2018-2020
State of New Mexico Clean Water Act Section 303(d)/ Section 305(b) Integrated Report

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COVER PHOTO: Lower Charette Lake , May 2016, NMED/SWQB

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Abbreviations and Acronyms

ACWA	Association of Clean Water Administrators
ATTAINS	Assessment &Total Maximum Daily Load Tracking & Implementation System
AU	Assessment Unit
BLM	Bureau of Land Management
BOR	Best Management Practices
BMPs	U.S. Bureau of Reclamation
CALM	Comprehensive Assessment and Listing Methodology
CFR	Code of Federal Regulations
CPB	Construction Programs Bureau
CWA	Clean Water Act
CWSRF	Clean Water State Revolving Fund
DDT	dichlorodiphenyltrichloroethane
DO	Dissolved Oxygen
DWB	Drinking Water Bureau
DWSRLF	Drinking Water State Revolving Loan Fund
E. coli	*Escherichia coli*
EMNRD	Energy, Minerals, and Natural Resources Department
EPA	Environmental Protection Agency
FY	Fiscal Year
GIS	Geographic Information System
GKM	Gold King Mine
GRTS	Grant Reporting and Tracking System
GWQB	Ground Water Quality Bureau
HP	Hydrology Protocol
HUC	Hydrologic Unit Code
IR	Integrated Report
ISC	Interstate Stream Commission
MASS	Monitoring, Assessment and Standards Section
MCL	Maximum Contaminant Level
MS4	Municipal Separate Storm Sewer Systems
NARS	National Aquatic Resources Surveys
NMAC	New Mexico Administrative Code
NMDGF	New Mexico Department of Game and Fish
NMDOH	New Mexico Department of Health
NMED	New Mexico Environment Department
NMFA	New Mexico Finance Authority
NMRAM	New Mexico Rapid Assessment Method
NMSA	New Mexico Statutes Annotated
N-STEPS	Nutrient Scientific Technical Exchange Partnership and Support
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source

NRCS	Natural Resources Conservation Service
OSE	New Mexico Office of the State Engineer
PCBs	Polychlorinated Biphenyls
PSRS	Point Source Regulation Section
POTW	Publicly Owned Treatment Works
PWS	Public Water System
QA/QC	Quality Assurance/ Quality Control
QAPP	Quality Assurance Project Plan
QMP	Quality Management Plan
RLWTF	Radioactive Liquid Waste Treatment Facility
RSP	River Stewardship Program
RTCR	Revised Total Coliform Rule
SDWA	Safe Drinking Water Act
SLD	State Laboratory Division
SQUID	Surface water QUality Information Database
SWCD	Soil and Water Conservation District
SWQB	Surface Water Quality Bureau
TMDL	Total Maximum Daily Load
UOC	Utility Operator Certification
USACE	United States Army Corp of Engineers
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WBP	Watershed-Based Plan
WPP	Wetlands Program Plan
WPS	Watershed Protection Section
WQA	Water Quality Act (New Mexico)
WQCC	New Mexico Water Quality Control Commission
WQMP/CPP	Water Quality Management Plan / Continuing Planning Process
WQS	Water Quality Standards
WQX	Water Quality Exchange
WWTP	Wastewater Treatment Plant

Executive Summary

The protection of water quality in New Mexico is vitally important to the health and well-being of all New Mexicans and the aquatic life and wildlife that inhabit its waters. New Mexico uses a variety of mechanisms, including state, federal, and local programs, to protect and restore the quality of its surface and ground waters. The basic underpinnings of surface water protection as provided in the United States Clean Water Act (CWA) and the New Mexico Water Quality Act (WQA) are found in the State of New Mexico Standards for Interstate and Intrastate Surface Waters [20.6.4 NMAC]. Water quality standards are comprised of the designated uses of surface waters of the state, associated water quality criteria necessary to protect these uses, and an antidegradation policy. Designated uses in New Mexico include aquatic life, fish culture, primary and secondary contact (including cultural, religious or ceremonial purposes), public water supply, industrial water supply, domestic water supply, irrigation, livestock watering, and wildlife habitat. To protect these uses and fulfill the requirements set forth in the law, coordinated programs have been developed to monitor, assess, protect, and restore surface water quality throughout New Mexico.

The process of addressing impairments begins with the identification and reporting of impaired waterbodies (e.g., waterbodies not meeting their designated uses). This report, the State of New Mexico CWA §303(d)/ §305(b) Integrated Report (IR), is designed to fulfill this need as well as satisfy the statutory requirements of §303(d), §305(b), and §314 of the CWA. The IR includes information on primarily surface water quality and water pollution control programs in New Mexico to the United States Environmental Protection Agency (EPA), United States Congress, and stakeholders. The IR is prepared by the New Mexico Environment Department Surface Water Quality Bureau (SWQB) with input from several other NMED bureaus and programs, and is approved by the Water Quality Control Commission (WQCC).

The Canadian and Dry Cimarron River watersheds were surveyed by the SWQB in 2015-2016 and hence are the primary focus of revised or retained assessment conclusions this listing cycle. Additional focus areas based on submitted or acquired datasets include the Pajarito Plateau, San Juan and Animas Rivers with respect to the Gold King Mine 2015 spill, Upper Rio Grande watershed streams sampled by citizen monitoring groups, and the Gallinas River. The assessment conclusions in non-focus areas based on data from previous rotational surveys and previously submitted outside data are typically carried over to the next list until more current data are available to assess unless, for example, a water quality standard change necessitates a re-assessment. Using available data assessed against current designated uses through application of New Mexico's established listing methodologies, the SWQB continues to determine that temperature, nutrient/eutrophication, and E. coli are the three most common causes of river and stream water quality impairment in New Mexico. The three most common causes of water quality impairments in lakes and reservoirs continue to be mercury in fish tissue, PCBs in fish tissue, and temperature.

During development of the IR, impaired waterbodies are further evaluated to determine if changes to the standard may be appropriate, whether more data collection is necessary to confirm the impairment, or whether a total maximum daily load (TMDL) or alternative water quality improvement plan should be scheduled for development. TMDLs and other planning documents provide information on the probable source(s) of the water quality impairment which is used to determine the best approach to improve water quality. Field observations, available GIS layers and land use imagery, and both stakeholder and staff watershed knowledge are combined to develop draft Probable Source lists which are finalized in TMDL documents and added to subsequent Integrated Lists (Appendix A) and summarized in the IR. The vast majority of surface water quality impairments identified in New Mexico are due to nonpoint sources of water pollution. Agricultural practices (including rangeland grazing), increased runoff from roads and other impervious surfaces, and onsite treatment systems are the leading probable sources of impairment in New Mexico's rivers and streams where TMDLs have been prepared.

The EPA recommends and New Mexico has prepared the 2018-2020 IR consistent with previous guidance memorandums, including EPA's significant 2006 IR Guidance supplemented by subsequent memorandums released for each listing cycle (EPA 2005, 2017a). The 2018 IR is the start of a new approach to reporting that is intended to reduce reporting burden to states, tribes, and territories. Starting with EPA's process improvement event in 2015 (which the SWQB was invited to participate in as one of a handful of states), EPA has worked with states, tribes, and territories to streamline the IR reporting process through updating the system for recording IR data, namely the Assessment and Total Maximum Daily Load Tracking and Implementation System (ATTAINS). The new ATTAINS provides an opportunity for New Mexico to streamline the narrative portion of IR. Accordingly, the main body of the 2018 IR was significantly re-organized and shortened, as compared with previous reports, to better describe New Mexico's current water quality framework and focus on required IR elements that are not reported electronically via ATTAINS. The re-design is also intended to make the IR a more user-friendly document by providing additional hyperlinks to additional information should the user want to learn more about specific programs or restoration activities.

I. Water Quality Identification and Control in New Mexico

The New Mexico Water Quality Act (WQA) was adopted in 1967 to protect water quality in New Mexico. The New Mexico Legislature has revised the WQA [NMSA 1978, §§ 74-6-1 to -17] numerous times to improve the management and protection of New Mexico's water resources. The WQA created the New Mexico Water Quality Control Commission (WQCC), and several of the revisions expanded the duties and powers of the WQCC. The WQCC is the State water pollution control agency for all purposes of the federal Clean Water Act (CWA), and may take all necessary actions under the WQA to secure the benefits of the WQA [NMSA 1978, § 74-6-3(E)]. These duties include adoption of water quality standards and the adoption of regulations to prevent or abate water pollution in the State or in any specific geographic area or watershed of the State or for any class of waters. Under the WQA, water is defined as "all water, including water situated wholly or partly within or bordering upon the State, whether surface or subsurface, public or private, except private waters that do not combine with other surface or subsurface water." [NMSA 1978, § 74-6-2(H)]. Responsibilities for water quality management activities are assigned by the WQCC to the constituent agencies, primarily the New Mexico Environment Department (NMED). [NMSA 1978, § 74-6-4(F)].

San Juan River near Lions Park

The *State of New Mexico CWA §303(d)/ §305(b) Integrated Report* (Integrated Report or IR) is designed to satisfy the statutory requirements of §303(d), §305(b), and §314 of the CWA. The IR includes information on water quality and water pollution control programs in New Mexico to the United States Environmental Protection Agency (EPA) and the United States Congress, as well as to the general public. The IR is prepared by the NMED Surface Water Quality Bureau (SWQB) with input from several other NMED bureaus and programs, and is approved by the WQCC. The primary focus of the IR is surface water quality, although groundwater is also briefly discussed according to reporting requirements.

The most important component of the IR for surface water pollution identification is the CWA §303(d)/ §305(b) Integrated List, provided as Appendix A. This list details the extent to which surface water quality goals (i.e., designated uses) documented in New Mexico's water quality standards (20.6.4 NMAC) are being met. Designated uses are the desirable, attainable, and existing uses of a surface water segment as specified in 20.6.4.97 through 20.6.4.899 NMAC. These surface water segments are further broken down into one or more "assessment units" (e.g., stream reaches or waterbodies) for IR categorization and reporting purposes. In accordance with current EPA integrated listing guidance, New Mexico determines and assigns Fully Supporting, Not Supporting, and Not Assessed to each individual designated use to determine an IR category for every reported assessment unit (AU) on the Integrated List. New Mexico's IR categories are defined in Table 1. A designated use assignment of "Not Assessed" means that a determination of Fully Supporting or Not Supporting could not be made based on available data and information. An AU is considered "impaired" when one or more pollutants prevent a waterbody from meeting its designated use(s). These pollutants are identified as "cause(s)" on the Integrated List.

Table 1. New Mexico's Integrated Report Categories

Category	Description
1	All designated uses are supported.
2	Available data and/or information indicate that some designated or existing uses are supported based on numeric and narrative parameters that were tested.
3A	There are insufficient available data and/or information to make a support determination (no data available).
3B	There are insufficient available data and/or information to make a support determination (only one data point available). Data point does not exceed an applicable water quality criterion.
3C	There are insufficient available data and/or information to make a support determination (only one data point available). Data point exceeds an applicable water quality criterion).
4A	Available data and/or information indicate that at least one designated or existing use is not being supported, but a Total Maximum Daily Load (TMDL) is not needed because TMDLs have been already been established.
4B	Available data and/or information indicate that at least one designated or existing use is not being supported, but a TMDL is not needed because other pollution control requirements are reasonably expected to result in attainment of the water quality standard in the near future.
4C	Available data and/or information indicate that at least one designated or existing use is not being supported, but a TMDL is not needed because impairment is not caused by a pollutant.
5A	Available data and/or information indicate that at least one designated or existing use is not being supported and necessary TMDLs are underway or scheduled.
5B	Available data and/or information indicate that at least one designated or existing use is not being supported. A review of the water quality standard is required to verify the appropriate designated or existing use and/or criterion.
5C	Available data and/or information indicate that at least one designated or existing use is not being supported but additional data are necessary to verify the listing before TMDLs are scheduled.
5-ALT	Available data and/or information indicate that at least one designated or existing use is not being supported and an alternative restoration approach is in progress or under development.

Waterbodies classified as Category 5 (e.g., 5A, 5B, 5C, 5-ALT) officially constitute the *CWA §303(d) List of Impaired Waters,* however New Mexico and EPA recognize waterbodies assigned IR Category 4 are also still impaired (Figure 1). In this case, a TMDL is either already in place (IR Category 4A), not required because the impairment is not caused by a "pollutant" (IR Category 4C), or other pollution control requirements are in place and expected to result in attainment of the water quality standard within a reasonable amount of time (IR Category 4B).

The EPA recommends and New Mexico has prepared the 2018-2020 IR consistent with previous guidance memorandums, including EPA's significant 2006 IR Guidance supplemented by subsequent memorandums released for each listing cycle (EPA 2005, 2017a). The 2018 IR is the start of a new approach to reporting that is intended to reduce the burden to states, tribes, and territories. Starting with EPA's process improvement event in 2015 (which the SWQB was invited to participate in as one of a handful of states), EPA has worked with states, tribes, and territories to streamline the IR reporting process through updating the system for recording IR data, namely the Assessment and Total Maximum Daily Load Tracking and Implementation System (ATTAINS). The new ATTAINS provided an opportunity for New Mexico to streamline the narrative portion of IR. Accordingly, the main body of the 2018 IR was significantly re-organized and shortened, as compared with previous reports, to better describe New Mexico's current water quality framework and focus on required IR elements that are not reported electronically via ATTAINS. The re-design is also intended to make the IR a more user-friendly document for the users by providing additional hyperlinks to additional information should the user want to learn more about specific programs or restoration activities.

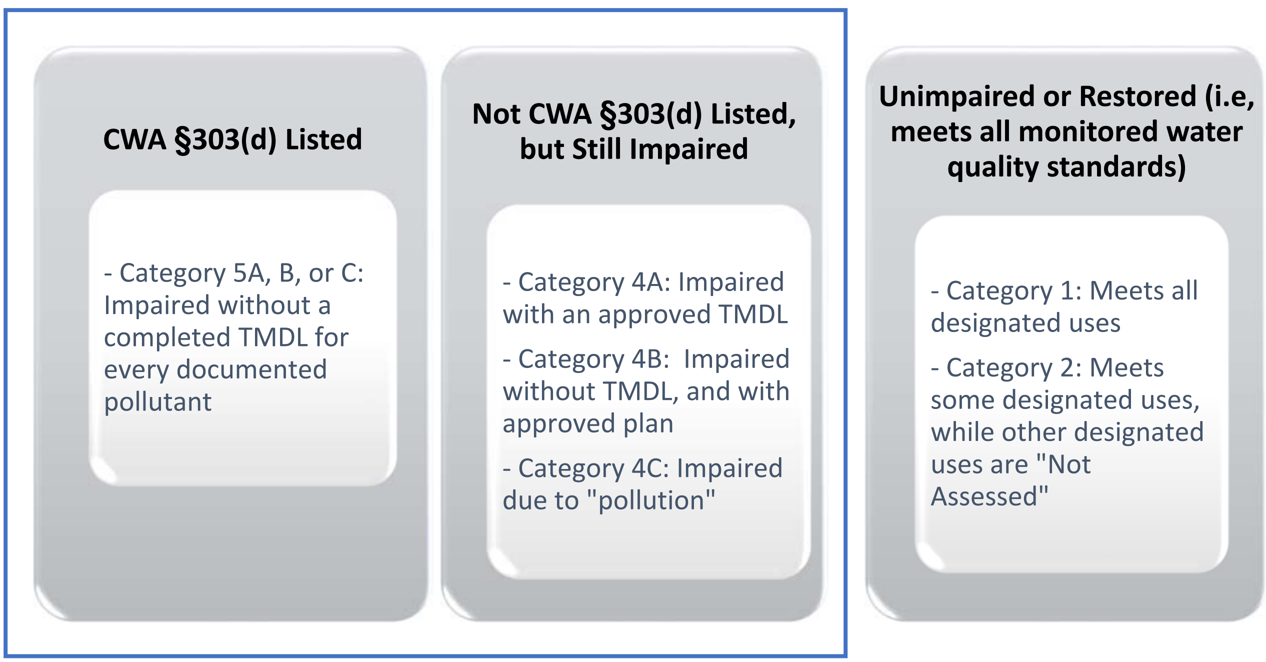


Figure 1. Relationship between CWA §303(d), Impairments, and IR Categories

For additional information on the Clean Water Act §303(d) Listing of Impaired Waters, visit: https://www.epa.gov/tmdl/program-overview-303d-listing-impaired-waters.

To view this and any of New Mexico's previous CWA §303(d)/§305(b) Integrated Reports, visit: https://www.env.nm.gov/swqb/303d-305b/.

A. New Mexico's Surface Water Synopsis

New Mexico is characterized by high mountains, expansive plains and plateaus, river gorges, and broad valleys. Land surface elevations in New Mexico vary from just under 3,000 feet above sea level at the Texas border in the southeastern portion of the State to just over 13,000 feet in the northern mountains. New Mexico is the fifth largest of the fifty states, with a total area of 121,607 square miles. Of this, approximately 34% is federal land, 12% is State land, 10% is Native American land, and 44% is privately owned (BLM 2016). New Mexico in one of the driest states, averaging less than twenty inches annual precipitation which ranges from less than eight inches in desert valleys to over thirty inches in the mountains. Statewide, the annual average precipitation is much less than evaporation from open water surfaces (BOR 1976). About half of annual precipitation is received during the summer period with brief but intense summer storms, commonly referred to as the "monsoon season." Much of the winter precipitation falls as snow in the high mountains and as snow or rain at lower elevations. Like much of the western U.S., New Mexico continues to experience long-term drought.

Surface water basins include upper portions of several of the region' principal drainage systems: the San Juan River, Little Colorado River and Gila River watersheds contribute to the Lower Colorado River Basin; the Canadian River and Dry Cimarron River watersheds contribute to the Arkansas-White-Red River Basin; and the Rio Grande and Pecos River watersheds contribute discharge to the Rio Grande basin (Figure 2). Other waters of the State in New Mexico include streams that are in topographically closed basins and drain internally (20.6.4 NMAC). Table 2 summarizes water resource information.

The New Mexico Office of the State Engineer (OSE) is charged with administering the state's water resources with respect to quantity. The State Engineer has authority over the supervision, measurement, appropriation, and distribution of all surface and groundwater in New Mexico, including streams and rivers that cross state boundaries. [NMSA 1978, § 72-2-9]. The related Interstate Stream Commission (ISC) has broad powers to investigate, protect, conserve, and develop New Mexico's waters including both interstate and intrastate stream systems. The ISC's authority under state law includes negotiating with other states to settle interstate stream controversies. [NMSA 1978, § 72-14-3]. New Mexico is a party to eight interstate stream basins. To ensure basin compliance, ISC staff analyze, review, and implement projects in New Mexico and analyze streamflow, reservoir, and other data on the stream systems. The ISC is also authorized by statute to investigate and develop the water supplies of the state and institute legal proceedings in the name of the state for planning, conservation, protection and development of public waters. [NMSA 1978, § 72-14-3]. New Mexico has sixteen water planning regions, each with its own water plan. New Mexico's current State Water Plan (OSE/ISC 2003) is under revision with a planned 2018 update. The regional and state water plans are vital tools intended to guide water management in the state to best meet all the state's water users – now and into the future.

For additional information on New Mexico's OSE/ISC, visit: http://www.ose.state.nm.us/

Table 2. Summary of New Mexico's Surface Water Resources

Topic	Value
State population[1]	2,088,070
State Surface Area	121,607 mi^2
Total miles of perennial non-tribal rivers / streams[2]	6,362 miles
Total miles of non-perennial non-tribal river / streams[2,3]	88,810 miles
Number of significant public lakes/reservoirs[4]	196
Acres of significant public lakes/reservoirs[2,4]	89,042 acres
Acres of freshwater wetlands[5]	845,213 acres

[1] United States Census Bureau July 1, 2017, estimate.

[2] Derived by NMED IT staff based on flowlines lengths and waterbody areas in the USGS National Hydrography Dataset (NHD) Plus V2 (USGS 2012). Includes both public and private non-tribal stream miles.

[3] Flowline segments assigned FCode 46003 (intermittent) and 46007 (ephemeral) in NHD were tallied to determine total non-perennial mileage. Assessment Units in NM's Integrated List (Appendix A) include a subset of the overall non-perennial stream mileage, typically waters with permits or other significant land use concerns.

[4] Includes significant publicly-owned high-altitude natural lakes, playa lakes, and sink holes as well as lakes and reservoirs in NHD Plus V2 (2012), compared to 2014 satellite images for acreage accuracy.

[5] USFWS National Wetlands Inventory (http://www.fws.gov/wetlands/Data/State-Downloads.html), plus riparian wetland acres.

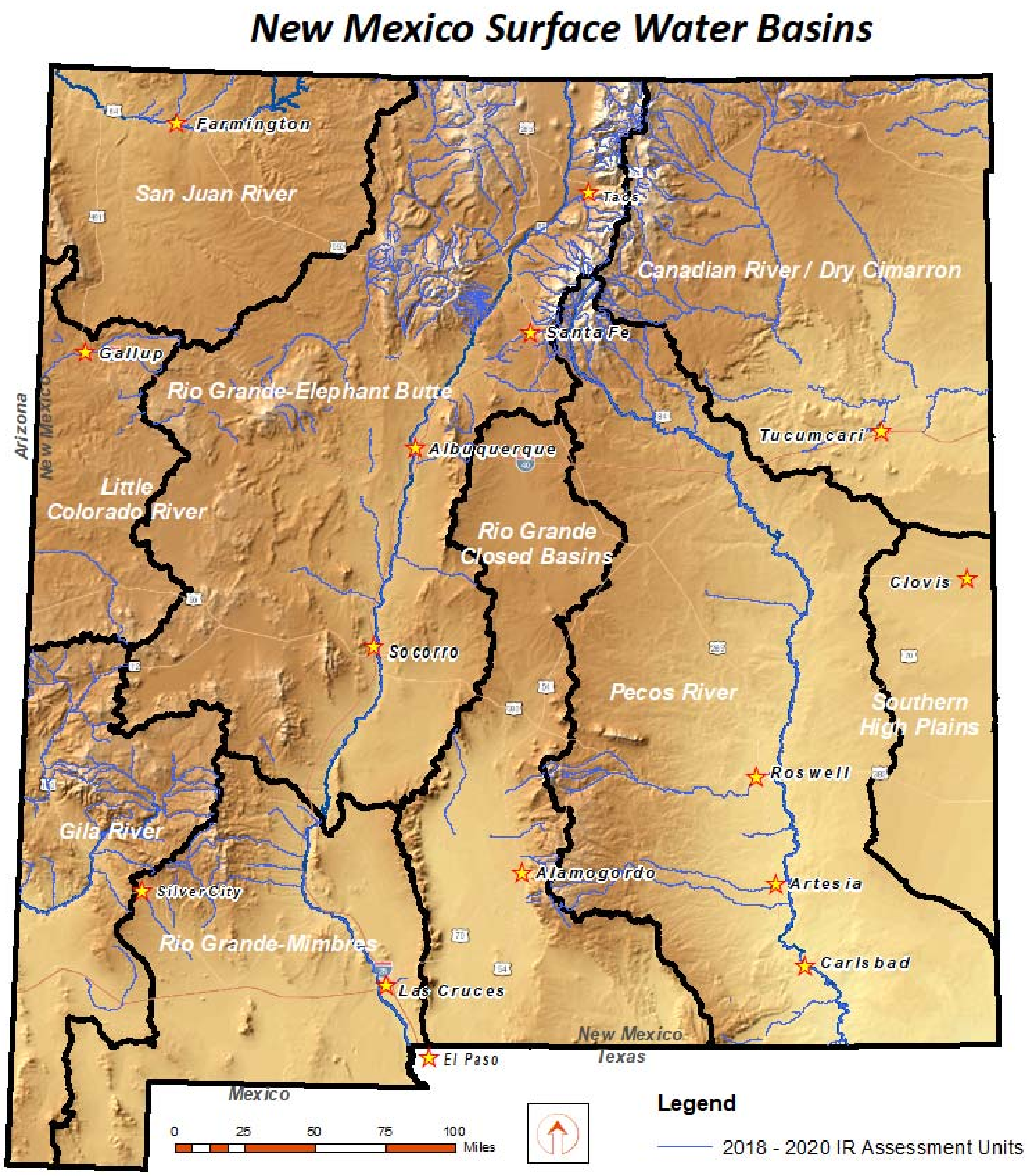


Figure 2. New Mexico Surface Water Basins

B. New Mexico's Surface Water Quality Framework

Under the authority of the WQA and the CWA, the SWQB developed and the WQCC has adopted the basic framework for water quality management in New Mexico as described in the *State of New Mexico Statewide Water Quality Management Plan/Continuing Planning Process* (WQMP/CPP) (WQCC 2011). The SWQB prepares and maintains the WQMP/CPP, and a revision is under development for 2018. The SWQB uses this integrated planning and management strategy to protect or attain the desired uses and levels of surface water quality within a waterbody. The iterative process implemented to identify water quality problems, develop solutions to address them, and assess the effectiveness of the implemented solutions is shown in Figure 3. Problem identification begins with establishing water quality standards and follows with collecting data to identify impaired waters. Problem solving involves the development of Total Maximum Daily Loads (TMDLs) and other planning documents which help guide National Pollutant Discharge Elimination System (NPDES) permit limits and CWA §319 restoration projects to help a waterbody achieve water quality standards. Progress in then measured, and water quality goals and approaches are updated accordingly. The sections below provide greater details on each component and associated programs and approaches.

For additional information on New Mexico's WQMP/CPP, visit:
https://www.env.nm.gov/swqb/documents/swqbdocs/WQMP-CPP/WQMP-CPP-December2011.pdf.

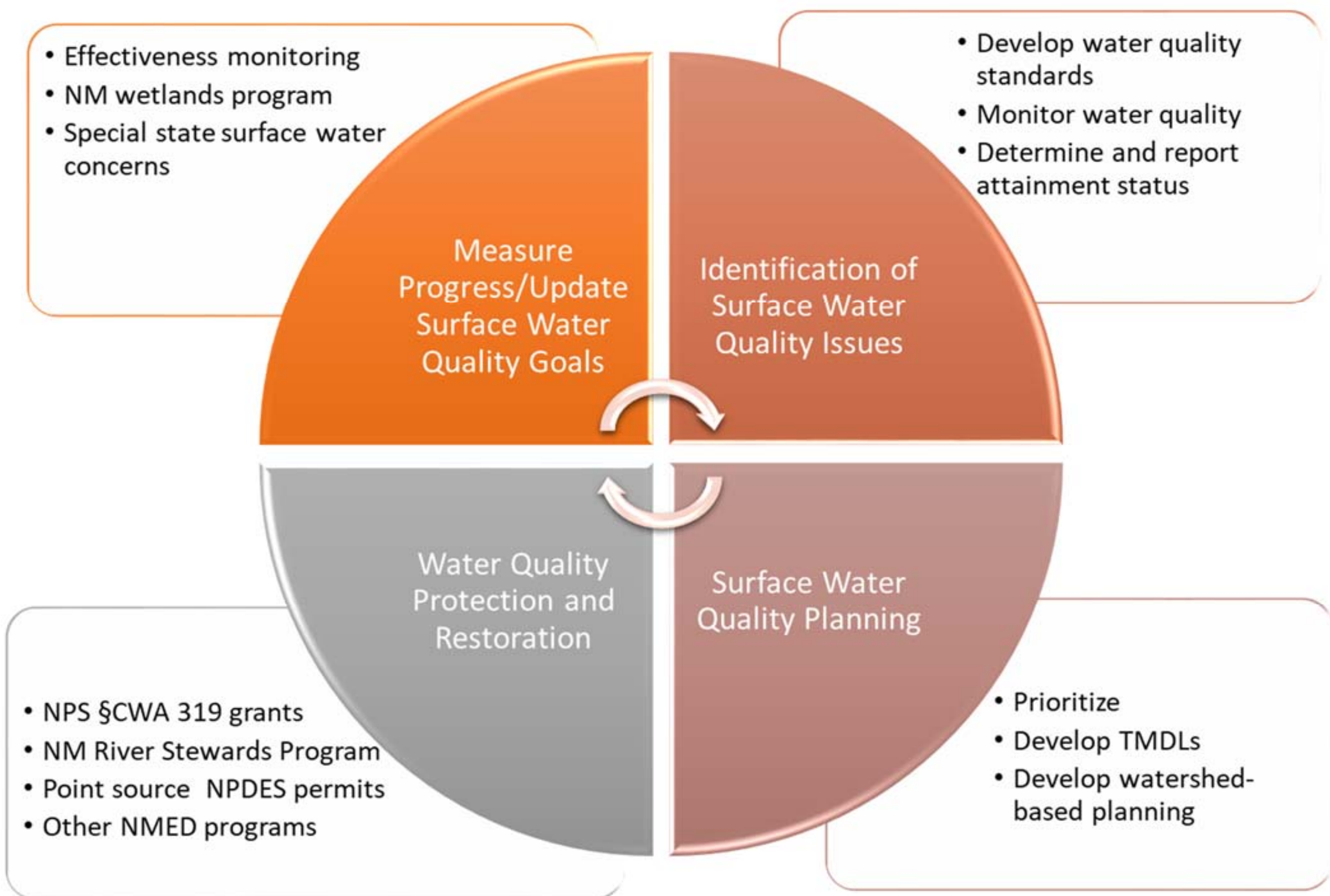


Figure 3. General Framework for Identifying and Restoring New Mexico's Surface Waters

II. Identification of Surface Water Quality Issues

A. Develop Water Quality Standards

The first step to identify surface water quality issues is to set surface water quality goals through the development and maintenance of New Mexico's surface water quality standards (20.6.4 NMAC). The SWQB's Surface Water Quality Standards (WQS) Program maintains and refines the State's surface WQS. The WQS define the water quality goals for a waterbody by designating uses, assigning criteria to protect those uses, and establishing provisions to apply and implement the WQS. New Mexico continually evaluates the WQS using applicable guidance documents, data, public input, and other sources of information to identify sections that may need to be changed or provisions to be added.

Field sampling for basic parameters

In accordance with CWA §303(c)(1), the State must hold a public hearing to examine the WQS on a three-year basis. This process is known as the "triennial review" and is also governed by the WQA which assigns authority for the adoption of WQS to the WQCC. The SWQB initiated the most recent triennial review with an informal scoping phase for public feedback during April and May of 2013 to identify state priorities and potential changes to the WQS. Proposals for changes were developed into a discussion draft which was noticed for public review and comment during April and May of 2014. During comment periods for both the scoping phase and public discussion draft, the SWQB received input from the EPA, watershed/river conservation groups, municipalities, water districts, industrial/trade groups, private organizations and citizens. The SWQB also continued to meet and work with various groups whenever requested to address their concerns, which resulted in additional changes. The SWQB presented the triennial review proposals for WQS changes to the WQCC in a public hearing held from October 13-16, 2015. The WQCC deliberated and issued a final order and statement of reasons on January 10, 2017. These changes were submitted to EPA for final approval under CWA §303(c) and EPA provided approval of the standards applicable to the Clean Water Act effective August 11, 2017. WQS changes approved by the WQCC included:

- A new temporary standards provision under 20.6.4.10.F NMAC;
- Updates to 20.6.4.16 NMAC to clarify requirements for piscicide applications that are covered under EPA's NPDES program, and to ensure public involvement for applications that are not covered under EPA's NPDES program;
- Listing of ephemeral waters under 20.6.4.97 NMAC pursuant to 20.6.4.15.C NMAC;
- Revisions to aquatic life uses in the San Juan River and Mimbres River basins under 20.6.4.403, 404, 803, and 804 NMAC;
- New Smelter Tailing Soils Investigation Unit-related standards in the Mimbres Basin under 20.6.4.808 and 809 NMAC; and
- Clarifications of criteria applicability, updates to methods, and corrections of grammatical errors.

While EPA provided comment on all changes to New Mexico's WQS, the areas in which EPA took no action included changes to the Planned Use of a Piscicide [20.6.4.16 NMAC], as this is a non-regulatory requirement; and the mine-related standards in the Mimbres Basin [20.6.4.808 NMAC and 20.6.4.809 NMAC], which included segment-specific copper criteria for ephemeral and intermittent-perennial waters. Even though these changes are not in effect for Clean Water Act purposes, they are effective under New Mexico law.

For more information on New Mexico's surface water quality standards, visit:
https://www.env.nm.gov/surface-water-quality/wqs/

B. Monitor Water Quality

The second step to identify surface water quality issues is to collect water quality data and information through organized, quality-controlled monitoring. The purpose of SWQB's Monitoring Program is to ensure relevant water quality data for all of New Mexico's surface waters are collected with the most robust scientific methods in a way that is transparent to water quality agencies and the public. The Monitoring Program serves all surface water quality monitoring needs to the extent possible given available resources, NMED priorities, and strategic goals. The waterbody types currently monitored by the program include streams, rivers, lakes, and reservoirs.

Clear goals and objectives are required to implement an effective monitoring program. To meet federal and state requirements and expectations, the SWQB has developed a monitoring strategy per EPA Guidance (EPA 2003b, NMED/SWQB 2016a). The strategy provides a detailed description of SWQB's monitoring objectives and designs, as well as approaches to data quality assurance and management. Key topics are briefly discussed below.

1. Monitoring design

Like several other states, New Mexico utilizes a targeted, rotational watershed approach to ambient water quality monitoring. Watershed surveys are developed through establishment of targeted sampling sites throughout a watershed of interest. Monitoring staff develop and implement field sampling plans to ensure all necessary chemical, biological, and physical data needed to determine attainment of New Mexico's water quality standards are collected during the survey. Pre- and post-survey planning meetings are held with other SWQB personnel working on point source and nonpoint source issues as well as TMDL development in the watershed. The current 8-year rotational monitoring schedule is shown in Figure 4.

Preparing for biological sampling on Rio Grande

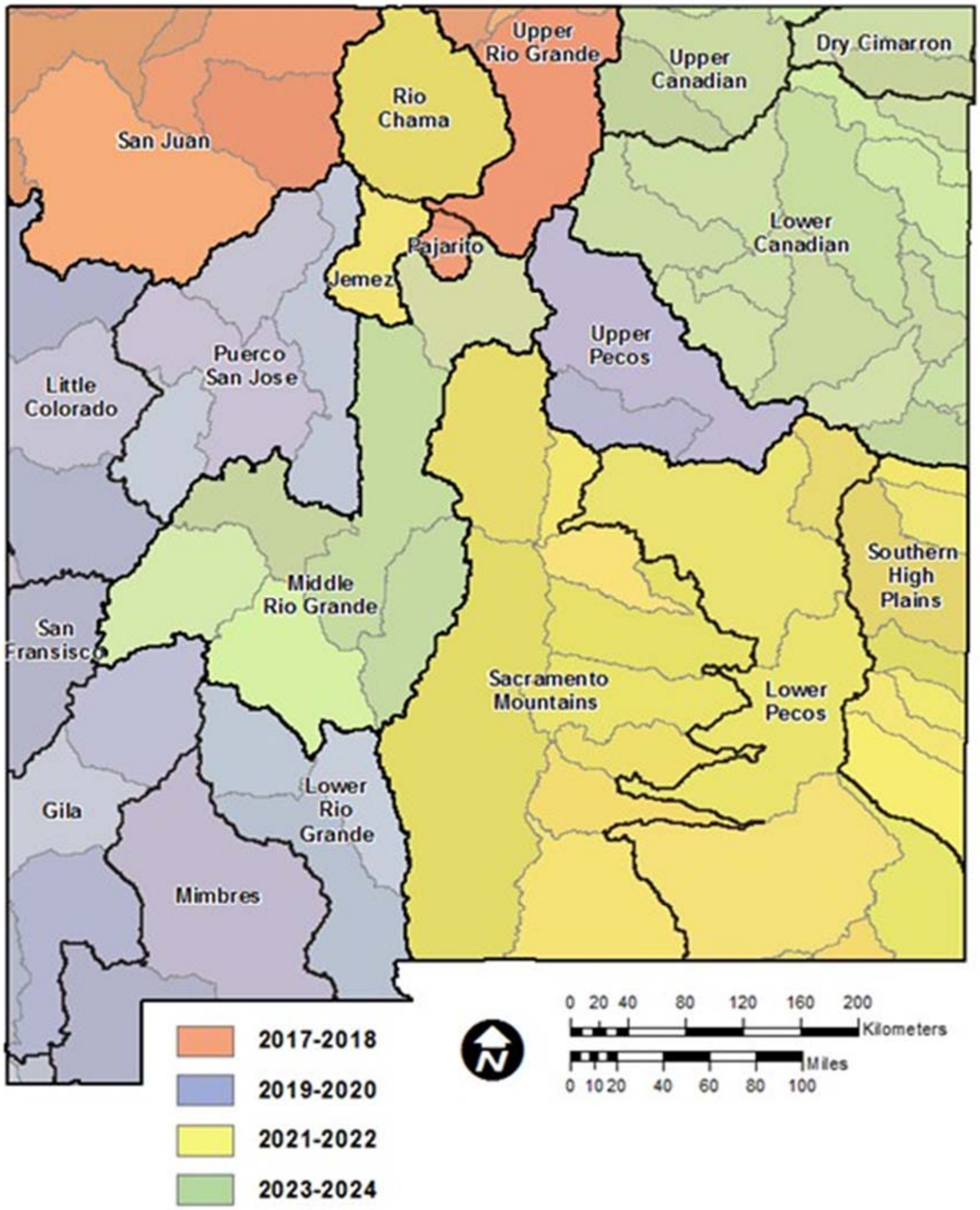


Figure 4. New Mexico's Surface Water Quality Monitoring Schedule (from NMED/SWQB 2016a)

For survey years 2015-2016, the SWQB conducted a two-year survey of the Canadian River and Dry Cimarron River basins, covering the northwest portion of the state. The data and information gathered during this survey are the focus of the 2018-2020 IR attainment determinations in Appendix A. The SWQB is implementing a two-year survey of the Upper Rio Grande and San Juan River basins for survey years 2017-2018, which will be the focus of the subsequent 2020-2022 IR.

To review New Mexico's 10-Year Monitoring Strategy, visit:
https://www.env.nm.gov/surface-water-quality/protocols-and-planning/

CWA §314 requires an assessment of "significant" publicly-owned lakes. New Mexico has identified 197 significant publicly-owned lakes, reservoirs, and playas that cover approximately 89,041 acres on the Integrated List (Appendix A). Lake monitoring is incorporated into the rotational, targeted survey design. The SWQB has determined the list of significant publicly-owned lakes, reservoirs, and playas using the following criteria:

Water quality sampling on Santa Cruz Lake

- Lakes and reservoirs over 20 acres because of their many and varied uses,
- Lakes and reservoirs smaller than 20 acres where fish kills or pollutants threaten designated use attainment,
- Various playa lakes in New Mexico because of their unique ecological character and location in some of the most arid portions of the State, and
- High-altitude natural lakes that serve as sensitive indicators of potential acidic precipitation as well as nonpoint sources of pollution (NOTE: Difficult access often restricts sampling efforts at these lakes.)

EPA has encouraged states to incorporate probabilistic sampling designs into their monitoring programs to enable them to generate statistically-based conclusions regarding the overall state of water quality. Accordingly, many states have begun to incorporate probabilistic monitoring into their core monitoring strategies. Although probabilistic-based monitoring can allow states to reach conclusions about surface water quality status as a whole, this type of monitoring cannot tell a state or tribal jurisdiction which specific waterbodies are impaired or where to target CWA §319 watershed restoration funds, and do not provide the targeted data necessary for TMDL development. In addition, successful sampling of random stations in the semiarid west is challenging due to a high percentage of intermittent and ephemeral waters, lack of hydrologic maps that accurately indicate perennial versus non-perennial waters, and difficult access logistics for many perennial waters located in remote mountainous headwaters. Because New Mexico is a large state with relatively little perennial water compared to total land area, and given the level of and recent trends in financial and staff resources, the SWQB considers the targeted approach to be the most appropriate to meet New Mexico's monitoring objectives. For example, the SWQB has sampled nearly all of New Mexico's perennial waters during its watershed surveys. To date, approximately 85% of all identified perennial stream miles have been assessed, and 98% of identified perennial public lake acres have been assessed, including all of New Mexico's large mainstem reservoirs. The targeted approach has proven effective at fulfilling monitoring objectives and allowing for summary conclusions to be drawn about the status of the State's waters. EPA's National Aquatic Resources Survey (NARS) 2013-2014 rivers and streams summary report and data were still provisional at the time this IR was drafted (February 2018). The 2020-2022 IR will include a summary of EPA's NARS 2013-2014 rivers and streams conclusions with respect to New Mexico (see New Mexico's 2014-2016 Integrated Report at https://www.env.nm.gov/swqb/303d-305b/2014-2016/index.html, Section C.5, for a discussion of EPA's 2008-2009 survey results).

2. *Quality assurance*

The SWQB is committed to maintaining a quality assurance program that ensures confidence in the environmental data produced by its various water quality programs. Water quality management programs are implemented in accordance with the current EPA-approved version of NMED's Quality Management Plan (QMP), which documents the quality system for planning, implementing, documenting, and assessing the effectiveness of activities supporting water quality management programs (NMED/SWQB 2018).

All data collected by the SWQB for water quality attainment determinations are collected and analyzed following established standard operating procedures (SOPs) (NMED/SWQB various dates). In addition, all data are handled in accordance with the most current version of the EPA-approved Quality Assurance Project Plan (QAPP) (NMED/SWQB 2016b). The QAPP describes the quality assurance procedures, quality control specifications, and other technical activities that must be implemented to ensure that the results of the project or tasks to be performed will meet project specifications. By establishing a quality system, New Mexico ensures that water quality management decisions are based on a systematic process and on data of known and acceptable quality. This also ensures that the public funds expended in these efforts are soundly invested. Further, in order for the SWQB to utilize data collected by outside agencies or stakeholder groups, a review of quality assurance procedures for submitted data is conducted to ensure that data are of equal or greater quality to those collected by the SWQB under the QAPP.

To review New Mexico's QMP, QAPP, and various SOPs, visit:
https://www.env.nm.gov/surface-water-quality/protocols-and-planning/

3. *Data management and survey reporting*

The SWQB's in-house Surface Water Quality Information Database (SQUID) is an integral tool for coordinated storing, assessing, and reporting of water quality data and conclusions between SWQB programs, to EPA, and to New Mexico's stakeholders. This Oracle© database, developed and maintained by NMED's Information Technology Bureau, allows for required electronic reporting of monitoring data to EPA's water quality exchange (WQX) database and WQS attainment conclusions to EPA's ATTAINS database. SQUID also contains many survey planning and tracking tools and reports. SQUID has been updated to be compatible with EPA's newly-redesigned ATTAINS database per EPA guidance (EPA 2017a).

Following the completion of each rotational watershed survey, SWQB monitoring staff prepare water quality survey reports. These sampling summary reports are an update to the associated original field sampling plan, detailing the monitoring goals that were accomplished during the survey as well as any deviations from the original monitoring plan.

To access SWQB's field sampling plans and survey reports, visit:
https://www.env.nm.gov/surface-water-quality/water-quality-monitoring/

C. Determine and Report Attainment Status

The third step to identify surface water quality issues is to compare collated water quality data to current water quality standards using consistent, documented processes. New Mexico's listing methodology is described in the Comprehensive Assessment and Listing Methodology (CALM) (NMED/SWQB 2017a). This document explains how the SWQB evaluates surface water quality data and other information to determine whether or not surface water quality standards are being met as documented in Appendix A. The listing methodologies described in the CALM are reviewed each odd-numbered year to ensure the methods are clearly defined and consistent with applicable water quality standards, and to incorporate relevant new EPA guidance. For the 2018-2020 reporting cycle, enhancements included a major revision to the nutrient assessment protocols for perennial, wadeable streams based on completion of the Nutrient Scientific Technical Exchange Partnership and Support (N-STEPS) project with EPA Office of Water and EPA Region 6 (Jessup et. al 2015).

To review New Mexico's listing methodologies (CALM), visit: https://www.env.nm.gov/surface-water-quality/calm/. **For additional information on nutrient threshold development, visit**: https://www.env.nm.gov/swqb/Nutrients/.

Outside sources of data are solicited and acquired via a public notice process prior to developing the draft IR and associated Integrated List (Appendix A). Simultaneously, the revised CALM is public noticed to solicit input into New Mexico's listing methodologies. In general, all readily-available data less than five years old that have been reviewed and accepted for consistency with the SWQB's data collection activities and quality assurance procedures are used to determine whether the applicable water quality standards are attained. Data older than five years old are given a lower priority in assessment than newer data, particularly if newer data indicate a change in water quality or the older data fail to meet data quality requirements. Provisional data are not used to make designated use support determinations.

Common surface water quality data sources collated to determine use impairment in New Mexico include, but are not limited to, the following:

- SWQB chemical/physical, biological, habitat, or bacteriological data collected during rotational watershed surveys;
- Chemical/physical, biological, habitat, or bacteriological data from SWQB studies or projects collected by SWQB staff or their cooperators;
- SWQB Effectiveness Monitoring data;
- USGS chemical/physical, biological, habitat, or bacteriological data;
- Los Alamos area environmental data publicly-available for download from *Intellus New Mexico* (http://www.intellusnmdata.com/); and
- Citizen or volunteer monitoring data.

For additional information regarding SWQB's data submittal process, visit: https://www.env.nm.gov/swqb/DataSubmittals/

The Canadian and Dry Cimarron River watersheds were surveyed by the SWQB in 2015-2016 and hence are the focus of revised or retained assessment conclusions in Appendix A and the associated assessment rationale of this IR. Other datasets that were either submitted or acquired this cycle and assessed as reported in Appendix A and the assessment rationale include:

- 2015-2017 EPA-collated Gold King Mine dataset,
- 2012-2017 Pajarito Plateau data collected by Los Alamos National Laboratory staff and contractors,
- 2014-2016 data for various stream reaches in and around Taos and Red River collected by Sentinels-Rio de Taos and submitted by Amigos Bravos, and
- 2015 data collected and submitted by the Hermit's Peak Watershed Alliance.

The assessment conclusions in non-focus areas based on data from previous rotational surveys and previously submitted outside data are typically carried over to the next list until more current data are available to assess unless, for example, a water quality standard change necessitates a re-assessment. This was the case with several historic dissolved aluminum listings with concurrent pH > 6.5 because the previous dissolved aluminum criteria are no longer applicable in these waterbodies (NMED/SWQB 2017a).

New Mexico maintains assessment information in SQUID, and uploads this information to ATTAINS per EPA guidance (EPA 2017a). Use of SQUID allows SWQB to automatically generate the entire Integrated List (Appendix A), the associated assessment rationale, the official CWA §303(d) List of Impaired Waters, as well as a variety of summary reports. The SWQB maintains an extensive web site that provides access to all past and current CWA §303(d)/ §305(b) reports and supporting information.

To access past and current CWA §303(d)/ §305(b) reports and supporting information, visit:
https://www.env.nm.gov/swqb/303d-305b/.

The assessment rationale document (formerly known as the "record of decision" or ROD) maintained by the SWQB is a historical record of impaired surface waters (i.e., Category 5 waters) provided to reviewers and users of the list -- including EPA -- to help track listing and de-listing information used in the development of New Mexico's Integrated List. EPA does not require this specific document and does not take action to approve or disapprove its contents. The assessment rationale was originally created as a separate word processing document. All assessment units (AUs) do not have detailed assessment rationale entries because prior to the 2018-2020 IR, the assessment rationale generally did not contain entries on AUs that have not been assessed or have never been found to be impaired. The assessment rationale is now a database field in SQUID, making it easier to provide assessment notes by IR cycle on all AUs being assessed. Assessment rationale entries by IR cycle, starting with the 2018-2020 IR, are also uploaded to EPA's ATTAINS database.

All AUs are assigned IR categories as described in New Mexico's CALM (NMED/SWQB 2017a). Assessment units noted with IR Category 5A, 5B, or 5C on the Integrated List in Appendix A comprise New Mexico's official CWA §303(d) List of Impaired Waters. A listing of Category 5-only waters is included in the beginning of Appendix A. To see details on a specific AU, refer to the particular AU entry on the full Integrated List in Appendix A and associated assessment rationale entry. Starting with the 2018-2020 IR, each AU entry on the Integrated List now also contains a "PARAMETER IR CATEGORY." This useful field provides additional planning information regarding each particular cause of impairment or AU_cause pair. For example, a parameter IR category of 5B lets the user know that a review of the applicable water quality standard is needed prior to scheduling TMDL development. New Mexico has several temperature listings that fall under the 5B parameter IR category.

New Mexico's Integrated List also includes an estimated year in the "TMDL DATE" field for all parameter IR category 5A AU_cause pairs. The estimated year is generally based on the SWQB's rotational monitoring schedule, prioritization strategy in the SWQB's long-term vision document (NMED/SWQB 2015), and severity of the impairment. The "TMDL DATE", as well as the projected "MONITORING SCHEDULE" year, is ultimately dependent upon personnel and financial resources which can change on an annual basis. If a TMDL has already been developed for the noted cause of impairment, the EPA TMDL approval date (MM/DD/YYYY) is reported in the TMDL date field.

The causes of impairments are summarized by major waterbody type (rivers/streams vs. lakes/reservoirs) in the section below.

1. *River and Stream Assessment Results*

New Mexico's surface waters are assigned to one of the IR categories defined in Table 1 and summarized in Table 3. Individual IR categories for every AU are provided in the Integrated List (Appendix A).

The largest grouping of assessed lotic (i.e., flowing) waters are IR Category 5. These AUs, along with the Category 5 lake/reservoir waterbodies, comprise New Mexico's official CWA §303(d) list of impaired waters. A list of Category 5-only waters was generated from SQUID and is included in the beginning of Appendix A.

Table 3. Integrated Report Categories for New Mexico's Rivers and Streams

IR Category	Total Size (miles)	Number of River/Stream Assessment Units
1	1,060	79
2	1,099	116
3A	1,575	132
3C	10	2
4A	927	74
4C	226	18
5A	1,470	95
5B	585	52
5C	883	74
TOTAL	**7,835**	**642**

NOTE: This information was generated using SQUID.

IR Category 4A represents stream reaches where TMDL planning documents have been developed for all documented causes of impairment in a particular AU. These AUs are technically still impaired (see Figure 1) even though they are not officially considered to be part of the Clean Water Act §303(d) list by EPA. Several of these stream reaches also have TMDLs for more than one parameter.

Assessment units are listed in IR Category 1 and 2 if there are sufficient data and information meeting the requirements of the assessment and listing methodology that can be used to support a determination that some or all uses are attained based on numeric and narrative water quality criteria that were evaluated.

Assessment units are listed in IR Category 3 when data to support an attainment determination for any designated use are not available according to the requirements of the assessment and listing methodology. Reasons include access, monitoring and/or analytical logistics (such as the need for automated sampling equipment), and staff and financial resource constraints. The SWQB prioritizes IR Category 3 AUs during rotational survey planning.

A summary of the river/stream attainment status for each designated use, as found in New Mexico's WQS (20.6.4 NMAC), is presented in Table 4. In New Mexico, the CWA goal of "fishable" is reported under the various aquatic life uses while the "swimmable" goal is reported under primary and secondary contact uses.

Table 4. Designated Use Support for New Mexico's Rivers and Streams

Designated Use	*Total Size (mi)*	Size Assessed (mi)	*Size Fully Supporting (mi)*	*Size Not Supporting (mi)*	*Size Not Assessed (mi)*
Coldwater Aquatic Life	854.7	647.5	172.2	475.3	207.1
Coolwater Aquatic Life	293.6	232.2	33.1	199.1	61.4
High Quality Coldwater Aquatic Life	2539.2	2309.4	870.0	1439.4	229.8
Limited Aquatic Life	195.1	98.5	25.7	72.8	96.6
Marginal Coldwater Aquatic Life	972.3	881.3	292.9	588.4	91.0
Marginal Warmwater Aquatic Life	2308.1	1343.0	664.5	678.5	965.1
Warmwater Aquatic Life	1731.3	1391.4	915.0	476.4	339.9
Primary Contact	6937.4	4528.8	3465.7	1063.1	2408.6
Secondary Contact	902.2	592.8	566.9	25.9	309.4
Domestic Water Supply	2669.2	2220.4	2202.8	17.6	448.9
Irrigation	6317.3	5322.4	5227.6	94.8	994.8
Livestock Watering	7839.6	5484.3	5366.4	117.9	2355.3
Wildlife Habitat	7839.6	5779.3	5574.2	205.0	2060.3
Fish Culture*	1264.6	--	--	--	1264.6
Industrial Water Supply*	423.6	--	--	--	423.6
Public Water Supply*	740.7	--	--	--	740.7

* = All Fish Culture, Public Water Supply, and Industrial Water Supply designated uses were defaulted to "Not Assessed" because no numeric criteria apply uniquely to these uses per 20.6.4.900.A NMAC.

The leading impairment causes for New Mexico's rivers and streams are presented in Figure 5. The SQUID-generated summary report of all Cause and Source statistics is provided in Appendix B. Standard EPA impairment cause categories included in SQUID were used to label the graphic. See Appendix B for subcategory information.

Excessive temperature, nutrient/eutrophication, and *E. coli* are identified as the top three causes of impairment of designated uses in New Mexico's streams and rivers based on current WQS (20.6.4 NMAC), available data, and applicable listing methodologies. Dissolved oxygen (DO) and nutrient/eutrophication impairments may be redundant in some cases, as DO impairment is often a response resulting from excessive nutrients.

E. coli sampling during watershed surveys has been a SWQB priority since the 2006 listing cycle, using a mobile *E. coli* sampling unit that resolved a chronic issue with meeting the 6-hour holding time. Implementation of this sampling method continues to result in the identification of additional contact use impairments, due to exceedence of the *E. coli* criteria, each listing cycle.

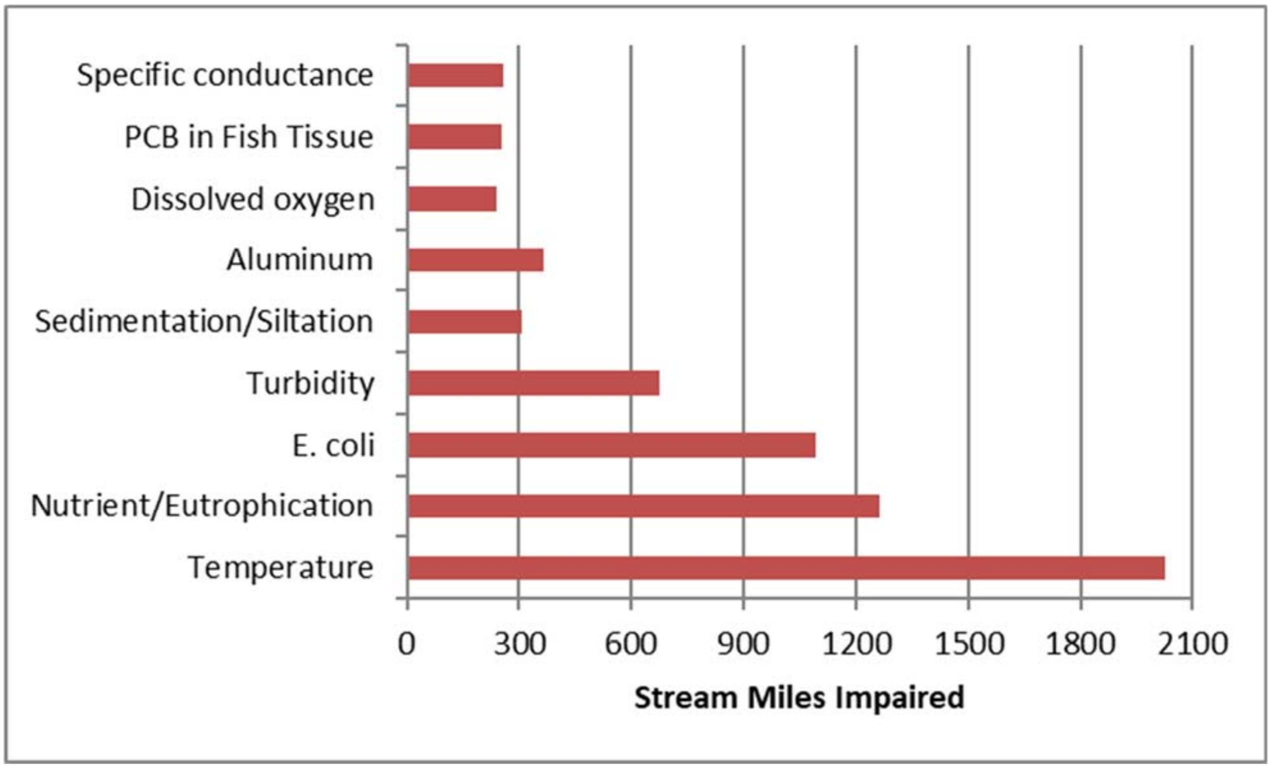


Figure 5. Top Causes of Surface Water Impairment for Rivers and Streams

2. *Lake and Reservoir Assessment Results*

One major challenge regarding both lake monitoring and lake TMDL development has been the loss of specific CWA §314 funds to address this need. In the past, states received this funding specifically targeted for lake monitoring. States must now carve out their own funding for lake monitoring from core CWA §106 funds. New revenue sources must be identified to increase lake and reservoir monitoring in order to support future TMDL development and provide water quality information to the public who utilize these lakes and reservoirs. A more robust program could confirm the current cause and source impairment information regarding lakes and reservoirs with more scientifically rigorous data and information.

Table 5. Integrated Report Categories for New Mexico's Lakes and Reservoirs

Category	Total Size (acres)	Number of Assessment Units
1	691	12
2	9,003	18
3A	20,661	124
5A	20,816	21
5B	302	3
5C	37,569	18
TOTAL	**89,042**	**196**

NOTE: This information was generated using SQUID.

Table 5 shows the number of New Mexico's lakes and reservoirs assigned to each IR category as defined in Table 1. Individual IR categories are presented for every AU on the Integrated List in Appendix A.

By acreage, the majority of assessed lentic (i.e., not flowing) AUs in New Mexico fall under Category 5. Over 90% of these acres are freshwater reservoirs (as opposed to natural lakes). New Mexico has very few natural lakes compared to the number of in-line and off-line reservoirs. These AUs, along with the IR Category 5 river/stream AUs, comprise New Mexico's official CWA §303(d) list of impaired waters. A list of Category 5-only waters was generated from SQUID and is included in Appendix A. New Mexico has yet to develop lake TMDLs, as noted by the absence of lakes or reservoirs in Category 4A.

Assessment units are listed in IR Category 3 when current data are not available to support an attainment determination. Reasons for this generally include access issues, monitoring and/or analytical logistics, and staff and financial resource constraints. Many of these lakes that are "Not Assessed" are very small in size, such as high elevation natural lakes. These lakes are logistically difficult to sample because they require long, steep hikes. The SWQB sampled a representative subset of these lakes during 2007 as part of a nutrient criteria development grant. Also included in this category are a large portion of the over 23,000 acres of playa lakes that were part of a SWQB special study in the late 1980s and early 1990s when the EPA provided specific CWA §314 monitoring funding. Attainment status for playas or lakes where adequate resources have not been available to re-monitor in more recent years were changed to "Not Assessed" during the 2008 listing cycle because these data were over 15 years old. Playas or lakes where data from only one sampling event were previously used to make Full Support determinations were changed to "Not Assessed" during the 2014 listing cycle because this is considered to be insufficient data to make attainment determinations under current assessment protocols (NMED/SWQB 2017a).

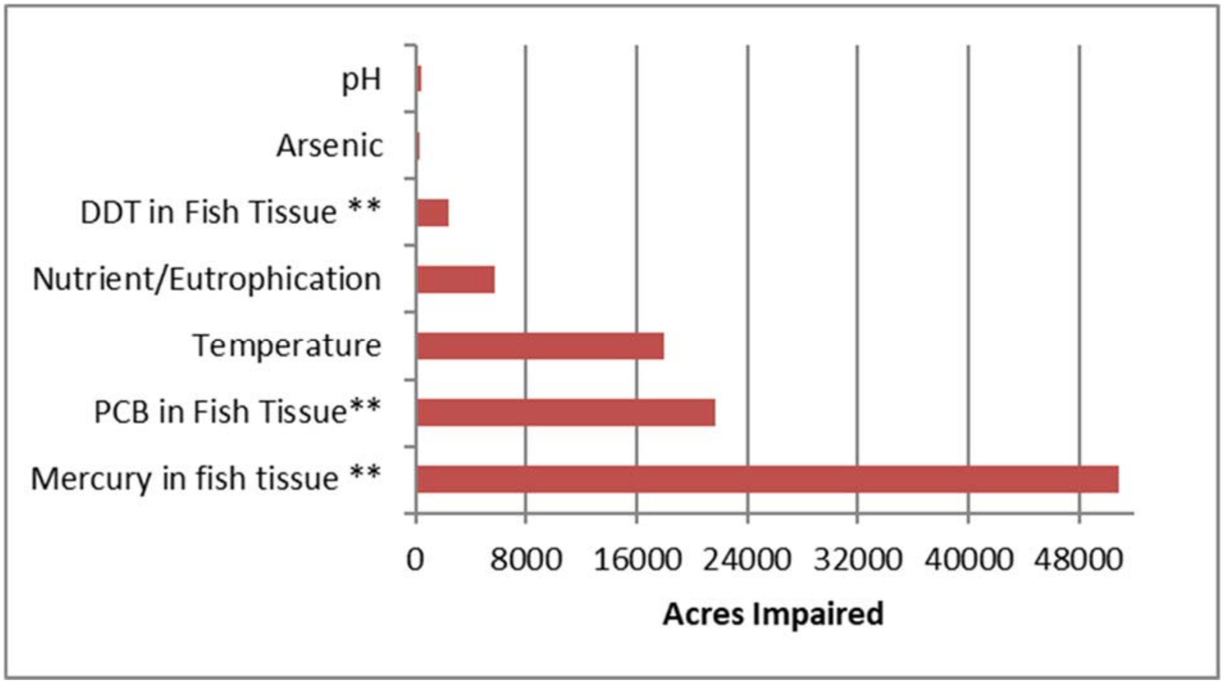
A summary of the lake/reservoir attainment status for each designated use, as found in New Mexico's WQS (20.6.4 NMAC), is presented in Table 6. Similar to rivers/streams, the CWA goal of "fishable" is reported under the various aquatic life uses while the "swimmable" goal is reported under primary and secondary contact uses.

Table 6. Individual Designated Use Support Summary for New Mexico Lakes and Reservoirs

Designated Use	*Total Size (acre)*	Size Assessed (acre)	*Size Fully Supporting (acre)*	*Size Not Supporting (acre)*	*Size Not Assessed (acre)*
Coldwater Aquatic Life	24716.5	24629.5	3221.9	21407.6	87.0
Coolwater Aquatic Life	5686.1	789.0	0.0	789.0	4897.2
High Quality Coldwater Aquatic Life	1910.9	1627.3	56.5	1570.8	283.6
Marginal Coldwater Aquatic Life	439.2	313.2	313.2	0.0	126.0
Marginal Warmwater Aquatic Life	28535.0	4843.0	11.2	4831.9	23692.0
Warmwater Aquatic Life	48623.1	47417.1	14625.4	32791.6	1206.1
Primary Contact	87703.1	61053.6	61053.6	0.0	26649.5
Secondary Contact	1336.2	487.6	487.6	0.0	848.5
Domestic Water Supply	2519.5	2236.0	2236.0	0.0	283.6
Irrigation	8860.2	8290.8	8290.8	0.0	569.5
Irrigation Storage	48400.9	48400.9	48400.9	0.0	0.0
Livestock Watering	89016.4	62824.5	62824.5	0.0	26191.9
Wildlife Habitat	89039.2	68378.9	68378.9	0.0	20660.3
Fish Culture*	41.5	--	--	--	41.5
Industrial Water Supply*	16770.9	--	--	--	16770.9
Public Water Supply*	36269.5	--	--	--	36269.5

* = All Fish Culture, Public Water Supply, and Industrial Water Supply designated uses are defaulted to "Not Assessed" because no numeric criteria apply uniquely to these uses per 20.6.4.900.A NMAC.

A summary of the impairment causes for New Mexico's lakes and reservoirs is presented in Figure 6. The SQUID-generated report that was used to generate the below figure is included in Appendix B. Standard EPA cause categories included in SQUID were used to label the graphic. See Appendix B for specific acreage and subcategory information.



NOTES: **Based on current fish consumption advisories and 0.3 mg/kg methylmercury in fish tissue criterion (see NMED/SWQB 2017a).

Figure 6. Top Causes of Surface Water Impairment for Lakes and Reservoirs

Mercury in fish tissue, PCBs in fish tissue, and temperature are the top three causes of impairment of designated uses in New Mexico's lakes and reservoirs based on current WQS, available data, and current listing methodologies (NMED/SWQB 2017a). EPA considers fish or shellfish consumption advisories and supporting fish tissue data to be existing and readily available data that demonstrate non-attainment of CWA goals stating that waters should be "fishable" (CWA §101(a), EPA 2005). New Mexico currently has fish consumption advisories based on mercury, DDT, and PCB levels in fish tissue (NMDOH *et al*. 2016). All waterbodies listed in the advisory are listed as impaired except waterbodies where available mercury in fish tissue data are below the New Mexico water quality criterion of 0.3 mg/kg.

III. Surface Water Quality Planning

A. Prioritize Impairments and Concerns

After water quality impairments and issues are identified, New Mexico engages in water quality planning to address the concern. The first surface water quality planning step is to prioritize impairment listings for subsequent TMDL development or alternative plans in order to implement restoration strategies with a more holistic approach. The SWQB continues to be involved in national conversations with EPA and the Association of Clean Water Administrators (ACWA) regarding the Long-Term Vision for the CWA 303(d) Program. The goals of the Vision are prioritization of watershed or waters for restoration and protection; assessment of priority waters; protection of unimpaired waters; alternative approaches to restoration and protection; engagement with the stakeholders; and integration with other CWA programs. As a result of the Vision and goals, the TMDL program in New Mexico is focusing on state water quality priorities, while continuing to evaluate TMDL alternatives and protection of waterbodies that are not impaired. This document, referred to as a Prioritization Framework, summarizes the prioritization of monitoring and TMDL activities in New Mexico. The Framework was provided to EPA Region 6 staff for review in January 2015 and comments received from EPA were addressed as appropriate and then incorporated in the SWQB's long-term prioritization document (NMED/SWQB 2015). This guidance document is used by the SWQB for monitoring and TMDL planning; it is not a static document and will be updated during the 2018-2022 timeframe, if necessary. The list of TMDL priorities through 2022 were determined using the process outlined in the Prioritization Framework and were provided to EPA Region 6 in July 2015. The portion of these TMDL priorities to be developed annually will be provided to EPA Region 6 at the beginning of each federal fiscal year.

To review the SWQB's prioritization framework, visit:
https://www.env.nm.gov/surface-water-quality/tmdl/.

B. Develop Total Maximum Daily Loads

CWA §303(d)(1) requires that states develop a list of waters within the State that are not supporting their designated uses established in the WQS and to establish a total maximum daily load (TMDL) for each pollutant for those "impaired waters." A TMDL is defined as the "calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant. A TMDL determines a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant."[1]

To accomplish this requirement, New Mexico develops a TMDL planning document -- a comprehensive plan for a given pollutant and waterbody starting from the relevant WQS, discussing existing water quality data and developing a plan to ensure that WQS are achieved and maintained for that waterbody. At the core of a TMDL is the allocation of pollutant loads to existing and reasonably foreseeable increases from point sources and nonpoint sources in the watershed. As such, TMDLs are an integral part of New Mexico's WQMP/CPP and incorporated by reference (WQCC 2011). TMDLs also inform the EPA in developing effluent

[1] https://www.epa.gov/tmdl/program-overview-total-maximum-daily-loads-tmdl

limits for NPDES permits and help guide SWQB in prioritizing watershed protection and restoration projects funded under the CWA §319 and other programs.

Since the previous listing cycle, New Mexico has completed and both the WQCC and EPA have approved TMDLs for the Jemez River (15), Lower Pecos River (2), Rio Ruidoso (6), Upper Rio Puerco (5), Galisteo Creek (2), Santa Fe River (3), and Tijeras Arroyo (2). EPA approval is pending for updated aluminum TMDLs for the Middle Rio Grande (1) and Jemez River (2). SWQB also received EPA approval to remove a dissolved aluminum TMDL for Cieneguilla Creek. EPA approval for additional removals for Rio Chamita, Rio Puerco, and Whitewater Creek are pending.

For more information on SWQB's TMDL program and to access individual approved TMDL planning documents, visit: https://www.env.nm.gov/surface-water-quality/tmdl/**.**

TMDLs include a list of "probable sources" in the contributing watershed. These are defined as activities that may contribute pollutants or stressors to a waterbody (EPA 1997). The probable source list included with any cause of impairment includes any and all activities occurring or likely to occur in the watershed that have the potential to contribute to the identified impairment. It is not intended to single out any particular land owner or single land management activity, and has therefore been labeled "probable," and generally includes several possible items. Probable sources listed for any particular waterbody have not been proven to be a source or the only sources of the identified impairment. The list is based on qualitative field observations made by field staff for AUs sampled during rotational watershed surveys and watershed restoration projects. This is combined with knowledge of known land management activities that have the potential to contribute to the identified impairment. Specifically, Probable Source Sheets are first drafted during rotational watershed surveys and watershed restoration activities by SWQB staff. Information gathered from the Probable Source Sheets are used to generate a draft Probable Source list in consequent draft TMDL planning documents. These draft Probable Source lists are finalized with watershed group/stakeholder input received during any one of the following: pre-survey public meeting, TMDL public meeting, watershed-based planning activities, and various public comment periods. The SWQB maintains a standard operating procedure for this topic.

As part of the ATTAINS re-design, there were several discussions between EPA and states regarding the reporting of probable sources since most states do not have dedicated funding for source identification. EPA Office of Water staff confirmed that probable sources for impaired AUs (i.e., IR Category 4 and 5) are an optional data element and not required in the new ATTAINs system. Therefore, New Mexico is no longer reporting "Source Unknown" for AU_cause pairs without approved TMDLs. As stated above, documenting probable sources is part of the TMDL process in New Mexico as opposed to the listing process. Accordingly, probable sources have also been removed from the Integrated List (Appendix A). However, the SWQB does maintain probable sources documented in approved TMDLs in SQUID in order to provide a summary discussion of the primary sources of impairment in New Mexico. This fulfills the CWA §305(b)(1)(E) requirement to provide "a description of the nature and extent of nonpoint sources of pollutants."

A summary of the top impairment sources as documented in approved TMDLs for New Mexico's rivers and streams is presented in Figure 7. The SQUID-generated report that was used to generate the below figure is included in Appendix B. Standard EPA source categories included in SQUID were used to label the graphic. See Appendix B for specific values and subcategory information. In most instances, more than a single probable source contributes to water quality impairment. The total mileage values reported are summations of AU mileages for <u>all</u> AU_impairment pairs assigned to each probable source. Since the State has not yet written any lake or reservoir TMDLS, a probable sources summary is not available for this water type but it is assumed to be similar.

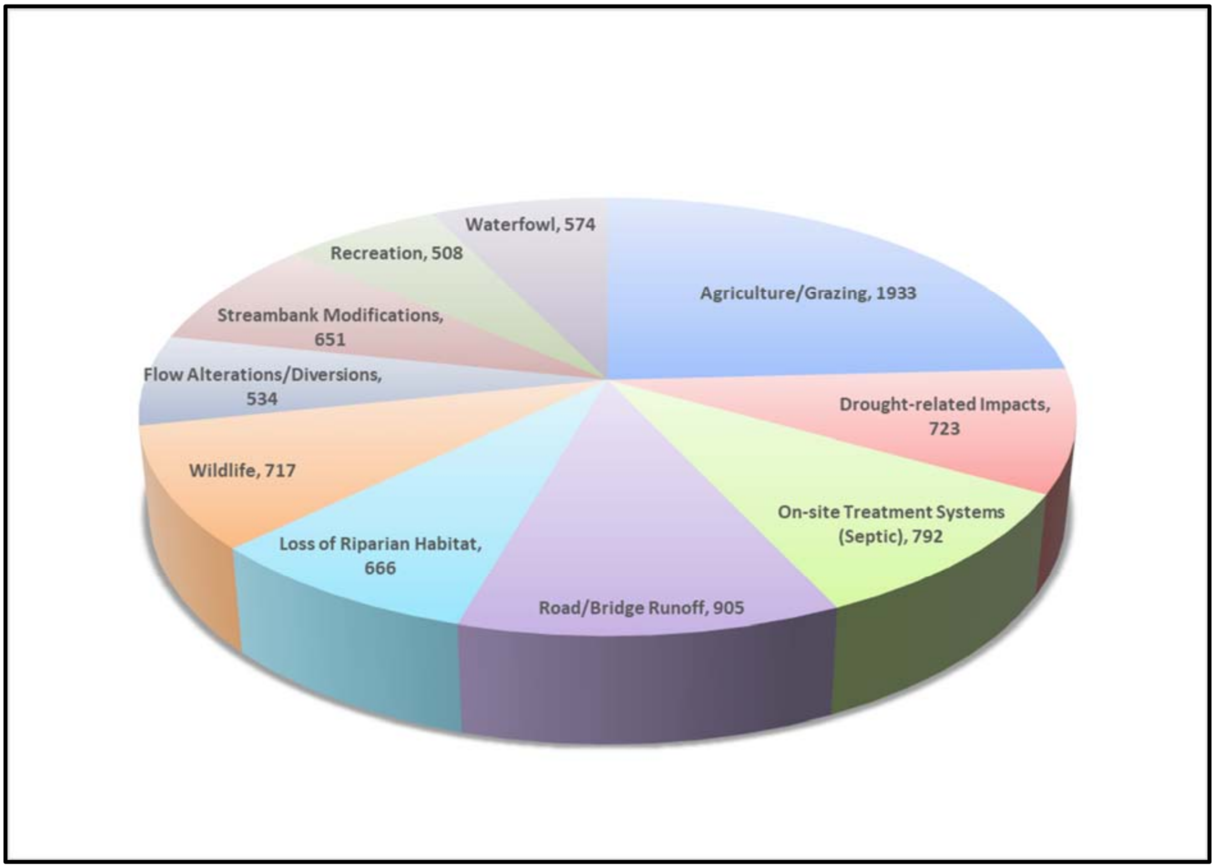
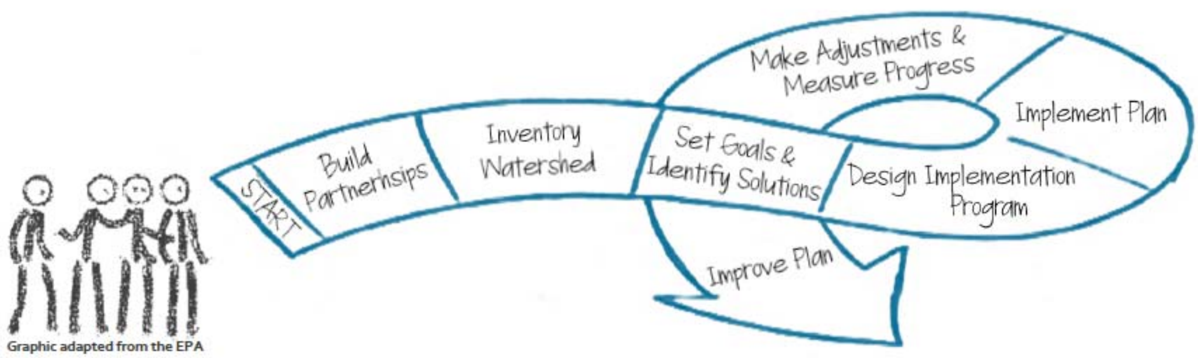


Figure 7. Top Probable Sources of Surface Water Impairment in Rivers/Streams as reported in approved TMDLs (total AU-impairment pair mileage shown)

As seen in the summary graphic, the majority of water quality impairments identified in New Mexico's streams and rivers continues to be due to nonpoint sources (NPS) of water pollution. NPS pollution can be directly related to land use practices on a broad geographic scale and is generally caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up natural and human-caused pollutants, which are deposited into rivers/streams, lake/reservoirs, wetlands, and ground water.

C. Develop Watershed-Based Plans

As mentioned, the Vision promoted by EPA encourages states to consider alternatives to TMDLs when other planning approaches are more appropriate or can lead to quicker on-the-ground results. One viable method is an increased emphasis on watershed-based plans (WBPs).



New Mexico's NPS Management Program is designed as a cooperative effort among federal and state agencies, watershed stakeholders, and NMED's SWQB Watershed Protection Section (WPS). The current plan for the NPS Management Program was developed in 2014 and approved by EPA in early 2015 (NMED/SWQB 2014a), and a draft revised plan is under development in 2018. The current plan states an overall goal of meeting and maintaining water quality standards and designated uses of surface water and ground water resources in New Mexico. The plan's objectives are directed toward meeting this goal, and are related to watershed-based planning, restoring and protecting surface and ground water quality, education, and interagency cooperation. The NPS Management Program emphasizes watershed-based planning, as described in EPA's *Nonpoint Source Program and Grants Guidelines for States and Territories* (EPA 2013).

A WBP is a comprehensive report written to address water quality problems for watersheds with impaired streams. It generally includes several elements to encourage effective implementation and adaptive evaluation. The SWQB encourages use of a WBP by any watershed restoration program to benefit water quality. WBPs are used by local watershed groups and other interested stakeholders to build on the TMDL process, if available, with more detailed characterization of pollutant sources, management measures, information and education programs, and monitoring. This approach facilitates coordinated watershed restoration efforts, the development of effective watershed associations, engaged stakeholders, and the implementation of effective BMPs to reduce NPS pollution. Table 7 provides some examples of BMPs encouraged by the Program. NMED underscored its encouragement by making watershed-based planning a requirement for significant restoration activities to be funded with CWA §319(h) funds. New Mexico's current and recently completed watershed-based planning projects are displayed on Figure 8 and in Appendix D.

Information on watershed-based planning, as well as WBPs that have been reviewed and accepted by EPA, are available at: https://www.env.nm.gov/surface-water-quality/wbp/**.**

Table 7. Common BMPs Implemented Throughout New Mexico to address Nonpoint Source Pollution

NPS Pollution Category	Examples of Best Management Practices (BMPs) utilized in New Mexico
Agriculture	• Residue Management (contour strip cropping, stubble munching, conservation tillage) • Improved irrigation practices (low output sprinklers, vegetation control) • Nutrient Management (split fertilizer applications, nutrient balancing, crop rotation)
Construction	• Sediment Control Structures (silt fences, hay bales, sediment retention ponds) • Heavy equipment cleaning and spill kits • Conduct construction activities during no-flow or low-flow conditions
Fire Suppression/Fuels Management	• Forest thinning / fuels reduction • Post wildfire watershed rehabilitation
Grazing	• Alternate watering sources (trick tanks, upland dirt tanks, and upland wells) • Planned/rotational grazing • Cattle guards to control access • Fencing (pasture cross fencing and creation of additional pastures for improved stock rotation methods and riparian exclosure fencing)
Loss of Riparian Habitat	• Habitat restoration and rehabilitation - Removal of non-native plant species - Planting native vegetation • Grazing exclosure(s) or planned grazing
Recreational Activities	• Revegetation of impacted areas • Trail maintenance/reconstruction • Provide and maintain waste and sanitation facilities • Limit off road vehicle use • Restrict vehicular access to riparian areas • Recreational area closure or relocation • Education/Outreach
Resource Extraction	• Sediment Control Structures (silt fences, hay bales, sediment retention ponds) • Stabilizing, relocating, and channeling runoff around mine and mill tailings
Septic Systems	• Identify and replace malfunctioning systems • Outreach to encourage preventative maintenance • Connect to centralized wastewater treatment system
Streambank Modification/ Hydromodification	• Streambank Stabilization via: - Revetment (e.g. vanes, j-hooks) - Grade control (e.g. cross vanes) - Grazing exclosures or rotation - Terracing / revegetation of slopes - Installing vortex weirs - Replacing undersized culverts - Brush control
Urban Stormwater	• Education/Outreach activities • Develop stormwater management plan • Propose new ordinance and/or development codes • Propose new construction standards • Install swales, French drains, detention ponds • Collect and treat runoff

IV. Water Quality Protection and Restoration

A. NPS CWA §319 Watershed Restoration Grants

Once the water quality problem has been identified and planning strategies have been developed, a variety of programs are available to protect and restore the water quality. One of the primary goals of New Mexico's NPS Management Program is to educate and implement BMPs to reduce NPS pollutants entering surface and ground waters. To accomplish this goal, the Program administers CWA §319 watershed restoration grants. The focus of implementation projects in recent years has been on impaired waters with approved TMDLs, and on a limited group of impaired waters for which a TMDL is not required because the impairment is thought to be caused by insufficient flow (i.e., Category 4C streams). Through a combination of funding programs, partnerships, education and outreach activities, New Mexico encourages interested parties to implement BMPs to control or reduce the degree of water quality impairments due to non-point sources.

Bluewater Creek before (2009) restoration…

Since 1998, the NPS Management Program has implemented over 100 watershed restoration projects. New Mexico's current and recently completed CWA §319 watershed restoration implementation projects are displayed on Figure 8 and in Appendix D. In addition, CWA §319(h)(11) requires New Mexico to report, on an annual basis, to EPA Region 6 progress in meeting milestones in the NPS Management Program plans, reductions in NPS pollutant loading, and improvements in streams that do not meet water quality standards. The SWQB maintains a website of all NPS Annual Reports from calendar year 2000 to present.

…and after (2016) restoration.

Information on projects completed in specific years can be found in the SWQB's *NPS Management Program Annual Reports* at:
https://www.env.nm.gov/surface-water-quality/nps-annual-reports/

B. New Mexico’s River Stewardship Program

A key part of the NPS Management Program is the state-funded River Stewardship Program (RSP). The goal of the RSP is to fund projects that enhance the health of rivers by addressing the root causes of poor water quality and stream habitat. The RSP builds on collaboration and restoration techniques developed and implemented during successful CWA §319 and state funded implementation projects around the state.

Specific RSP objectives include:

- Restoring or maintaining hydrology of streams and rivers to better handle overbank flows and thus reduce flooding downstream;
- Enhancing economic benefits of healthy river systems such as improved opportunities to hunt, fish, float or view wildlife; and
- Providing state matching funds required for federal CWA grants.

Gila River - Before

Gila River - After

Example of grazing management river restoration project eligible for RSP funding

RSP projects, like CWA §319 projects described above, are selected through a competitive, statewide application or Request for Proposals process. RSP projects are distributed statewide. Priority areas have been selected, although projects that are not within the priority areas are also considered. Eligible applicants include: towns, cities, counties, soil and water conservation districts, irrigation districts, for-profit organizations; and Indian Nations, Pueblos and Tribes. Evaluation criteria favor projects that improve water quality, enhance fish and wildlife habitat, support local economies, and reduce downstream flood hazard.

Although RSP projects are not required to implement watershed-based plans, each RSP project proposal is evaluated relative to its alignment with local, state, tribal or federal planning documents, and watershed-based plans often provide the strong basis in planning for proposals to be competitive. New Mexico’s current and recently completed RSP projects are displayed on Figure 8 and in Appendix D.

To view additional information on the River Stewardship Program, visit:
https://www.env.nm.gov/swqb/RiverStewards/.

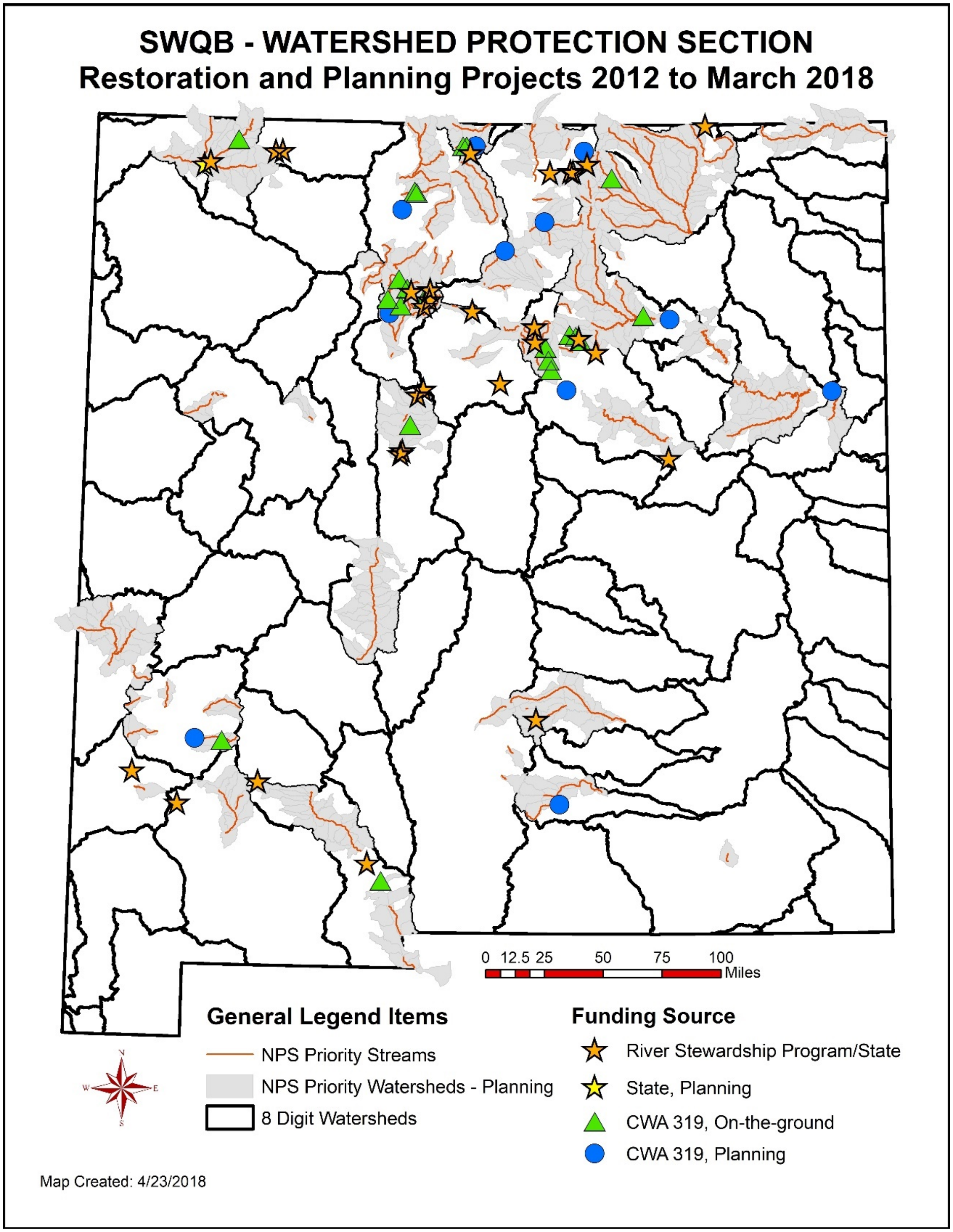


Figure 8. CWA §319 and RSP restoration and planning projects, 2012-2018

C. Point Source Regulation and Other State Certifications

Point source pollution results from discharge of contaminants through discrete conveyances such as pipes. In New Mexico, the EPA under CWA §402 administers the discharge of pollutants through the National Pollutant Discharge Elimination System (NPDES) program. State certification of federal permits is required under CWA §401 and ensures the permits are compatible with state laws, protect the state's water quality standards, and implement the state's WQMP/CPP. In New Mexico, the NMED is the CWA §401-certifying authority for waters of the state. The SWQB Point Source Regulation Section (PSRS) fulfills this responsibility, certifying eighteen NPDES permits in state FY 2016 and twenty permits in state FY 2017. The primary goal of PSRS is to protect public health and the environment by assuring that regulated point source discharges to surface waters of the state comply with appropriate state and federal statutes and regulations, including applicable water quality standards and applicable wasteload allocations developed through the TMDL process.

