2001	Phosphorus, Total	0.056	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/16/2001	Total Kjehldal Nitrogen	0.206	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/17/2001	Aluminum	0.2	Metals (dissolved)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/17/2001	Ammonia	0.11	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/17/2001	Phosphorus, Total	0.03	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	5/17/2001	Total Kjehldal Nitrogen	0.212	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	7/31/2001	Aluminum	0.02	Metals (dissolved)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	7/31/2001	Ammonia	0.1	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	7/31/2001	Phosphorus, Total	0.03	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	7/31/2001	Total Kjehldal Nitrogen	0.106	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	8/1/2001	Aluminum	0.01	Metals (dissolved)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	8/1/2001	Ammonia	0.1	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	8/1/2001	Phosphorus, Total	0.03	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	8/1/2001	Total Kjehldal Nitrogen	0.113	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/9/2001	Aluminum	0.01	Metals (dissolved)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/9/2001	Ammonia	0.1	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/9/2001	Phosphorus, Total	0.03	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/9/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/10/2001	Aluminum	0.01	Metals (dissolved)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/10/2001	Ammonia	0.1	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/10/2001	Phosphorus, Total	0.03	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/10/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/11/2001	Aluminum	0.01	Metals (dissolved)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/11/2001	Ammonia	0.1	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/11/2001	Phosphorus, Total	0.073	Nutrients (total)
PANCHUELA CR. 100 M ABV CAMPGROUND	50Panchu001.5	10/11/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	5/15/2001	Aluminum	0.13	Metals (dissolved)
Pecos River @ wilderness boundary	50PecosR812.2	5/15/2001	Ammonia	0.1	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	5/15/2001	Phosphorus, Total	0.035	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	5/15/2001	Total Kjehldal Nitrogen	0.15	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	5/16/2001	Aluminum	0.12	Metals (dissolved)
Pecos River @ wilderness boundary	50PecosR812.2	5/16/2001	Ammonia	0.1	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	5/16/2001	Phosphorus, Total	0.035	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	5/16/2001	Total Kjehldal Nitrogen	0.238	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	5/17/2001	Aluminum	0.17	Metals (dissolved)
Pecos River @ wilderness boundary	50PecosR812.2	5/17/2001	Ammonia	0.15	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	5/17/2001	Phosphorus, Total	0.042	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	5/17/2001	Total Kjehldal Nitrogen	0.162	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	7/31/2001	Aluminum	0.01	Metals (dissolved)
Pecos River @ wilderness boundary	50PecosR812.2	7/31/2001	Ammonia	0.1	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	7/31/2001	Phosphorus, Total	0.03	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	7/31/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	8/1/2001	Aluminum	0.01	Metals (dissolved)
Pecos River @ wilderness boundary	50PecosR812.2	8/1/2001	Ammonia	0.1	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	8/1/2001	Phosphorus, Total	0.03	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	8/1/2001	Total Kjehldal Nitrogen	0.131	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	10/9/2001	Aluminum	0.01	Metals (dissolved)
Pecos River @ wilderness boundary	50PecosR812.2	10/9/2001	Ammonia	0.1	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	10/9/2001	Phosphorus, Total	0.03	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	10/9/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	10/10/2001	Aluminum	0.01	Metals (dissolved)
Pecos River @ wilderness boundary	50PecosR812.2	10/10/2001	Ammonia	0.1	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	10/10/2001	Phosphorus, Total	0.03	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	10/10/2001	Total Kjehldal Nitrogen	0.177	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	10/11/2001	Aluminum	0.01	Metals (dissolved)
Pecos River @ wilderness boundary	50PecosR812.2	10/11/2001	Ammonia	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Pecos River @ wilderness boundary	50PecosR812.2	10/11/2001	Phosphorus, Total	0.086	Nutrients (total)
Pecos River @ wilderness boundary	50PecosR812.2	10/11/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Pecos River below Jack's Creek	50PecosR811.8	3/28/2001	Aluminum	0.23	Metals (dissolved)
Pecos River below Jack's Creek	50PecosR811.8	3/28/2001	Ammonia	0.1	Nutrients (total)
Pecos River below Jack's Creek	50PecosR811.8	3/28/2001	Phosphorus, Total	0.03	Nutrients (total)
Pecos River below Jack's Creek	50PecosR811.8	3/28/2001	Total Kjehldal Nitrogen	0.106	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/29/2001	Aluminum	0.01	Metals (dissolved)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/29/2001	Ammonia	0.15	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/29/2001	Phosphorus, Total	0.03	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/29/2001	Total Kjehldal Nitrogen	0.183	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/30/2001	Aluminum	0.01	Metals (dissolved)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/30/2001	Ammonia	0.1	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/30/2001	Phosphorus, Total	0.03	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/30/2001	Total Kjehldal Nitrogen	0.196	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/31/2001	Aluminum	0.01	Metals (dissolved)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/31/2001	Ammonia	0.1	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/31/2001	Phosphorus, Total	0.03	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	5/31/2001	Total Kjehldal Nitrogen	0.136	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	7/24/2001	Aluminum	0.01	Metals (dissolved)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	7/24/2001	Ammonia	0.1	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	7/24/2001	Phosphorus, Total	0.033	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	7/24/2001	Total Kjehldal Nitrogen	0.177	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	7/25/2001	Aluminum	0.01	Metals (dissolved)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	7/25/2001	Ammonia	0.1	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	7/25/2001	Phosphorus, Total	0.03	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	7/25/2001	Total Kjehldal Nitrogen	0.198	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	10/17/2001	Aluminum	0.01	Metals (dissolved)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	10/17/2001	Ammonia	0.1	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	10/17/2001	Phosphorus, Total	0.03	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	10/17/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	10/18/2001	Aluminum	0.01	Metals (dissolved)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	10/18/2001	Ammonia	0.1	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	10/18/2001	Phosphorus, Total	0.062	Nutrients (total)
Tecolote Cr. blw SFNF boundary	50Tecolo078.0	10/18/2001	Total Kjehldal Nitrogen	0.125	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	SampleType
Winsor Creek at Pecos River	50Winsor000.2	5/16/2001	Ammonia	0.1	Nutrients (total)
Winsor Creek at Pecos River	50Winsor000.2	5/16/2001	Phosphorus, Total	0.06	Nutrients (total)
Winsor Creek at Pecos River	50Winsor000.2	5/16/2001	Total Kjehldal Nitrogen	0.227	Nutrients (total)
Winsor Creek at Pecos River	50Winsor000.2	7/31/2001	Ammonia	0.1	Nutrients (total)
Winsor Creek at Pecos River	50Winsor000.2	7/31/2001	Phosphorus, Total	0.03	Nutrients (total)
Winsor Creek at Pecos River	50Winsor000.2	7/31/2001	Total Kjehldal Nitrogen	0.105	Nutrients (total)
Winsor Creek at Pecos River	50Winsor000.2	10/9/2001	Ammonia	0.1	Nutrients (total)
Winsor Creek at Pecos River	50Winsor000.2	10/9/2001	Phosphorus, Total	0.041	Nutrients (total)
Winsor Creek at Pecos River	50Winsor000.2	10/9/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)

There are no EMAP data for stations in this nomination area.