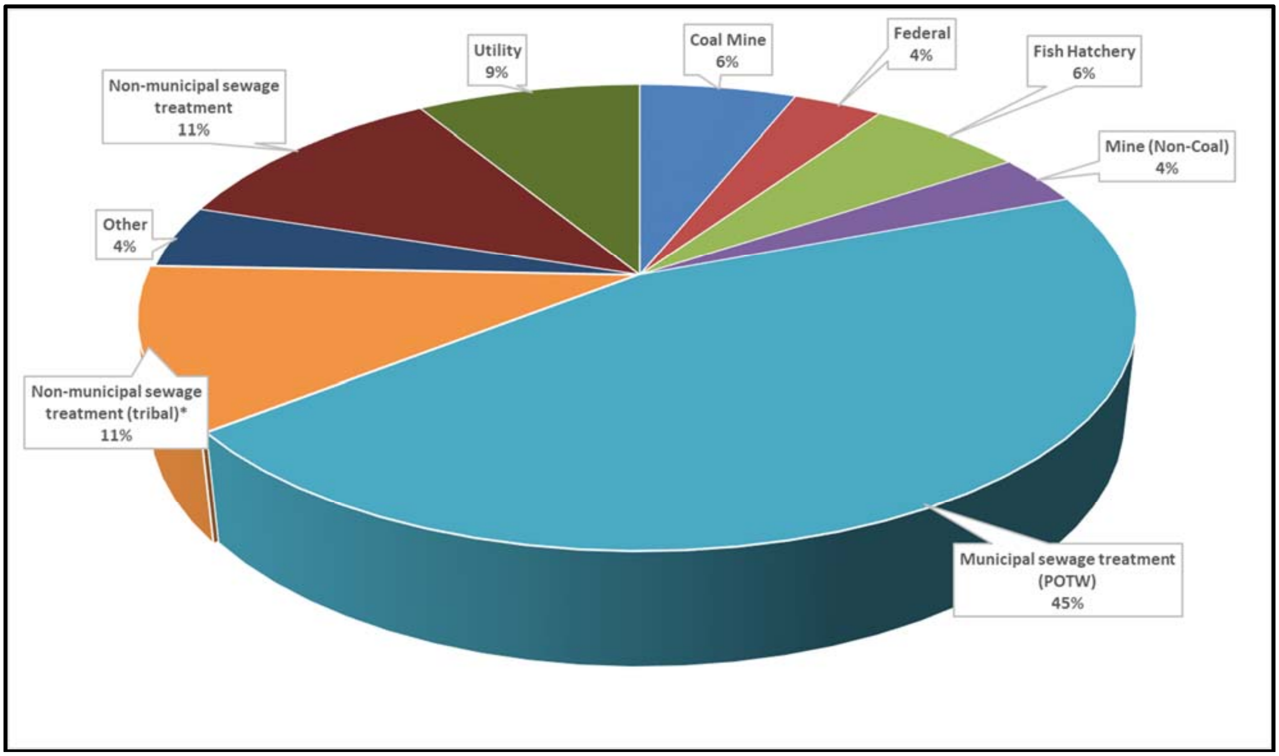
The PSRS is credentialed by EPA to conduct compliance inspections on behalf of EPA and to serve as a local point of contact for providing information to operators and other agencies regarding the federal regulatory program and also offering compliance assistance to individual facilities. Inspections help to ensure compliance with applicable effluent limitations and permit conditions and are carried out in accordance with the EPA NPDES Compliance Inspection Manual (EPA 2017b) using current, EPA-approved forms and checklists. The data and information collected are used to evaluate compliance and to support state or federal enforcement and permitting activities. The PSRS conducted 76 NPDES compliance inspections in FY 2016 and 53 inspections in FY 2017. In addition, EPA executed 17 NPDES enforcement actions in FY 2016 and 16 actions in FY 2017, most of which were based on state inspection reports.

Rock Lake State Fish Hatchery

State enforcement of NPDES permitted discharges is possible but has not occurred. State enforcement would be based in large part upon meeting the applicability requirement of 20.6.2.2100 NMAC, which applies to any discharger who is given written notice of a NPDES permit violation from EPA and who has not corrected the violation. The regulatory applicability clause is designed to prevent dual regulation by state and federal government, while still allowing the State to act in cases where the federal program has been unable to gain compliance within a prescribed time. Furthermore, the NMED has the authority under 20.6.2.1220 NMAC to issue compliance orders, including penalties, to a discharge that exceeds any water quality standard in state regulations, or is not complying with a condition or provision of an approved or modified discharge plan or permit. The state may also enforce provisions of 20.6.2.2201 NMAC prohibiting disposal of refuse in a watercourse.

In addition to conducting individual permit inspections, the PSRS also conducts both construction site and industrial facility stormwater inspections in accordance with the provisions of the Construction General Permit or the Multi Sector General Permit. The PSRS conducts outreach to construction site and industrial facility owners and operators to inform them of requirements under the CWA. The PSRS also assists with implementation of the Phase I and II Municipal Separate Storm Sewer Systems or "MS4" (i.e., urban stormwater) permitting program in New Mexico. PSRS has assisted EPA with implementation of the watershed-based MS4 permit in the Middle Rio Grande (issued December 2014) and has assisted EPA with the issuance of similar requirements in the statewide sMS4 permit, to be issued soon. PSRS will continue to provide assistance conducting audits of these programs as needed.

Figure 9 illustrates the distribution of individual NPDES permitted facilities by type and percentages. Because of the large percentage of wastewater treatment plants in the state, these facilities continue to cause adverse effects on water quality in local areas, in part due to poor operation and maintenance or limited funding to implement technological improvements or upgrades to treatment facilities.



NOTES: *SWQB does not certify these permits on tribal lands (comment provided only)

Figure 9. Distribution of Individual NPDES permits in New Mexico (115 permits total)

The U.S. Army Corps of Engineers (USACE) under CWA §404 administers the discharge of dredged or fill material in New Mexico. These federal permits are required for persons conducting dredge or fill activities in a water of the United States, and are designed to protect the waters from degradation due to nonpoint source pollution associated with such activities. State certification of these federal permits is required under CWA §401, and the NMED is certifying authority for waters of the state. The NPS Management Program leads this responsibility for New Mexico with assistance from other programs as needed. In 2017, the NPS Management Program completed water quality confirmations, certifications, or other actions on sixty-six dredge or fill permits.

For more information on State Certifications, see:
https://www.env.nm.gov/surface-water-quality/npdes-permits/
https://www.env.nm.gov/surface-water-quality/dredgeandfillactivities/
https://www.env.nm.gov/surface-water-quality/public-notices/

D. Other NMED Water Pollution Control Programs

CWA §303(d) and §305(b) are primarily implemented by the SWQB. However, because surface water quality is utilized and affected in diverse ways by different activities and needs, NMED has other bureaus and programs that also address water pollution control in New Mexico under the WQA. A few are highlighted below.

1. Drinking Water Bureau

NMED's Drinking Water Bureau (DWB) is responsible for regulating public water systems who are responsible for preserving, protecting, and improving New Mexico's drinking water quality for present and future generations. This is accomplished by implementing the requirements of New Mexico's Drinking Water Regulations (20.7.10 NMAC) and the federal Safe Drinking Water Act (SDWA) which establish the standards for drinking water throughout the State. These standards set limits for harmful contaminants such as pesticides, volatile organics, and radiochemical, chemical, and bacteriological contaminants. The SDWA originally focused on treatment as the means of providing safe drinking water at the tap. The 1996 amendments greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. This approach, adopted by the DWB, ensures the quality of drinking water in New Mexico by protecting it from source to tap. See inset box for additional information on recent primacy activities.

All public drinking water systems must monitor the water for regulated contaminants and ensure compliance with New Mexico's Drinking Water Regulations and the SDWA. Water samples are collected at each public water system's entry point into distribution, after treatment, and analyzed for contaminants according to an established schedule. The DWB provides oversight to all of New Mexico's public drinking water systems and reviews these data, periodically inspects the systems according to a rotating schedule depending on the type of system,

NEW MEXICO OBTAINED PRIMACY FOR THE REVISED TOTAL COLIFORM RULE

The Drinking Water Bureau submitted a primacy package to the EPA for the Revised Total Coliform Rule (RTCR) 78 FR 10269, February 13, 2013, Vol. 78, No. 30.

The purpose of the RTCR is to increase public health protection through the reduction of potential pathways of entry for fecal contamination into public water system (PWS) distribution systems. The RTCR establishes a maximum contaminant level (MCL) for *E. coli* and uses *E. coli* and total coliforms to initiate a "find and fix" approach to address fecal contamination that could enter into the distribution system. It requires PWSs to perform assessments to identify sanitary defects and subsequently take action to correct them.

The implementation of the RTCR in NM began on April 1, 2016. Additional Information is available at: https://www.env.nm.gov/drinking_water/rtcr/.

and takes action whenever a system is out of compliance. These actions typically include providing technical, managerial or financial assistance to help improve the overall capacity of a system and encouraging systems to regionalize and combine resources when possible; however, enforcement action may be taken to return the system to compliance.

Systems utilizing surface water sources for drinking water require more sampling of treated water than systems using a ground water source due to the potential for rapid changes in source water quality. While the quality of the source water does not impact the required quality of the produced drinking water, the quality of the source water will influence treatment considerations and associated costs to comply with all maximum contaminant levels. As of February 2018, out of 1,089 public drinking water systems, 63 public drinking water systems use or purchase water obtained from either surface water or ground water under the direct influence of surface water. When chlorine is used as part of drinking water treatment, disinfection byproducts can form when organic carbon reacts with the chlorine. Typically, systems can adjust treatment and operations as an effort to return to compliance relative quickly; however, additional infrastructure is sometimes required to remove organic carbon. A system is required to notify the public whenever violations of the SDWA occur.

In addition to providing oversight to systems, DWB's Source Water and Wellhead Protection Program works with systems to identify potential sources of contamination that might have adverse effects on the source waters and to develop a plan to protect those drinking water sources. The DWB assists systems to conduct assessments of potential sources of contamination for all surface water sources. The Source Water and Wellhead Protection Program recommends that systems evaluate surface water sources on the following criteria: 1) stream flow rate or reservoir size, 2) surface water intake construction and integrity, 3) intake method (direct or indirect), and 4) average daily turbidity of the surface water source. Sources of contamination are also typically identified within a ten-mile segment upstream of and one-half mile on either side of each intake. Additional potential contamination sources posing high risk are identified for the entire watershed as delineated from 500 feet below a drinking water intake. The identified sources of contamination are evaluated based on the chemical properties of the associated contaminants, their likelihood of release, the number of contaminants, their proximities to the surface water source, and chemical monitoring history. In early 2017, Source Water Protection Plans were completed for the cities of Farmington and Bloomfield. These plans are a start to more broad source water protection planning for the San Juan and Animas rivers. The City of Aztec will potentially be included in 2018 or 2019. In the past year, DWB also began working with the Buckman Direct Diversion and the City of Santa Fe on their source water planning efforts. As these two systems finalize their initial plans, the DWB also began working with the City of Albuquerque to update their 2009 water protection plan, thereby initiating comprehensive source water protection planning for the highly populated Upper and Middle Rio Grande Watersheds.

Buckman Direct Diversion on the Rio Grande

For additional information on NMED's Drinking Water Bureau, visit:
https://www.env.nm.gov/dwb/index.htm.

2. *Utility Operator Certification Program*

The Utility Operator Certification (UOC) Program administers the certification program for water and wastewater operators at all public water and wastewater utilities in New Mexico. This includes development, scheduling and administration of certification examinations, processing applications for certification and renewal, tracking all certified operators continuing education courses, evaluating training courses for relevance to program, tracking compliance with operator certification requirements, as well as working with the New Mexico WQCC and the Utility Operator Certification Advisory Board. NMED administers the UOC Program pursuant to the New Mexico Utility Operators Certification Act, NMSA 1978, §§ 61-33-1 to 10.

The UOC ensures that the roughly 3,300 active operators of drinking water systems and wastewater treatment systems in New Mexico are appropriately trained and qualified through:

- Tracking required continuing education credit hours (10 hours/year/operator) – over 46,245 and 37,763 hours were recorded in state FY 2016 and state FY 2017;
- Increasing the number of certifications through examinations that ensure the necessary knowledge and ability of all operators –,1293 and,1303 exams were conducted resulting in 575 and 545 certifications in state FY 2016 and state FY 2017, respectively; and
- Tracking the number of certified operators who renew each certificate held (renewal required every three years) – 1,056 and 1,060 operators renewed their certification in state FY 2016 and state FY 2017, respectively.

UOC Short School and Exam Session

The UOC Program has developed four study manuals for operators that comprehensively cover the technical aspects of water and wastewater treatment operations to assist them in studying for certification examinations. They include the Wastewater Study Guide, Water Study Guide, Wastewater Laboratory Study Guide, and Water Sampling Study Guide. The Program has made these study manuals available online. In addition, each year UOC Program staff provide approximately 40 hours of

For more information on the Utility Operators Certification program, see:
https://www.env.nm.gov/drinking_water/utility-operator-certification-program/.

For additional information on the UOC Advisory Board, see:
https://www.env.nm.gov/drinking_water/dwbutility-operators-certification-advisory-board/.

instruction at training events for certification of new operators and renewal of certification for existing operators.

3. *Ground Water Quality Bureau*

New Mexico's ground water resources are of vital importance in sustaining life, and must be preserved and protected for both present and future generations. Approximately 50% of New Mexicans depend solely on ground water for drinking water. This is a decrease from 90% four years ago due to the recent addition of surface water to augment the public water supplies of Albuquerque and Santa Fe. Eighty percent of New Mexicans are served by public systems with water derived from ground water sources and over 295,600 New Mexicans – 14.5% of the State's population - depend on private wells for drinking water (OSE 2010). Nearly half of the total water annually withdrawn for all uses in New Mexico, including agriculture and industry, is groundwater, the only practicable source of water in many areas of the State. Overall, the quality of these waters is assumed to be good, although there are significant pollution problems known to affect certain areas of New Mexico.

New Mexico relies on several programs to protect and maintain groundwater quality. The primary statute dealing with groundwater quality management is the WQA, which authorizes the WQCC to adopt groundwater quality protection regulations and standards (20.6.2 NMAC). Key features of the WQA and the WQCC regulations relating to groundwater include:

- A requirement for dischargers to obtain a groundwater discharge permit to prevent groundwater contamination from discharges that have the potential to impact groundwater quality, including discharges to underground injection control wells;
- Requirements for reporting and addressing spills and releases;
- Development of groundwater quality standards;
- Requirements to abate groundwater pollution; and
- Provisions for civil and criminal penalties for violation of the regulations and standards.

The role of the NMED Ground Water Quality Bureau (GWQB) is to protect the environmental quality of New Mexico's groundwater resources; and to identify, investigate and clean-up contaminated sites which pose significant risks to human health and the environment. Specifically, the GWQB:

- Issues groundwater pollution prevention permits;
- Implements the departments responsibilities under the New Mexico Mining Act to ensure that environmental issues are addressed and standards are met;
- Oversees groundwater investigation and remediation activities;
- Identifies, investigates and remediates inactive hazardous waste sites through implementation of the federal Superfund program;
- Oversees agreements between the state and responsible parties; and
- Implements the Voluntary Remediation Program.

The GWQB strives to increase industry and public understanding and awareness of the importance of safe groundwater supplies in sustaining the quality of life in New Mexico for this and future generations, and the importance of protecting groundwater quality through pollution prevention initiatives. The GWQB also offers free water quality screening for domestic wells at water fairs routinely held around New Mexico.

Groundwater quality monitoring is typically required at permitted facilities to determine baseline groundwater quality, serve as a leak detection method, and as part of remediation efforts to determine whether or not remediation efforts are effective. While household septic tanks or cesspools are the predominant source of nonpoint source contamination of groundwater in New Mexico, such degradation may also be caused by other diffuse sources such as residual minerals from evapotranspiration, land disturbance by mineral exploration, urban runoff, or application of agricultural chemicals. Point source categories include publicly and privately-owned sewage treatment plants with flows over 5,000 gallons per day, dairy operations, mines, food processing operations, industrial discharges, landfills, above and underground storage tanks, petroleum processing and storage, and accidental spills or leaks.

Groundwater Sampling

The WQCC held a public hearing on NMED's Petition to Amend the Ground and Surface Water Protection Regulations (20.6.2 NMAC) from November 14 – 17, 2017. Programs established under the New Mexico Oil and Gas Act, Hazardous Waste Act, Ground Water Protection Act, Solid Waste Act, Emergency Management Act, Voluntary Remediation Act, and Environmental Improvement Act also contain provisions which are designed to protect groundwater quality and which implement the groundwater regulations and water quality standards directly or by reference. In addition, the State cooperates with local and federal governments on various programs relevant to groundwater pollution control.

For more information on NMED's Ground Water Quality Bureau (including updates to the petition to amend ground water regulations), visit: https://www.env.nm.gov/gwb/.

V. Measure Progress/ Update Surface Water Quality Goals

The fourth phase of New Mexico's implementation of the CWA framework for surface waters is to continually grow and improve water quality identification and control techniques through measuring progress and updating surface water quality goals. Identification goals are reviewed and updated through activities such as the triennial review of water quality standards; the biennial revisions and improvements to the IR listing methodologies, especially related to developing numeric thresholds for narrative water quality criteria; and development of tools to identify, measure condition, and restore additional waterbody types such as wetlands. Progress towards meeting these goals is continually evaluated through rotational surface water quality monitoring, wetlands mapping, site inspections, consideration of special needs and concerns that hamper the ability to identify and address water quality impairments, and effectiveness monitoring of restoration implementation activities. Two specific SWQB programs that focus on these areas are highlighted below, along with special water quality issues and concerns in New Mexico.

A. Effectiveness Monitoring Program

An important goal of the NPS Management Program is to monitor the effects of NPS pollution control projects on water quality. These projects are primarily stream restoration measures funded under CWA §319, but also include projects funded through the RSP and the Wetlands Program. Effectiveness monitoring has focused primarily on projects addressing stream temperature impairments in mountain streams in northern and central New Mexico. Temperature monitoring is ongoing on the following streams: Bluewater Creek, Rio de Los Pinos, Ponil Creek, Rito Peñas Negras, Rio de las Vacas, Redondo Creek, Jaramillo Creek, San Antonio Creek, and Cow Creek.

The stream temperature monitoring provides data for statistical analysis using the before/after upstream/downstream study design, in which the relationship between the upstream and downstream stations is tested for a significant difference before and after restoration. Initial results from the data analysis indicate that peak summer temperatures in many streams have improved, but still exceed the associated aquatic life water quality criteria in some streams.

A common restoration technique for temperature impairments is to exclude cattle and elk grazing by building fence exclosures (i.e., intended to exclude animals from these areas to remove grazing impacts) and planting native vegetation to bring back the riparian cover. Although this technique is expected to be effective, there is a significant lag time between planting and sufficient vegetation growth to effectively shade the stream. Data collection and analysis will be continued to account for this lag time. These projects are expected to have beneficial effects which will continue to increase as riparian vegetation continues to grow and provide shade to the adjacent stream.

Watershed-scale change to bring about water quality standards attainment is usually a long-term effort. Economic changes, societal values, climate cycles, and climate change each may exert as much influence on water quality as isolated projects or small shifts in land management practices. NMED's Effectiveness Monitoring Program seeks to recognize water quality standards attainment attributable to projects or intentional land management improvements. A key NPS Management Program milestone is for NMED to submit one or more nominations per year to EPA for recognition as a NPS Success Story. New Mexico's recognized NPS Success Stories are listed in Table 8.

Table 8. New Mexico NPS success stories

Waterbody	Year
Bluewater Creek (Perennial portions Bluewater Reservoir to headwaters)	2017
Polvadera Creek (Cañones Creek to headwaters)	2015
Willow Creek (Pecos River to headwaters)	2014
Sitting Bull Creek (Last Chance Canyon to Sitting Bull Springs)	2014
Comanche Creek (Costilla Creek to headwaters)	2013
Santa Fe River (Paseo del Cañon to Santa Fe WWTP)	2011
Rio Cebolla (Rio de las Vacas to Fenton Lake)	2010

For more information on New Mexico restoration success stories, visit:
https://www.env.nm.gov/swqb/wps/Effectiveness/ and https://www.epa.gov/nps/nonpoint-source-success-stories#nm

B. New Mexico's Wetlands Program

Approximately one million acres of wetlands exist in New Mexico, which represents only a portion of the wetlands thought to be in existence in the early 1800s. Historically, the value of wetlands and their functions or natural processes were not fully appreciated and wetlands were used for what were considered more productive uses: agriculture; flood control structures; stockyards and livestock production areas; residential and industrial development; and oil and gas production. The SWQB's Wetlands Program administers CWA §104(b)(3) wetland restoration and program development grants. The overall goals of the Wetlands Program are to protect and restore New Mexico's remaining wetlands and riparian areas and to prevent additional wetland losses. The Wetlands Program works to increase self-sustaining and naturally functioning wetlands to their original extent especially targeting threatened, impacted and scarce wetlands types.

Wetlands are important features of the natural landscape because they function as filters that trap excess sediment, nutrient runoff and other pollutants, thereby improving water quality. They also mitigate extreme weather events common to New Mexico, such as drought and flashfloods by allowing water to slow down and infiltrate, thus augmenting groundwater storage and aquifer recharge, and attenuating the power and intensity of flashfloods. Wetlands support vegetation that provides a moist green fire break in the event of wildfires. They serve as the headwater sources of perennial streams including some of our State's outstanding streams and fisheries. Wildlife benefit greatly from wetlands, which support greater diversity of terrestrial and aquatic species. Their presence can also enhance property values in residential areas, as they provide a barrier to noise and urbanization.

Among the modern threats to New Mexico's wetlands are development, groundwater pumping that lowers already shallow water tables, the use of wetlands for storm water control, gravel and potash mining, invasive exotic plants and animals, agriculture, and channelization. This latter threat has severely impacted many of New Mexico's wetlands by limiting, and in many cases eliminating, the water/land relationship that would normally have allowed the establishment of wetland vegetation and ecosystems along river corridors. The results include the loss of natural flood attenuation, nutrient cycling, habitat connectivity, particulate retention, carbon sequestration, dynamic and long-term surface water storage, moderation of groundwater flow or discharge, and maintenance of vertebrate and invertebrate communities and habitat structure.

Channelization can also result in severe bank erosion and gully formation causing sediment build up in rivers and reservoirs and the loss of habitat for native fisheries, waterfowl, and other wildlife.

Starbuck Playa in 2015 in Curry County

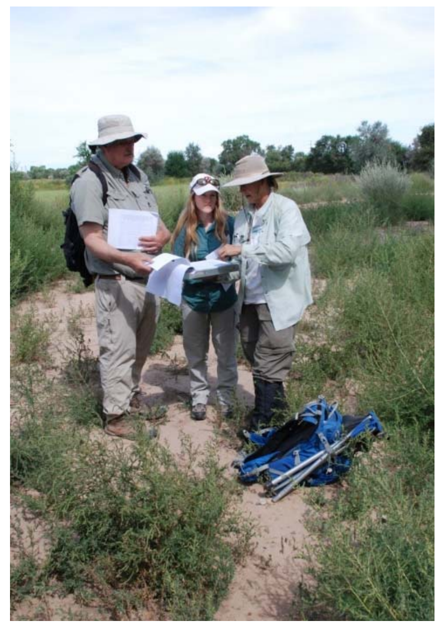
In the southeastern part of New Mexico, there are many economically and ecologically valuable playas that serve as critical oasis-like over-wintering habitat for migratory birds within the North American Central Flyway. These waters provide habitat for the Northern Pintail which is a highest priority waterfowl species according to the North American Waterfowl Management Plan (USFWS 2004). They also provide habitat for fifteen priority species of shorebirds listed in the US Shorebird Conservation Plan for the Central Plains/Playa Lakes (Brown *et al.* 2001). These playas are used by other wildlife such as pronghorn antelope, and for irrigation and livestock watering. They provide recreational opportunities such as hunting and bird-watching. Recent research has also shown that these playas serve as groundwater recharge zones, and therefore serve to sustain local water sources.

The Wetlands Program emphasizes the role of wetlands in prevention and reduction of water quality impairments and providing habitat and life requirements for protected species and other wildlife. The primary objectives of the Program include:

- Conducting identification of wetland types and baseline assessment throughout New Mexico;
- Implementing and administering wetlands restoration projects;
- Conducting an inventory of wetlands resources through landscape level mapping and classification, and working through a statewide mapping consortium;
- Promoting maintenance of instream flow to support streamside and floodplain wetlands and provide other water quality benefits;
- Promoting agricultural water use management and supporting wetlands as filtration systems for agricultural runoff;
- Promoting land management techniques to restore wetland-supporting beaver habitat;
- Increasing wetland acreage in New Mexico through the restoration and protection of wetland corridors;
- Determining the ecological condition of wetlands in New Mexico through the development and implementation of wetlands rapid assessment methods;
- Ensuring adequate protection of closed basin and isolated wetlands at the state level; and
- Participating in wetland/riparian education and outreach for schools and interest groups.

In 2017, EPA accepted the updated Wetlands Program Plan for New Mexico (WPP, NMED/SWQB 2017b**) as meeting the four required elements for such plans: monitoring and assessment; regulation; voluntary restoration and protection; and water quality standards for wetlands. Key activities to implement the WPP include:

- Developing and testing new methods that restore wetlands;
- Helping local watershed groups and communities develop Wetlands Action Plans throughout New Mexico to monitor, restore and protect wetlands, riparian and buffer areas at the local level;
- Implementing the State of New Mexico Assessment and Monitoring Program Strategy for Wetlands (NMED/SWQB 2013);
- Collecting and analyzing wetlands data using the New Mexico Rapid Assessment Method (NMRAM);
- Continuing to map and classify all wetlands in New Mexico including playas, isolated wetlands, and seeps and springs;
- Continuing to explore the relationship of groundwater and surface flows that sustain wetlands; and
- Improving WQS that apply to wetlands.


NMRAM data on the Rio Grande Floodplain, Valencia County

The monitoring and assessment goals of the WPP include expanding our current inventory of wetlands resources across the state. Our landscape level wetlands assessment includes classifying wetlands using the National Wetlands Classification System (Cowardin et al. 1979) and the "Landscape Position, Landform, Waterbody Type, Water Flow Path (LLWW)" (Tiner 2011) classification for updating and inclusion in the National Wetlands Inventory. From these data and other natural resource data, wetland functions and ecosystem services are identified and mapped by wetland type, as well as the identification of subclasses of similar wetlands. Accurate and up-to date mapping of wetlands provides the basis for a greater understanding of wetland resources throughout the state to monitor changes and trends, identify rare wetland types, select mitigation sites and coordinate protection of wetlands by agencies and partners. In addition to inventory and classification of wetlands, the SWQB Wetlands Program is developing methods for wetlands assessment that lead to protection and provide a benchmark for restoration of the state's wetlands resources. Assessment data from the NMRAM are providing the basis and justification for development of wetlands WQS and designated uses that will enable the state to more comprehensively protect wetlands. These data provide justification for preventing or eliminating stressors that will ultimately lead to increases in wetland quality. Training agency personnel, watershed group technicians, and other interested parties in NMRAM will accelerate the collection of relevant data and expand the use of NMRAM to other wetlands in the same selected subclasses. The development of a New Mexico wetlands database integrated with other water quality data ensures that these data are available to stakeholders and EPA. These assessment and monitoring initiatives include collaboration with agencies and stakeholders through advisory committees and the New Mexico Wetlands Roundtables to ensure that the state's overall wetland program develops comprehensively and in a coordinated manner.

Restored Wetlands in the Cebolla Canyon Closed Basin

Wetlands restoration is a crucial component of the WPP. Several restoration projects are occurring throughout New Mexico which include the assistance and collaboration of a variety of project partners, and are funded by EPA Region 6 CWA §104(b)(3) Wetlands Program Development grants and River Stewardship Program. Project activities include restoration of wet meadows and waterfowl habitat, restoration of wetlands on private land parcels, reestablishment of natural flooding, increasing wetland plant diversity and habitat diversity, removal of exotic vegetation, restoration of springs, planning for open-space and conservation easements to protect wetland resources and buffer, restoring high mountain fen wetlands, development and demonstration of slope wetland restoration techniques, and conservation of playas and closed basin wetlands.

Figure 10 depicts active wetland projects conducted by the SWQB Wetlands Program in New Mexico. The programs, plans, projects and measures developed and implemented by the SWQB Wetlands Program and our statewide partners ensure that the biological, chemical, and physical integrity of New Mexico wetlands are adequately protected.

For more information on New Mexico Wetlands Program, visit:
https://www.env.nm.gov/surface-water-quality/wetlands/

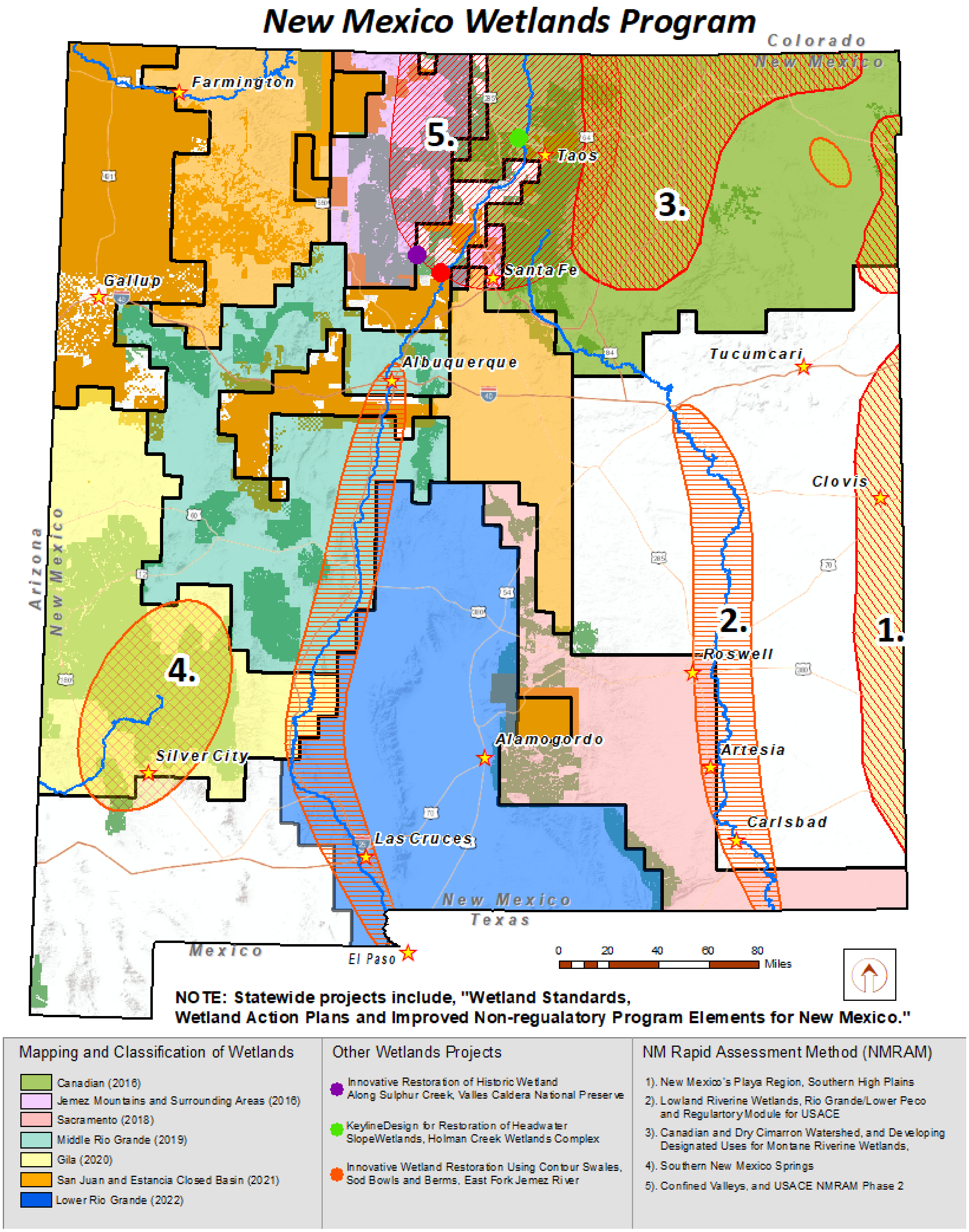


Figure 10. Approximate Location of Current Wetland Projects in New Mexico

C. Special State Surface Water Concerns and Recommendations

Agencies and other stakeholders that implement New Mexico's water management programs work continuously to protect surface water quality. However, there are still many challenges in meeting the objectives of the CWA and the WQA. Below is a list of the more significant surface water issues in New Mexico.

1. Gold King Mine Spill

On August 5, 2015, an estimated 3 million gallons of contaminated mine wastewater containing sediment, heavy metals and other chemicals were released from the Gold King Mine (GKM) in the headwaters of Animas River near Silverton, CO. The GKM release included aluminum, iron, manganese, lead, copper, arsenic, zinc, cadmium, and small amounts of mercury (EPA 2017c). The plume was carried by the Animas River into New Mexico, entered the San Juan River, which flowed to the Navajo Nation and Utah.

The GKM was operated from approximately 1887 until 1922 and is only one of the more than 400 abandoned or inactive mines (a.k.a. "legacy mines") in the San Juan Mountains. These legacy mines have billions of tons of heavy metal-laden waste, such as arsenic, copper, lead, and mercury, which have not been remediated or cleaned up. While the scope of the 2015 GKM spill has put the spotlight on legacy mining impacts, there have been several high-profile spills in the past, including another large magnitude blowout into Eureka Gulch and the Animas River in 1978, and a breach in the 1980s at the Leadville Tunnel in Colorado that killed off the aquatic life in the headwaters of the Arkansas River, to highlight a few.

The EPA Office of Research and Development (ORD) consolidated all available data in part to document the fate and transport of heavy metals released from the GKM spill (EPA 2017c). These data were downloaded from EPA's GKM website. Additional 2017 sampling data provided by ORD was added to the consolidated dataset. Post-spill surface water quality data collected at mainstem Animas River and San Juan River sampling stations in New Mexico from 2015-2017 were assessed against applicable WQS found in 20.6.4 NMAC. Although the 2015 dataset contained a few exceedences of dissolved copper (San Juan River only) and dissolved arsenic (San Juan River and Lower Animas River) water quality criteria, the 2016 and 2017 datasets did not have any exceedences of applicable metals criteria. As stated in New Mexico's listing methodology, more recent data may take precedence over older data, especially in cases where there was a temporary disturbance and several consecutive years of data before and after the event (NMED/SWQB 2017a). Available surface water data reviewed for this report indicate that surface water metal concentrations in the Animas River and San Juan River have returned to pre-spill conditions. The magnitude and frequency of the limited 2015 exceedences, combined with no additional exceedences of any applicable criteria in 2016 and 2017, did not warrant an impairments listing. The SWQB is currently implementing a two-year water quality survey in the San Juan River watershed during 2017-2018; these data will be assessed for development of the 2020-2022 IR. NMED's Chief Scientist is continuing the evaluation of potential impacts to sediments in the Animas and San Juan Rivers.

For more information on the NMED and EPA GKM response efforts, long-term monitoring plan, current advisories, timelines, and news releases, visit: https://www.epa.gov/goldkingmine and https://www.env.nm.gov/river-water-safety/

2. Drought and Climate Change

Living in the desert southwest, droughts are a way of life, but droughts are predicted to increase in both frequency and severity in many regions of the world, including the southwestern U.S., due to climate change (OSE/ISC 2006). The most common hydrological effects of drought are reduced runoff (snowmelt and monsoon), decreased stream flows, and lower lake levels. However, droughts may also result in major changes in water quality.

In general, droughts and the immediate recovery period have substantial water quality effects that vary depending on the waterbody and its watershed (Mosley 2015). For example, decreases in stream flow will likely lead to increases in salinity and other conservative solutes due to evapo-concentration. Higher air temperatures due to climate change coupled with decreased streamflow and lower lake levels associated with drought can increase water temperatures, enhance algal production, support toxic algal blooms, and lower dissolved oxygen levels, all of which are stressors to aquatic life. Where point sources of pollution are present, water quality may worsen due to less dilution, particularly for nutrients. Storage and buildup of material in watersheds during drought (due to reduced flushing and increased productivity) can also result in large post-drought flood loadings of pollutants. Large inputs of nutrients, sediment and carbon can cause severe downstream water quality effects such as deoxygenation and fish kills. The maintenance of long-term monitoring programs will identify trends in water quality and evaluate project effectiveness. In addition, watershed restoration projects will enhance the natural environment and improve watershed resilience to climate change, including droughts, floods and wildfire.

3. Wildfires

New Mexico has experienced a growing number of wildfires with increasing size and severity. Wildfires can produce significant watershed changes that may impact water quality, fish and other aquatic organisms, drinking water supplies and wastewater treatment systems. The primary water quality concerns after a wildfire are: (1) the introduction of sediment and debris into the surface waters; (2) the increase of nitrate and other plant nutrients from burned vegetation; (3) the introduction of radionuclides and heavy metals from ash, soils, and geologic sources; and (4) the introduction of fire retardant chemicals into waterbodies. The magnitude of these effects is largely dependent on the size, intensity, and severity of the fire, and on the condition (e.g., healthy or poor) of the watershed at the time of burning.

A watershed may take decades to completely recover from the effects of a wildfire, during which time the waters may exceed WQS for one or more pollutants. Assessing the water quality of an area after a wildfire can be challenging as it may be difficult to determine the cause of any impairments and the time at which fire-caused conditions are no longer influencing the watershed. Whether natural or human-caused, with the increasing frequency and magnitude of wildfires in response to drought and climate change, a standard approach for monitoring, assessing, and listing wildfire affected areas needs to be developed.

4. Stormwater

Controlling stormwater runoff and its impact is a serious issue facing communities across New Mexico. Urban and highway stormwater runoff is rainfall or snowmelt that runs off the ground or impervious surfaces such as buildings, roads, and parking lots, and drains into natural or man-made drainage systems. In most cases, it drains directly into streams, river, lakes, or wetlands without receiving any treatment to remove pollutants. Because of this, stormwater is a leading cause of water pollution.

Changes in land use have a major effect on both the quantity and quality of stormwater runoff. Urbanization, if not properly planned and managed, can dramatically alter the natural hydrology of an area because it increases impervious cover, decreases the amount of rainwater that can naturally infiltrate into the soil, and consequently increases the volume and rate of stormwater runoff. These changes lead to more frequent and severe flooding, and therefore potential damage to public and private property. In addition, the increased flow associated with urbanization can significantly alter aquatic life habitat through erosion of the streambed and banks and deposition of eroded materials in critical habitat areas.

Stormwater runoff often contains elevated concentrations of a variety of constituents that may contribute to WQS exceedences in state surface water. Of particular concern are certain heavy metals, such as copper, lead, and zinc; certain organics, such as polyaromatic hydrocarbons (PAHs) and pesticides; oil and grease; nutrients (nitrogen and phosphorus); sediment; and bacteria, such as *E. coli*. On the Pajarito Plateau, there are additional concerns associated with legacy contaminants from the Manhattan Project and Los Alamos National Laboratory. Untreated stormwater entering our waterways carry certain toxicants that may negatively impact aquatic life or drinking water supplies depending on the nature of the receiving water; prohibit or limit swimming, fishing or boating; present dangers to public health and safety; and increase the frequency and magnitude of flooding. Therefore, effective water quality protection requires the "treatment" of stormwater through the use of various preventive and control measures to reduce the impact of impervious surfaces and minimize increases in stormwater runoff, such as low impact development, structural controls, and pollution prevention strategies.

5. Nutrient Reduction Strategy

The EPA, through its National Water Program Guidance, continues to place a high priority on states addressing nutrient pollution and identifying nutrient-impaired waters through adoption of numeric water quality criteria for nitrogen and phosphorous in our nation's waters, although it has allowed appropriate flexibility to states to make incremental improvements to address excess nutrients through other measures (Stoner 2011). As documented in the *New Mexico Nutrient Reduction Strategy* (NMED/SWQB 2014b), New Mexico is currently not pursuing adoption of numeric nutrient criteria. Instead, New Mexico is pursuing continued refinement of numeric thresholds for our narrative criteria and associated listing methodologies. Specific accomplishments this listing cycle include:

- Incorporation of the collaborative EPA's Nutrient Scientific Technical Exchange Partnership and Support (N-STEPS) project (Jessup et. al 2015) findings to refine numeric nutrient threshold values in New Mexico's listing methodology for wadeable, perennial streams;
- Continued protection of water-quality limited segments in accordance with both state (20.6.4.8 NMAC) and federal (40 C.F.R. §131.12) antidegradation policies and implementation procedures to ensure that Tier 1 waters (i.e., waters identified as "impaired") are not further degraded and that NPDES nutrient effluent limitations, at a minimum, protect existing instream uses;
- Continued improvements to nutrient TMDLs that recognize the nutrient threshold concentrations necessary to protect designated aquatic life uses while developing approaches to implement waste load allocations and load reductions that are achievable while neither over- nor under-protective; and
- Adoption of a Temporary Standard provision during the Triennial Review process to encourage incremental improvements in water quality and establish a clear path to compliance (SWQB is currently working with EPA and a contractor to develop nutrient temporary standards proposals for five demonstration facilities in New Mexico that consider the existing facility design as well as local economic and social factors).

6. Adequate Funding of Water Quality Programs

Protecting the nation's water from pollution and contaminants relies on cooperation between EPA, states, and tribes; however, over the past decade state and federal funding for water quality programs has decreased (or remained flat) to a point where some basic services can no longer be sustained (see graph below). Core Water Protection program components include: water quality criteria, standards, and technology-based effluent guidelines; NPDES permitting and compliance; water quality monitoring and assessment; TMDLs; watershed management; water infrastructure and grants management; core wetlands programs, and CWA §106 program management, including groundwater protection. Even funding cuts in other agencies that are often thought of as peripheral to water quality management have an adverse effect on water quality programs. For example, budget cuts in the New Mexico Department of Health have resulted in a 45% reduction in analytical services provided by the State Laboratory Division to NMED. Cuts and sweeps of state funding have resulted in placing more burden on federal grants to fill those gaps, but federal assistance grants are also on the chopping block.

In March 2018, the U.S. Congress passed the FY 2018 omnibus bill to fund the federal government through September 2018 (end of the federal fiscal year). The bill holds EPA operating programs at the FY 2017 enacted level, maintaining the lowest level of funding since FY 2009. While EPA operating programs are held level, the bill provides additional funding for states to do high priority permitting and cleanup work and significant increases for on-the-ground cleanup and infrastructure. These increases include:

- $2.9 billion for the Clean Water and Drinking Water State Revolving Loan funds, an increase of $600 million, which help states and localities improve water infrastructure;
- $50 million in new funding for programs authorized in the WIIN Act to provide access to basic wastewater and drinking water services and to clean up lead in schools;
- $1.15 billion, a $66 million increase, for Superfund to help clean up the nation's most polluted sites.
- $63 million for the Water Infrastructure Finance and Innovation Act (WIFIA) loan program, which will leverage federal dollars to provide over $6 billion in financing for water infrastructure projects.

Looking forward to next year, the following table[2] provides a break-down of the proposed FY 19 National Water Program grants (dollars in thousands), which shows a **60.5% reduction in state assistance grants for key water quality programs in New Mexico**. Many of these grants also require state match.

National Program / State Grant **WATER**	FY 2017 Actuals	FY 2018 Appropriation	FY 2019 PB	Delta FY 2019 PB – FY 2018 ACR	% Change FY 2019 PB – FY 2018
Pollution Control (CWA §106)	$227,686	$230,810	$153,683	($75,556)	-33.0%
Nonpoint Source (CWA §319)	$169,772	$170,920	$0	($169,754)	-100.0%
Wetlands Program Development	$15,867	$14,660	$9,762	($4,799)	-33.0%
	$413,325	**$413,554**	**$163,445**	**($250,109)**	**-60.5%**

NOTES: PB = President's Budget, ACR = Annualized Continuing Resolution

Cutting state assistance grants will seriously inhibit New Mexico's ability to implement the Clean Water Act. Moreover, if water quality overall is poorer because Clean Water Act programs are limited then treatment

[2] From https://www.epa.gov/sites/production/files/2018-02/documents/fy-2019-epa-bib.pdf.

of the water to achieve beneficial uses (such as safe drinking water, livestock watering, irrigation, wildlife habitat, and recreation) will cost more.

Here are the Clean Water Act programs in NM that may be underfunded or cut in FY 19:

1. Pollution Control (CWA §106) – This grant program provides federal assistance to states, tribes, and interstate agencies to establish and maintain programs for the prevention and control of surface and groundwater pollution from point and nonpoint sources.

2. Nonpoint Source (CWA §319) – This program provides grants to assist states and tribes in implementing approved elements of Nonpoint Source Programs including: regulatory and non-regulatory programs, technical assistance, financial assistance, education, training, technology transfers, and demonstration projects.

3. Wetlands Program Development (CWA §104(b)(3)) – This program provides technical and financial assistance to states, tribes, and local governments to support development or refinement of wetland programs through monitoring and assessment, voluntary restoration and protection, and wetland water quality standards in order to increase the overall acreage and condition of wetlands.

As the Southwest continues to experience drought conditions and changing climatic conditions, higher frequency and magnitude of wildfires, and other challenges related to urbanization, water quality management programs become all the more important. Elected officials, land managers, and other stakeholders have higher expectations of water quality agencies. These pressures run contrary to the funding profiles these agencies are experiencing.

Funding challenges exist on the state level as well. In the past, NMED, OSE, U.S. Bureau of Reclamation, and the City of Albuquerque collectively funded the USGS to conduct ambient monitoring at approximately 20 stations that comprised the state's long-term surface water quality surveillance network. These USGS stations were located on the major stream systems of New Mexico, and support a variety of projects across the state. Unfortunately, due to cuts to NMED's operating budget, USGS sampling previously funded by the state was discontinued starting in state FY 2012, as NMED was the principal source of funding for several parameters at USGS gauges. This is a large loss to the state water quality monitoring community, and hampers the SWQB's ability to detect and report long-term trends at key monitoring stations around the state.

VI. Financial Resource Analysis

A. Resources Applied to Surface Water Quality Management

Protecting and preserving water quality to ensure adequate, safe, and reliable water resources for the long term is a top priority for New Mexico. Each year New Mexico invests in water quality management programs and water quality improvements, which reflects the value placed on New Mexico's precious water resources. The quality of the state's water resources has an impact on every citizen and is linked to the economic vitality and quality of life New Mexicans cherish.

Like most states, New Mexico is faced with the challenge of addressing an array of complex surface water quality issues with limited financial resources. As the complexity of environmental needs continues to increase, there is an expectation that the SWQB will continue to meet and exceed the mandates of state and federal legislative and regulatory requirements with fewer resources to do so. This pressure makes it essential that New Mexico evaluate information regarding the fiscal implications and potential benefits of its water quality programs. While most are implemented by the SWQB, they are largely supported by the federal government. However, and as referenced throughout this report, there are also local, state, and even private resources that directly or indirectly affect the state's water quality. Table 9 summarizes the estimated amount of funds the SWQB expended annually to implement a comprehensive water quality management program, and is based on actual expenditures for state FY 2017. Match of state or federal funding, provided locally as in-kind support for nonpoint source and wetland projects, are not included in this table.

Table 9. Estimated State Expenditures for New Mexico's Surface Water Quality Management Implemented Through NMED SWQB

Water Quality Management Program	Federal	State	Total
Monitoring & Assessment (Includes Water Quality Management Program, TMDL Development, and State Fish Advisories)	$ 922,558	$ 530,221*	$ 1,452,779
Point Source Regulation	$467,332	$253,991	$721,323
Nonpoint Source Management	$ 1,083,306	$ 308,669	$ 1,391,975
Wetlands Program	$ 489,065	$ 67,137	$ 556,202
Water Quality Standards (includes planning and reporting activities)	$ 124,134	$ 88,297	$ 212,431
River Stewardship Program**	--	$ 752,940	$ 752,940
Total	**$ 3,086,395**	**$ 2,001,255**	**$ 5,087,650**

NOTES: The above numbers are based on NMED state FY 2017 actual expenditures.
* = funding includes State Level of Effort for CWA §106 Grant ($220,084) and water quality sample analysis awarded as "work time units" ($178,735)
** = These projects are state-funded special initiatives whose continued funding is uncertain.

Capital Investments in Municipal Facilities

Table 10. Estimated Annual Operation and Maintenance Costs for Wastewater Treatment Facilities in New Mexico

Wastewater Treatment Plant Facility Size	Estimated Annual Operation and Maintenance Costs
Small WWTP < 1 MGD	$300,000 per year
Medium WWTP 1-4 MGD	$780,000 per year
Large WWTP > 5 MGD	$1,500,000 per year

Source: Utility Operator Certification Program

The estimated annual costs for operating and maintaining various sizes of wastewater treatment facilities in New Mexico is summarized in Table 10. Most of these operation and maintenance costs are funded through fees included in monthly water/sewer rates. Many entities do not include replacement cost in their rate structure; therefore, New Mexico is encouraging communities to utilize the Asset Management approach to rate setting. Asset Management helps wastewater treatment systems prepare for both anticipated and unexpected problems by evaluating the system's current physical, financial, and managerial situation. It requires entities to make fundamental decisions about the water system's purpose, structure, and functions. For more information refer to *Asset Management: A Handbook for Small Water Systems* (EPA 2003a).

Table 11. Summary of Improvement and Construction Costs for New Mexico Water, Wastewater, and Solid Waste Facilities

Program	Description	Funds Disbursed in FY 2016	Funds Disbursed in FY 2017
State Appropriations Program	State Legislature capital outlay appropriated for the construction of community water supply, wastewater facility, and solid waste facility projects.	$ 17,726,506	$ 26,703,656
Clean Water State Revolving Fund (CWSRF) Program	Revolving loan fund to provide a source of low-cost financing for a wide range of wastewater or storm drainage projects that protect surface and groundwater quality and public health. Funds may also be used for nonpoint source water pollution control projects, such as solid waste projects and septic tank installations	$ 12,848,694	$ 21,432,010
Rural Infrastructure Program	Revolving loan fund to provide financial assistance to local authorities for the planning, design, and construction or modification of water supply, wastewater, and solid waste facilities.	$ 1,974,941	$ 1,596,417
	Water-Related Projects TOTAL	**$ 32,550,141**	**$ 49,732,083**

The NMED Construction Programs Bureau (CPB) administers the Clean Water State Revolving Fund (CWSRF), the Rural Infrastructure Revolving Loan Program (RIP), and the Special Appropriations Capital Outlay Program (SAP). The CWSRF provides funding for a variety of wastewater projects including nonpoint source and solid waste projects; the RIP provides funding for water, wastewater and solid waste projects; and the SAP oversees legislatively assigned water, wastewater and environmentally related projects. Technical assistance and oversight is provided for all projects to ensure environmentally sound, high quality projects free of waste, fraud and abuse. Table 11 summarized the programs administered by the CBP, and shows the amounts disbursed in FY 2016 and FY 2017.

Benefits of these expenditures can be seen directly and indirectly throughout communities in New Mexico The state's water quality programs, including expenditures for pollutant-reducing infrastructure, result in prevention of water quality degradation from point and NPS sources of pollution, protection of aquatic life and habitat in receiving streams, reduction of pollutant loads that could have financial and public health impacts in areas where surface water is a source of drinking water, increased public awareness regarding the need for water quality protection, and sustainable resource management practices.

The NMED DWB and New Mexico Finance Authority (NMFA) administer the Drinking Water State Revolving Loan Fund (DWSRLF), which provides low-cost loans to eligible public drinking water systems. In state FY 2016 the NMFA closed ten loans (nine new loans and one amendment) totaling $16,436,843 and in state FY 2017 closed sixteen loans (twelve new loans and four amendments totaling $12,163,705. Representative projects include repair and replacement of failing distribution lines, water treatment upgrades to maintain compliance with the SDWA, and the construction and rehabilitation of wells to ensure an adequate water supply.

Recognizing the overabundance of funding needs and limited resources in New Mexico, NMED developed the Water Infrastructure Team (WIT) in 2014. The WIT is a collaborative effort of government agencies and non-governmental organizations who are working together to tackle New Mexico's vast water infrastructure needs (including wastewater and drinking water). This multi-state agency effort includes the identification of water system funding as well as technical, managerial, and financial assistance needs. Through a survey conducted in 2014, the WIT identified over $300 million of water-related infrastructure projects in need of funding and continues to work with stakeholders to help identify potential funding sources for these projects.

For more information on the Construction Programs Bureau and WIT, visit:
https://www.env.nm.gov/construction-programs/ and https://www.env.nm.gov/WIT

VII. Public Participation and Agency Coordination

A. CWA §303(d)/ §305(b) Integrated Report Public Participation

All individuals living and working in the New Mexico affect water quality and are affected by water quality. Public awareness and involvement is therefore crucial to the successful implementation of water quality programs. New Mexico's water quality programs promote a multi-stakeholder, consensus-based public participation process. By actively pursuing and considering public input and involvement, New Mexico can more effectively effect changes in behavior and actively improve decision-making concerning water quality with greater public acceptance and support for those decisions.

There are several opportunities for public and other stakeholder participation in the development of the IR, from data collection through impairment determination and reporting. The public participation requirements of specific water quality programs are specified in 40 C.F.R. §25.4 and described in the WQMP/CPP (WQCC 2011). At a minimum, the public participation process for New Mexico's water quality programs consists of the following:

- Providing the public with the information and assistance necessary for meaningful involvement;
- Providing a central location of reports, studies, plans, and other documents;
- Maintaining a list of affected or interested parties and stakeholders; and
- Notifying stakeholders in a timely fashion prior to consideration of major decisions (generally at least 30 days).

What is a Stakeholder?
For the purposes of this report, a stakeholder is defined as any organization, governmental entity, or individual that has a vested interest in or may be impacted by a state directed approach to environmental regulation, pollution prevention, or energy conservation.

During rotational watershed survey planning, meetings are held in the planned survey area to inform stakeholder of proposed sampling locations, frequencies, and parameter suites. These meetings provide an important opportunity to gather local knowledge of water quality issues and concerns, and often result in revisions to the draft field sampling plans.

Prior to development of the draft Integrated List for each listing cycle, the public has an opportunity to provide comments to the listing methodology (i.e., CALM) through a public participation process that includes a minimum 30-day public comment period with public notification as defined in the WQMP/CPP (WQCC 2011). The SWQB typically announces the "call for outside data" at the same time. The CALM used to develop the draft 2018-2020 Integrated List (Appendix A) was released for public comment in this manner (NMED/SWQB 2017a). A draft of this listing methodology was opened for a 30-day public comment period from April 12 to May 11, 2017. Comments received were reviewed, considered, and incorporated as deemed appropriate.

The public participation associated with the development of this Integrated Report and associated Integrated List (Appendix A) included notifying stakeholders of a 45-day public comment period April 18 - May 31, 2018. Public notices were posted to NMED's website, sent through the GovDelivery e-mail delivery service, and announced by NMED's public relations officer. In addition, a Public Involvement Plan was prepared as required per NMED policy. The SWQB responded in writing to each comment received in Appendix C of the IR. These responses were forwarded to all commenters prior to the WQCC meeting.

B. Coordination with state and federal government agencies

Successful surface water quality management and protection is founded on cooperative interaction between the federal, state, local, and tribal levels of government, and between the public and private sectors. In particular, the NPS Management Program relies on established resource protection programs, national and state NPS pollution prevention programs, and activities of other land management and resource protection agencies to address NPS pollution. New Mexico identifies programs and activities that will facilitate the achievement of surface water quality criteria, using a voluntary approach to implement water quality improvements due to non-point sources. In addition to NMED, numerous other New Mexico and federal agencies conduct activities that utilize, protect, and restore surface water quality, including but not limited to:

- Office of the State Engineer (OSE),
- Interstate Stream Commission (ISC),
- Department of Game and Fish (NMDGF),
- Department of Agriculture (NMDA),
- Energy, Minerals, and Natural Resources Department (EMNRD),
- Department of Health (NMDOH),
- Oil Conservation Commission (OCD),
- US Army Corps of Engineers (USACE),
- US Bureau of Reclamation (USBOR),
- US Forest Service (USFS),
- Natural Resources Conservation Service (NRCS), and
- Soil and Water Conservation Districts (SWCDs).

Northern Wetlands Roundtable, Santa Fe, 2018

These and other agencies work with stakeholders during development and implementation of water quality management activities. Coordination is crucial and focuses on informing and including stakeholders on water quality management related activities, seeking input, soliciting data and information, and working with stakeholders to implement solutions to water quality problems and concerns. For example, the Wetlands Program coordinates and facilitates the New Mexico Wetlands Roundtable consisting of state, federal, and tribal agency participants, and NGO partners such as the New Mexico Riparian Council, Society of Wetland Scientists Rocky Mountain Chapter, Albuquerque Wildlife Federation and the New Mexico Wildlife Federation. The New Mexico Wetlands Roundtable is conducted four times a year, twice in the spring, and twice in the fall, one each in southern (Las Cruces) and northern (Santa Fe) New Mexico.

Regular coordination between the USFS and the SWQB continues to be an integral part of the NPS Management Program and has facilitated cooperation on many successful NPS pollution reduction projects. As mentioned in the state certification section above, the NPS Management Program also coordinates with the USACE to implement the State's CWA §401 certification responsibilities for CWA §404 permits.

Additionally, numerous stakeholder focus groups have been developed for specific issues and meet on a regular basis to coordinate efforts. NMED participates in many of these groups to address a variety of water quality issues. Examples of such groups include the New Mexico Municipal League Environmental Quality Association, the New Mexico Forest and Watershed Health Coordinating Group, and individual watershed groups' regular meetings, such as the Middle Rio Grande Water Quality Workgroup.

C. Fish Consumption Advisory Program

Fish are a lean, low-calorie source of protein, and can be an important part of a balanced diet. However, some fish may contain contaminants that, when consumed in certain quantities, could pose health risks. When contaminant levels may be unsafe, consumption advisories recommend that people limit or avoid eating certain species of fish caught in certain places. NMDOH, NMDGF, and the SWQB work together to implement New Mexico's Fish Consumption Advisory Program. EPA considers fish or shellfish consumption advisories and supporting fish tissue data to be existing and readily available data that demonstrate non-attainment of CWA goals stating that waters should be "fishable" (CWA §101(a), EPA 2005). The basis for fish consumption impairments each listing cycle is the most recent, available fish consumption advisories at the time the Integrated Report is drafted, except in cases where there is a consumption advisory due to mercury but available fish tissue data indicate New Mexico's methylmercury criterion of 0.3 mg/kg in fish tissue is not exceeded (NMED/SWQB 2017a).

Electrofishing in a New Mexico

The Program's monitoring strategy involves screening a select number of sites for chemical contamination where sport, subsistence, or commercial fishing is conducted. Site selection is prioritized based on areas where it is known that a large number of fish are harvested or where there are known or suspected contamination issues. This screening helps identify those waters where fish tissue contamination may pose unacceptable health risks to human consumers.

Fish consumption advisories relay fish tissue contamination information to the public. These advisories are only guidelines and do not constitute legal restrictions that prevent people from eating contaminated fish from New Mexico lakes and streams. Fish consumption advisories pertain to consumption of fish only. There are no known contaminant-related health risks associated with activities such as camping, swimming, boating, or handling fish in areas where there are fish consumption advisories.

Currently, advisories have been issued for mercury, DDT and PCBs in fish tissue at several reservoirs, lakes and rivers (NMDOH *et al*., 2016). The New Mexico Game Commission rescinded the catch-and-release only rule for Brantley, effective April 1, 2018. There will still be a fish consumption advisory for DDT. This change will be reflected in the next update to the fish consumption advisories.

New Mexico fish consumption advisories are available online at:
https://www.env.nm.gov/swqb/advisories/

D. Additional SWQB Outreach Efforts

The SWQB supports or implements several outreach activities throughout the year, including but not limited to:

- Publishing the quarterly newsletter *Clearing the Waters (*https://www.env.nm.gov/surface-water-quality/newsletters/*)*,
- Preparing BMP brochures and other water quality topics for conferences and stakeholders,
- Developing and maintaining the extensive SWQB web site (https://www.env.nm.gov/surface-water-quality/),
- Coordinating and/or participating in several on-the-ground restoration workshops,
- Soliciting stakeholder input of important guiding SWQB documents such as upcoming revisions to the Nonpoint Source Management Plan,
- Presenting on a variety of surface water quality issues and programs at various state and national workshops and meetings, and
- Presenting at school and community events such as the *Children's Water Festival*.

Quivira Coalition building one-rock dams to capture sediment and raise water table in slope wetlands in the Comanche Creek Watershed

VIII. References

Brown, S., C. Hickey, B. Harrington, R. Gill, Ed. 2001. United States Shorebird Conservation Plan. Manomet Center for Conservation Sciences. Manomet, MA.

Bureau of Land Management (BLM). 2016. New Mexico Land Ownership Dataset. New Mexico State Office. Santa Fe, NM.

Bureau of Reclamation (BOR). 1976. New Mexico State Resources Assessment for Planning Purposes. United States Department of the Interior.

Cowardin, Lewis M., et al. 1979. Classification of wetlands and deepwater habitats of the United States. US Department of the Interior, US Fish and Wildlife Service, 1979. Available at: https://scholar.google.com/scholar?hl=en&q=National+Wetlands+Classification+System+%28Cowardin+et+al.+1979%29&btnG=&as_sdt=1%2C32&as_sdtp=

Jessup, B.K., S. Joseph, B. Dail, L. Guevara, S. Lemon, S. Murray, F. John, J. Oliver, L. Yuan, C. Patrick, M. Maier, and M. Paul. 2015. New Mexico nutrient thresholds for perennial wadeable streams. August 21, 2015. Prepared in cooperation with the New Mexico Environment Department, and the U.S. EPA Region 6 and the N-STEPS Program. Tetra Tech, Inc., Montpelier, VT. Available at: https://www.env.nm.gov/swqb/Nutrients/.

Mosley, Luke M. 2015. Drought impacts on the water quality of freshwater systems; review and integration. Earth-Science Reviews. Volume 140, January 2015, pp. 203-214.

New Mexico Department of Health, New Mexico Environment Department, and New Mexico Department of Game and Fish (NMDOH et al.). 2016. Fish Consumption Advisories https://www.env.nm.gov/swqb/advisories/

New Mexico Environment Department/Surface Water Quality Bureau (NMED/SWQB). 2014a. New Mexico Nonpoint Source Management Program. Santa Fe, NM. Available at: https://www.env.nm.gov/swqb/wps/Plan/2014NPSPlan.pdf.

______. 2013. State of New Mexico Assessment and Monitoring Program Strategy for Wetlands. Santa Fe, NM. Available at: https://www.env.nm.gov/surface-water-quality/wetlands/

______. 2014b. State of New Mexico Nutrient Reduction Strategy for protecting and improving water quality. Santa Fe, NM. Available at: https://www.env.nm.gov/swqb/Nutrients/NutrientReductionStrategy-2014.pdf.

______. 2015. Final Draft Prioritization Framework and Long-Term Vision for Water Quality in New Mexico. Santa Fe, NM. Available at: https://www.env.nm.gov/surface-water-quality/tmdl/

______. 2016a. *State of New Mexico Surface Water Quality Bureau 10-Year Monitoring and Assessment Strategy*. Santa Fe, NM. Available at: https://www.env.nm.gov/swqb/MAS/monitoring/10-yearmonitoringplan_FINAL_June2016.pdf.

______. 2016b. Quality Assurance Project Plan for Water Quality Management Programs. Santa Fe, NM. Available at: https://www.env.nm.gov/surface-water-quality/protocols-and-planning/.

______. 2017a. Procedures for Assessing Standards Attainment for the State of New Mexico CWA §303(d)/ §305(b) Integrated Report: Comprehensive Assessment and Listing Methodology (CALM). Santa Fe, NM. Available at: https://www.env.nm.gov/surface-water-quality/calm/.

______. 2017b. Wetlands Program Plan for New Mexico. Santa Fe, NM. Available at: https://www.env.nm.gov/surface-water-quality/wetlands/.

______. 2018. Quality Management Plan. Santa Fe, NM. Available at: https://www.env.nm.gov/surface-water-quality/protocols-and-planning/.

______. various. Standard Operating Procedures. Santa Fe, NM. Available at: https://www.env.nm.gov/surface-water-quality/protocols-and-planning/.

New Mexico Office of the State Engineer (OSE). 2010. Water Use By Categories 2010. New Mexico Office of the State Engineer Technical Report 54. Santa Fe, NM. Available at: http://www.ose.state.nm.us/Pub/TechnicalReports/TechReport%2054NM%20Water%20Use%20by%20Categories%20.pdf.

New Mexico Office of the State Engineer/Interstate Stream Commission (OSE/ISC). 2003. New Mexico State Water Plan. Santa Fe, NM.

______. 2006. The Impact of Climate Change on NM's Water Supply and Ability to Manage Water Resources. Santa Fe, NM. Available at: http://www.nmdrought.state.nm.us/ClimateChangeImpact/completeREPORTfinal.pdf.

New Mexico Water Quality Control Commission (WQCC). 2011. State of New Mexico Statewide Water Quality Management Plan and Continuing Planning Process. Santa Fe, New Mexico.

Stoner, N K. 2011. Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions Memo to Regional Administrators, U.S. Environmental Protection Agency, Regions 1–10. 16 March 2011.

Tiner, R. W. 2011. Dichotomous keys and mapping codes for wetland landscape position, landform, water flow path, and waterbody type descriptors: Version 2.0. US Fish and Wildlife Service. National Wetlands Inventoryl. Hadley, MA. Available at: https://www.fws.gov/northeast/ecologicalservices/pdf/wetlands/DichotomousKeys_090611wcover.pdf.

United States Environmental Protection Agency (EPA). 1997. Guidelines for preparation of the comprehensive state water quality assessments (305(b) reports) and electronic uptakes. EPA-841-B-97-002A. Washington, D.C.

______. 2003a. Asset Management: A Handbook for Small Water Systems 2003. (4606M) EPA 816-R-03-016. Office of Water. Available at: http://epa.gov/safewater/smallsystems/pdfs/guide_smallsystems_asset_mgmnt.pdf

______. 2003b. Elements of a state water monitoring and assessment program. Assessment and Watershed Protection Division, Office of Wetlands, Oceans, and Watersheds. March. EPA 841-B-03-003. Washington, D.C.

_____. 2005. Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act. Office of Water. Washington, D.C. Available at: https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.

_____. 2013. Nonpoint Source Program and Grants Guidelines for States and Territories. Issued on April 12, 2013. Available at: https://www.epa.gov/sites/production/files/2015-10/documents/319-guidelines-fy14.pdf.

_____. 2017a. Information Concerning 2018 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions. Memorandum dated December 22, 2017. Office of Wetlands, Oceans, and Watersheds. Washington, D.C. Available at: https://www.epa.gov/tmdl/integrated-reporting-guidance.

_____. 2017b. NPDES Compliance Inspection Manual. EPA publication number ——305-K-17-001. Interim revised version, January. Available at: https://www.epa.gov/sites/production/files/2017-01/documents/npdesinspect.pdf.

_____. 2017c. Analysis of the transport and fate of metals released from the Gold King Mine in the Animas and San Juan Rivers. Office of Research and Development. EPA/600/R-16/296. Washington, D.C. Available at: https://www.epa.gov/goldkingmine.

United State Fish and Wildlife Service (USFWS). 2004. North American Waterfowl Management Plan 2004. Implementation Framework: Strengthening the Biological Foundation. Canadian Wildlife Service, U.S. Fish and Wildlife Service, Secretaria de Medio Ambiente y Recursos Naturales, 106 pp.

United States Geological Survey (USGS). 2012. National Hydrography Dataset (NHD) Plus V2. Available at: http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php.

Appendices

Appendix A—Integrated List
Appendix B—Sources and Causes Tables
Appendix C—Response to Comments
Appendix D— NPS Management Program Project Tracking

2018-2020 State of New Mexico Clean Water Act Section 303(d)/ Section 305(b) Integrated Report

Appendix A
303(d)/305(b) List

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PREFACE

I. Format and Organization of Integrated List and Assessment Rationale

In 2013, the New Mexico Environment Department (NMED) merged Surface Water Quality Bureau's (SWQB) in-house water quality database with NMED's *Assessment Database* to create the *Surface water QUality Information Database* (SQUID) so both data and assessment conclusions could be housed in one database. SWQB took this opportunity to also re-design and streamline the *CWA §303(d)/§305(b) Integrated Report: Appendix A List of Assessed Waters* (Integrated List) format for ease of review, to incorporate additional information, and to reduce the total number of pages. The associated Assessment Rationale (previously called the *Record of Decision* or ROD) that houses additional details on any water body or Assessment Unit (AU) that is currently or has ever been documented as "impaired" is also now housed in SQUID. If there was no action on a specific impaired AU during a particular listing cycle, there may be no entry for that cycle.

The Canadian and Dry Cimarron River watersheds were surveyed by the SWQB in 2015-2016 and hence are the focus of revised or retained assessment conclusions in the Integrated List. Other datasets that were either submitted or acquired this cycle and assessed as reported include:

- 2015-2017 EPA-collated Gold King Mine dataset,
- 2012-2017 Pajarito Plateau data collected by Los Alamos National Laboratory staff and contractors,
- 2014-2016 data for various stream reaches in and around Taos and Red River collected by Sentinels-Rio de Taos and submitted by Amigos Bravos, and
- 2015 data collected and submitted by the Hermit's Peak Watershed Alliance.

The assessment conclusions in non-focus areas based on data from previous rotational surveys and previously submitted outside data are typically carried over to the next list until more current data are available to assess unless, for example, a water quality standard change necessitates a re-assessment. This was the case with several historic dissolved aluminum listings with concurrent pH > 6.5 because the previous dissolved aluminum criteria are no longer applicable in these waterbodies.

All AUs are assigned IR categories as described in New Mexico's CALM (NMED/SWQB 2017). Assessment units noted with IR Category 5A, 5B, or 5C on the Integrated List in Appendix A comprise New Mexico's official CWA §303(d) List of Impaired Waters. A listing of Category 5-only waters is included in the beginning of Appendix A. To see details on a specific AU, refer to the particular AU entry on the full Integrated List in Appendix A and associated assessment rationale entry. Starting with the 2018-2020 IR, each AU entry on the Integrated List now also contains a "PARAMETER IR CATEGORY." This useful field provides additional planning information regarding each particular cause of impairment or AU_cause pair. For example, a parameter IR category of 5B lets the user know that a review of the applicable water quality standard is needed prior to scheduling TMDL development. New Mexico has several temperature listings that fall under the 5B parameter IR category.

New Mexico's Integrated List also includes an estimated year in the "TMDL DATE" field for all parameter IR category 5A AU_cause pairs. The estimated year is generally based on the SWQB's rotational monitoring schedule, prioritization strategy in the SWQB's long-term vision document (NMED/SWQB

2015), and severity of the impairment. The "TMDL DATE", as well as the projected "MONITORING SCHEDULE" year, is ultimately dependent upon personnel and financial resources which can change on an annual basis. If a TMDL has already been developed for the noted cause of impairment, the EPA TMDL approval date (MM/DD/YYYY) is reported in the TMDL date field.

II. Useful Definitions

INTEGRATED LIST FIELD HEADINGS AND CODES --

ASSESSED	This field notes the last Integrated Reporting Cycle when data for this particular AU or watershed were collated, assessed, and reported. In the case of a non-assessed AU (IR Category 3), this date indicates when there was an attempt to collate data to assess but no assessible data were available.
Assessment Unit (AU)	Descriptive name of a specific waterbody (stream reach or lake). Limited to 60 characters.
ATTAINMENT	The use attainment status for the associated USE (Fully Supporting, Not Supporting, Not Assessed)
ASSESSED	This field generally notes the last Integrated Report Cycle when data for this particular watershed were assessed and reported.
AU ID	An internal database code that is unique to an assessment unit, and is not intended to provide any specific information to the reader of the list.
CAUSE(S)	Parameters and/or constituents that are causing non-attainment of the associated USE
E. coli	Abbreviation of *Escherichia coli*. These bacteria found in the environment, foods, and intestines of people and animals.
FIRST LISTED	This field generally notes the first Integrated Reporting Cycle when the associated impairment was noted.
HUC	8-digit Hydrologic Unit Codes (HUC) that identify various watersheds. The US Geologic Survey defines these codes and associated watershed names.
IR	Integrated Report
IR Category (AU)	Overall water quality standards attainment category for each assessment unit as determined by combining individual designated use support decisions. The unique IR categories for New Mexico are described as

follows as follows:

IR Category (Cause)	Water quality standards attainment category for each listed cause of impairment. The unique IR categories for New Mexico are described as follows as follows:
IR Category 1	Attaining the water quality standards for all designated and existing uses. AUs are listed in this category if there are data and information that meet all requirements of the assessment and listing methodology and support a determination that the water quality criteria are attained.
IR Category 2	Attaining some of the designated or existing uses based on numeric and narrative parameters that were tested, and no reliable monitored data is available to determine if the remaining uses are attained or threatened. AUs are listed in this category if there are data and information that meet requirements of the assessment and listing methodology to support a determination that some, but not all, uses are attained based on numeric and narrative water quality criteria that were tested. Attainment status of the remaining uses is unknown because there is no reliable monitored data with which to make a determination.
IR Category 2A	This indicates a IR Category 2 parameter (currently non-impaired) where an associated Action exists (e.g., Approved TMDL, Alternative Restoration Approach, etc.).
IR Category 3/3A	Insufficient of no reliable monitored data and/or information to determine if any designated or existing use is attained.
IR Category 3/3B	There are insufficient available data and/or information to make a support determination (only one data point available). Data point does not exceed an applicable water quality criterion).
IR Category 3/3C	There are insufficient available data and/or information to make a support determination (only one data point available). Data point exceeds an applicable water quality criterion).
IR Category 4A	Impaired for one or more designated uses, but does not require development of a TMDL because TMDL has been completed. AUs are listed in this subcategory once all TMDL(s) have been developed and approved by USEPA that, when implemented, are expected to result in full attainment of the standard. Where more than one pollutant is associated with the impairment of an AU, the AU remains in IR Category 5A (see below) until all TMDLs for each pollutant have been completed and approved by USEPA.
IR Category 4B	Impaired for one or more designated uses, but does not require development of a TMDL because other pollution control requirements are reasonably expected to result in attainment of the water quality

	standard in the near future. Consistent with the regulation under 40 CFR 130.7(b)(i),(ii), and (iii), AUs are listed in this subcategory where other pollution control requirements required by local, state, or federal authority are stringent enough to implement any water quality standard (WQS) applicable to such waters.
IR Category 4C	Impaired for one or more designated uses, but does not require development of a TMDL because impairment is not caused by a pollutant. AUs are listed in this subcategory if a pollutant does not cause the impairment. For example, USEPA considers flow alteration to be “pollution” vs. a “pollutant.”
IR Category 5/5A	Impaired for one or more designated or existing uses and a TMDL is underway or scheduled. AUs are listed in this category if the AU is impaired for one or more designated uses by a pollutant. Where more than one pollutant is associated with the impairment of a single AU, the AU remains in IR Category 5A until TMDLs for all pollutants have been completed and approved by USEPA.
IR Category 5/5B	Impaired for one or more designated or existing uses and a review of the water quality standard will be conducted. AUs are listed in this category when it is possible that water quality standards are not being met because one or more current designated use is inappropriate. After a review of the water quality standard is conducted, a Use Attainability Analysis (UAA) will be developed and submitted to USEPA for consideration, or the AU will be moved to IR Category 5A and a TMDL will be scheduled.
IR Category 5/5C	Impaired for one or more designated or existing uses and Additional data will be collected before a TMDL is scheduled. AUs are listed in this category if there is not enough data to determine the pollutant of concern or there is not adequate data to develop a TMDL. For example, AUs with biological impairment will be listed in this category until further research can determine the particular pollutant(s) of concern. When the pollutant(s) are determined, the AU will be moved to IR Category 5A and a TMDL will be scheduled. If it is determined that the current designated uses are inappropriate, it will be moved to IR Category 5B and a UAA will be developed. If it is determined that “pollution” is causing the impairment (vs. a “pollutant”), the AU will be moved to IR Category 4C.
IR Category 5-ALT	Available data and/or information indicate that at least one designated or existing use is not being supported and an alternative restoration approach is in progress or under development.
LOCATION DESCRIPTION	The name of the 8-digit Hydrologic Unit Code (HUC) watershed of the assessment unit as defined by the United States Geologic Survey.
MONITORING SCHEDULE	These proposed dates are primarily based on SWQB’s most recent

	rotational watershed monitoring schedule. This date, as well as the “TMDL DATE” date, is ultimately dependent upon personnel, financial, and laboratory resources which change on an annual basis.
NS	Non Support or Not Supporting
PARAMETER(S) OF CONCERN	This includes parameters that are currently not documented as impaired but that have previous TMDLs or other action plans.
PARAMETER IR CATEGORY	*See above definition for “IR Category (Cause).”*
PCBs	Polychlorinated biphenyls; highly-persistent compounds that are fat soluble and accumulate in the food chain
PROBABLE SOURCE(S)	This field contains either 1) “Source Unknown” if no TMDLs have yet been developed, or 2) the Probable Sources noted in associated TMDLs that may be contributing to the noted impairment(s).
SIZE	Streams and/or rivers = Miles, Lakes and/or playas = Acres, per EPA’s current reporting requirement
TMDL	Total Maximum Daily Load
TMDL DATE	This field contains either 1) future estimated (“est.”) TMDL development year primarily based on SWQB’s rotational monitoring schedule, prioritization schedule, date since last intensively surveyed, upcoming permit renewals, etc.; 2) the EPA TMDL approval date (MM/DD/YYYY) if a TMDL has already been developed and approved; or 3) nothing if the water quality standard is under review (IR Category 5B) or additional data are needed (IR Category 5C). This date, as well as the “Monitoring Schedule” date, is ultimately dependent upon personnel and financial resources which change on an annual basis.
USE	Any designated uses specified in the State of New Mexico Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC) that apply to the given assessment unit and/or any documented existing uses that apply to the given assessment unit. Uses that exist but are not officially designated in NMAC are also listed here with a note in “Assessment Unit Comments.”
WATER TYPE	This field contains the EPA-defined water type that most accurately describes the “normal” hydrologic character of the assessment unit to the best of SWQB’s knowledge given available flow data, GIS layers, and Hydrology Protocol survey results (where available).
WQS REF	Applicable Water Quality Standard segment as described in the most recent State of New Mexico Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC) that applies to the given assessment unit.

III. Abbreviations in Assessment Unit Names

The size of the assessment unit name is limited to 60 characters by the database. Therefore, the following abbreviations were used when necessary:

abv	=	above
AZ	=	Arizona
blw	=	below
bnd	=	boundary
BNSF	=	Burlington Northern – Santa Fe
Campgrd	=	Campground
Ck	=	Creek
Cny	=	Canyon
CO	=	Colorado
CR	=	County Road
confl	=	confluence
Div	=	Diversion
E	=	East
Fk	=	Fork
FS	=	Forest Service (usually road)
hdwtrs	=	headwaters
HWY	=	Highway
I	=	Interstate highway
Irr	=	irrigation
LANL	=	Los Alamos National Laboratory
M	=	Middle
mi	=	mile
N	=	North
NM	=	New Mexico
nr	=	near
NWR	=	National Wildlife Refuge
OK	=	Oklahoma
prt	=	Portion (i.e., reaches)
R	=	River or Rio
rd	=	road
RR	=	railroad
Rsvr	=	Reservoir
S	=	South
SFNF	=	Santa Fe National Forest
Spr	=	Spring
SR	=	state road
trib	=	tributary
TX	=	Texas
VCNP	=	Valles Caldera National Preserve
xing	=	crossing
USFS	=	United States Forest Service
W	=	West
WWTP	=	waste water treatment plant

(Table of Contents of Category 5 waters on the following Integrated §303(d)/§305(b) List)

- Charette Lake (Upper)
- Wheaton Creek (Manuelas Creek to headwaters)

HUC: 11080004 - Mora

- Coyote Creek (Black Lake to headwaters)
- Coyote Creek (Mora River to Amola Ridge)
- Coyote Creek (Williams Canyon to Black Lake)
- Mora River (USGS gage east of Shoemaker to HWY 434)
- Rito Cebolla (Mora River to Rito Morphy)
- Sapello River (Mora River to Arroyo Jara)

HUC: 11080005 - Conchas

- Conchas Reservoir
- Conchas River (Conchas Reservoir to Salitre Creek)

HUC: 11080006 - Upper Canadian-Ute Reservoir

- Canadian River (TX border to Ute Reservoir)
- Canadian River (Ute Reservoir to Conchas Reservoir)
- Pajarito Creek (Perennial prt Canadian R to Vigil Canyon)
- Ute Reservoir

HUC: 11080008 - Revuelto

- Revuelto Creek (Canadian River to headwaters)

HUC: 11100101 - Upper Beaver

- Clayton Lake

HUC: 13010005 - Conejos

- Canada Tio Grande (Rio San Antonio to headwaters)
- Rio San Antonio (CO border to Montoya Canyon)
- Rio San Antonio (Montoya Canyon to headwaters)

HUC: 13020101 - Upper Rio Grande

- Acid Canyon (Pueblo Canyon to headwaters)
- Arroyo del Palacio (Rio Grande to headwaters)
- Bitter Creek (Red River to headwaters)
- Canada Agua (Arroyo La Mina to headwaters)
- DP Canyon (Grade control to upper LANL bnd)
- DP Canyon (Los Alamos Canyon to grade control)
- Embudo Creek (Canada de Ojo Sarco to Picuris Pueblo bnd)

- Embudo Creek (Rio Grande to Canada de Ojo Sarco)
- Graduation Canyon (Pueblo Canyon to headwaters)
- Grassy Creek (Comanche Creek to headwaters)
- Los Alamos Canyon (DP Canyon to upper LANL bnd)
- Los Alamos Canyon (NM-4 to DP Canyon)
- Pioneer Creek (Red River to headwaters)
- Pojoaque River (San Ildefonso bnd to Pojoaque bnd)
- Pueblo Canyon (Acid Canyon to headwaters)
- Pueblo Canyon (Los Alamos Canyon to Los Alamos WWTP)
- Pueblo Canyon (Los Alamos WWTP to Acid Canyon)
- Red River (Placer Creek to headwaters)
- Red River (Rio Grande to Placer Creek)
- Rio Fernando de Taos (R Pueblo d Taos to USFS bnd at canyon)
- Rio Grande (Embudo Creek to Rio Pueblo de Taos)
- Rio Grande (Ohkay Owingeh bnd to Embudo Creek)
- Rio Grande (Red River to CO border)
- Rio Grande (Santa Clara Pueblo bnd to Ohkay Owingeh bnd)
- Rio Grande del Rancho (R Pueblo de Taos to Rito de la Olla)
- Rio Pueblo (Picuris Pueblo bnd to headwaters)
- Rio Pueblo de Taos (Arroyo del Alamo to R Grande del Rancho)
- Rio Pueblo de Taos (Rio Grande to Arroyo del Alamo)
- Rio Santa Barbara (non-pueblo Embudo Ck to USFS bnd)
- Santa Cruz Lake
- Santa Cruz River (San Clara Pueblo bnd to Santa Cruz Dam)
- South Fork Acid Canyon (Acid Canyon to headwaters)
- Unnamed Arroyo (Rio Pueblo de Taos to Taos WWTP)
- Vidal Creek (Comanche Creek to headwaters)
- Walnut Canyon (Pueblo Canyon to headwaters)

HUC: 13020102 - Rio Chama

- Abiquiu Creek (Rio Chama to headwaters)
- Abiquiu Reservoir
- Arroyo del Toro (Rio Chama to headwaters)
- Burns Lake (Rio Arriba)
- Canada de Horno (Rio Chama to headwaters)
- Canjilon Ck (Perennial portions Abiquiu Rsrv to headwaters)
- Canones Creek (Abiquiu Rsvr to Chihuahuenos Ck)
- Canones Creek (Rio Chama to Jicarilla Apache bnd)
- Chihuahuenos Creek (Canones Creek to headwaters)

- Coyote Creek (Rio Puerco de Chama to headwaters)
- El Rito Creek (Perennial reaches above HWY 554)
- El Rito Creek (Perennial reaches below HWY 554)
- Heron Reservoir
- Hopewell Lake
- Placer Creek (Hopewell Lake to headwaters)
- Poleo Creek (Rio Puerco de Chama to headwaters)
- Rio Nutrias (Perennial prt Rio Chama to headwaters)
- Rio Ojo Caliente (Arroyo El Rito to Rio Vallecitos)
- Rio Puerco de Chama (Abiquiu Reservoir to HWY 96)
- Rio Tusas (Perennial prt Rio Vallecitos to headwaters)
- Rio Vallecitos (Rio Tusas to headwaters)
- Rio del Oso (Perennial prt Rio Chama to headwaters)
- Rito Encino (Rio Puerco de Chama to headwaters)
- Rito de Tierra Amarilla (HWY 64 to headwaters)
- Rito de Tierra Amarilla (Rio Chama to HWY 64)
- Sixto Creek (Rio Chamita to CO border)

HUC: 13020201 - Rio Grande-Santa Fe

- Ancho Canyon (North Fork to headwaters)
- Ancho Canyon (Rio Grande to North Fork Ancho)
- Arroyo de la Delfe (Pajarito Canyon to headwaters)
- Canada del Buey (within LANL)
- Canon de Valle (LANL gage E256 to Burning Ground Spr)
- Canon de Valle (below LANL gage E256)
- Canon de Valle (upper LANL bnd to headwaters)
- Chaquehui Canyon (within LANL)
- Mortandad Canyon (within LANL)
- North Fork Ancho Canyon (Ancho Canyon to headwaters)
- Pajarito Canyon (Lower LANL bnd to Two Mile Canyon)
- Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe)
- Pajarito Canyon (upper LANL bnd to headwaters)
- Pajarito Canyon (within LANL above Starmers Gulch)
- Potrillo Canyon (above Water Canyon)
- Rio Grande (Cochiti Reservoir to San Ildefonso bnd)
- Rio Grande (non-pueblo Angostura Div to Cochiti Rsrv)
- Rito de los Frijoles (Rio Grande to headwaters)
- Sandia Canyon (Sigma Canyon to NPDES outfall 001)
- Sandia Canyon (within LANL below Sigma Canyon)

- Santa Fe River (Cienega Creek to Santa Fe WWTP)
- Santa Fe River (Cochiti Pueblo bnd to Cienega Creek)
- Santa Fe River (Guadalupe St to Nichols Rsvr)
- Santa Fe River (Nichols Reservoir to headwaters)
- Santa Fe River (Santa Fe WWTP to Guadalupe St)
- Ten Site Canyon (Mortandad Canyon to headwaters)
- Three Mile Canyon (Pajarito Canyon to headwaters)
- Two Mile Canyon (Pajarito to headwaters)
- Water Canyon (upper LANL bnd to headwaters)
- Water Canyon (within LANL below Area-A Cyn)

HUC: 13020202 - Jemez

- Calaveras Creek (Rio Cebolla to headwaters)
- Clear Creek (Rio de las Vacas to San Gregorio Lake)
- Clear Creek (San Gregorio Lake to headwaters)
- East Fork Jemez (San Antonio Creek to VCNP bnd)
- East Fork Jemez (VCNP to headwaters)
- Fenton Lake
- Jaramillo Creek (East Fork Jemez to headwaters)
- Jemez River (Jemez Pueblo bnd to Rio Guadalupe)
- Jemez River (Soda Dam nr Jemez Springs to East Fork)
- Jemez River (Zia Pueblo bnd to Jemez Pueblo bnd)
- La Jara Creek (East Fork Jemez to headwaters)
- Redondo Creek (Sulphur Creek to headwaters)
- Rio Cebolla (Fenton Lake to headwaters)
- Rio Cebolla (Rio de las Vacas to Fenton Lake)
- Rio Guadalupe (Jemez River to confl with Rio Cebolla)
- Rio de las Vacas (Clear Creek to headwaters)
- Rito Penas Negras (Rio de las Vacas to headwaters)
- Rito de las Palomas (Rio de las Vacas to headwaters)
- Rito de los Indios (San Antonio Creek to headwaters)
- San Antonio Creek (East Fork Jemez to VCNP bnd)
- San Antonio Creek (VCNP bnd to headwaters)
- San Gregorio Lake
- Sulphur Creek (Redondo Creek to headwaters)
- Sulphur Creek (San Antonio Creek to Redondo Creek)
- Vallecito Ck (Jemez Pueblo bnd to Div abv Ponderosa)
- Vallecito Ck (Perennial Prt Div abv Ponderosa to headwaters)

HUC: 13020203 - Rio Grande-Albuquerque

- Rio Grande (Arroyo de las Canas to Rio Puerco)
- Rio Grande (Isleta Pueblo boundary to Tijeras Arroyo)
- Rio Grande (Rio Puerco to Isleta Pueblo bnd)
- Rio Grande (San Marcial at USGS gage to Arroyo de las Canas)
- Rio Grande (Tijeras Arroyo to Alameda Bridge)
- Rio Grande (non-pueblo Alameda Bridge to HWY 550 Bridge)

HUC: 13020204 - Rio Puerco

- Rio Puerco (Arroyo Chijuilla to northern bnd Cuba)
- Rio Puerco (non-pueblo Rio Grande to Arroyo Chico)

HUC: 13020207 - Rio San Jose

- Arroyo del Valle (Laguna Pueblo bnd to headwaters)
- Bluewater Lake

HUC: 13020209 - Rio Salado

- Rio Salado (Rio Grande to Alamo Navajo bnd)

HUC: 13020211 - Elephant Butte Reservoir

- Elephant Butte Reservoir
- Rio Grande (Elephant Butte Rsvr to San Marcial at USGS)

HUC: 13030101 - Caballo

- Caballo Reservoir
- Las Animas Ck (perennial prt Animas Gulch to headwaters)
- Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)

HUC: 13030102 - El Paso-Las Cruces

- Rio Grande (International Mexico bnd to Anthony Bridge)

HUC: 13030202 - Mimbres

- Bear Canyon Reservoir
- Gallinas Creek (Mimbres River to headwaters)
- San Vicente Creek (Perennial prt Maudes Cny to Silva Creek)

HUC: 13050003 - Tularosa Valley

- Dog Canyon Creek (perennial portions)
- Fresnal Canyon (La Luz Creek to Salado Canyon)
- Karr Canyon (Fresnal Canyon to headwaters)

- Lake Holloman
- Nogal Creek (Tularosa Creek to Mescalero Apache bnd)

HUC: 13050004 - Salt Basin

- Sacramento R (Perennial prt Scott Able Canyon to headwaters)

HUC: 13060001 - Pecos Headwaters

- El Porvenir Creek (Gallinas River to SFNF bnd)
- El Rito (Pecos River to headwaters)
- Gallinas River (Pecos River to Aguilar Creek)
- Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)
- Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)
- McAllister Lake
- Pecos River (Sumner Reservoir to Santa Rosa Reservoir)
- Pecos River (Tecolote Creek to Villanueva State Park)
- Santa Rosa Reservoir
- Storrie Lake
- Sumner Reservoir
- Tecolote Creek (I-25 to Blue Creek)
- Tres Lagunas (Northeast)

HUC: 13060003 - Upper Pecos

- Pecos River (Salt Creek to Crockett Draw)

HUC: 13060007 - Upper Pecos-Long Arroyo

- Figure Eight Lake
- Lake Van
- Pecos River (Eagle Creek to Rio Felix)
- Pecos River (Rio Felix to Rio Hondo)
- Pecos River (Rio Hondo to Salt Creek)
- Pecos River (Rio Penasco to Eagle Creek)

HUC: 13060008 - Rio Hondo

- Grindstone Canyon Reservoir
- Rio Bonito (Perennial prt NM 48 near Angus to headwaters)

HUC: 13060010 - Rio Penasco

- Agua Chiquita (perennial portions McEwan Cny to headwaters)

HUC: 13060011 - Upper Pecos-Black

- Brantley Reservoir
- Lower Tansil Lake/Lake Carlsbad (Carlsbad Municipal Lake)
- Pecos River (Avalon Reservoir to Brantley Reservoir)
- Pecos River (Black River to Six Mile Dam Lake)
- Pecos River (Brantley Reservoir to Rio Penasco)
- Pecos River (Six Mile Dam Lake to Lower Tansil Lake)
- Pecos River (TX border to Black River)
- Six Mile Dam Lake

HUC: 14080101 - Upper San Juan

- Navajo Reservoir
- Navajo River (Jicarilla Apache Nation to CO border)

HUC: 14080104 - Animas

- Animas River (Estes Arroyo to So. Ute Indian Tribe bnd)
- Lake Farmington (Beeline Reservoir)

HUC: 14080105 - Middle San Juan

- La Plata R (McDermott Arroyo to So. Ute Indian Tribe bnd)
- La Plata River (San Juan River to McDermott Arroyo)
- San Juan River (Navajo bnd at Hogback to Animas River)

HUC: 15020003 - Carrizo Wash

- Quemado Lake

HUC: 15020004 - Zuni

- McGaffey Lake
- Ramah Reservoir

HUC: 15020006 - Upper Puerco

- Puerco River (non-tribal AZ border to Gallup WWTP)

HUC: 15040001 - Upper Gila

- Beaver Creek (Perennial prt Taylor Ck to Mule Canyon)
- East Fork Gila River (Gila River to headwaters)
- Gila River (Mogollon Ck to East and West Forks of Gila R)
- Gilita Creek (Middle Fork Gila R to Willow Creek)
- Iron Creek (Middle Fork Gila R to headwaters)
- Lake Roberts
- Middle Fork Gila River (Canyon Creek to headwaters)

- Middle Fork Gila River (West Fork Gila R to Canyon Creek)
- Snow Lake
- Taylor Creek (Perennial reaches Beaver Creek to headwaters)
- Turkey Creek (Gila River to headwaters)
- West Fork Gila R (East Fork to Middle Fork)
- West Fork Gila R (Middle Fork to headwaters)
- Willow Creek (Gilita Creek to headwaters)

HUC: 15040002 - Upper Gila-Mangas

- Bill Evans Lake
- Gila River (AZ border to Red Rock)
- Gila River (Mangas Creek to Mogollon Creek)
- Gila River (Red Rock to Mangas Creek)
- Mangas Creek (Gila River to Mangas Springs)

HUC: 15040004 - San Francisco

- Centerfire Creek (San Francisco R to headwaters)
- Mule Creek (San Francisco R to Mule Springs)
- Negrito Creek (Tularosa River to confl of N and S forks)
- San Francisco River (Box Canyon to Whitewater Creek)
- San Francisco River (Centerfire Creek to AZ border)
- San Francisco River (NM 12 at Reserve to Centerfire Creek)
- San Francisco River (Whitewater Ck to Pueblo Ck)
- Trout Creek (Perennial prt San Francisco R to headwaters)
- Tularosa River (San Francisco R to Apache Creek)

Uses Abbreviation Key	
ColdWAL	Coldwater Aquatic Life
CoolWAL	Coolwater Aquatic Life
DWS	Domestic Water Supply
FC	Fish Culture
HQColdWAL	High Quality Coldwater Aquatic Life
IW Storage	Industrial Water Storage
IW Supply	Industrial Water Supply
IRR	Irrigation
IRR Storage	Irrigation Storage
LAL	Limited Aquatic Life
LW	Livestock Watering
MCWAL	Marginal Coldwater Aquatic Life
MWWAL	Marginal Warmwater Aquatic Life
MWS	Municipal Water Storage
PC	Primary Contact
PWS	Public Water Supply
SC	Secondary Contact
WWAL	Warmwater Aquatic Life
WH	Wildlife Habitat

HUC: 11040001 Cimarron Headwaters

Archuleta Creek (Dry Cimarron R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11040001 Cimarron Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2701_50	20.6.4.99	STREAM, PERENNIAL	8.22 MILES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Carrizozo Creek (OK bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11040001 Cimarron Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2701_40	20.6.4.702	STREAM, PERENNIAL	44.85 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may not be entirely perennial.

Dry Cimarron R (Perennial reaches OK bnd to Long Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11040001 Cimarron Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2701_00	20.6.4.702	STREAM, PERENNIAL	54.59 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Temperature	2004	2018 (est.)	5/5A
		Nutrients	2018	2018 (est.)	5/5A
IRR	Not Supporting	Sulfate	2008	6/2/2009	4A
		Total Dissolved Solids (TDS)	2004	6/2/2009	4A
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDLs were prepared for sulfate and TDS (2009).

Dry Cimarron River (Long Canyon to Oak Ck)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11040001 Cimarron Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2701_02	20.6.4.702	STREAM, PERENNIAL	23.12 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Nutrients	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDLs were prepared for E. coli and TDS (2009).

Dry Cimarron River (Oak Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11040001 Cimarron Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2701_01	20.6.4.701	STREAM, PERENNIAL	26.53 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature Nutrients	2018 2018	 2018 (est.)	5/5B 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Long Canyon (Perennial reaches abv Dry Cimarron)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11040001 Cimarron Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2701_20	20.6.4.702	STREAM, PERENNIAL	8.33 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Selenium, Total Recoverable	2008	6/2/2009	4A
		Temperature	2004	2018 (est.)	5/5A
		Nutrients	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2008	6/2/2009	4A
WH	Not Supporting	Selenium, Total Recoverable	2008	6/2/2009	4A
AU Comment: TMDLs were prepared for E. coli and selenium (2009).					

Oak Creek (Perennial prt Dry Cimarron to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 11040001 Cimarron Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2701_10	20.6.4.701	STREAM, PERENNIAL	11.72 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	2008	6/2/2009	4A
		Flow Regime Modification	2018		4C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2008	6/2/2009	4A
WH	Fully Supporting				
AU Comment: TMDLs were prepared for E. coli and nutrients (2009).					

HUC: 11080001 Canadian Headwaters

Bracket Canyon (Vermejo R to hdwtrs)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_008	20.6.4.97	STREAM, EPHEMERAL	1.97 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Chevron Mining Inc. Ancho Mine permit NM0030180

Caliente Canyon (Vermejo River to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			4A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_151	20.6.4.309	STREAM, PERENNIAL	17.39 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Specific Conductance	2004	9/21/2007	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: HQCWAL is probably not attainable due to low flows and high background temperatures. TMDL for specific conductance.

Canadian River (Chicorica Creek to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_201	20.6.4.305	STREAM, PERENNIAL	58.29 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature	2018		5/5B
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Canadian River (Cimarron River to Chicorica Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_200	20.6.4.305	STREAM, PERENNIAL	37.99 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Nutrients	2008	11/21/2011	4A
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: A TMDL was prepared for nutrients (2011).					

Chicorica Creek (Canadian River to East Fork Chicorica)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_250	20.6.4.305	STREAM, PERENNIAL	20.22 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Chicorica Creek (East Fork Chicorica to Lake Maloya)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_251	20.6.4.305	STREAM, PERENNIAL	2.18 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Doggett Creek (Raton Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_255	20.6.4.99	STREAM, PERENNIAL	3.02 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Not Supporting	E. coli	2008	2018 (est.)	5/5A
WWAL	Not Supporting	Nutrients	1998	2018 (est.)	5/5A
WH	Fully Supporting				
AU Comment: None.					

East Fork Chicorica Creek (Chicorica Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_252	20.6.4.98	STREAM, INTERMITTENT	7.52 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Supporting	E. coli	2018	2018 (est.)	5/5A
WH	Fully Supporting				
AU Comment: This AU went dry during the 2015-2016 survey. No diversions visible from aerial photograph.					

Gachupin Canyon (Vermejo R to w trib nr mine outfall)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_010	20.6.4.97	STREAM, EPHEMERAL	2.74 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Chevron Mining Inc. Ancho Mine permit NM0030180

Hunter Creek (Throttle Reservoir to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_040	20.6.4.98	STREAM, INTERMITTENT	6.03 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Laguna Madre			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_058	20.6.4.99	LAKE, PLAYA	302.17 ACRES	2010	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Lake Alice (Sugarite Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.B_10	20.6.4.311	RESERVOIR	6.05 ACRES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Lake Maloya			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.B_20	20.6.4.312	RESERVOIR	117.49 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients Mercury - Fish Consumption Advisory	2018 2018	2018 (est.)	5/5A 5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Leandro Creek (Vermejo River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080001	Canadian Headwaters
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_161	20.6.4.309	STREAM, PERENNIAL	11.25 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: Rio Grande Cutthroat Trout restoration in 1998 by NMG&F.					

Maxwell Lake 12			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080001	Canadian Headwaters
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_080	20.6.4.99	LAKE, PLAYA	226.69 ACRES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: Marginal Coldwater, Warmwater Aquatic Life and Irrigation are existing uses.					

Maxwell Lake 13			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11080001	Canadian Headwaters
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_081	20.6.4.99	LAKE, PLAYA	301.4 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	pH	2018		5/5C
WH	Fully Supporting				
AU Comment: None.					

Maxwell Lake 14			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_082	20.6.4.99	LAKE, PLAYA	80.46 ACRES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses.

Raton Creek (Chicorica Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_253	20.6.4.305	STREAM, PERENNIAL	17.6 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Nutrients	1998	2018 (est.)	5/5A
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Stubblefield Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_101	20.6.4.99	LAKE, PLAYA	907.26 ACRES	2010	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Tinaja Creek (Canadian R to West Fork Tinaja Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_018	20.6.4.98	STREAM, INTERMITTENT	5.96 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 6/9/09) indicate this assessment unit is intermittent (Hydrology Protocol score of 14.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

Tinaja Creek (West Fork Tinaja Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_019	20.6.4.98	STREAM, INTERMITTENT	19.46 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Supporting	E. coli	2018	2018 (est.)	5/5A
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 6/9/09) indicate this assessment unit is intermittent (Hydrology Protocol score of 14.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

Una de Gato Creek (Chicorica Creek to HWY 64)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_254	20.6.4.305	STREAM, PERENNIAL	10.62 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Nutrients	2008	11/21/2011	4A
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: A TMDL was prepared for nutrients (2011).

Una de Gato Creek (HWY 64 to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_030	20.6.4.305	STREAM, PERENNIAL	20.84 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Nutrients	2008	11/21/2011	4A
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: A TMDL was prepared for nutrients (2011).

Unnamed tributary (Bracket Cny to mine area)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_009	20.6.4.97	STREAM, EPHEMERAL	1.72 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Chevron Mining Inc. Ancho Mine permit NM0030180

VanBremmer Creek (HWY 64 to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5B	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_140	20.6.4.309	STREAM, PERENNIAL	34.79 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Supporting	Turbidity	2004		5/5B
		Temperature	2004		5/5B
		Specific Conductance	2004		5/5B
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Vermejo River (Canadian River to Rail Canyon)			AU IR CATEGORY	LOCATION DESCRIPTION	
			4C	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_210	20.6.4.305	STREAM, PERENNIAL	25.38 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Flow Regime Modification			4C
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Often extremely low or no flow due to diversion. Application of the SWQB Hydrology Protocol (survey date 6/9/2009) indicate this assessment unit should be perennial (Hydrology Protocol score of 30.0 but 0.3% no flow days at USGS gage 07203000 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

Vermejo River (Rail Canyon to York Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_220	20.6.4.309	STREAM, PERENNIAL	23.53 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	2018		5/5B
		Temperature	2006	9/21/2007	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Vermejo River (Rock Creek to North Fork Vermejo R)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_231	20.6.4.309	STREAM, PERENNIAL	9.08 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2006	9/21/2007	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Vermejo River (York Canyon to Rock Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_230	20.6.4.309	STREAM, PERENNIAL	11.37 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2006	9/21/2007	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

York Canyon (Vermejo R to Left Fork York Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 11080001 Canadian Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_153	20.6.4.309	STREAM, PERENNIAL	7.76 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	2004		5/5B
		Specific Conductance	2004	9/21/2007	4A
		Temperature	2018		5/5B
		Dissolved oxygen	2018		5/5B
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDL for specific conductance (2007).					

HUC: 11080002 Cimarron

American Creek (Cieneguilla Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_066	20.6.4.309	STREAM, PERENNIAL	4.5 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2018	2018 (est.)	5/5A
		Temperature	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Bonito Creek (Rayado Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.1.A_20	20.6.4.309	STREAM, PERENNIAL	5.68 MILES	2000	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Cieneguilla Creek (Eagle Nest Lake to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_065	20.6.4.309	STREAM, PERENNIAL	14.61 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	1998	5/19/2004	4A
		Sedimentation/Siltation	1998	5/19/2004	4A
		Nutrients	2008	9/3/2010	4A
		Temperature	2008	9/3/2010	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2008	9/3/2010	4A
WH	Fully Supporting				
AU Comment: TMDLs were prepared/updated for turbidity, sedimentation/siltation, fecal coliform, and dissolved Al chronic (2004); and nutrients, e. coli, and temperature (2010). Dissolved Al TMDL removed 2017 because WQC no longer applicable.					

Cimarron River (Canadian River to Ponil Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.1.A_10	20.6.4.306	STREAM, PERENNIAL	27.24 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Temperature	2018		5/5B
		Nutrients	2008	9/3/2010	4A
WH	Fully Supporting				
AU Comment: TMDL for chronic aluminum (assessed incorrectly -- aluminum was de-listed). TMDLs were prepared for nutrients in 2010.					

Cimarron River (Cimarron Village to Turkey Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_040	20.6.4.309	STREAM, PERENNIAL	4.27 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature Turbidity	2008 2018	9/3/2010 2018 (est.)	4A 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDL for chronic dissolved aluminum. TMDLs for temperature and arsenic (2010).					

Cimarron River (Ponil Creek to Cimarron Village)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.1.A_11	20.6.4.306	STREAM, PERENNIAL	10.6 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2008	9/3/2010	4A
WH	Fully Supporting				
AU Comment: TMDL for chronic aluminum (assessed incorrectly -- aluminum was de-listed). TMDLs were prepared for nutrients in 2010.					

Cimarron River (Turkey Creek to Eagle Nest Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_130	20.6.4.309	STREAM, PERENNIAL	18.24 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2018	2018 (est.)	5/5A
		Nutrients	2008	9/3/2010	4A
		Turbidity	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: De-list letter for total phosphorus. TMDLs for nutrients and arsenic (2010).					

Clear Creek (Cimarron River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_131	20.6.4.309	STREAM, PERENNIAL	3.57 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Eagle Nest Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.B_00	20.6.4.315	RESERVOIR	1331.97 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Greenwood Creek (Middle Ponil Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_122	20.6.4.309	STREAM, PERENNIAL	4.63 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.					

McCrystal Creek (North Ponil to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_112	20.6.4.309	STREAM, PERENNIAL	8.84 MILES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	2010	2017 (est.)	5/5A
		Temperature	1998	2017 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.					

Middle Ponil Creek (Greenwood Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_124	20.6.4.309	STREAM, PERENNIAL	10.96 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006. TMDL for nutrients (2011).					

Middle Ponil Creek (South Ponil to Greenwood Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_121	20.6.4.309	STREAM, PERENNIAL	10 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	2018	9/27/2001	4A
		Temperature	2004	9/27/2001	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for temperature and turbidity (2010); de-list letter for total phosphorus.

Moreno Creek (Eagle Nest Lake to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_060	20.6.4.309	STREAM, PERENNIAL	8.96 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2008	9/3/2010	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for turbidity and fecal coliform. TMDLs for temperature and plant nutrients (2010).

North Ponil Creek (Seally Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_162	20.6.4.309	STREAM, PERENNIAL	7.03 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Supporting	Gross Alpha, Adjusted	2008		5/5C
		Radium	2008		5/5C
HQColdWAL	Not Supporting	Turbidity	2010	9/30/1999	4A
		Temperature	2008	11/8/2011	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006. TMDL for turbidity (1999) and temperature (2011).

North Ponil Creek (South Ponil Creek to Seally Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_110	20.6.4.309	STREAM, PERENNIAL	14.78 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	2004	5/19/2004	4A
		Temperature	2004	12/31/1999	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2008	9/3/2010	4A
WH	Fully Supporting				

AU Comment: TMDL for temp, turbidity, SBD (sedimentation/siltation), and total phosphorus; de-list letter for total phosphorus. TMDLs for e. coli (2010).

Ponil Creek (Cimarron River to HWY 64)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_100	20.6.4.306	STREAM, PERENNIAL	9.7 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Dissolved oxygen	2018		5/5C
WH	Fully Supporting				

AU Comment: TMDL for turbidity, temp, and Al chronic; de-list letter for total phosphorus. TMDL for e. coli (2010).

Ponil Creek (HWY 64 to confl of North and South Ponil)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_101	20.6.4.309	STREAM, PERENNIAL	6.78 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	1998	9/27/2001	4A
		Nutrients	2008	9/3/2010	4A
		Turbidity	1998	9/27/2001	4A
		Specific Conductance	2018		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2010	9/3/2010	4A
WH	Fully Supporting				

AU Comment: TMDL for turbidity, temp, and Al chronic; de-list letter for total phosphorus. De-listed for Al chronic in 2008. TMDLs for e. coli and plant nutrients (2010).

Rayado Creek (Cimarron River to Miami Lake Diversion)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_80	20.6.4.307	STREAM, PERENNIAL	18.85 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Sedimentation/Siltation Nutrients	2004 2008	2/16/2001 9/3/2010	4A 4A
PC	Not Supporting	E. coli	2018	2018 (est.)	5/5A
WWAL	Not Supporting	Sedimentation/Siltation	2004	2/16/2001	4A
WH	Fully Supporting				
AU Comment: TMDL for SBD (sedimentation/siltation). TMDLs for nutrients (2010).					

Rayado Creek (Miami Lake Diversion to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_051	20.6.4.309	STREAM, PERENNIAL	20.74 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2008	9/3/2010	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDLs for temperature and e. coli (2010).					

Saladon Creek (Cieneguilla Creek to headwaters			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_069	20.6.4.309	STREAM, PERENNIAL	5.73 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2018	2018 (est.)	5/5A
WH	Fully Supporting				
AU Comment: None.					

Seally Canyon (North Ponil to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_111	20.6.4.309	STREAM, PERENNIAL	4.74 MILES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.					

Shuree Pond (North)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.B_30	20.6.4.314	RESERVOIR	5.53 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Shuree Pond (South)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.B_31	20.6.4.133	RESERVOIR	3.59 ACRES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Sixmile Creek (Eagle Nest Lake to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_064	20.6.4.309	STREAM, PERENNIAL	5.08 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	1998	5/19/2004	4A
		Temperature	2008	9/3/2010	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2008	9/3/2010	4A
WH	Fully Supporting				

AU Comment: TMDL for turbidity and fecal coliform. TMDLs for temperature, e. coli, and nutrients (2010).

South Ponil Creek (Middle Ponil Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_123	20.6.4.309	STREAM, PERENNIAL	10.14 MILES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Rio Grande Cutthroat Trout restoration in 2000 by NMG&F.

South Ponil Creek (Ponil Creek to Middle Ponil Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_120	20.6.4.309	STREAM, PERENNIAL	5.24 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2008	9/3/2010	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for temperature (2010).

Springer Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.1.B_10	20.6.4.317	RESERVOIR	459.06 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Tolby Creek (Cimarron River to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_132	20.6.4.309	STREAM, PERENNIAL	5.89 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Turkey Creek (Cimarron River to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_129	20.6.4.309	STREAM, PERENNIAL	5.42 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Ute Creek (Perennial prt Cimarron River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_068	20.6.4.309	STREAM, PERENNIAL	8.06 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2008	9/3/2010	4A
WH	Fully Supporting				
AU Comment: TMDLs for arsenic, e. coli, and temperature (2010).					

West Agua Fria Creek (Cieneguilla Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080002 Cimarron	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_067	20.6.4.309	STREAM, PERENNIAL	5.39 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

HUC: 11080003 Upper Canadian

Canadian River (Conchas Reservoir to Mora River)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_000	20.6.4.305	RIVER	36.53 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: A TMDL was prepared for e. coli (2011).

Canadian River (Mora River to Cimarron River)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_100	20.6.4.305	RIVER	74.21 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Charette Lake (Lower)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.5_10	20.6.4.308	RESERVOIR	241.77 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
		Temperature	2018		5/5B
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Charette Lake (Upper)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.5_20	20.6.4.308	RESERVOIR	62.25 ACRES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Mercury - Fish Consumption Advisory	2016		5/5C
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Not Supporting	Mercury - Fish Consumption Advisory	2016		5/5C
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Manueles Creek (Ocate Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_090	20.6.4.309	STREAM, PERENNIAL	8.88 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Ocate Ck (Perennial prt Canadian R to Sweetwater Ck)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_70	20.6.4.307	STREAM, INTERMITTENT	21.6 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Supporting	Flow Regime Modification	2018		4C
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Ocate Ck (Perennial prt Charette Lakes Div to Ocate Village)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_72	20.6.4.307	STREAM, PERENNIAL	10.63 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Supporting	Flow Regime Modification	2018		4C
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Ocate Ck (Perennial prt Sweetwater Ck to Charette Lakes Div)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_71	20.6.4.307	STREAM, INTERMITTENT	14.21 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Supporting	Flow Regime Modification	2018		4C
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Ocate Creek (Ocate Village to Wheaton Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_070	20.6.4.309	STREAM, PERENNIAL	4.22 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Supporting	Flow Regime Modification			4C
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Wagon Mound Salt Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_106	20.6.4.99	LAKE, PLAYA	184.3 ACRES	1998	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Wheaton Creek (Manuelas Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 11080003 Upper Canadian	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_091	20.6.4.309	STREAM, PERENNIAL	9.75 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2018		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

HUC: 11080004 Mora

Coyote Creek (Amola Ridge to Williams Canyon)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_023	20.6.4.309	STREAM, PERENNIAL	11.5 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: HQCWAL may not be attainable in this AU - WQS review needed.

Coyote Creek (Black Lake to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_021	20.6.4.309	STREAM, PERENNIAL	7.73 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2018		5/5C
WH	Fully Supporting				

AU Comment: None.

Coyote Creek (Mora River to Amola Ridge)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_020	20.6.4.309	STREAM, PERENNIAL	13.7 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Specific Conductance	1998	9/21/2007	4A
		Temperature	1998	9/21/2007	4A
		Nutrients	2018	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: HQCWAL may not be attainable in this AU - WQS review needed.					

Coyote Creek (Williams Canyon to Black Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_022	20.6.4.309	STREAM, PERENNIAL	11.41 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients	2018	2018 (est.)	5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Encantada (Enchanted) Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.B_10	20.6.4.313	LAKE, FRESHWATER	2.36 ACRES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

La Jara Creek (Coyote Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_54	20.6.4.98	STREAM, INTERMITTENT	15.78 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Little Coyote Creek (Black Lake to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_024	20.6.4.309	STREAM, PERENNIAL	4.66 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients	2004	9/21/2007	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Lujan Creek (Luna Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_002	20.6.4.309	STREAM, PERENNIAL	7.57 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Luna Creek (Mora River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_001	20.6.4.309	STREAM, PERENNIAL	4.03 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Maestas (Lost) Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.B_20	20.6.4.313	LAKE, FRESHWATER	2.91 ACRES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Maestas Creek (Manuelitas Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_81	20.6.4.307	STREAM, PERENNIAL	4.26 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Manuelitas Creek (Rito San Jose to Maestas Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_25	20.6.4.307	STREAM, PERENNIAL	3.37 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Manuelitas Creek (Sapello River to Rito San Jose)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_21	20.6.4.307	STREAM, PERENNIAL	13.83 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Middle Fork Lake of Rio de la Casa			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.B_10	20.6.4.313	LAKE, FRESHWATER	4.54 ACRES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Mora River (Canadian River to USGS gage east of Shoemaker)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_020	20.6.4.305	STREAM, PERENNIAL	40.99 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Mora River (HWY 434 to Luna Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_000	20.6.4.309	STREAM, PERENNIAL	16.67 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Specific Conductance	1998	9/21/2007	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for specific conductance (SC) and sedimentation/siltation (2007, updated 2011). SC impairment may be due to natural sources - WQS needed.

Mora River (USGS gage east of Shoemaker to HWY 434)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_00	20.6.4.307	STREAM, PERENNIAL	53.44 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Nutrients	2004	7/22/2015	4A
PC	Not Supporting	E. coli	2018	2018 (est.)	5/5A
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDLs for DO (2010) and plant nutrients (2015).

Morphy (Murphy) Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.B_30	20.6.4.99	RESERVOIR	13.21 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

North Fork Lake of Rio de la Casa			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.B_20	20.6.4.313	LAKE, FRESHWATER	4.46 ACRES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Pacheco Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_093	20.6.4.313	LAKE, FRESHWATER	1.64 ACRES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Rio la Casa (Mora River to confl of North and South Forks)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2306.A_030	20.6.4.309	STREAM, PERENNIAL	5.74 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rito Cebolla (Mora River to Rito Morphy)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_40	20.6.4.307	STREAM, PERENNIAL	9.97 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Dissolved oxygen	2018		5/5B
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rito Morphy (Rito Cebolla to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_42	20.6.4.307	STREAM, PERENNIAL	7.54 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: Dry during spring and summer 2002 sampling.					

Rito San Jose (Manuelitas Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_22	20.6.4.307	STREAM, PERENNIAL	8.27 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rito de Gascon (Rito San Jose to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_24	20.6.4.307	STREAM, PERENNIAL	3.76 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Santiago Creek (Rito Cebolla to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_41	20.6.4.307	STREAM, PERENNIAL	9.66 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Supporting	Flow Regime Modification	2018		4C
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Sapello River (Arroyo Jara to Manuelitas Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_23	20.6.4.307	STREAM, PERENNIAL	18.78 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Sapello River (Manuelitas Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_30	20.6.4.307	STREAM, PERENNIAL	17.53 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Sapello River (Mora River to Arroyo Jara)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_20	20.6.4.307	STREAM, PERENNIAL	8.64 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Dissolved oxygen	2018		5/5C
		Sedimentation/Siltation	2006	9/21/2007	4A
		Temperature	2018		5/5B
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Sparks Creek (Maestas Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_26	20.6.4.307	STREAM, PERENNIAL	3.9 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Wolf Creek (Mora River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 11080004 Mora	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.3.A_10	20.6.4.307	STREAM, PERENNIAL	24.48 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Supporting	Flow Regime Modification			4C
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: According to the manager of the Black Willow Ranch, Wolf Cr. used to be perennial, but then the well serving the facility at Valmora was deepened or otherwise improved and pumping has increased. Now Wolf Cr. goes dry.

HUC: 11080005 Conchas

Conchas Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11080005 Conchas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2304_00	20.6.4.304	RESERVOIR	8768.43 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
		PCBS - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" and "PCBs in fish tissue" listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Conchas River (Conchas Reservoir to Salitre Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080005 Conchas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_010	20.6.4.305	STREAM, PERENNIAL	37.49 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Nutrients	2018	2018 (est.)	5/5A
		Aluminum, Total Recoverable	2018	2018 (est.)	5/5A
PC	Not Supporting	E. coli	2018	2018 (est.)	5/5A
WH	Fully Supporting				
AU Comment: This entire AU may not be perennial.					

Conchas River (Salitre Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080005 Conchas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2305.A_011	20.6.4.305	STREAM, PERENNIAL	26.66 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: This entire AU may not be perennial.					

HUC: 11080006 Upper Canadian-Ute Reservoir

Canadian River (TX border to Ute Reservoir)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5B	HUC: 11080006 Upper Canadian-Ute Reservoir	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2301_00	20.6.4.301	RIVER	40.49 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature	2018		5/5B
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Canadian River (Ute Reservoir to Conchas Reservoir)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 11080006 Upper Canadian-Ute Reservoir	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2303_00	20.6.4.303	RIVER	60.83 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature	2018	2018 (est.)	5/5A
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 7/1/09) indicate this assessment unit is perennial (Hydrology Protocol score of 20.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). A TMDL was prepared for e. coli (2011).

No Name Creek (Pajarito Creek to Breen's Pond)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 11080006 Upper Canadian-Ute Reservoir	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2303_11	20.6.4.303	STREAM, PERENNIAL	1.07 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: This AU receives effluent from Tucumcari WWTP via an underground pipe to Breen's Pond.

Pajarito Creek (Perennial prt Canadian R to Vigil Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 11080006	Upper Canadian-Ute Reservoir
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2303_10	20.6.4.303	STREAM, PERENNIAL	27.6 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature Nutrients	2018 2008	2018 (est.) 11/21/2011	5/5A 4A
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDLs were prepared for e. coli and nutrients (2011).					

Pajarito Creek (Vigil Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080006	Upper Canadian-Ute Reservoir
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2303_12	20.6.4.98	STREAM, INTERMITTENT	28.32 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Tucumcari Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080006	Upper Canadian-Ute Reservoir
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_103	20.6.4.99	LAKE, PLAYA	349.28 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Ute Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11080006 Upper Canadian-Ute Reservoir	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2302_00	20.6.4.302	RESERVOIR	3759.46 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
		PCBS - Fish Consumption Advisory	2016		5/5C
WH	Fully Supporting				

AU Comment: The mercury and PCBs in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

HUC: 11080007 Ute

Chicosa Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 11080007 Ute	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_029	20.6.4.98	LAKE, PLAYA	18.75 ACRES	1998	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: Part of playa lake study. Data are old.

Palo Blanco Creek (Ute Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080007 Ute	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2303_22	20.6.4.98	STREAM, INTERMITTENT	25.88 MILES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Ute Creek (Perennial prt Bueyeros Ck to Palo Blanco Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 11080007 Ute	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2303_20	20.6.4.303	STREAM, PERENNIAL	50.66 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: This is a reference AU.

Ute Creek (Ute Reservoir to Bueyeros Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11080007 Ute	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2303_23	20.6.4.98	STREAM, PERENNIAL	64.93 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

HUC: 11080008 Revuelto

Revuelto Creek (Canadian River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 11080008 Revuelto	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2301_10	20.6.4.98	STREAM, INTERMITTENT	22.85 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature	2018		5/5B
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Often dry except for irrigation return flows and stormwater runoff. Application of the SWQB Hydrology Protocol (survey date 7/1/09) indicate this assessment unit is intermittent - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). A TMDL was prepared for boron (2011). There is an inconsistency between the marginal warmwater ALU description in 20.6.4.7.M(2) and the associated temperature criterion in 20.6.4.900.H(6) NMAC that needs review.

HUC: 11100101 Upper Beaver

Clayton Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 11100101 Upper Beaver	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_030	20.6.4.316	RESERVOIR	148.57 ACRES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
		Nutrients	2018	2018 (est.)	5/5A
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Corrumpa Creek (OK border to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11100101 Upper Beaver	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2701_30	20.6.4.310	STREAM, PERENNIAL	73.96 MILES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Seneca Creek (Perennial reaches abv Clayton Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 11100101 Upper Beaver	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_904	20.6.4.99	STREAM, PERENNIAL	12.56 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Application of the SWQB Hydrology Protocol (6/30/09 survey date) indicate this assessment unit is perennial (Hydrology Protocol score of 23.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

HUC: 12050001 Yellow House Draw

Little Tule Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 12050001 Yellow House Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_076	20.6.4.98	LAKE, PLAYA	7.62 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Tule Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 12050001 Yellow House Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_104	20.6.4.98	LAKE, PLAYA	45.64 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: Part of playa lake study. Data are old.

HUC: 12050002 Blackwater Draw

Dennis Chavez Lake (Curry)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 12050002 Blackwater Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_036	20.6.4.99	LAKE, PLAYA	3.8 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Green Acres Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 12050002 Blackwater Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_046	20.6.4.99	LAKE, PLAYA	10.94 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Irrigation is an existing use.

Ingram Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 12050002 Blackwater Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_050	20.6.4.99	LAKE, PLAYA	11.59 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Oasis Park Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 12050002 Blackwater Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_092	20.6.4.99	RESERVOIR	1.32 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses.

Williams Playa (Curry)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 12050002 Blackwater Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_108	20.6.4.98	LAKE, PLAYA	17.87 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

HUC: 12050005 Running Water Draw

Ned Houk Park Lakes			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 12050005 Running Water Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_089	20.6.4.99	RESERVOIR	44.35 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses. This water body was sampled once in 2007 as part of a data gathering effort related to nutrients. An n=1 is insufficient to assess for impairments. Applicable criteria for E. coli, aluminum, and temperature were exceeded.

HUC: 12080003 Monument-Seminole Draws

Chaparral (Park) Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 12080003 Monument-Seminole Draws	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_028	20.6.4.99	RESERVOIR	10.83 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses.

Green Meadows Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 12080003 Monument-Seminole Draws	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_047	20.6.4.99	RESERVOIR	12.42 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses.

Lea County Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 12080003 Monument-Seminole Draws	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_073	20.6.4.99	RESERVOIR	0.43 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: None.

HUC: 12080004 Mustang Draw

Lane Salt Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 12080004 Mustang Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_072	20.6.4.98	LAKE, PLAYA	369.97 ACRES	1998	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Part of playa lake study. Data are old.

Middle Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 12080004 Mustang Draw	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_084	20.6.4.98	LAKE, PLAYA	9.19 ACRES	2016	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

HUC: 13010005 Conejos

Beaver Creek (Rio de los Pinos to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_904	20.6.4.123	STREAM, PERENNIAL	6.58 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: n=1 (limited parameters) during the URG 2009 survey.					

Canada Tio Grande (Rio San Antonio to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_903	20.6.4.123	STREAM, PERENNIAL	9.39 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2012	2020 (est.)	5/5A
		Nutrients	2014	2020 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Laguna Larga			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_057	20.6.4.99	RESERVOIR	34.45 ACRES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Coldwater Aquatic Life is an existing use.					

Lagunitas Lake No. 1			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_063	20.6.4.123	RESERVOIR	3.2 ACRES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Lagunitas Lake No. 2			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_064	20.6.4.123	RESERVOIR	4.01 ACRES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Lagunitas Lake No. 3			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_065	20.6.4.123	RESERVOIR	1.81 ACRES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Rio Nutritas (Rio San Antonio to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_905	20.6.4.123	STREAM, PERENNIAL	6.62 MILES	2016	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Rio San Antonio (CO border to Montoya Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_902	20.6.4.123	STREAM, PERENNIAL	11.83 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature Dissolved oxygen	2012 2012	2020 (est.)	5/5A 5/5C
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Further evaluation is needed to determine if excessive nutrients is the cause of the DO impairment.					

Rio San Antonio (Montoya Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_901	20.6.4.123	STREAM, PERENNIAL	17.92 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature Dissolved oxygen	2004 2012	12/17/2004	4A 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2012	9/13/2012	4A
WH	Fully Supporting				
AU Comment: TMDL for temperature. Further evaluation is needed to determine if excessive nutrients is the cause of the DO impairment.					

Rio de los Pinos (New Mexico reaches)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13010005 Conejos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_900	20.6.4.123	STREAM, PERENNIAL	21.3 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2004	12/17/2004	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for temperature.

HUC: 13020101 Upper Rio Grande

Acid Canyon (Pueblo Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_002	20.6.4.98	STREAM, EPHEMERAL	0.36 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
MWWAL	Not Supporting	Aluminum, Total Recoverable Polychlorinated Biphenyls (PCBs) Copper, Dissolved	2018 2010 2010		5/5B 5/5C 5/5B
PC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC. Metals listings based on exceedences of acute criteria.

Agua Caliente (Rio Grande to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_430	20.6.4.123	STREAM, PERENNIAL	5.15 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Alamitos Creek (Rio Pueblo to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_411	20.6.4.123	STREAM, PERENNIAL	5.59 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: There are threatened Rio Grande cutthroat trout in this reach.					

Apache Canyon (Rio Fernando de Taos to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_002	20.6.4.123	STREAM, PERENNIAL	1.45 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Supporting	E. coli	2010	9/13/2012	4A
WH	Not Assessed				

AU Comment: NMEDs Hydrology Protocol (http://www.nmenv.state.nm.us/swqb/Hydrology/) was performed at this AU on 5/23/11. According to the protocol and supporting information, this AU falls under the "perennial" definition in 20.6.4.7 NMAC.

Arroyo Seco Creek (perennial prt HWY 522 to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2119_31	20.6.4.99	STREAM, PERENNIAL	8.25 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Fully Supporting				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Arroyo del Palacio (Rio Grande to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_004	20.6.4.98	STREAM, EPHEMERAL	9.86 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012	2020 (est.)	5/5A
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Bayo Canyon (San Ildefonso bnd to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_007	20.6.4.98	STREAM, EPHEMERAL	5.81 MILES	2018	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Bernardin Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_013	20.6.4.99	RESERVOIR	2.65 ACRES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Coldwater Aquatic Life is an existing use.

Bitter Creek (Red River to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_705	20.6.4.123	STREAM, PERENNIAL	8.33 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	2012	2020 (est.)	5/5A
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDL for SBD (sedimentation/siltation) and Al acute.

Bobcat Creek (Red River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_716	20.6.4.123	STREAM, PERENNIAL	5.31 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Bull Creek Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_023	20.6.4.133	LAKE, FRESHWATER	0.78 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Cabresto Creek (Red River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_701	20.6.4.123	STREAM, PERENNIAL	17.34 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Cabresto Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_20	20.6.4.134	RESERVOIR	15.66 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This water body was sampled twice in 1991. No impairments were identified. Data are old -- changed to Not Assessed (2012).

Canada Agua (Arroyo La Mina to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_003	20.6.4.98	STREAM, EPHEMERAL	1.15 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012	2020 (est.)	5/5A
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Capulin Creek (R Fernando de Taos to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_514	20.6.4.98	STREAM, INTERMITTENT	4.07 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Fully Supporting				
WH	Not Assessed				

AU Comment: NMEDs Hydrology Protocol (http://www.nmenv.state.nm.us/swqb/Hydrology/) was performed at this AU on 5/23/11. According to the protocol and supporting information, this AU falls under the "intermittent" definition in 20.6.4.7 NMAC.

Casias Creek (Costilla Reservoir to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_831	20.6.4.123	STREAM, PERENNIAL	7.36 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Chamisal Creek (abv Embudo Creek except Picuris Pueblo)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_402	20.6.4.123	STREAM, PERENNIAL	8.5 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Chuckwagon Creek (Comanche Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_833	20.6.4.123	STREAM, PERENNIAL	2.3 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Columbine Creek (Red River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_702	20.6.4.123	STREAM, PERENNIAL	4.71 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Comanche Creek (Costilla Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_827	20.6.4.123	STREAM, PERENNIAL	10.29 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	1998	12/17/2004	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for temperature. ONRW status for surface waters in the Valle Vidal as of February 2006. Rio Grande Cufthroat trout re-introduction area.					

Cordova Creek (Costilla Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_823	20.6.4.123	STREAM, PERENNIAL	5.58 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Sedimentation/Siltation	2004	12/17/1999	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for total phosphorus, SBD (sedimentation/siltation), and turbidity.					

Costilla Creek (CO border to Diversion abv Costilla)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_810	20.6.4.123	STREAM, PERENNIAL	3.29 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Supporting	Flow Regime Modification			4C
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: This AU is de-watered by diversion; thermograph and gage data confirm that channel goes dry.					

Costilla Creek (Comanche Creek to Costilla Dam)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_830	20.6.4.123	STREAM, PERENNIAL	4.39 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.					

Costilla Creek (Costilla Reservoir to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_829	20.6.4.123	STREAM, PERENNIAL	7.88 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Costilla Creek (Diversion abv Costilla to Comanche Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_820	20.6.4.123	STREAM, PERENNIAL	17.45 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDL for temperature.					

Costilla Creek (Rio Grande to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_800	20.6.4.123	STREAM, PERENNIAL	2.55 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Flow Regime Modification			4C
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: This reach reportedly goes dry due to irrigation diversion in all but the wettest years.					

Cow Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_40	20.6.4.133	LAKE, FRESHWATER	0.62 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

DP Canyon (Grade control to upper LANL bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_14	20.6.4.128	STREAM, EPHEMERAL	1.01 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Copper, Dissolved	2018		5/5B
		Polychlorinated Biphenyls (PCBs)	2010		5/5C
		Aluminum, Total Recoverable	2018		5/5B
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C

AU Comment: None.

DP Canyon (Los Alamos Canyon to grade control)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_10	20.6.4.128	STREAM, INTERMITTENT	0.82 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
		Aluminum, Total Recoverable	2018		5/5B
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C

AU Comment: None.

Eagle Rock Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_10	20.6.4.122	RESERVOIR	3 ACRES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
FC	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This water body was sampled once in 1991. There was one exceedence of the applicable dissolved zinc criterion at the time. Data are old -- changed to Not Assessed (2012).

East Fk Rio Santa Barbara (R Santa Barbara to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_424	20.6.4.123	STREAM, PERENNIAL	5.51 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: ONRW status was adopted for the Rio Santa Barbara, including the west, middle and east forks from their headwaters downstream to the boundary of the Pecos Wilderness.

East Fork Red River (Red River to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_715	20.6.4.123	STREAM, PERENNIAL	5.96 MILES	1998	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Elk Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_039	20.6.4.133	LAKE, FRESHWATER	0.68 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Embudo Creek (Canada de Ojo Sarco to Picuris Pueblo bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_40	20.6.4.114	STREAM, PERENNIAL	5.07 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Nutrients	2012	2020 (est.)	5/5A
PC	Not Assessed				
WWAL	Not Supporting	Nutrients	2012	2020 (est.)	5/5A
WH	Fully Supporting				

AU Comment: None.

Embudo Creek (Rio Grande to Canada de Ojo Sarco)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_41	20.6.4.114	STREAM, PERENNIAL	6.18 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Turbidity Sedimentation/Siltation Temperature	1998 1998 2012	6/2/2005 6/2/2005 2020 (est.)	4A 4A 5/5A
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for turbidity and sedimenation/siltation (SBD).

Fawn Lake (East)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_60	20.6.4.134	RESERVOIR	1.29 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: .					

Fawn Lake (West)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_61	20.6.4.134	RESERVOIR	0.78 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Fernandez Creek (Comanche Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_834	20.6.4.123	STREAM, PERENNIAL	2.48 MILES	2008	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.					

Gold Creek (Comanche Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_835	20.6.4.123	STREAM, PERENNIAL	2.87 MILES	2008	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2008	11/8/2011	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006. TMDL for temperature (2011).					

Goose Creek (Red River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_711	20.6.4.123	STREAM, PERENNIAL	5.12 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Goose Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_12	20.6.4.133	LAKE, FRESHWATER	5.95 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Graduation Canyon (Pueblo Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020101	Upper Rio Grande
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_005	20.6.4.98	STREAM, EPHEMERAL	0.7 MILES	2010	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Supporting	Copper, Dissolved	2010		5/5B
		Polychlorinated Biphenyls (PCBs)	2010		5/5C
PC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC. Metals listings based on exceedences of acute criteria.

Grassy Creek (Comanche Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101	Upper Rio Grande
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_836	20.6.4.123	STREAM, PERENNIAL	3.11 MILES	2010	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	2010	2020 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.

Guaje Canyon (San Ildefonso bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101	Upper Rio Grande
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_005	20.6.4.98	STREAM, EPHEMERAL	12.32 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: Although the next survey date is noted as 2017, SWQB does not plan monitoring of these watersheds in the next ten years. However, ongoing water quality data will continue to be collected on the Pajarito Plateau by LANL and NMED DOE-OB. Application of the SWQB Hydrology Protocol (survey date 7/22/08) indicate this assessment unit is ephemeral (Hydrology Protocol score of 8.25 with 93.3% days with no flow at LANL gage E089 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

Heart Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_70	20.6.4.133	LAKE, FRESHWATER	4.34 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Hidden Lake (Lake Hazel)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_80	20.6.4.133	LAKE, FRESHWATER	3.58 ACRES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Holman Creek (Comanche Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_837	20.6.4.123	STREAM, PERENNIAL	2.85 MILES	2008	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2008	11/8/2011	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006. TMDL for temperature (2011).

Horseshoe Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_90	20.6.4.133	LAKE, FRESHWATER	6.92 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: High elevation cirque lake (difficult access).

Horseshoe Lake (Alamitos)			**AU IR CATEGORY** 3/3A	**LOCATION DESCRIPTION** HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_25	20.6.4.133	LAKE, FRESHWATER	7.89 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Indian Lake			**AU IR CATEGORY** 3/3A	**LOCATION DESCRIPTION** HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_35	20.6.4.99	LAKE, FRESHWATER	1.74 ACRES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Coldwater Aquatic Life is an existing use.					

Italianos Creek (Rio Hondo to headwaters)			**AU IR CATEGORY** 2	**LOCATION DESCRIPTION** HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_440	20.6.4.123	STREAM, PERENNIAL	2.36 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Jicarita Creek (Rio Santa Barbara to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_442	20.6.4.123	STREAM, PERENNIAL	2.59 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Jose Vigil Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.B_20	20.6.4.133	LAKE, FRESHWATER	1.84 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Kwage Canyon (Pueblo Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_003	20.6.4.98	STREAM, EPHEMERAL	1.17 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

La Cueva Creek (Costilla Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_838	20.6.4.123	STREAM, PERENNIAL	2.96 MILES	2008	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.

La Cueva Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_45	20.6.4.99	LAKE, FRESHWATER	1.42 ACRES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Coldwater Aquatic Life is an existing use.

LaBelle Creek (Comanche Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_839	20.6.4.123	STREAM, PERENNIAL	2.57 MILES	2008	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2008	11/8/2011	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006. TMDL for temperature (2011).					

Lake Fork (Cabresto Creek to Cabresto Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_707	20.6.4.123	STREAM, PERENNIAL	1.21 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Lake Fork (Cabresto Lake to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_708	20.6.4.123	STREAM, PERENNIAL	4.1 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Lake Fork Creek (Rio Hondo to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_606	20.6.4.123	STREAM, PERENNIAL	2.15 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Latir Creek (Costilla Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_824	20.6.4.123	STREAM, PERENNIAL	5.58 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L).					

Little Costilla Creek (Comanche Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_840	20.6.4.123	STREAM, PERENNIAL	4.65 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.					

Little Tesuque Creek (Rio Tesuque to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_34	20.6.4.121	STREAM, PERENNIAL	8.28 MILES	2018	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDL for aluminum.					

Los Alamos Canyon (DP Canyon to upper LANL bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_063	20.6.4.128	STREAM, EPHEMERAL	4.47 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs) Cyanide, Total Recoverable Selenium, Total Recoverable	2006 2018 2018		5/5C 5/5C 5/5C
LW	Not Supporting	Gross Alpha, Adjusted	2004		5/5C
SC	Not Assessed				
WH	Not Supporting	Mercury, Total Polychlorinated Biphenyls (PCBs) Cyanide, Total Recoverable Selenium, Total Recoverable	2006 2006 2018 2018		5/5C 5/5C 5/5C 5/5C
AU Comment: None.					

Los Alamos Canyon (Los Alamos Rsvr to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-127.A_00	20.6.4.127	STREAM, PERENNIAL	2.75 MILES	2014	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Los Alamos Canyon (NM-4 to DP Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_006	20.6.4.128	STREAM, EPHEMERAL	2.59 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Aluminum, Total Recoverable Polychlorinated Biphenyls (PCBs) Cyanide, Total Recoverable	2018 2006 2018		5/5B 5/5C 5/5C
LW	Not Supporting	Radium Gross Alpha, Adjusted	2018 2004		5/5C 5/5B
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs) Mercury, Total Cyanide, Total Recoverable	2006 2006 2018		5/5C 5/5C 5/5C
AU Comment: None.					

Los Alamos Canyon (San Ildefonso bnd to NM-4)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_000	20.6.4.98	STREAM, INTERMITTENT	1.16 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Los Alamos Canyon (upper LANL bnd to Los Alamos Rsvr)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_049	20.6.4.98	STREAM, EPHEMERAL	1.04 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Los Alamos Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_077	20.6.4.127	RESERVOIR	2.29 ACRES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Lost Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_13	20.6.4.133	LAKE, FRESHWATER	8.41 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Mallette Creek (Red River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_704	20.6.4.123	STREAM, PERENNIAL	4.25 MILES	2002	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Manzanita Creek (Rio Hondo to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_441	20.6.4.123	STREAM, PERENNIAL	2.81 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Middle Fk Rio Santa Barbara (R Santa Barbara to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_423	20.6.4.123	STREAM, PERENNIAL	4.05 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: ONRW status was adopted for the Rio Santa Barbara, including the west, middle and east forks from their headwaters downstream to the boundary of the Pecos Wilderness.

Middle Fork Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_55	20.6.4.133	LAKE, FRESHWATER	8.31 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This water body was sampled once in 2007 as part of a data gathering effort related to nutrients. Although there were no exceedences, an n=1 is insufficient to assess for impairments.

Middle Fork Red River (Red River to Middle Fork Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_714	20.6.4.123	STREAM, PERENNIAL	2.69 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Nambe Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.B_10	20.6.4.133	LAKE, FRESHWATER	1.56 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This water body was sampled once in 2007 as part of a data gathering effort related to nutrients. Although there were no exceedences, an n=1 is insufficient to re-assess for impairments.

Nat Lake II			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_087	20.6.4.133	LAKE, FRESHWATER	0.7 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Nat Lake IV			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_088	20.6.4.133	LAKE, FRESHWATER	0.62 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

No Fish Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_65	20.6.4.133	LAKE, FRESHWATER	1.02 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

North Fork Tesuque Creek (Tesuque Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_32	20.6.4.121	STREAM, PERENNIAL	2.19 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: Industrial water supply and municipal water supply may not be appropriate for this stream reach.					

Pioneer Creek (Red River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_703	20.6.4.123	STREAM, PERENNIAL	4.88 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity Sedimentation/Siltation	2004 2012	3/17/2006 2020 (est.)	4A 5/5A
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDL for turbidity.					

Pioneer Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_97	20.6.4.133	LAKE, FRESHWATER	1.05 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Placer Creek (Red River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_706	20.6.4.123	STREAM, PERENNIAL	2.75 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for Al acute.					

Placer Fork (Columbine Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_444	20.6.4.123	STREAM, PERENNIAL	3.75 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Pojoaque River (San Ildefonso bnd to Pojoaque bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_20	20.6.4.114	STREAM, PERENNIAL	0.61 MILES	1998	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012	2020 (est.)	5/5A
PC	Not Assessed				
WWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012	2020 (est.)	5/5A
WH	Fully Supporting				

AU Comment: This AU was not surveyed during the 2009 URG study. DOE-OB submitted PCB data for the 2012 listing cycle.

Policarpio Canyon (La Junta Ck to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_443	20.6.4.123	STREAM, PERENNIAL	2.3 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Powderhouse Creek (Costilla Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_832	20.6.4.123	STREAM, PERENNIAL	4.42 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.

Pueblo Canyon (Acid Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_043	20.6.4.98	STREAM, EPHEMERAL	3.59 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Supporting	Gross Alpha, Adjusted	2002		5/5B
MWWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2006		5/5C
		Copper, Dissolved	2018		5/5B
		Aluminum, Total Recoverable	2018		5/5B
PC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2006		5/5C

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC. Metals listings based on exceedences of acute criteria.

Pueblo Canyon (Los Alamos Canyon to Los Alamos WWTP)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-99.A_001	20.6.4.98	STREAM, EPHEMERAL	2.31 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5C
MWWAL	Not Supporting	Aluminum, Total Recoverable	2018		5/5B
		Polychlorinated Biphenyls (PCBs)	2010		5/5C
		Selenium, Total Recoverable	2018		5/5C
PC	Not Assessed				
WH	Not Supporting	Selenium, Total Recoverable	2018		5/5C
		Polychlorinated Biphenyls (PCBs)	2010		5/5C

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC. Metals ALU listings based on exceedences of acute criteria.

Pueblo Canyon (Los Alamos WWTP to Acid Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_006	20.6.4.98	STREAM, EPHEMERAL	3.25 MILES	2014	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
MWWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
PC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C

AU Comment: Application of the SWQB Hydrology Protocol (survey date 7/21/08) indicate this assessment unit is ephemeral (Hydrology Protocol score of 3.75 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

Red River (Placer Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_710	20.6.4.123	STREAM, PERENNIAL	5.6 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients	2012	2020 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Red River (Rio Grande to Placer Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2119_10	20.6.4.122	STREAM, PERENNIAL	20.72 MILES	2018	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Aluminum, Total Recoverable	2018	2019 (est.)	5/5C
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for dissolved aluminum 2006 (withdrawn in 2013).					

Rendija Canyon (Guaje Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_045	20.6.4.98	STREAM, EPHEMERAL	8.1 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Rio Chiquito (Picuris Pueblo bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_421	20.6.4.123	STREAM, PERENNIAL	9.73 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Rio Chiquito (Rio Grande del Rancho to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_502	20.6.4.123	STREAM, PERENNIAL	17.38 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Rio Chupadero (USFS bnd to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_40	20.6.4.121	STREAM, PERENNIAL	2.3 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Fernando de Taos (R Pueblo d Taos to USFS bnd at canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_512	20.6.4.123	STREAM, PERENNIAL	4.96 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Specific Conductance	1998	12/17/2004	4A
		Sedimentation/Siltation	2012	2020 (est.)	5/5A
		Temperature	1998	12/17/2004	4A
		Nutrients	2012	2020 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2008	9/13/2012	4A
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDLs for temperature and specific conductance.

Rio Fernando de Taos (Tienditas Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_001	20.6.4.123	STREAM, PERENNIAL	5.84 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2008	9/13/2012	4A
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: The SWQB Watershed Protection Section completed a special study of E. coli levels with associated flow observations in the upper 3 miles of Rio Fernando de Taos and the Apache Canyon tributary to assess potential impacts from livestock grazing in 2006. The study demonstrated instances when grazing on the Flechado Allotment probably increased E. coli levels in Apache Canyon and this portion of Rio Fernando de Taos in 2006. The USFS Carson National Forest in cooperation with SWQB collected E. coli data in 2007 (combined with 2006 data and assessed for 2008 cycle). NMEDs Hydrology Protocol (http://www.nmenv.state.nm.us/swqb/Hydrology/) was performed at this AU on 5/23/11. According to the protocol and supporting information, this AU falls under the perennial definition in 20.6.4.7 NMAC

Rio Fernando de Taos (UFSF bnd at canyon to Tienditas Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_513	20.6.4.123	STREAM, PERENNIAL	10.85 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Supporting	E. coli	2012	9/13/2012	4A
PWS	Not Assessed				
WH	Not Assessed				

AU Comment: NMEDs Hydrology Protocol (http://www.nmenv.state.nm.us/swqb/Hydrology/) was performed at this AU on 5/23/11. According to the protocol, this AU falls under the "perennial" definition in 20.6.4.7 NMAC.

Rio Frijoles (Rio Medio to Pecos Wilderness)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_60	20.6.4.121	STREAM, PERENNIAL	13.92 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L).

Rio Grande (Embudo Creek to Rio Pueblo de Taos)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_12	20.6.4.114	RIVER	15.19 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Turbidity	2012	2020 (est.)	5/5A
PC	Fully Supporting				
PWS	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Grande (Klauer) spring			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-132.S_01	20.6.4.132	SPRING	0 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
DWS	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Not Assessed				
AU Comment: Limted data collection during 2009 URG survey (e. coli, gross alpha, and cyanide only).					

Rio Grande (Ohkay Owingeh bnd to Embudo Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_10	20.6.4.114	RIVER	14.52 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Turbidity PCBS - Fish Consumption Advisory	1998 2006	6/2/2005	4A 5/5C
PC	Fully Supporting				
PWS	Not Assessed				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2006		5/5C
WH	Fully Supporting				

AU Comment: TMDL for turbidity. The "PCB in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Rio Grande (Red River to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2119_05	20.6.4.122	RIVER	28.98 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	pH Temperature	2004 2004	2020 (est.) 12/17/2004	5/5A 4A
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for temperature.

Rio Grande (Rio Pueblo de Taos to Red River)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2119_00	20.6.4.122	RIVER	23.14 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Rio Grande (Santa Clara Pueblo bnd to Ohkay Owingeh bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_11	20.6.4.114	RIVER	0.7 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
		Turbidity	1998	6/2/2005	4A
PC	Fully Supporting				
PWS	Not Assessed				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: TMDL for turbidity. The "PCB in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Rio Grande del Rancho (R Pueblo de Taos to Rito de la Olla)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_501	20.6.4.123	STREAM, PERENNIAL	9.32 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients	2012	2020 (est.)	5/5A
		Specific Conductance	2004	12/17/2004	4A
		Temperature	2012	2020 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	2019 (est.)	5/5A
WH	Fully Supporting				
AU Comment: TMDL for specific conductance.					

Rio Grande del Rancho (Rito de la Olla to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_500	20.6.4.123	STREAM, PERENNIAL	16.27 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Rio Hondo (Lake Fork Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_607	20.6.4.129	STREAM, PERENNIAL	1.74 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: n=1 for metals, nutrients, e. coli, and field parameters during 2009 URG study (no exceedences).					

Rio Hondo (Rio Grande to USFS bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_600	20.6.4.129	STREAM, PERENNIAL	8.56 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2002	12/17/2004	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for temperature.					

Rio Hondo (South Fork Rio Hondo to Lake Fork Creek)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_602	20.6.4.129	STREAM, PERENNIAL	3.9 MILES	2002	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: A waste load allocation for nutrients was previously completed for the Rio Hondo in 1981. Stream surveys (2000-2004) have found that the Rio Hondo near the Village of Taos Ski Valley fully supports its designated uses. The Village of Taos Ski Valley has plans to increase their capacity and effluent discharge into the river so the SWQB developed a revised nutrient TMDL for this reach that defines a waste load allocation for the Village of Taos Ski Valley such that increased discharge from the waste water treatment plant will not cause violations of the water quality standards protecting the Rio Hondo.

Rio Hondo (USFS bnd to South Fork Rio Hondo)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_601	20.6.4.129	STREAM, PERENNIAL	4.44 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Rio Medio (Rio Frijoles to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_53	20.6.4.121	STREAM, PERENNIAL	17.41 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L).					

Rio Nambe (Nambe Pueblo bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_43	20.6.4.121	STREAM, PERENNIAL	8.39 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Reach is difficult to access. Watershed impacted by 2012 Santa Fe National Forest Pacheco Fire.					

Rio Pueblo (Picuris Pueblo bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_410	20.6.4.123	STREAM, PERENNIAL	18.23 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients	2012	2020 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Rio Pueblo de Taos (Arroyo del Alamo to R Grande del Rancho)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2119_30	20.6.4.122	STREAM, PERENNIAL	5.37 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature Nutrients	2004 2012	12/17/2004 2020 (est.)	4A 5/5A
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for temperature and sedimentation/siltation (SBD).

Rio Pueblo de Taos (R Grande del Rancho to Taos Pueblo bnd)			AU IR CATEGORY	LOCATION DESCRIPTION	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_511	20.6.4.123	STREAM, PERENNIAL	3.05 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2004	12/17/2004	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2012	9/13/2012	4A
WH	Fully Supporting				
AU Comment: TMDL for temperature.					

Rio Pueblo de Taos (Rio Grande to Arroyo del Alamo)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2119_20	20.6.4.122	STREAM, PERENNIAL	2.34 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature Nutrients	2004 2012	12/17/2004 2020 (est.)	4A 5/5A
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for temperature.					

Rio Quemado (Rio Arriba Cnty bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_120	20.6.4.123	STREAM, PERENNIAL	11.2 MILES	2002	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Rio Quemado (Santa Cruz River to Rio Arriba Cnty bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_52	20.6.4.121	STREAM, PERENNIAL	3.73 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2012	9/13/2012	4A
WH	Fully Supporting				

AU Comment: None.

Rio Santa Barbara (USFS bnd to confl of E and W forks)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_420	20.6.4.123	STREAM, PERENNIAL	5.09 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: ONRW status was adopted for the Rio Santa Barbara, including the west, middle and east forks from their headwaters downstream to the boundary of the Pecos Wilderness.

Rio Santa Barbara (non-pueblo Embudo Ck to USFS bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_419	20.6.4.123	STREAM, PERENNIAL	4.2 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2012	2020 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/13/2012	4A
WH	Fully Supporting				

AU Comment: TMDL for turbidity (2005, de-list 2012) and E. coli (2012). The mileage is an over estimate because it includes the non-pueblo portions through the checkerboard area of private in holdrings.

Rio Tesuque (Pojoaque Pueblo to Tesuque Pueblo bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_30	20.6.4.114	STREAM, PERENNIAL	1.39 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Not Assessed				
MCWAL	Fully Supporting				
PC	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: Marginal CWAL and WWAL may not be attainable -- reach may not be perennial.					

Rio Tesuque (Tesuque Pueblo to Little Tesuque Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_31	20.6.4.114	STREAM, PERENNIAL	1.99 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio de Truchas (Perennial portions Rio Grande to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_300	20.6.4.123	STREAM, PERENNIAL	22.31 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Rio de las Trampas (Rio Embudo to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_401	20.6.4.123	STREAM, PERENNIAL	17.76 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Rio en Medio (Aspen Ranch to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_42	20.6.4.121	STREAM, PERENNIAL	0.93 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Not Assessed				
AU Comment: Accessible only by lengthy hike.					

Rio en Medio (non-pueblo lands Pojoaque R to Aspen Ranch)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_41	20.6.4.121	STREAM, PERENNIAL	6.28 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Rito de la Olla (Rio Grande del Rancho to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_503	20.6.4.123	STREAM, PERENNIAL	13.66 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Romero Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_05	20.6.4.123	LAKE, FRESHWATER	1.36 ACRES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

San Cristobal Creek (Rio Grande to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_680	20.6.4.123	STREAM, PERENNIAL	9.68 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

San Leonardo Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_14	20.6.4.133	LAKE, FRESHWATER	3.49 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Sanchez Canyon (Costilla Creek to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_822	20.6.4.123	STREAM, PERENNIAL	5.96 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Santa Clara Creek (Santa Clara Pueblo bnd to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_110	20.6.4.123	STREAM, PERENNIAL	0.87 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Santa Cruz Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.B_00	20.6.4.121	RESERVOIR	100.76 ACRES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2012	2021 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Santa Cruz River (San Clara Pueblo bnd to Santa Cruz Dam)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_50	20.6.4.114	STREAM, PERENNIAL	8.27 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Temperature	2012	2020 (est.)	5/5A
PC	Not Supporting	E. coli	2012	9/13/2012	4A
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Santa Cruz River (Santa Cruz Reservoir to Rio en Medio)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_51	20.6.4.121	STREAM, PERENNIAL	0.96 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Serpent Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_95	20.6.4.133	LAKE, FRESHWATER	0.96 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This water body was sampled once in 2007 as part of a data gathering effort related to nutrients. Although there were no exceedences, an n=1 is insufficient to assess for impairments.

South Fork Acid Canyon (Acid Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_029	20.6.4.98	STREAM, EPHEMERAL	0.09 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Supporting	Gross Alpha, Adjusted	2014		5/5B
MWWAL	Not Supporting	Copper, Dissolved	2014		5/5B
		Polychlorinated Biphenyls (PCBs)	2014		5/5C
PC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2014		5/5C

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC. Metals listings based on exceedences of acute criteria.

South Fork Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_58	20.6.4.133	LAKE, FRESHWATER	0.63 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

South Fork Rio Hondo (Rio Hondo to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_608	20.6.4.129	STREAM, PERENNIAL	4.15 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

South Fork Tesuque Creek (Tesuque Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_33	20.6.4.121	STREAM, PERENNIAL	1.01 MILES	2004	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Tesuque Creek (Rio Tesuque to confl of forks)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_31	20.6.4.121	STREAM, PERENNIAL	6.8 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 6/4/2009) indicate this assessment unit is perennial (Hydrology Protocol score of 31.3 but 0.6% no flow days at USGS gage 08302500 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

Tienditas Creek (R Fernando de Taos to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_515	20.6.4.98	STREAM, PERENNIAL	4.78 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: No data available. This AU was defaulted to 20.6.4.98. It may be perennial, Hydro Protocol needed to determine.

Trampas Lake (East)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_86	20.6.4.133	LAKE, FRESHWATER	2.62 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Trampas Lake (West)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_85	20.6.4.133	LAKE, FRESHWATER	2.65 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Unnamed Arroyo (Rio Pueblo de Taos to Taos WWTP)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-99.A_005	20.6.4.99	STREAM, PERENNIAL	2.32 MILES	2018	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2012	2020 (est.)	5/5A
WH	Not Assessed				
AU Comment: This channel is effluent-dominated.					

Ute Creek (Costilla Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_821	20.6.4.123	STREAM, PERENNIAL	7.04 MILES	2012	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Vidal Creek (Comanche Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_841	20.6.4.123	STREAM, PERENNIAL	4.87 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2014	2015 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: ONRW status for surface waters in the Valle Vidal as of February 2006.					

Walnut Canyon (Pueblo Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_004	20.6.4.98	STREAM, EPHEMERAL	0.38 MILES	2014	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Supporting	Polychlorinated Biphenyls (PCBs) Copper, Dissolved	2010 2014		5/5C 5/5B
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC. Metals listings based on exceedences of acute criteria.

West Fk Rio Santa Barbara (R Santa Barbara to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_422	20.6.4.123	STREAM, PERENNIAL	5.54 MILES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: ONRW status was adopted for the Rio Santa Barbara, including the west, middle and east forks from their headwaters downstream to the boundary of the Pecos Wilderness.

West Fork Red River (Middle Fork Red R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.A_713	20.6.4.123	STREAM, PERENNIAL	1.4 MILES	2000	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Williams Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020101 Upper Rio Grande	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2120.B_75	20.6.4.133	LAKE, FRESHWATER	7.88 ACRES	2014	2017
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: This water body was sampled once in 2007 as part of a data gathering effort related to nutrients. Although there were no exceedences, an n=1 is insufficient to re-assess for impairments.					

HUC: 13020102 Rio Chama

Abiquiu Creek (Rio Chama to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2113_50	20.6.4.116	STREAM, PERENNIAL	12.85 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Dissolved oxygen	1998	9/3/2004	4A
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Not Supporting	E. coli	2014	2019 (est.)	5/5A
WWAL	Not Supporting	Dissolved oxygen	1998	9/3/2004	4A
WH	Fully Supporting				

AU Comment: TMDL for dissolved oxygen. Impacts to watershed in 2012.

Abiquiu Reservoir			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2114_00	20.6.4.117	RESERVOIR	1037.97 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Mercury - Fish Consumption Advisory PCBS - Fish Consumption Advisory	2010 2006		5/5C 5/5C
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory Mercury - Fish Consumption Advisory	2006 2010		5/5C 5/5C
WH	Fully Supporting				

AU Comment: The Mercury and PCB in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Arroyo del Toro (Rio Chama to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_006	20.6.4.98	STREAM, EPHEMERAL	6.86 MILES	2012	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012		5/5C
PC	Not Assessed				
WH	Not Assessed				
AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC..					

Beaver Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_012	20.6.4.99	LAKE, FRESHWATER	0.85 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Coldwater Aquatic Life is an existing use.					

Burns Lake (Rio Arriba)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_025	20.6.4.99	RESERVOIR	1.53 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2014	2021 (est.)	5/5A
WH	Fully Supporting				
AU Comment: None.					

Canada de Horno (Rio Chama to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_005	20.6.4.98	STREAM, EPHEMERAL	2.81 MILES	2012	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012		5/5C
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Canjilon Ck (Perennial portions Abiquiu Rsrv to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_030	20.6.4.119	STREAM, PERENNIAL	34.13 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Nutrients	2010		5/5C
		Turbidity	2006		5/5C
		Specific Conductance	2006	8/16/2011	4A
		Temperature	2006	8/16/2011	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDLs prepared for temperature and SC in 2011.

Canjilon Lake (a)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_10	20.6.4.134	RESERVOIR	5.85 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Canjilon Lake (b)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_11	20.6.4.119	RESERVOIR	1.6 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Canjilon Lake (c)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_12	20.6.4.134	RESERVOIR	3.07 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Canjilon Lake (d)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_13	20.6.4.119	RESERVOIR	1.27 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Canjilon Lake (e)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_14	20.6.4.134	RESERVOIR	4.1 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Canjilon Lake (f)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_15	20.6.4.134	RESERVOIR	2.31 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: This water body was sampled twice in 1991. No impairments were identified. Data are old -- changed to Not Assessed (2012).					

Canones Creek (Abiquiu Rsvr to Chihuahuenos Ck)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_010	20.6.4.119	STREAM, PERENNIAL	8.35 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2014	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	2019 (est.)	5/5A
WH	Fully Supporting				
AU Comment: TMDLs for Al chronic, turbidity, and fecal coliform.					

Canones Creek (Chihuahuenos Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_012	20.6.4.119	STREAM, PERENNIAL	11.27 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Canones Creek (Rio Chama to Jicarilla Apache bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_100	20.6.4.119	STREAM, PERENNIAL	8.35 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2014		5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Cecilia Canyon Creek (Rio Capulin to USFS bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_042	20.6.4.119	STREAM, PERENNIAL	5.01 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Chavez Creek (Rio Brazos to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_081	20.6.4.119	STREAM, PERENNIAL	12.88 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2004	3/4/2004	4A
IRR	Fully Supporting				
LW	Not Assessed				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for temperature. HQCWAL may not be attainable.					

Chihuahuenos Creek (Canones Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_016	20.6.4.119	STREAM, PERENNIAL	9.28 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable Sedimentation/Siltation	2014 2014	 2019 (est.)	5/5C 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Clear Creek (Rio Gallina to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_043	20.6.4.119	STREAM, PERENNIAL	3.52 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Cold Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_031	20.6.4.99	LAKE, FRESHWATER	0.62 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Coldwater Aquatic Life is an existing use.					

Coyote Creek (Rio Puerco de Chama to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_022	20.6.4.119	STREAM, PERENNIAL	13.74 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Sedimentation/Siltation	2014	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Deep Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_035	20.6.4.99	LAKE, FRESHWATER	0.67 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Coldwater Aquatic Life is an existing use.					

East Fork Rio Brazos (Jicarilla Apache bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_088	20.6.4.119	STREAM, PERENNIAL	6.74 MILES	2000	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

El Rito Creek (Perennial reaches above HWY 554)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2112.A_20	20.6.4.115	STREAM, PERENNIAL	22.4 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2014		5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	2019 (est.)	5/5A
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

El Rito Creek (Perennial reaches below HWY 554)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2113_40	20.6.4.116	STREAM, PERENNIAL	13.07 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	2014		5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Not Supporting	E. coli	2014	2019 (est.)	5/5A
WWAL	Not Supporting	Nutrients	2014		5/5C
WH	Fully Supporting				

AU Comment: None.

El Vado Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2117_00	20.6.4.120	RESERVOIR	3221.66 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Ensenada Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_040	20.6.4.99	LAKE, FRESHWATER	2.8 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Coldwater Aquatic Life is an existing use.

Heron Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2117_10	20.6.4.120	RESERVOIR	4740.8 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature	2014	2021 (est.)	5/5A
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Hopewell Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2112.B_00	20.6.4.134	RESERVOIR	16.13 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients	2014	2021 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Jarosa Creek (Rio Vallecitos to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2112.A_01	20.6.4.115	STREAM, PERENNIAL	6.67 MILES	2000	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Little Willow Creek (Rio Chama to to Jicarilla Apache bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_120	20.6.4.119	STREAM, PERENNIAL	0.4 MILES	2000	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: Rio Grande Cutthroat Trout restoration in 1992-1996 by NMG&F.					

Nabor Creek (Rio Chamita to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_111	20.6.4.98	STREAM, INTERMITTENT	2.77 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: HP					

Nabor Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_20	20.6.4.119	RESERVOIR	4.5 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Nutrias Lake A (Trout Lake A)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_30	20.6.4.119	RESERVOIR	1.03 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Nutrias Lake B (Trout Lake B)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_31	20.6.4.119	RESERVOIR	0.19 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Nutrias Lake C (Trout Lake C)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_32	20.6.4.119	RESERVOIR	4.06 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Nutrias Lake D (Trout Lake D)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_33	20.6.4.119	RESERVOIR	1.15 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Nutrias Lake E (Trout Lake E)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_34	20.6.4.119	RESERVOIR	3.08 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Placer Creek (Hopewell Lake to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2112.A_03	20.6.4.115	STREAM, PERENNIAL	2.38 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2014	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Placer Creek (Rio Vallecitos to Hopewell Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2112.A_02	20.6.4.115	STREAM, PERENNIAL	2.4 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Poleo Creek (Rio Puerco de Chama to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_023	20.6.4.119	STREAM, PERENNIAL	7.96 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Sedimentation/Siltation	2014	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for turbidity (2004).					

Polvadera Creek (Canones Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_011	20.6.4.119	STREAM, PERENNIAL	13.86 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for temperature (2004).					

Rio Brazos (Chavez Creek to Jicarilla Apache bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_084	20.6.4.119	STREAM, PERENNIAL	22.97 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Rio Brazos (Rio Chama to Chavez Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_080	20.6.4.119	STREAM, PERENNIAL	3.54 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	1998	3/4/2004	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDL for temperature (approved by EPA March 2004)					

Rio Capulin (Rio Gallina to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_041	20.6.4.119	STREAM, PERENNIAL	12.08 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2010	8/16/2011	4A
WH	Fully Supporting				
AU Comment: TMDL prepared for e. coli (2011).					

Rio Cebolla (Rio Chama to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_050	20.6.4.119	STREAM, PERENNIAL	23.85 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Rio Chama (Abiquiu Reservoir to El Vado Reservoir)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2115_00	20.6.4.118	RIVER	37.63 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Chama (El Vado Reservoir to Rito de Tierra Amarilla)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_003	20.6.4.119	STREAM, PERENNIAL	7.66 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature Nutrients	2010 2010	8/16/2011 8/16/2011	4A 4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2010	8/16/2011	4A
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDLs were prepared for e. coli , nutrients, and temperature in 2011.

Rio Chama (Little Willow Creek to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_002	20.6.4.119	STREAM, PERENNIAL	9.09 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2010	8/16/2011	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDLs were prepared for e. coli and temperature in 2011.

Rio Chama (Ohkay Owingeh to Abiquiu Dam)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2113_00	20.6.4.116	RIVER	29.14 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Chama (Rio Brazos to Little Willow Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_001	20.6.4.119	STREAM, PERENNIAL	13.2 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	1998	3/4/2004	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDLs were prepared for temperature (2004), and e. coli and nutrients (2011).					

Rio Chama (Rito de Tierra Amarilla to Rio Brazos)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_000	20.6.4.119	STREAM, PERENNIAL	6.64 MILES	2010	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Nutrients	2010	8/16/2011	4A
		Temperature	2010	8/16/2011	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2010	8/16/2011	4A
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDLs were prepared for e. coli , nutrients, and temperature in 2011.

Rio Chamita (Rio Chama to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_110	20.6.4.119	STREAM, PERENNIAL	12.86 MILES	2018	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Nutrients	2006	8/16/2011	4A
		Temperature	1998	12/31/1999	4A
		Ammonia, Total	1998	9/30/1999	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2010	8/16/2011	4A
WH	Fully Supporting				

AU Comment: TMDL for ammonia, total phosphorus, fecal coliform, temp (1999), and dissolved aluminum (2004). TMDLs were prepared for e. coli and nutrients (2011). Dissolved Al TMDL withdrawn 2018 because no longer an applicable WQC.

Rio Gallina (HWY 96 to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_040	20.6.4.119	STREAM, PERENNIAL	8.7 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Rio Gallina (Perennial prt Rio Chama to HWY 96)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2115_10	20.6.4.451	STREAM, PERENNIAL	24.32 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Rio Nutrias (Perennial prt Rio Chama to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_060	20.6.4.119	STREAM, PERENNIAL	34.57 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Turbidity	2004	9/3/2004	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	2019 (est.)	5/5A
WH	Fully Supporting				
AU Comment: TMDL for turbidity (2004).					

Rio Ojo Caliente (Arroyo El Rito to Rio Vallecitos)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2113_10	20.6.4.116	STREAM, PERENNIAL	8.18 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	2014	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2014	2019 (est.)	5/5A
WH	Fully Supporting				
AU Comment: None.					

Rio Ojo Caliente (Rio Chama to Arroyo El Rito)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2113_11	20.6.4.116	STREAM, INTERMITTENT	17.19 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Coldwater ALU is liklely not attainable in this lower AU.

Rio Puerco de Chama (Abiquiu Reservoir to HWY 96)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2115_20	20.6.4.118	STREAM, PERENNIAL	13.57 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature Nutrients	1998 2010	8/16/2011	4A 5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2010	8/16/2011	4A
WWAL	Not Supporting	Nutrients	2010		5/5C
WH	Fully Supporting				

AU Comment: TMDLs prepared for temperature and e. coli (2011).

Rio Puerco de Chama (HWY 96 to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_020	20.6.4.119	STREAM, PERENNIAL	12.08 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Tusas (Perennial prt Rio Vallecitos to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2113_30	20.6.4.116	STREAM, PERENNIAL	42.73 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature Nutrients	2016 2010	2019 (est.) 8/16/2011	5/5A 4A
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2010	8/16/2011	4A
WH	Fully Supporting				
AU Comment: TMDL was prepared for nutrients (2011).					

Rio Vallecitos (Rio Tusas to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2112.A_00	20.6.4.115	STREAM, PERENNIAL	35.01 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	1998	9/3/2004	4A
		Nutrients	2016	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDL for Al chronic, temperature, and turbidity. HQCWAL may not be attainable - WQS review needed.

Rio del Oso (Perennial prt Rio Chama to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2112.A_10	20.6.4.115	STREAM, PERENNIAL	16.88 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012		5/5C
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: DOE-OB submitted PCB data for the 2012 listing cycle.

Rito Encino (Rio Puerco de Chama to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_021	20.6.4.119	STREAM, PERENNIAL	9.85 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Sedimentation/Siltation	2014	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014		5/5C
WH	Fully Supporting				
AU Comment: None.					

Rito Redondo (Rito Resumidero to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_026	20.6.4.119	STREAM, PERENNIAL	2.08 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rito Resumidero (Perennial prt R Puerco de Chama to hdwt)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_025	20.6.4.119	STREAM, PERENNIAL	2.75 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Supporting	Flow Regime Modification	2014		4C
IRR	Not Assessed				
LW	Not Assessed				
PC	Fully Supporting				
WH	Not Assessed				
AU Comment: The entire stream is diverted just upstream of the SWQB historic sampling station.					

Rito de Tierra Amarilla (HWY 64 to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_072	20.6.4.119	STREAM, PERENNIAL	4.97 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable Temperature	2014 2014	 2019 (est.)	5/5C 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Rito de Tierra Amarilla (Rio Chama to HWY 64)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_070	20.6.4.119	STREAM, PERENNIAL	15.78 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Specific Conductance	2014		5/5B
		Nutrients	2016		5/5C
		Turbidity	1998	3/4/2004	4A
		Temperature	1998	3/4/2004	4A
		Sedimentation/Siltation	1998	3/4/2004	4A
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDLs for temperature, turbidity, and sedimentation/siltation (2004). WQS review recommended-Cool water ALU more appropriate on basis of ecoregion (21d) and fish community.

Sixto Creek (Rio Chamita to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_112	20.6.4.119	STREAM, PERENNIAL	1.12 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2014	2019 (est.)	5/5A
IRR	Not Assessed				
LW	Not Assessed				
PC	Fully Supporting				
WH	Not Assessed				

AU Comment: None.