Water quality data from USGS gauge no. 08379187 TECOLOTE CR BL WRIGHT CANYON NR EL PORVENIR, NM 1962-2008

Sacramento Region

Assessment Units

Table 1. Nominated AUs with data

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13050003	Dog Canyon	801	Coldwater, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting		Fully supporting	Fully supporting	Secondary, Fully supporting	Temperature
13050003	Three Rivers (Perennial prt HWY 54 to USFS exc Mescalero)	802	HQCW, Not supporting		NA	NA	NA	NA			Secondary, NA	Low flow alterations

Table 2. Nominated AUs without data

			Designated Uses									
HUC	**Water Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13060011	Black River	202	Warmwater, Fully supporting		Fully supporting	Fully supporting	Fully supporting			Fully supporting	Secondary, NA	
13060008	Rio Bonito (NM 48 near Angus to headwaters)	209	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, Not supporting	Fecal coliform, low flow alterations, macroinvertebrate assessments
13050003	San Andres Canyon	801	Coldwater, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting		Fully supporting	Fully supporting	Secondary, NA	
13060008	South Fork Rio Bonito	209	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Secondary, NA	

Two monitoring stations with data were in nominated waters or within a half-mile downstream.

Table 2. Field and bacteria data

ONRW parcel	Station ID	Station	No on map	Date	pH	EC	temp	DO	turb	E. coli	Fecal colif orm	total colif orm
						uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*		
W Face Sac mtns IRA	48DogCan002.7	Dog Canyon at Nature Trail		7/7/2004	8.12	960	20.77	6.54	0			
W Face Sac mtns IRA	48DogCan002.7	Dog Canyon at Nature Trail		8/3/2004		940	12.75	7.27		20	1200	
W Face Sac mtns IRA	48DogCan002.7	Dog Canyon at Nature Trail		8/16/2004						3350	9100	
W Face Sac mtns IRA	48DogCan002.7	Dog Canyon at Nature Trail		8/26/2004	8.07	1004	22.12	7.5	4			
W Face Sac mtns IRA	48DogCan002.7	Dog Canyon at Nature Trail		9/21/2004						0		
W Face Sac mtns IRA	48DogCan002.7	Dog Canyon at Nature Trail		10/5/2004	6.47	978	19.3	8.79	2.5	3.1		525
W Face Sac mtns IRA	48DogCan002.7	Dog Canyon at Nature Trail		10/18/2004						1	10	
W Face Sac mtns IRA	48DogCan002.7	Dog Canyon at Nature Trail		11/2/2004	7.61	924	11.2	9.24	0.01			
W Face Sac mtns IRA	48DogCan002.7	Dog Canyon at Nature Trail		11/2/2005	7.74	983	14.08	11.56	14.1			
White Mtn wilderness	48ThreeR022.8	Three Rivers at Forest Service campground		7/8/2004	7.92	408	19.04	7.1	0.1			
White Mtn wilderness	48ThreeR022.8	Three Rivers at Forest Service campground		8/3/2004	7.62	396	20.65	8.34	8	350	850	
White Mtn wilderness	48ThreeR022.8	Three Rivers at Forest Service campground		8/16/2004						7750	9000	
White Mtn wilderness	48ThreeR022.8	Three Rivers at Forest Service campground		9/21/2004						50	60	
White Mtn wilderness	48ThreeR022.8	Three Rivers at Forest Service campground		10/5/2004	8.14	388	16.06	6.19	4.5			1414
White Mtn	48ThreeR022.8	Three Rivers at Forest Service		10/5/2004	8.14	388	16.06	6.19	4.5	79		

ONRW parcel	Station ID	Station	No on map	Date	pH	EC	temp	DO	turb	E. coli	Fecal colif orm	total colif orm
wilderness		campground										
White Mtn wilderness	48ThreeR022.8	Three Rivers at Forest Service campground		10/18/2004						40	40	
White Mtn wilderness	48ThreeR022.8	Three Rivers at Forest Service campground		11/1/2004	6.95	275	7.39	9.55	10			
White Mtn wilderness	48ThreeR022.8	Three Rivers at Forest Service campground		11/3/2004	7.71	275	7.45	10.14	3			

Table 3. Macroinvertebrate sampling results

Station ID	Location	Date	No. Taxa
48DogCan002.7	Dog Canyon at Nature Trail	11/02/2005	24
48DogCan002.7	Dog Canyon at Nature Trail	11/02/2004	46
48ThreeR022.8	Three Rivers at USFS Campground	11/03/2004	23

Table 4. Selected Chemical Data

Station	Coll Date	Analyte name	Sample Type	mg/L
Dog Canyon at Nature Trail - 48DogCan002.7	7/7/2004	Ammonia	Nutrients (total)	0.1
Dog Canyon at Nature Trail - 48DogCan002.7	7/7/2004	Phosphorus, Total	Nutrients (total)	0.03
Dog Canyon at Nature Trail - 48DogCan002.7	7/7/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.214
Dog Canyon at Nature Trail - 48DogCan002.7	7/7/2004	Aluminum	Metals (dissolved)	0.01
Dog Canyon at Nature Trail - 48DogCan002.7	8/3/2004	Ammonia	Nutrients (total)	0.1
Dog Canyon at Nature Trail - 48DogCan002.7	8/3/2004	Phosphorus, Total	Nutrients (total)	0.03
Dog Canyon at Nature Trail - 48DogCan002.7	8/3/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.182
Dog Canyon at Nature Trail - 48DogCan002.7	8/26/2004	Ammonia	Nutrients (total)	0.1
Dog Canyon at Nature Trail - 48DogCan002.7	8/26/2004	Phosphorus, Total	Nutrients (total)	0.03
Dog Canyon at Nature Trail - 48DogCan002.7	8/26/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.155
Dog Canyon at Nature Trail - 48DogCan002.7	8/26/2004	Aluminum	Metals (dissolved)	0.01
Dog Canyon at Nature Trail - 48DogCan002.7	10/5/2004	Ammonia	Nutrients (total)	0.1
Dog Canyon at Nature Trail - 48DogCan002.7	10/5/2004	Phosphorus, Total	Nutrients (total)	0.03
Dog Canyon at Nature Trail - 48DogCan002.7	10/5/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.18
Dog Canyon at Nature Trail - 48DogCan002.7	11/2/2004	Ammonia	Nutrients (total)	0.1
Dog Canyon at Nature Trail - 48DogCan002.7	11/2/2004	Phosphorus, Total	Nutrients (total)	0.003

Station	Coll Date	Analyte name	Sample Type	mg/L
Dog Canyon at Nature Trail - 48DogCan002.7	11/2/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.21
Dog Canyon at Nature Trail - 48DogCan002.7	11/2/2005	Ammonia	Nutrients (total)	0.1
Dog Canyon at Nature Trail - 48DogCan002.7	11/2/2005	Phosphorus, Total	Nutrients (total)	0.005
Dog Canyon at Nature Trail - 48DogCan002.7	11/2/2005	Total Kjehldal Nitrogen	Nutrients (total)	0.1
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	7/8/2004	Ammonia	Nutrients (total)	0.1
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	7/8/2004	Phosphorus, Total	Nutrients (total)	0.03
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	7/8/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.347
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	7/8/2004	Aluminum	Metals (dissolved)	0.01
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	7/8/2004	Ammonia	Nutrients (total), dup	0.1
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	7/8/2004	Phosphorus, Total	Nutrients (total), dup	0.03
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	7/8/2004	Total Kjehldal Nitrogen	Nutrients (total), dup	0.175
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	7/8/2004	Aluminum	Metals (dissolved), dup	0.01
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	8/3/2004	Ammonia	Nutrients (total)	0.15
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	8/3/2004	Phosphorus, Total	Nutrients (total)	0.0524
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	8/3/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.356
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	8/26/2004	Ammonia	Nutrients (total)	0.1
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	8/26/2004	Phosphorus, Total	Nutrients (total)	0.03
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	8/26/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.1
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	8/26/2004	Aluminum	Metals (dissolved)	0.02
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	10/5/2004	Ammonia	Nutrients (total)	0.1
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	10/5/2004	Phosphorus, Total	Nutrients (total)	0.031
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	10/5/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.1
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	11/1/2004	Ammonia	Nutrients (total)	0.1
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	11/1/2004	Phosphorus, Total	Nutrients (total)	0.065
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	11/1/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.41
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	11/1/2004	Aluminum	Metals (total, full suite)	0.41
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	11/3/2004	Ammonia	Nutrients (total)	0.1
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	11/3/2004	Phosphorus, Total	Nutrients (total)	0.03
THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	11/3/2004	Total Kjehldal Nitrogen	Nutrients (total)	0.26

There are no EMAP or USGS gauge data for stations in this nomination area.

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Upper Rio Grande Region

Assessment Units

Table 1. Nominated AUs with data

			Designated Uses									
HUC	**Water (AU) Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13020201	Alamo Canyon	121	HQCW, NA		NA	NA	NA	NA	NA	NA	Primary and secondary, NA	
13020101	Columbine Creek*	123	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13020101	East Fork Red River*	123	HQCW, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	
13020101	Nambe Lake	121	HQCW, Fully supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary and secondary, NA	
13020101	North Fork Tesuque Creek	121	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary and secondary, NA	
13020101	Rio Santa Barbara (USFS bnd to confl of E and W forks)	123	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13020201	Santa Fe Lake	121	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary and secondary, NA	
13020201	Santa Fe River (Nichols Rsvr to headwaters)	121	HQCW, Fully supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary and secondary, Fully supporting	
13020101	Serpent Lake	99	Coldwater, NA			NA	NA				Secondary, NA	
13020101	South Fork Tesuque Creek	121	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary and secondary, NA	
13020101	South Fork Rio Hondo	129	HQCW NA		NA	NA	NA	NA			Secondary, NA	

			Designated Uses									
HUC	**Water (AU) Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13020101	Tesuque Creek	121	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary and secondary, NA	
13020101	Williams Lake	123	HQCW, Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	

*Data source for development of impairment status is unknown

Table 2. Nominated AUs without data

			Designated Uses									
HUC	**Water (AU) Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13020101	Capulin Creek	119	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13020101	Goose Creek	123	HQCW, NA	NA	NA	NA	NA	NA			Secondary, NA	
13020101	Guaje Canyon	98	Aquatic life, NA			Not supporting	Not supporting				Secondary, NA	Gross alpha, selenium
13020101	Little Tesuque Creek	121	HQCW, Not supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary and secondary, NA	Aluminum
13020101	Medio Creek	121	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary and secondary, NA	
13020101	Middle Fork Lake of Rio la Casa	309	HQCW, NA		NA	NA	NA	NA	NA	NA	Secondary, NA	
13020101	Rendija Canyon	98	Aquatic life, fully supporting			Fully supporting	Not supporting				Secondary, NA	Selenium
13020101	Rio Chiquito	123	HQCW, Not supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	Turbidity

			Designated Uses									
HUC	**Water (AU) Name**	**WQS**	**Aquatic Life**	**Fish Culture**	**Irrigation**	**Livestock Watering**	**Wildlife Habitat**	**Domestic Water Supply**	**Municipal Water Supply**	**Industrial Water Supply**	**Contact**	**Impairment**
13020101	Rio de los Pinos	123	HQCW, Not supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting			Secondary, NA	Temperature
13020101	Rio de Truchas	123	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13020101	Rio Frijoles	121	HQCW, Fully supporting		Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary, secondary, NA	
13020101	Rio Medio	121	HQCW, Fully supporting		Fully supporting	NA	Fully supporting	Fully supporting	Fully supporting	Fully supporting	Primary, secondary, NA	
13020101	Rio Nambe	121	HQCW, Fully supporting		NA	NA	NA	Fully supporting	Fully supporting	Fully supporting	Primary, secondary, NA	
13020101	Rio Santa Barbara (west fork)	123	HQCW, ND, NA	ND, NA	ND, NA	ND, NA	ND, NA	ND, NA			Secondary, ND, NA	
13020101	Rio Santa Barbara (middle fork)	123	HQCW, ND, NA	ND, NA	ND, NA	ND, NA	ND, NA	ND, NA			Secondary, ND, NA	
13020101	Rio Santa Barbara (east fork)	123	HQCW, ND, NA	ND, NA	ND, NA	ND, NA	ND, NA	ND, NA			Secondary, ND, NA	
13020101	San Cristobal Creek	123	HQCW, Fully supporting	Fully supporting	Fully supporting	NA	Fully supporting	Fully supporting			Secondary, NA	
13020101	Trampas Creek	123	HQCW, Fully supporting	Fully supporting	NA	NA	NA	Fully supporting			Secondary, NA	

Monitoring Data

Thirteen monitoring stations are on nominated waters, or within ½ mile downstream.

Table 2. Field and bacteria monitoring results

ONRW parcel	Station ID	Station	Date	pH	EC	temp	DO	Turb	E. Coli	Fecal Coliform
					uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*	
Unnamed IRA	30AlamoC012.0	Alamo Canyon above Ponderosa Trail crossing	9/13/2001	7.99	116	11.98	8.86	3.2		
Unnamed IRA	28LTesuq010.5	Little Tesuque Creek at Hyde Park Road above Hyde Park	5/22/2001	7.66	125	9.78	8.12	8.56		
Unnamed IRA	28LTesuq010.5	Little Tesuque Creek at Hyde Park Road above Hyde Park	5/23/2001	7.67	128	10.7	8.19	7.65		
Unnamed IRA	28LTesuq010.5	Little Tesuque Creek at Hyde Park Road above Hyde Park	5/24/2001	7.73	131	10.64	7.9	8.44		
Unnamed IRA	28LTesuq010.5	Little Tesuque Creek at Hyde Park Road above Hyde Park	8/21/2001	8.01	254	12.24	6.53	1.61		
Unnamed IRA	28LTesuq010.5	Little Tesuque Creek at Hyde Park Road above Hyde Park	8/22/2001	7.87	217	12.32	6.91	1.36		
Unnamed IRA	28LTesuq010.5	Little Tesuque Creek at Hyde Park Road above Hyde Park	10/2/2001	7.81	308	9.68	7.85	5		
Unnamed IRA	28LTesuq010.5	Little Tesuque Creek at Hyde Park Road above Hyde Park	10/3/2001	7.7	305	10.66	7.41	0.4		
Unnamed IRA	28LTesuq010.5	Little Tesuque Creek at Hyde Park Road above Hyde Park	10/4/2001	8.01	308	10.03	7.6	0.1		
Pecos wilderness	28NambeLakeDp	Nambe Lake	8/23/2007						1	
Unnamed IRA	28NFkTes000.6	N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	5/22/2001	7.47	26	7.67	7.76	2.43		
Unnamed IRA	28NFkTes000.6	N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	5/23/2001	7.38	26	7.88	8.44	2.15		
Unnamed IRA	28NFkTes000.6	N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	5/24/2001	7.37	26	7.94	8.16	2.06		
Unnamed IRA	28NFkTes000.6	N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	8/21/2001	8.41	34	12.84	6.3	0.96		
Unnamed IRA	28NFkTes000.6	N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	8/22/2001	7.89	35	12.31	6.11	1.12		
Unnamed IRA	28NFkTes000.6	N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	10/2/2001	8.18	36	8.53	7.85	0.4		
Unnamed IRA	28NFkTes000.6	N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	10/3/2001	8.45	37	8.03	8.1	1.1		
Unnamed IRA	28NFkTes000.6	N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	10/4/2001	8.6	36	9.1	8.32	0.1		
Pecos IRA	28RSanBa017.9	Rio Santa Barbara at Santa Barbara Campground	9/30/2004	7.38	201	5.99	9.3	0.01		