Tonita Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.B_40	20.6.4.119	LAKE, FRESHWATER	0.63 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

West Fork Rio Brazos (Jicarilla Apache bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_087	20.6.4.119	STREAM, PERENNIAL	5.94 MILES	2000	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Willow Creek (Jicarilla Apache bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_140	20.6.4.119	STREAM, PERENNIAL	13.91 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Not Assessed				
LW	Not Assessed				
PC	Fully Supporting				
WH	Not Assessed				
AU Comment: None.					

Wolf Creek (Rio Chama to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020102 Rio Chama	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2116.A_130	20.6.4.119	STREAM, PERENNIAL	0.81 MILES	2000	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

HUC: 13020201 Rio Grande-Santa Fe

Alamo Canyon (Rio Grande to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_71	20.6.4.121	STREAM, PERENNIAL	14.68 MILES	2004	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Alamo Creek (Cienega Creek to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2110_20	20.6.4.113	STREAM, PERENNIAL	6.48 MILES	2004	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Assessed				
SC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Ancho Canyon (North Fork to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_046	20.6.4.128	STREAM, EPHEMERAL	4.42 MILES	2014	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
LW	Not Assessed				
SC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Ancho Canyon (Rio Grande to North Fork Ancho)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_054	20.6.4.128	STREAM, EPHEMERAL	2.39 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2014		5/5C
LW	Fully Supporting				
SC	Not Assessed				
WH	Not Supporting	Mercury, Total Polychlorinated Biphenyls (PCBs)	2018 2014		5/5C 5/5C
AU Comment: None.					

Apache Canyon (perennial prt Galisteo Creek to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_14	20.6.4.121	STREAM, PERENNIAL	9.99 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Arroyo Hondo (south of Old Pecos Trail to headwater)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2110_11	20.6.4.98	STREAM, INTERMITTENT	7.45 MILES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Arroyo de la Delfe (Pajarito Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_16	20.6.4.128	STREAM, EPHEMERAL	0.61 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Copper, Dissolved Polychlorinated Biphenyls (PCBs) Aluminum, Total Recoverable	2018 2018 2018		5/5B 5/5C 5/5B
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2018		5/5C
AU Comment: None.					

Canada del Buey (San Ildefonso Pueblo to LANL bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_053	20.6.4.98	STREAM, EPHEMERAL	1.65 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.					

Canada del Buey (within LANL)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_00	20.6.4.128	STREAM, EPHEMERAL	5.14 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
LW	Not Supporting	Gross Alpha, Adjusted	2006		5/5B
SC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Canada del Rancho (Arroyo Hondo to outfall)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_0121	20.6.4.98	STREAM, EPHEMERAL	4.5 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Receiving water for Ranchland Utility Company - NM0030368.					

Canon de Valle (LANL gage E256 to Burning Ground Spr)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-126.A_00	20.6.4.126	STREAM, PERENNIAL	0.3 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
LW	Fully Supporting				
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
AU Comment: None.					

Canon de Valle (below LANL gage E256)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5B	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_01	20.6.4.128	STREAM, EPHEMERAL	2.39 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Fully Supporting				
LW	Not Supporting	Gross Alpha, Adjusted	2006		5/5B
SC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Canon de Valle (upper LANL bnd to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5B	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_051	20.6.4.98	STREAM, INTERMITTENT	3.53 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
MWWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Canon de Valle (within LANL above Burning Ground Spr)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_02	20.6.4.128	STREAM, EPHEMERAL	1.07 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Capulin Creek (Rio Grande to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_72	20.6.4.121	STREAM, PERENNIAL	13.17 MILES	2006	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: The 1996 Dome Fire extensively burned this watershed, leading to increased erosion of the already erosive natural geology in the area (Bandelier Tuff).

Chaquehui Canyon (within LANL)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_03	20.6.4.128	STREAM, EPHEMERAL	2.51 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2018		5/5C
LW	Fully Supporting				
SC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Cienega Creek (Perennial prt of Santa Fe R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2110_10	20.6.4.113	STREAM, PERENNIAL	3.12 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Middle reaches often go dry due to diversion.

Cunningham Gulch (CR 55 to above mine area)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_011	20.6.4.97	STREAM, EPHEMERAL	1.33 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
LAC Minerals permit NM0028711

Deer Creek (Galisteo Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_13	20.6.4.98	STREAM, INTERMITTENT	5.49 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Fence Canyon (above Potrillo Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_04	20.6.4.128	STREAM, EPHEMERAL	2.92 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Galisteo Ck (Perennial prt 2.2 mi abv Lamy to hdwts)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_12	20.6.4.121	STREAM, PERENNIAL	9.71 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	1998	8/22/2017	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for temperature (2017).

Galisteo Ck (Perennial prt Kewa bnd to 2.2 mi abv Lamy)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_10	20.6.4.139	STREAM, PERENNIAL	33.28 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Temperature	1998	8/22/2017	4A
DWS	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol at various locations in this AU indicate this AU has perennial, intemittent and ephemeral portions - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). TMDL for temperature (2017).

Indio Canyon (above Water Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_05	20.6.4.128	STREAM, EPHEMERAL	1.17 MILES	2010	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Las Huertas Ck (Perennial prt Santa Ana bnd to hdwtrs)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2108.5_00	20.6.4.111	STREAM, PERENNIAL	14.06 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
HQColdWAL	Not Supporting	Flow Regime Modification	2018		4C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Lummis Canyon (Upper Trail to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_001	20.6.4.98	STREAM, EPHEMERAL	8.28 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

McClure Reservoir			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.B_50	20.6.4.138	RESERVOIR	85 ACRES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Not Assessed				

AU Comment: This AU was reclassified from segment 121 into a new segment 138. Amendment was effective February 14, 2013. EPA approved the changes June 5, 2013.

Medio Creek (Rio Grande to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_73	20.6.4.121	STREAM, PERENNIAL	6.35 MILES	2004	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Mortandad Canyon (within LANL)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_042	20.6.4.128	STREAM, EPHEMERAL	4.25 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Copper, Dissolved Polychlorinated Biphenyls (PCBs)	2010 2014		5/5B 5/5C
LW	Not Supporting	Gross Alpha, Adjusted	2004		5/5B
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs) Mercury, Total	2014 2018		5/5C 5/5C
AU Comment: None.					

Nichols Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.B_40	20.6.4.138	RESERVOIR	27.46 ACRES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Not Assessed				
AU Comment: This AU was reclassified from segment 121 into a new segment 138. Amendment was effective February 14, 2013. EPA approved the changes June 5, 2013.					

North Fork Ancho Canyon (Ancho Canyon to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5B	HUC: 13020201	Rio Grande-Santa Fe
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_055	20.6.4.128	STREAM, EPHEMERAL	3.73 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
AU Comment: None.					

Pajarito Canyon (Arroyo de La Delfe to Starmers Spring)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 13020201	Rio Grande-Santa Fe
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-126.A_01	20.6.4.126	STREAM, PERENNIAL	0.51 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
LW	Fully Supporting				
SC	Not Assessed				
WH	Fully Supporting				
AU Comment: Spring fed.					

Pajarito Canyon (Lower LANL bnd to Two Mile Canyon)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5B	HUC: 13020201	Rio Grande-Santa Fe
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_08	20.6.4.128	STREAM, EPHEMERAL	4.87 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Aluminum, Total Recoverable Polychlorinated Biphenyls (PCBs) Copper, Dissolved	2018 2010 2018		5/5B 5/5C 5/5B
LW	Not Supporting	Gross Alpha, Adjusted	2006		5/5B
SC	Not Assessed				
WH	Not Supporting	Cyanide, Total Recoverable Polychlorinated Biphenyls (PCBs)	2018 2010		5/5C 5/5C
AU Comment: Metals listings based on exceedences of acute criteria.					

Pajarito Canyon (Rio Grande to LANL bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020201	Rio Grande-Santa Fe
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_040	20.6.4.98	STREAM, EPHEMERAL	2.85 MILES	2014	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020201	Rio Grande-Santa Fe
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_06	20.6.4.128	STREAM, INTERMITTENT	2.06 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
		Silver, Dissolved	2018		5/5C
		Copper, Dissolved	2016		5/5B
LW	Not Supporting	Gross Alpha, Adjusted	2006		5/5B
SC	Not Assessed				
WH	Fully Supporting				

AU Comment: Metals listings based on exceedences of acute criteria.

Pajarito Canyon (upper LANL bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201	Rio Grande-Santa Fe
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_048	20.6.4.98	STREAM, INTERMITTENT	2.57 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
PC	Not Assessed				
WWAL	Not Supporting	Cyanide, Total Recoverable	2018		5/5C
		Polychlorinated Biphenyls (PCBs)	2010		5/5C
		Aluminum, Total Recoverable	2018		5/5B
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
		Mercury, Total	2018		5/5C

AU Comment: None.

Pajarito Canyon (within LANL above Starmers Gulch)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_07	20.6.4.128	STREAM, INTERMITTENT	1.09 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Aluminum, Total Recoverable	2018		5/5C
LW	Not Supporting	Gross Alpha, Adjusted	2006		5/5C
SC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Potrillo Canyon (above Water Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_09	20.6.4.128	STREAM, EPHEMERAL	6.25 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Fully Supporting				
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5C
SC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Rio Chiquito (Cochiti Pueblo bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_041	20.6.4.98	STREAM, EPHEMERAL	3.29 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.					

Rio Grande (Cochiti Reservoir to San Ildefonso bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2111_00	20.6.4.114	RIVER	18.13 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Supporting	Aluminum, Dissolved	2016	2020 (est.)	5/5A
LW	Not Supporting	Gross Alpha, Adjusted	2012	2020 (est.)	5/5A
MCWAL	Not Supporting	Turbidity	2004	2020 (est.)	5/5A
		Thallium	2016	2020 (est.)	5/5A
		Polychlorinated Biphenyls (PCBs)	2012	2020 (est.)	5/5A
		Selenium, Total Recoverable	2016	2020 (est.)	5/5A
		PCBS - Fish Consumption Advisory	2006		5/5C
PC	Fully Supporting				
PWS	Not Assessed				
WWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012	2020 (est.)	5/5A
		PCBS - Fish Consumption Advisory	2006		5/5C
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012	2020 (est.)	5/5A
		Cyanide, Total Recoverable	2016	2020 (est.)	5/5A

AU Comment: The 2016 assessments were based on primarily stormwater data. It should be noted that the city of Santa Fe has procedures in place that do not allow public water supply withdrawal from the Buckman Diversion during significant storm events. The "PCB in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Rio Grande (non-pueblo Angostura Div to Cochiti Rsrv)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2108_00	20.6.4.110	RIVER	1.54 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature	2016	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Not Supporting	Gross Alpha, Adjusted	2016	2019 (est.)	5/5A
PC	Fully Supporting				
WWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2016	2019 (est.)	5/5A
WH	Fully Supporting				

AU Comment: There is only ~1.5 miles of non-pueblo stream reach between Angostura Diversion and Cochiti Reservoir.

Rito de los Frijoles (Rio Grande to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_70	20.6.4.121	STREAM, PERENNIAL	13.99 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2016	2020 (est.)	5/5A
		DDT - Fish Consumption Advisory	2004		5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: DDT levels were measured in fish tissue in 2001. The levels warrant a state fish tissue advisory. The National Park Service continues to have a fishing ban in effect.

San Cristobal Creek (Galisteo Creek to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_11	20.6.4.98	STREAM, INTERMITTENT	13.85 MILES	2004	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

San Pedro Creek (San Felipe bnd to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_004	20.6.4.125	STREAM, PERENNIAL	24.62 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Sandia Canyon (Sigma Canyon to NPDES outfall 001)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_047	20.6.4.126	STREAM, PERENNIAL	2.24 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2006		5/5C
		Aluminum, Total Recoverable	2018		5/5B
		Copper, Dissolved	2010		5/5B
		Temperature	2018		5/5B
LW	Fully Supporting				
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2006		5/5C
AU Comment: None.					

Sandia Canyon (within LANL below Sigma Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_11	20.6.4.128	STREAM, EPHEMERAL	3.39 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2006		5/5C
		Aluminum, Total Recoverable	2018		5/5B
LW	Not Supporting	Gross Alpha, Adjusted	2006		5/5C
SC	Not Assessed				
WH	Not Supporting	Mercury, Total	2006		5/5C
		Polychlorinated Biphenyls (PCBs)	2006		5/5C
AU Comment: None.					

Santa Fe Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.B_30	20.6.4.133	LAKE, FRESHWATER	4.86 ACRES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This lake is in the upper portion of the Santa Fe Municipal Watershed. Access is restricted to protect the water supply reservoirs, so primary contact should not be existing uses. This water body was sampled once in 2007 as part of a data gathering effort related to nutrients. Although there were no exceedences, an n=1 is insufficient to assess for impairments.

Santa Fe River (Cienega Creek to Santa Fe WWTP)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2110_00	20.6.4.113	STREAM, PERENNIAL	6.9 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Nutrients	2008	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2016	5/3/2017	4A
WH	Fully Supporting				

AU Comment: TMDL for SBD (sedimentation/siltation), DO, pH, and chlorine. TMDL for E. coli (2017). Santa Fe River below the WWTP is effluent-dominated.

Santa Fe River (Cochiti Pueblo bnd to Cienega Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2110_02	20.6.4.113	STREAM, PERENNIAL	5.32 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Nutrients	2008	2018 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for SBD (sedimentation/siltation) (2000), DO, and pH.					

Santa Fe River (Guadalupe St to Nichols Rsvr)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_062	20.6.4.137	STREAM, INTERMITTENT	4.09 MILES	2014	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Aluminum, Total Recoverable Polychlorinated Biphenyls (PCBs)	2016 2018	2019 (est.) 2019 (est.)	5/5A 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2016	5/3/2017	4A
WH	Fully Supporting				
AU Comment: TMDL for E. coli (2017).					

Santa Fe River (Nichols Reservoir to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020201	Rio Grande-Santa Fe
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2118.A_21	20.6.4.121	STREAM, PERENNIAL	11.18 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2016		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: A WQS review may be warranted in this "closed" municipal drinking water supply watershed.

Santa Fe River (Santa Fe WWTP to Guadalupe St)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020201	Rio Grande-Santa Fe
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_061	20.6.4.136	STREAM, EPHEMERAL	9.98 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LAL	Not Supporting	Aluminum, Total Recoverable	2016	2018 (est.)	5/5A
LW	Fully Supporting				
PC	Not Supporting	E. coli	2010	5/3/2017	4A
WH	Fully Supporting				

AU Comment: TMDL for E. coli (2017).

Ten Site Canyon (Mortandad Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020201	Rio Grande-Santa Fe
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_17	20.6.4.128	STREAM, EPHEMERAL	1.52 MILES	2014	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C

AU Comment: None.

Three Mile Canyon (Pajarito Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_091	20.6.4.128	STREAM, EPHEMERAL	2.2 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Fully Supporting				
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5C
SC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Two Mile Canyon (Pajarito to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_15	20.6.4.128	STREAM, EPHEMERAL	3.36 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs) Aluminum, Total Recoverable Copper, Dissolved	2010 2018 2018		5/5C 5/5B 5/5B
LW	Not Supporting	Gross Alpha, Adjusted	2010		5/5B
SC	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2010		5/5C
AU Comment: Metals listings based on exceedences of acute criteria.					

Unnamed tributary (Arroyo Hondo to Oshara outfall)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_012	20.6.4.97	STREAM, EPHEMERAL	0.37 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				
AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013. Oshara Village water reclamation facility, permit NM0030813					

Unnamed tributary (San Pedro Cr to PAAKO outfall)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_013	20.6.4.97	STREAM, EPHEMERAL	0.79 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
PAA-KO comm sewer assoc, permit NM0029724

Water Canyon (Area-A Canyon to NM 501)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-126.A_03	20.6.4.126	STREAM, PERENNIAL	1.31 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
LW	Fully Supporting				
SC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Water Canyon (Rio Grande to lower LANL bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_044	20.6.4.98	STREAM, EPHEMERAL	0.53 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Water Canyon (upper LANL bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_052	20.6.4.98	STREAM, INTERMITTENT	2.86 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Supporting	Aluminum, Total Recoverable	2018		5/5C
PC	Not Assessed				
WH	Not Supporting	Mercury, Total	2018		5/5C

AU Comment: Application of the SWQB Hydrology Protocol (survey date 7/21/08) indicate this assessment unit is intermittent (Hydrology Protocol score of 9.8 with 24.1% days with no flow at LANL gage E252 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

Water Canyon (within LANL above NM 501)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_12	20.6.4.128	STREAM, INTERMITTENT	0.03 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Water Canyon (within LANL below Area-A Cyn)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020201 Rio Grande-Santa Fe	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-128.A_13	20.6.4.128	STREAM, EPHEMERAL	8.56 MILES	2018	
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Polychlorinated Biphenyls (PCBs) Aluminum, Total Recoverable	2010 2018		5/5C 5/5B
LW	Not Supporting	Gross Alpha, Adjusted	2006		5/5B
SC	Not Assessed				
WH	Not Supporting	Mercury, Total Polychlorinated Biphenyls (PCBs)	2018 2010		5/5C 5/5C

AU Comment: None.

HUC: 13020202 Jemez

American Creek (Rio de las Palomas to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_44	20.6.4.98	STREAM, INTERMITTENT	4.8 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: De-list for SBD (sedimentation/siltation), temperature, and turbidity. Coldwater ALU is an existing use (salmonids seen during 2013 survey). WQS review needed.

Calaveras Creek (Rio Cebolla to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_53	20.6.4.108	STREAM, PERENNIAL	9.17 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2016		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Clear Creek (Rio de las Vacas to San Gregorio Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_54	20.6.4.108	STREAM, PERENNIAL	5.14 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature Nutrients	2016 2016	2019 (est.) 9/23/2016	5/5A 4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2016	9/23/2016	4A
WH	Fully Supporting				

AU Comment: TMDL for turbidity and TOC (2003). The lake level dropped and no longer spills water into Clear Creek. Water is drained from the lake into Nacimiento Creek by a stand pipe. This AU is not perennial for its entire length.

Clear Creek (San Gregorio Lake to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_55	20.6.4.108	STREAM, PERENNIAL	3.67 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Nutrients Aluminum, Total Recoverable	2016 2016	9/23/2016	4A 5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; aluminum criteria are under review to identify appropriate/attainable levels.

East Fork Jemez (San Antonio Creek to VCNP bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_13	20.6.4.108	STREAM, PERENNIAL	10.4 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2016		5/5B
		Temperature	2008	9/15/2009	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDLs for turbidity (2003). TMDLs for temperature and arsenic (2009). Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; aluminum criteria are under review to identify appropriate/attainable levels.

East Fork Jemez (VCNP to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_10	20.6.4.108	STREAM, PERENNIAL	8.65 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2016		5/5B
		Turbidity	1998	12/31/1999	4A
		Nutrients	2016	9/23/2016	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; aluminum criteria are under review to identify appropriate/attainable levels.

Fenton Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.B_00	20.6.4.108	RESERVOIR	23.81 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Nutrients	2004	2021 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Jaramillo Creek (East Fork Jemez to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_12	20.6.4.108	STREAM, PERENNIAL	10.03 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2016		5/5B
		Turbidity	2004	10/11/2006	4A
		Nutrients	2016	9/23/2016	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDLs for temperature and turbidity. Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; aluminum criteria are under review to identify appropriate/attainable levels.

Jemez River (Jemez Pueblo bnd to Rio Guadalupe)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_71	20.6.4.107	STREAM, PERENNIAL	1.87 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Arsenic, Dissolved	2008	9/15/2009	4A
		Temperature	2016	2019 (est.)	5/5A
		Nutrients	2016	2019 (est.)	5/5A
IRR	Not Supporting	Boron, Dissolved	2008	9/15/2009	4A
LW	Fully Supporting				
PC	Not Supporting	E. coli	2016	9/23/2016	4A
WH	Fully Supporting				

AU Comment: TMDLs for arsenic and boron (2009).

Jemez River (Rio Guadalupe to Soda Dam nr Jemez Springs)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105.5_10	20.6.4.107	STREAM, PERENNIAL	9.62 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature	2008	9/15/2009	4A
		Aluminum, Total Recoverable	2016	4/27/2018	4A
		Turbidity	1998	7/30/2004	4A
		Nutrients	2008	9/15/2009	4A
		Arsenic, Dissolved	2008	9/15/2009	4A
IRR	Not Supporting	Arsenic, Dissolved	2008	9/15/2009	4A
		Boron, Dissolved	2008	9/15/2009	4A
LW	Fully Supporting				
PC	Not Supporting	E. coli	2016	9/23/2016	4A
WH	Fully Supporting				

AU Comment: TMDL for Al acute (2003), turbidity, and SBD (1999) (sedimentation/siltation). De-listed for SBD in 2008. TMDLs for arsenic, boron, plant nutrients, and temperature (2009). The dissolved aluminum TMDL was revised to a total recoverable aluminum TMDL in 2018 using the current applicable WQC. Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; aluminum criteria are under review to identify appropriate/attainable levels.

Jemez River (Soda Dam nr Jemez Springs to East Fork)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_00	20.6.4.108	STREAM, PERENNIAL	3.81 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Supporting	Arsenic, Dissolved	2008	9/15/2009	4A
FC	Not Assessed				
HQColdWAL	Not Supporting	pH	2008		5/5B
		Aluminum, Total Recoverable	2018	4/27/2018	4A
		Temperature	2008		5/5B
		Turbidity	1998	7/30/2004	4A
		Arsenic, Dissolved	2008	9/15/2009	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2016	9/23/2016	4A
WH	Fully Supporting				

AU Comment: TMDL for Al (2003), turbidity, and SBD (1999) (sedimentation/siltation); de-list letter for plant nutrients. De-listed for SBD in 2008. TMDL for arsenic (2009). The dissolved aluminum TMDL was revised to a total recoverable aluminum TMDL in 2018 using current applicable WQC. Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; aluminum criteria are under review to identify appropriate/attainable levels. Temperature and pH may be influenced by geothermal groundwater inputs.

Jemez River (Zia Pueblo bnd to Jemez Pueblo bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_75	20.6.4.106	STREAM, PERENNIAL	1.86 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Supporting	Boron, Dissolved	2008	9/15/2009	4A
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature	2016	2019 (est.)	5/5A
		Arsenic, Dissolved	2008	9/15/2009	4A
		Sedimentation/Siltation	2016	2019 (est.)	5/5A
PC	Not Supporting	E. coli	2016	9/23/2016	4A
WH	Fully Supporting				

AU Comment: TMDLs for arsenic and boron (2009).

La Jara Creek (East Fork Jemez to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_11	20.6.4.108	STREAM, PERENNIAL	5.32 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2016		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; aluminum criteria are under review to identify appropriate/attainable levels.

Redondo Creek (Sulphur Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_21	20.6.4.108	STREAM, PERENNIAL	6.01 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Turbidity	1998	6/2/2003	4A
		Temperature	2018	6/2/2003	4A
		pH	2016		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Not Assessed				

AU Comment: TMDL for turbidity, total phosphorus, and temperature. Previously split at the Valles Caldera Boundary, the upper (NM-2016.A_25) and lower AUs were merged back into this AU ID. AU may not be perennial -- HP and WQS review needed

Rio Cebolla (Fenton Lake to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_52	20.6.4.108	STREAM, PERENNIAL	14.63 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Nutrients Turbidity	2016 2010		5/5C 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for temperature and SBD (sedimentation/siltation). De-listed for temperature 2008. Rio Grande Cutthroat restoration in 1994 by NMG&F.					

Rio Cebolla (Rio de las Vacas to Fenton Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_50	20.6.4.108	STREAM, PERENNIAL	6.06 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature Sedimentation/Siltation	2016 1996	2019 (est.) 6/2/2003	5/5A 4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for SBD (sedimentation/siltation).					

Rio Guadalupe (Jemez River to confl with Rio Cebolla)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_30	20.6.4.108	STREAM, PERENNIAL	12.6 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Turbidity	2016	12/2/1999	4A
		Specific Conductance	2016	2019 (est.)	5/5A
		Temperature	2008	9/1/2009	4A
		Nutrients	2016	9/23/2016	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for Al chronic (2003), turbidity, and SBD (1999) (sedimentation/siltation); de-list letter for total phosphorus. De-listed for sedimentation/siltaiton in 2008. A TMDL was prepared for temperature (2009).

Rio de las Vacas (Clear Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_46	20.6.4.108	STREAM, PERENNIAL	10.34 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2016		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; aluminum criteria are under review to identify appropriate/attainable levels.

Rio de las Vacas (Rio Cebolla to Clear Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_40	20.6.4.108	STREAM, PERENNIAL	14.35 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	1998	6/2/2003	4A
		Nutrients	2008	9/15/2009	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for temperature and TOC (2003). A TMDL was prepared for plant nutrients (2009).

Rito Penas Negras (Rio de las Vacas to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_42	20.6.4.108	STREAM, PERENNIAL	11.8 MILES	2008	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	1998	6/2/2003	4A
		Turbidity	2010		5/5B
		Sedimentation/Siltation	1998	6/2/2003	4A
		Nutrients	2008	9/15/2009	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for temperature, TOC, and SBD (sedimentation/siltation) (2003). A TMDL was prepared for plant nutrients (2009). AU may not be perennial -- HP and WQS review needed.

Rito de las Palomas (Rio de las Vacas to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_43	20.6.4.108	STREAM, PERENNIAL	5.58 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Sedimentation/Siltation Turbidity	1998 2010	9/15/2009	4A 5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDLs were prepared for temperature and sedimentation/siltation (2009). AU may not be perennial -- HP and WQS review needed.					

Rito de los Indios (San Antonio Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_24	20.6.4.108	STREAM, PERENNIAL	4.47 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature Nutrients Turbidity	2016 2016 2016	2019 (est.) 2019 (est.) 2019 (est.)	5/5A 5/5A 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

San Antonio Creek (East Fork Jemez to VCNP bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_20	20.6.4.108	STREAM, PERENNIAL	11.17 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	1998	6/2/2003	4A
		Turbidity	2006	6/2/2003	4A
		Aluminum, Total Recoverable	2016		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for turbidity and temperature (2003). TMDL for arsenic (2009). Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; aluminum criteria are under review to identify appropriate/attainable levels.

San Antonio Creek (VCNP bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_26	20.6.4.108	STREAM, PERENNIAL	15.95 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Aluminum, Total Recoverable	2016		5/5B
		Temperature	1998	6/2/2003	4A
		Nutrients	2016		5/5B
		Turbidity	2016		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for temperature (2003). Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; WQS criteria are under review to identify appropriate/attainable levels. In addition, the low pH in this AU is likely contributing to increased metals concentrations. AU may not be perennial -- HP and WQS review needed.

San Gregorio Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.B_10	20.6.4.134	RESERVOIR	35.73 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients	2016	2021 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: This reservoir has a headgate on one end of the dam that is the beginning of Nacimiento Creek (Rio Puerco Watershed). The dam also has a spillway that empties into Clear Creek, which is in the Jemez watershed. The water level June 2004 did not reach this spillway.

Sulphur Creek (Redondo Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_22	20.6.4.124	STREAM, PERENNIAL	6.03 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Supporting	Aluminum, Total Recoverable	2016		5/5B
LW	Fully Supporting				
SC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL were previously prepared for pH and conductivity. WQS change to 20.6.4.124 resulted in de-list (pH is naturally low in this watershed). Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; WQS criteria are under review to identify appropriate/attainable levels.

Sulphur Creek (San Antonio Creek to Redondo Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_27	20.6.4.108	STREAM, PERENNIAL	0.81 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2016		5/5B
		pH	2016		5/5B
		Aluminum, Total Recoverable	2016		5/5B
		Turbidity	2010		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Natural conditions contribute to high aluminum concentrations throughout the Jemez and impacts to aquatic life are unclear; WQS criteria are under review to identify appropriate/attainable levels. In addition, the low pH in this AU is likely contributing to increased metals concentrations. HP needed -- this AU may not be perennial. pH applicable to 20.6.4.108 NMAC not attainable given naturally low pH in upstream AU.

Vallecito Ck (Jemez Pueblo bnd to Div abv Ponderosa)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105.5_20	20.6.4.98	STREAM, INTERMITTENT	3.03 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Supporting	Arsenic, Dissolved	2016	2019 (est.)	5/5A
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Vallecito Ck (Perennial Prt Div abv Ponderosa to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105.5_21	20.6.4.107	STREAM, PERENNIAL	11.74 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Sedimentation/Siltation	2016	2019 (est.)	5/5A
		Turbidity	2010	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: Sometimes referred to as Paliza Creek because it flows through Paliza Canyon.					

Virgin Canyon (Rio Guadalupe to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020202 Jemez	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2106.A_31	20.6.4.108	STREAM, PERENNIAL	13.03 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

HUC: 13020203 Rio Grande-Albuquerque

Abo Arroyo (Rio Grande to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_40	20.6.4.103	STREAM, PERENNIAL	37.54 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Canon de Domingo Baca (Arroyo de Domingo Baca to outfall)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_020	20.6.4.98	STREAM, EPHEMERAL	3.44 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Cedro Canyon (Tijeras Arroyo to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_018	20.6.4.98	STREAM, EPHEMERAL	9.46 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Conservancy Park Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_032	20.6.4.99	RESERVOIR	2.42 ACRES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses.					

La Canada de la Loma Arena (La Constancia Ditch to outfall)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_021	20.6.4.98	STREAM, EPHEMERAL	0.77 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.					

La Joya Lakes			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.B_10	20.6.4.105	RESERVOIR	166.47 ACRES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Rio Grande (Arroyo de las Canas to Rio Puerco)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_11	20.6.4.105	RIVER	28.04 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Copper, Dissolved	2016	2019 (est.)	5/5A
		Aluminum, Total Recoverable	2016	4/27/2018	4A
PC	Not Supporting	E. coli	2008	6/30/2010	4A
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDLs for e. coli and dissolved aluminum (2010). The dissolved aluminum TMDL was revised to a total recoverable aluminum TMDL in 2018 using the current applicable WQC.

Rio Grande (Isleta Pueblo boundary to Tijeras Arroyo)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_50	20.6.4.105	RIVER	8.26 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
		Dissolved oxygen	2008		5/5C
PC	Not Supporting	E. coli	2008	6/30/2010	4A
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDL for E. coli. The "PCB in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Rio Grande (Rio Puerco to Isleta Pueblo bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_40	20.6.4.105	RIVER	38.67 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature	2010	2019 (est.)	5/5A
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDL for e. coli (2010).					

Rio Grande (San Marcial at USGS gage to Arroyo de las Canas)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_10	20.6.4.105	RIVER	29.31 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Aluminum, Total Recoverable Temperature	2016 2016	4/27/2018 2019 (est.)	4A 5/5A
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDLs for e. coli and dissolved aluminum (2010). The dissolved aluminum TMDL was revised to a total recoverable aluminum TMDL in 2018 using the current applicable WQC.					

Rio Grande (Tijeras Arroyo to Alameda Bridge)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_51	20.6.4.105	RIVER	11.81 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature	2010	2019 (est.)	5/5A
		Dissolved oxygen	2008	2019 (est.)	5/5A
		PCBS - Fish Consumption Advisory	2010		5/5C
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDL for E. coli. The "PCB in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Rio Grande (non-pueblo Alameda Bridge to HWY 550 Bridge)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105.1_00	20.6.4.106	RIVER	11.74 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Not Supporting	Gross Alpha, Adjusted	2012	2019 (est.)	5/5A
MWWAL	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012	2019 (est.)	5/5A
		PCBS - Fish Consumption Advisory	2010		5/5C
PC	Fully Supporting				
PWS	Not Assessed				
WH	Not Supporting	Polychlorinated Biphenyls (PCBs)	2012	2019 (est.)	5/5A

AU Comment: TMDL for E. coli (2010). The "PCB in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Rio Grande (non-pueblo HWY 550 Bridge to Angostura Div)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105.1_02	20.6.4.106	RIVER	2.36 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDL for fecal coliform. De-listed for fecal coliform because this criteria was replaced with E. coli during the 2005 trienniel.

Tijeras Arroyo (Four Hills Bridge to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_001	20.6.4.99	STREAM, PERENNIAL	15 MILES	2018	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2008	10/12/2017	4A
WH	Fully Supporting				

AU Comment: This entire AU may not be perennial. This upper AU is often referred to as Tijeras Creek or Tijeras Canyon. TMDL for nutrients (2017).

Tijeras Arroyo (Rio Grande to Four Hills Bridge)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_070	20.6.4.98	STREAM, EPHEMERAL	11.49 MILES	2008	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 6/24/09) indicate this assessment unit is ephemeral (Hydrology Protocol score of 3.0 with 89.1% days with no flow at USGS gage 08330600 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

Unnamed tributary (South Diversion Channel to I-25)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_015	20.6.4.97	STREAM, EPHEMERAL	0.29 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Delta Person Generating station, permit NM0030376

Unnamed tributary (div channel to Fire Academy outfall)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020203 Rio Grande-Albuquerque	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_014	20.6.4.97	STREAM, EPHEMERAL	1.27 MILES	2016	2023
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Firefighters Academy, permit NM0029726 has since been terminated.

HUC: 13020204 Rio Puerco

Arroyo San Jose (Rio Puerco to La Jara Creek)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_39	20.6.4.98	STREAM, INTERMITTENT	6.15 MILES	2006	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 9/16/08) indicate this assessment unit is ephemeral (Hydrology Protocol score of 6.5- see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

Canon del Piojo S Fk (main canyon to ranch pond)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_016	20.6.4.97	STREAM, EPHEMERAL	4.56 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013. Resurrection Mining, permit NM0028169

La Jara Creek (Perennial reaches abv Arroyo San Jose)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_46	20.6.4.109	STREAM, PERENNIAL	9.86 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Aluminum, Total Recoverable	2014	6/16/2016	4A
DWS	Fully Supporting				
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDL for dissolved aluminum (2007).

Nacimiento Ck (Perennial prt HWY 126 to San Gregorio Rsvr)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_42	20.6.4.109	STREAM, PERENNIAL	6.77 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Aluminum, Total Recoverable	2014	6/16/2016	4A
		Turbidity	2014	6/16/2016	4A
DWS	Not Supporting	Uranium, Dissolved	2014	6/16/2016	4A
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDLs for turbidity, aluminum, and uranium (2016).					

Nacimiento Creek (Rio Puerco to HWY 126)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_47	20.6.4.98	STREAM, INTERMITTENT	2.06 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Rio Puerco (Arroyo Chijuilla to northern bnd Cuba)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_40	20.6.4.131	STREAM, PERENNIAL	8.44 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2006	9/21/2007	4A
		Sedimentation/Siltation	2004	8/10/2007	4A
		Ammonia, Total	2006		5/5C
WH	Fully Supporting				

AU Comment: TMDLs were prepared for sedimentation, chronic dissolved Al, and nutrients (2007). Dissolved Al TMDL withdrawn 2018 because no longer an applicable WQC.

Rio Puerco (Perennial prt northern bnd Cuba to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_44	20.6.4.109	STREAM, PERENNIAL	13.99 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Sedimentation/Siltation	2014	6/16/2016	4A
DWS	Fully Supporting				
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for sedimentation/siltation (2016).

Rio Puerco (non-pueblo Arroyo Chico to Arroyo Chijuilla)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_22	20.6.4.130	STREAM, INTERMITTENT	42.55 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Puerco (non-pueblo Rio Grande to Arroyo Chico)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_20	20.6.4.130	STREAM, INTERMITTENT	106.51 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2012	2022 (est.)	5/5A
WWAL	Fully Supporting				
WH	Not Supporting	Mercury, Total	2012	2022 (est.)	5/5A
AU Comment: None.					

Rito Leche (Intermittent reaches above HWY 126)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_43	20.6.4.98	STREAM, INTERMITTENT	6.6 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Rito Leche (Rio Puerco to Hwy 126)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_53	20.6.4.98	STREAM, INTERMITTENT	1.55 MILES	2006	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Rito de los Pinos (Arroyo San Jose to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_45	20.6.4.98	STREAM, EPHEMERAL	8.78 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 9/16/08) indicate this assessment unit is ephemeral (Hydrology Protocol score of 0.0 and 3.5 at two stations - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

San Miguel Arroyo (San Pablo Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_51	20.6.4.98	STREAM, INTERMITTENT	9.61 MILES	2006	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 6/16/09) indicate this assessment unit is intermittent (Hydrology Protocol score of 17.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

San Pablo Canyon (Rio Puerco to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020204	Rio Puerco
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_41	20.6.4.98	STREAM, INTERMITTENT	11.49 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol on 9/18/08 at the station immediately above the Rio Puerco indicate this AU is ephemeral (Hydrology Protocol of 5.5), while surveys on 9/19/11 and 10/27/11 at FR 20/533 indicate intermittent (Hydrology Protocol scores of 19 and 16.5, respectively). See http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol.

Senorito Creek (Nacimiento Mine to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020204	Rio Puerco
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_54	20.6.4.109	STREAM, PERENNIAL	2.85 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
DWS	Fully Supporting				
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Senorito Creek (San Pablo Canyon to Nacimiento Mine)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020204	Rio Puerco
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_52	20.6.4.98	STREAM, INTERMITTENT	5.27 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Unnamed tributary (Canon del Piojo S Fk to mine outfall)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020204 Rio Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_017	20.6.4.97	STREAM, EPHEMERAL	0.6 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013. Resurrection Mining, permit NM0028169

HUC: 13020205 Arroyo Chico

Arroyo Chico (Rio Puerco to San Isidro Arroyo)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020205 Arroyo Chico	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_016	20.6.4.98	STREAM, INTERMITTENT	32.49 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Inditos Draw (breached road berm to hdwtrs)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020205 Arroyo Chico	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_021	20.6.4.97	STREAM, EPHEMERAL	3.45 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Lee Ranch Coal Co El Segundo mine, permit NM0030996

Mulatto Canyon (Arroyo Tinaja to one mi blw USFS bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020205	Arroyo Chico
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_024	20.6.4.97	STREAM, EPHEMERAL	6.81 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Lee Ranch Mine permit NM0029581

San Isidro Arroyo (mine outfall to Tinaja Arroyo)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020205	Arroyo Chico
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_022	20.6.4.97	STREAM, EPHEMERAL	0.65 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Lee Ranch Mine permit NM0029581

San Lucas Canyon (San Miguel Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020205	Arroyo Chico
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_014	20.6.4.98	STREAM, INTERMITTENT	13.76 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

San Miguel Creek (Arroyo Chico to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020205 Arroyo Chico	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_015	20.6.4.98	STREAM, INTERMITTENT	28.42 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Tinaja Arroyo (San Isidro Arroyo to Mulatto Cny)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020205 Arroyo Chico	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_023	20.6.4.97	STREAM, EPHEMERAL	1.24 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Lee Ranch Mine permit NM0029581

HUC: 13020206 North Plains

Laguna Americana			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13020206 North Plains	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_053	20.6.4.98	LAKE, PLAYA	25.8 ACRES	1998	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: Part of playa lake study. Data are old.

Laguna Seco			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020206 North Plains	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_060	20.6.4.98	LAKE, PLAYA	1.57 ACRES	1998	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

HUC: 13020207 Rio San Jose

Arroyo del Puerto (San Mateo Ck to mine entrance rd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_018	20.6.4.97	STREAM, EPHEMERAL	6.81 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013. Rio Algom Mining/Ambrosia Lake, permit NM0020532

Arroyo del Valle (Laguna Pueblo bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_030	20.6.4.98	STREAM, EPHEMERAL	12.47 MILES	2018	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Supporting	Gross Alpha, Adjusted	2018	2021 (est.)	5/5A
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU will remain under 20.6.4.98 NMAC.

Bluewater Creek (Perennial prt Bluewater Rsvr to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_01	20.6.4.109	STREAM, PERENNIAL	16.82 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature	1998	9/21/2007	4A
DWS	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDLs were prepared for temperature and plant nutrients (2007). WQS temperature review is warranted in this AU.

Bluewater Creek (Perennial prt R San Jose to Bluewater Rsvr)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_00	20.6.4.109	STREAM, PERENNIAL	10.97 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	1998	9/21/2007	4A
		Temperature	2006	9/21/2007	4A
DWS	Fully Supporting				
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Non-tribal portions only. TMDLS were completed for temperature and nutrients (2007).

Bluewater Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.B_00	20.6.4.135	RESERVOIR	608.63 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	2014	2021 (est.)	5/5A
DWS	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Moquino (Laguna Pueblo to Seboyettia Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_10	20.6.4.109	STREAM, PERENNIAL	1.98 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients Temperature	2006 1998	9/21/2007 9/21/2007	4A 4A
DWS	Not Assessed				
FC	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: TMDLs were completed for temperature and nutrients (2007). There may not be adequate flow in the lower portions of this reach to sustain a CWAL.					

Rio Paguate (Laguna Pueblo bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_30	20.6.4.109	STREAM, PERENNIAL	10.59 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
DWS	Not Assessed				
FC	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: The USGS gage used to make the original impairment determinations is downstream of Jackpile Mine, which is on pueblo land and not in the AU.

Rio San Jose (Grants BNSF RR crossing to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_028	20.6.4.98	STREAM, EPHEMERAL	12.87 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Rio San Jose (non-tribal HWY 117 to Grants BNSF RR crossing)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_003	20.6.4.99	STREAM, PERENNIAL	7.69 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Seboyeta Creek (Rio Moquino to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2107.A_20	20.6.4.109	STREAM, PERENNIAL	17.08 MILES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
DWS	Not Assessed				
FC	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Access issues (not sampled during 2011 Rio Puerco survey).

Unnamed tributary (San Mateo Cr to mine outfall)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13020207 Rio San Jose	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_019	20.6.4.97	STREAM, EPHEMERAL	2.43 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassifie Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Strathmore Roca Honda, permit NM0031020

HUC: 13020209 Rio Salado

Rio Salado (Rio Grande to Alamo Navajo bnd)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5C	HUC: 13020209 Rio Salado	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_10	20.6.4.103	STREAM, PERENNIAL	45.37 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Temperature	2016		5/5C
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: A second thermograph should be deployed to confirm the temperature listing.

Rio Salado (non-pueblo lands)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 13020209 Rio Salado	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_002	20.6.4.98	STREAM, INTERMITTENT	5.81 MILES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 9/10/2008) indicate this assessment unit is intermittent (Hydrology Protocol score of 11.25 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

HUC: 13020211 Elephant Butte Reservoir

Alamosa Creek (Perennial reaches abv Monticello diversion)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13020211 Elephant Butte Reservoir	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_30	20.6.4.103	STREAM, PERENNIAL	13.09 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Elephant Butte Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13020211 Elephant Butte Reservoir	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2104_00	20.6.4.104	RESERVOIR	6433 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
		Mercury - Fish Consumption Advisory	2004		5/5C
WH	Fully Supporting				

AU Comment: The mercury and PCBs in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern. Land management agencies have posted contact recreation warnings due to toxic blue green algae. SWQB does not have water quality standards or assessment procedures related to blue green algae at this time. The actual size of this AU at any given time depends on fluctuating surface area and reservoir volume. The noted acreage is from the USGS NHD 2014 GIS layer. The potential inundation area is almost 40,000 acres.

Rio Grande (Elephant Butte Rsvr to San Marcial at USGS)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13020211 Elephant Butte Reservoir	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2105_00	20.6.4.105	RIVER	24.5 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Aluminum, Total Recoverable	2016	2019 (est.)	5/5A
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: The actual length of this AU at any given time depends on Elephant Butte's fluctuating surface area.

HUC: 13030101 Caballo

Caballo Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13030101 Caballo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2102.B_00	20.6.4.104	RESERVOIR	2943.63 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2016	2021 (est.)	5/5A
		Mercury - Fish Consumption Advisory	2004		5/5C
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Cuchillo Negro Creek (Rio Grande to Willow Spring Draw)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13030101 Caballo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_012	20.6.4.98	STREAM, EPHEMERAL	10.27 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Las Animas Ck (perennial prt Animas Gulch to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13030101 Caballo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_50	20.6.4.103	STREAM, PERENNIAL	27.03 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Dissolved oxygen	2014		5/5A
		Benthic Macroinvertebrates	2010		5/5C
SC	Fully Supporting				
WWAL	Not Supporting	Benthic Macroinvertebrates	2010		5/5C
WH	Fully Supporting				

AU Comment: None.

Las Animas Ck (perennial prt R Grande to Animas Gulch)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13030101 Caballo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_51	20.6.4.103	STREAM, PERENNIAL	12.54 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Assessed				
SC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Palomas Creek (perennial portion R Grande to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13030101 Caballo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_60	20.6.4.103	STREAM, PERENNIAL	23.87 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Percha Ck (Perennial prt Caballo Rsvr to Wicks Gulch)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13030101 Caballo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_21	20.6.4.103	STREAM, PERENNIAL	13.1 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Assessed				
SC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Percha Ck (Perennial prt Wicks Gulch to Middle Percha Ck)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13030101 Caballo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_20	20.6.4.103	STREAM, PERENNIAL	11.74 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13030101 Caballo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_00	20.6.4.103	RIVER	21.04 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Dissolved oxygen	2006		5/5C
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: The dissolved oxygen impairment may indicate excessive nutrients. Protocols for nutrients in large rivers are under development.					

HUC: 13030102 El Paso-Las Cruces

Burn Lake (Dona Ana)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13030102 El Paso-Las Cruces	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_024	20.6.4.99	RESERVOIR	22.68 ACRES	2018	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13030102 El Paso-Las Cruces	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2101_01	20.6.4.101	RIVER	13.32 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Supporting	E. coli	2006	6/11/2007	4A
WH	Fully Supporting				
AU Comment: TMDL for E. coli.					

Rio Grande (International Mexico bnd to Anthony Bridge)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13030102 El Paso-Las Cruces	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2101_00	20.6.4.101	RIVER	8.73 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Supporting	Boron, Dissolved	2014	2019 (est.)	5/5A
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Supporting	E. coli	2006	6/11/2007	4A
WH	Fully Supporting				
AU Comment: TMDL for E. coli.					

Rio Grande (Leasburg Dam to one mile below Percha Dam)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13030102 El Paso-Las Cruces	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2101_10	20.6.4.101	RIVER	42.17 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Supporting	E. coli	2006	6/11/2007	4A
WH	Fully Supporting				
AU Comment: TMDL for e. coli.					

Rio Grande (NM192 bridge W of Mesquite to Picacho Bridge)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13030102 El Paso-Las Cruces	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2101_03	20.6.4.101	RIVER	13.3 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for E. coli.					

Rio Grande (Picacho Bridge to Leasburg Dam)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 13030102	El Paso-Las Cruces
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2101_02	20.6.4.101	RIVER	16.61 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL for E. coli.

Rio Grande (one mile below Percha Dam to Caballo Reservoir)			AU IR CATEGORY	LOCATION DESCRIPTION	
			1	HUC: 13030102	El Paso-Las Cruces
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2102.A_00	20.6.4.102	RIVER	3.05 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

South Fork Las Cruces Arroyo (Las Cruces Arroyo to hdwtrs)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13030102	El Paso-Las Cruces
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_013	20.6.4.98	STREAM, EPHEMERAL	6.53 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU will remain under 20.6.4.98 NMAC.

Tierra Blanca Creek (Rio Grande to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13030102 El Paso-Las Cruces	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2103.A_70	20.6.4.98	STREAM, INTERMITTENT	33.72 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Fully Supporting				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

HUC: 13030202 Mimbres

Allie Canyon (Mimbres River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2804_20	20.6.4.804	STREAM, PERENNIAL	8.82 MILES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Bear Canyon (Mimbres River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2804_10	20.6.4.804	STREAM, PERENNIAL	9.96 MILES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Bear Canyon Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2504_30	20.6.4.806	RESERVOIR	8.75 ACRES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	2004	2021 (est.)	5/5A
		Temperature	2012	2021 (est.)	5/5A
		Mercury - Fish Consumption Advisory	2004		5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Cold Springs Creek (Hot Springs Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2803_11	20.6.4.803	STREAM, PERENNIAL	7.56 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Lead, Dissolved	2012	9/11/2014	4A
		Cadmium, Dissolved	2012	9/11/2014	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 5/26/09) indicate this assessment unit is perennial (Hydrology Protocol score of 20.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

Gallinas Creek (Mimbres River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2803_20	20.6.4.803	STREAM, INTERMITTENT	20.19 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	2012		5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Sonde data and/or chlorophyll collection recommended prior to TMDL development. Application of the SWQB Hydrology Protocol (5/26/09 survey date) indicate this assessment unit is perennial (Hydrology Protocol score of 18.5 to 22.5 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

Hanover Creek (Whitewater Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2803_31	20.6.4.98	STREAM, EPHEMERAL	7.09 MILES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Hot Springs Ck (Perennial prt of Mimbres R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2803_10	20.6.4.803	STREAM, PERENNIAL	10.51 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: The perennial portion is privately owned -- SWQB was denied access during during both watershed surveys (2002 and 2009).					

McKnight Canyon (Mimbres River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2804_30	20.6.4.804	STREAM, PERENNIAL	14.91 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: Gila Trout restoration in 1972 by NMG&F.					

Mimbres R (Perennial reaches Allie Canyon to Cooney Cny)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2804_00	20.6.4.804	STREAM, PERENNIAL	10.87 MILES	2018	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Mimbres R (Perennial reaches Cooney Cyn to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2804_40	20.6.4.807	STREAM, PERENNIAL	12.13 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Mimbres R (Perennial reaches downstream of Allie Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2803_00	20.6.4.803	STREAM, PERENNIAL	29.64 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2012	9/11/2014	4A
WH	Fully Supporting				

AU Comment: This AU near the ecoregion boundary and is more closely associated with ecoregion 24b (Chihuahuan Desert).

San Vicente Arroyo (Mimbres R to Maudes Cny)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_026	20.6.4.97	STREAM, EPHEMERAL	29.85 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Hydrology Protocol-based UAA concluded this reach was ephemeral. UAA was approved by EPA in Oct 2013. Perennial reaches of San Vicente above Maudes Canyon remain classified in 20.6.4.803.

San Vicente Creek (Perennial prt Maudes Cny to Silva Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_025	20.6.4.803	STREAM, PERENNIAL	1.87 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	2012		5/5A
IRR	Not Assessed				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: San Vicente below Maudes Canyon was approved by EPA as ephemeral 97 in Dec 2013. Perennial reaches of San Vicente above Maudes Canyon remain classified in 20.6.4.803.

Whitewater Creek (Mimbres River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13030202 Mimbres	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2803_30	20.6.4.803	STREAM, PERENNIAL	17.08 MILES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

HUC: 13050001 Western Estancia

Estancia Park Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050001 Western Estancia	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_042	20.6.4.99	RESERVOIR	1.32 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses.					

Laguna del Pero			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13050001 Western Estancia	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_054	20.6.4.98	LAKE, PLAYA	4497.56 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: Water is too saline for cattle, so livestock watering may not be an existing or attainable use.					

Manzano Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050001 Western Estancia	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_114	20.6.4.99	RESERVOIR	3.19 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Marginal Coldwater is an existing uses.					

Mike's Playa			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050001 Western Estancia	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_085	20.6.4.98	LAKE, PLAYA	21.31 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Water is too saline for cattle, so livestock watering may not be an existing or attainable use.					

HUC: 13050003 Tularosa Valley

Carrizozo Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_027	20.6.4.99	RESERVOIR	2.92 ACRES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Davies Tank			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_034	20.6.4.99	LAKE, PLAYA	2.12 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: This playa was only sampled once in 1995, so Not Assessed.

Dog Canyon Creek (perennial portions)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_20	20.6.4.810	STREAM, PERENNIAL	5.84 MILES	2018	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Temperature	2006		5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: A UAA to create 20.6.4.810 NMAC for this water body with coolwater aquatic life use was approved by the WQCC (effective 2/28/18 for state purposes).

Fresnal Canyon (La Luz Creek to Salado Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_41	20.6.4.801	STREAM, PERENNIAL	2.61 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Flow Regime Modification	2014		4C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014		5/5C
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: This reach is often dry below Salado Canyon where the Alamogordo diversion is installed,

Fresnal Canyon (Salado Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_44	20.6.4.801	STREAM, PERENNIAL	10.29 MILES	2018	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Karr Canyon (Fresnal Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_42	20.6.4.801	STREAM, PERENNIAL	6.57 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Sedimentation/Siltation	2014	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

La Luz Creek (perennial portions)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_40	20.6.4.801	STREAM, PERENNIAL	13.58 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Lake Holloman			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_113	20.6.4.99	LAKE, PLAYA	150.85 ACRES	2010	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Arsenic, Dissolved	2010	2021 (est.)	5/5A
WH	Fully Supporting				

AU Comment: Lake is actually an impounded playa. Although the reservoir is associated with Holloman Air Force Base, the public does have access and the AFB is considering adding a park. This lake has very high salinity, and is thus not suitable for livestock watering or supporting a viable fishery. Limited aquatic life might be a more realistic use based on salinity.

Lake Lucero (North)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_068	20.6.4.98	LAKE, PLAYA	3419.53 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Water is generally too saline for cattle, so livestock watering may not be an existing or attainable use. This playa was only sampled once in 1993, so Not Assessed.

Lake Lucero (South)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_069	20.6.4.98	LAKE, PLAYA	1987.55 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Water is generally too saline for cattle, so livestock watering may not be an existing or attainable use. This playa was only sampled once in 1993, so Not Assessed.

Lake Stinky			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_070	20.6.4.99	LAKE, PLAYA	75.24 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: This playa was only sampled once in 1993, so Not Assessed.					

Malpais Springs			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_079	20.6.4.99	LAKE, PLAYA	2.2 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: Habitat for White Sands pup fish. This playa was only sampled once in 1995, so Not Assessed.					

Mound Springs			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_086	20.6.4.99	LAKE, PLAYA	0.59 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: Habitat for White Sands pup fish. This playa was only sampled once in 1995, so Not Assessed.					

Nogal Creek (Tularosa Creek to Mescalero Apache bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13050003	Tularosa Valley
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_10	20.6.4.801	STREAM, PERENNIAL	4.08 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature	2014	2019 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/21/2015	4A
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Salado Canyon (Fresnal Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13050003	Tularosa Valley
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_43	20.6.4.801	STREAM, PERENNIAL	2.03 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Salt Creek (Tularosa Valley)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003	Tularosa Valley
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_50	20.6.4.99	STREAM, PERENNIAL	47.13 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

San Andres Canyon (S San Andres Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_31	20.6.4.801	STREAM, PERENNIAL	4.04 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

San Andres Canyon (Taylor Ranch Rd to S San Andres Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_30	20.6.4.97	STREAM, EPHEMERAL	3.75 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				
AU Comment: Hydrology Protocol-based UAA concluded this reach was ephemeral. UAA was approved by EPA in Oct 2013.					

Three Rivers (Perennial prt HWY 54 to USFS exc Mescalero)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2802_00	20.6.4.802	STREAM, INTERMITTENT	14.69 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Supporting	Flow Regime Modification			4C
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: There is extensive irrigation in the reach from surface water diversion as well as ground water pumping in the lower portion of the assessment unit. Therefore, this AU is listed under Category 4C with an impairment of Low Flow Alteration diversion (flow modification) "pollution" is de-watering this reach.

Three Rivers (USFS bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2802_01	20.6.4.802	STREAM, PERENNIAL	4.13 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Per USFS personnel (2/4/09), livestock grazing is not allowed along this stream reach. It is a popular horseback riding trail with several crossings.

Tularosa Ck (perennial prt downstream of old HWY 70 xing)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_00	20.6.4.99	STREAM, PERENNIAL	18.96 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Tularosa Creek (Old HWY 70 xing to Mescalero Apache bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13050003 Tularosa Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2801_01	20.6.4.801	STREAM, PERENNIAL	4.85 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

HUC: 13050004 Salt Basin

Sacramento R (Arkansas Canyon to Scott Able Canyon)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13050004 Salt Basin	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2805_00	20.6.4.98	STREAM, INTERMITTENT	8.43 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: 2013 application of the hydro protocol indicate this AU is intermittent.

Sacramento R (Perennial prt Scott Able Canyon to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 13050004 Salt Basin	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2805_02	20.6.4.805	STREAM, PERENNIAL	7.17 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Sedimentation/Siltation	2014	2019 (est.)	5/5A
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Scott Able Canyon (Sacramento R to road NF-64 abv canyon)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13050004 Salt Basin	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2805_01	20.6.4.98	STREAM, INTERMITTENT	2.76 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

HUC: 13060001 Pecos Headwaters

Alamitos Canyon (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_022	20.6.4.98	STREAM, INTERMITTENT	8.86 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU likely needs to be split. The lower portion includes the reconstructed portion through Terrero Mine reclamation.

Beaver Creek (El Porvenir Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_04	20.6.4.215	STREAM, PERENNIAL	5.87 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Blue Creek (Tecolote Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_15	20.6.4.215	STREAM, PERENNIAL	4.22 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Blue Hole			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.B_10	20.6.4.212	SINK HOLE	0.23 ACRES	2006	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: Coldwater Aquatic Life and Primary Contact are existing uses. Dissolved oxygen is naturally low due to groundwater influx. This unique water warrants its own WQ standard segment.					

Brown's Marsh			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_022	20.6.4.99	LAKE, PLAYA	8.36 ACRES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Bull Creek (Cow Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_091	20.6.4.217	STREAM, PERENNIAL	15.22 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: A TMDL was written for temperature.					

Burro Canyon (Gallinas River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_06	20.6.4.215	STREAM, PERENNIAL	4.48 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Cow Creek (Bull Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_102	20.6.4.217	STREAM, PERENNIAL	22.25 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	1998	9/13/2005	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDLs for temperature and turbidity.					

Cow Creek (Pecos River to Bull Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_090	20.6.4.217	STREAM, PERENNIAL	15.57 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	1998	9/13/2005	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDLs for temperature and turbidity. HQCWAL may not be attainable.					

Dalton Canyon Creek (Perennial prt Pecos R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_070	20.6.4.217	STREAM, PERENNIAL	8.02 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Specific Conductance	2012	9/25/2013	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: Portions went dry during both the 2001 and 2010 surveys. HQCWAL may not be attainable -- WQS review needed.					

Doctor Creek (Holy Ghost Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_021	20.6.4.217	STREAM, PERENNIAL	3.43 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

El Porvenir Creek (Gallinas River to SFNF bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_01	20.6.4.215	STREAM, PERENNIAL	2.63 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2010	2022 (est.)	5/5A
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

El Porvenir Creek (SFNF bnd to Hollinger Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_05	20.6.4.215	STREAM, PERENNIAL	4.67 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: There were 2 of 3 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L).					

El Rito (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_050	20.6.4.212	STREAM, PERENNIAL	2.75 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Ammonia, Total	2012	2022 (est.)	5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2012	9/25/2013	4A
WH	Fully Supporting				
AU Comment: Additional ammonia sampling and full Level 2 nutrient assessment recommended prior to TMDL development. WWTP upgraded in 2010.					

Falls Creek (Tecolote Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_12	20.6.4.215	STREAM, PERENNIAL	6.18 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Specific Conductance	2012	9/25/2013	4A
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Gallinas River (Las Vegas Diversion to USFS bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_00	20.6.4.215	STREAM, PERENNIAL	7.91 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	1998	9/13/2005	4A
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: A TMDL was prepared for temperature.					

Gallinas River (Pecos Arroyo to Las Vegas Diversion)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2213_23	20.6.4.220	STREAM, PERENNIAL	10.63 MILES	2018	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Gallinas River (Pecos River to Aguilar Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2213_20	20.6.4.98	STREAM, PERENNIAL	20.32 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Supporting	Dissolved oxygen	2012		5/5A
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: USGS 08382500 gage data from 1/1/1951 to 9/7/2011 documents 8848 days (40%) with zero daily flow. Sonde was in isolated pool - redeployment recommended.

Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2213_21	20.6.4.220	STREAM, PERENNIAL	41.63 MILES	2018	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Turbidity	2012	2018 (est.)	5/5A
		Nutrients	2006	2018 (est.)	5/5A
		Temperature	2012	2018 (est.)	5/5A
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Gallinas River (USFS bnd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_02	20.6.4.215	STREAM, PERENNIAL	8.51 MILES	2010	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Glorieta Ck (Perennial prt Glorieta CC WWTP to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_082	20.6.4.217	STREAM, PERENNIAL	5.95 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Flow Regime Modification	2014		4C
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Very limited data. Low flow alterations affecting stream condition (impoundments on Glorieta CC property).					

Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_081	20.6.4.217	STREAM, PERENNIAL	8.39 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Specific Conductance Nutrients	2004 2012		5/5B 5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Flow in this AU is effluent dominated. HQCW use and associated criteria may not be attainable. WQS under review.

Hollinger Creek (El Porvenir Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_03	20.6.4.215	STREAM, PERENNIAL	5.67 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Holy Ghost Creek (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_020	20.6.4.217	STREAM, PERENNIAL	6.91 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Indian Creek (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_072	20.6.4.217	STREAM, PERENNIAL	6.45 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Jack's Creek (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_045	20.6.4.217	STREAM, PERENNIAL	6.59 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: Rio Grande Cutthroat Trout restoration in 1992-1996 by NMG&F.					

Johnson Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.B_10	20.6.4.222	LAKE, FRESHWATER	2.51 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Lake Bentley			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_067	20.6.4.99	LAKE, PLAYA	45.66 ACRES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Lake Katherine			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.B_20	20.6.4.222	LAKE, FRESHWATER	11.78 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Access is difficult -- high elevation lake.

Lost Bear Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.B_30	20.6.4.222	LAKE, FRESHWATER	0.5 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Macho Canyon Creek (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_071	20.6.4.217	STREAM, PERENNIAL	7.82 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Specific Conductance	2012	9/25/2013	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

McAllister Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.3_00	20.6.4.213	LAKE, PLAYA	183.62 ACRES	2006	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Arsenic, Dissolved	2006	2021 (est.)	5/5A
LW	Fully Supporting				
SC	Fully Supporting				
WH	Fully Supporting				

AU Comment: This is a nutrient rich fishing lake. The human health criterion for arsenic (9.0 ug/L) was exceeded during 4 of 6 sampling events in 2001. NMED has collected fish tissue to be analyzed for arsenic to determine if a fish consumption advisory is warranted.

Monastery Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.B_40	20.6.4.224	RESERVOIR	5.79 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This water body was sampled once in 2001. An n=1 is insufficient to determine use support.

North Fork Blue Creek (Blue Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_17	20.6.4.215	STREAM, PERENNIAL	2.11 MILES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Panchuela Creek (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_060	20.6.4.217	STREAM, PERENNIAL	6.9 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Park Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.B_20	20.6.4.99	RESERVOIR	4.21 ACRES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Pecos Arroyo (Gallinas River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2213_22	20.6.4.221	STREAM, PERENNIAL	13.54 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Not Supporting	E. coli	2010	9/25/2013	4A
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for E. coli.					

Pecos Baldy Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.B_50	20.6.4.222	LAKE, FRESHWATER	5.6 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Pecos River (Alamitos Canyon to Jack's Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_002	20.6.4.217	STREAM, PERENNIAL	21.21 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: A TMDL was prepared for turbidity.

Pecos River (Canon de Manzanita to Alamitos Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_003	20.6.4.217	STREAM, PERENNIAL	5.69 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2004	9/13/2005	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDLs were written for temperature and turbidity. De-list for turbidity.

Pecos River (Cow Creek to Canon de Manzanita)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2213_02	20.6.4.216	STREAM, PERENNIAL	19.7 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Pecos River (Jack's Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_000	20.6.4.217	STREAM, PERENNIAL	13.91 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: Rio Grande Cutthroat Trout restoration in 1992-1996 by NMG&F above Pecos Falls.					

Pecos River (Santa Rosa Reservoir to Tecolote Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.A_10	20.6.4.211	STREAM, PERENNIAL	51.1 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Supporting	E. coli	2012	9/25/2013	4A
WH	Fully Supporting				
AU Comment: USGS 08382600 gage data from 1/1/1976 to 9/7/2011 documents 3596 days (28%) with zero daily flow.					

Pecos River (Sumner Reservoir to Santa Rosa Reservoir)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.A_00	20.6.4.211	STREAM, PERENNIAL	46.72 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Nutrients	2012	2022 (est.)	5/5A
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: The nutrient listing is marginal.					

Pecos River (Tecolote Creek to Villanueva State Park)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2213_00	20.6.4.216	STREAM, PERENNIAL	18.83 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Temperature	2012	2022 (est.)	5/5A
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: The AU boundary is the downstream end of the state park.					

Pecos River (Villanueva State Park to Cow Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2213_01	20.6.4.216	STREAM, PERENNIAL	19.83 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: The AU boundary is the downstream end of the state park.					

Perch Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.B_40	20.6.4.226	SINK HOLE	3.63 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Power Dam Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2202.B_10	20.6.4.212	RESERVOIR	13.17 ACRES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Rio Mora (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_040	20.6.4.217	STREAM, PERENNIAL	17.93 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rito del Oso (Rio Mora to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_044	20.6.4.217	STREAM, PERENNIAL	2.04 MILES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Santa Rosa Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.B_00	20.6.4.225	RESERVOIR	4820.42 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Spirit Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.B_80	20.6.4.222	LAKE, FRESHWATER	2.9 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Stewart Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.B_70	20.6.4.222	LAKE, FRESHWATER	4.24 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Access is difficult -- high elevation lake.					

Storrie Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.5_00	20.6.4.214	RESERVOIR	1080.22 ACRES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Mercury - Fish Consumption Advisory	2006		5/5C
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
PWS	Not Assessed				
WWAL	Not Supporting	Mercury - Fish Consumption Advisory	2006		5/5C
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Sumner Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2210_00	20.6.4.210	RESERVOIR	4274.73 ACRES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Tecolote Creek (Blue Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_09	20.6.4.215	STREAM, PERENNIAL	5.77 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Tecolote Creek (I-25 to Blue Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_10	20.6.4.230	STREAM, PERENNIAL	22.05 MILES	2018	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Temperature Nutrients	1998 2012		5/5A 5/5C
DWS	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: A UAA to create 20.6.4.230 NMAC for this water body with coolwater aquatic life use was approved by the WQCC (effective 2/28/18 for state purposes).

Tecolote Creek (Pecos River to I-25)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_08	20.6.4.98	STREAM, EPHEMERAL	26.37 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral.The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU will remain under 20.6.4.98 NMAC.

Tres Lagunas (Northeast)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.B_30	20.6.4.212	RESERVOIR	34.45 ACRES	2010	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	pH	2010	2021 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Tres Lagunas NE is one of three small on-line impoundments on a perennial tributary to the Pecos River origionally constructed by the railroad for flood control and eventual irrigation storage. In the years since the construction, the lake has filled with sediment, now averaging one meter in depth. As a result, WQS segment 20.6.4.212 is likely not appropriate for this waterbody.

Tres Lagunas (Southeast)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.B_31	20.6.4.212	RESERVOIR	12.44 ACRES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Tres Lagunas (West)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2211.B_32	20.6.4.212	RESERVOIR	10.89 ACRES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Truchas Lake (North)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.B_60	20.6.4.222	LAKE, FRESHWATER	0.68 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Truchas Lake (South)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.B_61	20.6.4.222	LAKE, FRESHWATER	2.57 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment:					

Wallace Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_107	20.6.4.99	LAKE, PLAYA	17.46 ACRES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Willow Creek (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_030	20.6.4.217	STREAM, PERENNIAL	5.8 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Specific Conductance	2004	9/25/2013	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Continuing monitoring data following Terrero Mine reclaimation indicate improved water quality with respect to metals (previous listed for cadmium and zinc).

Winsor Creek (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2214.A_061	20.6.4.217	STREAM, PERENNIAL	5.95 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Wright Canyon Creek (Tecolote Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060001 Pecos Headwaters	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2212_18	20.6.4.215	STREAM, PERENNIAL	2.05 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

HUC: 13060003 Upper Pecos

Bosque Redondo Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060003 Upper Pecos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_021	20.6.4.99	RESERVOIR	32.63 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses. This water body was sampled once in 2007 as part of a data gathering effort related to nutrients. An n=1 is insufficient to assess for impairments. The applicable criterion for temperature was exceeded.

Pecos River (Crockett Draw to Yeso Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060003 Upper Pecos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2207_01	20.6.4.207	RIVER	46.57 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
SC	Fully Supporting				
WH	Fully Supporting				

AU Comment: If the October 2015 proposed revisions to 20.6.4.206 NMAC are approved by the EPA, E. coli will become Non Support.

Pecos River (Salt Creek to Crockett Draw)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060003 Upper Pecos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2207_00	20.6.4.207	RIVER	22.15 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature	2016	2019 (est.)	5/5A
SC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Pecos River (Truchas Creek to Sumner Reservoir)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060003 Upper Pecos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2207_03	20.6.4.207	RIVER	20.36 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
SC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Pecos River (Yeso Creek to Truchas Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060003 Upper Pecos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2207_02	20.6.4.207	RIVER	26.36 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Fully Supporting				
SC	Fully Supporting				
WH	Fully Supporting				

AU Comment: If the October 2015 proposed revisions to 20.6.4.206 NMAC are approved by the EPA, E. coli will become Non Support.

Yeso Creek (Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060003 Upper Pecos	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_011	20.6.4.98	STREAM, INTERMITTENT	46.11 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

HUC: 13060007 Upper Pecos-Long Arroyo

Bitter Lake (Bitter Lake NWR)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_014	20.6.4.99	LAKE, PLAYA	149.3 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: This water body was sampled once in 2007 as part of a data gathering effort related to nutrients. Although there were no exceedences, an n=1 is insufficient to assess for impairments.

Bitter Lake NWR - Unit 15			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_019	20.6.4.99	RESERVOIR	68.45 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Bitter Lake NWR - Unit 16			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_017	20.6.4.99	RESERVOIR	54.99 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Bitter Lake NWR - Unit 3			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_016	20.6.4.99	RESERVOIR	52.25 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Bitter Lake NWR - Unit 5			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_015	20.6.4.99	RESERVOIR	54.16 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Bitter Lake NWR - Unit 6			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_020	20.6.4.99	RESERVOIR	82.87 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Bitter Lake NWR - Unit 7			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_018	20.6.4.99	RESERVOIR	97.39 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Bitter Lake Sink Hole 19			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_112	20.6.4.99	SINK HOLE	0.13 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: This water body was sampled once in 2007 as part of a data gathering effort related to nutrients. An n=1 is insufficient to assess for impairments. The applicable criterion for E. coli was exceeded.

Cottonwood Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_004	20.6.4.228	SINK HOLE	0.27 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Water is naturally too saline for livestock watering.

Eagle Creek (Pecos River nr Artesia to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_008	20.6.4.98	STREAM, EPHEMERAL	68.5 MILES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 10/28/08) indicate this assessment unit is ephemeral (Hydrology Protocol score of 5.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

Figure Eight Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_044	20.6.4.99	SINK HOLE	2.76 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2016		5/5B
WH	Fully Supporting				
AU Comment: Livestock use is not allowed at this lake. A segment-specific DO criterion may be warranted in this small sinkhole lake.					

Inkwell Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_002	20.6.4.228	SINK HOLE	0.4 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Water is naturally too saline for livestock consumption.					

Lake Van			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_071	20.6.4.99	RESERVOIR	37.67 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Temperature	2016	2021 (est.)	5/5A
WH	Fully Supporting				
AU Comment: None.					

Lea Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_001	20.6.4.227	SINK HOLE	17.46 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: Water is naturally too saline for livestock consumption.					

Mirror Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_003	20.6.4.229	SINK HOLE	1.98 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: Water is naturally too saline for livestock watering.					

Pasture Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_094	20.6.4.99	SINK HOLE	0.96 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: Livestock use is not allowed at this lake.					

Pecos River (Eagle Creek to Rio Felix)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2206.A_03	20.6.4.206	RIVER	34.8 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Not Supporting	Temperature	2016	2019 (est.)	5/5A
		DDT - Fish Consumption Advisory	2010		5/5C
		PCBS - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: The DDT and PCBs in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Pecos River (Rio Felix to Rio Hondo)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2206.A_00	20.6.4.206	RIVER	26.77 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
		Temperature	2016	2019 (est.)	5/5A
		DDT - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: The DDT and PCBs in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Pecos River (Rio Hondo to Salt Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2206.A_20	20.6.4.206	RIVER	21 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
		DDT - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: The DDT and PCBs in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern. If the October 2015 proposed revisions to 20.6.4.206 NMAC are approved by the EPA, E. coli will become Non Support.

Pecos River (Rio Penasco to Eagle Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2206.A_02	20.6.4.206	RIVER	13.62 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
		DDT - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: The DDT and PCBs in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Unnamed tributary (Hart Canyon to South Union Rd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060007 Upper Pecos-Long Arroyo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_020	20.6.4.97	STREAM, EPHEMERAL	0.92 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
SW Public Services, permit NM0029131

HUC: 13060008 Rio Hondo

Alto Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.B_30	20.6.4.98	RESERVOIR	11.15 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Water in this reservoir is used by the city of Ruidoso when available -- it is often dry. Copper sulfate has been used as an algalcide in the past to protect this drinking water supply.

Bonito Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.B_10	20.6.4.223	RESERVOIR	39.05 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: This lake was several impacted by the Little Bear Fire.					

Carrizo Creek (Rio Ruidoso to Mescalero Apache bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.A_22	20.6.4.209	STREAM, PERENNIAL	2.03 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/21/2015	4A
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: A TMDL for E. coli (2015).					

Eagle Creek (Alto Lake to S. Fork Eagle Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_017	20.6.4.98	STREAM, INTERMITTENT	2.85 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Impacted by 2012 Little Bear Fire.

Eagle Creek (Rio Ruidoso to Alto Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_007	20.6.4.98	STREAM, INTERMITTENT	16.27 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Not Assessed				

AU Comment: Impacted by 2012 Little Bear Fire.

Grindstone Canyon (Carrizo Creek to Grindstone Rsvr)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_008	20.6.4.98	STREAM, INTERMITTENT	0.77 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Grindstone Canyon (Grindstone Rsvr to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_009	20.6.4.97	STREAM, EPHEMERAL	1.01 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Hydrology Protocol-based UAA concluded this reach was ephemeral. UAA was approved by EPA in Oct 2013.

Grindstone Canyon Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.B_20	20.6.4.209	RESERVOIR	56.88 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2014		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: WQS is under review.

Little Creek (Eagle Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_019	20.6.4.98	STREAM, EPHEMERAL	17.95 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

North Spring River (Rio Hondo to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2206.A_40	20.6.4.206	STREAM, PERENNIAL	6.3 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Not Assessed				

AU Comment: If the October 2015 proposed revisions to 20.6.4.206 NMAC are approved by the EPA, E. coli will become Non Support.

Rio Bonito (Perenial prt Rio Ruidoso to NM 48 near Angus)			AU IR CATEGORY	LOCATION DESCRIPTION	
			4C	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_10	20.6.4.208	STREAM, PERENNIAL	31.99 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Flow Regime Modification			4C
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Stream reach has very low flow during certain times of the year due to dam forming Bonito Lake for drinking water uses. This AU was impacted by the 2012 Little Bear Fire.

Rio Bonito (Perennial prt NM 48 near Angus to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.A_10	20.6.4.209	STREAM, PERENNIAL	12.99 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Flow Regime Modification	2014		4C
		Temperature	2006	2019 (est.)	5/5A
		Benthic Macroinvertebrates			5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/21/2015	4A
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: A small portion of this AU is dewatered due to dam. A TMDL was developed for E. Coli (2015). This AU was impacted by the 2012 Little Bear Fire.					

Rio Hondo (Perennial prt North Spring R to Bonney Cyn)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_25	20.6.4.206	STREAM, PERENNIAL	47.3 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Rio Hondo (Perennial prt Pecos R to North Spring R)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_26	20.6.4.206	STREAM, PERENNIAL	7.57 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Hondo (Perennial reaches Bonney Canyon to Rio Ruidoso)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_30	20.6.4.208	STREAM, PERENNIAL	23.44 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Flow Regime Modification	2014		4C
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: A TMDL was developed for fecal coliform. This reach was impacted by 2012 fire and subsequent flooding.					

Rio Ruidoso (Carrizo Ck to Mescalero Apache bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.A_20	20.6.4.209	STREAM, PERENNIAL	4.73 MILES	2018	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Turbidity	1998	2/10/2006	4A
		Temperature	1998	2/10/2006	4A
		Phosphorus, Total	2014	12/13/2016	4A
		Nutrients	2018	12/13/2016	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDLs for temperature and turbidity (prior to split at Carrizo Ck). TMDL for nutrients (2016).

Rio Ruidoso (Eagle Ck to US Hwy 70 Bridge)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_20	20.6.4.208	STREAM, PERENNIAL	8.23 MILES	2018	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	1998	12/13/2016	4A
		Turbidity	2014	9/21/2015	4A
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/21/2015	4A
WH	Fully Supporting				

AU Comment: TMDL for nutrients.

Rio Ruidoso (North Fork abv Mescalero Apache bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.A_24	20.6.4.209	STREAM, PERENNIAL	2.21 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Rio Ruidoso (Perennial prt Rio Bonito to Eagle Ck)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_21	20.6.4.208	STREAM, PERENNIAL	11.68 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
FC	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Rio Ruidoso (US Hwy 70 Bridge to Carrizo Ck)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.A_21	20.6.4.209	STREAM, PERENNIAL	7.58 MILES	2018	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2014	2/10/2006	4A
		Nutrients	2014	12/13/2016	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/21/2015	4A
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDLs for temperature and turbidity (prior to split at Carrizo Ck), E. coli, and nutrients.

S. Fork Eagle Creek (Eagle Creek to Mescalero Apache bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.A_00	20.6.4.209	STREAM, PERENNIAL	0.72 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Flow Regime Modification			4C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: This reach often dries up from April on. Wells in the vicinity contribute to the drying of the stream according to USFS personnel (2/4/09).

South Fork Rio Bonito (Rio Bonito to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060008 Rio Hondo	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2209.A_11	20.6.4.209	STREAM, PERENNIAL	5.3 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

HUC: 13060009 Rio Felix

Rio Felix (Perennial reaches Pecos River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060009 Rio Felix	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2206.A_30	20.6.4.206	STREAM, PERENNIAL	22.44 MILES	1998	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: This reach is usually dry. Some fish observed in pools spring of 2003.					

HUC: 13060010 Rio Penasco

Agua Chiquita (Rio Penasco to McEwan Cny)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 13060010 Rio Penasco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_02	20.6.4.97	STREAM, EPHEMERAL	14.86 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Fully Supporting				
LW	Not Assessed				
SC	Not Assessed				
WH	Fully Supporting				

AU Comment: Hydrology Protocol-based UAA concluded this reach was ephemeral. UAA was approved by EPA in Oct 2013.

Agua Chiquita (perennial portions McEwan Cny to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 13060010 Rio Penasco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_01	20.6.4.208	STREAM, PERENNIAL	20.81 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Turbidity	2014	9/21/2015	4A
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2016	2018 (est.)	5/5A
WH	Fully Supporting				

AU Comment: None.

Bear Canyon Reservoir (Otero)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13060010 Rio Penasco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_010	20.6.4.99	RESERVOIR	2.4 ACRES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Marginal Coldwater Aquatic Life is an existing use.

Rio Penasco (HWY 24 to Cox Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 13060010 Rio Penasco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_00	20.6.4.208	STREAM, PERENNIAL	34.66 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Turbidity	2014	9/21/2015	4A
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: Coolwater may be a more appropriate ALU designation. WQS is under review.					

Rio Penasco (Perennial prt Cox Canyon to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060010 Rio Penasco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2208_03	20.6.4.208	STREAM, PERENNIAL	14.7 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Fully Supporting				
FC	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Penasco (Perennial prt Pecos River to HWY 24)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 13060010 Rio Penasco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2206.A_10	20.6.4.206	STREAM, PERENNIAL	64.29 MILES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

HUC: 13060011 Upper Pecos-Black

Avalon Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2204.B_00	20.6.4.219	RESERVOIR	848.53 ACRES	2014	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR Storage	Fully Supporting				
LW	Not Assessed				
SC	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Black River (Perennial reaches of Blue Spring to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2202.A_13	20.6.4.202	STREAM, PERENNIAL	37.45 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: split original AU at Blue Spring trib post 2013 survey					

Black River (Perennial reaches of Pecos R to Blue Spring)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2202.A_10	20.6.4.202	STREAM, PERENNIAL	17.49 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: split original AU at Blue Spring trib post 2013 survey					

Blue Spring (Black River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2202.A_11	20.6.4.202	STREAM, PERENNIAL	3.59 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Brantley Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2205_00	20.6.4.205	RESERVOIR	2273.05 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	DDT - Fish Consumption Advisory	2006		5/5C
WH	Fully Supporting				
AU Comment: The "DDT in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.					

Harroun Dam (Ten Mile) Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_048	20.6.4.98	RESERVOIR	116.22 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Laguna Gatuna			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_055	20.6.4.98	LAKE, PLAYA	294.64 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Naturally saline lake, so livestock watering not attainable or existing.					

Laguna Quatro			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_059	20.6.4.98	LAKE, PLAYA	258.53 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Hypersaline due to potash mining activities, so livestock watering likely not attainable or existing.					

Laguna Tres			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_061	20.6.4.98	LAKE, PLAYA	334.71 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Laguna Uno			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_066	20.6.4.98	LAKE, PLAYA	142.56 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Laguna Walden			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_062	20.6.4.98	LAKE, PLAYA	19.15 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Lower Tansil Lake/Lake Carlsbad (Carlsbad Municipal Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2203.B_00	20.6.4.218	RESERVOIR	150.39 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
		DDT - Fish Consumption Advisory	2016		5/5C
WH	Fully Supporting				

AU Comment: The PCB and DDT in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Pecos River (Avalon Reservoir to Brantley Reservoir)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2204.A_00	20.6.4.204	RIVER	6.94 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Not Assessed				
WWAL	Not Supporting	DDT - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: The "DDT in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Pecos River (Black River to Six Mile Dam Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2202.A_00	20.6.4.202	RIVER	15.13 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2016	9/23/2016	4A
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: The PCBs in fish tissue listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Pecos River (Brantley Reservoir to Rio Penasco)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2206.A_01	20.6.4.206	RIVER	11.36 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
SC	Fully Supporting				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
		DDT - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: The DDT and PCBs in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Pecos River (Lake Carlsbad to Avalon Reservoir)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4C	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2203.A_00	20.6.4.203	RIVER	3.9 MILES	2006	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
LW	Fully Supporting				
PC	Not Assessed				
WWAL	Not Supporting	Flow Regime Modification			4C
WH	Fully Supporting				

AU Comment: Usually dry - water diverted to Carlsbad main canal.

Pecos River (Six Mile Dam Lake to Lower Tansil Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2202.A_01	20.6.4.202	RIVER	3.46 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2010		5/5C
WH	Fully Supporting				

AU Comment: The PCBs in fish tissue listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Pecos River (TX border to Black River)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2201_00	20.6.4.201	RIVER	35.06 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2016	9/23/2016	4A
WWAL	Not Supporting	Dissolved oxygen PCBS - Fish Consumption Advisory	2006 2010		5/5C 5/5C
WH	Fully Supporting				

AU Comment: The PCBs in fish tissue listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Rattlesnake Spring			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2202.A_12	20.6.4.99	SPRING	0 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Not Assessed				
AU Comment: This is the drinking water source for Carlsbad Caverns.					

Sitting Bull Creek (Last Chance Canyon to Sitting Bull Spr)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_007	20.6.4.99	STREAM, PERENNIAL	1.78 MILES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Not Assessed				
AU Comment: None.					

Six Mile Dam Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2202.B_20	20.6.4.202	RESERVOIR	82.11 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2016	2021 (est.)	5/5A
WH	Fully Supporting				
AU Comment: None.					

Williams Sink (Eddy)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 13060011 Upper Pecos-Black	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_109	20.6.4.98	LAKE, PLAYA	210.11 ACRES	1998	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Potash activities have lead to hypersaline conditions which likely make livestock watering not attainable or existing.

HUC: 13070002 Delaware

Delaware River (Pecos River to TX border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 13070002 Delaware	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2202.A_20	20.6.4.202	STREAM, PERENNIAL	8.43 MILES	2006	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: No flow documented at US285 bridge.

HUC: 13070007 Landreth-Monument Draws

Eunice Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13070007 Landreth-Monument Draws	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_043	20.6.4.99	RESERVOIR	5.21 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses.

Jal Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 13070007 Landreth-Monument Draws	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_052	20.6.4.99	RESERVOIR	9.87 ACRES	2016	2021
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MCWAL	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: Marginal Coldwater and Warmwater Aquatic Life are existing uses.

HUC: 14080101 Upper San Juan

Gallegos Canyon (San Juan River to Navajo bnd)			AU IR CATEGORY	LOCATION DESCRIPTION	
			4A	HUC: 14080101 Upper San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_060	20.6.4.99	STREAM, PERENNIAL	0.46 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Not Assessed				
WWAL	Not Supporting	Selenium, Total Recoverable	2004	8/26/2005	4A
WH	Not Supporting	Selenium, Total Recoverable	2004	8/26/2005	4A

AU Comment: TMDL was prepared for selenium (2005).

Los Pinos River (Navajo Reservoir to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 14080101 Upper San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2407.A_10	20.6.4.407	STREAM, PERENNIAL	1.35 MILES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
PWS	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Navajo Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 14080101 Upper San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2406_00	20.6.4.406	RESERVOIR	12778.92 ACRES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature	2012	2021 (est.)	5/5A
		Mercury - Fish Consumption Advisory	2004		5/5C
IW Supply	Not Assessed				
IRR Storage	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Navajo River (Jicarilla Apache Nation to CO border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 14080101 Upper San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2407.A_00	20.6.4.407	STREAM, PERENNIAL	6.06 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature	2012		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: Fisheries data indicate coolwater may be a more appropriate ALU -- WQS review needed.					

San Juan River (Animas River to Canon Largo)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 14080101 Upper San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2401_00	20.6.4.408	RIVER	25.2 MILES	2016	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Sedimentation/Siltation	2004	8/26/2005	4A
PC	Not Supporting	E. coli	2006	2/26/2010	4A
PWS	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDLs were prepared for sedimentation, fecal coliform and E. coli.					

San Juan River (Canon Largo to Navajo Reservoir)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 14080101 Upper San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2405_10	20.6.4.405	RIVER	19.34 MILES	2010	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
HQColdWAL	Fully Supporting				
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

San Juan River (NM reach upstream of Navajo Reservoir)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 14080101 Upper San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2405_11	20.6.4.99	RIVER	0.57 MILES	2012	2018
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

HUC: 14080104 Animas

Animas River (Estes Arroyo to So. Ute Indian Tribe bnd)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 14080104 Animas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2404_00	20.6.4.404	RIVER	18.8 MILES	2018	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Phosphorus, Total	2012	9/30/2013	4A
		Turbidity	2012	2019 (est.)	5/5A
		Temperature	1998	2019 (est.)	5/5A
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2012	9/30/2013	4A
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDL for E. coli and total phosphorus.