ONRW parcel	Station ID	Station	Date	pH	EC	temp	DO	Turb	E. Coli	Fecal Coliform
					uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*	
Pecos IRA	28RSanBa017.9	Rio Santa Barbara at Santa Barbara Campground	8/26/2005	7.73	170	12.62	8.13	0		
Pecos IRA	28RSanBa017.9	Rio Santa Barbara at Santa Barbara Campground	8/11/2006	7.77	188	10.72	8.34	1		
Pecos IRA	28RSanBa017.9	Rio Santa Barbara at Santa Barbara Campground	11/2/2006	8.76	181	7.1	10.93	0		
Pecos wilderness	28SantaFeLake	Santa Fe Lake	8/21/2007						1	
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	5/31/2000	6.08	38.2	10	9.17	1.17		1.00
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	6/1/2000	7.36	38.9	9.7	9.29	1.09		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	8/28/2000	7.45	46.2	10.1	8.3	1.61		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	8/29/2000	7.64	45.4	10.1	8.75	1.27		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	8/30/2000	7.17	44.7	10.1	8.78	1.62		10.00
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	10/30/2000	7.21	56.6	4.8	9.55	9.73		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	10/31/2000	7.22	56.3	4	10.4	9.39		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	11/1/2000	7.12	56.6	2.3	10.1	7.59		1.00
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	5/1/2001	7.2	40.1	4.8	10.59	4.32		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	5/2/2001	6.9	38.5	3.8	9.57	4.83		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	5/3/2001	7.4	37.2	4	9.53	4.9		9.00
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	7/31/2001	6.97	43	12.52	8.11	1.3		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	8/1/2001	7.43	44	12.24	8.31	1.2	5	3.00
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	10/29/2001	8.04	48	6.39	9.27	0.1		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	10/30/2001	8.13	48	5.32	8.53	0.1		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	10/31/2001	7.77	48	6.55	8.85	1.3		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	4/23/2002	6.93	42.3	3.1	9.79	1.34		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	4/24/2002	6.43	41.9	4.5	9.31	0.96		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	4/25/2002	6.16	42	5.6	9.12	1.74		

ONRW parcel	Station ID	Station	Date	pH	EC	temp	DO	Turb	E. Coli	Fecal Coliform
					uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*	
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	8/20/2002	7.69	51	12.31	8.23	0.1		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	8/21/2002	7.63	51	11.64	8.13	1E-11	1	1.00
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	4/21/2003	7.83	47	2.8		3.5		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	4/22/2003	7.6	43	3.3	9.52	2.3		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	4/23/2003	7.34	43	1.61	10.22	4		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	9/9/2003	8.3	42	11.83	8.12	3.5		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	9/11/2003	7.9	47	9.23	8.52	5		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	9/23/2003						1	1.00
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	11/4/2003		42	2.27	9.6	0.1		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	11/5/2003	7.2	42	0.09	10.19	1.2		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	11/6/2003	7	41	0.09	10.06	0.8		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	5/11/2004		32	4.72	9.7	6.1		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	5/12/2004	6.51	31	4.22	10.02	7.8		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	5/13/2004	7.04	31	3.45	9.86	6		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	7/20/2004	7.64	44	14.01	7.62	1		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	7/20/2004	7.76	46	15.83	7.38	1		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	7/20/2004	7.9	57	14.93	8.01	5		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	7/21/2004	7.79	46	12	7.82	1		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	11/2/2004	8.09	58	0.03	10.96	1.6		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	11/3/2004	7.47	51	0.09	10.64	0.6	1	1.00
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	5/17/2006	7.57	38	7.92	8.77	0		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	8/23/2006	6.62	59	10.43	8.18	5.9		

ONRW parcel	Station ID	Station	Date	pH	EC	temp	DO	Turb	E. Coli	Fecal Coliform
					uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*	
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	10/12/2006	6.87	47	4.8	9.27	0.3		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	4/11/2007		48	0.44	10.42	4.1		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	8/27/2007	6.76	42	10.25	7.63	0.86		
Pecos wilderness	30SantaF061.2	Santa Fe River at lower wilderness boundary	10/26/2007	7.6	45	2.92	9.87	0		
Wheeler peak wilderness	28SFRHon00.1	South Fork Rio Hondo above Rio Hondo	3/24/2004	8.4	108	4.53	10.47	0.8		
Wheeler peak wilderness	28SFRHon00.1	South Fork Rio Hondo above Rio Hondo	9/22/2004	8.59	105	6.68	9.84	1		
Unnamed IRA	28SFkTes000.5	Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	5/22/2001	7.33	34	4.54	8.44	3.84		
Unnamed IRA	28SFkTes000.5	Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	5/23/2001	7.33	33	5.48	8.54	2.15		
Unnamed IRA	28SFkTes000.5	Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	5/24/2001	7.33	34	5.34	8.6	2.15		
Unnamed IRA	28SFkTes000.5	Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	8/21/2001	8.22	41	9.07	6.8	0.53		
Unnamed IRA	28SFkTes000.5	Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	8/22/2001	7.75	42	8.86	6.56	0.63		
Unnamed IRA	28SFkTes000.5	Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	10/2/2001	8.08	44	5.46	8.28	0.1		
Unnamed IRA	28SFkTes000.5	Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	10/3/2001	8.19	44	6	8.28	0.5		
Unnamed IRA	28SFkTes000.5	Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	10/4/2001	8.37	44	5.81	8.66	4		
Unnamed IRA	28Tesuqu023.4	Tesuque Creek at gage 08302500 near Santa Fe	5/22/2001	7.58	51	9.79	8.41	15.4		
Unnamed IRA	28Tesuqu023.4	Tesuque Creek at gage 08302500 near Santa Fe	5/23/2001	7.53	51	5.73	9.38	16.1		
Unnamed IRA	28Tesuqu023.4	Tesuque Creek at gage 08302500 near Santa Fe	5/24/2001	7.5	52	6.35	9.69	8.92		
Unnamed IRA	28Tesuqu023.4	Tesuque Creek at gage 08302500 near Santa Fe	8/21/2001	8.04	118	13.77	6.96	1.83		
Unnamed IRA	28Tesuqu023.4	Tesuque Creek at gage 08302500 near Santa Fe	8/22/2001	8.21	117	12.76	7.47	1.9		
Unnamed IRA	28Tesuqu023.4	Tesuque Creek at gage 08302500 near Santa Fe	10/2/2001	8.36	129	11.76	8.43	0.8		
Unnamed IRA	28Tesuqu023.4	Tesuque Creek at gage 08302500 near Santa Fe	10/3/2001	7.91	130	8.25	9.05	1.1		

ONRW parcel	Station ID	Station	Date	pH	EC	temp	DO	Turb	E. Coli	Fecal Coliform
					uS/cm	*°C*	*mg/L*	*ntu*	*cfu/100 ml*	
Unnamed IRA	28Tesuqu023.4	Tesuque Creek at gage 08302500 near Santa Fe	10/4/2001	8.11	87	8.07	8.88	0.8		
Wheeler Peak wilderness	28WilliamsLkD	Williams Lake	8/8/2007						36.60	

Table 3. Thermograph results in °C for 30SantaF061.2 (at wilderness boundary)

Dates	6/24/02-10/11/02	6/20/03-9/11/03	6/19/04-9/10/04
No. of readings	2621	1989	2000
Min	3.73	6.64	6.91
Max	27.32	18.13	17.92

Table 4. Sonde results for 28Tesuqu023.4
11/08/04-11/17/04

Parameter	Temp	SpCond	TDS	Salinity	DO Conc	pH	Turbidity
Unit	**C**	**mS/cm**	**g/L**	**ppt**	**mg/L**		**NTU**
Min	0.95	0.131	0.085	0.06	9.94	6.71	1.5
Max	6.81	0.176	0.114	0.08	12.74	7.71	13.4

Table 5. Macroinvertebrate sampling results

StationID	Location	CollDate	TotalTaxa
28NFkTes002.1	North Fork Tesuque Creek at Santa Fe Ski Basin Road (above FR 150)	09/15/1987	30
28RSanBa017.9	Rio Santa Barbara at SB campground	09/15/2001	23
28RSanBa017.9	Rio Santa Barbara at SB campground	08/26/2005	37
28RSanBa013.2	Rio Santa Barbara at upper Santa Barbara campground	09/30/2004	29
30SantaF061.2	Santa Fe River 100 m above Wilderness Area Boundary	09/09/2000	36
30SantaF061.2	Santa Fe River 100 m above Wilderness Area Boundary	10/10/2002	20
30SantaF061.2	Santa Fe River 100 m above Wilderness Area Boundary	11/01/2001	24
30SantaF061.2	Santa Fe River 100 m above Wilderness Area Boundary	09/28/2004	46

StationID	Location	CollDate	TotalTaxa
30SantaF061.2	Santa Fe River 100 m above Wilderness Area Boundary	10/12/2006	41

Table 6. Selected Chemical Data

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
Middle Fork Lake	28MiddleForkD	8/1/2007	Aluminum	0.01	Metals (dissolved)
Middle Fork Lake	28MiddleForkD	8/1/2007	Ammonia	0.1	Nutrients (dissolved)
Middle Fork Lake	28MiddleForkD	8/1/2007	Ammonia	0.1	Nutrients (total)
Middle Fork Lake	28MiddleForkD	8/1/2007	Phosphorus, Total	0.03	Nutrients (dissolved)
Middle Fork Lake	28MiddleForkD	8/1/2007	Phosphorus, Total	0.026	Nutrients (total)
Middle Fork Lake	28MiddleForkD	8/1/2007	Total Kjehldal Nitrogen	0.41	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	5/22/2001	Ammonia	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	5/22/2001	Phosphorus, Total	0.03	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	5/22/2001	Total Kjehldal Nitrogen	0.115	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	5/23/2001	Ammonia	0.125	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	5/23/2001	Phosphorus, Total	0.036	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	5/23/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	5/24/2001	Ammonia	0.12	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	5/24/2001	Phosphorus, Total	0.03	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	5/24/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	8/21/2001	Ammonia	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	8/21/2001	Phosphorus, Total	0.03	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	8/21/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	8/22/2001	Ammonia	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	8/22/2001	Phosphorus, Total	0.044	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	8/22/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	10/2/2001	Ammonia	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	10/2/2001	Phosphorus, Total	0.03	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	10/2/2001	Total Kjehldal Nitrogen	0.12	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	10/3/2001	Ammonia	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	10/3/2001	Phosphorus, Total	0.03	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	10/3/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	10/4/2001	Ammonia	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	10/4/2001	Phosphorus, Total	0.03	Nutrients (total)
N.FORK OF TESUQUE CR ABV HYDE PARK (475) RD	28NFkTes000.6	10/4/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Nambe Lake (Cirque)	28NambeLakeDp	8/23/2007	Aluminum	0.01	Metals (dissolved)
Nambe Lake (Cirque)	28NambeLakeDp	8/23/2007	Ammonia	0.1	Nutrients (dissolved)
Nambe Lake (Cirque)	28NambeLakeDp	8/23/2007	Ammonia	0.1	Nutrients (total)
Nambe Lake (Cirque)	28NambeLakeDp	8/23/2007	Phosphorus, Total	0.01	Nutrients (dissolved)
Nambe Lake (Cirque)	28NambeLakeDp	8/23/2007	Phosphorus, Total	0.011	Nutrients (total)
Nambe Lake (Cirque)	28NambeLakeDp	8/23/2007	Total Kjehldal Nitrogen	0.26	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	9/30/2004	Ammonia	0.1	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	9/30/2004	Phosphorus, Total	0.03	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	9/30/2004	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	8/26/2005	Ammonia	0.1	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	8/26/2005	Phosphorus, Total	0.007	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	8/26/2005	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	8/11/2006	Ammonia	0.1	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	8/11/2006	Phosphorus, Total	0.006	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	8/11/2006	Total Kjehldal Nitrogen	0.5	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	11/2/2006	Ammonia	0.1	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	11/2/2006	Phosphorus, Total	0.03	Nutrients (total)
Rio Santa Barbara at Santa Barbara Campground	28RSanBa017.9	11/2/2006	Total Kjehldal Nitrogen	0.52	Nutrients (total)
Santa Fe Lake (Cirque)	28SantaFeLake	8/21/2007	Aluminum	0.01	Metals (dissolved)
Santa Fe Lake (Cirque)	28SantaFeLake	8/21/2007	Ammonia	0.1	Nutrients (dissolved)
Santa Fe Lake (Cirque)	28SantaFeLake	8/21/2007	Ammonia	0.1	Nutrients (total)
Santa Fe Lake (Cirque)	28SantaFeLake	8/21/2007	Phosphorus, Total	0.011	Nutrients (dissolved)
Santa Fe Lake (Cirque)	28SantaFeLake	8/21/2007	Phosphorus, Total	0.01	Nutrients (total)
Santa Fe Lake (Cirque)	28SantaFeLake	8/21/2007	Total Kjehldal Nitrogen	0.35	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/31/2000	Aluminum	0.05	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/31/2000	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/31/2000	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/31/2000	Total Kjehldal Nitrogen	0.2	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	6/1/2000	Aluminum	0.05	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	6/1/2000	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	6/1/2000	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	6/1/2000	Total Kjehldal Nitrogen	0.1	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/28/2000	Aluminum	0.08	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/28/2000	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/28/2000	Phosphorus, Total	0.05	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/28/2000	Total Kjehldal Nitrogen	0.208	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/29/2000	Aluminum	0.13	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/29/2000	Aluminum	0.11	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/29/2000	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/29/2000	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/29/2000	Phosphorus, Total	0.05	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/29/2000	Phosphorus, Total	0.05	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/29/2000	Total Kjehldal Nitrogen	0.17	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/29/2000	Total Kjehldal Nitrogen	0.17	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/30/2000	Aluminum	0.06	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/30/2000	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/30/2000	Phosphorus, Total	0.05	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/30/2000	Total Kjehldal Nitrogen	0.24	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/30/2000	Aluminum	1.2	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/30/2000	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/30/2000	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/30/2000	Total Kjehldal Nitrogen	0.283	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/31/2000	Aluminum	1.1	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/31/2000	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/31/2000	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/31/2000	Total Kjehldal Nitrogen	0.228	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/1/2000	Aluminum	1	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/1/2000	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/1/2000	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/1/2000	Total Kjehldal Nitrogen	0.281	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/1/2001	Aluminum	0.32	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/1/2001	Aluminum	0.37	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/1/2001	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/1/2001	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/1/2001	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/1/2001	Phosphorus, Total	0.03	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/1/2001	Total Kjehldal Nitrogen	0.17	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/1/2001	Total Kjehldal Nitrogen	0.157	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/2/2001	Aluminum	0.34	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/2/2001	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/2/2001	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/2/2001	Total Kjehldal Nitrogen	0.224	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/3/2001	Aluminum	0.26	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/3/2001	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/3/2001	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/3/2001	Total Kjehldal Nitrogen	0.198	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/31/2001	Aluminum	0.05	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/31/2001	Aluminum	0.06	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/31/2001	Aluminum	0.06	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/31/2001	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/31/2001	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/31/2001	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/31/2001	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/31/2001	Total Kjehldal Nitrogen	0.135	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/31/2001	Total Kjehldal Nitrogen	0.112	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/1/2001	Aluminum	0.05	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/1/2001	Ammonia	0.35	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/1/2001	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/1/2001	Total Kjehldal Nitrogen	0.116	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/29/2001	Aluminum	0.02	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/29/2001	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/29/2001	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/29/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/30/2001	Aluminum	0.02	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/30/2001	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/30/2001	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/30/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/31/2001	Aluminum	0.02	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/31/2001	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/31/2001	Phosphorus, Total	0.03	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/31/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/23/2002	Aluminum	0.06	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/23/2002	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/23/2002	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/23/2002	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/24/2002	Aluminum	0.05	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/24/2002	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/24/2002	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/24/2002	Total Kjehldal Nitrogen	0.104	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/25/2002	Aluminum	0.05	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/25/2002	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/25/2002	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/25/2002	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/20/2002	Aluminum	0.01	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/20/2002	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/20/2002	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/20/2002	Total Kjehldal Nitrogen	0.17	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/21/2002	Aluminum	0.01	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/21/2002	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/21/2002	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/21/2002	Total Kjehldal Nitrogen	0.112	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/21/2003	Aluminum	0.47	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/21/2003	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/21/2003	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/21/2003	Total Kjehldal Nitrogen	0.117	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/22/2003	Aluminum	0.39	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/22/2003	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/22/2003	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/22/2003	Total Kjehldal Nitrogen	0.205	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/23/2003	Aluminum	0.3	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/23/2003	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/23/2003	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/23/2003	Total Kjehldal Nitrogen	0.177	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	9/9/2003	Aluminum	0.05	Metals (dissolved)