Animas River (San Juan River to Estes Arroyo)			AU IR CATEGORY	LOCATION DESCRIPTION	
			4A	HUC: 14080104 Animas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2403.A_00	20.6.4.403	RIVER	16.82 MILES	2018	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Temperature	2012	9/30/2013	4A
		Nutrients	2004	1/17/2006	4A
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2012	9/30/2013	4A
PWS	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDL for nutrients, temperature, and E. coli.

Lake Farmington (Beeline Reservoir)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 14080104 Animas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_006	20.6.4.409	RESERVOIR	213.21 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	PCBS - Fish Consumption Advisory	2016		5/5C
		Mercury - Fish Consumption Advisory	2004		5/5C
LW	Fully Supporting				
PC	Fully Supporting				
PWS	Not Assessed				
WWAL	Not Supporting	Mercury - Fish Consumption Advisory	2004		5/5C
		PCBS - Fish Consumption Advisory	2016		5/5C
WH	Fully Supporting				

AU Comment: This is the City of Farmingtons drinking water supply reservoir. The PCBs and mercury in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

HUC: 14080105 Middle San Juan

Jackson Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 14080105 Middle San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_005	20.6.4.410	RESERVOIR	66.68 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This water body was sampled once in 2002. Although there were no exceedences, an n=1 is insufficient to determine use support.

La Plata R (McDermott Arroyo to So. Ute Indian Tribe bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 14080105	Middle San Juan
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2402.A_01	20.6.4.402	STREAM, PERENNIAL	8.03 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Nutrients	2012	2019 (est.)	5/5A
MWWAL	Not Supporting	Nutrients	2012	2019 (est.)	5/5A
PC	Not Supporting	E. coli	2006	8/26/2005	4A
WH	Fully Supporting				

AU Comment: TMDLs for DO and e. coli. The response variable DO was replaced with causal variable of nutrients based on 2010 survey data.

La Plata River (San Juan River to McDermott Arroyo)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 14080105	Middle San Juan
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2402.A_00	20.6.4.402	STREAM, PERENNIAL	16.74 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Dissolved oxygen	1998	2019 (est.)	5/5A
		Sedimentation/Siltation	2004	8/26/2005	4A
MWWAL	Fully Supporting				
PC	Not Supporting	E. coli	2012	2/26/2010	4A
WH	Fully Supporting				

AU Comment: There were conflicting results between the 2002 dissolved oxygen sonde data (using percentage) and grab data. 2010 sonde equipment failure. Re-deployment attempted fall of 2012, but channel was completely dry. Coolwater aquatic life use may be a more appropriate ALU based on available fisheries data. Application of the SWQB Hydrology Protocol (survey date 6/17/09) indicate this assessment unit should be perennial (Hydrology Protocol score of 28.3 but 14.2% no flow days at USGS gage 09367500 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

San Juan River (Navajo bnd at Hogback to Animas River)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 14080105 Middle San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2401_10	20.6.4.401	RIVER	22.51 MILES	2016	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Turbidity	2012	2019 (est.)	5/5A
		Sedimentation/Siltation	2012	2019 (est.)	5/5A
PC	Not Supporting	E. coli	2006	8/26/2005	4A
PWS	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDLs were prepared for fecal coliform and E. coli.

Shumway Arroyo (San Juan River to Ute Mtn Ute bnd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 14080105 Middle San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_021	20.6.4.98	STREAM, INTERMITTENT	13.2 MILES	2004	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: Application of the SWQB Hydrology Protocol (survey date 6/17/09) indicate this assessment unit is intermittent (Hydrology Protocol score of 18.8 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

Stevens Arroyo (Perennial prts San Juan R to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 14080105 Middle San Juan	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2401_11	20.6.4.99	STREAM, PERENNIAL	9.59 MILES	2012	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Fully Supporting				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: The arroyo generally starts flowing near the Farmers Mutual Ditch. E. coli was the only parameter sampled during the 2010 survey.

HUC: 14080106 Chaco

Unnamed tributary (Kim-me-ni-oli Wash to hdwtrs)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 14080106 Chaco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_025	20.6.4.97	STREAM, EPHEMERAL	8.69 MILES	2012	2018
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Lee Ranch Coal Co, El Segundo Mine, permit NM0030996

HUC: 15020003 Carrizo Wash

Crater Lake			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 15020003 Carrizo Wash	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_033	20.6.4.98	LAKE, PLAYA	3.29 ACRES	1998	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

El Caso Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15020003 Carrizo Wash	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_038	20.6.4.98	LAKE, PLAYA	19.77 ACRES	1998	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Gabaldon Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15020003 Carrizo Wash	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_045	20.6.4.98	LAKE, PLAYA	9.4 ACRES	1998	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: Part of playa lake study. Data are old.

Largo Creek (Carrizo Wash to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020003 Carrizo Wash	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_906	20.6.4.98	STREAM, EPHEMERAL	77.05 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Little El Caso Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020003 Carrizo Wash	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_075	20.6.4.98	LAKE, PLAYA	3.14 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Pine Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020003 Carrizo Wash	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_095	20.6.4.98	LAKE, PLAYA	16.9 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Quemado Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15020003 Carrizo Wash	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_096	20.6.4.453	RESERVOIR	111.39 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Nutrients	2014	2021 (est.)	5/5A
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

HUC: 15020004 Zuni

Cebolla Creek (Ramah Rsvr to headwaters)

AU IR CATEGORY	LOCATION DESCRIPTION
3/3A	HUC: 15020004 Zuni

AU ID	WQS REF	WATER TYPE	SIZE	ASSESSED	MONITORING SCHEDULE
NM-9000.A_032	20.6.4.98	STREAM, EPHEMERAL	10.22 MILES	2014	2019

USE	ATTAINMENT	CAUSE(S)	FIRST LISTED	TMDL DATE	PARAMETER IR CATEGORY
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Application of the SWQB Hydrology Protocol on 5/19/2009 indicate this assessment unit is intermittent (Hydrology Protocol score of 10.5), while survey data from 10/12/11 indicate ephemeral at the station above the falls (score of 0.0). The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Cebolla Creek (Zuni Pueblo bnd to Ramah Rsvr)

AU IR CATEGORY	LOCATION DESCRIPTION
3/3A	HUC: 15020004 Zuni

AU ID	WQS REF	WATER TYPE	SIZE	ASSESSED	MONITORING SCHEDULE
NM-9000.A_031	20.6.4.98	STREAM, EPHEMERAL	4.08 MILES	2014	2019

USE	ATTAINMENT	CAUSE(S)	FIRST LISTED	TMDL DATE	PARAMETER IR CATEGORY
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Application of the SWQB Hydrology Protocol on 5/19/2009 indicate this assessment unit is intermittent (Hydrology Protocol score of 10.5), while survey data from 10/12/11 indicate ephemeral at the station above the falls (score of 0.0). This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

McGaffey Lake

AU IR CATEGORY	LOCATION DESCRIPTION
5/5C	HUC: 15020004 Zuni

AU ID	WQS REF	WATER TYPE	SIZE	ASSESSED	MONITORING SCHEDULE
NM-9000.B_083	20.6.4.98	RESERVOIR	11.47 ACRES	2014	2019

USE	ATTAINMENT	CAUSE(S)	FIRST LISTED	TMDL DATE	PARAMETER IR CATEGORY
LW	Fully Supporting				
MWWAL	Not Supporting	Nutrients	1998	2021 (est.)	5/5A
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Lake often goes dry. Department of Game and Fish dredged the lake in 2003 to return it to its original design capacity. They no longer successfully stock trout (just catfish when there is adequate water).

Ramah Reservoir			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15020004 Zuni	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_110	20.6.4.452	RESERVOIR	139.42 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients	2014	2021 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Rio Nutria (Tampico Draw to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020004 Zuni	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_033	20.6.4.451	STREAM, EPHEMERAL	11.76 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Coolwater may not be attainable -- WQS under review.					

Rio Nutria (Zuni Pueblo bnd to Tampico Draw)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 15020004 Zuni	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_029	20.6.4.451	STREAM, PERENNIAL	0.32 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Tampico Draw (Rio Nutria to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020004 Zuni	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_080	20.6.4.451	STREAM, PERENNIAL	4.8 MILES	2006	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

HUC: 15020006 Upper Puerco

Defiance Draw (CR 1 to W Defiance Road)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020006 Upper Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_026	20.6.4.97	STREAM, EPHEMERAL	4.94 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Chevron McKinley mine, permit NM0029386

Puerco River (Gallup WWTP to South Fork Puerco R)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020006 Upper Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_201	20.6.4.98	STREAM, INTERMITTENT	10.15 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Puerco River (South Fork Puerco R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020006 Upper Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_202	20.6.4.98	STREAM, INTERMITTENT	43 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Puerco River (non-tribal AZ border to Gallup WWTP)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15020006 Upper Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_200	20.6.4.99	STREAM, PERENNIAL	22.2 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	Ammonia, Total	2014	2022 (est.)	5/5A
WH	Fully Supporting				
AU Comment: This AU is effluent-dependent.					

South Fork Puerco River (Puerco R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020006 Upper Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.A_203	20.6.4.98	STREAM, INTERMITTENT	33.49 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Unnamed tributary to Defiance Draw (CR 1 to NM 264)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15020006 Upper Puerco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-97.A_027	20.6.4.97	STREAM, EPHEMERAL	5.17 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LAL	Not Assessed				
LW	Not Assessed				
SC	Not Assessed				
WH	Not Assessed				

AU Comment: Ephemeral AU subject to 20.6.4.97 NMAC, included in UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.
Chevron/McKinley Mine, permit NM0029386

HUC: 15040001 Upper Gila

Beaver Creek (Perennial prt Taylor Ck to Mule Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_25	20.6.4.503	STREAM, PERENNIAL	17.45 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2014		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Temperature WQC is under review.

Black Canyon Creek (East Fork Gila River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_21	20.6.4.503	STREAM, PERENNIAL	25.14 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	1996	4/5/2002	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDL for temperature. WQC is under review.					

Canyon Creek (Middle Fork Gila River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_43	20.6.4.503	STREAM, PERENNIAL	14.16 MILES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Nutrients Turbidity	1998 1998	4/10/2002 4/10/2002	4A 4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: TMDL turbidity and plant nutrients					

Diamond Ck (Perennial prt Bailey Ck to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_24	20.6.4.503	STREAM, PERENNIAL	12.59 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: The USFS states that this reach is occupied habitat for Gila Trout.

Diamond Ck (Perennial prt East Fork Gila R to Bailey Ck)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_22	20.6.4.503	STREAM, PERENNIAL	13 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: The USFS states that the reach is intermittent in the lower sections and contains a native warmwater fishery. The existing and attainable aquatic life use for the perennial portions in this lower AU is likely coolwater. WQS review needed.

East Fork Gila River (Gila River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_20	20.6.4.503	STREAM, PERENNIAL	26.14 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Benthic Macroinvertebrates	2010		5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: None.					

Gila River (Mogollon Ck to East and West Forks of Gila R)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2502.A_30	20.6.4.502	STREAM, PERENNIAL	41.51 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Temperature	2010		5/5B
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: Marginal CWAL may not be attainable. WQS under review.					

Gilita Creek (Middle Fork Gila R to Willow Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_45	20.6.4.503	STREAM, PERENNIAL	6.27 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2002	2022 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Gilita Creek (Perennial reaches abv Willow Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_48	20.6.4.503	STREAM, PERENNIAL	6.57 MILES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Hoyt Creek (Wall Lake to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_26	20.6.4.98	STREAM, INTERMITTENT	19.95 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Iron Creek (Middle Fork Gila R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_44	20.6.4.503	STREAM, PERENNIAL	12.96 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2014		5/5B
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: Temperature WQS is under review.

Lake Roberts			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2504_20	20.6.4.504	RESERVOIR	68.46 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients Mercury - Fish Consumption Advisory	2014 2016	2021 (est.)	5/5A 5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: The "mercury in fish tissue" listing is based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable." Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Little Creek (West Fork Gila River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_31	20.6.4.503	STREAM, PERENNIAL	16.46 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Middle Fork Gila River (Canyon Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_41	20.6.4.503	STREAM, PERENNIAL	12.47 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2002		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: Temperature WQC is under review. The 2012 Whitewater Baldy Complex Fire severely burned portions of the watershed.					

Middle Fork Gila River (West Fork Gila R to Canyon Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_40	20.6.4.503	STREAM, PERENNIAL	24.32 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2002		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Temperature WQC is under review. The 2012 Whitewater Baldy Complex Fire severely burned portions of the watershed.

Mogollon Creek (Gila River to USGS Gage 09430600)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_05	20.6.4.98	STREAM, PERENNIAL	12.72 MILES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Mogollon Creek (Perennial prt USGS Gage 09430600 to hwtrs)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_02	20.6.4.503	STREAM, PERENNIAL	16.71 MILES	2018	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: TMDL Al chronic; de-list letter for SBD (sedimentation/siltation), chronic lead. Gila Trout restoration in 1986 and 1996 by NMG&F.

Sapillo Creek (Gila River to Lake Roberts)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			1	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_04	20.6.4.503	STREAM, PERENNIAL	11.84 MILES	2018	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: TMDL turbidity and TOC; de-list letter for biological impairment. De-listed for turbidity (2010 cycle).

Snow Canyon Ck (Perennial prt Gilita Ck to Snow Lake)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_46	20.6.4.99	STREAM, PERENNIAL	0.38 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Assessed				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: This reach exists due to dam leakage only, so an existing aquatic life use of coldwater was added to match the source of this flow.

Snow Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2504_40	20.6.4.504	RESERVOIR	91.68 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Nutrients pH	2014 2016	2021 (est.) 2021 (est.)	5/5A 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

Taylor Creek (Perennial reaches Beaver Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_23	20.6.4.503	STREAM, PERENNIAL	22.55 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature Nutrients	1998 2014	8/5/2002 2022 (est.)	4A 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: Temperature WQC is under review.					

Turkey Creek (Gila River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_03	20.6.4.503	STREAM, PERENNIAL	16.94 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2002		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				
AU Comment: The temperature WQC is under review.					

West Fork Gila R (East Fork to Middle Fork)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_10	20.6.4.503	STREAM, PERENNIAL	4.85 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2002		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: The temperature WQC is under review. Wildfire impacts.

West Fork Gila R (Middle Fork to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_30	20.6.4.503	STREAM, PERENNIAL	31.49 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature	2010		5/5B
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Temperature WQC is under review.

White Creek (West Fork Gila River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_32	20.6.4.503	STREAM, PERENNIAL	8.94 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Willow Creek (Gilita Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15040001 Upper Gila	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_47	20.6.4.503	STREAM, PERENNIAL	7.21 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
HQColdWAL	Not Supporting	Temperature Aluminum, Total Recoverable	2014 2014	2022 (est.) 9/11/2014	5/5A 4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Native fish re-introduction with fish barrier (2016).

HUC: 15040002 Upper Gila-Mangas

Bear Creek (Gila River nr Cliff to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_01	20.6.4.502	STREAM, PERENNIAL	33.26 MILES	2008	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: According to SWQB Silver City staff, the Cypress Mine contributed to this stream reach previously going dry. This mine is now closed. SWQB intensively studied Bear Creek in 2006. No impairments were determined.

Bill Evans Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2502.B_00	20.6.4.505	RESERVOIR	69.93 ACRES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
CoolWAL	Not Supporting	Mercury - Fish Consumption Advisory	2012		5/5C
		PCBS - Fish Consumption Advisory	2016		5/5C
LW	Fully Supporting				
PC	Fully Supporting				
WWAL	Not Supporting	PCBS - Fish Consumption Advisory	2016		5/5C
		Mercury - Fish Consumption Advisory	2012		5/5C
WH	Fully Supporting				

AU Comment: Land management agencies have posted contact recreation warnings due to toxic blue green algae in the past. SWQB does not have water quality standards or assessment procedures related to blue green algae at this time. The PCBs and mercury in fish tissue listings are based on NMs current fish consumption advisories for this water body. Per USEPA guidance, these advisories demonstrate non-attainment of CWA goals stating that all waters should be "fishable". Therefore, the impaired designated use is the associated aquatic life even though human consumption of the fish is the actual concern.

Bitter Creek (AZ border to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2503_49	20.6.4.98	STREAM, INTERMITTENT	6.27 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Blue Creek (Gila River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2501_10	20.6.4.502	STREAM, PERENNIAL	28.92 MILES	2010	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Fully Supporting				
PC	Not Assessed				
WWAL	Fully Supporting				
WH	Not Assessed				

AU Comment: None.

Carlisle Creek (Gila River to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2502.A_02	20.6.4.98	STREAM, EPHEMERAL	16.9 MILES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Fully Supporting				

AU Comment: This AU may be ephemeral. The process detailed in 20.6.4.15 NMAC Subsection C must be completed in order to classify a waterbody under 20.6.4.97 NMAC. Until such time, this AU remains classified under Intermittent Waters - 20.6.4.98 NMAC.

Gila River (AZ border to Red Rock)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2501_00	20.6.4.501	RIVER	26.34 MILES	2010	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MWWAL	Not Supporting	Temperature	2010	2022 (est.)	5/5A
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

Gila River (Mangas Creek to Mogollon Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2502.A_10	20.6.4.502	RIVER	15.91 MILES	2010	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Temperature	2010		5/5B
PC	Fully Supporting				
WWAL	Fully Supporting				
WH	Fully Supporting				
AU Comment: Marginal CWAL may not be attainable. WQS under review.					

Gila River (Red Rock to Mangas Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2502.A_00	20.6.4.502	RIVER	19.57 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Nutrients Temperature	2010 2010	2022 (est.) 2022 (est.)	5/5A 5/5A
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2010	2022 (est.)	5/5A
WH	Fully Supporting				

AU Comment: None.

Mangas Creek (Gila River to Mangas Springs)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2502.A_21	20.6.4.502	STREAM, PERENNIAL	6.39 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Nutrients Temperature	2004 2010	4/16/2002 2022 (est.)	4A 5/5A
PC	Fully Supporting				
WWAL	Not Supporting	Nutrients	2004	4/16/2002	4A
WH	Fully Supporting				

AU Comment: TMDL for nutrients. The source spring for Mangas Creek produces unusually high concentrations of nitrates, the source(s) of which are unknown.

Mangas Creek (Mangas Springs to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040002 Upper Gila-Mangas	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2502.A_22	20.6.4.502	STREAM, PERENNIAL	18.06 MILES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IW Supply	Not Assessed				
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
PC	Not Assessed				
WWAL	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

HUC: 15040003 Animas Valley

Burro Cienaga (Lordsburg Playa to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040003 Animas Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-98.A_010	20.6.4.98	STREAM, INTERMITTENT	52.02 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

North Lordsburg Playa			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040003 Animas Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_091	20.6.4.98	LAKE, PLAYA	3024.86 ACRES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

Sacaton (No Name) Playa			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040003 Animas Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_097	20.6.4.98	LAKE, PLAYA	1180.99 ACRES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

South Lordsburg Playa			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040003 Animas Valley	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_099	20.6.4.98	LAKE, PLAYA	7456.25 ACRES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

HUC: 15040004 San Francisco

Apache Creek (Tularosa River to Hardcastle Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_44	20.6.4.98	STREAM, INTERMITTENT	8.74 MILES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: De-list letter for conductivity. Application of the SWQB Hydrology Protocol (survey date 10/9/2008) indicate this assessment unit is intermittent (Hydrology Protocol score of 11.8 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

Centerfire Creek (San Francisco R to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			5/5A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_50	20.6.4.603	STREAM, PERENNIAL	16.1 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Turbidity	2014	9/11/2014	4A
		Nutrients	1998	4/16/2002	4A
		Sedimentation/Siltation	2014	2022 (est.)	5/5A
		Specific Conductance	1998	4/16/2002	4A
		Temperature	1998	2022 (est.)	5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/11/2014	4A
WH	Fully Supporting				
AU Comment: TMDL for plant nutrients and conductivity. Temperature WQC under review.					

Dry Blue Creek (AZ bnd to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			3/3A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_70	20.6.4.603	STREAM, PERENNIAL	9.52 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Leyba Lake			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-9000.B_074	20.6.4.98	LAKE, PLAYA	12.64 ACRES	1998	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: Part of playa lake study. Data are old.

Mineral Creek (San Francisco R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_20	20.6.4.98	STREAM, INTERMITTENT	19.64 MILES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

Mule Creek (San Francisco R to Mule Springs)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2601_01	20.6.4.601	STREAM, PERENNIAL	10.5 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Dissolved oxygen	2014	2022 (est.)	5/5A
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: Sonde data needed to confirm DO listing based on grab data. Access is limited.

Negrito Creek (Tularosa River to confl of N and S forks)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_42	20.6.4.603	STREAM, PERENNIAL	12.42 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2002		5/5B
IRR	Not Assessed				
LW	Not Assessed				
PC	Fully Supporting				
WH	Not Assessed				
AU Comment: Reach went dry during 2011 Gila survey upstream of sampling station. Limited WQ data available. WQS under review.					

North Fork Negrito Creek (Negrito Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_45	20.6.4.603	STREAM, PERENNIAL	8.31 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

S A Creek (Perennial prt of Centerfire Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-99.A_002	20.6.4.99	STREAM, PERENNIAL	13.65 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Not Assessed				
PC	Not Assessed				
WWAL	Not Assessed				
WH	Not Assessed				

AU Comment: None.

San Francisco River (AZ border to Box Canyon)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2601_00	20.6.4.601	STREAM, PERENNIAL	17.61 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				

AU Comment: None.

San Francisco River (Box Canyon to Whitewater Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2601_10	20.6.4.601	STREAM, PERENNIAL	6.41 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Benthic Macroinvertebrates	2010		5/5C
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				

AU Comment: None.

San Francisco River (Centerfire Creek to AZ border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5C	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2602_20	20.6.4.602	STREAM, PERENNIAL	14.73 MILES	2008	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature Benthic Macroinvertebrates	1998 2012	8/5/2002	4A 5/5C
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDL for temperature and plant nutrients; de-list for turbidity. Delisted for nutrients during 2010 listing cycle. Temperature WQC is under review.					

San Francisco River (NM 12 at Reserve to Centerfire Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2602_10	20.6.4.602	STREAM, PERENNIAL	16.02 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
ColdWAL	Not Supporting	Temperature Turbidity	2014 2014	2022 (est.) 9/11/2014	5/5A 4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/11/2014	4A
WH	Fully Supporting				
AU Comment: Wildlife impacts.					

San Francisco River (Pueblo Ck to Willow Springs Cyn)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2601_21	20.6.4.601	STREAM, PERENNIAL	22.46 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Not Assessed				
LW	Not Assessed				
MCWAL	Not Assessed				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

San Francisco River (Whitewater Ck to Pueblo Ck)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2601_20	20.6.4.601	STREAM, PERENNIAL	14.45 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Not Supporting	Sedimentation/Siltation	2014	2022 (est.)	5/5A
MWWAL	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: None.					

San Francisco River (Willow Springs Cyn to NM 12 at Reserve)			AU IR CATEGORY	LOCATION DESCRIPTION	
			4A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2601_22	20.6.4.601	STREAM, PERENNIAL	10.42 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
IRR	Fully Supporting				
LW	Fully Supporting				
MCWAL	Fully Supporting				
MWWAL	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/11/2014	4A
WH	Fully Supporting				

AU Comment: None.

Silver Creek (Mineral Creek to headwaters)			AU IR CATEGORY	LOCATION DESCRIPTION	
			2	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_21	20.6.4.98	STREAM, INTERMITTENT	9.75 MILES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
LW	Fully Supporting				
MWWAL	Not Assessed				
PC	Not Assessed				
WH	Fully Supporting				

AU Comment: None.

South Fork Negrito Creek (Negrito Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			4A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_43	20.6.4.603	STREAM, PERENNIAL	14.48 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	1998	4/5/2002	4A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/11/2014	4A
WH	Fully Supporting				
AU Comment: TMDL for temperature. The temperature WQC is under review.					

Stone Creek (San Francisco R to AZ border)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_61	20.6.4.603	STREAM, PERENNIAL	2.37 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: Temperature WQC is under review.					

Trout Creek (Perennial prt San Francisco R to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5B	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_60	20.6.4.603	STREAM, PERENNIAL	15.31 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Supporting	Temperature	2014		5/5B
IRR	Not Assessed				
LW	Not Assessed				
PC	Fully Supporting				
WH	Not Assessed				
AU Comment: Temperature WQC is under review.					

Tularosa River (Apache Creek to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			3/3A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_41	20.6.4.603	STREAM, PERENNIAL	17.75 MILES	2002	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Not Assessed				
FC	Not Assessed				
HQColdWAL	Not Assessed				
IRR	Not Assessed				
LW	Not Assessed				
PC	Not Assessed				
WH	Not Assessed				
AU Comment: None.					

Tularosa River (San Francisco R to Apache Creek)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			5/5A	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_40	20.6.4.603	STREAM, PERENNIAL	21.97 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Not Supporting	Turbidity Temperature	2014 2014	9/11/2014 2022 (est.)	4A 5/5A
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Not Supporting	E. coli	2014	9/11/2014	4A
WH	Fully Supporting				
AU Comment: TMDL for specific conductance.					

Whitewater Creek (San Francisco R to Whitewater Campgrd)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_10	20.6.4.603	STREAM, PERENNIAL	5.68 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: TMDLs for turbidity and dissolved Al (2002). The 2012 Whitewater Baldy Complex Fire severely burned portions of the watershed. Dissolved Al TMDL withdrawn 2018 because no longer an applicable WQC.					

Whitewater Creek (Whitewater Campgrd to headwaters)			**AU IR CATEGORY**	**LOCATION DESCRIPTION**	
			2	HUC: 15040004 San Francisco	
AU ID	**WQS REF**	**WATER TYPE**	**SIZE**	**ASSESSED**	**MONITORING SCHEDULE**
NM-2603.A_12	20.6.4.603	STREAM, PERENNIAL	13.76 MILES	2014	2019
USE	**ATTAINMENT**	**CAUSE(S)**	**FIRST LISTED**	**TMDL DATE**	**PARAMETER IR CATEGORY**
DWS	Fully Supporting				
FC	Not Assessed				
HQColdWAL	Fully Supporting				
IRR	Fully Supporting				
LW	Fully Supporting				
PC	Fully Supporting				
WH	Fully Supporting				
AU Comment: The 2012 Whitewater Baldy Complex Fire severely burned portions of the watershed.					

Uses Abbreviation Key	
ColdWAL	Coldwater Aquatic Life
CoolWAL	Coolwater Aquatic Life
DWS	Domestic Water Supply
FC	Fish Culture
HQColdWAL	High Quality Coldwater Aquatic Life
IW Storage	Industrial Water Storage
IW Supply	Industrial Water Supply
IRR	Irrigation
IRR Storage	Irrigation Storage
LAL	Limited Aquatic Life
LW	Livestock Watering
MCWAL	Marginal Coldwater Aquatic Life
MWWAL	Marginal Warmwater Aquatic Life
MWS	Municipal Water Storage
PC	Primary Contact
PWS	Public Water Supply
SC	Secondary Contact
WWAL	Warmwater Aquatic Life
WH	Wildlife Habitat

2018-2020 State of New Mexico Clean Water Act Section 303(d)/ Section 305(b) Integrated Report

Appendix B Cause and Source Tables

Prepared by:
New Mexico Environment Department
Surface Water Quality Bureau
1190 St. Francis Drive
Santa Fe, New Mexico 87505
https://www.env.nm.gov/surface-water-quality/

Cause Summary for Stream/River Water Quality Impairments	Total Size (miles)
AMMONIA	**46.25**
Ammonia, Total	46.25
CAUSE UNKNOWN - IMPAIRED BIOTA	**114.33**
Benthic Macroinvertebrates	114.33
FISH CONSUMPTION ADVISORY	**122.18**
DDT - Fish Consumption Advisory	122.18
HYDROLOGIC ALTERATION	**226.78**
Flow Regime Modification	226.78
MERCURY	**142.06**
Mercury, Total	142.06
METALS (OTHER THAN MERCURY)	**859.67**
Aluminum, Dissolved	18.13
Aluminum, Total Recoverable	364.41
Arsenic, Dissolved	33.62
Cadmium, Dissolved	7.56
Copper, Dissolved	51.56
Lead, Dissolved	7.56
Sedimentation/Siltation	307.37
Selenium, Total Recoverable	49.27
Silver, Dissolved	2.06
Thallium	18.13
NUTRIENTS	**1287.95**
Nutrients	1264.42
Phosphorus, Total	23.53
ORGANIC ENRICHMENT/OXYGEN DEPLETION	**242.28**
Dissolved oxygen	242.28
PATHOGENS	**1092.43**
E. coli	1092.43
PH/ACIDITY/CAUSTIC CONDITIONS	**39.61**
pH	39.61
POLYCHLORINATED BIPHENYLS (PCBS)	**509.41**
PCBS - Fish Consumption Advisory	255.13
Polychlorinated Biphenyls (PCBs)	254.28
RADIATION	**141.31**
Gross Alpha, Adjusted	124.92
Radium	9.62
Uranium, Dissolved	6.77

Cause Summary for Stream/River Water Quality Impairments	Total Size (miles)
SALINITY	**367.62**
Specific Conductance	258.44
Sulfate	54.59
Total Dissolved Solids (TDS)	54.59
TEMPERATURE	**2027.06**
Temperature	2027.06
TOXIC INORGANICS	**65.17**
Boron, Dissolved	25.48
Cyanide, Total Recoverable	39.69
TURBIDITY	**675.45**
Turbidity	675.45

Cause Summary for Lake/Reservoir Water Quality Impairments	Total Size (acres)
FISH CONSUMPTION ADVISORY	**2423.44**
DDT - Fish Consumption Advisory	2423.44
MERCURY	**50898.85**
Mercury - Fish Consumption Advisory	50898.85
METALS (OTHER THAN MERCURY)	**334.47**
Arsenic, Dissolved	334.47
NUTRIENTS	**5749.06**
Nutrients	5749.06
PH/ACIDITY/CAUSTIC CONDITIONS	**427.53**
pH	427.53
POLYCHLORINATED BIPHENYLS (PCBS)	**21753.47**
PCBS - Fish Consumption Advisory	21753.47
TEMPERATURE	**17965.55**
Temperature	17965.55

Probable Sources Summary for Stream/River Water Quality Impairments*	Total Size (miles)
AGRICULTURE	**2785.31**
Animal Feeding Operations (Nps)	84.58
Animal Shows And Racetracks	6.9
Confined Animal Feeding Operations - Cafos (Point Source)	92.89
Crop Production (Dry Land)	103.01
Crop Production (Irrigated)	277.51
Livestock (Grazing or Feeding Operations)	287.89
Rangeland Grazing	1932.53
AQUACULTURE	**12.86**
Aquaculture (Permitted)	12.86
CONSTRUCTION	**166.91**
Road/Bridge/Infrastructure Construction	52.05
Site Clearance (New Development or Infill)	114.86
HABITAT ALTERATIONS (NOT DIRECTLY RELATED TO HYDROMODIFICATION)	**862.98**
Habitat Modification	197.16
Loss of Riparian Habitat	665.82
HYDROLOGIC ALTERATION	**1951.33**
Baseflow Depletion	66.31
Channel Erosion/Incision due to Upstream Hydromodifications	28.04
Channelization	362.51
Dam or Impoundment	214.42
Dredging for Navigation Channels	95.34
Streambank Modifications/Destabilization	650.69
Water Diversions	534.02
INDUSTRIAL	**25.2**
Petroleum/Natural Gas Activities (Permitted)	25.2
MUNICIPAL DISCHARGES/SEWAGE	**1149.53**
Municipal Point Source Discharges	357.4
On-site Treatment Systems (Septic)	792.13
NATURAL/WILDLIFE	**2272.65**
Drought-related Impacts	723.21
Natural Sources	258.27
Waterfowl	574.32
Wildlife Other than Waterfowl	716.85
OTHER	**612.16**
Low Water Crossing	386.36
Rural (Residential Areas)	225.8

Probable Sources Summary for Stream/River Water Quality Impairments*	Total Size (miles)
RECREATION AND TOURISM (NON-BOATING)	**536.25**
Off-road Vehicles	28.09
Recreational Pollution Sources	508.16
RESOURCE EXTRACTION	**85.5**
Abandoned Mine Lands	19.95
Mine Tailings	38.37
Petroleum/Natural Gas Activities	25.2
Surface Mining	1.98
SILVICULTURE (FORESTRY)	**691.45**
Forest Roads (Road Construction and Use)	85.37
Silviculture Activities	112.07
Silviculture Fire Suppression	105.99
Silviculture Harvesting	110.36
Watershed Runoff following Forest Fire	277.66
SPILLS/DUMPING	**247.56**
Illegal Dumps Or Other Inappropriate Waste Disposal	247.56
URBAN-RELATED RUNOFF/STORMWATER	**1975.24**
Impervious Surface/Parking Lot Runoff	533.51
MS4 Discharges	67.44
Municipal (High Density Area)	78.57
Road/Bridge Runoff	905
Urban Runoff/Storm Sewers	85.53
Wastes from Pets	305.19

NOTES:
These tables were generated using SQUID. In most instances, more than a single cause or probable source of water quality impairment in any assessment unit (AU). When AUs have more than one cause or source of impairment, the associated AU Size is tallied in each cause or probable source category

* As reported in EPA-approved TMDLs. New Mexico has not yet written any lake TMDLS, hence there is no probable source summary to present for this water type.

2018-2020 State of New Mexico Clean Water Act Section 303(d)/ Section 305(b) Integrated Report

Appendix C Response to Comments

Prepared by:
New Mexico Environment Department
Surface Water Quality Bureau
1190 St. Francis Drive
Santa Fe, New Mexico 87505
https://www.env.nm.gov/surface-water-quality/

RESPONSE TO COMMENTS

ON THE
2016-2018 STATE OF NEW MEXICO
CLEAN WATER ACT
§303(d)/§305(b)
INTEGRATED LIST OF ASSESSED SURFACE WATERS

July 23, 2018

Table of Contents

PLEASE NOTE:

Original letters and emails were converted to Microsoft Word. All submitted comments were converted to Calibri font with standard page margins for ease of collation. Personal identification information such as phone numbers, street addresses, and e-mail addresses from private citizens were removed for privacy reasons. All original comment letters/emails are on file at the SWQB office in Santa Fe, NM.

MINOR CHANGES TO THE DRAFT 2018-2020 INTEGRATED REPORT, LIST (Appendix A of the Integrated Report), AND ASSOCIATED ASSESSMENT RATIONALE (formerly "ROD") BASED ON ADDITIONAL SWQB STAFF REVIEW DURING THE COMMENT PERIOD:

1. Figure 8 was revised to display only priority streams as stated in the legend.
2. New IR Categories 3C and 5-ALT, as described in New Mexico's listing methodology (CALM, available at https://www.env.nm.gov/surface-water-quality/calm/), were added to Table 1 on page 8 of the Integrated Report. The definitions for IR Categories 3A and 3B were also corrected to match the CALM.
3. Unassessed waterbody **Glenwood Pond (AU ID NM-2603.B_10)** was removed from the CWA 303(d)/305(b) Integrated List (Appendix A) because it is not a surface water of the state per 20.6.4 NMAC. Specifically, it is part of the treatment system for the NMDGF Glenwood Springs Hatchery, NPDES Permit NM0030163. Therefore, this surface water falls under the below bolded section of 20.6.4.7.S(5):

   (5) "Surface water(s) of the state" *means all surface waters situated wholly or partly within or bordering upon the state, including lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, reservoirs or natural ponds. Surface waters of the state also means all tributaries of such waters, including adjacent wetlands, any manmade bodies of water that were originally created in surface waters of the state or resulted in the impoundment of surface waters of the state, and any "waters of the United States" as defined under the Clean Water Act that are not included in the preceding description. Surface waters of the state does not include private waters that do not combine with other surface or subsurface water or any water under tribal regulatory jurisdiction pursuant to Section 518 of the Clean Water Act.* ***Waste treatment systems, including treatment ponds or lagoons designed and actively used to meet requirements of the Clean Water Act (other than cooling ponds as defined in 40 CFR Part 423.11(m) that also meet the criteria of this definition), are not surface waters of the state****, unless they were originally created in surface waters of the state or resulted in the impoundment of surface waters of the state.*

4. The Assessment Rationale for **Raton Creek (Chicorica Creek to headwaters), AU_ID NM-2305.A_253**, was corrected to the following (change underlined) –

   2018 ACTION: Sampled during 2015-2016 Canadian/Dry Cimarron survey. <u>1/7</u> E. coli exceedences. 4/8 TN and 8/8 TP threshold exceedences, with delta DO of 11.24 mg/L. Therefore, E. coli was removed and nutrients remains a cause of impairment. MWWAL may be under protective-- WQS review needed.

5. The following items that are related to the associated draft IR review spreadsheets were added to the Useful Definitions section of the Preface to the Integrated List (Appendix A of the IR):

IR Category 2A	This indicates a IR Category 2 parameter (currently non-impaired) where an associated Action exists (e.g., Approved TMDL, Alternative Restoration Approach, etc.).
PARAMETER(S) OF CONCERN	This includes parameters that are currently not documented as

impaired but that have previous TMDLs or other action plans.

6. The total ammonia listing for **Rio Puerco (Arroyo Chijuilla to northern bnd Cuba), AU_ID NM--2107.A_40,** was erroneously attached to a 2007 TMDL document. This document does not contain a TMDL for ammonia. Therefore, the parameter IR Category has been changed from 4A (TMDL Complete) to 5/5C (more data needed before scheduling TMDL).
7. Temperature was added as a cause of impairment (IR Category 5/5B) for **Sandia Canyon (Sigma Canyon to NPDES outfall 001), AU_ID NM-9000.A_047**, based on thermograph data submitted by LANL during the 2017 call for data. The Assessment Rationale (formerly named the ROD) was updated accordingly.
8. Specific conductance was removed as a cause of impairment for **Tecolote Creek (I-25 to Blue Creek), AU ID NM-2212_10**, because there is no longer an applicable specific conductance WQC. The Assessment Rationale (formerly named the ROD) was updated accordingly.
9. **Coyote Creek (Mora River to Williams Canyon), AU_ID NM-2306.A_020**, was split into:

   Coyote Creek (Mora River to Amola Ridge), AU_ID NM-2306.A_020

   Coyote Creek (Amola Ridge to Williams Canyon), AU_ID NM-2306.A_023

COMMENT SET 1 – San Juan Watershed Group, Aztec, NM

From: SanJuan WatershedGroup [mailto:sanjuanwatershedgroup@gmail.com]
Sent: Monday, May 7, 2018 1:26 PM
Cc: Melissa May <melissa.may@sanjuanswcd.com>
Subject: Comments to NMED SWQB 303(D)/ 305(B) Integrated Report

Dear Ms. Guevara,
The San Juan Watershed Group would like to submit the following comments in response to NMED's SWQB 303(D)/ 305(B) Integrated Report. We will also send these as formal, written comments in the mail.

1) The Animas River (San Juan River to Estes Arroyo) has been de-listed for Nutrients. We believe this is an error. The “Integrated List” still lists Nutrients as an impairment for this section of the Animas, while the “2018 De-Listed Impairments” says it has been de-listed due to “Applicable WQS attained; based on new data.” However, the “Assessment Rationale (ROD)” does not say this section of the Animas was de-listed and it does not mention any ‘new data’ that the decision may have been based on. If this de-listing is correct and new data has been used to determine that water quality standards are being met, the data should be described in the ROD and made public to allow for review by SJWG (and others) before concurring with the de-listing.

2) The Animas River (Estes Arroyo to So. Ute Indian Tribe bnd) has been de-listed for Temperature. However, there is some conflicting information regarding this de-listing. The

"Integrated List" still lists Temperature as an impairment for this section of the Animas but, the "2018 De-Listed Impairments" says it has been de-listed due to "Applicable WQS attained; based on new data." Additionally, the Assessment Rationale (ROD) does not mention the de-listing, but states that the ALU has been changed to "coolwater." If new data has been used to determine that this water quality standard is being met, then the data should be made public and described in the ROD to allow for review before concurring with the de-listing. If the ALU has in fact been changed to "coolwater," then the SJWG would like to see further justification of this decision in the ROD.

3) In the Assessment Rationale (ROD) for the San Juan River (Canon Largo to Navajo Reservoir), the "2018 Action" statement is probably misplaced, and should be moved to the section for the downstream reach of the San Juan River (Navajo bnd at Hogback to Animas River). Metals transported from the Gold King Mine Spill would only have affected the San Juan River downstream of the confluence with the Animas River.

We hope that these comments will be addressed in the final report.
Thank you for your time,

Jaclynn Fallon
Watershed Coordinator
sanjuanwatershedgroup@gmail.com

***SWQB RESPONSE**: Thank you for your review and comment on the draft 2018-2020 Integrated List (Appendix A of the IR) and associated spreadsheets. The "2018 De-Listed Impairments" spreadsheet did erroneously note the impairments you mention in item 1) and 2) as de-listed. We have corrected the report error and regenerated and re-posted the "2018 De-Listed Impairments" spreadsheet. Regarding item 3), the 2018 Action Statement for the San Juan River (Canon Largo to Navajo Reservoir) AU was incorrect and has been moved to the San Juan River (Navajo bnd at Hogback to Animas River) AU. The corrected information has been re-posted to our website.*

COMMENT SET 2 – Thor Sigstedt, Santa Fe, NM

From: Thor Sigstedt
Sent: Friday, May 11, 2018 9:53 AM
Cc: adventuretrails
Subject: Input for the Galisteo Creek ; Deer Creek to 2.2 miles above Lamy

Hello Lynette,

This letter is to let you know that I read the various pieces regarding the upper reaches of the Galisteo Creek, with continued interest, of course. I find the various letters and information a little bit confusing, but I think I got the jist of it. What I got was that the stretch I am most interested in has been designated high quality cold water and that down the road continued temperature data will be looked at in order to continue the classification. So my request to you is to make that more clear to me so that I can understand the status of the designation and the future of it.

In addition, I want you to continue to refer to my comments over the years as well as thank you for reading them and caring about them. You can access them on my blog at this location: https://thor-sigstedt.blogspot.com and scroll down on the right to "Thor's Letter to the NMENV" and the full text will be there.

In addition, I have been taking temperature data for some years now and have this latest data (which is in addition to other data segments that I have sent to you over the years), so please let me know if this is in a format that is helpful. I set up a data recording system in a location suggested by you all back then, so this should be helpful. This is air temperature data.

Please let me know if there are any issues that I should know about concerning this subject, so that I can respond. I wish I could see it more clearly, so anything you can give me (especially if there is something I am not aware of that threatens the high quality cold water designation...)

Thank You Very Much!,

Thor Sigstedt

SWQB RESPONSE: *Thank you for your continued interest and sharing of knowledge of Galisteo Creek, and for the air temperature data. The Galisteo Creek assessment unit, 2.2 miles upstream of Lamy to its headwater, continues to have a High Quality Coldwater aquatic life use designation on the CWA 303(d)/305(b) Integrated List. Stream temperature information collected in the summer of 2014 indicated that Galisteo Creek (2.2 miles upstream of Lamy to headwaters) was not meeting the High Quality Coldwater aquatic life use temperature criteria. Consequently, a Total Maximum Daily Load (TMDL) document for temperature was completed and approved in 2017. Therefore, this stream is now eligible for development of a watershed-based planning document laying out opportunities to address problems impacting temperature within the watershed, as well as the subsequent availability of EPA non-point source restoration grants that could further our common goal in fostering a healthy watershed for Galisteo Creek. Funding opportunities and other restoration information are available at: https://www.env.nm.gov/surface-water-quality/watershed-protection-section/.*

COMMENT SET 3 – Lauren Chavez, Placitas, NM

From: Lauren Chavez
Sent: Thursday, May 31, 2018 4:56 PM
Subject: Fwd: Las Huertas Creek

RE: NM Clean Water Act 303(D)/ 305(B) Public Comment-

Dear Lynette,
I'm not sure if this particular case would fall under the impaired surface waters that the NM Clean Water Act 303(D)/ 305(B) is trying to list and assess, but if not, please refer me to the correct department. This case involves Las Huertas Creek, which is on the north side of the Sandias. NM Highway 165 runs up east through Placitas, and toward the canyon, and its approximately 1.5 miles from where the paved road turns to dirt road, where you'll find in the creek to the left, a concreted culvert acting as a dam, which diverts 100% of the water into Las Huertas Community Ditch's acequia. This work was done over the last few years, and the legality is in question. It is decimating Las Huertas Creek. Whether they have water rights is not the question, but whether they have viable agriculture to take 100% of this flow, and whether they attained an environmental impact permit from the Army Corp. of Engineers before building/altering land in National Forest Land. In a hydrological study done several years back, hydrologist Peggy Johnson found that this creek feeds much of the aquifer/water shed in the Placitas area. It is of major concern that the springs which our water system Las Acequias de Placitas and many other wells in the area are being impacted by this diversion, not to mention the riparian life down the creek. As you go further up the canyon, you'll see more culverts and diversions they've installed. If this falls under the category of this assessment, please add Las Huertas Creek to the list.

Please see the attached photos, and please call if you have any questions.

Thank you,

Lauren Chavez
Placitas, NM

SWQB RESPONSE*:* *Thank you for providing this information regarding flow alteration on Las Huertas Creek. Based on the information you provided, Las Huertas Creek has been changed to IR Category 4C – impaired due to Flow Regime Modification – on NM's Integrated List. In New Mexico, IR Category 4C waters are eligible for watershed-based planning and subsequent restoration funding through our CWA 319 program. Funding opportunities and other restoration information are available at: https://www.env.nm.gov/surface-water-quality/watershed-protection-section/. Regarding your other questions pertaining to land use, water rights, and whether or not this type of diversion is permitted, you will need to consult with the NM Office of the State Engineer (Middle Rio Grande area at the District 1 Albuquerque office) and the U.S. Army Corps of Engineers, respectively.*

COMMENT SET 4 – Los Alamos National Laboratory, Environmental Protection Division, Los Alamos, NM

Environmental Protection Division
Los Alamos National Laboratory PO
Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

Date: **MAY 3 1 2018**
Symbol: EPC-DO: 18-210
LA-UR: 18-24658
Locates Action No.: *NIA*

Ms. Lynette Guevara
Environmental Scientist
New Mexico Environment Department
Surface Water Quality Bureau
P.O. Box 5469
Santa Fe, NM 87502

Subject: Los Alamos National Laboratory Com ments to Draft 2018 - 2020 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters Integrated Report

Dear Ms. Guevara:

Enclosed for your consideration are Los Alamos National Laboratory's (LANL) comments to the New Mexico Environment Departments 2018-2020 CWA Sections 303(d)/305(b) Integrated List of Assessed Surface Waters Integrated Report (IR). LANL appreciates the opportunity to provide comments.

Please contact Robert Gallegos (505) 665-0450 of the Environmental Compliance Programs if you have questions.

Sincerely,

Taunia S. Van Valkenburg
Group Leader

TSVV:MTS:RMG:cmh

Enclosure:

1) LANL Comments to Draft 2018 - 2020 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters Integrated Report
   a) Attachment 1 - BLM Data-Quality Objectives and Data Quality
   b) Attachment 2 - Aluminum Manuscript

Copy: Shelly Lemon, NMED/SWQB, Santa Fe, NM, (E-File)
Kristopher Barrios, NMED/SWQB, Santa Fe, NM, (E-File)
Karen E. Armijo, NA-LA, (E-File)
William R. Mairson, ADESH, (E-File)
Enrique Torres, EPC-00, (E-File)
Taunia S. Van Valkenburg, EPC-CP, (E-File)
Michael T. Saladen, EPC-CP, (E-File)
Frazer R. Lockhart, EM-LA, (E-File)
Steven J. Veenis, N3B-ER, (E-File)
Robert M. Gallegos, EPC-CP, (E-File)
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adesh-records@lanl.gov (E-File)
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locatestream@Janl.gov (E-File)

ENCLOSURE 1

LANL Comments to Draft 2018 - 2020 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters Integrated Report

Attachment 1 - BLM Data-Quality Objectives and Data Quality
Attachment 2 - Aluminum Manuscript

EPC-DO: 18-210

LA-UR-18-24658

Date: MAY 3 1 2018

Comments on 2018 - 2020 NMED Integrated Report – 303(d) Listings

Comments to NMED

Los Alamos National Laboratory (LANL) provides the following comments to the New Mexico Environment Department (NMED) regarding its 2018 proposed 303(d) listings integrated report (IR) released on April 18, 2018 for public comment.

1) New and existing copper 303(d) listings

The five Assessment Units (AUs) proposed to be added to the 303(d) list with the existing seven AUs for 5C impairments due to copper should be reconsidered in light of the recent Biotic Ligand Model (BLM) Data Quality Objective (DQO)/data quality assessment (DQA) evaluations and findings (Windward 2018 - Attachment 1). Comparing Ambient Water Quality Criteria (AWQC) assessments for these five AUs in side-by-side samples, the hardness-based NM AWQC generate false positives[1] while BLM-based copper AWQC are not exceeded (acute AWQC). See Section 4.8 and Table 4-14 from the 2018 BLM DQO/DQA document (Windward 2018a). Given this information and that the NM AWQC have not yet been updated to adopt the current EPA 304(a) AWQC for copper[2] (i.e., the BLM), at a minimum, the 5C listing should be changed to Category 5B because the water quality standard is in question (i.e., the NM copper AWQC are based on 1996 EPA 304(a) criteria which were updated by EPA in 2007 to incorporate the BLM).

In the prior seven AU listings for copper, some of the samples had non-detect copper reported at a relatively high detection limit of 10 µg/L. Therefore, hardness-based and BLM-based AWQC exceedances based on the detection limit are uncertain (e.g., Pajarito Canyon, Two Mile Canyon to Arroyo de la Delfe, and Acid Canyon [Pueblo to headwaters]. Such exceedances could be re-evaluated using estimation techniques for the non-detected results (or the non-detected results could be excluded). In the case of BLM-based AWQC, these were the sole exceedances of the criterion.

Consider that BLM-based copper AWQC for Upper Sandia Canyon locations yielded a 3% exceedance frequency. Dissolved copper in 4 of 128 samples exceeded the acute BLM-based AWQC. Meanwhile hardness-based AWQC yielded a 48% exceedance frequency (i.e., 61 of 128 samples exceeded the acute hardness-based AWQC). This large difference in potential assessment conclusions illustrates the importance of considering the use of BLM-based AWQC for copper, rather than relying on the hardness-based AWQC. Similar findings existed for lead and zinc BLM-based AWQC, though no new listings are proposed and the one zinc listing for a LANL AU is proposed for de-listing because more recent data have attained hardness-based zinc AWQC (South Fork Acid Canyon).

SWQB RESPONSE: *Thank you for your review and comment. CWA 303(d)/305(b) assessments must be completed using the approved water quality standards identified in 20.6.4 NMAC (available at: https://www.env.nm.gov/surface-water-quality/wqs/) and the procedures specified in the current listing*

[1] A false positive means a sample concentration would exceedance the status quo New Mexico hardness-based AWQC but would not exceed the prospective AWQC, in this case EPA 2007 freshwater copper AWQC (EPA 2007).

[2] The BLM is the basis of EPA 2007 nationally recommended AWQC for copper (EPA 2007). The copper BLM-based AWQC are acknowledged as one of the site-specific water quality criteria (SSWQC) options in New Mexico water quality standards [20.6.4.10(D)(4)(c)].

methodology (CALM, available at: https://www.env.nm.gov/surface-water-quality/calm/). At this time, SWQB cannot assess against BLM-based AWQC to determine CWA 303(d)/305(b) status. The above-mentioned copper impairments on the Pajarito Plateau have been changed from IR Category 5C to 5B in recognition of potential segment-specific criteria development. The 2018 Assessment Rational (formerly named the ROD) has also been updated with this information.

There were two dissolved copper results reported as non-detects with a detection limit of 10 ug/L in the assessment datasets provided by LANL in 2017 for Pajarito Canyon, Two Mile Canyon, Arroyo de la Delfe, and Acid Canyon [Pueblo to headwaters]. One of the Two Mile Canyon data points was assessed as Full Support for acute copper because the applicable WQC was 12.56 ug/L. Per the listing methodology (CALM, available at: https://www.env.nm.gov/surface-water-quality/calm/), the other data point was not assessed because the applicable WQC was less than 10 ug/L.

2) New and existing aluminum 303(d) listings

Given the concerns summarized below, aluminum listings should be changed to category 5B and notes added to the 2018 IR and ROD documents explaining that natural background sources overshadow and confound assessments of aluminum AWQC in most cases. NMED has used the 5B designation in the past for numerous other waters impacted by natural background sources of aluminum, but has not applied category 5B to LANL AUs listed for aluminum. TMDLs for aluminum are unrealistic if seeking only to control natural background sources. Revisions to the aluminum AWQC and its implementation guidance are needed. Perhaps the use of aluminum AWQC should focus only on known anthropogenic aluminum discharges or certain natural sources that may pose a realistic toxicity threat due to the presence of bioavailable aluminum (e.g., truly “dissolved” forms) and/or where precipitated aluminum hydroxide forms are present or likely to exist.

a. Use of “total recoverable” as a measurement basis for aluminum doesn’t seem appropriate in this instance. While the criteria are currently based on “total recoverable” in NMAC, this is really a misnomer because attainment is based on results of samples analyzed after filtration, with filter size to be determined by NMED (NMED 2012, 2013, 2015). Perhaps a clearer basis could be provided for each affected listing in accordance with NMED guidance by stating the actual filter size used for the assessments and for determining the non-attainment, (i.e., whether an unfiltered sample or a 10-µm filtered sample).
b. In discussions with LANL and others, NMED has recognized that measurements of total recoverable aluminum are inappropriate and instead must rely on some pre-filtration to remove non-toxic mineral forms of aluminum present as a natural background source in suspended sediments in typical surface water samples (NMED 2012, 2013, 2015). Recent work at LANL has shown that using filter sizes including 10, 1, and 0.45-µm will result in non-attainment of the aluminum AWQC for undeveloped watersheds where anthropogenic sources are absent and the aluminum is attributable to natural background sources, e.g., Bandelier tuff geologic deposits (Windward 2018b; Windward and LANL [in press]).
c. The likelihood of potentially toxic precipitated aluminum hydroxide forms being present in typical natural surface waters is low to non-existent as suggested by the recent evaluations of historical data with respect to speciation and saturation(Windward and LANL (Attachment 2). While such forms of aluminum are known to be present in the toxicity test data used to generate AWQC, they appear to be transient and in the environment may not occur at all or may occur only under certain circumstances. LANL has been collaborating with NMED to develop further testing of environmental samples to determine if such potentially toxic forms of aluminum are present on the Pajarito Plateau (Windward 2018b).
d. In 2017, EPA issued new draft aluminum AWQC under §304(a) (EPA 2017). While these draft criteria have

not been finalized, public comments have echoed some of the above concerns as well as others, for which EPA has not yet responded. The recent work completed by LANL is important for EPA to consider before they finalize the aluminum AWQC (Windward and LANL [in press]; Windward 2018b, 2016a, b). Other work has shown that the EPA 2017 draft AWQC tend to be significantly higher than the current NM hardness-based AWQC and potentially significant differences in assessment outcomes are possible (Windward 2018a). Specifically, recent work showed that NM AWQC would result in false positive[3] AWQC exceedances for 11% of the unfiltered samples (n=457), 41% of the samples pre-filtered using a 10µm filter (n=149), 29% using a 1µm filter (n=34) and 44% using a 0.45µm filter (n=457). False negatives were zero for each sample preparation, except for the 0.45µm basis where false negatives using NM AWQC over EPA 2017 draft AWQC were negligible at 0.2%. Thus, many of the existing and new listings of AUs impaired by aluminum might be erroneous and TMDLs might be unnecessary if assessments were based on the current draft EPA 2017 AWQC for aluminum.

SWQB RESPONSE: *CWA 303(d)/305(b) assessments must be completed using the approved water quality standards identified in 20.6.4 NMAC (available at: https://www.env.nm.gov/surface-water-quality/wqs/) and the procedures specified in the current listing methodology (CALM, available at: https://www.env.nm.gov/surface-water-quality/calm/). At this time, SWQB cannot assess against draft EPA 2017 Aluminum AWQC to determine CWA 303(d)/305(b) status. The above-mentioned total recoverable aluminum impairments on the Pajarito Plateau have been changed from IR Category 5C to 5B in recognition of potential segment-specific criteria development and the draft EPA 2017 Aluminum AWQC guidance. The 2018 Assessment Rational (formerly named the ROD) has also been updated with this information.*

Regarding aluminum pre-filtration, section 3.1.2.1 of the Main CALM document describes the Department's approach to "…minimize mineral phases…" per 20.6.4.900J(2)(e) NMAC. Samples with concurrent turbidity greater than 30 NTU must be filtered with a 10-micron filter prior to analysis. Since concurrent turbidity data were not available for LANL stormwater data, all samples were presumed to have concurrent turbidity greater than 30 ug/L. Therefore, only the results from 10-micron filtered samples were assessed.

3) 303(d) Listings for PCBs

Two new AU 303(d) listings for PCBs are proposed in the 2018 IR to add to the existing list of 26 LANL AUs and 10 other AUs 303(d)-listed for PCBs across the state. In early 2018, LANL's contractor computed an updated 95-95 UTL[4] of 0.058 µg/L for PCBs attributable to anthropogenic baseline runoff, which is 90 times higher than the NM Human Health (HHWQC) for PCBs (0.00064 µg/L). This UTL represents 41 samples of runoff collected from 2009 to 2016 from undeveloped northern and western reference watersheds near LANL[5]. In NMED's 2018 IR assessment dataset in the Sandia Canyon AUs where PCBs exceeded the 0.00064 µg/L HHWQC (n=107). PCBs were less than the updated PCB baseline UTL in 44 % of the samples, and were less than the LANL 2012 baseline PCB UTL of 0.013 µg/L

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[3] A false positive means a sample concentration would exceedance the status quo New Mexico hardness-based AWQC but would not exceed the prospective AWQC, in this case EPA 2017 draft aluminum AWQC (EPA 2017).

[4] Upper tolerance limit. A 95-95 UTL is calculated at the 95 percent confidence limit on the 95^{th} percentile, a common metric used by LANL and others in the past for characterizing background conditions in the environment (Dale et al. 2013; Ryti et al. 1998).

[5] The updated UTL was computed according to the background characterization framework described in the 2017 sampling and monitoring SEP DQO/DQA (Appendix B, Section B-6.1).

in 27% of the samples. Similarly, in the Pueblo Canyon AU dataset, 79% of the 58 PCB results were less than the updated PCB baseline UTL and 21% were less than the prior UTL. For the PCB dataset that exceeded the HHWQC in all other Pajarito Plateau AUs (n=190), 62% were less than the updated UTL and 29% were less than the prior UTL.

Thus, it is likely that exceedances of the PCB HHWQC are attributable to the baseline anthropogenic PCB concentrations. Therefore, we recommend NMED consider adding a note to this effect in its 2018 IR and ROD documents, as well as consider changing the PCB listing category from 5C to 5B. Finally, the current 5C status indicates additional data are needed, but it is not clear what these additional data needs are. Upon definition of the additional data needs, LANL will provide the requested information to NMED.

SWQB RESPONSE: *CWA 303(d)/305(b) assessments must be completed using the approved water quality standards identified in 20.6.4 NMAC (available at: https://www.env.nm.gov/surface-water-quality/wqs/) and the procedures specified in the current listing methodology (CALM, available at: https://www.env.nm.gov/surface-water-quality/calm/). SWQB is not in agreement with LANL regarding anthropogenic baseline runoff as a reason to change the CWA 303(d)/305(b) listing to 5B as PCBs are not naturally-occurring. In addition, while site-specific criteria can be based on natural background proven to protect the designated use (including a quantifiable human contribution), 20.6.4.10(E) NMAC prohibits modification of human-health criteria based on natural background. Therefore, these listings will remain IR Category 5C.*

4) 303(d) Listings for adjusted gross alpha

While NMED proposes no new listings of AUs impaired for adjusted gross alpha, across the state, a total of 30 AUs are currently 303(d)-listed for gross alpha, with 25 of these listings for LANL area waters. Similar to concerns expressed for baseline PCBs, natural background levels of gross alpha exist as has been demonstrated in several LANL reports over the years (LANL 2017b, 2014, 2013, 2007). In early 2018, LANL's contractor computed an updated 95-95 UTL for gross alpha normalized to suspended sediment concentration (SSC) of 190 pCi/g SSC attributable to natural background runoff. This UTL represents 43 samples of runoff collected from 2009 to 2017 from undeveloped northern and western reference watersheds near LANL, as well as the new SEP reference watersheds[6].

Using 25th and 75th percentile SSC values for this group of locations, the SSC-normalized UTL is back- transformed to 170 and 1900 pCi/L concentrations, respectively, which are one to two orders of magnitude higher than the 15 pCi/L WQC for livestock watering. In the 2018 IR dataset for LANL where gross alpha exceeded livestock watering WQC (n=132), all but one sample was less than the 75th percentile-based 1900 pCi/L UTL, and 74% were less than the 25th percentile-based UTL of 190 pCi/L. Comparing the 2018 IR dataset for LANL to the previous gross alpha UTL of 1490 pCi/L derived by LANL (LANL 2013) returns similar results indicating that gross alpha found in Pajarito Plateau waters is dominated by natural background sources. Thus, we recommend NMED consider adding a note to this effect in its 2018 IR and ROD documents, as well as consider changing the gross alpha listing category from5C to 5B until such a time as site specific WQC for gross alpha are adopted.

SWQB RESPONSE: *CWA 303(d)/305(b) assessments must be completed using the approved water quality standards identified in 20.6.4 NMAC (available at: https://www.env.nm.gov/surface-water-quality/wqs/) and the procedures specified in the current listing methodology (CALM, available at: https://www.env.nm.gov/surface-water-quality/calm/). Therefore, SWQB cannot assess using SSC-*

[6] The updated UTL was computed according to the background characterization framework described in the 2017 sampling and monitoring SEP DQO/DQA (Appendix B, Section B-6.1).

normalized UTLs to determine CWA 303(d)/305(b) status. The above-mentioned adjusted gross alpha impairments on the Pajarito Plateau have been changed from IR Category 5C to 5B in recognition of progress towards potential segment-specific criteria development. The 2018 Assessment Rational (formerly named the ROD) has also been updated with this information.

5) Category 4B

Category 4B – In addition to the semi-annual report provided on June 29, 2017, please consider the following storm water management activities, currently being executed through the Supplemental Environmental Projects (SEPs), before reaching a final decision for withdrawal of Category 4B status in the Sandia Canyon AU:

a. A Low Impact Development (LID) Master Plan has been developed and finalized. The LID Master Plan will guide and prioritize future development of LID projects at LANL. The LID Master Plan applies to developed areas across the Laboratory and focuses on identifying opportunities for storm water quality and hydrological improvements in the heavily urbanized areas of Technical Areas 03, 35 and 53. TA-03 primarily drains to Sandia, Mortandad, Two Mile and Los Alamos Canyons. The LID Master Plan is organized to allow the addition of LID projects for other technical areas as time and funds allow in the future.
b. The LID Master Plan identifies a number of LID projects within the Sandia AU. Under the SEP, 5 projects will be designed and 2-3 will be constructed prior to the end of calendar year 2018. These projects are designed and constructed with the specific goal of improved storm water management.
c. Water Quality and Flow Monitoring – This work was carried out in 2017 and will continue through the rest of 2018. The monitoring will fill data gaps to characterize the sources of pollutants in storm water runoff and impacts on receiving waters in and around the Laboratory including the Sandia AU. Data gaps in discharge (volume and flow) will be addressed. A broad range of pollutants (including dissolved copper) are targeted from the following sources: Laboratory developed areas, Laboratory firing sites, natural landscapes, and atmospheric deposition.

SWQB RESPONSE: *SWQB appreciates the planning and implementation efforts undertaken to reduce dissolved copper levels in the Sandia watershed. As stated in the Assessment Rationale (formerly named the ROD), the IR Category 4B demonstration for dissolved copper in this AU has been withdrawn following consultation with EPA Region 6. Storm water urban runoff is a significant contributor to dissolved copper water quality exceedances in the AU. In 2015, EPA issued a preliminary municipal separate storm water sewer system (MS4) determination for portions of Los Alamos County, including the Laboratory. As a result of EPA's preliminary determination, LANL suspended development and implementation of the Storm Water Management Plan. EPA has not yet issued a final MS4 determination, and LANL has not renewed efforts to develop and implement a storm water management plan. The IR Category 4B demonstration requires development and implementation of a comprehensive Storm Water Management Plan to address contamination in storm water runoff. When a comprehensive Storm Water Management Plan is developed and implemented, the IR Category 4B demonstration can be updated and reviewed for reinstatement. The IR Category 5C dissolved copper listing on the public comment draft has been changed to IR Category 5B (see SWQB response to LANL Comment #1, above).*

6) Sandia Canyon 2014-2016 Stream Temperature Data

In July 2014, LANS initiated a stream temperature study in the upper Sandia Canyon AU (NM-9000.A_047). The study will continue through 2018. The information derived from the study will be used to determine if a site specific standard or change in the designated use is warranted for Segment

20.6.4.126 NMAC in Sandia Canyon. Thermographs were placed at 5 locations within the AU. Interim findings, of data gathered in 2014 and 2016, indicate that the designated use of cold water aquatic life may not be attainable:

- Marginal cold water or cool water may best describe conditions in this reach because natural water temperatures resulting from natural ambient air temperatures prevent attainment of ColdWAL aquatic life use.
- The data show that the AUs measured surface water temperatures correlate to July average air temperatures in support of NMED's model.

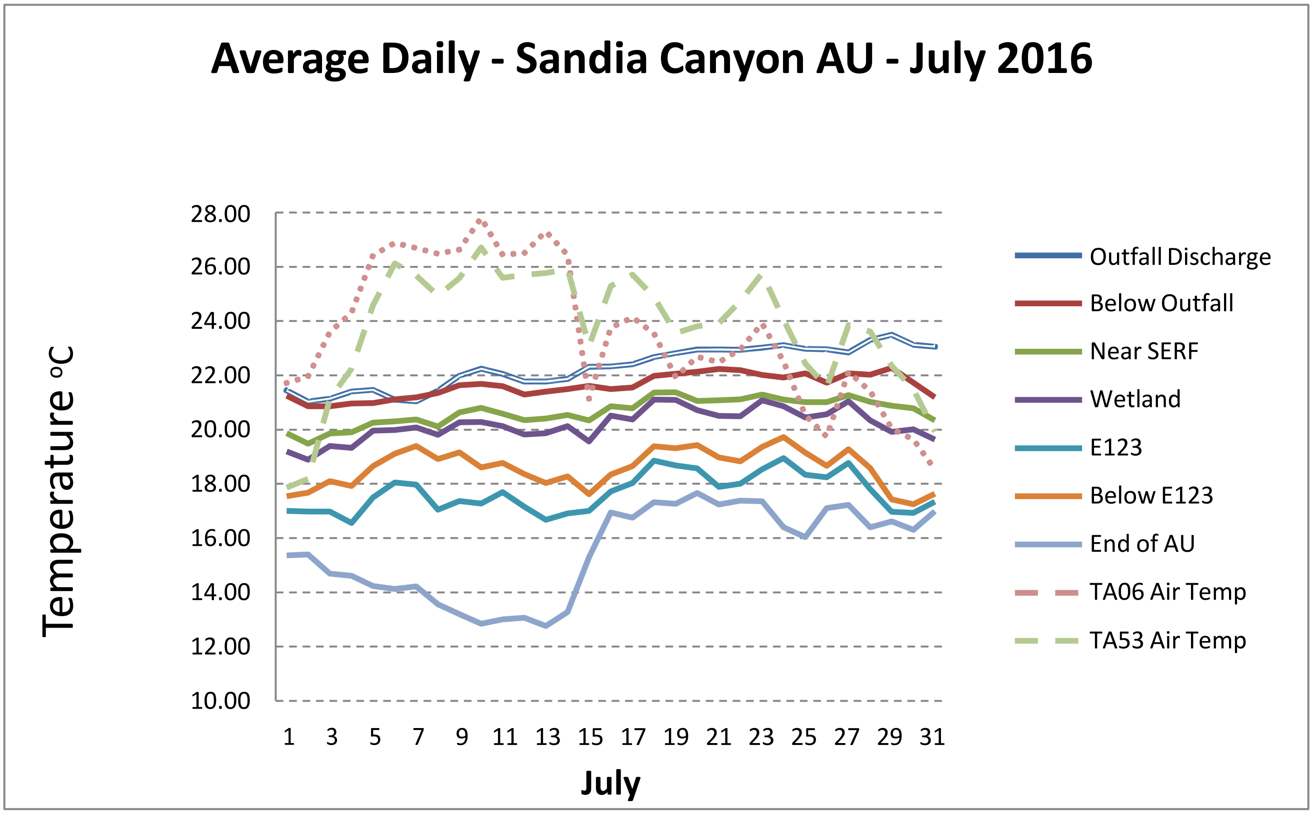
<table>
<tr><th>Thermograph Location</th><th>Observed[a] Average Water Temperature °C</th><th>Observed[a] Maximum Water Temperature °C</th><th colspan="3">PRISM[b]</th><th colspan="3">ATEMP[c] °C Monthly Average</th><th>Average Air Temperature °C (1981 to 2010)[e]</th><th>Predicted 6T3 °C</th><th>Predicted Maximum (TMAX) °C</th></tr>
<tr><td></td><td></td><td></td><td>2014</td><td>2015</td><td>2016</td><td>2014</td><td>2015</td><td>2016</td><td>1991 - 2010</td><td></td><td></td></tr>
<tr><td>Below Outfall</td><td>21.60</td><td>24.20</td><td rowspan="5">21.58</td><td rowspan="5">20.52</td><td rowspan="5">25.15</td><td rowspan="5">19.3</td><td rowspan="5">18.8</td><td rowspan="5">23.74[d]</td><td rowspan="5">20.1</td><td rowspan="5">25.75[c]/ (22.0)[e]</td><td rowspan="5">30.35[c]/ (26.4)[e]</td></tr>
<tr><td>Near SERF</td><td>20.65</td><td>24.58</td></tr>
<tr><td>E123</td><td>17.67</td><td>23.16</td></tr>
<tr><td>Below E123[f]</td><td>18.58</td><td>23.49</td></tr>
<tr><td>At Sigma Canyon[f]</td><td>15.46</td><td>20.08</td></tr>
</table>

Notes:

a. July 2016
b. PRISM – Lat: 35.8694 Lon: -106.3073 Elev: 7149
c. July Average Air Temperature – LANL TA-06 (and where noted TA-53) Monitoring Station ATEMP
d. LANL TA-53 Monitoring Station July 2016 (Insufficient Temp Data Available for the TA-06 Monitoring Station)
e. July Average Air Temperature 1981-2010 – LANL TA-06 Monitoring Station
f. Location added in 2016

Based on the information provided above, the IR Category designation of 5B should be retained because the temperature criteria is under review and cold water aquatic life (ColdWAL) use may not be existing or attainable. The figure below provides a July 2016 overview of stream temperatures at monitored sites.

SWQB RESPONSE: *Recognizing LANL has developed a draft UAA workplan for a proposed change from a Coldwater to Marginal Coldwater or Coolwater aquatic life use, SWQB agrees that the Sandia Canyon AU extending from Outfall 001 to Sigma Canyon (NM-9000.A_47) should be classified as IR Category 5B. The Integrated List and Assessment Rational (formerly named the ROD) have been updated with this information.*



7) Stipulated Agreement between NMED, Amigos Bravos and LANS

Pursuant to the Stipulated Agreement between NMED, Amigos Bravos and LANL, entered during the last Triennial Review, the United States Department of Energy and LANL agreed to meet and confer with Amigos Bravos regarding the appropriate level of water quality classifications for waters currently listed in Segment 128 (ephemeral and intermittent waters located within Los Alamos National Laboratory). In 2017, the Hydrology Protocol (HP) was applied to the AUs listed below. NMED, Amigos Bravos and LANS are working on a process to appropriately classify these waters to determine the most protective designated use:

- Ancho Canyon (below spring) - NM.9000.A_054
- Water Canyon (above State Road 501 to LANL Boundary) - NM.128.A_12
- DP Canyon (below grade control) - NM-128.A_10
- DP Canyon (above grade control) - NM-128.A_14

SWQB RESPONSE: *A note acknowledging these efforts was added to the Assessment Rational (formerly named the ROD). SWQB looks forward to working with LANS and Amigos Bravos on the other waters identified for water quality standards review under the Stipulated Agreement (e.g., Los Alamos, Mortandad, Pajarito, Ten Site, Two Mile, and Water canyons).*

8) Other Concerns for 2018 IR

a) Calculations and comparisons of observed concentrations to respective water quality criteria were not provided with NMED's public notice of the 2018 draft IR. LANL would appreciate the opportunity to receive and review NMED's related spreadsheets. We also would like to confirm that the sampling locations are appropriately representative of waters of the state.

***SWQB RESPONSE**: SWQB is not required to provide all data and assessment spreadsheets as part of the public notice and has not done so in the past; there are a substantial number of individual files associated with each assessed watershed or region making this impractical. However, SWQB frequently fulfills requests to review and inspect public records and data. On May 23, 2018, SWQB fulfilled a public records request from LANL contractor Windward Environmental, LCC for the 2018 IR Pajarito Plateau datasets and draft 2018 IR conclusions. These final assessment datasets were based on files provided by LANL as stated in the QA review. The data files provided by LANL were re-formatted through a standard series of steps to create assessment input files for SWQB's automated assessment routines. These assessment input files were provided in response to the public records request by Windward Environmental, LLC. Regarding site selection and representation, watershed stations at the bottom of an assessment unit are presumed to be representative of the assessment unit unless other information indicates conditions in the assessment unit are not homogeneous.*

b) NMED's spreadsheet for new impairments appears to include 5 duplicated listings of AUs in the LANL vicinity, LANL respectfully requests that these duplicates be removed from the list.
   a. total recoverable cyanide – Upper and Lower Los Alamos Canyon
   b. total recoverable selenium – Upper Los Alamos Canyon and Lower Pueblo Canyon
   c. total PCBs – Arroyo de la Delfe

***SWQB RESPONSE**: Thank you for your review and comment on the associated Integrated List spreadsheets. The "New Impairments" spreadsheet was automatically generated from our in-house assessment database and did indeed include duplicate new impairment rows because these new causes are impairing more than one Designated Use in their respective Assessment Units. The NMED IT Department has added a Designated Use field to this report so now each row is unique. The improved report has been regenerated and re-posted to* https://www.env.nm.gov/surface-water-quality/2018-2020-ir/.

c) Section II(A) (page 14) describes the state WQS review and update process. We appreciate the state's efforts to keep abreast of national science and policy regarding WQS (i.e., updates to §304(a) criteria). Because more than three years have passed since the most recent triennial review was completed (2014), NMED will likely begin preparations for the next triennial review process. In particular, LANL is interested in helping NMED adopt the EPA 2007 BLM-based copper AWQC statewide, as well as further refining the aluminum AWQC and its implementation guidance.

***SWQB RESPONSE**: Thank you for your continued interest in BLM-based copper AWQC and the aluminum AWQC. New Mexico's Water Quality Control Commission (WQCC) approved the most recent triennial review in January 2017 and EPA's final approval and technical support document were received in August 2017. Scoping for the next triennial review will begin in 2019. SWQB looks forward to any proposals that LANL would like to submit to the WQCC for consideration during the next triennial regarding BLM-based copper and aluminum AWQC.*

d) LANL is also interested in working with NMED to refine characterizations of natural background concentrations of constituents of concern (COCs) including but not limited to aluminum and gross alpha. LANL continues to believe consideration of natural background levels is vital in any clean water act compliance decision making, and that site specific water quality criteria based on natural background are needed. LANL has prepared a number of reports on natural background in the past that have led to productive discourse between NMED and LANL staff on the merits of the related data evaluation processes and findings. In 2017, LANL updated its background characterization framework (BCF) based on input from NMED. The updated BCF is described in the 2017 sampling and monitoring SEP DQO/DQA (Appendix B, Section B-6.1)(LANL 2017a). In 2018, LANL completed preliminary evaluations of historic data, as well as new datasets collected as part of the SEP intended for characterizing natural background concentrations of COCs. LANL would like to revisit the BCF with NMED and discuss the preliminary results mentioned in the specific comments above on aluminum, PCBs and gross alpha.

***SWQB RESPONSE**: SWQB appreciates these efforts. Please set up a meeting with our Standards, Planning and Reporting team to discuss further.*

e) Along the same lines as comment number 5 above, we are interested in working with NMED to refine characterizations of anthropogenic baseline COCs including, but not limited to, PCBs. LANL's preliminary evaluations of historic data in 2018 also included characterization of anthropogenic baseline and LANL would like to revisit the BCF with NMED and discuss these results.

***SWQB RESPONSE**: SWQB appreciates these efforts. However, PCBs are not eligible for consideration as natural background. Please see the response to LANL Comment #3. Please set up a meeting with our Standards, Planning and Reporting team to discuss other COCs further.*

f) In the Public Comment Draft of the IR, under Section V (C)(4) Storm water, text on Page 50-51 raises concerns and LANL respectfully recommends the text be revised to incorporate the following comments:
   a. The first sentence of the last paragraph states that storm water typically exceeds WQS. This seems to be an over generalization that might confuse the public about

regulatory programs such as NPDES vs §305(b) Integrated Assessments. While WQS can be used to screen discharges such as storm water, state WQS are typically not applied directly to discharges outside of NPDES permits, which often account for mixing and other instream water quality conditions. It would be more appropriate to say that in certain cases, storm water may contribute to exceedances of WQS in state waters, in which case NPDES permits would likely be required (via "reasonable potential analysis").

***SWQB RESPONSE**: The first sentence has been changed from "Stormwater runoff also typically contains elevated concentrations of a variety of constituents that exceed WQS" to "Stormwater runoff often contains elevated concentrations of a variety of constituents that many contribute to WQS exceedences." The reference to NPDES permits in this sentence is unnecessary because there may not be a point source involved.*

b. The fourth sentence in the last paragraph provides a list of storm water quality concerns by including a statement that untreated storm water can kill aquatic life, i.e., via acute toxicity. The sentence makes it sound as though *any* untreated storm water would present such a concern. Typically, treatment is one line of defense in adaptive management after source control best management practices are found inadequate. Specific evidence of untreated storm water killing aquatic life is generally lacking. Therefore, LANL recommends that the sentence be revised to state the concern more generally, "storm water may carry certain toxicants that may be a concern depending on the nature of the receiving water and aquatic life".

***SWQB RESPONSE**: The fourth sentence has been changed from "Untreated stormwater entering our waterways can kill aquatic life and result in the contamination of fish tissue and drinking water supplies; prohibit or limit swimming, fishing or boating; present dangers to public health and safety; and increase the frequency and magnitude of flooding" to "Depending on the nature of the receiving water, untreated stormwater entering our waterways may carry certain toxicants that may negatively impact aquatic life or drinking water supplies; prohibit or limit swimming, fishing or boating; present dangers to public health and safety; and increase the frequency and magnitude of flooding."*

g) The 2018-2020 IR lists the following AUs (within Sandia and Pueblo Canyon Watersheds) for total recoverable aluminum and dissolved copper as a cause of impairment for aquatic life use. Some water quality data were collected during storm water events and the resulting data represent periods of hydrologic instability that should not be used for assessment of chronic criteria, per NMED's CALM guidance. Thus, LANL requests that NMED add clarification as to whether the listings are based on exceedances of acute or chronic criteria.

- Acid Canyon (Pueblo to headwaters) - NM-97.A_002
- Pueblo Canyon (Acid Canyon to headwaters) - NM-9000.A_043
- Pueblo Canyon (Los Alamos Canyon to Los Alamos WWTP) - NM-99.A_001
- Graduation Canyon (Pueblo Canyon to headwaters) - NM-97.A_005
- South Fork Acid Canyon (Acid Canyon to headwaters) - NM-97.A_029
- Walnut Canyon (Pueblo Canyon to headwaters) - NM-97.A_004
- Sandia Canyon (Sigma Canyon to NPDES outfall 001) - NM-9000.A_047

a. Pueblo Canyon – In the fall of 2017 NMED's Hydrology Protocol (HP) was applied to waters within the Pueblo Canyon Watershed. The HPs were conducted as part of SEPs to determine stream flow hydrology. These waters are currently subject to the default water quality standards contained in NMAC 20.6.4.98 for intermittent waters. All of the Pueblo Canyon Watershed AUs were evaluated and received HP scores ranging from 2.5 to 24.5:

- Pueblo Canyon (Acid Canyon to Headwaters) - NM-9000.A_043
- Pueblo Canyon (Los Alamos WWTP to Acid Canyon – NM-97.A_006
- Pueblo Canyon (Los Alamos Canyon to Los Alamos WWTP) - NM-99.A_001
- Walnut Canyon (Pueblo Canyon to Headwaters) - NM-97.A_004
- Kwage Canyon (Pueblo Canyon to headwaters) - NM-97.A_003

Level 2 HP evaluations are warranted, and will be conducted in 2018, for Kwage, Graduation, Pueblo at E055 and Pueblo above E055. The current water standard is subject to confirmation via the HP and NMED/EPA approval, thus an IR Category designation of 5B may be warranted.

SWQB RESPONSE: *The above listings are based on exceedences of acute criteria in accordance with Section 3.1.2.2 of the listing methodology (CALM, https://www.env.nm.gov/wp-content/uploads/2017/03/FINAL-2018-Main-CALM.pdf). An AU Comment has been added to these listings. Aluminum and copper listings were changed to IR Category 5/5B in response to LANL Comments #1 and #2, above. Kwage Canyon is listed as IR Category 3C (Not Assessed) due to insufficient data.*

h) In Los Alamos Canyon and DP Canyon to Upper LANL Boundary (NM-9000.A_063), mercury (T) was first listed as a cause of impairment in the 2006-2008 IR. A review of data from May 2012 April 2018 do not show exceedances of the Livestock Watering use criteria of 10ug/l. Please consider removing Mercury (T) as a cause of impairment for Livestock Watering.

Location ID	Sample Date	Hg Report (ug/L)
Los Alamos abv DP	7/24/2012	0.2
Los Alamos abv DP	8/3/2012	3.29
Los Alamos abv DP	10/12/2012	0.629
Los Alamos abv DP	7/12/2013	1.59
Los Alamos abv DP	9/12/2013	1.81
Los Alamos abv DP	7/29/2014	1.28
Los Alamos abv DP	7/31/2014	2.42
Los Alamos abv DP	9/29/2017	0.255
Los Alamos abv DP	10/4/2017	0.524
Los Alamos blw Ice Rink	9/12/2013	0.798
Los Alamos blw Ice Rink	7/31/2014	0.243
Los Alamos blw Ice Rink	8/2/2015	0.272

SWQB RESPONSE*: Thank you for catching this error. Total mercury data collected on 7/11/2012 and 7/24/2012 at the station above DP Canyon (both 20 ug/L) indicated two exceedences of the 10 ug/L Livestock Watering criterion. However, these results were qualified as below the sample detection limit. Since the sample detection limit of 20 ug/L for these data points is greater than the 10 ug/l criterion, the results cannot be used for assessment. Therefore, total mercury has been removed as a cause of impairment for Livestock Watering. The 2018 Assessment Rational (formerly named the ROD) has also been updated with this information.*

References

Dale M, Longmire P, Granzow K, Yanicak S, Mayer R. 2013. Statistical analysis of regional aquifer background, Pajarito Plateau, New Mexico. Geological Society of American Annual Meeting, October 27-30, 2013.

EPA. 2007. Aquatic life ambient freshwater quality criteria - copper, 2007 revision. EPA-822-R-07-001. Office of Water, US Environmental Protection Agency Washington, DC.

EPA. 2017. Draft aquatic life ambient water quality criteria for aluminum 2017. EPA-822-P-17-001. US Environmental Protection Agency, Washington, DC.

LANL. 2007. Los Alamos National Laboratory NPDES permit application number NM0030759. Preliminary comments regarding use of statistical methods to evaluate background surface water quality and identify laboratory impacts. LA-UR-07-8120. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2013. Background metals concentrations and radioactivity in storm water on the Pajarito Plateau, northern New Mexico. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2012. Polychlorinated biphenyls in precipitation and storm water within the upper Rio Grande watershed. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2014. Natural background metals concentrations and radioactivity in storm water for the individual permit. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2017b. Individual permit storm water data background comparisons. Los Alamos National Laboratory, Los Alamos, NM.

NMED. 2012. Aluminum filtration study. New Mexico Environment Department, Surface Water Quality Bureau.

NMED. 2013. Procedures for assessing water quality standards attainment for the state of New Mexico

CWA §303(d) /§305(b) integrated report: assessment protocol. New Mexico Environment Department Surface Water Quality Bureau.

NMED. 2015. Procedures for assessing water quality standards attainment for the state of New Mexico CWA §303(d) /§305(b) integrated report: assessment protocol. New Mexico Environment Department Surface Water Quality Bureau.

Ryti RT, Longmire PA, Broxton DE, Reneau SL, McDonald EV. 1998. Inorganic and radionuclide background data for soils, canyon sediments, and Bandelier Tuff at Los Alamos National Laboratory. Environmental Restoration Project. Los Alamos National Laboratory, Los Alamos, New Mexico.

Windward. 2016a. Presentation. Aluminum bioavailability: implications for ambient water quality criteria and sampling. Preliminary draft for discussion. Presented August 2, 2016. Windward Environmental LLC, Seattle, WA.

Windward. 2016b. Presentation. Preliminary evaluations of LANL aluminum filter study data. Preliminary draft for discussion. Presented August 2, 2016. Windward Environmental LLC, Seattle, WA.

Windward. 2018a. Data-quality objectives and data quality assessment: application of the biotic ligand model to generate water quality criteria for four metals in surface waters of the Pajarito Plateau New Mexico. Windward Environmental LLC, Seattle, WA.

Windward. 2018b. Proposed testing plan for characterizing potential aquatic toxicity in surface waters attributable to aluminum: developing new alternatives for sample preparation. Windward Environmental LLC, Seattle, WA.

Windward, LANL. [in press]. Total aluminum: not totally relevant for water quality standards. Integr Environ Assess Manag.