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
Santa Fe River at lower wilderness boundary	30SantaF061.2	9/9/2003	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	9/9/2003	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	9/9/2003	Total Kjehldal Nitrogen	0.174	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	9/11/2003	Aluminum	0.35	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	9/11/2003	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	9/11/2003	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	9/11/2003	Total Kjehldal Nitrogen	0.267	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/4/2003	Aluminum	0.02	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/4/2003	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/4/2003	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/4/2003	Total Kjehldal Nitrogen	0.12	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/5/2003	Aluminum	0.02	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/5/2003	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/5/2003	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/5/2003	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/6/2003	Aluminum	0.02	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/6/2003	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/6/2003	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/6/2003	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/11/2004	Aluminum	0.17	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/11/2004	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/11/2004	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/11/2004	Total Kjehldal Nitrogen	0.325	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/12/2004	Aluminum	0.16	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/12/2004	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/12/2004	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/12/2004	Total Kjehldal Nitrogen	0.323	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/13/2004	Aluminum	0.14	Metals (Hg/Se)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/13/2004	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/13/2004	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/13/2004	Total Kjehldal Nitrogen	0.263	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/20/2004	Aluminum	0.03	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/20/2004	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/20/2004	Phosphorus, Total	0.03	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/20/2004	Total Kjehldal Nitrogen	0.144	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/21/2004	Aluminum	0.03	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/21/2004	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/21/2004	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	7/21/2004	Total Kjehldal Nitrogen	0.121	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/2/2004	Aluminum	0.03	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/2/2004	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/2/2004	Phosphorus, Total	0.016	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/2/2004	Total Kjehldal Nitrogen	0.27	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/3/2004	Aluminum	0.04	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/3/2004	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/3/2004	Phosphorus, Total	0.006	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	11/3/2004	Total Kjehldal Nitrogen	0.11	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/17/2006	Aluminum	0.03	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/17/2006	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/17/2006	Phosphorus, Total	0.015	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	5/17/2006	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/23/2006	Aluminum	0.44	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/23/2006	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/23/2006	Phosphorus, Total	0.04	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/23/2006	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/11/2007	Aluminum	0.5	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/11/2007	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/11/2007	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	4/11/2007	Total Kjehldal Nitrogen	0.323	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/27/2007	Aluminum	0.04	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/27/2007	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/27/2007	Phosphorus, Total	0.03	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	8/27/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/26/2007	Aluminum	0.03	Metals (dissolved)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/26/2007	Ammonia	0.1	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/26/2007	Phosphorus, Total	0.01	Nutrients (total)
Santa Fe River at lower wilderness boundary	30SantaF061.2	10/26/2007	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Serpent Lake (Carson NF)	28SerpentLkDp	7/31/2007	Aluminum	0.05	Metals (dissolved)

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
Serpent Lake (Carson NF)	28SerpentLkDp	7/31/2007	Ammonia	0.1	Nutrients (dissolved)
Serpent Lake (Carson NF)	28SerpentLkDp	7/31/2007	Ammonia	0.1	Nutrients (total)
Serpent Lake (Carson NF)	28SerpentLkDp	7/31/2007	Phosphorus, Total	0.03	Nutrients (dissolved)
Serpent Lake (Carson NF)	28SerpentLkDp	7/31/2007	Phosphorus, Total	0.032	Nutrients (total)
Serpent Lake (Carson NF)	28SerpentLkDp	7/31/2007	Total Kjehldal Nitrogen	1.39	Nutrients (total)
South Fork Rio Hondo above Rio Hondo	28SFRHon00.1	3/24/2004	Ammonia	0.1	Nutrients (total)
South Fork Rio Hondo above Rio Hondo	28SFRHon00.1	3/24/2004	Phosphorus, Total	0.03	Nutrients (total)
South Fork Rio Hondo above Rio Hondo	28SFRHon00.1	3/24/2004	Total Kjehldal Nitrogen	0.144	Nutrients (total)
South Fork Rio Hondo above Rio Hondo	28SFRHon00.1	9/22/2004	Ammonia	0.1	Nutrients (total)
South Fork Rio Hondo above Rio Hondo	28SFRHon00.1	9/22/2004	Phosphorus, Total	0.03	Nutrients (total)
South Fork Rio Hondo above Rio Hondo	28SFRHon00.1	9/22/2004	Total Kjehldal Nitrogen	0.31	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	5/22/2001	Ammonia	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	5/22/2001	Phosphorus, Total	0.03	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	5/22/2001	Total Kjehldal Nitrogen	0.147	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	5/23/2001	Ammonia	0.135	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	5/23/2001	Phosphorus, Total	0.03	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	5/23/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	5/24/2001	Ammonia	0.13	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	5/24/2001	Phosphorus, Total	0.03	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	5/24/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	8/21/2001	Ammonia	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	8/21/2001	Phosphorus, Total	0.053	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	8/21/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	8/22/2001	Ammonia	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	8/22/2001	Phosphorus, Total	0.03	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	8/22/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	10/2/2001	Ammonia	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	10/2/2001	Phosphorus, Total	0.03	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	10/2/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	10/3/2001	Ammonia	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	10/3/2001	Phosphorus, Total	0.03	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	10/3/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	10/4/2001	Ammonia	0.1	Nutrients (total)
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	10/4/2001	Phosphorus, Total	0.03	Nutrients (total)

Station	Station ID	Coll Date	Analyte	mg/L	Sample Type
Tesuque Creek (south fork) above Hyde Park Road (Hwy 475)	28SFkTes000.5	10/4/2001	Total Kjehldal Nitrogen	0.1	Nutrients (total)

An EMAP survey was conducted for Rio Santa Barbara at Santa Barbara Campground - 28RSanBa017.9.