DATA-QUALITY OBJECTIVES AND DATA QUALITY ASSESSMENT: APPLICATION OF THE BIOTIC LIGAND MODEL TO GENERATE WATER QUALITY CRITERIA FOR FOUR METALS IN SURFACE WATERS OF THE PAJARITO PLATEAU NEW MEXICO

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Acronyms

%HA	percent humic acid
ACR	acute-to-chronic ratio
AOC	area of concern
AU	assessment unit
AWQC	ambient water quality criteria
BDL	below detection limit
BLM	biotic ligand model
DOC	dissolved organic carbon
DL	detection limit
DQA	data quality assessment
DQO	data quality objective
E	ephemeral
EIM	Environmental Information Management
EF	exceedance factor
EPA	US Environmental Protection Agency
ESA	Endangered Species Act
FAV	final acute value
FMB	fixed monitoring benchmark
gw	grams wet weight
I	intermittent
IP	individual permit
IWQC	instantaneous water quality criteria
LANL	Los Alamos National Laboratory
MLR	multiple linear regression
MTAL	maximum target action level
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMFS	National Marine Fisheries

NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
NWQMC	National Water Quality Monitoring Council
P	perennial
QC	quality control
SEP	supplemental environmental project
SMWU	storm water management unit
SR	state route
SSWQC	site-specific water quality criteria
SWQB	Surface Water Quality Bureau (of NMED)
TAL	target action level
TOC	total organic carbon
TU	toxic unit
USDA	US Department of Agriculture
USGS	US Geological Survey
WER	water effect ratio
Windward	Windward Environmental LLC
WM	snowmelt
WP	Persistent water
WQBEL	water quality-based effluent limit
WQS	water quality standard
WS	surface water
WT	storm water
WWTF	wastewater treatment plant

1 Introduction

The purpose of this document is to use the data quality objective (DQO) and data quality assessment (DQA) process to define an appropriate water quality dataset and then use it, in conjunction with the biotic ligand model (BLM), to generate preliminary ambient water quality criteria (AWQC) for aluminum, copper, lead, and zinc applicable to surface waters of the Pajarito Plateau in the vicinity of the Los Alamos National Laboratory (LANL). The BLM-based AWQC will be compared with current state of New Mexico AWQC for these four metals; the current New Mexico AWQC are based on hardness.

The BLM mechanistically accounts for the effects of multiple water chemistry variables on the bioavailability and toxicity of metals. This method is widely recognized nationally and internationally as the most scientifically advanced means of generating bioavailability-based AWQC. Typical BLMs employ measurements of up to 10 water quality variables, as described in Section 2. All BLMs characterize metal speciation and have the capacity to estimate metal toxicity to certain organisms, but only certain BLMs have been adapted to generate AWQC according to US Environmental Protection Agency (EPA) guidelines(EPA 1985), or other relevant international guidance. When in accordance with EPA guidelines, the AWQC generated by the BLM are regarded as instantaneous water quality criteria (IWQC), much like AWQC that are based on measurements of hardness at the time of sampling (i.e., state and EPA hardness-based AWQC).

EPA released nationally recommended AWQC for copper based on the BLM in 2007, after its initial draft in 2003 (EPA 2007, 2003a, b). In 2017, EPA considered a BLM for aluminum in its draft AWQC for that metal (EPA 2017). The state of New Mexico, like many other states, permits the use of the BLM as an option for generating SSWQC for copper, per EPA's 2007 copper AWQC (EPA 2007). However, SSWQC in general are subject to EPA review and approval until AWQC such as BLM-based copper criteria are adopted on a statewide basis; this recently occurred in the states of Idaho and Oregon (IDAPA 58.01.02, and OAR 340-041-8033 in (ODEQ 2016b, a) as a result of EPA Region 10 mandates related to Endangered Species Act (ESA) consultations on state WQS.

Ideally, the use of EPA's nationally recommended AWQC such as the 2007 BLM-based copper AWQC, would not lead to the need for SSWQC development for a particular location. In other words, EPA 2007 BLM-based copper AWQC should in one sense be as readily applicable as IWQC as are hardness-based copper AWQC stemming from EPA 1996 nationally recommended AWQC.

Key Definitions

- AWQC –ambient water quality criteria are state regulations or national policy documents and statements that define Section 304(a) criteria intended to broadly protect designated or beneficial uses regulated under the Clean Water Act; these regulations are applicable to wide geographic areas. AWQC are expressed as either fixed values or equations (models). The latter depend on one or more ambient water quality variables (e.g., hardness [metals], pH, or temperature [ammonia]) or more complex models such as multiple linear regression (MLR) models and the BLM.
- IWQC – Instantaneous water quality criteria are based on the application of AWQC to a particular set of values of dependent variables measured, calculated, or estimated for a particular set of conditions for a certain time at a location of interest. IWQC, by definition, will be time variable where dependent water quality parameters vary over time. Section 305(b) water quality assessments typically compare observed pollutant concentrations to concurrent IWQC.
- SSWQC – Site-specific water quality criteria (SSWQC) are AWQC that have been adjusted to local water quality conditions, typically to account for different bioavailability between the site of interest and laboratory toxicity testing waters used by EPA to generate nationally recommended AWQC. Typical SSWQC approaches include, but are not limited to, the water effect ratio (WER), recalculation, and resident species procedures (EPA 1994). SSWQC are typically used in long-term projections to determine the need for and set water quality-based effluent limits (WQBELs) in National Pollutant Discharge Elimination System (NPDES) permits. SSWQC are subject to EPA review and approval after adoption by state authorities in state water quality standards (WQS).

The DQO process, as described in Section 3, will be used to develop performance and acceptance criteria and to define study objectives with regard to using water quality data that have already been collected by LANL. Consequently, the focus of the DQO process will be to define the appropriate use of the existing data for the purpose of generating BLM-based IWQC. As an objectives-oriented and planning approach, the DQO process will establish data sufficiency and data handling rules that will help identify and minimize decision errors associated with analysis/project outcomes.

Each step of the DQO process is described in Section 3; given that data have already been obtained, Step 7 will be replaced with a description of a DQA. The DQA process (described in detail in Section 4) will evaluate the appropriateness and completeness of the data obtained from prior monitoring efforts conducted by LANL for surface waters of the Pajarito Plateau in the vicinity of LANL.

The focus of this evaluation process will be to maximize the number of appropriately usable water chemistry datasets for discrete surface water stormflow or baseflow sampling events. To characterize metal (i.e., copper, lead, zinc, and aluminum) bioavailability and calculate IWQC (using each applicable approach), a sufficient suite of BLM chemistry inputs is needed for each discrete water sampling event. The DQA process will identify the number of discrete sampling events for which complete or sufficiently complete BLM chemistry inputs are available and usable.

Sufficiently complete BLM chemistry inputs are somewhat dependent upon the metal being considered: For all of the metals in this evaluation, pH and dissolved organic carbon (DOC) are necessary key BLM inputs. Other chemistry inputs, such as alkalinity and hardness cations (e.g., calcium and magnesium), are also important, but values for these parameters can be estimated if information for other parameters is available. For example, alkalinity can be estimated from pH and the ambient concentration of carbon dioxide in the atmosphere, and major ions can be estimated from hardness and known or assumed ion ratios (Windward 2017). In addition, EPA (2016) provides nationwide eco-regional estimates (10^{th} percentiles) of most BLM inputs and describes analyses that, based on correlations between BLM inputs and conductivity and stream order, can be used to estimate missing values for BLM inputs. Both approaches are similar in that missing BLM inputs can be estimated for a water body of interest if certain water quality data are available, while other parameters are estimable as indicated in EPA (2016).

In addition to identifying sufficiently complete datasets, the DQA process will identify data gaps and will describe the outcomes of analyses intended to support applicable data substitutions or estimates. Generally, if the dataset is rich enough, substitution or estimation of missing data can be supported by evaluating potential relationships among water chemistry variables (e.g., relationships between DOC and total organic carbon [TOC], or relationships between major ions and hardness or specific conductance). After completion of the DQA process, the goal will be to use the aggregated dataset to perform analyses that will address the objectives of this study.

The overall objective of this work is to evaluate the use of the BLM as a potential approach for developing SSWQC for copper, lead, zinc, and aluminum applicable to surface waters of the Pajarito Plateau in the vicinity of LANL. The State of NM has only adopted EPA 2007 copper AWQC as an SSWQC option in state water quality standards (20.6.4.10.D((4)(c) NMAC).

Prior to evaluating the applicability of the BLM, the availability of a sufficiently robust dataset of BLM inputs must be established. To aid evaluations, IWQC will be calculated using multiple approaches, including current New Mexico and EPA hardness-based AWQC, and BLM-based IWQC. For aluminum, an additional approach will be to calculate IWQC based on the current MLR approach proposed by EPA in its 2017 draft aluminum AWQC (EPA 2017). Each approach will be used in the context of AWQC, so that the intended level of protection is consistent with EPA guidelines for AWQC (EPA 1985).

Comparisons of IWQC and potential water quality assessment outcomes generated using each of the approaches will provide information regarding potential decision errors between the more accurate BLM-based approach and nationwide or statewide AWQC approaches. Additionally, this evaluation will consider resolving time-variable IWQCs to potential SSWQC using applicable approaches driven by the richness of the dataset. For example, use of fixed percentiles of the IWQC distribution or the fixed monitoring benchmark (FMB) approach may be applicable at specific locations or spatial aggregations of interest.

Specific objectives of this work include:

- Communication of the purpose and appropriate use of the BLM for generating IWQC and approaches for developing SSWQC based on the BLM
- Generation of hardness- and BLM-based IWQC for copper, lead, zinc, and aluminum, and MLR-based IWQC for aluminum based on available datasets at a wide array of sampling locations and events
- Evaluation of the different assessment outcomes for each metal by comparing observed dissolved metals concentrations with each of the IWQC outcomes for each sampling event
- Calculation of FMBs where sufficient data are available (concurrent IWQC and metals concentrations)
- Consideration of various spatial aggregations with regard to using locations individually or combining locations according to spatial features or assessment units (AUs) recognized by the Surface Water Quality Bureau (SWQB) of the New Mexico Environment Department (NMED).
- Recommendation of potential SSWQC approaches, limitations, and outcomes (e.g., FMB, MLR equation, or percentiles of IWQC)

2 Background

This section provides background information about the development and use of the BLM, the LANL area waters and State of NM Water Quality Standards.

2.1 BLM Background

The BLM is depicted schematically in Figure 2-1. The BLM is a tool that can mechanistically predict the bioavailability of a variety of metals under the wide range of water chemistry conditions that are observed in surface waters. The BLM is scientifically robust and defensible, user friendly, and freely available. BLMs have been developed for metals in both freshwater and saltwater environments. Windward

Environmental LLC (Windward) staff developed the BLM software that the EPA adopted as the basis of its 2007 nationally recommended freshwater AWQC for copper. The states of Oregon and Idaho have adopted the EPA 2007 copper AWQC statewide[1] and use the Windward BLM software. Other states have adopted the copper BLM on a more limited basis.

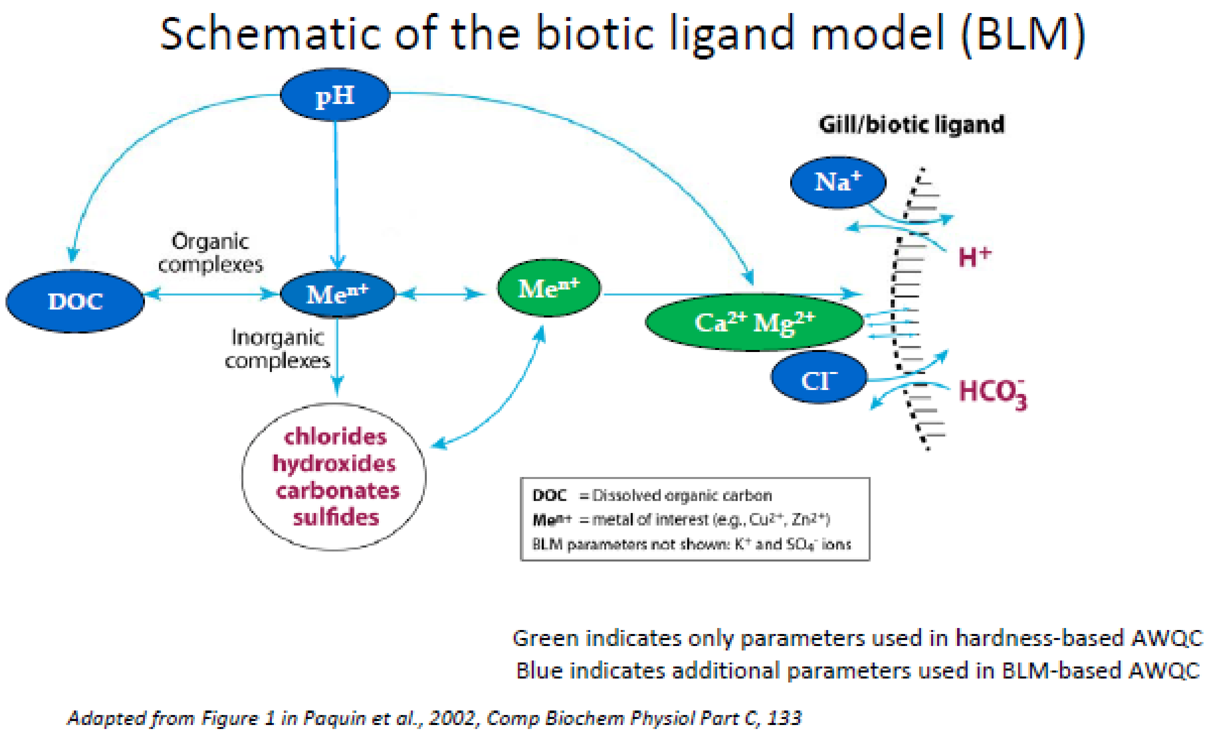

Figure 2-1.Schematic of the BLM

Several BLMs, including those for aluminum, lead, and zinc have been evaluated for potential use as water quality standards (e.g., Santore et al. 2018; DeForest et al. 2017; DeForest and Van Genderen 2012). In addition to generating AWQC consistent with EPA 1985 guidelines, the BLM software can also generate metal speciation data as well as predictions for a variety of toxicity endpoints for various organisms and metals.

The BLM executable program that drives the user-friendly Windows Interface version of the BLM software (available at: http://www.windwardenv.com/biotic-ligand-model/) can be used in batch mode (i.e., with a command prompt) to perform BLM calculations efficiently for large datasets. Coupled with a data analysis platform such

[1] Pursuant to ESA-related consultations on state WQS, EPA Region 10 required Oregon and Idaho to do away with hardness-based copper AWQC (EPA 1996 basis) and replace them, statewide, with EPA 2007 BLM-based AWQC for copper. As related to the 2012 National Marine Fisheries (NMFS) biological opinion (NMFS 2012), EPA did not approve the Oregon hardness-based copper AWQC (as well as other AWQC) in 2013 (EPA 2013). Similar ESA-related consultations in Idaho resulted in similar NMFS and EPA actions, leading to the 2015-2016 copper AWQC rulemaking and 2017 statewide adoption of copper BLM-based AWQC by Idaho.

as R (R Development Core Team 2010), the BLM executable provides a means to rapidly generate BLM outcomes (e.g., IWQC calculations, toxicity predictions for specific organisms/endpoints, or speciation calculations) for surface waters of interest. Such an approach, using the BLM in batch mode and R for analyses and graphics, was employed herein.

2.2 DESCRIPTION OF BLM INPUTS AND FUNCTIONS

Most metal BLMs, like the EPA 2007 copper BLM (EPA 2007), rely on 11 user inputs: pH, DOC, calcium, magnesium, sodium, potassium, sulfate, chloride, alkalinity, temperature, and percent humic acid (%HA). While %HA is an input parameter, measurements are not frequently available, so the BLM user's guide has recommended a default of 10% since EPA released the BLM-based copper AWQC in 2007 (HydroQual 2007; Windward 2015, 2017) Observed metals concentrations are not needed to generate BLM-based (or hardness-based) IWQC, because the IWQC depends only on the chemistry of the water of interest. Observed metals concentrations are needed for the purpose of generating toxic units[2] (TUs), which are the ratio of the observed metal concentration to the IWQC associated with a particular sample. The BLM user interface software generates TUs if user input is provided.

Observed metals concentrations are also needed to generate FMBs, which rely on distributions of observed metals and TUs. The FMB approach was first described in a 2008 report related to the approach's development and use in Colorado to address time-variable BLM-based IWQC (HydroQual 2008). EPA has been working on related FMB guidance (EPA 2012a), and more recent works further describe the FMB approach (Ryan et al. [in press]). The FMB approach is also mentioned as an implementation option in the Idaho and Oregon BLM-related copper AWQC documentation (McConaghie and Matzke 2016; IDEQ 2017).

Generally, measured concentrations in water samples that have been filtered through a 0.45-µm filter (i.e., operationally defined as dissolved concentrations) are used as BLM inputs. However, if it can be demonstrated that dissolved and total concentrations of BLM inputs are similar, then total (i.e., unfiltered) concentrations can be substituted if dissolved concentrations are not available for particular samples.

In addition to substitution approaches, it may be necessary to estimate concentrations for some BLM input parameters based on other measured parameters. However, this

[2] TUs are meant to describe the quotient of the measured metal concentration and the IWQC (e.g., [metal]/[IWQC]). This quantity can also be described as an exceedance factor (EF). Regardless of the term used to describe the quotient, it is intended to provide information about the relative magnitude of the measured metal concentration with respect to the IWQC. A value > 1 indicates that the metal concentration exceeds the IWQC magnitude, and a value < 1 indicates that the metal concentration is less than the IWQC magnitude. A TU > 1 does not by itself indicate a water quality standard violation, nor does it mean that toxicity has occurred or is likely to occur; the TU is intended as a frame of reference for initial decision making.

estimation approach is contingent upon a demonstration that such estimates are appropriate and defensible (e.g., calcium and magnesium may be estimated from hardness; DOC may be estimated from TOC; other cations or anions may be estimated from relationships with conductivity or specific conductance).

Another approach to substituting missing BLM inputs makes use of the ecoregion-specific "default" estimates proposed by EPA (2016). Such an approach is being used by the state of Oregon to generate "default" criteria for purposes of initial screening assessments (ODEQ 2016a, b; McConaghie and Matzke 2016), although based on state-specific datasets rather than the EPA 2016 values. In either case, this type of approach will only be considered during this evaluation if available data limitations are extensive. It is not anticipated that this type of approach will be necessary with the LANL dataset.

2.3 APPLICATION OF BLM-BASED AWQC

BLM-based AWQC are intended to be applied to ambient receiving waters subject to numeric criteria applicable to existing, designated, or attainable uses, such as those defined in 20.6.4.97 through 20.6.4.899 of the New Mexico Administrative Code (NMAC). While BLMs can be used to evaluate the potential toxicity of a particular discharge, BLM-based AWQC are not intended to be applied directly to discharges. The State of NM has only adopted EPA 2007 copper BLM-based AWQC as a SSWQC option in state water quality standards (20.6.4.10.D((4)(c) NMAC).

2.4 SURFACE WATERS OF THE PAJARITO PLATEAU IN THE LANL VICINITY

For the Pajarito Plateau waters in the vicinity of LANL, the NMED SWQB has assigned various AUs to particular groups of water bodies with designated aquatic life uses specified in 20.6.4.121, 126-128 NMAC. NMED's § 305(b) assessments have resulted in § 303(d) listings for a number of Pajarito Plateau AUs, especially those within or adjacent to LANL, determined to be impaired by metals such as aluminum, copper, and zinc (NMED 2012b, 2018).

The vast majority of water bodies in the LANL vicinity are classified as ephemeral or intermittent streams, which are designated for a limited aquatic life use (20.6.4.128 NMAC), so these water bodies are subject only to acute numeric criteria. Just a few water bodies in the area are classified as perennial waters with higher-level designated aquatic life uses that apply both acute and chronic criteria (e.g., Upper Sandia Canyon, and isolated segments of Canon de Valle and Pajarito canyons linked with springs; and Rio Frijoles in Bandelier National Monument [20.6.4.126 and 20.6.4.121 NMAC, respectively]).

A number of other water bodies outside of LANL but within greater Los Alamos County are not specifically classified in state standards, but are protected as default intermittent waters under 20.6.4.98 NMAC. These waters are designated with a marginal warm water aquatic life use, which in turn also applies both acute and chronic criteria. These waters are largely found in Pueblo, Bayo and Guaje Canyons and associated tributaries, as well as segments of Canon de Valle, Pajarito and Water canyons upstream of the LANL western boundary.

3 Data Quality Objectives

EPA's *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA 2006) will be used to establish DQOs. Per EPA, "The DQO Process is used to develop performance and acceptance criteria (or data quality objectives) that clarify study objectives, define the appropriate type of data, and specify tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions." Through DQO planning team involvement, the DQO process will systematically evaluate the problem, goals, and approach, as well as the intended use of the environmental data collected. EPA indicates that there are two primary types of intended use: decision making and estimation. The DQO process will identify the intended use and performance or acceptance criteria for the existing datasets provided by LANL necessary to meet the intended use.

The EPA DQO process is divided into the seven steps listed below:

1) State the problem.
2) Define study objectives.
3) Identify information inputs.
4) Define study boundaries.
5) Develop an analytical approach.
6) Specify performance and acceptance criteria.
7) Develop plan for obtaining data.

3.1 DQO Step 1: State the Problem

Current federal and certain state WQS lag behind scientific advances in understanding metal bioavailability. Therefore, decision making using existing WQS may lead to significant errors that either under- or over-protect aquatic environments.

Examples of scientific advancements that have yet to be implemented as regulatory policy include development of BLMs for several metals in addition to copper; EPA does not yet recommend these BLMs for use as AWQC. Mature BLMs that have been evaluated for potential use as AWQC, using guidelines for the derivation of AWQC (EPA 1985), include lead (DeForest et al. 2017) and zinc (DeForest and Van Genderen 2012). The aluminum BLM (Santore et al. 2018) and a MLR for aluminum (DeForest et al. 2018) have both been evaluated by EPA (2017) as potential tools to use for the derivation of aluminum AWQC.

These approaches characterize the influence of water chemistry on metal bioavailability, through either mechanistic (i.e., understanding chemical speciation and accounting for the effect of bioavailable species) or empirical (i.e., utilizing the direct relationships between water chemistry and observed effects) means, to predict the potential for adverse effects under various water chemistry conditions. Many current AWQC for metals consider water hardness as the only toxicity-modifying factor in surface waters; the failure to account for the effects of other toxicity-modifying factors (e.g., pH, DOC, alkalinity, etc.) may lead to AWQC that are not appropriately protective in the waters to which they are applied. In other words, outdated approaches could lead to false negative and false positive compliance decision-making errors, which might otherwise be alleviated or minimized by using the most current science: the BLM.

3.2 DQO Step 2: Identify Study Goals

3.2.1 Primary study goals

The study goals are:

- Identify and use appropriate data to generate BLM-based IWQC for locations on or around the Pajarito Plateau in the vicinity of LANL.
- Characterize the potential decision-making errors in using current state or EPA AWQC that might be eliminated or minimized by using BLM-based AWQC.
- Provide recommendations regarding potential use of the BLM for the derivation of SSWQC outcomes.

In addition to BLM-based AWQC, other approaches—such as the MLR for aluminum described by DeForest et al. (2018) for characterizing the effects of toxicity-modifying factors (other than hardness)—will be considered.

3.2.2 Possible outcomes from the study

If application of the BLM to waters of the state on the Pajarito Plateau in the vicinity of LANL indicates that current AWQC are under- or over-conservative, then stakeholders could consider the following:

1) Alternative 305(b) assessments using the BLM, which could lead to an alternative determination, wherein the BLM shows that application of NMAC AWQC leads to false positives, or conversely, supporting a 303(d) Category 5 listing wherein the BLM shows that application of NMAC AWQC leads to false negatives
2) Implementing BLM-based AWQC, such as via SSWQC for the Pajarito Plateau waters appropriately characterized

3) More broadly adopting BLM-based AWQC as statewide options subject to the "performance-based" approach recommended by EPA (Wilcut and Beaman 2015).

If BLM-based SSWQC are demonstrated to be feasible for surface waters on the Pajarito Plateau in the vicinity of LANL, communication regarding the appropriate use of the BLM and/or other bioavailability-based WQC approaches should be provided as next steps.

3.3 DQO Step 3: Identify Information Inputs

3.3.1 Types of information needed

The following types of data and information are needed:

- Sufficiently complete sets of BLM input parameters for discrete water sampling events for surface waters in the LANL vicinity. Table 3-1 provides information regarding the importance and use of each BLM input parameter.
- Data for related parameters such as TOC, hardness, conductivity, and specific conductance should also be compiled for the purpose of evaluating potential strategies for filling data gaps for BLM inputs.
- Water chemistry data used for BLM calculations should have an appropriate "pedigree:" a defined sampling plan, sampling and analytical methods, sample handling, and quality control (QC) review.
- Generally, BLM inputs refer to dissolved concentrations (i.e., in sample filtered through a 0.45-µm filter prior to analysis), because the chemical interactions characterized by the BLM do not consider solubility or the presence of solid phases (with the exception of amorphous aluminum hydroxide(s) when predicting effect concentrations for aluminum). However, total (i.e., unfiltered) concentrations for BLM inputs will be considered as substitutions for dissolved concentrations if these types of substitutions are supported by the data.
- Measured dissolved metals concentrations are necessary for copper, lead, and zinc so that TUs can be computed (a TU being the ratio of an observed dissolved metal concentration to IWQC generated for the water chemistry in that same sample).
- For aluminum, unfiltered ("UF," i.e., total) and filtered concentrations (using filter pore sizes of 10-, 1-, and 0.45-µm; denoted as F10, F1, and F or F0.45, respectively) will be used for comparisons with IWQC and for calculation of TU values corresponding to each sample preparation type. Preparing computations based on all four bases for aluminum (UF, F0.45, F1 and F10) will help illustrate the potential differences in outcomes for the various sample preparations currently under consideration (UF by EPA 2017, F10 by NMED, F1 by LANL as a potential improvement over F10, and F0.45 status quo "dissolved").

The data and information inputs described above will determine the number of BLM-based IWQC that can be generated for the particular waters that have sufficient data. The EPA's recommended default estimated BLM input values for local ecoregions will not be employed, but they may be used for relativistic comparisons that might be instructive when considering further extrapolation. Aggregation of the BLM input data will identify where data gaps exist. Simultaneous aggregation of data for other water chemistry characteristics (e.g., TOC, hardness, specific conductance, etc.) will allow for evaluation of potential strategies to fill data gaps while systematically documenting which events are affected by data substitutions. Documenting substitutions will facilitate the identification of uncertainties associated with BLM-based IWQC calculations.

Table 3-1. BLM input parameters

Parameter	Comments
Metal of interest (e.g., aluminum, copper, lead, zinc)	not necessary for calculation of IWQC, but necessary to calculate TUs (or exceedance factors)
Temperature	required for all BLMs
pH	necessary for speciation and competing ion; required for all BLMs
DOC	necessary for speciation; required for all BLMs[a]
%HA	typically assumed to be 10% per BLM User Guides (i.e., 10% of organic matter assumed to be humic acid); required for all BLMs
Calcium (Ca)	necessary as a competing ion; required for all BLMs[b]
Magnesium (Mg)	necessary as a competing ion; required for all BLMs[b]
Sodium (Na)	necessary as a competing ion; required for all BLMs[b]
Potassium (K)	necessary for charge balance; required for all BLMs[b]
Sulfate (SO_4)	necessary for charge balance; required for all BLMs[b]
Chloride (Cl)	necessary for charge balance; required for all BLMs[b]
Alkalinity	necessary for inorganic speciation calculations; required for all BLMs[c]

[a] Input for DOC is needed; if missing, fraction of TOC could be substituted, if relationship is demonstrated.

[b] Input for major ions is needed; if missing, could be estimated from hardness, conductivity, specific conductance, or location average, if relationships are identified or if substitution is deemed defensible (HydroQual 2007; EPA 2016).

[c] If missing, alkalinity can be estimated using pH and atmospheric carbon dioxide (HydroQual 2007).

%HA – percent humic acid
BLM – biotic ligand model
DOC – dissolved organic carbon
IWQC – instantaneous water quality criteria
TOC – total organic carbon
TU – toxic unit

3.3.2 Sources of information needed

The primary source of information for this evaluation will be surface water monitoring data collected by LANL. The data will be queried and extracted from LANL's Environmental Information Management (EIM) database. Data collected by NMED will not be used because they lack measured DOC data. In addition to data from

LANL, surface water data from the National Water Quality Monitoring Council (NWQMC) will be used to identify other relevant data for surface waters in the LANL vicinity and greater New Mexico area (e.g., the Rio Grande at Otowi Bridge, Rio Grande below Cochiti Dam, and Rio Grande at San Felipe). The NWQMC's data portal consolidates water quality data from EPA's STORET database, the US Geological Survey's (USGS's) National Water Information System database, and the US Department of Agriculture's (USDA's) STEWARDS database (https://www.waterqualitydata.us/wqp_description/).

3.4 DQO Step 4: Define Study Boundaries

3.4.1 Temporal boundaries

The temporal boundaries associated with this effort will be determined by the time periods over which sufficiently complete BLM input data exist for surface waters in the LANL vicinity. If supplemental data are obtained for additional waters within the LANL vicinity (e.g., the Rio Grande), the temporal boundaries associated with those data will be dictated by national water monitoring programs at various historical and current monitoring locations. Surface water sampling events can be either some form of dry weather baseflow (springs, snowmelt) or wet weather stormflow generated by rainfall; both baseflow and stormflow can be sampled by one or more of LANL's storm water monitoring programs.

Regarding appropriate application of IWQC calculations for AWQC durations, the temporal nature of the receiving water will be considered. Acute IWQC will be relevant for all locations that are considered ephemeral, intermittent, or perennial waters. Chronic IWQC will be relevant only for defined perennial waters in the area: Frijoles in Bandelier [20.6.4.121 NMAC] and perennial waters within LANL [20.6.4.126 NMAC]. If usable data are available, chronic IWQC may also be evaluated for the effluent-dependent waters in upper Sandia Canyon and lower Pueblo Canyon as they relate to the discharges from the LANL wastewater outfall 001, and Los Alamos County wastewater treatment plant, respectively.

3.4.2 Spatial boundaries

BLM-based IWQC will be generated for each of the surface water locations in the LANL vicinity that have usable datasets. These locations are generally similar to those identified in the 2017 sampling and monitoring supplemental environmental project (SEP) DQOs (LANL 2017a). The locations are expected to represent a broad array of surface waters that include the major and minor watersheds on the Pajarito Plateau in the LANL vicinity. LANL has already characterized the watersheds associated with many sampling locations as predominated by either developed or undeveloped characteristics. Sampling locations within some of the developed watersheds have been designated as "Site," because they are downstream from actual or potential storm water runoff from solid waste management units and areas of concern regulated under LANL's NPDES individual permit.[3]

Numerous locations within undeveloped watersheds have been sampled extensively as part of past efforts to characterize natural background concentrations of various constituents stemming from upstream locations, i.e., the LANL western boundary, and Northern Reference Watersheds(LANL 2014, 2013, 2012). In addition, more recent sampling programs were develop to characterize additional natural background reference locations further removed and upwind from LANL activity, i.e., the new SEP Reference Watershed monitoring commenced in 2017(LANL 2017a). Where usable data exist, BLM-based IWQC will be generated for nearby perennial waters where the USGS operates monitoring stations (e.g., Rio Grande River).

3.5 DQO Step 5: Develop Analytical Approach

The source dataset will be provided by LANL, based on a query of the LANL EIM database constructed to provide all available records for the following:

1) BLM analytes, starting with pH & DOC pairs
2) Secondary analytes that can aid in filling data gaps and further interpretation of the BLM dataset and outcomes
3) Water sample types including surface water (WS), snowmelt (WM), persistent flow (WP), and storm water (WT)
4) Sampling location names, aliases, and coordinates for known surface waters
5) QC and other information available from EIM

LANL staff will provide additional information about sample locations (e.g., developed/undeveloped landscape designations, major/minor watershed names). LANL staff will also identify data potentially affected by wild fires; fire-affected data will not be removed but will be plotted separately in various evaluations to help visualize potential anomalies.

The LANL dataset will be aggregated and evaluated to determine the extent to which BLM-based IWQC can be generated for each discrete event for the locations provided. Initial dataset aggregation will be intended to identify the number of complete BLM scenarios that can be considered, as well as the number of data gaps present. Subsequent to initial dataset aggregation, strategies to fill data gaps will be evaluated.

For the purpose of calculating BLM-based IWQC, a measurement of pH and organic carbon for each sampling event will be required (either measured DOC or an

[3] Collectively, LANL refers to storm water management units (SWMUs) and areas of concern (AOCs) as "Sites" (with a capital "S").

appropriate estimate of DOC calculated from measured TOC). Steps for establishing BLM inputs for any sampling event include:

1) With the exception of alkalinity, DOC, and pH, determine measured concentrations of each input from filtered samples for each event.
2) If measured concentrations are not available from filtered samples, determine if measured concentrations are available from an unfiltered sample from the same event, and evaluate if those data can be used to determine estimates.
3) If measured concentrations are not available from filtered or unfiltered samples, determine if BLM input can be estimated from another water chemistry characteristic (e.g., hardness or specific conductance).
4) If measured concentrations are not available from filtered or unfiltered samples, determine if a location-specific estimate (e.g., location average) can be used as an estimate.
5) If no data are available for a BLM input, determine if regional information can be used.
6) If no data are available for a BLM input, and regional information are not available or suitable, perform a sensitivity analyses to identify an appropriately conservative input value (this may be most appropriate for temperature).

During data aggregation and summary, supporting information will be provided to demonstrate the adequacy and defensibility of strategies used to fill data gaps. It is known that temperature data are missing for the entire dataset, so a uniform temperature will need to be assumed, and a sensitivity analysis will need to be performed across the range of BLM calibration temperatures, e.g., 10 to 25 °C specified in the BLM user's guides (HydroQual 2007; Windward 2015).

Detection statuses of analyte concentrations will be considered during data aggregation, and BLM inputs will be treated differently than the metals of interest (i.e., aluminum, copper, lead, and zinc). For BLM input parameters, concentrations that are flagged as below detection limit (BDL) or not detected will be replaced by ½ of the reported detection limit (DL). Because a zero concentration is not allowed as an input to the BLM, a substitution approach using ½ of the reported DL is reasonable, as other approaches (e.g., maximum likelihood estimation and regression on order statistics) are not appropriate for discrete samples. When the concentration of a metal of interest is reported as BDL, the DL will be used and the sample will be flagged as BDL. This convention is used so that comparisons between metal concentrations and associated IWQCs will be conservative. Generally, concentrations of BLM inputs are not often affected by detection limits, whereas metals concentrations are affected more frequently.

Using the aggregated data, IWQC will be generated for each metal considered using the approaches described in Table 3-2, summarized as follows:

- Aluminum:
  - BLM-based chronic (and potentially acute) WQC using Santore et al. (2018)
  - MLR-based acute AWQC using EPA (2017) [4]
  - Hardness-based acute WQC using NMAC.20.6.4.900(I)
- Copper:
  - BLM-based acute AWQC using (EPA 2007)
  - Hardness-based acute WQC using NMAC. 20.6.4.900(I)
- Lead:
  - BLM-based acute AWQC using DeForest et al. 2017
  - Hardness-based acute WQC using NMAC. 20.6.4.900(I)
- Zinc
  - BLM-based acute AWQC using DeForest and Van Genderen (2012)
  - Hardness-based acute WQC using NMAC.20.6.4.900(I)

The relevant BLMs will be applied to the aggregated BLM input dataset using the BLM binding constants provided in Table 3-3, which represent the strength of binding of bioavailable metal species and competing cations to the biotic ligand. Reactions at the biotic ligand are characterized as equilibrium complexation reactions at a toxicologically relevant surface (e.g., gill surface), facilitating the competitive interactions among metal species and competing cations. The BLM parameter descriptions for copper, lead, and zinc are taken directly from EPA (2007), DeForest et al. (2017), and DeForest and Van Genderen (2012), respectively. For aluminum, the BLM description in Table 3-3 represents calibration to chronic toxicity data and is taken directly from Santore et al. (2018). A conservative translation of chronic aluminum IWQC to acute aluminum IWQC will be performed using an acute-to-chronic ratio (ACR) derived from EPA (2017). If resources are sufficient to apply the chronic aluminum BLM to the acute AWQC dataset described by EPA (2017), a direct calculation of acute aluminum IWQC may be performed using the aluminum BLM described by Santore et al. (2018).

[4] The EPA (2017) MLR approach uses the following equations from DeForest et al. (2018) to normalize the acute and chronic species sensitivity distributions for aluminum to facilitate calculation of WQC:

Normalized Invertebrate ECX =

$$exp^{(\ln(ECX_{meas})-0.525*(\ln(DOC_{meas})-\ln(DOC_{site}))-11.282*(pH_{meas}-pH_{site})-2.201*(\ln(hardness_{meas})-\ln(hardness_{site}))+0.663*(pH^2_{meas}-pH^2_{site})+0.264*(pH_{meas}*\ln(hardness_{meas})-pH_{site}*\ln(hardness_{site})))}$$

Normalized Vertebrate ECX =

$$exp^{(\ln(ECX_{meas})-0.503*(\ln(DOC_{meas})-\ln(DOC_{site}))-3.131*(pH_{meas}-pH_{site})-3.443*(\ln(hardness_{meas})-\ln(hardness_{site}))+0.494*(pH_{meas}*\ln(hardness_{meas})-pH_{site}*\ln(hardness_{site})))}$$

Table 3-2. AWQC calculation approaches

Metal	Approach	Description	Reference
Aluminum	aluminum BLM	mechanistic characterization of dissolved and precipitated aluminum bioavailability	Santore et al. (2018)
	New Mexico WQC	hardness equation	NMAC.20.6.4.900(I)
	draft EPA WQC	MLR with pH, DOC, hardness	EPA (2017)
Copper	BLM	EPA-recommended WQC	EPA (2007)
	New Mexico WQC (= EPA 1996 WQC)	hardness equation	NMAC.20.6.4.900(I)
Lead	BLM	mechanistic characterization of dissolved lead bioavailability	DeForest et al. (2017)
	New Mexico WQC (= EPA 1996 WQC)	hardness equation	NMAC.20.6.4.900(I)
Zinc	BLM	mechanistic characterization of dissolved zinc bioavailability	DeForest and Van Genderen (2012)
	New Mexico WQC	hardness equation	NMAC.20.6.4.900(I)

BLM – biotic ligand model
DOC – dissolved organic carbon
EPA – US Environmental Protection Agency
MLR – multiple linear regression
NMAC – New Mexico Administrative Code
WQC – water quality criteria

The hardness- and MLR-based equations for aluminum AWQC described above, will also be applied to the BLM input dataset. For all approaches utilizing hardness to generate IWQC, hardness will be either the value reported for filtered samples, or the value calculated based on calcium and magnesium concentrations reported for filtered samples.

Where suitable observed metal concentrations are available (i.e., dissolved concentrations for copper, lead, and zinc; total and dissolved concentrations for aluminum), they will be compared to calculated IWQC. These comparisons will be made by calculating a TU (or quotient of the reported metal concentration and the IWQC) for each approach that is used to calculate IWQC (e.g., hardness-, MLR-, or BLM-based). When a metal concentration is flagged as BDL and is then compared to a calculated IWQC by determination, the TU will be described as less than the calculated value.

Table 3-3. BLM-binding constants for copper, lead, zinc, and aluminum

Biotic Ligand Model Parameter	Copper (EPA 2007)	Lead (DeForest et al. 2017)	Zinc (DeForest and Van Genderen 2012)	Aluminum (Santore et al. 2018)
Biotic ligand (BL) reactions with specified chemical constituent; logarithm of equilibrium constant is shown (i.e., Log K)[a]				
BL-H	5.4	4	6.39	5.4
BL-Ca	3.6	5.1	3.82	4.8
BL-Mg	3.6	4	3.31	
BL-Na	3	4.2	2.59	3.3
BL-Cu	7.4	X	X	X
BL-CuOH	-1.3	X	X	X
BL-Pb	X	6.65	X	X
BL-PbOH	X	-0.4	X	X
BL-Zn	X	X	5.41	X
BL-ZnOH	X	X	-2.4	X
BL-Al	X	X	X	4.4
BL-AlOH	X	X	X	-1.9
BL-Al(OH)$_2$	X	X	X	-7.75
BL-Al(OH)$_4$	X	X	X	-21
BL-AlF	X	X	X	8.5
Sensitivity parameters for calculating 5th percentiles of genus sensitivity distributions[b]				
Acute critical accumulation (nmol/gw)	0.03395	0.0628	5.388	na
Chronic critical accumulation (nmol/gw)	X	0.000341	0.345	na
ACR ratio (if used)	3.22	X	X	5

a Log K represents the overall formation of the biotic ligand (BL) complex indicated. For example: $BL^- + Cu^{2+} + OH^- = BL\text{-}CuOH$; Log K = -1.3.

b Acute and chronic critical accumulation values represent the amount of metal required at the biotic ligand to elicit an effect commensurate with the 5th percentile of the acute or chronic genus sensitivity distribution.

ACR – acute-to-chronic ratio na – not applicable gw – grams wet weight

The calculated TUs will be used as a basis for evaluating the frequency of decision errors that may be encountered when using a hardness-based IWQC approach vs. a BLM-based IWQC approach. To evaluate potential decision error frequencies among the various AWQC bases, a quadrant diagram will be used (Figure 3-1). Such diagrams provide a simple summary of the relative differences among potential outcomes, and the magnitude of those differences when using different approaches to generate IWQC.

- TUs plotted in the lower right quadrant indicate a "false positive" where TUs are > 1 based on hardness but < 1 based on the BLM[5].
- TUs plotted in the upper left quadrant indicate a "false negative" where TUs are < 1 based on hardness, but > 1 based on the BLM.
- TUs plotted in the upper right and lower left quadrants indicate equivocal results (exceedances and non-exceedances, respectively).
- Perfect agreement between the two outcomes would be indicated by data points falling on the 45 degree line intersecting the origin (where the TU axes cross at values of 1).
- Relative discord between outcomes increases logarithmically as data points fall further from the 45 degree line. In other words, besides decision errors, tendencies towards incipient errors can also be visualized rapidly using quadrant plots like Figure 3-1.

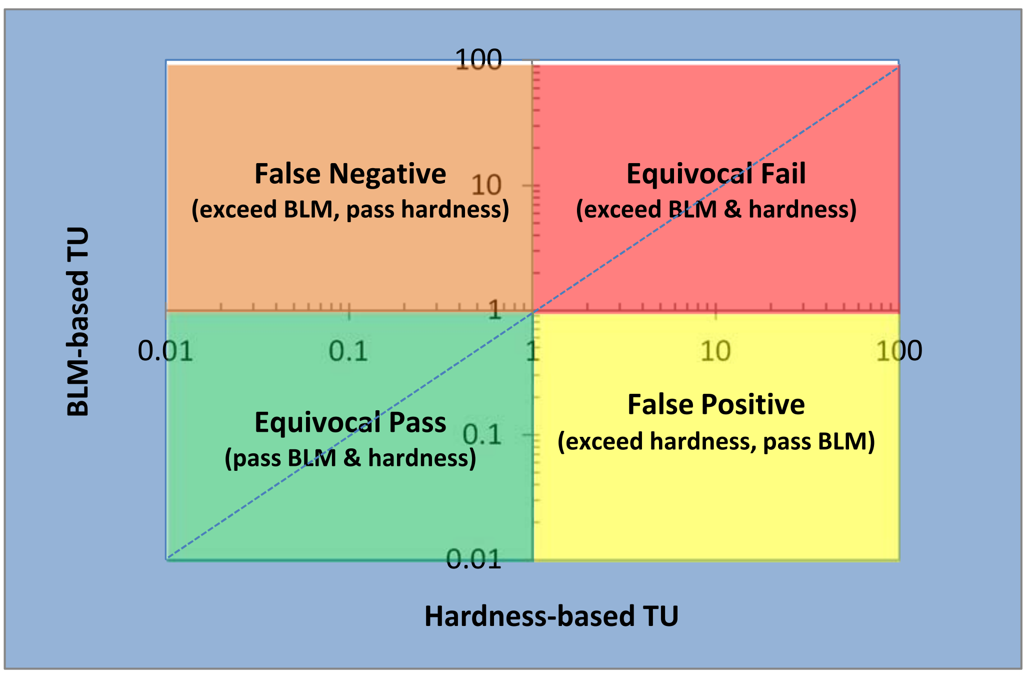

Figure 3-1.TU quadrant diagram for evaluating decision error frequency and magnitudes

In addition to the simple comparisons of various IWQC approaches, TUs can be used with reported concentrations and IWQCs to calculate FMBs for a given location (Ryan et al. [accepted]). An FMB for a given location is intended to provide a benchmark

[5] For aluminum, TU quadrant diagrams will also be used to compare the EPA 2017 MLR-based IWQC with hardness-based IWQC.

that, if not exceeded, is an indicator of WQC attainment. An FMB has potential utility as a SSWQC when IWQC time variability needs to be taken into account but is contingent upon the availability of a sufficient number of BLM datasets with BLM inputs and concurrent observed metals data.

With respect to the number of samples needed for calculation of FMBs, a definitive number of samples necessary is not known *a priori*. FMB calculations are affected by the variability of measured metal concentrations and calculated IWQCs, and their correlation. For the purpose of generating initial FMBs, calculations will only be performed when ten or more paired metal and IWQC observations are available for a particular location (or other relevant level of spatial scale). The FMB approach was originally developed for discrete locations (e.g. those downstream from a wastewater outfall), but aggregation of locations among AUs will be considered for this project, as well as potential larger spatial scales (watersheds) and different temporal scales (base flow vs. storm flow).

3.6 DQO Step 6: Specify Performance and Acceptance Criteria

The performance and acceptability of the BLM-based IWQC results will be primarily based on whether sufficient water chemistry data are available to generate BLM-based IWQC for the locations of interest. If data substitutions or estimates are necessary for the most important/sensitive BLM inputs (pH & DOC), the results of the BLM will be qualified as uncertain.

Performance criteria include:

- BLM- and other bioavailability-based WQC calculations should be performed only when pH and organic carbon (preferably DOC, but substitution based upon TOC may be appropriate) are measured for the same water sampling event.
- Substitution or estimation of other missing BLM input parameters should be supported by available data (e.g., relationship between dissolved and total concentration of input parameter).
- To evaluate potential decision errors based on various approaches for calculating WQC, measured metal concentrations must be available so that TUs can be calculated.
- To use the FMB approach to derive potential site-specific benchmarks, a sufficient number of TUs should be available (sufficient number depends on behavior of the data [i.e., distributions, correlations, variability]).

Acceptance criteria include:

- Sampling locations should be verified as surface waters (i.e., lying on NMED SWQB AUs) and not direct storm water discharges from developed areas.
- Data used for calculations should be validated.

- Models used for calculations should be applicable and defensible for the purpose of calculating WQC.
- Uncertainty should be characterized qualitatively and quantitatively (where possible) for decision making.

3.7 DQO Step 7: Develop Plan for Obtaining Data

Surface water data, including BLM inputs, have been collected by LANL at a variety of locations since 2005. Routine monitoring for BLM inputs appears to have begun in 2013 at many additional locations. To perform the analyses described above, water quality data associated with receiving water samples collected by LANL were requested in January 2018. Data were queried by LANL staff from LANL's EIM database and provided in Excel format. Supplemental water quality data for the Rio Grande and other locations of potential interest will be obtained from the water quality portal: https://www.waterqualitydata.us/wqp_description/

4 Data Quality Assessment

This section describes the results of the DQA for the BLM dataset provided by LANL. A dataset, consisting of 95,743 records for various analytes (including BLM inputs) from 66 different locations was provided by LANL. This dataset was generated by a number of LANL monitoring programs that are understood to have had specific sampling plans and data quality comparable to those evaluated in LANL's recent sampling and monitoring SEP DQO/DQA (LANL 2018a, 2017a).

The LANL BLM dataset comprised 48 locations[6], which were surface water sampling locations known or believed to represent many surface water AUs recognized by the NMED SWQB. LANL provided the list of sampling locations with additional information that was used for these determinations[7] (Table 4-1). The 48 surface water sampling locations in the LANL BLM dataset represent two distinct groups: 1) 12 surface waters with watersheds outside of, or upstream from the LANL facility and Los Alamos town site ("undeveloped" landscape type in Table 4-1), and 2) 36 surface waters within or downstream from the LANL facility and Los Alamos town site and other unincorporated areas of Los Alamos County ("Site" landscape type in Table 4-1).

[6] Data provided by LANL for 18 locations were excluded from the BLM dataset because they represented storm water discharge locations deemed inappropriate for the application of AWQC, i.e., they are not sampling locations in surface water AUs

[7] Sample location names were simplified by Windward to aid evaluations and plotting (the more information-rich mnemonics were selected between choices of Location ID and Location Alias).Windward also used GIS tools to measure distances to the nearest AU (based on NMED shapefiles for AUs.) In many cases in Table 4-1, the distances are considerable because sampling locations on small tributaries are well-removed from the mapped AU main stems.

Of the 12 upstream/offsite locations, 7 locations have been characterized as "natural background" locations[8] in various LANL reports that have characterized background water quality conditions(LANL 2007, 2010b, 2013, 2014, 2015, 2017b, 2018a), four locations are being characterized as part of the SEP[9], and 1 location is in Bandelier National Monument (E350). The 36 downstream locations ("Site" landscape type in Table 4-1) are some of the numerous gaging stations operated by LANL with relatively long periods of water quality and discharge monitoring data. All surface water sampling locations with sufficient BLM datasets, as described below, are shown in Plate 1.

In addition to results for the LANL dataset, supplemental BLM datasets from the NWQMC database for locations in New Mexico were acquired and evaluated. This dataset included data for a total of 18 locations in New Mexico, but most locations, with the exception of those from the Rio Grande, contained ≤ 5 complete BLM sampling events. Thus, the BLM evaluations will focus on the five Rio Grande locations.

[8] E026, E240, E252, Guaje-REF-2, BAND-REF-3, BAND-REF-4, WR-REF-3

[9] The four SEP reference watershed locations are designated in Table 4-1 with location IDs beginning with "SEP".

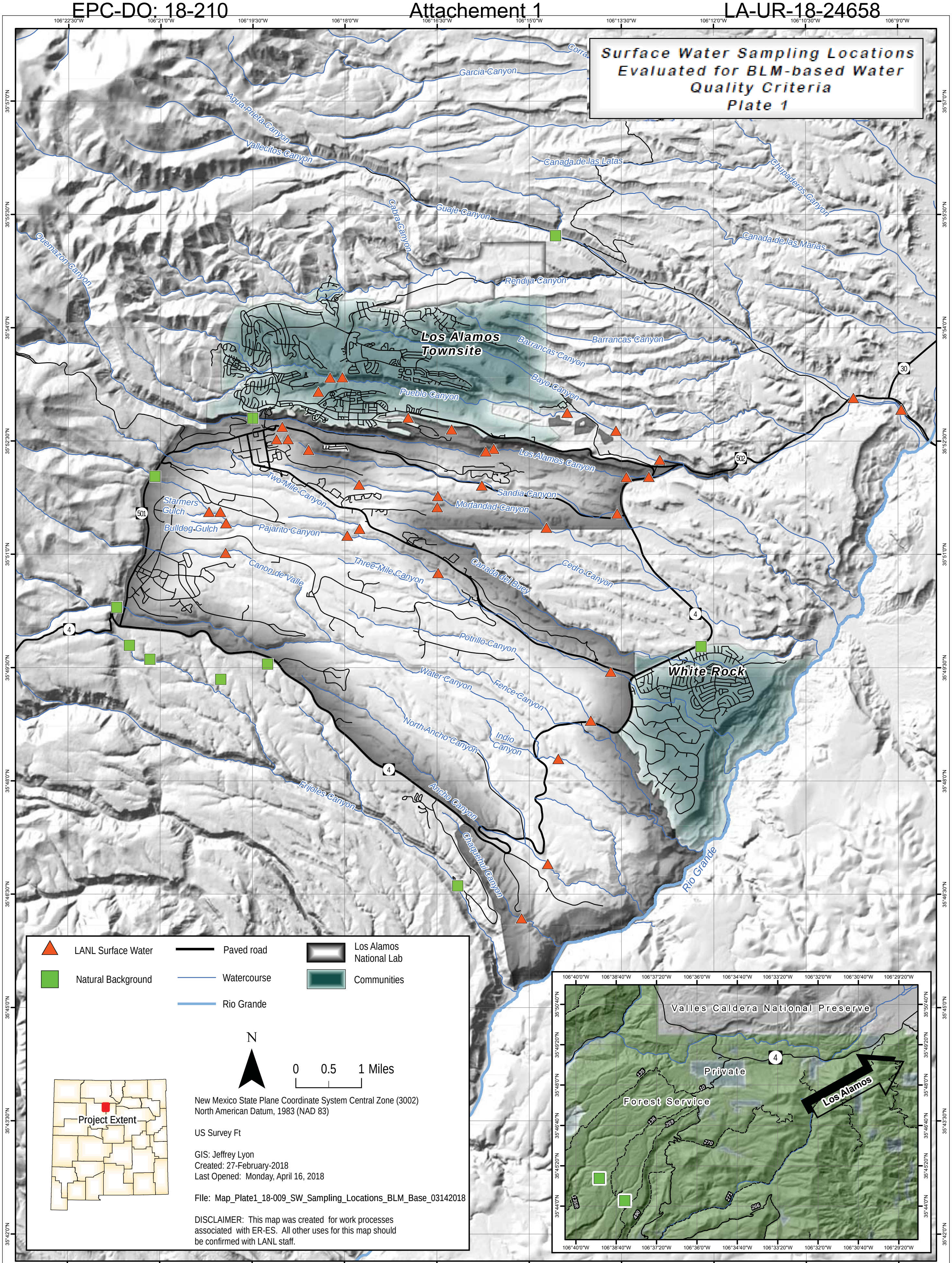
Surface Water Sampling Locations Evaluated for BLM-based Water Quality Criteria Plate 1
Los Alamos Townsite
White Rock
Garcia Canyon
Agua Prieta Canyon
Vallecitos Canyon
Canada de las Latas
Chupaderos Canyon
Cabra Canyon
Guaje Canyon
Canada de las Marias
Quemazon Canyon
Rendija Canyon
Barrancas Canyon
Pueblo Canyon
Bayo Canyon
Los Alamos Canyon
Two-Mile Canyon
Sandia Canyon
Starmers Gulch
Mortandad Canyon
Bulldog Gulch
Pajarito Canyon
Canon de Valle
Three-Mile Canyon
Canada del Buey
Cedro Canyon
Potrillo Canyon
Water Canyon
Fence Canyon
North Ancho Canyon
Indio Canyon
Frijoles Canyon
Ancho Canyon
Chaquehui Canyon
Rio Grande
LANL Surface Water
Natural Background
Paved road
Watercourse
Rio Grande
Los Alamos National Lab
Communities
N
0 0.5 1 Miles
Project Extent
New Mexico State Plane Coordinate System Central Zone (3002)
North American Datum, 1983 (NAD 83)
US Survey Ft
GIS: Jeffrey Lyon
Created: 27-February-2018
Last Opened: Monday, April 16, 2018
FIle: Map_Plate1_18-009_SW_Sampling_Locations_BLM_Base_03142018
DISCLAIMER: This map was created for work processes associated with ER-ES. All other uses for this map should be confirmed with LANL staff.
Valles Caldera National Preserve
Private
Forest Service
Los Alamos

Table 4-1. BLM evaluation locations

Location ID	Location ID Alias	Windward ID	Major Watershed	Minor Watershed	Landscape	Fire-affected Watershed	Y Axis	X Axis	Water Type	NMAC Class	Hydrology (E/I/P)	Nearest AU	Nearest AU Distance (ft)	Notes
Acid above Pueblo	E056	E056	Pueblo	Acid	site	no	1778790.921	1624431.601	surface water	98	intermittent	NM-97.A_002	54	
South Fork of Acid Canyon	E055.5	E055.5	Pueblo	Acid	site	no	1777746.088	1623467.575	surface water	98	intermittent	NM-97.A_029	11	
Ancho below SR-4	E275	E275	Ancho	Ancho	site	not determined	1739818.299	1641902.732	surface water	128	E/I	NM-9000.A_054	52	
La Delfe above Pajarito	E242.5	E242.5	Pajarito	Arroyo de la Delfe	site	yes	1767185.074	1616053.533	surface water	128	E/I	NM-128.A_16	17	
Canon de Valle below MDA P	E256 Canon de Valle below MDA P	E256	Water	Cañon de Valle	site	yes	1764811.076	1616017.769	surface water	126	perennial	NM-126.A_00	50	
Chaquehui at TA-33	E338	E338	Chaquehui	Chaquehui	site	not determined	1735450.235	1639792.836	surface water	128	E/I	NM-128.A_03	2.5	
DP above Los Alamos Canyon	E040	E040	Los Alamos	DP	site	yes	1773169.199	1637555.718	surface water	128	E/I	NM-128.A_10	32	
DP above TA-21	E038	E038	Los Alamos	DP	site	yes	1775660.775	1630683.66	surface water	128	E/I	NM-128.A_14	19	
DP below grade ctrl structure	E039.1	E039.1	Los Alamos	DP	site	yes	1774716.075	1634183.14	surface water	128	E/I	NM-128.A_10	9	
Guaje at SR-502	E099	E099	Los Alamos	Guaje	site	yes	1777248.77	1666451.92	surface water	98	intermittent			no AU in lower Guaje in Pueblo land
Los Alamos above DP Canyon	E030	E030	Los Alamos	Los Alamos	site	yes	1772912.232	1637449.1	surface water	128	E/I	NM-9000.A_063	41	
Los Alamos above low-head weir	E042.1	E042.1	Los Alamos	Los Alamos	site	yes	1770891.744	1648209.644	surface water	128	E/I	NM-9000.A_006	26	
Los Alamos above Rio Grande	E1099	E1099	Los Alamos	Los Alamos	site	yes	1776310.43	1670298.54	surface water	98	intermittent			no AU in lower Los Alamos Cyn in Pueblo land
Los Alamos below low-head weir	E050.1	E050.1	Los Alamos	Los Alamos	site	yes	1770920.631	1650021.007	surface water	128	E/I	NM-9000.A_006	17	
Mortandad above Ten site	E201	E201	Mortandad	Mortandad	site	no	1769370.925	1633074.678	surface water	128	E/I	NM-9000.A_042	38	
Mortandad at LANL Boundary	E204	E204	Mortandad	Mortandad	site	no	1766832.164	1641803.501	surface water	128	E/I	NM-9000.A_042	17	
Mortandad below Effluent Canon	E200	E200	Mortandad	Mortandad	site	no	1770288.738	1626750.385	surface water	128	E/I	NM-9000.A_042	44	
Pajarito above SR-4	E250	E250	Pajarito	Pajarito	site	yes	1755252.105	1646963.683	surface water	128	E/I	NM-128.A_08	63	
Pajarito above Starmers	E241	E241	Pajarito	Pajarito	site	yes	1768103.439	1614687.844	surface water	128	E/I	NM-128.A_07	38	
Pajarito above Threemile	E245.5	E245.5	Pajarito	Pajarito	site	yes	1763183.035	1633089.654	surface water	128	E/I	NM-128.A_08	38	
Pajarito above Twomile	E243	E243	Pajarito	Pajarito	site	yes	1766185.42	1625793.513	surface water	128	E/I	NM-128.A_06	148	
Potrillo above SR-4	E267	E267	Water	Potrillo	site	yes	1751323.246	1645352.039	surface water	128	E/I	NM-128.A_09	197	
Pueblo below GCS	E060.1	E060.1	Pueblo	Pueblo	site	no	1772289.42	1650902.66	surface water	128	E/I	NM-99.A_001	612	
E059.5 Pueblo below LAC WWTF	E059.5	E059.5	Pueblo	Pueblo	site	no	1776062.519	1643469.866	surface water	98	intermittent	NM-99.A_001	13	EDW
E059.8 Pueblo Below Wetlands	E059.8	E059.8	Pueblo	Pueblo	site	no	1774623.8	1647376.832	surface water	98	intermittent	NM-99.A_001	85	EDW
Pueblo above Acid	E055	E055	Pueblo	Pueblo	site	no	1778877.63	1624411.282	surface water	98	intermittent	NM-97.A_002	3	
Sandia above Firing Range	E124	E124	Sandia	Sandia	site	no	1770215.618	1636600.69	surface water	128	E/I	NM-128.A_11	194	
Sandia above SR-4	E125	E125	Sandia	Sandia	site	no	1767966.131	1647472.056	surface water	128	E/I	NM-128.A_11	15	

Location ID	Location ID Alias	Windward ID	Major Watershed	Minor Watershed	Landscape	Fire-affected Watershed	Y Axis	X Axis	Water Type	NMAC Class	Hydrology (E/I/P)	Nearest AU	Nearest AU Distance (ft)	Notes
Sandia below Wetlands	E123	E123	Sandia	Sandia	site	no	1773067.617	1622687.147	surface water	126	perennial	NM-9000.A_047	83	EDW, AU delineation begins downstream
Sandia left fork at Asph Plant	E122	E122.LFat AP	Sandia	Sandia	site	no	1773922.43	1620119.01	surface water	126	perennial	NM-9000.A_063	1,577	EDW, AU delineation begins downstream
Sandia right fork at Pwr Plant	E121	E121	Sandia	Sandia	site	no	1773840.385	1620124.03	surface water	126	perennial	NM-9000.A_063	1,659	EDW, AU delineation begins downstream
South Fork of Sandia at E122		E122.SF	Sandia	Sandia	site	no	1773924.5	1620114.1	surface water	126	perennial	NM-9000.A_063	1,575	EDW, AU delineation begins downstream
Starmers above Pajarito	E242	E242	Pajarito	Starmers	site	yes	1767983.726	1614644.252	surface water	128	E/I	NM-126.A_01	7	
Ten site above Mortandad	E201.5	E201.5	Mortandad	Tensite	site	no	1768470.302	1633024.952	surface water	128	E/I	NM-128.A_17	5	
Twomile above Pajarito	E244	E244	Pajarito	Twomile	site	yes	1766733.695	1626782.28	surface water	128	E/I	NM-128.A_15	68	
Water below SR-4	E265	E265	Water	Water	site	yes	1748258.527	1642753.28	surface water	128	E/I	NM-128.A_13	12	
Rio de los Frijoles at Band	E350	E350	Frijoles	Frijoles	undeveloped	yes	1738080.2	1634678.6	surface water	121	perennial	NM-2118.A_70	21	
Los Alamos below Ice Rink	E026	E026	Los Alamos	Los Alamos	undeveloped	yes	1775624.331	1618215.135	surface water	128	E/I	NM-9000.A_063	33	
Pajarito below SR-501	E240	E240	Pajarito	Pajarito	undeveloped	yes	1770945.505	1610350.084	surface water	128	E/I	NM-128.A_07	87	
BAND-REF-3	BAND-REF-3 at RF15BAND03	BAND-REF-3	Frijoles	Frijoles	undeveloped	yes	1757405.797	1608295.878	surface water	98	intermittent	NM-126.A_03	2,362	small trib to Frijoles mainstem AU
BAND-REF-4	BAND-REF-4 at RF15BAND04	BAND-REF-4	Frijoles	Frijoles	undeveloped	yes	1755871.917	1619402.965	surface water	98	intermittent	NM-128.A_13	1,177	small trib to Frijoles mainstem AU
SEP-REF-BM1 at RF17BM01		SEP-REF-BM1	Frijoles	Frijoles	undeveloped	yes	1754660.819	1615636.458	surface water	98	intermittent	NM-128.A_13	3,736	small trib to Frijoles mainstem AU
SEP-REF-P1 at RF17P01		SEP-REF-P1	Frijoles	Frijoles	undeveloped	yes	1756279.877	1609944.04	surface water	98	intermittent	NM-126.A_03	3,018	small trib to Frijoles mainstem AU
RF09GU02	GUAJE-REF-2	GUAJE-REF-2	Los Alamos	Guaje	undeveloped	yes	1790296.6	1642533.5	surface water	98	intermittent	NM-9000.A_005	10	
SEP-REF-SJM1 at RF17SJM01		SEP-REF-SJM1	Jemez River	Jemez River	undeveloped	no	1728030.12	1520615.217	surface water	98	intermittent	NM-2105.5_10	13,879	small trib to distant Jemez River AU
SEP-REF-SJM4 at RF17SJM04		SEP-REF-SJM4	Jemez River	Jemez River	undeveloped	no	1723545.512	1524751.695	surface water	98	intermittent	NM-2105.5_21	8,722	small trib to distant Jemez River AU
WR-REF-3 at RF13WR03	172 Meadow Lane	WR-REF-3	Mortandad	Mortandad	undeveloped	no	1757295.268	1654224.752	surface water	98	intermittent	NM-9000.A_053	1,429	small trib to Canada del Buey AU
Water above SR-501	E252	E252 up	Water	Water	undeveloped	yes	1760451.049	1607279.987	surface water	98	intermittent	NM-9000.A_052	76	

AU – assessment unit
BLM – biotic ligand model
DOE – Department of Energy
E – ephemeral
EDW – effluent-dominated water
I – intermittent
ID – identification
LANL – Los Alamos National Laboratory
NMAC – New Mexico Administrative Code
NMED – New Mexico Environment Department
P – perennial
Windward – Windward Environmental LLC
WWTF – wastewater treatment facility

4.1 DATA AGGREGATION AND EVALUATION

Initial data processing for the aggregation of BLM input data focused on summarizing analyte concentrations on the basis of a single location and date combination. As specified in Section 3.5, a requirement for BLM calculations was that a pH and DOC measurement had to be associated with a sample collected at the same location on the same day (or within a 24-hour period, or otherwise associated with a given sampling event). Among the 1,142 initial location-date pairings (i.e., events) in the BLM dataset, there were only 4 instances of pH (from a filtered sample) combined with DOC (from a filtered sample). After working through the steps specified in Section 3.5 for establishing BLM inputs, the following number of events were sequentially aggregated:

- 331 potential events total after including 227 events with pH from unfiltered samples and DOC from filtered samples
- 464 potential events after including 133 other events with representations or estimates of DOC
  - 1 event for which DOC was reported for an unfiltered sample
  - 3 events for which TOC was reported for a filtered sample
  - 129 events for which DOC was estimated from TOC
- 463 potential events after including representations of alkalinity
  - 132 events for which alkalinity was reported for a filtered sample
  - 331 events for which alkalinity was reported for an unfiltered sample
  - 1 event for which alkalinity was not reported
- 457 potential events after considering major cations
  - 6 events did not have concentration data for calcium, magnesium, sodium, and potassium
- 457 potential events after considering major anions
  - 4 events lacked sulfate concentrations, but those were estimated using location-specific averages
  - 5 events lacked chloride concentrations, but those were estimated using location-specific averages

Because estimation of DOC from TOC was necessary for 129 events, a comparison of DOC and TOC in samples for which both analytes were measured was performed (Figure 4-1). The conversion factor of 0.86 used to estimate DOC from TOC was taken as the lower 95% confidence limit for the slope of the relationship between DOC and TOC (e.g., green line in Figure 4-1). This approach and TOC to DOC conversion factor were very similar to that (0.83) used by Oregon Department of Environmental Quality in its copper BLM-based IWQC implementation guidance (ODEQ 2016a). In addition, a ceiling of 29.65 mg/L was used for DOC inputs to the BLM where reported or estimated DOC were greater than this upper bound of the calibration range specified in BLM user's guides (HydroQual 2007; Windward 2017).

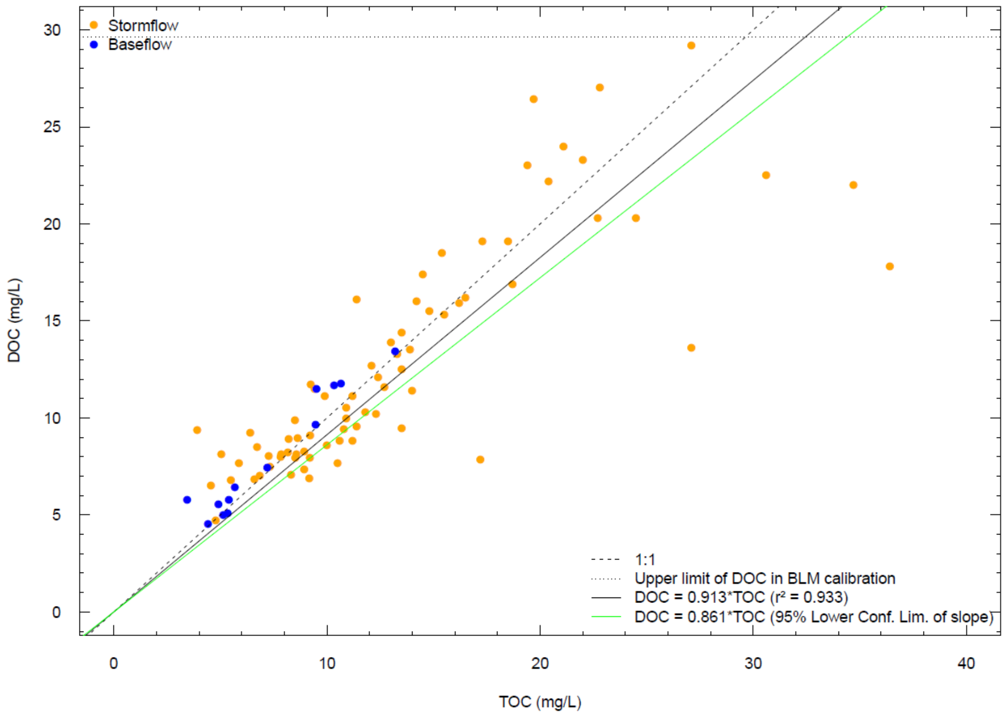

Figure 4-1.Relationship between DOC and TOC

Similarly, alkalinity from unfiltered samples was used as a substitute for missing dissolved alkalinity inputs. The relationship between filtered and unfiltered alkalinity from events for which both were measured, indicated that substitution of alkalinity from unfiltered samples provided a reasonable estimate of alkalinity in filtered samples (Figure 4-2).

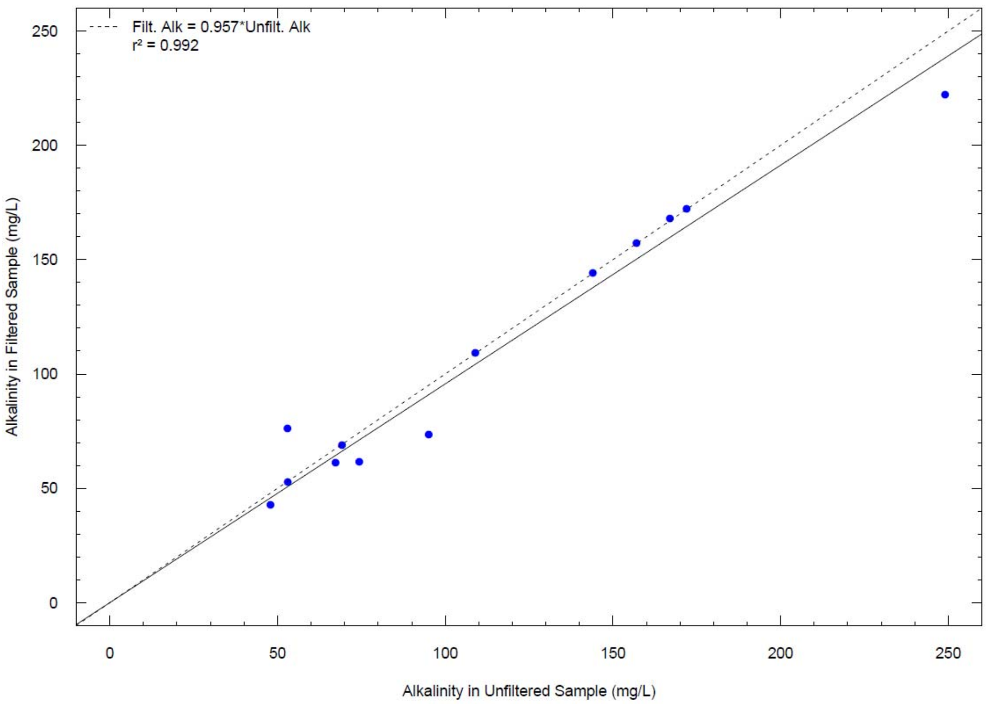

Figure 4-2. Relationship between alkalinity in filtered samples and alkalinity in unfiltered samples

Six potential BLM sample datasets lacked data for major cations, and were not considered further. Of the 457 remaining potential BLM events, 4 lacked sulfate concentrations and 5 lacked chloride concentrations. Because the purpose of these BLM inputs is to help satisfy charge balance, and because aluminum, copper, lead, and zinc BLM calculations are not sensitive to these inputs, location average concentrations were used to fill these data gaps.

No surface water data existed for temperature in the dataset considered herein, so a temperature sensitivity analysis was conducted across the BLM calibration range of 10 to 25°C. See Figure 4-3. The differences in BLM-based acute aluminum IWQC computed across the 10-25°C range varied little for copper, lead and zinc. For aluminum, the figure shows that BLM-based WQC differences were inversely proportional to temperature, with marked differences across the range, which was not unexpected given the known sensitivity of the aluminum BLM to temperature. Based on these results, a conservative assumption of 10°C was deemed appropriate (it is the lower bound of the BLM calibration range for temperature). The water temperature variable is not included in the MLR proposed by EPA in its 2017 draft aluminum AWQC, so if such AWQC are eventually adopted, the temperature sensitivity issue for aluminum appears to be moot for the MLR-based AWQC.

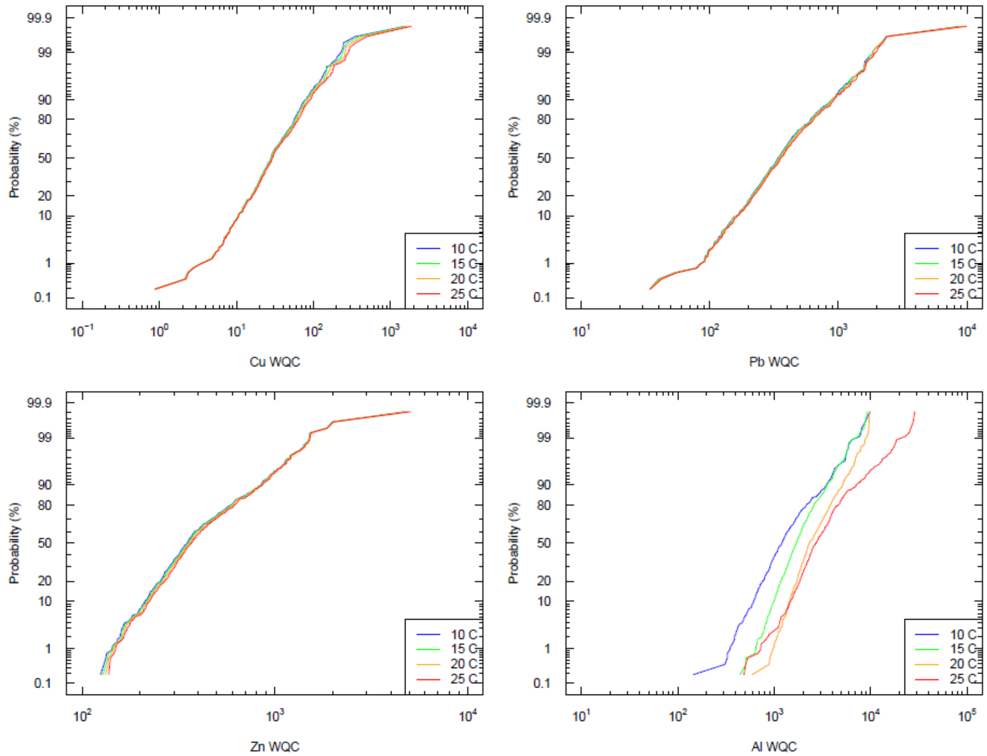

Figure 4-3. Temperature sensitivity analysis for copper, lead, zinc and aluminum BLMs

After the above considerations, the resulting dataset contained sufficient information to perform BLM calculations for 457 events. Table 4-2[10] provides a complete summary of all water sampling events considered when evaluating potential complete BLM datasets (i.e., 464 events). The detection status (i.e., "<," a value reported below the concentration indicated) and sources of any data substitutions are also indicated in Table 4-2. None of the BLM inputs were affected by detection limitations. A summary of the number of BLM events associated with each location is provided in Table 4-3, and a general spatial distribution of data richness is shown in Figure 4-4 (see Plate 1 for the geographic map of locations).

Table 4-2. LANL Surface Water Dataset for BLM Evaluations

(provided electronically in a separate Microsoft® Excel document)

[10] Table 4-2 is provided electronically in a separate Microsoft® Excel document.

Table 4-3. Summary of complete BLM events by location

Location ID	Windward ID	Major Watershed	Minor Watershed	Landscape	Sample Type[a]	Events with Both pH and DOC			Events with Complete BLM Information		
						N	Min. Date	Max. Date	N	Min. Date	Max. Date
Ancho below SR-4	E275	Ancho	Ancho	site	WT	3	7/25/2013	6/25/2017	3	7/25/2013	6/25/2017
Chaquehui at TA-33	E338	Chaquehui	Chaquehui	site	WT	2	9/13/2013	7/23/2014	2	9/13/2013	7/23/2014
DP above Los Alamos Canyon	E040	Los Alamos	DP	site	WT	20	8/5/2013	9/28/2017	20	8/5/2013	9/28/2017
DP above TA-21	E038	Los Alamos	DP	site	WS, WT	25	9/2/2008	8/7/2017	25	9/2/2008	8/7/2017
DP below grade ctrl structure	E039.1	Los Alamos	DP	site	WT, WT+WS	26	6/14/2013	8/7/2017	26	6/14/2013	8/7/2017
Guaje at SR-502	E099	Los Alamos	Guaje	site	WT	1	8/5/2013	8/5/2013	1	8/5/2013	8/5/2013
Los Alamos above DP Canyon	E030	Los Alamos	Los Alamos	site	WM, WS, WT	4	4/28/2005	10/4/2017	4	4/28/2005	10/4/2017
Los Alamos above low-head weir	E042.1	Los Alamos	Los Alamos	site	WT	16	7/12/2013	10/4/2017	16	7/12/2013	10/4/2017
Los Alamos above Rio Grande	E1099	Los Alamos	Los Alamos	site	WT	4	7/25/2013	9/12/2013	4	7/25/2013	9/12/2013
Los Alamos below low-head weir	E050.1	Los Alamos	Los Alamos	site	WT	18	7/12/2013	10/5/2017	18	7/12/2013	10/5/2017
Mortandad above Ten Site	E201	Mortandad	Mortandad	site	WT	4	7/12/2013	7/31/2014	4	7/12/2013	7/31/2014
Mortandad at LANL Boundary	E204	Mortandad	Mortandad	site	WT	2	7/31/2014	10/4/2017	1	7/31/2014	7/31/2014
Mortandad below Effluent Canon	E200	Mortandad	Mortandad	site	WS, WP, WT	13	4/29/2005	10/4/2017	13	4/29/2005	10/4/2017
Ten Site above Mortandad	E201.5	Mortandad	Tensite	site	WT	1	9/13/2013	9/13/2013	1	9/13/2013	9/13/2013
La Delfe above Pajarito	E242.5	Pajarito	Arroyo de la Delfe	site	WT	4	7/20/2015	10/5/2017	4	7/20/2015	10/5/2017
Pajarito above SR-4	E250	Pajarito	Pajarito	site	WT	3	9/13/2013	7/21/2015	3	9/13/2013	7/21/2015
Pajarito above Starmers	E241	Pajarito	Pajarito	site	WT	2	7/15/2015	7/20/2015	2	7/15/2015	7/20/2015
Pajarito above Threemile	E245.5	Pajarito	Pajarito	site	WT	15	7/12/2013	10/5/2017	15	7/12/2013	10/5/2017

Location ID	Windward ID	Major Watershed	Minor Watershed	Landscape	Sample Type[a]	Events with Both pH and DOC			Events with Complete BLM Information		
						N	Min. Date	Max. Date	N	Min. Date	Max. Date
Pajarito above Twomile	E243	Pajarito	Pajarito	site	WP, WS, WT	12	8/29/2006	7/20/2015	12	8/29/2006	7/20/2015
Starmers above Pajarito	E242	Pajarito	Starmers	site	WT	3	7/6/2015	9/28/2017	3	7/6/2015	9/28/2017
Twomile above Pajarito	E244	Pajarito	Twomile	site	WP, WS, WT	14	8/29/2006	10/4/2017	14	8/29/2006	10/4/2017
Acid above Pueblo	E056	Pueblo	Acid	site	WT, WS, WP, WS+WT	21	5/3/2005	8/23/2017	21	5/3/2005	8/23/2017
South Fork of Acid Canyon	E055.5	Pueblo	Acid	site	WT	7	9/13/2013	7/29/2017	7	9/13/2013	7/29/2017
E059.5 Pueblo below LAC WWTF	E059.5	Pueblo	Pueblo	site	WT	5	7/29/2014	9/29/2017	5	7/29/2014	9/29/2017
E059.8 Pueblo Below Wetlands	E059.8	Pueblo	Pueblo	site	WT	3	10/21/2015	10/5/2017	3	10/21/2015	10/5/2017
Pueblo above Acid	E055	Pueblo	Pueblo	site	WT, WP, WS	14	5/3/2005	9/29/2017	14	5/3/2005	9/29/2017
Pueblo below GCS	E060.1	Pueblo	Pueblo	site	WT	2	7/2/2015	7/20/2015	2	7/2/2015	7/20/2015
Sandia above Firing Range	E124	Sandia	Sandia	site	WT	5	7/29/2014	9/29/2017	5	7/29/2014	9/29/2017
Sandia above SR-4	E125	Sandia	Sandia	site	WT	2	9/13/2013	7/31/2014	2	9/13/2013	7/31/2014
Sandia below Wetlands	E123	Sandia	Sandia	site	WP, WS, WT, WT+WS	49	7/12/2006	8/10/2017	48	7/12/2006	8/10/2017
Sandia left fork at Asph Plant	E122.LFatAP	Sandia	Sandia	site	WT	11	9/12/2013	8/21/2017	11	9/12/2013	8/21/2017
Sandia right fork at Pwr Plant	E121	Sandia	Sandia	site	WS, WT	47	11/3/2008	8/10/2017	46	11/3/2008	8/10/2017
South Fork of Sandia at E122	E122.SF	Sandia	Sandia	site	WS+WP, WP, WS	24	6/29/2006	8/10/2017	22	6/29/2006	8/10/2017
Canon de Valle below MDA P	E256	Water	Cañon de Valle	site	WP, WS, WT	19	1/29/2007	6/2/2017	19	1/29/2007	6/2/2017
Potrillo above SR-4	E267	Water	Potrillo	site	WT	1	7/2/2014	7/2/2014	1	7/2/2014	7/2/2014

Location ID	Windward ID	Major Watershed	Minor Watershed	Landscape	Sample Type[a]	Events with Both pH and DOC			Events with Complete BLM Information		
						N	Min. Date	Max. Date	N	Min. Date	Max. Date
Water below SR-4	E265	Water	Water	site	WT	3	9/13/2013	8/1/2015	3	9/13/2013	8/1/2015
BAND-REF-3	BAND-REF-3	Frijoles	Frijoles	undeveloped	WT	2	9/9/2015	10/20/2015	2	9/9/2015	10/20/2015
BAND-REF-4	BAND-REF-4	Frijoles	Frijoles	undeveloped	WT	1	10/20/2015	10/20/2015	1	10/20/2015	10/20/2015
Rio de los Frijoles at Band	E350	Frijoles	Frijoles	undeveloped	WP, WS, WT	8	9/20/2006	10/22/2015	8	9/20/2006	10/22/2015
SEP-REF-BM1 at RF17BM01	SEP-REF-BM1	Frijoles	Frijoles	undeveloped	WT	4	9/27/2017	10/5/2017	2	9/27/2017	9/28/2017
SEP-REF-P1 at RF17P01	SEP-REF-P1	Frijoles	Frijoles	undeveloped	WT	4	9/27/2017	10/5/2017	4	9/27/2017	10/5/2017
SEP-REF-SJM1 at RF17SJM01	SEP-REF-SJM1	Jemez River	Jemez River	undeveloped	WT	4	9/26/2017	10/4/2017	4	9/26/2017	10/4/2017
SEP-REF-SJM4 at RF17SJM04	SEP-REF-SJM4	Jemez River	Jemez River	undeveloped	WT	2	8/24/2017	9/27/2017	2	8/24/2017	9/27/2017
RF09GU02	GUAJE-REF-2	Los Alamos	Guaje	undeveloped	WT	3	7/29/2015	8/17/2015	3	7/29/2015	8/17/2015
Los Alamos below Ice Rink	E026	Los Alamos	Los Alamos	undeveloped	WM, WS, WT	4	4/29/2005	8/3/2016	4	4/29/2005	8/3/2016
WR-REF-3 at RF13WR03	WR-REF-3	Mortandad	Mortandad	undeveloped	WT	6	9/11/2013	8/27/2015	6	9/11/2013	8/27/2015
Pajarito below SR-501	E240	Pajarito	Pajarito	undeveloped	WT	9	8/20/2013	7/15/2015	9	8/20/2013	7/15/2015
Water above SR-501	E252 up	Water	Water	undeveloped	WP, WS, WT	12	1/24/2007	9/19/2013	12	1/24/2007	9/19/2013

[a] Sample types separated by a plus sign (i.e., "+") indicate that the specified sample types were associated with a single event at the specified location.

BLM – biotic ligand model
DOC – dissolved organic carbon
ID – identification
LANL – Los Alamos National Laboratory
WM – snowmelt
WP – persistent water
WS – surface water
WT – storm water
Windward – Windward Environmental LLC
WWTF – wastewater treatment facility

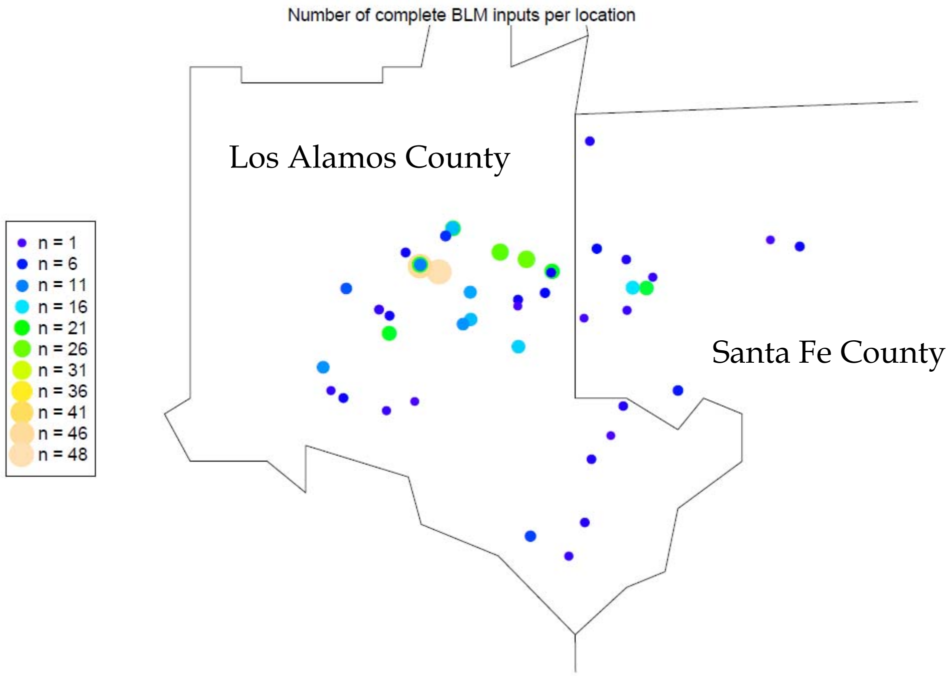

Figure 4-4. General spatial distribution of locations and data richness for BLM inputs (LANL dataset)

For the 457 events for which BLM calculations could be performed (i.e., the BLM dataset):

- 433 events had measured dissolved copper
- 446 events had measured dissolved lead and zinc
- 370 events had measured total (unfiltered) aluminum
- 150 events had measured 10-µm filtered aluminum
- 34 events had measured 1-µm filtered aluminum
- 457 events had measured dissolved (0.45-µm filtered) aluminum.

These large datasets of concurrent metal and IWQC indicate that a rich set of TUs can be calculated for the evaluation of decision errors using each WQC approach. The opportunities for calculating FMBs depends on the richness and variability of TUs and IWQCs at locations of interest (discrete and aggregated spatially). However, in these cases, the TUs will be uncertain when affected by metals results that were reported as below detection limits. For purposes of calculating TUs in these cases, the reported detection limit was used, rather than a typical basis of using ½ the detection limit[11].

[11] Using the full detection limit was done to be conservative when comparing metal concentrations directly to IWQC and to flag any TUs affected by non-detects. The maximum likelihood estimation

Potentially fire-affected datasets were identified by LANL staff as occurring during the period Jul 4, 2011 through December 31, 2013 for particular watersheds affected by wildfires. The fire-affected watersheds are identified in Table 4-1. The IWQC based on sample data for locations and periods that may be potentially affected by wildfires are plotted as a separate data series in scatter plots presented in subsequent sections and appendices.

Lastly, the supplemental NWQMC dataset for the Rio Grande (Figure 4-5) included 78 BLM events for 5 different locations (e.g., near Taos, at Otowi Bridge, below Cochiti Dam, at San Felipe, and below Alameda Bridge). All BLM inputs for the NWQMC dataset, including temperature, were measured values (i.e., estimates or substitutions were not considered), with the exception of %HA, which was assumed to be 10%, consistent with all other BLM calculations herein.

4.2 APPLICATION OF BLMS FOR GENERATING IWQC

Acute BLMs were applied to the BLM dataset to derive acute IWQCs for copper, lead, and zinc using the BLMs described by EPA (2007), DeForest et al. (2017), and DeForest and Van Genderen (2012), respectively. In addition to BLM-based IWQC for these events, hardness-based IWQC were calculated using the measured hardness result and the relevant hardness-based equation for each metal's AWQC described in NMAC.20.6.4.900(I). All IWQC outcomes for the LANL dataset are provided in Table 4-2 (see columns to the right of the water quality dataset).

For aluminum, as noted in Section 3.5, the currently available BLM is limited to generating chronic IWQC. Consequently, the following process was used to generate preliminary acute aluminum BLM-based IWQC. First, the aluminum BLM (Santore et al. 2018) was applied to the BLM dataset to generate chronic aluminum IWQCs. Then, the chronic IWQCs were converted to acute IWQCs by multiplying each chronic BLM result by an ACR of 5.0. This ACR approach is often used by EPA, although most often in the converse situation (i.e., when deriving chronic criteria from acute toxicity datasets) (EPA 1985). In the recent draft WQC document for aluminum, EPA (2017) calculated a final ACR of 8.068, but the ACR is generally intended to convert a final acute value (FAV) to a final chronic value (or chronic criterion). Using the lowest genus mean chronic value for *Salmo* (508.5 µg/L) and the FAV of 2741 µg/L described in a scenario by EPA (2017), a conservative ACR would be 2741/508.5 = 5.39. For added conservatism here, calculation of preliminary aluminum acute BLM-based IWQCs used an ACR of 5.0. Further evaluations of the overall situation for aluminum are underway as part of other LANL efforts in collaboration with the NMED SWQB.

(MLE) technique used in FMB calculations accounts for censored (i.e., non-detect) data, and properly handles them when fitting distributions. When fitting distributions, this approach is generally favored over substitution (i.e., fabrication) approaches.

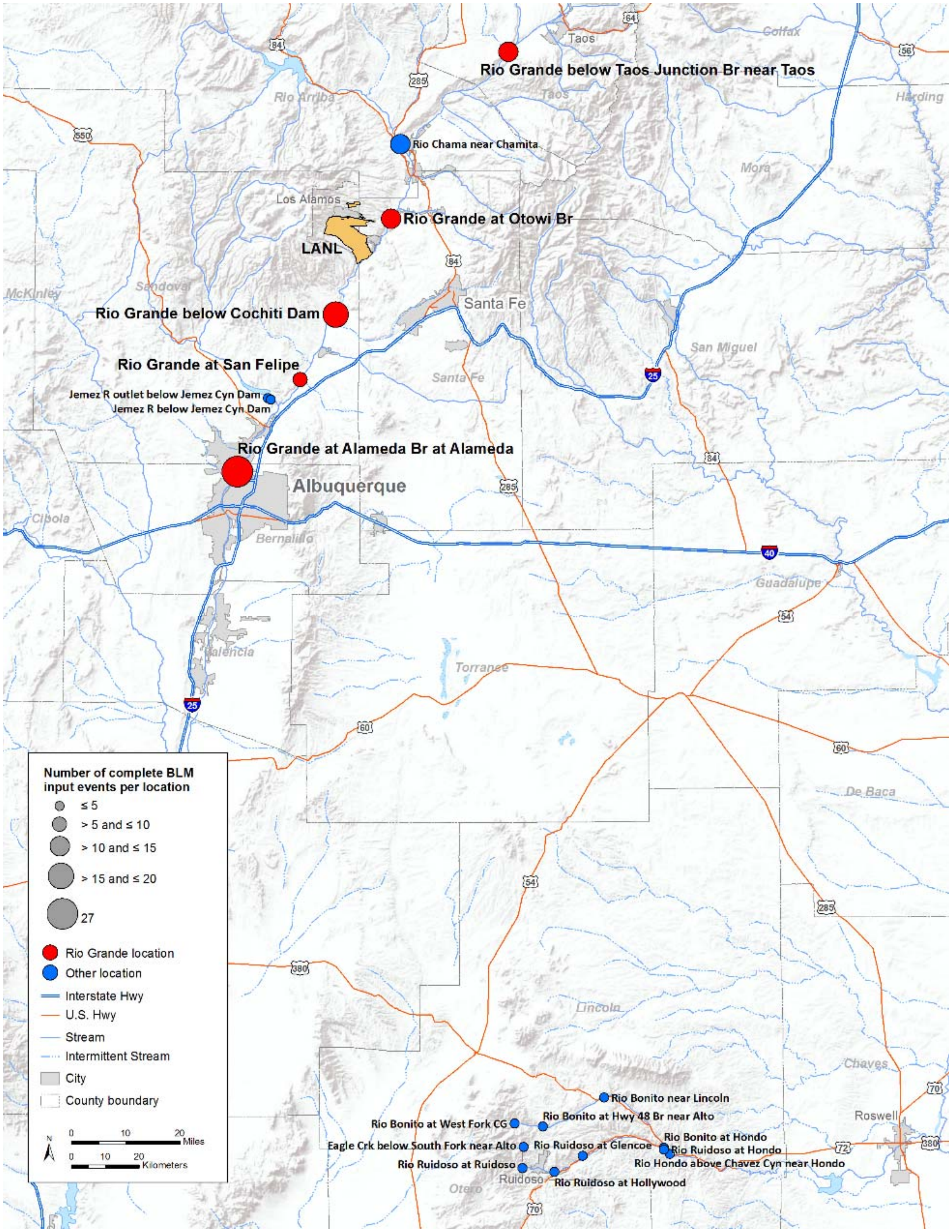

Figure 4-5. Spatial distribution of locations and data richness for BLM inputs from New Mexico locations in NWQMC dataset

4.3 OVERALL COMPARISONS OF BLM-BASED AND HARDNESS-BASED ACUTE IWQC

Comparisons of acute BLM- and hardness-based TUs for dissolved copper, lead, and zinc are shown in Figures 4-6 to 4-8 based on BLM input data for all locations and BLM events. Referring to Figure 3-1 aids interpretation of the magnitude and frequency of potential false positives and false negatives where the hardness-based IWQC were over- and under-conservative, respectively, with respect to BLM-based IWQC.

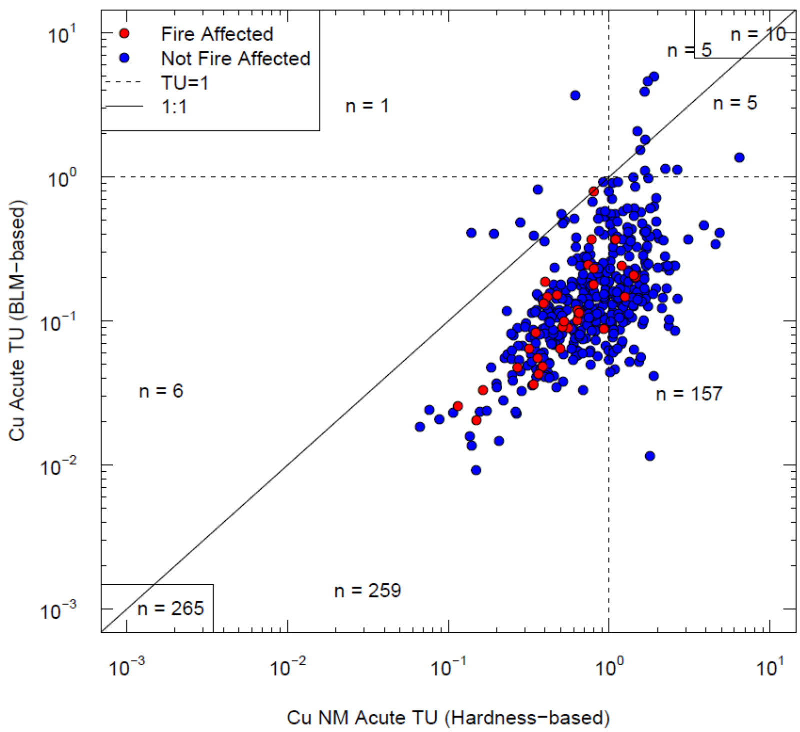

Figure 4-6. Comparison of acute <u>dissolved copper</u> IWQC TUs between EPA 2007 BLM and New Mexico hardness-based AWQC

For copper, Figure 4-6 shows that the hardness-based AWQC for copper frequently generated false positives, i.e., the 157 TU values plotted in the lower right quadrant indicate that the observed dissolved copper concentrations would exceed the New Mexico IWQC in 36% of the events, but would not exceed BLM-based IWQC. Meanwhile, application of the BLM identified one false negative, where the observed copper would exceed acute BLM-based IWQC but not the hardness-based IWQC. In the upper right, Figure 4-6 shows that the BLM and the New Mexico copper IWQC yield a consistent determination of a true exceedance in 2% (10) of the events and a true non-exceedance in 61% (265) of the events in the lower left.

For lead, Figure 4-7 shows that the BLM and New Mexico IWQC returned equivocal results (all observed concentrations did not exceed either basis) without decision errors, yet the New Mexico IWQC tended to return higher TUs than did the BLM-based IWQC (data points clustering further to the right and lower than the 1:1 line of perfect equivalency). For zinc (Figure 4-8), a similar pattern occurred, except only 2% (11) of the hardness-based IWQC TUs were false positives relative to BLM-based IWQC.

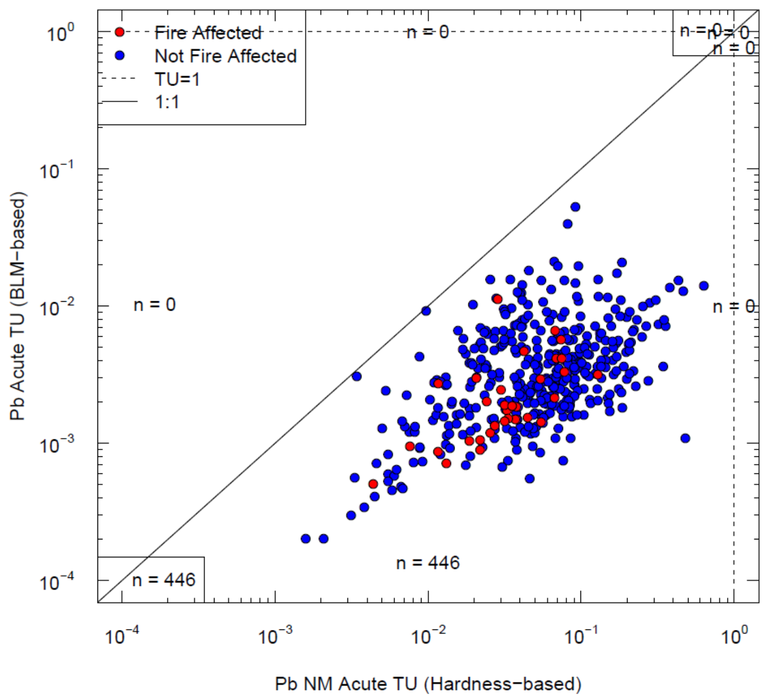

Figure 4-7. Comparison of acute <u>dissolved lead</u> IWQC TUs between BLM and New Mexico hardness-based AWQC

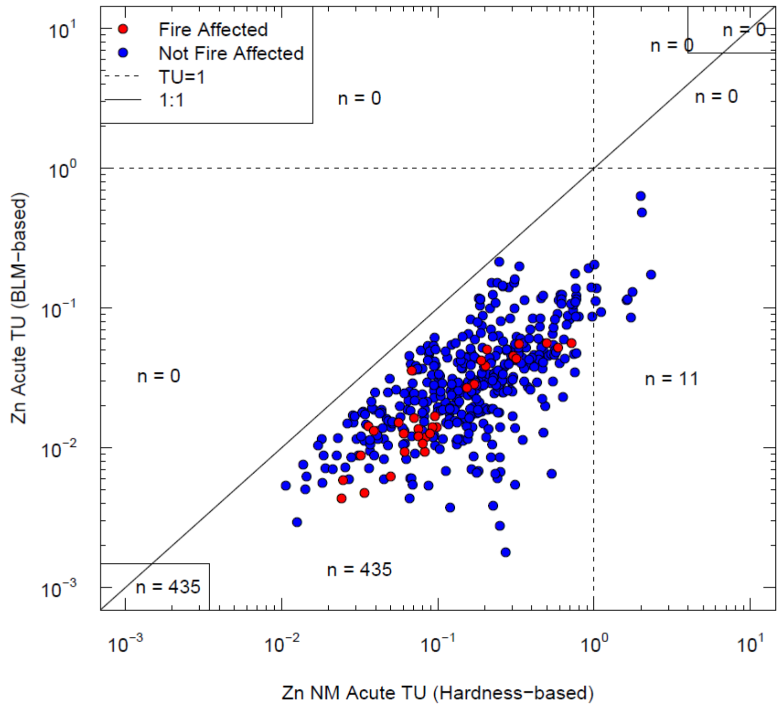

Figure 4-8. Comparison of acute <u>dissolved zinc</u> IWQC TUs between BLM and New Mexico hardness-based AWQC

For aluminum, the acute BLM- and hardness-based IWQC TU comparisons are shown in Figures 4-9 to 4-12 for unfiltered-, 10-µm-, 1-µm, and 0.45-µm-filtered aluminum concentrations. Similarly, comparisons of EPA draft MLR- and hardness-based acute TUs are shown for unfiltered-, 10-µm-, 1-µm, and 0.45-µm-filtered aluminum concentrations in Figures 4-13 to 4-16. Overall for aluminum, interpreting the patterns is complicated and subjective given the current uncertainty of 1) the sample filter preparation issue,[12] 2) the BLM and MLR basis of acute IWQC, and 3) implications of natural background[13] concentrations that are likely false positives (i.e., fine mineral forms of aluminum that are not bioavailable but that are included in the filtrates from all three sample filter sizes, which LANL has shown to be the case for 1-µm filtrates (LANL 2018b)). Thus, characterizing potential decision error rates at this time may be premature.

12 Current NMED guidance calls for analyzing "total" aluminum in filtrate from a 10-µm filter if turbidity is above 30 nephelometric turbidity units (NTU) (NMED 2012a, 2013, 2015). LANL staff and NMED have been discussing the problems that are apparent when using filters larger than 0.45-µm for aluminum analysis (i.e. the risk of significant false positive bias via inclusion of fine mineral forms of aluminum that are non-toxic) (LANL 2018b, 2016). Further evaluations are being planned by Windward and LANL staff in collaboration with NMED (95% draft toxicity testing plan).

13 LANL has completed extensive data collection and characterization demonstrating significantly elevated natural background concentrations of aluminum and other constituents in storm water samples collected from various surface waters within and around LANL in the vicinity of the Pajarito Plateau (LANL 2007, 2010b, 2013, 2014, 2015).

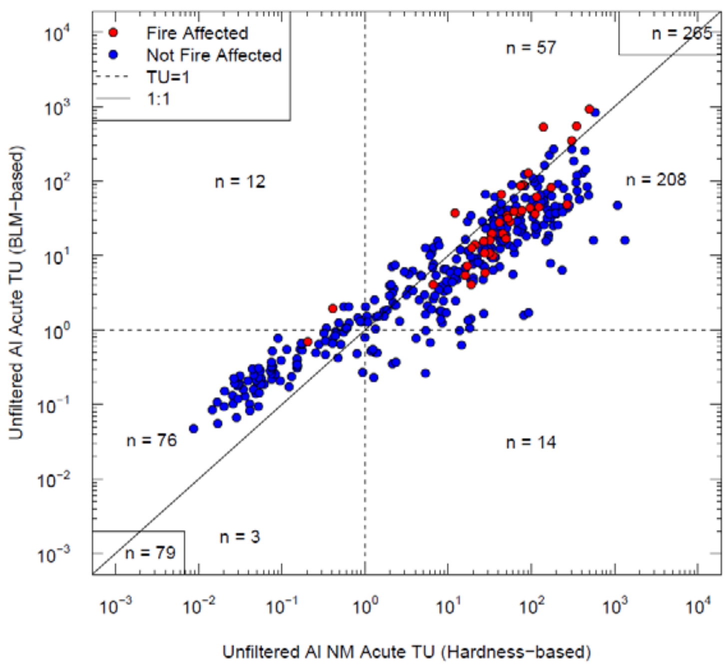

Figure 4-9. Comparison of acute aluminum IWQC TUs between BLM and New Mexico hardness-based AWQC (on basis of unfiltered aluminum)

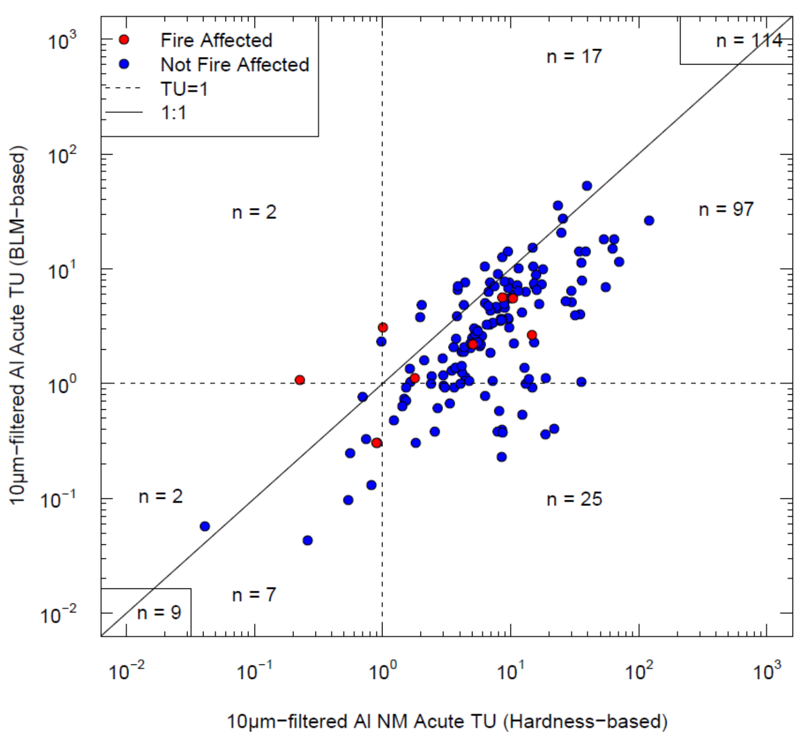

Figure 4-10. Comparison of acute aluminum IWQC TUs between BLM and New Mexico hardness-based AWQC (on basis of 10-µm filtered aluminum)

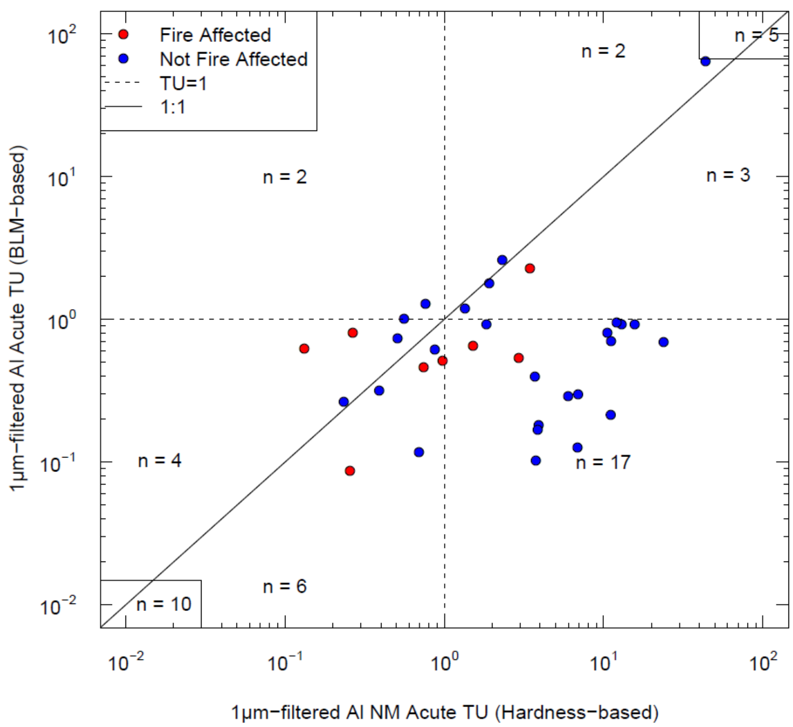

Figure 4-11. Comparison of acute aluminum IWQC TUs between BLM and New Mexico hardness-based AWQC (on basis of 1-µm filtered aluminum)

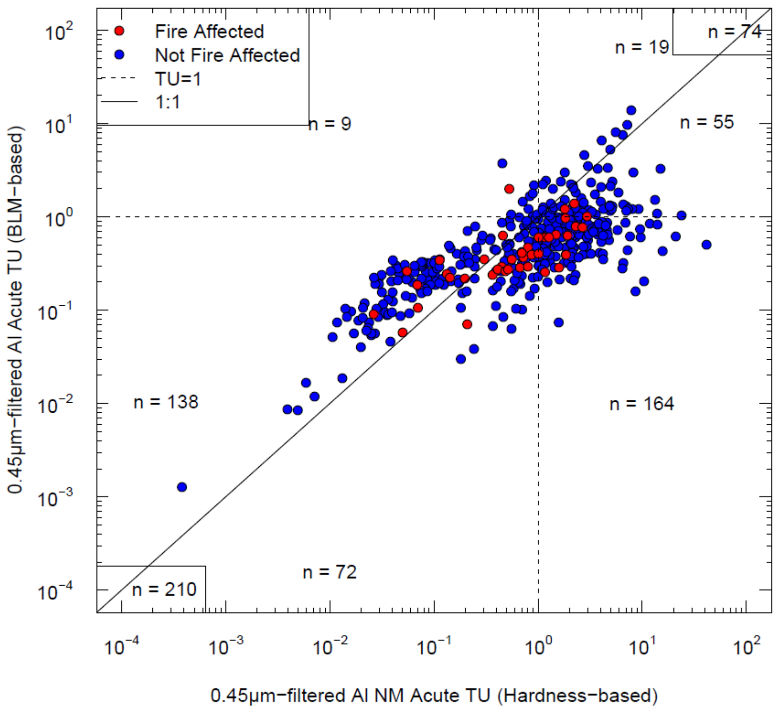

Figure 4-12. Comparison of acute <u>aluminum</u> IWQC TUs between BLM and New Mexico hardness-based AWQC (on basis of <u>0.45 µm filtered</u> aluminum)

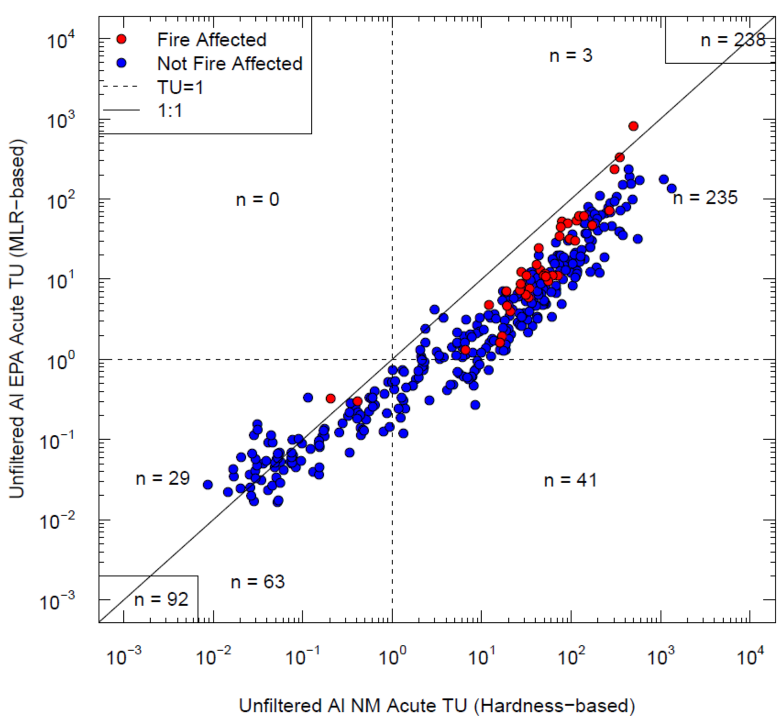

Figure 4-13. Comparison of EPA draft <u>MLR-based</u> acute TUs and New Mexico hardness-based TUs for aluminum (for <u>unfiltered</u> aluminum)

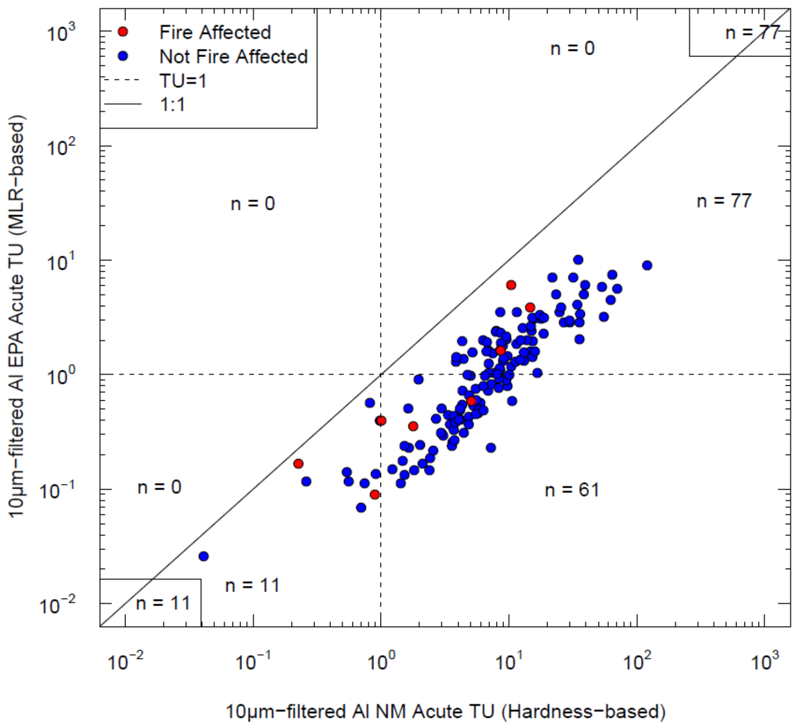

Figure 4-14. Comparison of EPA draft MLR-based acute TUs and New Mexico hardness-based TUs for aluminum (for 10-µm filtered aluminum)

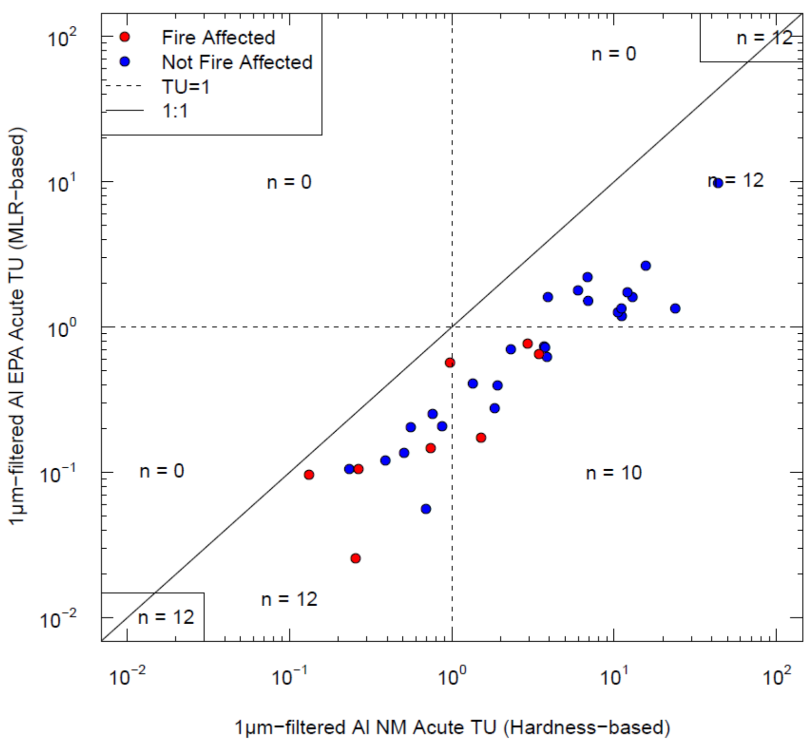

Figure 4-15. Comparison of EPA draft MLR-based acute TUs and New Mexico hardness-based TUs for aluminum (for 1-µm filtered aluminum)

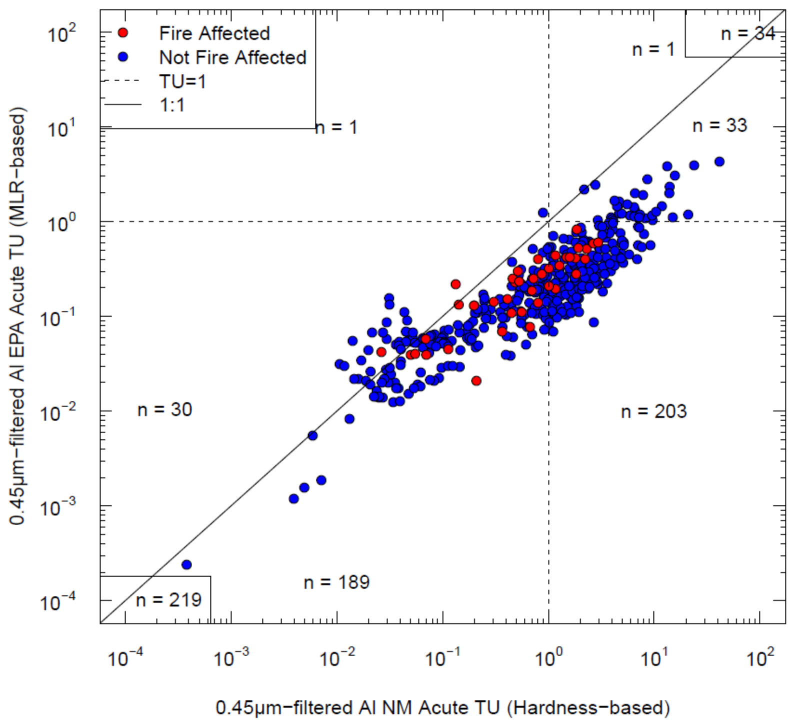

Figure 4-16. Comparison of EPA draft <u>MLR-based</u> acute TUs and New Mexico (2010; AWQC) hardness-based TUs for aluminum (for <u>0.45-µm filtered</u> aluminum)

Table 4-4 provides a summary of acute BLM-based TUs for each location (i.e., description of percentage of TUs>1, number of TUs calculated, number of TUs affected by BDL metal concentrations, and number BDL-affected TUs>1). On the basis of acute BLM-based IWQC, there were no TUs > 1 for lead and zinc.

Table 4-4. Summary of acute BLM-based TUs by location

Location ID	Windward ID	Unfiltered Aluminum				10-µm Filtered Aluminum				1-µm Filtered Aluminum				0.45-µm Filtered Aluminum				0.45-µm Filtered Copper				0.45-µm Filtered Lead				0.45-µm Filtered Zinc			
			No.				No.				No.				No.				No.				No.				No.		
		% TU>1	TU	BDL	BDL TU>1	% TU>1	TU	BDL	BDL TU>1	% TU>1	TU	BDL	BDL TU>1	% TUs>1	TU	BDL	BDL TU>1	% TUs>1	TU	BDL	BDL TU>1	% TUs>1	TU	BDL	BDL TU>1	% TUs>1	TU	BDL	BDL TU>1
Acid above Pueblo	E056	88	17	1	0	100	4	0	0					24	21	2	0	**5**	20	4	**1**	0	21	5	0	0	21	1	0
Ancho below SR-4	E275	100	3	0	0									0	3	0	0	0	3	0	0	0	3	0	0	0	3	2	0
BAND-REF-3	BAND-REF-3	100	2	0	0	50	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	2	0	0	2	2	0
BAND-REF-4	BAND-REF-4	100	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0
Canon de Valle below MDA P	E256	27	15	1	0	100	1	0	0					0	19	12	0	0	18	17	0	0	19	19	0	0	19	16	0
Chaquehui at TA-33	E338	100	2	0	0									0	2	0	0	0	2	0	0	0	2	0	0	0	2	1	0
DP above Los Alamos Canyon	E040	100	10	0	0	100	13	0	0					35	20	0	0	0	20	0	0	0	20	0	0	0	20	1	0
DP above TA-21	E038	94	18	0	0	91	11	0	0	50	2	0	0	20	25	1	0	0	23	1	0	0	23	9	0	0	23	4	0
DP below grade ctrl structure	E039.1	100	18	0	0	92	12	0	0					31	26	0	0	0	26	0	0	0	26	5	0	0	26	2	0
E059.5 Pueblo below LAC WWTF	E059.5	100	3	0	0	100	2	0	0					0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0
E059.8 Pueblo Below Wetlands	E059.8	0	1	0	0	0	1	0	0					0	3	0	0	0	3	0	0	0	3	1	0	0	3	0	0
Guaje at SR-502	E099	100	1	0	0									0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0
La Delfe above Pajarito	E242.5	100	2	0	0	100	2	0	0					25	4	0	0	0	4	0	0	0	4	1	0	0	4	1	0
Los Alamos above DP Canyon	E030	50	2	0	0									0	4	0	0	0	4	2	0	0	4	2	0	0	4	0	0
Los Alamos above low-head weir	E042.1	100	10	0	0	100	7	0	0					25	16	0	0	0	16	0	0	0	16	0	0	0	16	2	0
Los Alamos above Rio Grande	E1099	100	4	0	0									0	4	0	0	0	4	0	0	0	4	0	0	0	4	1	0
Los Alamos below Ice Rink	E026	67	3	0	0	100	1	0	0					0	4	0	0	0	4	2	0	0	4	3	0	0	4	2	0
Los Alamos below low-head weir	E050.1	100	17	0	0	100	8	0	0					11	18	0	0	0	18	0	0	0	18	3	0	0	18	2	0
Mortandad above Ten Site	E201	100	4	0	0									0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0
Mortandad at LANL Boundary	E204	100	1	0	0									100	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0
Mortandad below Effluent Canon	E200	70	10	0	0									46	13	0	0	0	12	0	0	0	13	8	0	0	13	1	0
Pajarito above SR-4	E250	100	3	0	0	100	1	0	0					0	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0
Pajarito above Starmers	E241	100	2	0	0	100	2	0	0					0	2	0	0	0	2	1	0	0	2	1	0	0	2	1	0
Pajarito above Threemile	E245.5	100	11	0	0	100	5	0	0					33	15	0	0	0	15	0	0	0	15	4	0	0	15	3	0
Pajarito above Twomile	E243	92	12	0	0	100	2	0	0					83	12	0	0	**11**	9	6	**1**	0	12	5	0	0	12	2	0
Pajarito below SR-501	E240	100	9	0	0	50	4	0	0	0	3	0	0	11	9	0	0	0	6	1	0	0	6	0	0	0	6	1	0
Potrillo above SR-4	E267	100	1	0	0									0	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0
Pueblo above Acid	E055	60	10	1	0	67	3	0	0					21	14	2	0	0	13	4	0	0	14	6	0	0	14	1	0
Pueblo below GCS	E060.1	100	2	0	0	100	2	0	0					50	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0
RF09GU02	GUAJE-REF-2	100	3	0	0	100	3	0	0	100	3	0	0	0	3	0	0	0	3	0	0	0	3	1	0	0	3	1	0
Rio de los Frijoles at Band	E350	50	8	0	0	100	2	0	0	50	2	0	0	13	8	1	0	0	7	5	0	0	8	6	0	0	8	7	0
Sandia above Firing Range	E124	100	5	0	0	100	2	0	0					20	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0
Sandia above SR-4	E125	100	2	0	0									0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0

Location ID	Windward ID	Unfiltered Aluminum				10-µm Filtered Aluminum				1-µm Filtered Aluminum				0.45-µm Filtered Aluminum				0.45-µm Filtered Copper				0.45-µm Filtered Lead				0.45-µm Filtered Zinc			
			No.				No.				No.				No.				No.				No.				No.		
		% TU>1	TU	BDL	BDL TU>1	% TU>1	TU	BDL	BDL TU>1	% TU>1	TU	BDL	BDL TU>1	% TUs>1	TU	BDL	BDL TU>1	% TUs>1	TU	BDL	BDL TU>1	% TUs>1	TU	BDL	BDL TU>1	% TUs>1	TU	BDL	BDL TU>1
Sandia below Wetlands	E123	48	42	2	0	55	11	0	0					6	48	18	0	0	48	10	0	0	48	30	0	0	48	2	0
Sandia left fork at Asph Plant	E122.LFatAP	64	11	0	0	25	4	0	0					0	11	0	0	18	11	0	0	0	11	2	0	0	11	0	0
Sandia right fork at Pwr Plant	E121	63	38	9	0	53	15	0	0					4	46	12	0	4	46	5	0	0	46	35	0	0	46	2	0
SEP-REF-BM1 at RF17BM01	SEP-REF-BM1	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	1	0	0	2	0	0
SEP-REF-P1 at RF17P01	SEP-REF-P1	75	4	0	0	50	4	0	0	0	4	0	0	25	4	0	0	0	4	0	0	0	4	0	0	0	4	1	0
SEP-REF-SJM1 at RF17SJM01	SEP-REF-SJM1	100	4	0	0	33	3	0	0	0	3	0	0	25	4	0	0	0	4	0	0	0	4	0	0	0	4	3	0
SEP-REF-SJM4 at RF17SJM04	SEP-REF-SJM4	100	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	2	0	0	2	1	0
South Fork of Acid Canyon	E055.5	100	1	0	0	0	3	0	0					0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0
South Fork of Sandia at E122	E122.SF	5	19	6	0									5	22	14	0	0	22	13	0	0	22	16	0	0	22	3	0
Starmers above Pajarito	E242	100	2	0	0	100	2	0	0					33	3	0	0	0	3	0	0	0	3	1	0	0	3	1	0
Ten Site above Mortandad	E201.5	100	1	0	0									100	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0
Twomile above Pajarito	E244	91	11	0	0	100	2	0	0					21	14	0	0	0	10	4	0	0	14	7	0	0	14	5	0
Water above SR-501	E252 up	83	12	0	0	100	4	0	0	0	4	0	0	42	12	0	0	**71**	7	7	**5**	0	8	8	0	0	8	5	0
Water below SR-4	E265	100	3	0	0	100	1	0	0					100	3	0	0	0	3	0	0	0	3	0	0	0	3	1	0
WR-REF-3 at RF13WR03	WR-REF-3	100	6	0	0	100	6	0	0	33	6	0	0	17	6	0	0	0	4	0	0	0	4	3	0	0	4	3	0

Bold underlined values indicate % TUs >1 is uncertain due to all TU>1 based on non-detected copper result with TU calculated using the 10-µg/L detection limit.

BDL – below detection limit
BLM – biotic ligand model
ID – identification
LANL – Los Alamos National Laboratory
TU – toxic unit
Windward – Windward Environmental LLC
WWTF – wastewater treatment plant

For the supplemental NWQMC Rio Grande dataset, Figures 4-17 and 4-18 show comparison of acute BLM- and hardness-based TUs for dissolved copper and zinc based on BLM input data for the five Rio Grande locations. Lead concentrations were not obtained, so TUs were not calculated for lead. There were no TUs > 1 for copper or zinc using BLM- or hardness-based IWQC. Figures 4-17 and 4-18 indicate that the BLM- and New Mexico hardness-based approaches consistently denote non-exceedances for both copper and zinc at the Rio Grande locations considered. Table 4-5 provides a summary of acute BLM-based TUs for each Rio Grande location identified in the NWQMC dataset.

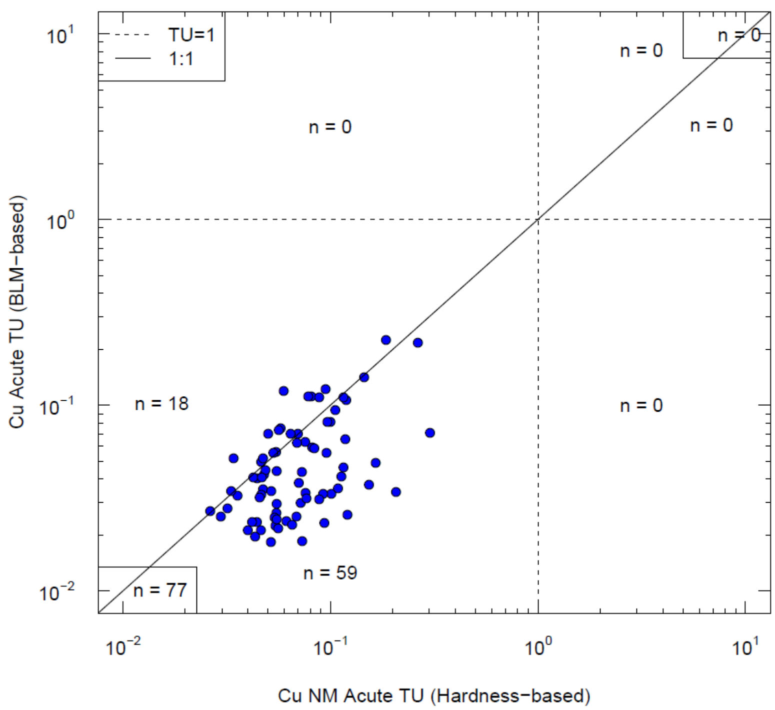

Figure 4-17. Comparison of acute dissolved copper IWQC TUs between EPA 2007 BLM and New Mexico hardness-based AWQC for the Rio Grande dataset

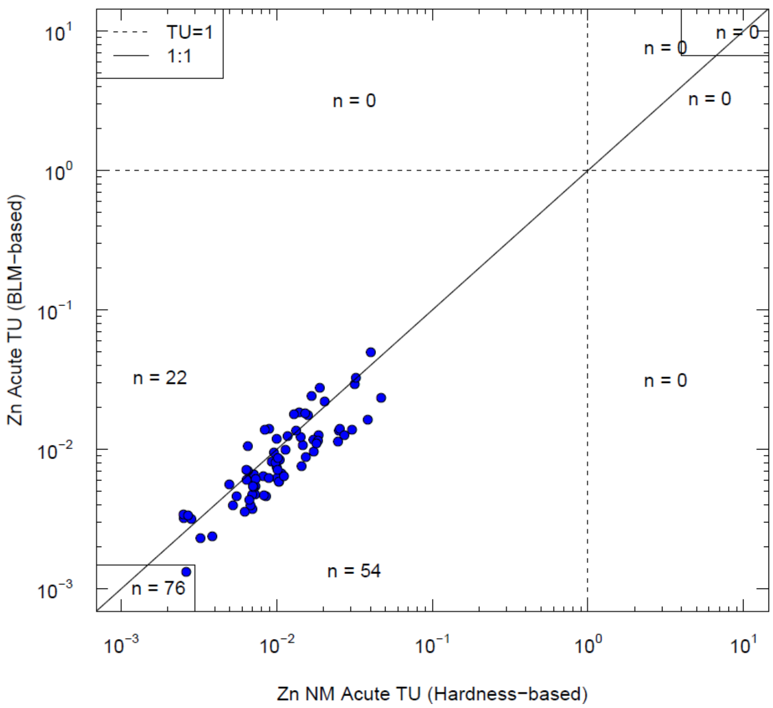

Figure 4-18. Comparison of acute <u>dissolved zinc</u> IWQC TUs between BLM and New Mexico hardness-based AWQC for the Rio Grande dataset

Table 4-5. Summary of acute BLM-based TUs for each Rio Grande location

NWQMC Location ID	Unfiltered Aluminum				0.45-µm Filtered Aluminum				0.45-µm Filtered Copper				0.45-µm Filtered Zinc			
	% TU>1	No.			% TUs>1	No.			% TUs>1	No.			% TUs>1	No.		
		TU	BDL	BDL TU>1		TU	BDL	BDL TU>1		TU	BDL	BDL TU>1		TU	BDL	BDL TU>1
Rio Grande below Taos Junction Bridge near Taos, New Mexico					0	12	6	0	0	12	7	0	0	12	10	0
Rio Grande at Otowi Bridge, New Mexico					0	13	7	0	0	13	7	0	0	13	11	0
Rio Grande below Cochiti Dam, New Mexico					0	18	0	0	0	18	9	0	0	18	16	0
Rio Grande at San Felipe, New Mexico	100	1	0	0	0	8	7	0	0	8	7	0	0	7	7	0
Rio Grande at Alameda Bridge at Alameda, New Mexico	88	26	0	0	0	26	6	0	0	26	14	0	0	26	24	0

BDL – below detection limit
BLM – biotic ligand model
ID – identification
NWQMC – National Water Quality Monitoring Council
TU – toxic unit

Also for the supplemental NWQMC dataset, Figures 4-19 and 4-20 show comparisons between acute BLM- and hardness-based IWQC TUs for unfiltered- and 0.45-µm-filtered aluminum concentrations. Similarly, Figures 4-21 and 4-22 show comparisons of EPA draft MLR- and hardness-based acute TUs for unfiltered- and 0.45-µm-filtered aluminum concentrations. Generally, the BLM generates higher TUs than the New Mexico hardness-based IWQC, indicating that for the Rio Grande dataset, the BLM generates lower IWQC. The MLR-based TUs are often higher than the hardness-based TUs, although the MLR-based TUs are more similar to the hardness-based TUs than are the BLM-based TUs. As described above, interpreting the patterns for aluminum is complicated and subjective given the uncertainty in appropriate sample preparation, criteria basis, and contribution from natural background.

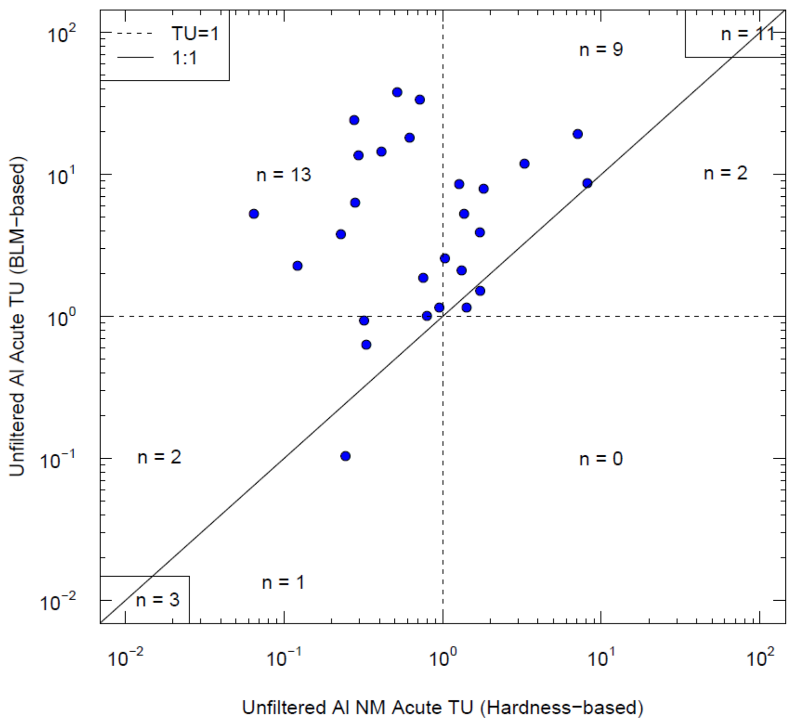

Figure 4-19. Comparison of acute aluminum IWQC TUs between BLM and New Mexico hardness-based AWQC (on basis of unfiltered aluminum) for the Rio Grande dataset

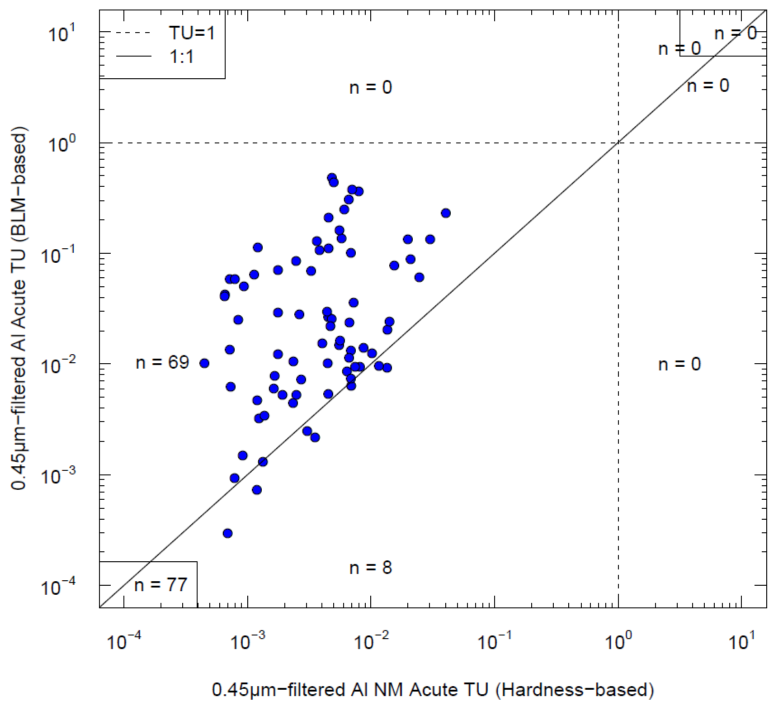

Figure 4-20. Comparison of acute aluminum IWQC TUs between BLM and New Mexico hardness-based AWQC (on basis of 0.45 µm filtered aluminum) for the Rio Grande dataset

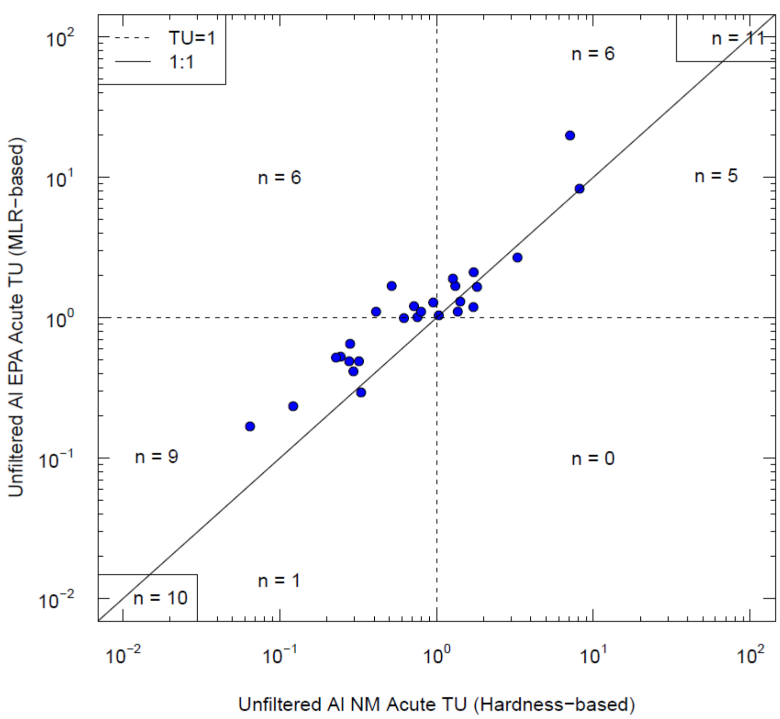

Figure 4-21. Comparison of EPA draft MLR-based acute TUs and New Mexico hardness-based TUs for aluminum (for unfiltered aluminum) for the Rio Grande dataset

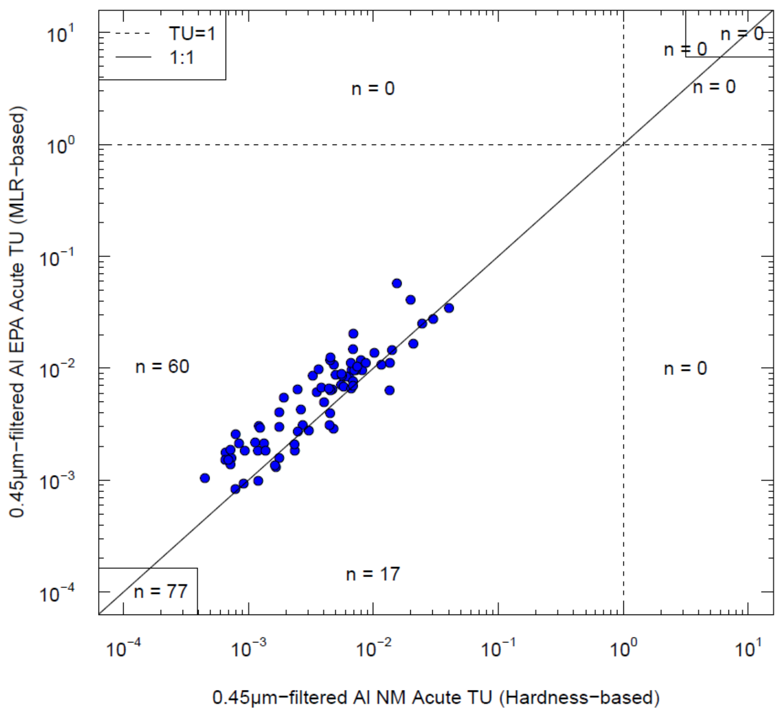

Figure 4-22. Comparison of EPA draft MLR-based acute TUs and New Mexico hardness-based TUs for aluminum (for 0.45-µm filtered aluminum) for the Rio Grande dataset

4.4 Spatial Patterns in Acute IWQC

Figure 4-23 provides a longitudinal summary of acute BLM-based copper TU results for the Los Alamos watershed (mainstem and two tributaries). This type of data visualization can help illustrate the spatial distributions of the large differences between the acute TUs for BLM-based and hardness based IWQC. In Figure 4-23. One can see that all three DP canyon locations exhibit similar results, illustrating the significant false positive concern for hardness-based copper IWQC pointed out in Section 4.3. Similar longitudinal series of boxplots for the minor watersheds are provided in Appendix A.

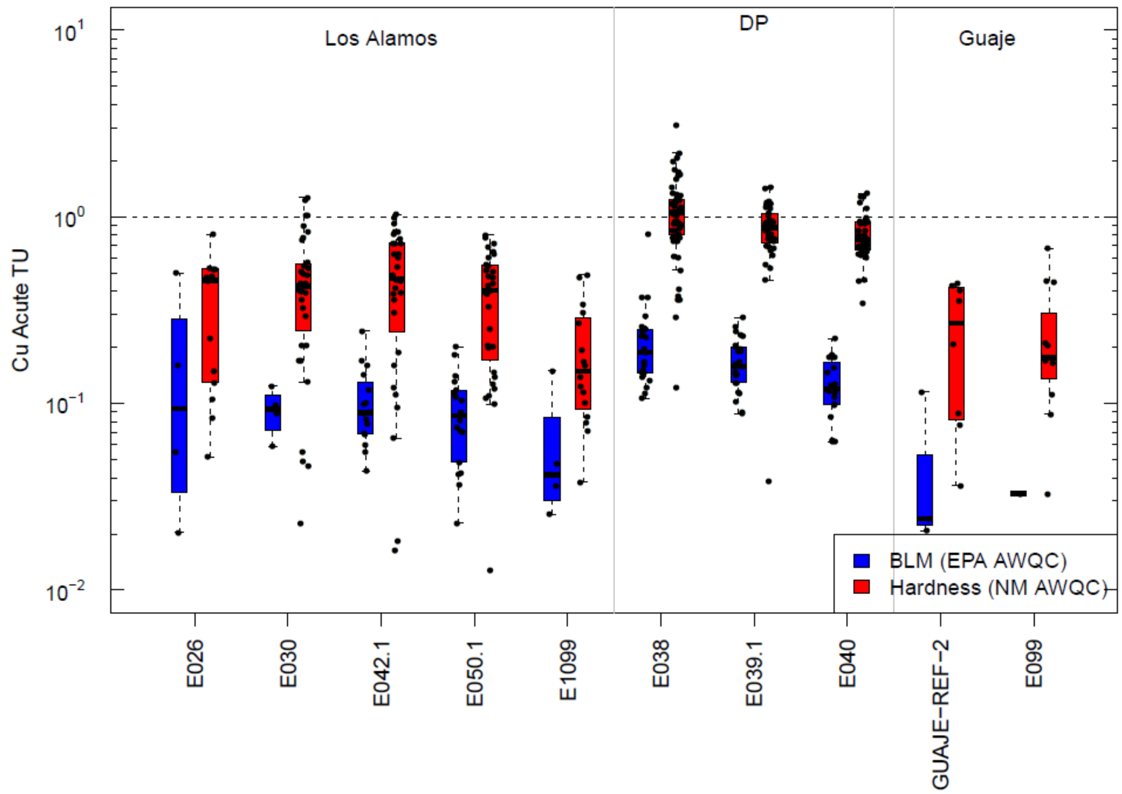

Figure 4-23. Los Alamos Watershed longitudinal summary of acute dissolved copper IWQC TUs based on BLM and New Mexico (NM) IWQC

For copper, BLM-based IWQC exceedances (TUs > 1, n=11) were limited to 5 locations:E056, E243, E122.LFatAP (Sandia Left fork at Asph plant), E121 and E252 (Water canyon above SR-501). It is important to note that 7 of the IWQC exceedances were attributable to BDL copper results where the copper detection limits were 10 µg/L, which exceeded the respective BLM-based IWQC. These occurrences were most pronounced at E252 and should be regarded as artifactual results and not relied up given the copper DL was approximately 3-fold higher than typical DLs reported in the dataset (~ 3 µg/L). The four remaining IWQC exceedances were limited to two locations in Upper Sandia canyon (E121 and E122.LFatAP).

Another potential concern for the acute copper BLM IWQC results is apparent in the Sandia Canyon watershed for E122.LFatAP. See Figure 4-24. This location had only WT (storm water) sample types which were associated with lower BLM-based IWQC (n=11) than the 22 baseflow (WS or WP) sample events at this same gage station coordinates (E122) but that were identified by EIM with different nomenclature (South Fork of Sandia at E122, i.e. E122.SF Windward ID). The stormflow E122 (WT) events had lower average pH (7.0) than the average pH of 8.5 in the E122 baseflow (WS, WP) events, while DOC was similar across all events at E122 (average 12 mg/L for WT, and 12.2 mg/L for WS, WP events).

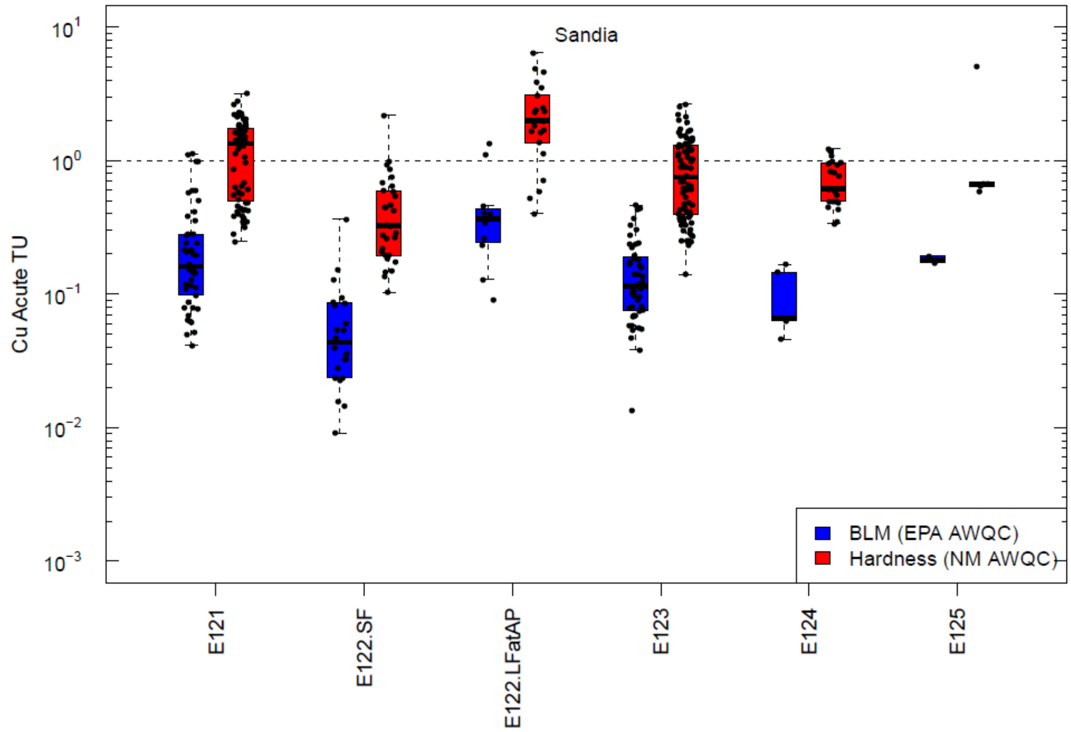

Figure 4-24. Sandia Canyon longitudinal summary of acute dissolved copper IWQC TUs based on BLM and New Mexico (NM) IWQC

Given the BLM sensitivity to pH it is apparent that the lower pH of the stormflow samples at E122 is a significant consideration, which is not surprising given the runoff from the significant impervious surface area in the associated watershed (rainfall is naturally acidic with pH~5.5). Considering spatial patterns in the Upper Sandia perennial waters, not far downstream from E122, BLM events from gage station E123 (Sandia below wetland) exhibited no BLM-based IWQC TUs>1 across a large dataset (n=49 BLM events) nearly evenly distributed between stormflow (n=22) and baseflow (n=27). See Figure 4-24, which again helps to illustrate the significant false positive rate of the hardness-based copper IWQC. Additional longitudinal summaries based on chronic IWQCs are provided in Appendix B.

A longitudinal summary of BLM- and hardness-based acute copper TUs for the supplemental NWQMC dataset for the Rio Grande is shown in Figure 4-25. While BLM-based acute copper TUs are generally lower than hardness-based TUs, the TUs for the Rio Grande are generally lower than those calculated for the LANL dataset. This pattern is likely due to differences in copper concentrations and/or water chemistry (e.g., DOC, pH, and hardness) between the Rio Grande perennial waters and the ephemeral/intermittent surface waters of the Pajarito Plateau. Additional longitudinal summaries based on both acute and chronic IWQCs are provided for the Rio Grande in Appendix C.

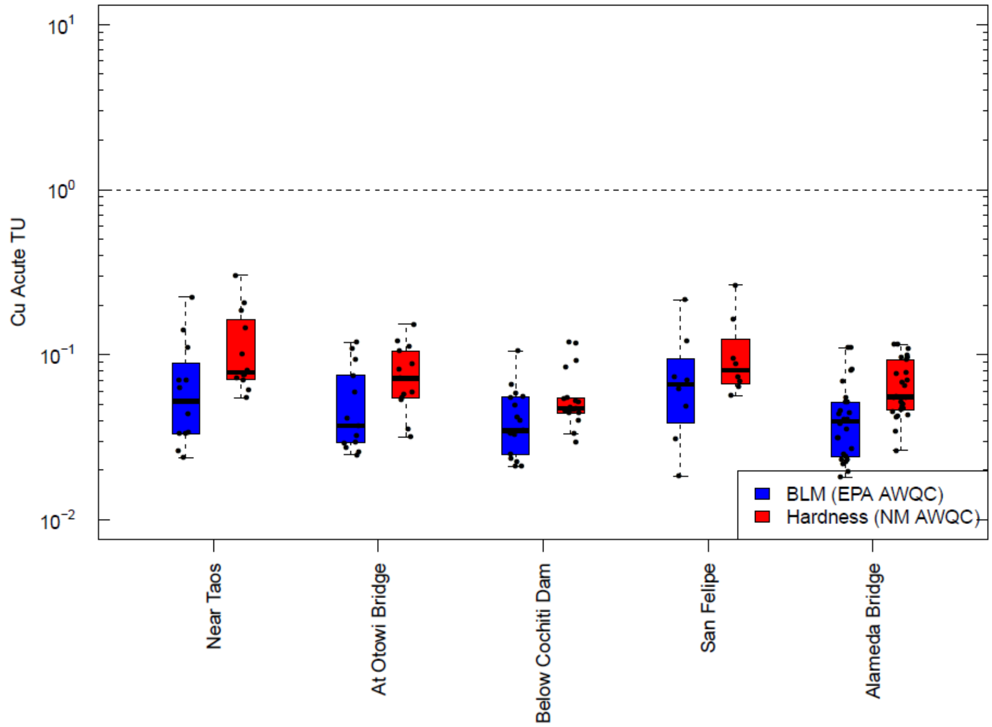

Figure 4-25. Longitudinal summary of acute dissolved copper IWQC TUs based on BLM and New Mexico (NM) IWQC from the Rio Grande dataset

4.5 EVALUATION OF TIME-VARIABLE ACUTE IWQC FOR FMBS AND OTHER POTENTIAL SSWQC OUTCOMES

Location-specific acute BLM-based FMBs were calculated for each metal for locations containing at least 10 BLM-based TUs. A summary of acute FMBs for copper, lead, and zinc by sampling location is provided in Table 4-6; FMBs for minor watersheds are described in Section 4.6. Figure 4-26 provides a graphical representation of the BLM-based copper FMB derived for E042.1 as an example. In this figure, "AFa" is the acute adjustment factor applied to the distribution of copper TUs (green dashed line) such that the projected IWQC exceedance frequency is equal to once in three years (the 99.9th percentile). In this case, the AF is 2.56, which is applied to shift the dissolved copper distribution (red dashed line) upwards so that it intersects a value of 15.06 µg/L, which is the FMB. Appendix D provides comprehensive plots of acute IWQC and TUs over time and the corresponding plots used to derive the FMBs for each metal for each location and by minor watershed groups of locations. Plots are also included for aluminum FMBs based on the various filter size sample preparations.

Table 4-6. Acute BLM-based FMB results for copper, lead, and zinc by location

Location ID	Windward ID	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)
Acid above Pueblo	E056	5.7	175	294
Canon de Valle below MDA P	E256			218
DP above Los Alamos Canyon	E040	12.2	270	356
DP above TA-21	E038	14.2	275	338
DP below grade ctrl structure	E039.1	19.6	177	368
Los Alamos above low-head weir	E042.1	15.1	161	253
Los Alamos below low-head weir	E050.1	14.1	275	305
Mortandad below Effluent Canon	E200	11.5	263	415
Pajarito above Threemile	E245.5	11.2	217	497
Pajarito above Twomile	E243		237	306
Pueblo above Acid	E055	9.6	155	308
Sandia below Wetlands	E123	11.3	276	341
Sandia left fork at Asph Plant	E122.LFatAP	35.3	101	2100
Sandia right fork at Pwr Plant	E121	4.8	58	218
South Fork of Sandia at E122	E122.SF	84.8	1110	787
Twomile above Pajarito	E244	5.1	252	195
Water above SR-501	E252 up			

Note: 1) results shown for locations with more than 10 available TUs, 2) FMBs are based on 0.45µm filtered ("dissolved") metal concentrations and BLM-based IWQCs which are also on a dissolved basis.

BLM – biotic ligand model
FMB – fixed monitoring benchmark
ID – identification
IWQC – instantaneous water quality criteria
TU – toxic unit
Windward – Windward Environmental LLC

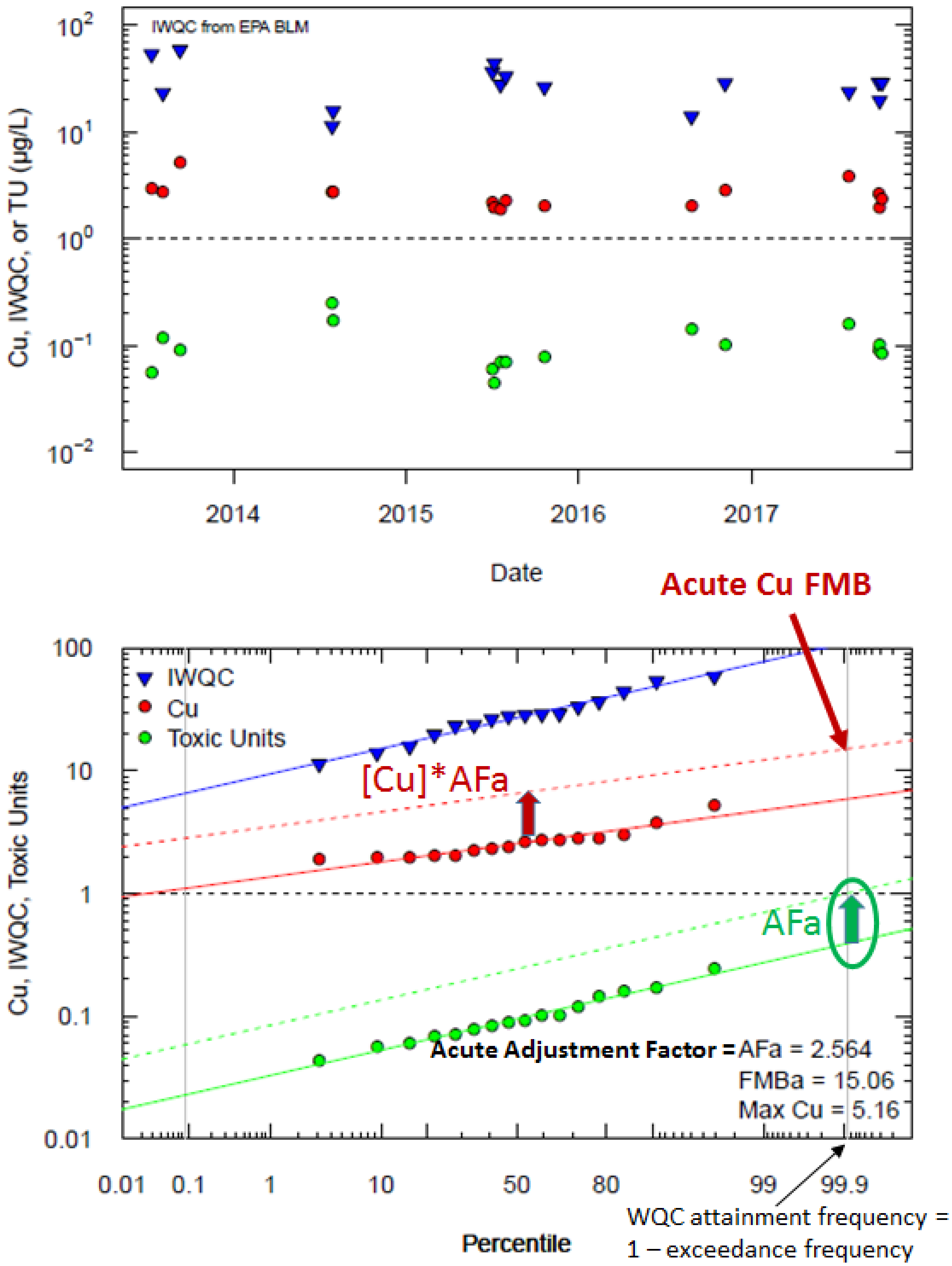

Figure 4-26. Example BLM-based acute copper FMB for E042.1

Table 4-7 provides a summary of acute BLM- and MLR-based FMB results for aluminum by location, and Table 4-8 provides a summary of acute BLM- and MLR-based FMB results for aluminum by minor watershed. The resulting FMBs vary considerably between the six permutations possible (three filter preparations x two AWQC basis). Care must be taken in interpreting the aluminum FMBs given the uncertainty in 1) the EPA MLR-based AWQC are draft subject to finalization, 2) the BLM has broader bounds than the MLR-based AWQC for DOC and pH as indicated in EPA 2017 and associated literature, 3) the criteria implementation basis (UF, vs F10 vs F0.45), and the significance of impacts from aluminum in the natural background conditions(LANL 2017b, 2016, 2015, 2014, 2013, 2010a, b, 2007).

Table 4-7. Acute aluminum BLM- and MLR-based FMB results based on filter size preparation by location

Location ID	Windward ID	BLM (μg/L)			MLR (μg/L)		
		UF	F10	F0.45	UF	F10	F0.45
Acid above Pueblo	E056	1307		998	1493		1550
Canon de Valle below MDA P	E256	659		503	4204		4988
DP above Los Alamos Canyon	E040	862	991	832	4699	4282	3893
DP above TA-21	E038	695	714	1002	2355	3373	2850
DP below grade ctrl structure	E039.1	1314	636	819	2911	4634	2818
Los Alamos above low-head weir	E042.1	1027		622	2091		2317
Los Alamos below low-head weir	E050.1	2405		1194	2300		2019
Mortandad below Effluent Canon	E200	1398		1384	3588		3564
Pajarito above Threemile	E245.5	2041		1337	830		944
Pajarito above Twomile	E243	1525		1009	3042		2294
Pueblo above Acid	E055	1531		861	1735		1931
Sandia below Wetlands	E123	1339	648	972	2273	3020	2063
Sandia left fork at Asph Plant	E122.LFatAP	339		172	2020		1694
Sandia right fork at Pwr Plant	E121	572	210	689	1770	2602	1467
South Fork of Sandia at E122	E122.SF	1216		611	2972		3360
Twomile above Pajarito	E244	3130		1015	914		1630
Water above SR-501	E252 up	2426		775	3380		883

Note: Results based on 10 or more IWQC and TU results.

BLM – biotic ligand model
F – filtered
FMB – fixed monitoring benchmark
ID – identification
IWQC – instantaneous water quality criteria
MLR – multiple linear regression
TU – toxic unit
UF – unfiltered
Windward – Windward Environmental LLC

Table 4-8. Acute aluminum BLM- and MLR-based FMB results based on filter size preparation by minor watershed

Canyon	2015 Draft IP MTAL (µg/L)	BLM (µg/L)			MLR (µg/L)		
		UF	F10	F0.45	UF	F10	F0.45
Acid	442	1360		1064	1461		1625
Canon de Valle	974	659		503	4204		4988
DP	688	899	913	970	3040	4651	3489
Los Alamos	1042	3038	783	837	3727	3866	2234
Mortandad	554	2029		1283	3215		2718
Pajarito	1069	3305	1579	1266	1354	3517	1738
Pueblo	985	1058		907	1673		1721
Sandia	1490	1377	299	901	2310	3397	1784
Twomile	628	3130		1015	914		1630
Water	965	737		430	4281		1408

Note: Blank cells indicate that there were no data, or insufficient data for calculating FMBs
Results based on 10 or more IWQC and TU results.

BLM – biotic ligand model
F – filtered
FMB – fixed monitoring benchmark
IWQC – instantaneous water quality criteria
MLR – multiple linear regression
MTAL – maximum target action level
UF – unfiltered
TU – toxic unit

Additionally, 10th, 25th and 50th percentiles of acute BLM-based IWQCs for copper, lead, and zinc are provided for the LANL dataset in Table 4-9 (for locations with at least 10 calculated TUs). Table 4-10 provides a similar summary of acute BLM- and MLR-based IWQC percentiles for aluminum by location for the LANL dataset, and Table 4-11 provides a summary of IWQC percentiles calculated for the Rio Grande dataset.

Where data are absent or insufficient to generate BLM-based IWQC for a location of interest, using conservative percentile IWQC results from other, representative locations that have BLM-based IWQC datasets may be a useful initial approach for screening observed metals concentrations. For example, the State of Idaho's guidance recommends NPDES permit writers use the minimum 10th percentile of BLM-based IWQC for 189 locations characterized in 2016 as part of that state's initial BLM rulemaking effort (IDEQ 2017).

Additionally, as an alternative for reconciling time-variable IWQC when data are insufficient for calculating FMBs, conservative percentiles have been proposed for initial screening purposes (McConaghie and Matzke 2016). EPA has gone so far as to indicate that the 2.5th percentile IWQC may need to be used for conservatism (EPA 2016), although caution must be exercised when using such an approach to evaluate any unintended over-conservatism. The 10th, 25th, and 50th BLM-based IWQC percentiles were also evaluated by Oregon DEQ in its 2016 Technical Support Document used for statewide copper criteria evaluations using the BLM (McConaghie and Matzke 2016). Lastly, the 50th percentile (median) is provided as a general measure of central tendency that can be compared with the hardness-based IP MTALs that have been based on geometric mean or average hardness.

Careful consideration of the key differences between FMBs and IWQC are needed while interpreting the time-variable outcomes provided herein. Significant differences in BLM IWQC and TU results among multiple locations may affect FMBs derived for multiple locations within a particular canyon or AU grouping. Similarly, certain locations may contain BLM events dominated by certain sample types, e.g., WT – stormflow versus WM/WP/WS baseflow that may have experienced significantly different water quality that might lead to correspondingly different IWQC and/or FMBs.

Specifically, the copper BLM-based FMBs for the four sampling locations in the Upper Sandia AU varied across an order of magnitude between 4.8 and 85 µg/L (see Table 4-6, copper FMBs, for locations "Sandia right fork at Pwr Plant (E121)" and "South Fork of Sandia at E122 (E122.SF)"). Meanwhile, an overall copper FMB of 8.5 µg/L for all four locations in the AU grouped together (Table 4-12) was approximately an order of magnitude lower than the highest individual Sandia location FMB. Interestingly, among the four locations (n=127 BLM datasets), copper would exceed an FMB in 16 samples, while 6 of those results would not have exceeded BLM-based acute IWQC. In practice, exceedances of an IWQC (or lack thereof) should take precedence over exceedances of an FMB for a particular sample result. Some of this contrast may reflect significant differences between baseflow and stormflow water quality that will require further consideration, especially where pH measurements are concerned as described in Section 4.4. This situation is applicable to lead and zinc BLM-based FMBs for Sandia as well, which is not surprising because those metal BLMs behave similarly to the copper BLM.

Table 4-9. Acute copper, lead and zinc BLM IWQC percentiles by location

Location ID	Windward ID	Median Hardness (mg/L as calcium carbonate)	Copper (µg/L)			Lead (µg/L)			Zinc (µg/L)		
			10th Percentile	25th Percentile	50th Percentile	10th Percentile	25th Percentile	50th Percentile	10th Percentile	25th Percentile	50th Percentile
Acid above Pueblo	E056	20	7.4	8.9	16	160	180	210	240	250	290
Canon de Valle below MDA P	E256	66	10	12	18	130	160	180	190	210	250
DP above Los Alamos Canyon	E040	28	16	20	26	220	260	330	230	270	300
DP above TA-21	E038	28	8.1	11	13	120	150	210	160	180	220
DP below grade ctrl structure	E039.1	25	12	16	20	160	200	280	200	220	290
Los Alamos above low-head weir	E042.1	34	15	22	28	260	280	310	270	290	330
Los Alamos below low-head weir	E050.1	45	17	23	33	290	340	370	280	310	350
Mortandad below Effluent Canon	E200	28	16	23	26	240	270	350	310	350	360
Pajarito above Threemile	E245.5	24	8.3	16	25	170	230	310	280	320	370
Pajarito above Twomile	E243	35	10	20	24	160	210	250	210	230	270
Pueblo above Acid	E055	39	23	28	32	310	340	380	320	320	360

Location ID	Windward ID	Median Hardness (mg/L as calcium carbonate)	Copper (μg/L)			Lead (μg/L)			Zinc (μg/L)		
			10th Percentile	25th Percentile	50th Percentile	10th Percentile	25th Percentile	50th Percentile	10th Percentile	25th Percentile	50th Percentile
Sandia below Wetlands	E123	53	17	28	40	240	290	370	240	270	340
Sandia left fork at Asph Plant	E122.LFatAP	26	7.1	16	22	97	200	230	210	240	300
Sandia right fork at Pwr Plant	E121	27	9.3	14	31	130	190	250	160	210	240
South Fork of Sandia at E122	E122.SF	111	79	100	120	490	570	710	320	380	480
Twomile above Pajarito	E244	30	8.9	14	21	180	210	240	220	230	300
Water above SR-501	E252 up	46	2.1	4.2	6.5	39	78	120	160	170	200

Note: Results based on 10 or more IWQC and TU results.

BLM – biotic ligand model
ID – identification
IWQC – instantaneous water quality criteria
Windward – Windward Environmental LLC

Table 4-10. Acute total aluminum IWQC percentiles based on BLM and MLR by location

Location ID	Windward ID	Median Hardness (mg/L calcium carbonate)	Aluminum BLM (μg/L)			Aluminum MLR (μg/L)		
			10th Percentile	25th Percentile	50th Percentile	10th Percentile	25th Percentile	50th Percentile
Acid above Pueblo	E056	20	720	820	1100	1600	1900	2200
Canon de Valle below MDA P	E256	66	610	720	840	2800	3400	3600
DP above Los Alamos Canyon	E040	28	790	900	1000	3100	3600	3600
DP above TA-21	E038	28	570	640	880	1900	2200	2600
DP below grade ctrl structure	E039.1	25	720	810	1100	2600	2800	3100
Los Alamos above low-head weir	E042.1	34	850	1100	1200	2300	2700	3500
Los Alamos below low-head weir	E050.1	45	820	980	1400	2600	3200	3800
Mortandad below Effluent Canon	E200	28	970	1100	1300	2800	3100	3900
Pajarito above Threemile	E245.5	24	990	1200	1800	1200	1500	2100
Pajarito above Twomile	E243	35	690	800	1100	3000	3400	3900
Pueblo above Acid	E055	39	1100	1100	1200	2300	3500	3800
Sandia below Wetlands	E123	53	620	790	920	2500	3300	3800
Sandia left fork at Asph Plant	E122.LFatAP	26	640	900	1100	1400	2200	2400
Sandia right fork at Pwr Plant	E121	27	380	480	660	2200	2500	3200
South Fork of Sandia at E122	E122.SF	111	470	660	820	1700	2400	3100
Twomile above Pajarito	E244	30	590	670	1000	1600	1900	2900
Water above SR-501	E252 up	46	400	450	640	1300	1800	2500

Note: Results based on 10 or more IWQC and TU results.

BLM – biotic ligand model
ID – identification
IWQC – instantaneous water quality criteria
MLR – multiple linear regression
Windward – Windward Environmental LLC

Table 4-11. Acute copper, lead, and zinc BLM IWQC percentiles and acute aluminum BLM and MLR IWQC percentiles for the Rio Grande dataset

Location ID	Date Range	No. of Events	Median Hardness (mg/L)	Copper (µg/L)			Lead (µg/L)			Zinc (µg/L)			Aluminum BLM (µg/L)			Aluminum MLR (µg/L)		
				10th Percentile	25th Percentile	50th Percentile	10th Percentile	25th Percentile	50th Percentile	10th Percentile	25th Percentile	50th Percentile	10th Percentile	25th Percentile	50th Percentile	10th Percentile	25th Percentile	50th Percentile
Rio Grande below Taos Junction Bridge near Taos, New Mexico	2005 to 2010	12	97	12	13	26	86	104	163	93	111	159	58	214	930	1300	1300	1550
Rio Grande at Otowi Bridge, New Mexico	2005 to 2010	13	109	11	17	22	104	142	211	125	158	239	91	160	499	1400	1900	2600
Rio Grande below Cochiti Dam, New Mexico	2009 to 2015	18	120	15	17	23	163	192	223	216	231	264	120	227	826	2800	3125	3600
Rio Grande at San Felipe, New Mexico	2005 to 2008	8	114	12	15	20	122	135	175	147	149	198	66	70	374	1770	1875	2150
Rio Grande at Alameda Bridge at Alameda, New Mexico	2005 to 2015	27	122	15	20	30	173	196	254	196	227	255	84	195	1308	2000	2550	3200

BLM – biotic ligand model
ID – identification
MLR – multiple linear regression
IWQC – instantaneous water quality criteria

In contrast, most other FMBs were relatively similar between the individual locations (Table 4-6) and the pooled locations among the various canyons (Table 4-12). For example, the range of copper FMBs for individual and pooled locations for DP, Los Alamos, Mortandad and Pajarito canyons fell within a relatively narrow range of 11 to 15 µg/L, and none of the observed copper concentrations exceeded any FMB basis. The dataset for these four canyons contains nearly 200 BLM sample events across most of the past 13 years, with over 130 samples collected in the past 5 years, thus is robust and sound for considering BLM-based alternative AWQC (as IWQCs or FMBs).