Water quality data are available for USGS gauge no. 08302500, TESUQUE CREEK ABOVE DIVERSIONS for 1974-75.

Appendix 19: Sample Best Management Practices

The 1999 New Mexico Nonpoint Source (NPS) Management Plan describes innovative programs and progressive actions necessary to reduce pollutants from nonpoint sources entering surface water and ground water. Nonpoint source pollution is the leading cause of water quality degradation in the United States and severely impacts New Mexico's streams and rivers. Nonpoint source pollution comes from a variety of diffuse sources. As rainfall or snowmelt moves over and through the ground, the runoff accumulates and transports natural and anthropogenic pollutants depositing them into lakes, rivers, wetlands, and aquifers. The NPS Management Program is coordinated by the Surface Water Quality Bureau (SWQB) of the New Mexico Environment Department (NMED).

NPS pollution controls are typically established through implementation of management practices that are structural or nonstructural in nature. Structural practices include diversions, temporary sediment basins, animal waste lagoons, fencing, terraces, rock check dams and other constructed means of reducing impairments to surface water and ground water. Nonstructural practices relate to resource management techniques, such as timing and rate of fertilizer or pesticide application, conservation tillage methods, livestock grazing rotation, riparian planting, upland revegetation and other techniques.

The Outstanding National Resource Waters (ONRW) proposed under this petition will affect Wilderness and inventoried roadless areas administered by the U.S. Forest Service. All activities on U.S. Forest Service lands that have the potential to impact soil erosion and water quality are required to apply BMPs such as those listed below. The requirements for land use activities in National Forests are found in the Forest Service Manual and Handbooks at the USDA Forest Service Southwestern Region website http://www.fs.fed.us/r3/publications/index.shtml.

The list below is not intended to be comprehensive or exclusive, but represents a sample of current Best Management Practices (BMPs) extracted from state and federal publications. The actual selection of appropriate BMPs for a particular project are made on a case-by-case basis. See the BMP Bibliography at the end of this appendix for more information.

Adapted from:
New Mexico Environment Department 1999. New Mexico's Nonpoint Source (NPS) Management Plan and Assessment Report dated December 1999. http://www.nmenv.state.nm.us/swqb/NPS_Management_Plan-1999.pdf

and

New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division. 2008. New Mexico Forest Practices Guidelines.
http://www.emnrd.state.nm.us/fd/Publications/PubsMain.htm

Rangeland

Grazing/wildlife management:

- determine grazing capability of lands

- monitor grazing/wildlife use
- planned grazing systems such as rest/rotation, seasonal or pasture rotation
- control livestock/wildlife use in sensitive areas including riparian/wetland areas
- livestock/wildlife water development to better distribute use
- relocate livestock trails to better distribute livestock use
- riding or herding to shift livestock locations
- using salt or supplemental feed as tools to gain proper distribution of livestock

Gully erosion control:
- grade stabilization structure
- rock and brush dam
- debris basin
- diversion around eroding areas
- reestablishment of vegetation in riparian areas
- maintenance of erosion control structures

Critical area treatment to restore vegetative cover:
- grazing land mechanical treatment
- critical area planting
- mulching

Vegetative management practices to improve cover:
- brush management
- range seeding
- prescribed burning

Silviculture

Harvesting, reforestation, and residue management
- designate streamside management areas to provide stream shading, soil stabilization, sediment and water filtering effects and wildlife habitat
- streamside management areas encompass a strip at least 50 feet wide on each side of the stream, measured from the ordinary (yearly average) high-water mark or definable bank.
- design timber harvest units to minimize water quality impacts
- timber harvest limitations to protect steep slopes (>30%) or unstable areas
- clear delineation of protected areas in timber sale maps and special marking on the ground
- limiting the operating period of timber sale activities
- harvest when soils are frozen
- elimination of unstable stands from harvest units
- prescribing size, location and shape of clear cuts
- determining tractor loggable ground
- proper tractor skidding location and design
- suspended log yarding on sensitive areas (e.g., streamside management zones and steep slopes)

- proper log landing location
- special erosion prevention measures on disturbed lands
- site preparation for reforestation
- revegetation of areas disturbed by harvest activities
- log landing erosion prevention and control
- erosion control on skid trails
- meadow protection during timber harvesting
- proper location and method of stream crossings
- equipment kept out of streams
- erosion control structures and energy dissipaters
- maintenance of erosion control structures
- review and approval of timber sale erosion control measures before sale closure
- slash treatment in sensitive areas
- reforestation
- soil moisture and wetland limitations for equipment and vehicle use
- use of sale area maps for designating water protection needs
- directional felling of trees near streamside management zones
- modify timber sale contract if necessary as soon as water quality concerns are identified
- end-line logs out of streamside management zones

Fire suppression and fuels management
- fire and fuel management activities to reduce frequency, intensity and destructiveness of wildfires
- consideration of water quality in formulating fire prescriptions
- protection of water quality from prescribed burning effects
- minimizing watershed damage from fire suppression efforts
- repair or stabilization of watershed damage related to fire suppression activities
- emergency rehabilitation of watershed following intense fires

Road Construction and Maintenance

Road design
- provide proper drainage with use of outsloping, grade reversals, and cross drains
- minimize the number of roads constructed in a watershed
- limit the alteration of natural drainage patterns by following contours and minimizing cuts, fill and stream crossings.
- avoid problem areas such as flood zones, narrow canyon bottoms, wet areas, steep slopes, and highly erodible or unstable soils
- locate roads away from streams
- maintain a buffer strip of undisturbed soil and vegetation between the road and stream
- minimize road grade

Road construction
- develop and implement erosion control plans

- time construction activities to avoid wet periods
- dispersion of subsurface drainage from cut and fill slopes
- timely erosion control measures on actively eroding areas
- properly orient, design and maintain stream crossings
- construction of stable embankments
- control of sidecast materials
- minimize in-channel excavation
- divert flows around construction sites
- spill prevention plans should be mandatory part of all construction projects
- proper bridge and culvert installation
- proper stream crossings on temporary roads
- regulation of streamside gravel borrow areas
- proper disposal of right-of-way and roadside debris
- specifying riprap composition
- water source development consistent with water quality protection
- restrict machinery to the designated construction zone
- remove debris from stream channels that was added during construction
- limit removal of vegetation especially adjacent to streams
- deposit surplus soil and rock in areas where sediment will not threaten streams
- compact all fill material
- equipment kept out of streams unless necessary
- refuel and service machinery well away from streams
- revegetate denuded areas with appropriate native vegetation

Culvert Installation
- determine the necessary culvert diameter for expected high flows
- culvert should be long enough to extend beyond fill
- align the culvert with the stream, at the existing grade, and at the depth of the streambed
- compact surrounding fill
- protect fill material with armoring

Road maintenance
- regular maintenance and inspection
- inspect drainage structures frequently
- road surface treatment to prevent erosion
- correct erosion issues early
- traffic control during wet periods
- snow removal controls to avoid resource damage
- obliteration of temporary roads
- restoration of borrow pits and quarries
- prevent side casting materials into streams or wetlands
- reduce use of salt for deicing roads in sensitive areas

Road closure

- remove stream crossing structures on roads to be permanently closed
- reestablish natural drainage pattern
- revegetate denuded areas with appropriate native vegetation
- prevent unauthorized vehicle access

Recreation Management

- surface erosion control of facility sites and recreation sites
- provide and maintain sanitation facilities
- control of refuse disposal
- sanitation at hydrants and water faucets within developed recreation sites
- proper location of pack and riding stock facilities
- management of off-road vehicle (ORV) use
- heavy use area protection
- public information on water quality protection at recreation areas
- recreation area closure or relocation

Resource Extraction/Exploration/Development

General
- limit the total area of disturbed ground
- implement and maintain erosion control measures
- reclamation including revegetation
- maintain vegetated buffer zone along watercourses
- erosion control from exploration through closure

Surface mining
- mined land reclamation including revegetation
- control of runoff into or through mine
- treatment of acid mine drainage

Mill Tailings and Mine Tailings
- tailings stabilization
- tailings relocation
- channeling runoff around tailings

Oil and Gas Exploration and Production
- pit closures
- plug orphan wells
- provide secondary containment for above ground storage tanks
- implement spill prevention control and countermeasure plans

Best Management Practices Bibliography (website links current as of 8/28/08):

New Mexico Environment Department (NMED)
New Mexico's upgraded Nonpoint Source (NPS) Management Program and Assessment Report dated December 1999. http://www.nmenv.state.nm.us/swqb/NPS_Management_Plan-1999.pdf

NMED Information on USEPA NPDES Stormwater Program:
http://www.nmenv.state.nm.us/SWQB/StormWater/index.html

New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division
New Mexico Forest Practices Guidelines (2008).
http://www.emnrd.state.nm.us/fd/Publications/PubsMain.htm

New Mexico Department Game & Fish (NMDGF), Conservation Services Division
Habitat Handbook Topics: http://wildlife.state.nm.us/conservation/habitat_handbook/index.htm

Bridge & Road Construction in Riparian Area Guidelines (2003).
http://wildlife.state.nm.us/conservation/habitat_handbook/documents/BridgeandRoadConstructionGuidelines.pdf

Powerline Project Guidelines (2004)
http://wildlife.state.nm.us/conservation/habitat_handbook/documents/PowerlineProjectGuidelines.pdf

Riparian Grazing Guidelines (2004)
http://wildlife.state.nm.us/conservation/habitat_handbook/documents/ripariangrazingguidelines.pdf

Mining Guidelines (2004)
http://wildlife.state.nm.us/conservation/habitat_handbook/documents/MiningGuidelines.htm

Bridge & Road Construction Guidelines (2006)
http://wildlife.state.nm.us/conservation/habitat_handbook/documents/2006BridgeandRoadConstructionGuidelinesFinal.pdf

Oil and Gas Guidelines (2007) http://wildlife.state.nm.us/documents/oilandgasguidelines.pdf

Living with Beavers: A Guide for Solving Beaver-Human Conflicts Developed by Animal Protection of New Mexico & New Mexico Department of Game and Fish:
http://www.nmenv.state.nm.us/SWQB/WPS/Beavers.pdf

New Mexico Department of Transportation (NMDOT)
NMDOT Drainage Manuals:
http://nmshtd.state.nm.us/main.asp?secid=15697

NMDOT NPDES Manual:

http://www.nmshtd.state.nm.us/main.asp?secid=11161

NMDOT Specifications:
http://nmshtd.state.nm.us/main.asp?secid=11183

NMDOT Plans, Specifications and Estimates Standard Drawings:
http://www.nmshtd.state.nm.us/main.asp?secid=14793

US Department of Agriculture, US Forest Service
Soil and Water Conservation Practices Handbook. USDA. Forest Service, Southwestern Region. October, 1992. Albuquerque, NM. http://www.fs.fed.us/cgi-bin/Directives/get_dirs/fsh?2509.22!r3

Trail Construction and Maintenance Notebook. US Forest Service. 2007 Edition. Missoula, MT. http://www.fhwa.dot.gov/environment/fspubs/07232806/index.htm

US Department of Agriculture, Natural Resource Conservation Service (NRCS)
Field Office Technical Guide. http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=NM

National Conservation Practice Standards.
http://www.nrcs.usda.gov/technical/standards/nhcp.html

US Department of the Interior, Bureau of Land Management
Gold Book - Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (2007)
http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/oil_and_gas.Par.18714.File.dat/OILgas.pdf

Federal Highway Administration (FHWA)
FHWA Environmental (National Environmental Policy Act):
http://www.fhwa.dot.gov/environment/index.htm
http://www.environment.fhwa.dot.gov/guidebook/index.asp

FHWA Hydraulics Engineering:
http://www.fhwa.dot.gov/engineering/hydraulics/

FHWA Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance, Hydraulic Engineering Circular (HEC) No. 23:
http://www.fhwa.dot.gov/engineering/hydraulics/library_arc.cfm?pub_number=23&id=49.

National Transportation Library
Low-Volume Roads Engineering, Best Management Practices Field Guide:
http://ntl.bts.gov/lib/24000/24600/24650/Index_BMP_Field_Guide.htm

Transportation Research Board (TRB), National Cooperative Highway Research Program (NCHRP)
Environmentally Sensitive Channel- and Bank-Protection Measures, NCHRP Report 544:

http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_544.pdf

American Association of State Highway Transportation Officials (AASHTO)
AASHTO Construction Maintenance Practices Manual:
http://environment.transportation.org/environmental_issues/construct_maint_prac/compendium/manual/

U.S. Environmental Protection Agency (USEPA) Nonpoint Source
USEPA Nonpoint Source Information:
http://www.epa.gov/ebtpages/watewaterpollutionnonpointsources.html
http://www.epa.gov/owow/nps/categories.html

USEPA Nonpoint Source Information for Roads, Highways and Bridges:
http://www.epa.gov/owow/nps/roadshwys.html

USEPA Nonpoint Source Gravel Roads, Maintenance and Design Manual:
http://www.epa.gov/owow/nps/gravelroads/

USEPA National Management Measures to Control Nonpoint Source Pollution from Hydromodification:
http://www.epa.gov/owow/nps/hydromod/index.htm

U.S. Environmental Protection Agency (USEPA) National Pollution Discharge Elimination System (NPDES) Point Source
USEPA Construction General Permit Information:
http://cfpub1.epa.gov/npdes/stormwater/cgp.cfm

Other
"Stream Restoration in the Vicinity of Bridges" published by Journal of the American Water Resources Association:
http://www.wildlandhydrology.com/assets/SRITVOB.pdf

Rangeland Health and Planned Grazing Field Guide. Quivira Coalition and Earth Works Institute. January 2007. Santa Fe, NM. http://quiviracoalition.org/images/pdfs/77-Planned_Grazing_Field_Guide.pdf

An Introduction to Erosion Control. Earth Works Institute, Quivira Coalition, and Zeedyk Ecological Consulting. March 2006 http://quiviracoalition.org/images/pdfs/73-Erosion_Control_Field_Guide.pdf