4.6 POTENTIAL TARGET ACTION LEVELS FOR THE LANL INDIVIDUAL PERMIT

This section provides a summary of how some of the above-described outcomes might be used for NPDES permit compliance. In the case of LANL's NPDES individual permit (IP) for solid waste management units and areas of concern, acute hardness-based New Mexico AWQC are used as the current basis for maximum target action levels (MTALs). The MTALs are used to determine compliance activities based on storm water sampling results. In the 2010 IP, the metals MTALs were based on a 30-mg/L hardness[14], which yielded one-size-fits-all MTALs for dissolved copper, lead, and zinc of 4.3, 17, and 42 µg/L, respectively (while in effect in early 2010, MTALs based on hardness-based New Mexico AWQC for aluminum were not included in the 2010 IP by EPA). In contrast, the 2015 draft IP, in its Appendix F proposed ranges of MTALs for these metals, including aluminum across the numerous canyon watersheds; the MTALs were based on acute New Mexico AWQC using spatially aggregated average hardness results for surface water samples for each canyon.

The 2015 draft IP MTALs for copper, lead, and zinc are provided in Table 4-12, which also contains BLM-based acute FMBs for canyons for which 10 or more BLM acute IWQC and TU datasets were available, as identified in Section 4.2. Table 4-12 also provides median BLM acute IWQC for copper, lead and zinc for canyons with 10 or more BLM events. This table provides columns for each metal showing the factor difference between the acute BLM-based potential MTALs and the 2015 draft IP MTALs. The table also provides median hardness results for each canyon derived from the BLM dataset aggregated herein (10 or more samples).

In either case of the BLM application (acute FMBs or median acute IWQC), the differences with respect to the 2015 draft IP MTALs were most pronounced for lead (14- to 18-fold higher on average) and zinc (5-fold higher on average). All BLM-based acute copper FMBs were higher than the 2015 draft IP MTALs, ranging from 10% higher for Sandia to 6.2 times higher for Water canyon. Meanwhile, acute BLM IWQC ranged from 3.2 to 7.8 times higher than the 2015 MTALs. Thus, using either BLM-

[14] A 2008 LANL report indicates an overall geometric mean hardness of 30.1 mg/L and a median of 29.2 mg/L for filtered hardness results from 423 samples collected in receiving waters across LANL watersheds(LANL 2008).

based MTAL (acute FMB or median acute IWQC) for any of these three metals would likely yield different compliance scenarios. If it is accepted that the BLM provides more accurate environmental protection than do hardness-based AWQC, especially given the level of vetting behind the EPA 2007 copper BLM-based AWQC, it follows that BLM-based MTALs also can lead to more accurate decision making for storm water compliance needs while maintaining the level of environmental protection intended by EPA.

For aluminum, the potential new MTALs are a more complex set of outcomes related to the different combinations of sample preparations (e.g., UF, F0.45, F10 and F1) and the three types of AWQC evaluated (i.e., BLM, EPA 2017 MLR, and New Mexico 2010). Tables 4-7 and 4-13 provide the summaries accordingly.

Table 4-12. Potential BLM-based IP MTALs for copper, lead, and zinc by canyon

				Dissolved Copper (µg/L)						Dissolved Lead (µg/L)						Dissolved Zinc (µg/L)					
Canyon	2015 Draft IP Hardness	Median Hardness (mg/L)	Change in Hardness (%)	2015 Draft IP MTAL	BLM FMB[a]	Factor Diff. from IP	BLM IWQC Median	Factor Diff. from IP	Acute New Mexico WQC[b]	2015 Draft IP MTAL	BLM FMB[a]	Factor Diff. from IP	BLM IWQC Median	Factor Diff. from IP	Acute New Mexico WQC[b]	2015 Draft IP MTAL	BLM FMB[a]	Factor Diff. from IP	BLM IWQC Median	Factor Diff. from IP	Acute New Mexico WQC[b]
Acid	22	20	-13%	3.3	9.1	2.8	17	5.2	3.0	12	223	18	210	17	10	41	346	8.4	310	7.5	37
South Fork Acid	21			3.1						12						39					
Ancho	40	43	7%	5.6					6.3	23					27	69					75
North Fork Ancho	30			4.3						17						54					
Arroyo de la Delfe	22			3.2						12						40					
Bayo	59			8.1						36						99					
Canada del Buey	39			5.5						23						67					
Canon de Valle	40	66	66%	5.7			18	3.2	9.5	23			180	7.7	48	69	218	3.1	250	3.6	113
Chaquehui	30	25	-18%	4.3					3.7	17					14	54					46
DP	31	26	-15%	4.5	14.5	3.3	19	4.3	4.0	18	230	13	250	14	15	55	339	6.2	280	5.1	49
Fence	68			9.4						42						113					
Graduation	31			4.5						18						55					
Los Alamos	42	47	11%	5.9	13.7	2.3	29	4.9	6.8	25	219	8.8	370	15	31	73	221	3.0	350	4.8	82
Mortandad	26	30	12%	3.8	12.7	3.3	30	7.8	4.5	15	290	19	400	27	17	48	325	6.8	410	8.6	54
Pajarito	43	32	-24%	6.0	14.8	2.5	24	4.0	4.8	25	237	9.3	290	11	19	74	395	5.3	360	4.9	59
Potrillo	21			3.1						12						39					
Pratt	26			3.8						15						48					
Pueblo	40	39	-4%	5.7	9.7	1.7	35	6.1	5.7	24	173	7.3	410	17	24	70	423	6.0	370	5.3	69
Rendija	115			15.3						75						181					
Sandia	55	48	-12%	7.6	8.5	1.1	40	5.3	7.0	33	172	5.2	350	11	32	92	282	3.1	320	3.5	84
Ten-Site	16			2.4						8.3						30					
Threemile	29			4.2						17						52					
Twomile	29	30	4%	4.2	5.1	1.2	21	5.0	4.5	16	252	15	240	15	18	52	195	3.8	300	5.8	55
Walnut	23			3.3						13						42					
Water	40	43	8%	5.6	35.1	6.2	19	3.4	6.3	23	1479	63	260	11	28	69	303	4.4	230	3.3	76

Note: Median based on 10 or more results unless indicated by *.
Blank cells indicate that there were no data or insufficient data for calculating FMBs.

[a] FMBs shown only for locations with 10 or more IWQC and TU results.

[b] New Mexico WQC are based on median hardness.

BLM – biotic ligand model
FMB – fixed monitoring benchmark
IP – individual permit
IWCQ – instantaneous water quality criteria
MTAL – maximum target action level
WQC – water quality criteria

Table 4-13. Potential BLM- and MLR-based IP MTALs for total aluminum by canyon

Canyon	2015 Draft IP		Median Hardness (mg/L)	Total Aluminum (µg/L)				
				Acute FMB[a,b]		Acute IWQC Median Values[c]		
	Hardness	MTAL (µg/L)		BLM	EPA 2017 MLR	BLM	EPA 2017 MLR	New Mexico 2010
Acid	22	442	20	1360	1461	1200	2200	365
South Fork Acid	21	414						
Ancho	40	966	43					1060
North Fork Ancho	30	658						
Arroyo de la Delfe	22	427						
Bayo	59	1649						
Canada del Buey	39	926						
Canon de Valle	40	974	66	659	4204	840	3600	1948
Chaquehui	30	667	25					501
DP	31	688	26	899	3040	1000	3200	549
Fence	68	2026						
Graduation	31	692						
Los Alamos	42	1042	47	3038	3727	1400	4000	1200
Mortandad	26	554	30	2029	3215	1300	4200	650
Pajarito	43	1069	32	3305	1354	1400	3000	731
Potrillo	21	409						
Pratt	26	554						
Pueblo	40	985	39	1058	1673	1300	3900	935
Rendija	115	4122						
Sandia	55	1490	48	1377	2310	890	3300	1250
Ten-Site	16	274						
Threemile	29	639						
Twomile	29	628	30	3130	914	1000	2900	664
Walnut	23	452						
Water	40	965	43	737	4281	600	2500	1072

Note: Blank cells indicate that there were no data or insufficient data for calculating FMBs.

[a] FMBs shown only for locations with 10 or more available IWQC and TU results.

[b] FMBs based on TUs for unfiltered aluminum.

[c] Median IWQC based on 10 or more results.

BLM – biotic ligand model
EPA – US Environmental Protection Agency
FMB – fixed monitoring benchmark
IP – individual permit
IWQC – instantaneous water quality criteria
MLR – multiple linear regression
MTAL – maximum target action level
TU – toxic unit

4.7 APPLICATION OF BLM CHRONIC IWQC TO PERENNIAL SURFACE WATERS

Chronic IWQC were generated for all sample events, but only evaluated for specific LANL waters currently designated in §126 NMAC as perennial waters (e.g., upper Sandia, and specific AUs in Water Canyon and Canon de Valle). Although chronic IWQC are technically applicable to §98 NMAC waters (i.e., default intermittent) such as the greater Pueblo Canyon, chronic IWQC were not evaluated for these waters, partly to avoid potential confusion, since it is understood that some of these waters are being (or will be) evaluated under the NMED Hydrology Protocol use attainability analysis approach to determine whether habitat and hydrology support an aquatic life use that may or may not be subject to chronic AWQC.

Figures 4-27 to 4-29 portray comparisons of chronic IWQC TUs for §126 NMAC perennial waters in the LANL dataset. Similar patterns emerge consistent with those for the acute IWQC comparisons in Section 4.2, although the false positive rates for chronic IWQC based on hardness are now significant for lead (49%) and zinc (12%). For copper, the hardness-based chronic IWQC exhibited resulted in false positives over the BLM-based chronic IWQC in nearly half the samples (49%). Chronic aluminum IWQC TU plots for the LANL dataset are provided in Appendix E, and chronic copper, zinc, and aluminum IWQC TU plots for the Rio Grande dataset are also provided in Appendix F.

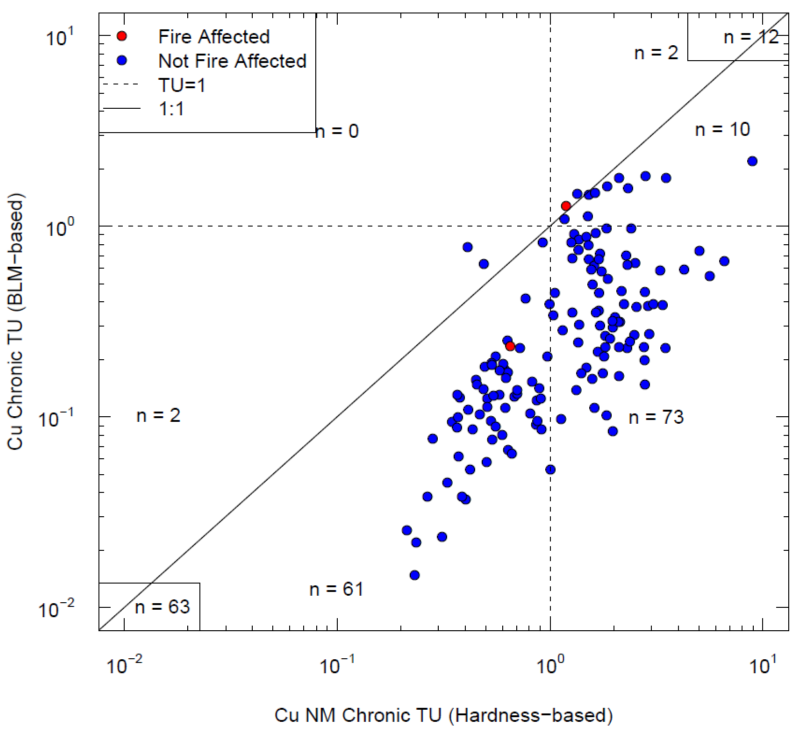

Figure 4-27. Comparison of dissolved <u>copper chronic IWQC</u> TUs based on BLM and New Mexico AWQC for NMAC Class 126 waters

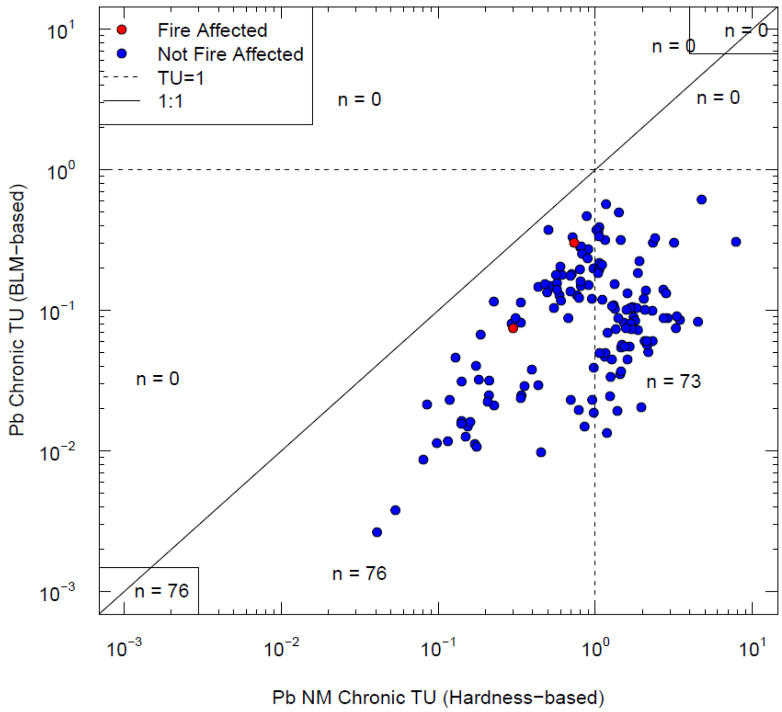

Figure 4-28. Comparison of dissolved lead chronic IWQC TUs based on BLM and New Mexico AWQC for NMAC Class 126 waters

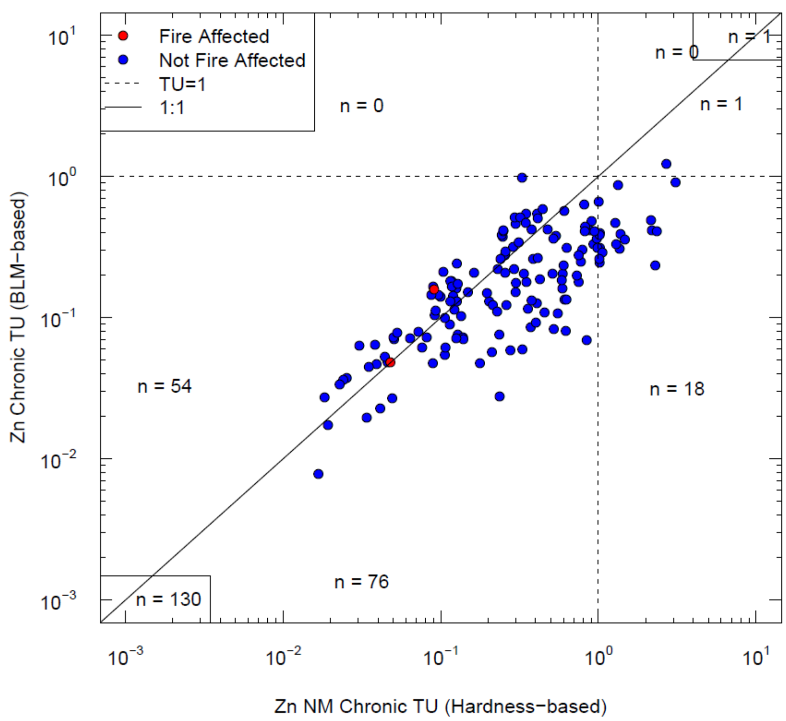

Figure 4-29. Comparison of dissolved zinc chronic IWQC TUs based on BLM and New Mexico AWQC for NMAC Class 126 waters

4.8 Implications of BLM-based IWQC for 303(d) Listings

As mentioned in Section 4.3, application of BLM-based AWQC for copper can be expected to result in potentially significant differences for water quality standards compliance determinations versus using hardness-based AWQC, whether for acute or chronic criteria considerations. Such differences for lead and zinc are likely to be less significant for acute criteria but of potential concern for chronic criteria. To illustrate the potentially different outcomes, Table 4-14 compares LANL BLM dataset outcomes for the current and proposed New Mexico §303(d) listings for copper (NMED 2018). For the five new AU segments proposed for Category 5 listings for impairments by copper (acute), results for hardness-based New Mexico TUs support the new listings, while BLM-based TUs show zero incidence of acute BLM-based IWQC exceedances.

Similarly, for the three of seven previously §303(d)-listed AUs, BLM datasets indicate no acute copper IWQC exceedances. Two of the seven listed AUs would probably also pose little to no risk based on the BLM after consideration of BDL copper results used to calculate the TU values. BLM datasets were not available for the remaining two AUs. The Acid Canyon AU previously §303(d)-listed for impairment by zinc is proposed for delisting in 2018, which is supported by results for New Mexico hardness-based and BLM-based IWQC from the current LANL dataset.

As discussed in Sections 4.4-4.6, the Upper Sandia Canyon water quality patterns bear further consideration with regard to BLM outcomes (IWQC and FMBs). The relatively frequent exceedances (48%) of New Mexico acute copper IWQC are in sharp contrast to infrequent (4%) BLM-based IWQC exceedances, which may be limited to particular flow regimes. The acute criteria averaging period for the EPA 2007 BLM-based copper AWQC is 24 hours, which bears consideration for the interplay between the relatively stable baseflow and intermittent, short duration storm water runoff that Upper Sandia canyon experiences, a fairly unique situation with respect to other Pajarito Plateau waters.

Table 4-14. Comparison of IWQC attainment based on BLM and New Mexico IWQC generated for 303(d) Impaired Waters Listings in the LANL vicinity

2016 303(d) listings - NMED 2016, 2018 proposed (adapted from NMED 2018)						2018 LANL BLM DQO/DQA Dataset Basis						
						New Mexico IWQC			BLM-based IWQC			
AU_ID	AU Name	WQS Reference	IMPAIRMENT	IR Category (by AU)	CYCLE FIRST LISTED	n	TU>1	exc freq (%)	n	TU>1	exc freq (%)	Locations
NM-128.A_06	Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe)	20.6.4.128	COPPER, ACUTE	5/5C	2016	9	7*	78%	9	1*	11%	E243
NM-9000.A_042	Mortandad Canyon (within LANL)	20.6.4.128	COPPER, ACUTE	5/5C	2010	17	7	41%	17	0	0%	E200, E201, E204
NM-9000.A_047	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	20.6.4.126	COPPER, ACUTE	5/5B	2010	128	61	48%	127	4	3%	E121, E122 (2), E123
NM-97.A_002	Acid Canyon (Pueblo to headwaters)	20.6.4.98	COPPER, ACUTE	5/5C	2010	27	1*	4%	27	1*	4%	E055.5, E056
NM-97.A_004	Walnut Canyon (Pueblo Canyon to headwaters)	20.6.4.98	COPPER, ACUTE	5/5C	2014	no data						
NM-97.A_005	Graduation Canyon (Pueblo Canyon to headwaters)	20.6.4.98	COPPER, ACUTE	5/5C	2010	no data						
NM-97.A_029	South Fork Acid Canyon (Acid Canyon to headwaters)	20.6.4.98	COPPER, ACUTE	5/5A	2014	7	0	0%	7	0	0%	E055.5
NM-97.A_029	South Fork Acid Canyon (Acid Canyon to headwaters)	20.6.4.98	ZINC, ACUTE	5/5A	2014	7	0	0%	7	0	0%	E055.5
NM-128.A_14	DP Canyon (Grade control to upper LANL bnd)	20.6.4.128	Copper, Dissolved	5/5C	2018	49	15	31%	49	0	0%	E038, E039.1
NM-9000.A_043	Pueblo Canyon (Acid Canyon to headwaters)	20.6.4.98	Copper, Dissolved	5/5C	2018	13	5	38%	13	0	0%	E055
NM-128.A_16	Arroyo de la Delfe (Pajarito Canyon to headwaters)	20.6.4.128	Copper, Dissolved	5/5C	2018	4	3	75%	4	0	0%	E242.5
NM-128.A_08	Pajarito Canyon (Lower LANL bnd to Two Mile Canyon)	20.6.4.128	Copper, Dissolved	5/5C	2018	18	5	28%	18	0	0%	E245.5, E250
NM-128.A_15	Two Mile Canyon (Pajarito to headwaters)	20.6.4.128	Copper, Dissolved	5/5C	2018	10	5*	50%	10	0	0%	E244

*exceedance uncertain, TUs calculated for non-detects at reported DL, a number of which were 10 µg/L.

5 Discussion, Uncertainty and Other Considerations for Further Use of the BLM DQA Results

This section describes the types of uncertainty encountered and how they may affect key considerations going forward, including but not limited to:

1. Status of BLMs and their acceptance for generating AWQC that meet EPA guidelines
2. IWQC uncertainty with respect to key water quality variables
3. Existing or upcoming New Mexico water quality assessments
4. Spatial groupings of data for FMBs
5. Use of percentiles versus FMBs
6. Potential new IP MTALs

5.1 Status of BLMs and their acceptance for generating AWQC that meet EPA guidelines

To date, EPA has recommended the BLM for use only in generating copper AWQC for freshwater aquatic life, and two states have adopted the BLM as a statewide replacement of hardness-based copper AWQC.[15] However, the BLMs for aluminum, lead, and zinc applied herein have been developed in a manner similar to that used to develop EPA's 2007 nationally recommended copper AWQC. In addition, the aluminum, lead, and zinc BLMs applied herein have been developed and evaluated for the purpose of generating AWQC according to EPA guidelines (e.g., DeForest and Van Genderen 2012; DeForest et al. 2017; Santore et al. 2018). It is not clear if or when EPA will recommend BLM-based AWQC for aluminum, lead, zinc, or other metals. Nonetheless, the lack of an EPA national recommendation does not preclude a state from adopting BLM-based AWQC as a uniform replacement of, or side-by-side alternative to, current hardness-based AWQC, or as SSWQC subject to state agency and EPA review and approval in each case. Additionally, EPA's initial and revised draft "missing parameters" documents (EPA 2012b, 2016) provide an approach that can be used to address not only missing data for copper BLM-based AWQC, but also for the other BLMs given consistent relationships.

Thus, the underpinnings of the BLMs applied herein are sound, state of the science understandings designed to maintain EPA's intended level of protection and provide a potential new and more accurate basis for evaluating not only LANL-area waters but others where suitable datasets exist. This DQO/DQA provides a sound framework for evaluating water quality datasets to generate BLM-based outcomes. The considerable

[15] EPA released draft marine/estuarine AWQC for copper based on the BLM in 2016 (EPA [in prep]).

differences shown between BLM-based AWQC outcomes and those based on current hardness-based AWQC generally suggest that very different surface water quality management decisions might be reached, and that fewer causes for concern would be raised by considering the more accurate BLM-based approaches.

5.2 IWQC UNCERTAINTY WITH RESPECT TO KEY WATER QUALITY VARIABLES

While the dataset used herein to generate BLM-based IWQCs was rich, with respect to BLM input parameters, strategies to address missing values had to be used to maximize usable datasets. Data for pH, which is regarded as a highly important BLM parameter, were available for this dataset, so no estimates of pH were used. However, data for DOC, another sensitive input to the BLM, had to be estimated from TOC in cases where only TOC data were available. In general, estimating DOC from TOC for BLM purposes is a recognized approach, e.g. as used in Oregon (ODEQ 2016a) , and herein was bounded by patterns exhibited in the local dataset. While conservative decisions were made in estimating DOC concentrations, DOC is often an important limitation for application of the BLM. Future monitoring to support BLM application should plan for the collection of complete datasets.

No data existed for temperature in the dataset considered herein, but a temperature sensitivity analysis demonstrated that a conservative assumption of 10°C was appropriate (lower bound of BLM calibration range for temperature input). Temperature has little impact on BLM predictions for copper, lead, and zinc, but it can be important for aluminum (Figure 4-3). To gain a better understanding of the potential broader impacts on decision making from using estimated temperature values for aluminum, further evaluations are needed. The differences in BLM-based acute aluminum IWQC computed at 10°C versus those computed at 15°C appear to be significant and most Pajarito Plateau surface waters are likely to be warmer than 10°C most of the year (e.g., summer monsoonal runoff). The water temperature variable is not included in the MLR proposed by EPA in its 2017 draft aluminum AWQC, so if such AWQC are eventually adopted, the temperature sensitivity issue for aluminum may be moot.

5.3 EXISTING AND UPCOMING NEW MEXICO WATER QUALITY ASSESSMENTS

Employing the BLM to evaluate acute copper IWQC was shown to yield potentially significant differences in assessment outcomes compared to using the current New Mexico hardness-based criteria. The evaluations showed a 36% false positive rate: using hardness-based IWQC would yield an incorrect decision on the status of water quality standard attainment in 36% of the samples. This finding suggests that the 305(b)/303(d) status of current or proposed listings of impairment caused by copper in the LANL area waters may need to be reconsidered in light of the copper BLM-based AWQC. Indeed, based on the proposed 2018 303(d) listings, five additional AUs have been identified as impaired by copper, yet none of the observed copper concentrations exceeded BLM-based acute IWQC for associated locations in the LANL BLM dataset.

The difference was less pronounced for acute zinc IWQC (2% false positive rate), and no errors were apparent for acute lead IWQC. However, the New Mexico hardness-based acute IWQC for lead and zinc tended to yield TUs that were approximately an order of magnitude higher than TUs for BLM-based acute IWQC for these metals (Figures 4-6 and 4-7). These patterns suggest a tendency that might yield significant potential false positives for acute IWQC in other cases where higher observed lead and zinc concentrations might occur. In contrast, chronic IWQC for lead and zinc exhibited pronounced differences between TUs for BLM-based and New Mexico hardness-based IWQC with 49% and 12% false positives, respectively.

Based on visual inspections of the plots contained herein, potentially fire-affected data appear to fall within the overall distributions in the TU quadrant plots and so probably pose little if any impact on potential conclusions that might be reached. However, spatial groupings of BLM datasets should be carefully considered.

5.4 SPATIAL GROUPINGS OF DATA FOR FMBS

For purposes of generating single target values analogous to NPDES WQBELs or sampling benchmarks, like those of the EPA MSGP and LANL IP, the FMBs and median IWQC have merit to the extent that they are sufficiently representative of the key variables involved and projected for the future. The FMB provides an advantage because it explicitly examines observed and projected metal concentrations and exceedance frequencies, while median IWQC are based solely on observed IWQC without regard to observed metals levels or projections. The relatively large datasets for certain canyons yielded robust FMBs and median IWQC that could readily be considered as a new basis for MTALs in the forthcoming LANL IP. The copper acute FMBs for DP, Los Alamos and Pajarito canyons were very similar (13.7 to 14.9 μg/L) and based on relatively large BLM datasets collected over more than a decade and so pooling data for a single FMB for these canyons appears reasonable. However, further consideration of FMBs for Upper Sandia is warranted based on the patterns observed between FMBs and IWQC across the four sampling locations discussed in Section 4.5. An FMB based on data pooled for the four locations appears to be overshadowed by the distinctly different patterns in water quality between baseflow (WS or WP samples representative of stable effluent flow from LANL NPDES outfall 001) versus storm water runoff (WT samples). Further evaluations of pH during the two distinct flow regimes is recommended, as well as considerations for accounting for the acute BLM-based AWQC averaging period (24-hours).

5.5 USE OF HARDNESS-BASED MTALS FOR THE IP

Because the MTALs in the 2015 draft IP depend on hardness results available at the time, i.e. through circa 2014, new hardness data should be evaluated to update those MTALs if BLM-based MTALs or other consideration for use of the BLM is not provided via the IP. For example, compared with the 2015 draft IP hardness basis, median hardness is 66% higher in the current dataset for Canon de Valle, while it is

24% lower for Pajarito canyon. However, the hardness data evaluated herein were limited to those samples that had available BLM datasets so it is not clear if potentially available additional hardness data might further influence updated hardness-based MTALs for copper, lead, zinc and aluminum. In addition, it is not clear whether data richness might affect such considerations (median hardness-based MTALs calculated herein were based on 10 or more samples, while it is not clear for the 2015 draft IP whether sample numbers were taken into account). A relative change in the hardness basis of an MTAL will result in a proportional change in the MTAL calculated on that hardness value and so the uncertainty could have potentially significant impacts on IP compliance decision making.

5.6 Potential new IP MTALs Based on the BLM

The potential impact of the BLM on setting new IP MTALs for copper, lead and zinc is clear (Table 4-12). For copper, BLM-based acute FMBs averaged nearly 3-fold higher, and BLM-based median acute IWQC averaged 5-fold higher than the hardness-based 2015 draft IP MTALs. Similarly, for zinc, both BLM-based alternatives averaged 5-fold higher. And for lead, the BLM-based MTAL alternatives had even greater differences than hardness-based MTALs; averaging 14- to 18-fold higher than the 2015 IP MTALs. In these cases, the FMB-based BLM scenarios may have more merit than median IWQC-based scenarios as IP MTALs because of the greater degree of realism provided by the FMB in terms of its inclusion of exceedance frequency patterns. However, as mentioned above, the sensitivity of the FMB to variability in IWQC and/or TUs for certain locations and spatial groupings appears important and warrants further evaluation. Potential new IP MTALs for aluminum will have to consider the broader issues and considerations posed by 1) sample preparation methods (measurements of unfiltered aluminum are clearly inappropriate for determining compliance), 2) choice of BLM versus the MLR approach proposed by EPA 2017 aluminum AWQC, and 3) aluminum from natural background contributions.

In conclusion, the relatively rich datasets evaluated herein, and the improved accuracy of environmental protection that results from using the BLM appropriately, suggest a distinct ability to make more appropriate decisions and resource allocations than those permitted by hardness-based AWQC, whether for state 305(b)/303(d) assessment purposes or for NPDES permits like the LANL IP.

6 References

DeForest D, Santore R, Ryan A, Church B, Chowdhury M, Brix K. 2017. Development of biotic ligand model-based freshwater aquatic life criteria for lead following US Environmental Protection Agency guidelines. Environ Toxicol Chem 36(11):2965-2973.

DeForest DK, Van Genderen EJ. 2012. Application of US EPA guidelines in a bioavailability-based assessment of ambient water quality criteria for zinc in freshwater. Environ Toxicol Chem 31(6):1264-1272.

DeForest DK, Brix KV, Tear LM, Adams WJ. 2018. Multiple linear regression models for predicting chronic aluminum toxicity to freshwater aquatic organisms and developing water quality guidelines. Environ Toxicol Chem 37(1):80-90.

EPA. 1994. Interim guidance on the determination and use of water-effect ratios for metals. EPA-823-B-94-001. US Environmental Protection Agency, Washington, DC.

EPA. 2003a. 2003 draft update ambient water quality criteria for copper.

EPA. 2003b. The biotic ligand model: technical support document for its application to the evaluation of water quality criteria for copper. Health and Ecological Criteria Division, Office of Science and Technology, US Environmental Protection Agency, Washington, DC.

EPA. 2006. Guidance on systematic planning using the data quality objectives process. EPA/240/B-06/001, EPA QA/G-4. Office of Environmental Information, US Environmental Protection Agency, Washington, DC.

EPA. 2007. Aquatic life ambient freshwater quality criteria - copper, 2007 revision. EPA-822-R-07-001. Office of Water, US Environmental Protection Agency Washington, DC.

EPA. 2012a. Calculation of BLM fixed monitoring benchmarks for copper at selected monitoring sites in Colorado. 820R12009. Office of Water, US Environmental Protection Agency, Washington, DC.

EPA. 2012b. Development of tools to estimate water quality parameters for the biotic ligand model. US Environmental Protection Agency, Washington, DC.

EPA. 2013. EPA Clean Water Act 303(c) determinations on Oregon's new and revised aquatic life toxic criteria submitted on July 8, 2004, and as amended by Oregon's April 23, 2007 and July 21, 2011 submissions. US Environmental Protection Agency Region 10, Seattle, WA.

EPA. 2016. Draft technical support document: recommended estimates for missing water quality parameters for application in EPA's Biotic Ligand Model. EPA

820-R-15-106. US Environmental Protection Agency, Office of Water, Washington, DC.

EPA. 2017. Draft aquatic life ambient water quality criteria for aluminum 2017. EPA-822-P-17-001. US Environmental Protection Agency, Washington, DC.

EPA. [in prep]. Draft update of aquatic life ambient estuarine/marine water quality criteria for copper - 2016. Office of Water, US Environmental Protection Agency, Washington, DC.

EPA. 1985. Guidelines for deriving numerical national water quality criteria for the protection of aquatic organisms and their uses. PB85-227049. Office of Research and Development, US Environmental Protection Agency, Washington, DC.

HydroQual. 2007. Biotic ligand model, Windows interface, version 2.2.1. User's guide and reference manual. HydroQual, Inc., Mahwah, NJ.

HydroQual. 2008. Calculation of BLM fixed monitoring benchmarks for copper at selected monitoring sites in Colorado. Prepared for US Environmental Protection Agency. HydroQual, Inc., Mahwah, NJ.

IDEQ. 2017. Implementation guidance for the Idaho copper criteria for aquatic life. Using the biotic ligand model. State of Idaho Department of Environmental Quality, Water Quality Division, Boise, ID.

LANL. 2007. Los Alamos National Laboratory NPDES permit application number NM0030759. Preliminary comments regarding use of statistical methods to evaluate background surface water quality and identify laboratory impacts. LA-UR-07-8120. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2008. Statistical analysis of hardness concentration filtered storm water runoff samples. NPDES Permit No. NM0030759. LA-UR-08-03767. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2010a. Comparison of 2009-2010 MSGP monitoring data with natural background concentrations. Los Alamos National Laboratory.

LANL. 2010b. Storm water background concentrations for MSGP pollutants of concern. Los Alamos National Laboratory.

LANL. 2012. Polychlorinated biphenyls in precipitation and stormwater within the Upper Rio Grande Watershed. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2013. Background metals concentrations and radioactivity in storm water on the Pajarito Plateau, northern New Mexico. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2014. Natural background metals concentrations and radioactivity in storm water for the individual permit. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2015. Methods and applicability for determining site-specific natural background for storm water under the Clean Water Act. LA-UR-15-29535. Los Alamos National Laboratory.

LANL. 2016. Project summary. Aluminum water quality criteria sample filtration and toxicity. Presented July 28, 2016. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2017a. Data quality objectives for sampling and monitoring supplemental environmental project. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2017b. Individual permit storm water data background comparisons. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2018a. Data quality assessment for reference and developed area storm water and sediment sampling. Los Alamos National Laboratory, Los Alamos, NM.

LANL. 2018b. Identification of aluminum-bearing mineral phases in storm water collected on the Pajarito Plateau, Los Alamos County, northern New Mexico. Los Alamos National Laboratory, Los Alamos, NM.

McConaghie J, Matzke A. 2016. Technical support document: an evaluation to derive statewide copper criteria using the biotic ligand model. Oregon Department of Environmental Quality, Water Quality Standards and Assessment, Portland, OR.

NMED. 2012a. Aluminum filtration study. New Mexico Environment Department, Surface Water Quality Bureau.

NMED. 2012b. Record of decision (ROD) for the 2012-2014 State of New Mexico §303(d)/§305(b) integrated list of assessed surface waters. March 13, 2012. Surface Water Quality Bureau, New Mexico Environment Department, Santa Fe, NM.

NMED. 2013. Procedures for assessing water quality standards attainment for the state of New Mexico CWA §303(d) /§305(b) integrated report: assessment protocol. New Mexico Environment Department Surface Water Quality Bureau.

NMED. 2015. Procedures for assessing water quality standards attainment for the state of New Mexico CWA §303(d) /§305(b) integrated report: assessment protocol. New Mexico Environment Department Surface Water Quality Bureau.

NMED. 2018. 2018-2020 State of New Mexico clean water act section 303(d)/section 305(d) integrated report. Assessment rationale (ROD). New Mexico Environmental Department. Surface Water Quality Bureau, Santa Fe, NM.

NMFS. 2012. Jeopardy and destruction or adverse modification of critical habitat. Endangered Species Act biological opinion for Environmental Protection Agency's proposed approval of certain Oregon administrative rules related to revised water quality criteria for toxic pollutants. National Marine Fisheries Service, Northwest Region, Seattle, WA.

ODEQ. 2016a. Implementation of the freshwater aquatic life water quality standards for copper. Oregon Department of Environmental Quality, Portland, OR.

ODEQ. 2016b. Questions and answers. Use and implementation of the copper biotic ligand model (BLM). Oregon Department of Environmental Quality, Water Quality Permitting and Program Development, Portland, OR.

R Development Core Team. 2010. R: A language and environment for statistical computing [online]. R Foundation for Statistical Computing, Vienna, Austria. [Cited 1/27/11.] Available from: http://www.R-project.org/

Ryan A, Santore R, Delos C. [in press]. Application of a fixed monitoring benchmark approach to evaluate attainment of time-variable water quality criteria: copper BLM as a case study. Integr Environ Assess Manag.

Santore RC, Ryan AC, Kroglund F, Rodriguez P, Stubblefield W, Cardwell A, Adams W, Nordheim E. 2018. Development and application of a biotic ligand model for predicting the chronic toxicity of dissolved and precipitated aluminum to aquatic organisms. Environ Toxicol Chem 37(7):70-79.

Wilcut L, Beaman J. 2015. BLM adoption and implementation. Copper biotic ligand model workshop proceedings, Seattle, WA, May 13-14, 2015. pp 14-15.

Windward. 2015. Biotic Ligand Model Windows® Interface, Research Version 3.1.2.37: User's Guide and Reference Manual, October 2015. Windward Environmental LLC, Seattle, WA.

Windward. 2017. Biotic Ligand Model Windows® Interface, Research Version 3.16.2.41: User's Guide and Reference Manual, November 2017. Windward Environmental LLC, Seattle, WA.

Appendices

- **A. Acute IWQC TU Longitudinal Plots**
- **B. Chronic IWQC TU Longitudinal Plots**
- **C. Acute and Chronic IWQC TU Longitudinal Plots for the Rio Grande**
- **D1. Acute FMBs for Individual Locations**
- **D2. Acute FMBs for Watersheds**
- **E. Chronic IWQC Comparisons in TU Quadrant Diagrams**
- **F. Chronic IWQC Comparisons in TU Quadrant Diagrams for the Rio Grande Dataset**

Attachment 2

Total Aluminum: Not Totally Relevant for Water Quality Standards

Total Aluminum: Not Totally Relevant for Water Quality Standards

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ABSTRACT

A large surface water dataset from more than 100 locations on the Pajarito Plateau, Northern New Mexico and spanning 10 years, was evaluated for aluminum concentrations in both unfiltered samples and samples filtered through 10, 1, 0.45, and 0.2 µm filters. Comparisons of aluminum concentrations in the unfiltered and filtered samples to EPA and New Mexico state ambient water quality criteria (AWQC) revealed that aluminum concentrations often exceeded criteria regardless of filter size and sample location. Aluminum concentrations in surface waters downstream of developed areas within and around Los Alamos National Laboratory (LANL) and Los Alamos County town site were similar to aluminum concentrations in surface waters collected from reference watersheds that represent natural background locations, indicating that exceedances occur naturally. Solubility calculations showed that the vast majority of aluminum concentrations were over-saturated with respect to amorphous $Al(OH)_3(s)$, regardless of filter size. Finally, aluminum concentrations in samples collected during storm events were strongly associated with suspended sediment concentrations, suggesting that naturally-occurring aluminosilicates in suspended particulate material contribute to AWQC exceedances.

While the toxicity data upon which State and EPA AWQC are based are generally expressed as measured (or nominal) total aluminum concentrations, the source of aluminum in all AWQC cases is a soluble aluminum salt prepared under laboratory conditions. Therefore, the only potential contributors to observed toxicity in the AWQC toxicity database are dissolved or precipitated (e.g., freshly precipitated amorphous $Al(OH)_3$) forms of aluminum. Aluminosilicates were not considered in the derivation of aluminum AWQC, and therefore should not be considered when quantifying toxicologically relevant aluminum concentrations in natural surface water samples for comparison to AWQC. It has been demonstrated that aluminosilicate particles smaller than 1 µm can be present in natural samples. These types of particles would be expected to be non-toxic and serve only to contribute to false positive determinations of criteria exceedances in surface water samples from upstream, i.e., natural background and downstream of developed areas. Thus, aluminum concentrations in surface waters from developed and background locations cannot be accurately evaluated for attainment of AWQC due to the presence of naturally occurring, non-toxic aluminosilicates.

Therefore, application of the 2017 EPA proposed AWQC for aluminum that are based on total aluminum synthetic test solutions in an unfiltered sample would incorrectly identify natural background conditions as impaired in a majority of occasions . Using 10-µm or even 0.45-µm filters to remove aluminosilicates prior to assessing attainment of the New Mexico 2010 hardness-based aluminum AWQC produces fewer AWQC exceedances than total aluminum measurements, but likely retain aluminosilicates that contribute to AWQC exceedances. Preparation of environmental samples for evaluation of aluminum AWQC attainment needs to be able to differentiate potentially bioavailable forms of aluminum (i.e., dissolved and precipitated forms) from non-bioavailable forms (e.g., aluminosilicates), or meaningless

AWQC exceedances in surface waters will continue to be problematic. The relevant issue for aluminum is that the size range of potentially bioavailable aluminum precipitates and non-bioavailable particles overlaps. A sample preparation protocol that solubilizes potentially bioavailable amorphous $Al(OH)_3(s)$, but does not solubilize aluminosilicates, could be utilized prior to filtration with 0.45- or 0.2-µm filters to more accurately represent potentially bioavailable forms of aluminum, while minimizing aluminum from non-bioavailable forms in environmental samples. Further development of such criteria implementation protocols is needed and verification through toxicity testing of environmental and empirical laboratory samples may be helpful in that endeavor.

INTRODUCTION

There are fundamental differences between the types of exposure conditions used to evaluate aluminum bioavailability and toxicity in laboratory experiments and exposure conditions that are prevalent in natural surface water environments. These differences are generally acknowledged, but not adequately addressed, during development of ambient water quality criteria (AWQC) for the protection of aquatic life. In the context of developing aquatic life criteria, US EPA controls for exposure conditions include duration, frequency, and magnitude of exposure. But even within the specified targets for those conditions, there may be differences between laboratory and field exposures. For example, acute toxicity tests for fish usually have an exposure duration of four days, but acute criteria are typically applied to field conditions by comparison with 1-hour average concentrations (US EPA, 1995). To some extent this difference provides a level of reasonable conservatism. For aluminum (and perhaps iron) there is an additional difference that is neither anticipated by or controlled for in the development of the water quality criteria, and that is that the predominant chemical or physical form(s) of aluminum to which organisms are exposed can be very different in laboratory and field settings to such an extent that application of the criteria is not representative and is problematic.

In laboratory exposures, soluble aluminum salts or acid stock solutions are used to achieve target nominal total[1] aluminum concentrations. These forms of aluminum are highly reactive, and highly bioavailable (Gensemer and Playle 1999; Teien et al 2006). Aluminum toxicity frequently occurs at concentrations that exceed solubility, and so the laboratory exposure conditions are further complicated by the fact that the test organisms are exposed to a mixture of soluble and precipitated aluminum (Santore et al, 2018).

In contrast, aluminum in natural surface water environments is often predominately in the form of aluminum-bearing minerals such as aluminosilicates in the suspended sediment load. When suspended sediment is exposed to acid in the preservation and pre-analytical digestion process, aluminum from aluminosilicates is liberated and subsequently quantified as part of the total aluminum concentration. The bioavailability of aluminum from aluminosilicates is minimal, in contrast to the bioavailability of aluminum from soluble aluminum salts. As a result, total aluminum concentrations in natural surface water samples that exceed aluminum water quality criteria by one or more orders of magnitude little to no toxicological relevance. Therefore, the application of water quality criteria for aluminum at sites

[1] Analytical measurements of aluminum in laboratory exposures typically include total, total recoverable, or "dissolved" (i.e., operationally defined as passing through 0.45 µm filter) concentrations. From the perspective of understanding the amount of potentially bioavailable aluminum to which organisms are exposed in the laboratory, measurement of these concentrations is a common strategy

where mineral forms of aluminum dominate is likely to generate water quality criteria exceedances where there is no impairment from aluminum.

It has been demonstrated in laboratory toxicity tests that toxicity is often correlated with measurements of total aluminum (e.g., (Cardwell, Adams et al. 2018, Gensemer, Gondek et al. 2018)). Several laboratory experiments have demonstrated that dissolved aluminum and freshly precipitated aluminum can both contribute to toxicity. Therefore, total aluminum may be a reasonable way to quantify aluminum in toxicity tests since it will include both dissolved and freshly precipitated forms of aluminum. Indeed, many of the toxic effect concentrations (ECx) included in recent aluminum toxicity databases from which AWQC were derived exceed solubility limits for aluminum, based on the formation of amorphous $Al(OH)_3(s)$ (Gensemer 2009, EPA 2017). This provides a clear indication that total aluminum is important to consider when evaluating aluminum toxicity in laboratory toxicity tests.

However, there is an important difference between measurement of total recoverable aluminum in a laboratory toxicity test and actual bioavailable aluminum in a natural surface water sample. The biggest problem with using total aluminum as a way to characterize aluminum exposure is that it will also include non-bioavailable forms of aluminum minerals that have been liberated in the pre-analytical sample preparation process. In a toxicity test, these non-bioavailable forms of aluminum are absent and so this deficiency with measurements of total aluminum is not a problem. However, in an environmental sample, naturally-occurring aluminum forms can be included when measuring total aluminum in surface water samples containing suspended sediments: mineral-bound aluminum (e.g., aluminosilicates such as feldspars, sanidine, and clays) associated with suspended material naturally present in the aquatic environment. Aluminum, after oxygen and silica, is the third most common element in the earth's crust (8.1% by weight on average) with aluminum oxide (Al_2O_3) the second most prevalent of the oxides (approximately 16%). Hence, environmental samples of water with suspended sediments will have a significant potential for including natural background concentrations of aluminum associated with rocks and minerals. Much of the aluminum associated with mineral solids is tightly bound within the crystalline mineral matrix of solids, and therefore is not bioavailable. Thus, the use of total aluminum measurements in environmental samples will be predominantly characterizing non-bioavailable forms of aluminum (Santore et al, 2018). Comparison of total aluminum measurements from environmental samples with laboratory-derived water quality criteria will likely lead to false positive exceedances, where no impairment from aluminum occurs naturally.

Given that aluminum comprises ~8% by weight of the Earth's crust, and assuming that naturally sourced suspended solids are similarly composed, water samples containing suspended sediment concentrations (SSC) as low as 9.4 mg/L and 1.1 mg/L, will exceed EPA's 1988 nationally recommended aluminum acute and chronic AWQC, respectively, if based on total aluminum. Therefore, samples from natural waters with measurable TSS would be expected to contain aluminum primarily from mineral forms associated with suspended clays and silts. The occurrence of freshly precipitated amorphous aluminum hydroxides in natural water samples in most aquatic environments is unlikely. An exception may be in areas impacted by acid rock drainage where a metal-rich acidic seep mixes with a higher pH water body. In these conditions, there could be formation of amorphous aluminum hydroxide precipitates in the mixing zone (USEPA, 2000).

EPA is in the process of updating its nationally recommended aluminum AWQC to incorporate not only hardness effects, but also other parameters like pH and dissolved organic carbon (DOC) that control bioavailability (USEPA, 2017). EPA has considered these and other toxicity modifying factors in the copper AWQC by using the biotic ligand model (BLM; EPA 2007). These factors should also be incorporated in the aluminum AWQC since they have also been demonstrated to influence aluminum bioavailability and toxicity (Gensemer and Playle 1999; Gensemer et al. 2018). Toxicity modifying factors for aluminum can be considered by using multiple linear regression models (MLRs; DeForest et al. 2018) and the BLM (Santore et al. 2018) which have been developed to predict aluminum toxicity in natural waters. The consideration of toxicity modifying factors in the EPA's updated nationally recommended aluminum AWQC is a significant improvement over the previous aluminum AWQC, but the 2017 draft AWQC do not address how it should be applied to environmental samples dominated by non-bioavailable forms of aluminum, e.g., aluminum bearing minerals.

Only certain states have adopted EPA's 1988 nationally recommended AWQC for aluminum, and of these states, New Mexico and Colorado have recognized the issues associated with comparing total aluminum concentrations to AWQC. Both states have incorporated modifications with respect to aluminum bioavailability in their AWQC and also understand that the presence of natural background aluminum can contribute to false positives. In contrast with the static values of the EPA 1988 aluminum AWQC the New Mexico 2010 aluminum AWQC depend on hardness, much like state and EPA AWQC for several other metals, e.g., cadmium, lead, and zinc.

According to guidance provided by the New Mexico Environment Department (NMED 2010, WQCC 2010, NMED 2013, NMED 2015), assessments of surface water quality data against the State's AWQC are based on analysis of aluminum in a filtered sample. NMED recommends using a 10-µm filter for samples with turbidity exceeding 30 NTU. However, the 10-µm filter size may be too large to determine toxicologically appropriate aluminum concentrations because it will allow the inclusion of naturally occurring clay and silt-sized sediment particles that contain non-bioavailable aluminum forms that are non-toxic. Mineral forms of aluminum will be liberated from these particles when the filtered samples are acidified and digested before analysis according to standard laboratory protocols. Therefore, retaining the aluminum from these naturally occurring minerals in sample filtrate will overestimate bioavailable aluminum and may result in spurious exceedances of AWQC (i.e., false positives).

The New Mexico filtration step is in recognition that natural samples will likely contain materials such as clay, silt, and sand. The important conundrum with respect to aluminum in natural samples is to remove nontoxic sources of aluminum, but to retain potentially toxic precipitated forms, such as amorphous aluminum hydroxide, which has been implicated as a form of aluminum that contributes to toxicity in laboratory toxicity tests in cases where aluminum exceeds solubility limits. Because of the uncertainty associated with the relevant size of precipitated amorphous aluminum hydroxide, and the potential for overlap in size with clay particles, filtration alone may not be sufficient to address this issue simultaneously.

The goal of this paper is to present a case study that provides evidence that the current practices used in sample preparation for measurement of aluminum in surface water samples may not provide aluminum concentration data that are appropriate for comparison to AWQC derived from laboratory toxicity tests. Specifically, the forms of aluminum that may be present in samples collected following typical protocols will be evaluated from the context of what is known about aluminum bioavailability and forms of aluminum that contribute to toxicity. Additionally, filtration as a means to remove non-bioavailable aluminosilicates from environmental samples will also be evaluated.

MATERIALS AND METHODS

Surface water quality monitoring data within the vicinity of Los Alamos National Laboratory (LANL) were obtained and evaluated in the context of which form or fraction of aluminum is most appropriate for comparison to AWQC. Data were obtained from LANL's Environmental Information Management (EIM) database (also available to the public at www.intellusnm.com) and processed to aggregate synoptic water chemistry data for as many sampling events as possible. Sampling events were defined as unique combinations of location and sampling date. Aggregation of data by unique sampling events was intended to provide sufficient data to examine aluminum concentrations, bioavailability, and solubility in unfiltered and filtered surface water samples, as well as to calculate instantaneous water quality criteria (IWQC) based on New Mexico and EPA AWQC, using water quality measurements in the samples. In addition to surface water monitoring data from the vicinity of LANL, a limited number of analyses were conducted to evaluate particle characteristics in storm water and suspended sediment samples collected from 3 locations (1 location was downstream of an urban developed landscape, and 2 locations represent natural background landscapes). Analysis of particle characteristics was intended to provide information regarding the size and composition of particles present in natural surface water samples. Reported aluminum concentrations in surface water samples were compared to solubility limits for amorphous $Al(OH)_3(s)$ to determine if mineral phase aluminum was likely present. Similarly, aluminum concentrations were also compared to sample-specific IWQC for sampling events that had sufficient data.

Surface Water Monitoring Data from the Pajarito Plateau

Surface water chemistry, including aluminum concentrations, have been monitored by LANL at many locations across the Pajarito Plateau, the geographic area within and surrounding LANL. The predominant sediment type on the Pajarito Plateau derives from an erodible, volcanic ash substrate called Bandelier Tuff. High-flow events (e.g., those triggered by monsoonal thunderstorms) mobilize large volumes of sediment and sediment-associated elements in storm water discharges. Many of these elements including metals and major cations and anions, are naturally present in soils and sediments (McDonald, Ryti et al. 2003). For example, Al is the third most abundant elements in the Earth's crust and is incorporated into the majority of minerals found in soil and sediment. Thus, natural sources contribute to the total chemical load of streams on the Pajarito Plateau. Development on the Pajarito Plateau is moderate; the town of Los Alamos has a population density of approximately 1,100 residents per mi^2 and an area of 11 mi^2, covering roughly 31% of the plateau. LANL accounts for a relatively small portion of the total development on the Pajarito Plateau (approximately 0.06% by area). Development generally alters natural landscapes and significantly changes hydrology by increasing runoff due to impervious surfaces that have replaced natural landscapes. Runoff from developed areas is also well-known to affect storm water quality.

While the LANL monitoring dataset includes data for hundreds of monitoring locations (including surface water and stormwater discharge locations), the analyses described herein were focused on data collected from 115 surface water monitoring locations (Figure M1). These locations are described as either natural background (i.e., from undeveloped watersheds) or downstream (i.e., downstream of developed LANL, county, or town areas) surface waters. The 28 natural background locations represent surface water drainage from watersheds that have little to no human alterations and that are located either upstream, north or south of LANL (Figure M1). In contrast, the 87 downstream surface water locations are gaging stations located in stream channels within or downstream of the LANL facility or the

Los Alamos County town site, and thus during wet weather sampling represent significant storm water runoff from LANL and the town of Los Alamos. Many of the downstream surface water locations have 10 or more years of water quality and flow records. Most (i.e., 90%) of the natural background and downstream surface water locations represent ephemeral or intermittent waters that flow seasonally only in response to rainfall (ephemeral) or snowmelt (intermittent). A few locations represent isolated perennial waters sourced to springs or treated wastewater effluent, or entire watersheds (i.e., Rito de Frijoles in Bandelier National Monument).

Unfiltered and filtered aluminum concentration data for surface water samples span a time range from January, 2005 to November, 2017. Filtered aluminum concentrations correspond to samples analyzed after passing through filter pore sizes of 10-, 5-, 1-, 0.45-, 0.2-, and 0.02-µm. After aggregation of data by sampling event, a total of 1,659 individual sampling events were identified for the 115 surface water monitoring locations. In addition to aluminum concentrations, data for other surface water quality characteristics (e.g., pH, suspended sediment concentration [SSC], DOC concentrations, and concentrations of major cations and anions) were also aggregated by sampling event. The purpose of data aggregation by sampling event was to facilitate comparisons of aluminum concentrations for unfiltered and filtered (multiple filter pore sizes considered) samples, and to compare aluminum concentrations to calculated IWQCs. Sampling event-specific IWQCs were calculated only where sufficient data were available for a particular AWQC basis (New Mexico 2010, EPA 2017, BLM). For example, calculation of New Mexico hardness-based IWQC require that hardness data are available, while calculation of EPA (2017) draft IWQC require that hardness, pH, and DOC data are available. Calculation of BLM-based pseudo[2]-IWQC (pWQC) for aluminum (Santore et al. 2018) require that data for pH, DOC, alkalinity, major cations, and major anions are available. Data analyses were focused on the unfiltered, 10-, and 0.45-µm filtered aluminum concentrations because those were the most common sample preparations, and because they are potentially most relevant from the perspective of AWQC.

Aggregation of the LANL dataset involved summarizing data for each water chemistry parameter by unique sampling events, and in some cases data for particular water chemistry parameters were not available. Data used for IWQC and solubility calculations were preferentially based upon operationally defined “dissolved” (i.e., passing through a 0.45-µm filter) concentrations for water quality parameters such as pH, DOC, major cations, major anions, and alkalinity. For cases where dissolved concentrations for water chemistry parameters were not available, relationships between total (unfiltered) and dissolved concentrations were examined using the entire dataset to determine if dissolved concentrations could be estimated from total concentrations. Notable estimates that were made during data aggregation include: estimates of DOC from total organic carbon (TOC), where DOC was estimated by calculating 0.704*TOC (based on the lower confidence limit of the regression between DOC and TOC, assuming an intercept = 0; n= 182, $p<2.2\times10^{-16}$ and r^2=0.781), substitution of total alkalinity for dissolved alkalinity, and use of location-specific averages for sulfate and chloride, where data were missing.

Review of Toxicity Test Data Used to Develop AWQC

The recent EPA (2017) draft aluminum AWQC are based on updated acute and chronic aluminum toxicity datasets for freshwaters. These data were reviewed and the database used to derive NM 2010

[2] Even though EPA evaluated the BLM as part of its 2017 draft proposed Al AWQC, we consider the BLM-based IWQC generated in this manuscript as “pseudo” or “pWQC”, although we have followed EPA 1985 guidelines in applying the BLM.

AWQC were also reviewed and compared to the data used by EPA (2017). Many of the DOC concentrations used in conjunction with the EPA (2017) draft aluminum AWQC are estimated values, based upon recommendations from the copper AWQC document (EPA 2007). As DOC is an important input for both the MLR approach used by EPA and the BLM approach described in Santore, Ryan et al. (2018), these estimates represent a potentially important source of uncertainty. The water chemistry associated with the toxicity tests in these databases will be used to evaluate aluminum solubility for the purpose of understanding the potential forms of aluminum present in exposure media.

Calculation of Water Quality Criteria and Evaluation of Aluminum Solubility

Using the aggregated LANL surface water dataset, New Mexico hardness-based aluminum IWQC, EPA (2017) draft aluminum IWQC, and BLM-based aluminum pWQC (Santore et al. 2018) were calculated for each sampling event that contained sufficient data (i.e., all necessary model inputs for each AWQC approach). The draft EPA (2017) AWQC normalization approach is based upon MLR models described in DeForest et al. (2018). To perform the MLR-based EPA (2017) draft aluminum IWQC calculations, the companion calculator workbook provided by EPA was used directly. The BLM-based pWQC calculations were performed using the BLM executable file (version 2.41) provided with the BLM download from the Windward Environmental website (i.e., http://www.windwardenv.com/biotic-ligand-model/).

The aggregated surface water dataset did not contain data for temperature or percent humic acid (%HA); both are required BLM inputs. Temperature was assumed to be 10°C, and %HA was set at the EPA recommended default value of 10% (HydroQual 2007, Windward 2015). A detailed description of aluminum BLM parameters and calculations is provided in Santore et al (2018). BLM-based pWQC were calculated using the toxicity database described by Gensemer et al. (2018), which represents chronic toxicity data. Because the pWQC are directly calculated using the aluminum BLM reflect chronic AWQC, a conservative acute-to-chronic ratio (ACR) of 5.0 was applied to convert the chronic IWQC to acute IWQC. In EPA's 2017 proposed aluminum AWQC EPA (2017) a final ACR of 8.068 was used. Although the ACR is generally intended to convert a final acute value (FAV) to a final chronic value (or chronic criterion), using it conversely to convert chronic to acute criteria is reasonable for purposes of these evaluations, especially at conservative value. Using the lowest normalized genus mean chronic value for *Salmo* (508.5 μg/L) and the FAV of 2741 μg/L described by EPA (2017) for a water with pH =7, hardness = 100 mg/L as $CaCO_3$, and DOC = 1 mg/L, a conservative ACR would be 2741/508.5 = 5.39. For added conservatism here, calculation of acute BLM-based pWQC used an ACR of 5.0. To facilitate comparison of observed surface water aluminum concentrations with the various IWQC calculations described above, toxic units[3] (TUs) were calculated as the quotient of the observed aluminum concentration with the IWQC calculated from that sample's water chemistry data.

The aluminum BLM was also used in speciation mode so that aluminum solubility, or saturation with respect to amorphous $Al(OH)_3(s)$, could be evaluated for samples with sufficient chemistry data. The log solubility constant (log(Ksp)) used for amorphous $Al(OH)_3(s)$ was 9.76 (Sposito 1995). To perform saturation index (SI) calculations, the ion activity product (IAP) for $Al(OH)_3$ was calculated as:

$$IAP = \{Al^{3+}\}\{OH^{-}\}^{3},$$

[3] A TU>1 indicates the observed concentration exceeded the IWQC magnitude and does not necessarily indicate a "violation" of water quality standards, which must also take into account exceedance frequency, as well as other considerations such as representativeness, data quality, etc.

and SI is calculated as:

$$SI = log10\left(\frac{IAP}{K_{sp}}\right).$$

Saturation index calculations were performed for all samples with sufficient chemistry data (i.e., BLM inputs), using unfiltered and filtered aluminum concentrations. Speciation calculations were performed using ambient pH (i.e., pH associated with the original environmental sample) and reported aluminum concentrations. Because aluminum concentrations were determined following the protocol for total recoverable aluminum (i.e., samples were acidified and digested), it was expected that SI would be greater than zero for the majority of unfiltered and 10-µm filtered samples. This expectation is driven by the likely liberation of aluminum from aluminosilicates during sample preparation/preservation. In addition to evaluating aluminum solubility status in the LANL dataset, aluminum solubility status was also investigated in the AWQC datasets (e.g., New Mexico 2010 and EPA 2017).

Particle Characterization

In addition to collecting surface water samples for water quality parameters described above, LANL has also evaluated samples with more sophisticated techniques to characterize dissolved solids and particulates. In a 2018 LANL report (LANL 2018), particles from surface waters naturally high in suspended sediments and mineral-bound aluminum from the Pajarito Plateau in New Mexico were evaluated using a variety of quantitative and qualitative techniques, including x-ray diffraction (XRD) and scanning electron microscopy with electron dispersive spectroscopy (SEM-EDS). These evaluations concluded that dissolved or precipitated aluminum hydroxides were absent and that fine particles passing a 1µm filter were dominated by aluminosilicates.

RESULTS

The LANL dataset contained >3,600 sampling events (i.e., combination of location and date) for three types of surface water samples: baseflow, stormflow, and snowmelt. This dataset has more than 3,057 measurements of aluminum concentrations corresponding to unfiltered water samples and samples filtered using filters of pore sizes ranging from 10 µm to 0.02 µm. Regarding aluminum concentrations, measurements from unfiltered and those filtered through 0.45 µm filters were most common. In addition to aluminum concentrations, the dataset contains synoptic measurements of suspended sediment concentration (SSC), pH, organic carbon concentrations (i.e., either total or dissolved), and major ions. These additional water quality characteristics allowed for calculation of IWQC using the hardness-based New Mexico AWQC, the proposed draft EPA AWQC, and a BLM-based calculation analogous to AWQC. A summary of the dataset is provided in Table R1.

Toxic units (TUs) were calculated as the quotient of observed aluminum concentration and corresponding IWQC for a given sample. Figure R1 provides a summary of TUs for different aluminum sample preparations (i.e., unfiltered or filtered through 10- and 0.45-µm filters) and the three different AWQC bases. From Figure R1, it is clear that observed aluminum concentrations exceeded IWQC in many samples, regardless of the sample preparation approach, the basis for AWQC, or whether a natural background or LANL surface water location. Figure R2 shows it is also clear that stormflow aluminum concentrations more frequently exceeded IWQC, especially in unfiltered and 10-µm filtered samples. When considering only 0.45-µm filtered samples, stormflow samples and baseflow/snowmelt samples are more similar in their level of exceedances.

A likely explanation for the high percentage of IWQC exceedances in stormflow samples in the unfiltered and 10-µm filtered sample preparations is that particulate material in SSC is contributing to the aluminum concentration. Indeed, it is clear that natural background aluminum concentrations are significantly correlated with SSC (Figure R3). Figure R4 shows the aluminum and SSC associations in broader context of the three water sample types across all 115 locations. The solid and dashed lines in Figure R4 provide estimates of the amount of aluminum that may be contributed by suspended sediment, assuming that suspended sediment contains 8.1% and 100% aluminum by weight, respectively. Thus, aluminum concentrations in stormflow samples can be attributed to aluminum in suspended sediment, although the contribution from suspended sediment is generally less than 8.1% (i.e., the average aluminum content of the Earth's crust). This is not necessarily unexpected, because suspended sediment contains organic material, in addition to weathered minerals.

Figure R4 also shows that the range of aluminum concentrations in the baseflow and snowmelt samples does not appear to indicate an association with SSC, and in some cases, aluminum concentrations are higher than would be expected even if suspended sediment was entirely composed of aluminum. A subset of the samples shown in Figure R4 have sufficient water chemistry data such that solubility can be evaluated (with respect to amorphous $Al(OH)_3$(s)) (Figure R5). Generally, our calculations indicate that aluminum concentrations in excess of 200 to 300 µg/L are over-saturated with respect to amorphous $Al(OH)_3$(s), indicating that the high aluminum concentrations in samples with low SSC are not attributable to "dissolved" aluminum.

While solubility exceedances may be expected when evaluating total aluminum concentrations (i.e., contributions of aluminum from suspended sediments), aluminum concentrations in a majority of the 10- and 0.45-µm samples also exceeded solubility (Figure R6). It is not necessarily unexpected that aluminum concentrations in 10-µm filtered samples would exceed solubility, because silt and clay particles can pass through a 10-µm filter. It is however, not expected that aluminum concentrations in 0.45-µm filtered samples will exceed solubility, given that 0.45-µm filtration is generally taken as the operational definition for dissolved solutes. However, in the LANL dataset, 70% of the 0.45-µm filtered aluminum concentrations exceeded the solubility limit for amorphous $Al(OH)_3$(s). These results suggest that particulate aluminum is capable of passing through a 0.45-µm filter, which suggests that using a 0.45-µm filter to define dissolved aluminum in environmental samples in this locale may be erroneous. Some uncertainty may exist in the solubility calculations (discussed below), but it should be noted that aluminum concentrations exceeded solubility limits by as much as 3 orders of magnitude in some 0.45-µm filtered samples.

To evaluate the nature of mineral forms of aluminum present in natural surface waters, LANL analyzed particles in stormflow samples from two natural background locations as well as one downstream gaging station to determine if amorphous $Al(OH)_3$(s) could be identified (LANL 2018). The XRD and SEM/EDS analyses results did not identify amorphous $Al(OH)_3$(s) in any of the samples evaluated, suggesting that aluminum-containing particles did not include the potentially bioavailable, and reportedly toxic amorphous $Al(OH)_3$(s) precipitate (Figure R7). Furthermore, SEM/EDS showed that fine particles passing a 1µm filter contained aluminosilicates (Figure R8).

Comparison of SI calculations with acute TU calculations (based on New Mexico hardness-based AWQC), demonstrates very similar patterns in solubility exceedances and IWQC exceedances for natural background and downstream surface water locations (Figure R9). For unfiltered samples (n=495), all samples exceeding the New Mexico acute aluminum IWQC are over-saturated with respect to amorphous $Al(OH)_3(s)$ in samples from both natural background (n=53) and downstream surface waters (n=260) . However, not all samples that are over-saturated exceed New Mexico hardness-based IWQC. For 10-µm filtered samples (n=34), only one sample exceeding acute aluminum IWQC did not exceed solubility limits. The pattern is similar for 0.45-µm filtered samples, but there are 3 samples in natural background locations that exceed IWQC without exceeding solubility limits. These results are not surprising, because it is generally true that higher concentrations of aluminum are needed to exceed either the solubility limit or the IWQC. Although some of the factors that influence aluminum solubility also affect bioavailability, and these factors (e.g., pH and DOC) are not considered with hardness-based IWQC, but are taken into account in both the EPA 2017 proposed AWQC and BLM-based pWQC.

Results summarized in Figures R2 and R6 indicate that stormflow samples are highly likely to exceed IWQC and solubility limits simultaneously, and Figures R2 and R4 strongly suggest that aluminum concentrations in these samples are associated with SSC. The potential reasons for elevated aluminum concentrations in the baseflow and snowmelt samples with low SSC are unknown, but the data can be evaluated to determine if similar concentrations are observed in samples from natural background and downstream locations.

For unfiltered samples, the distributions of aluminum concentrations from natural background and downstream locations (considering all sample types pooled) are essentially identical (Figure R10), with similar geometric means and standard deviations (standard deviations calculated with log10-transformed values). When the data are separated by sample type, similar concentrations are observed for natural background and downstream locations, suggesting that the sources of aluminum are similar regardless of the level of landscape development near a sampling location or in its greater watershed. Results for 10- and 0.45-µm filtered samples are similar (Figures R11 and R12). Statistical comparisons of aluminum concentrations in natural background and downstream locations is provided in Table R2.

DISCUSSION

Aluminum concentrations in the majority of surface water samples evaluated as part of this study exceeded the solubility limit for amorphous $Al(OH)_3(s)$. However, some further consideration for uncertainties associated with solubility calculations may be important. Aluminum concentrations in many samples also exceeded New Mexico hardness-based AWQC, draft EPA (2017) MLR-based AWQC, and BLM-based pWQC. Generally, IWQC exceedances occurred in the majority of samples that exhibited aluminum concentrations in excess of amorphous $Al(OH)_3(s)$ solubility. This is not necessarily surprising, given that most of the toxicity tests used to derive both the New Mexico hardness-based AWQC and the EPA (2017) MLR-based AWQC exhibited toxicity effect concentrations that were also in excess of amorphous $Al(OH)_3(s)$ solubility (Figure D1).

A major difference between the aluminum concentrations reported here, and the aluminum exposure concentrations used in the laboratory toxicity tests used to derive AWQC is the contribution of aluminum from suspended sediment. Figures R2 and R4 provide a clear indication that total aluminum concentrations in Pajarito Plateau surface water samples collected during storm events are associated with suspended sediment. This relationship between total aluminum and SSC is also evident in nationwide surface water data retrieved from the National Water Quality Monitoring Council data portal (https://www.waterqualitydata.us/portal/), representing the entire United States (Figure D2). It is interesting to note that the data for New Mexico in Figure D2 show a similar pattern as those in Figure

R4, including the relatively high total aluminum concentrations at low SSC. Furthermore, much like Figure D1 shows for the AWQC datasets, Figure D3 shows that aluminum in the majority of the natural background and downstream surface water samples exceeded solubility limits, regardless of considerations for pH and DOC effects on solubility as well as filter size used to prepare the samples.

Suspended sediment concentrations in Pajarito Plateau surface waters range from approximately 10 mg/L to more than 100 g/L (approximately 10% solids!) during storm events, resulting in total aluminum concentrations of up to 1 g/L or higher. In contrast, the exposure waters used in the toxicity tests from which aluminum AWQC were derived did not contain any environmental suspended sediments (i.e., many tests used reconstituted lab waters, Lake Superior water, tap water, or well water; see EPA 2017). Further, the toxicity tests would have included an acceptable dilution water control, with no added aluminum. Therefore, by design, the exposure waters in the toxicity tests upon which aluminum AWQC are based could have only become over-saturated with amorphous $Al(OH)_3(s)$ by addition of a soluble aluminum salt. As a consequence, any solid phase aluminum present in the toxicity tests would have formed during or prior to initiation of the toxicity tests. This solid phase aluminum would likely be much different in characteristics than the aluminum contributed from heterogeneous suspended sediment particles in the environment.

In other words, the likely dominant contributor to total aluminum concentrations in Pajarito Plateau stormflow water samples is non-bioavailable aluminosilicates. The aluminosilicates represent a very different, non-bioavailable form of aluminum than is used in laboratory toxicity tests. Therefore the toxicity database used to derive current AWQC is not appropriate for evaluating potential impairment due to aluminum in Pajarito Plateau surface waters. As such, total aluminum concentrations from environmental samples high in suspended sediment should not be compared to aluminum AWQC that were derived from total aluminum measurements in clean laboratory waters. As a point of emphasis, even the most *insensitive* organism in the EPA (2017) acute toxicity database, *Physa sp*[4]., would not be able to tolerate the elevated aluminum concentrations in natural background surface waters, especially waters with elevated aluminum associated with suspended sediment concentrations higher than approximately 20 g/L, if the form of aluminum present were toxicologically relevant. Many surface water samples in the natural background locations have exhibited total aluminum concentrations in excess of 100,000 ug/L, which corresponds to roughly the 70^{th} percentile (e.g., Figure R10).

Pre-filtration of water samples prior to analyzing for aluminum, with the goal of minimizing contribution of mineral phase aluminum (i.e., aluminosilicates – which are dissolved prior to analysis during sample preparation) while retaining potentially toxic precipitated amorphous $Al(OH)_3(s)$ (i.e., the likely form of solid phase aluminum in laboratory toxicity tests) is one approach that has been proposed for dealing with water samples high in suspended sediment concentrations (NMED 2012). While this approach is well-intentioned, with respect to limiting the mineral phase contribution to aluminum concentrations prior to comparison to IWQC, using a 10 µm filter is not capable of separating contributions from clays and fine silts (i.e., particles smaller than 8-µm; Wentworth 1922) from amorphous $Al(OH)_3(s)$. Figure R6 indicates that the majority of 10-µm filtered surface water samples exceed $Al(OH)_3(s)$ solubility, but there is no way of knowing if the source is aluminosilicates or precipitated $Al(OH)_3(s)$. Similarly, Figure R6 also indicates that many of the 0.45-µm filtered surface water samples exceed $Al(OH)_3(s)$ solubility,

[4] Excluding unbounded effect concentrations in the toxicity database; and based on data for *Physa* sp from {Call, 1984 #10430}; EC50 = 55,500 ug/L; pH = 7.5, hardness = 47.4 mg/L, and DOC estimated at 1.1 mg/L.

but the form of the solid phase(s) present is not known. Further complicating this is the uncertainty of whether aluminum hydroxide phases are even present in natural background surface waters, or in stormwater runoff generated by typical urban development.

With respect to identifying a simple filtration approach that minimizes aluminosilicates, but simultaneously retains amorphous $Al(OH)_3(s)$, if such an aluminum form is even present, the issue may not be resolvable. For example, Lai et al. (2007) demonstrated that $Al(OH)_3(s)$ particles in experimental laboratory waters exhibited a size range of 1.1- to 1.14-µm, and that particle size increased across this range during aging from 4 weeks to 20 weeks. Aging during formation of these particles is important to consider, as Teien et al. (2004; 2006) demonstrated that bioavailable aluminum particles are transient, and that bioavailability (toxicity) decreases upon aging (i.e., within minutes) as particles grow from a size of approximately 0.0025-µm to larger colloids. These studies suggest a size range of $Al(OH)_3(s)$ of less than 1.2-µm, and both studies mention a decrease in bio-reactivity as particles age and grow.

Regarding aluminosilicate particles, Baalousha et al. (2006) demonstrated that natural suspended particulate matter in the size range 0.01- to 0.45-µm was composed primarily of aluminosilicates and iron oxyhydroxides. Presence of very small aluminosilicate particles provides a reasonable explanation for the high percentage of the 0.45-µm filtered natural background and LANL surface water samples that exceed the amorphous $Al(OH)_3(s)$ solubility limit (Figure R6). Given these considerations, it appears that there is potential for both amorphous $Al(OH)_3(s)$ and aluminosilicates to be present in samples filtered with a 10-µm filter, but that only amorphous $Al(OH)_3(s)$ may be excluded by a 0.45-µm filter. However, as filter size increases above 0.45-µm, it is also likely that aluminosilicates will increasingly contribute to higher aluminum concentrations that may also be smaller than 0.45-µm.

A recently proposed pH 4-extraction method for determining bioavailable aluminum and iron concentrations in environmental samples may solve the problem that filtration alone does not appear capable of addressing (William Adams, personal communication [or in prep]). The idea behind this approach is to decrease pH in a water sample to pH 4 prior to filtering through a 0.45-µm filter. The pH 4 treatment is aggressive enough to solubilize amorphous $Al(OH)_3(s)$ while not dissolving aluminosilicates. As stated above, aluminosilicates may be capable of passing through a 0.45-µm filter, which may contribute some aluminum, but any aluminum in the form of $Al(OH)_3(s)$ that may have been excluded by a 0.45-µm filter would be solubilized by the pH 4 adjustment, and will be accounted for as a potentially bioavailable form of aluminum. Compared with 10-µm filtration, this approach, has the potential to minimize (not eliminate) contributions from aluminosilicates, while simultaneously accounting for amorphous $Al(OH)_3(s)$.

Regardless of the sample preparation issues described above, the striking similarity of unfiltered and various size-filtered aluminum concentrations in samples from natural background and LANL surface water locations seems to indicate that current aluminum AWQC are not appropriate for natural surface waters on the Pajarito Plateau. The summary statistics in Table R2 and Figures R10 - R12 demonstrate that aluminum concentrations in unfiltered, 10-µm filtered, and 0.45-µm filtered surface water samples from natural background and LANL surface water locations are remarkably similar. Despite the fact that there are many more samples in LANL surface water locations compared to natural background locations, the geometric mean aluminum concentrations and log10 standard deviations essentially suggest that the data come from similar distributions.

CONCLUSIONS

Many surface water samples from both natural background and LANL surface water locations on the Pajarito Plateau exceed New Mexico hardness-based WQC, EPA (2017) draft MLR-based WQC, and BLM-based pWQC. In a majority of the surface water samples evaluated, aluminum concentrations in unfiltered and filtered (10- and 0.45-μm) also exceed the solubility limit for amorphous Al(OH)3(s). A strong association between total aluminum concentrations and SSC suggests that much of the aluminum present is in the form of aluminosilicates, which are not considered bioavailable. The similarity of aluminum concentrations in filtered and unfiltered surface water samples from natural background and surface water locations indicates that exceedance of AWQC based upon toxicity data generated with laboratory waters would be expected to occur in natural environments with little to no human influence.

The presence of aluminosilicates in environmental samples, and the lack of aluminosilicates in laboratory exposures used to evaluate aluminum toxicity and to derive AWQC, presents a conundrum with respect to evaluating attainment of AWQC on the basis of total aluminum concentrations. Results of laboratory toxicity tests indicate that precipitated forms of aluminum are contributors to observed toxicity, because dissolved aluminum concentrations alone are often not sufficiently high to cause toxicity. As a consequence, AWQC are based upon toxic effect concentrations that are expressed as total aluminum. As discussed above, the size ranges of precipitated amorphous $Al(OH)_3(s)$ and small aluminosilicate particles overlap. Therefore, a filtration approach to minimize the contribution of aluminum from aluminosilicates, while retaining the contribution of aluminum from amorphous $Al(OH)_3(s)$, is therefore not capable of resolving the issue.

A sample preparation approach that solubilizes amorphous $Al(OH)_3(s)$, while not solubilizing aluminosilicates, and then followed by filtration (0.45- or 0.2-μm) has potential to address this conundrum (i.e., the pH 4 extraction approach described above). Measurement of total aluminum in surface water samples that have the potential to contain suspended sediment is totally inadequate, and potentially irrelevant. As little as 10 to 20 mg/L of typical naturally sourced SSC can contribute enough aluminum to exceed EPA's current AWQC for aluminum (i.e., 750 μg/L), and Figures R4 and D2 demonstrate that the majority of waters on the Pajarito Plateau and in the United States exhibit SSC far greater than 20 mg/L. An improved approach for quantifying toxicologically relevant or potentially bioavailable forms of aluminum in environmental samples is absolutely necessary for purposes of evaluating attainment of aluminum AWQC. If this issue is not addressed, samples from any surface waters exhibiting similar ranges of aluminum concentrations may be needlessly characterized as impaired.

Additionally, aluminum concentrations in surface waters from natural background and downstream locations cover very similar ranges and exhibit very similar distributions, suggesting that aluminum AWQC are not appropriate for natural surface waters of the Pajarito Plateau. As discussed above, this may also be true for other surface waters in the United States. The results described here provide substantial evidence that total aluminum concentrations in natural surface waters are likely irrelevant with respect to evaluating potential impairments due to aluminum, especially in waters containing suspended sediment.

REFERENCES:

GEI Consultants, Inc. (GEI). 2009. Direct Testimony of Steven P. Canton GEI Consultants, Inc. Notice of Intent (pleading log document #50). In the Matter of the Triennial Review of Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC WQCC NO. 08-13. Chevron Mining, Inc. August 28, 2009.

NMED 2010. New Mexico Environment Department's Proposed Statement of Reasons and Closing Legal Argument, lines 434-435 (pleading log document #119). Triennial review of Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC WQCC NO. 08-13. March 8, 2010.

NMED 2012. Aluminum Filtration Study. New Mexico Environment Department, Surface Water Quality Bureau. August 24, 2012.

NMED 2013. Procedures for Assessing Water Quality Standards Attainment for the State of New Mexico CWA §303(d) /§305(b) Integrated Report: Assessment Protocol. New Mexico Environment Department, Surface Water Quality Bureau. June 23, 2013.

NMED 2015. Procedures for Assessing Water Quality Standards Attainment for the State of New Mexico CWA §303(d) /§305(b) Integrated Report: Assessment Protocol. New Mexico Environment Department, Surface Water Quality Bureau. June 22, 2015.

Parametrix 2009. Updated Freshwater Aquatic Life Criteria for Aluminum (Exhibit 2 of Direct Testimony of Robert W. Gensemer, Parametrix Consultants). Los Alamos National Laboratory. Notice of Intent (pleading log document #51). In the matter of the Triennial Review of Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC WQCC NO. 08-13. August 28, 2009

Prothro M.G.1993. Office of Water policy and technical guidance on interpretation and implementation of aquatic life metals criteria. Office of Water, US Environmental Protection Agency, Washington, DC. October 1, 1993.

Santore R.C., Ryan A.C., Kroglund F., Teien H.C., Rodriquez P., Stubblefield W., Cardwell A., Adams A., Nordheim E. 2016. Development and application of a biotic ligand model for predicting the toxicity of dissolved and precipitated aluminum. Environ Toxicol Chem In prep.

WQCC 2010. Order and Statement of Reasons for Amendment of Standards, lines 514-516 (pleading log document # 134). State of New Mexico Water Quality Control Commission. In the matter of the Petition to Amend 20.6.4 NMAC Standards for Interstate and Intrastate Surface Waters, The Triennial Review. WQCC NO. 08-13. October 14, 2010.

Colorado Department of Public Health and Environment Water Quality Control Commission Regulation no. 31 The basic standards and methodologies for surface water (5 CCR 1002 – 31). Effective: January 31, 2013

U.S. EPA. 1988. Ambient water quality criteria for aluminum – 1988. EPA 440/5-86-008. US Environmental Protection Agency, Washington, DC.

EPA. 2007. Aquatic life ambient freshwater quality criteria – copper, 2007 revision. EPA-822-R-07-001. Office of Water, US Environmental Protection Agency Washington, DC.

Gensemer RW, Playle RC. 1999. The bioavailability and toxicity of aluminum in aquatic environments. Crit Rev Environ Sci Tech 29(4):315-450.

U.S. Environmental Protection Agency E, Stephan CE, Mount DI, Hansen DJ, Gentile JH, Chapman GA, Brungs WA. 1985. GUIDELINES FOR DERIVING NUMERICAL NATIONAL WATER QUALITY CRITERIA FOR THE PROTECTION OF AQUATIC ORGANISMS AND THEIR USES. Office of Research and Development.

Wentworth CK. 1922. A Scale of Grade and Class Terms for Clastic Sediments. The Journal of Geology 30(5):377-392.

Cardwell, A. S., W. J. Adams, R. W. Gensemer, E. Nordheim, R. C. Santore, A. C. Ryan and W. A. Stubblefield (2018). "Chronic toxicity of aluminum, at a pH of 6, to freshwater organisms: empirical data for the development of international regulatory standards/criteria." Environ Toxicol Chem **37**(7): 36-48.

EPA (2007). Aquatic life ambient freshwater quality criteria - copper, 2007 revision. EPA-822-R-07-001. Washington, DC, Office of Water, US Environmental Protection Agency

EPA (2017). Draft aquatic life ambient water quality criteria for aluminum 2017. EPA-822-P-17-001. Washington, DC, US Environmental Protection Agency.

GEI Consultants (2009). Direct testimony of Steven P. Canton, GEI Consultants, Inc. Notice of Intent (pleading log document No. 50). In the Matter of the Triennial Review of Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC WQCC NO. 08-13. August 28, 2009, Chevron Mining, Inc.

Gensemer, R. W. (2009). Direct testimony of Robert W. Gensemer, PhD, regarding 2009 triennial review of surface water quality standards, on behalf of Los Alamos National Security. Albany, OR, Parametrix, Inc.

Gensemer, R. W., J. C. Gondek, P. H. Rodriquez, J. J. Arbildua, W. A. Stubblefield, A. S. Cardwell, R. C. Santore, A. C. Ryan, W. J. Adams and E. Nordheim (2018). "Evaluating the effects of pH, hardness, and dissolved organic carbon on the toxicity of aluminum to freshwater aquatic organisms under circumneutral conditions." Environ Toxicol Chem **37**(1): 49-60.

HydroQual (2007). Biotic ligand model, Windows interface, version 2.2.1. User's guide and reference manual. Mahwah, NJ, HydroQual, Inc.

LANL (2018). Identification of aluminum-bearing mineral phases in storm water collected on the Pajarito Plateau, Los Alamos County, northern New Mexico. Los Alamos, NM, Los Alamos National Laboratory.

McDonald, E., R. T. Ryti, S. L. Reneau and D. Carlson (2003). Natural background geochemistry and statistical analysis of sediments. Los Alamos, NM, Los Alamos National Laboratory.

NMED (2010). New Mexico Environment Department’s Proposed Statement of Reasons and Closing Legal Argument, lines 434-435 (pleading log document #119). Triennial review of Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC WQCC NO. 08-13. March 8, 2010., New Mexico Environment Department.

NMED (2013). Procedures for assessing water quality standards attainment for the state of New Mexico CWA §303(d) /§305(b) integrated report: assessment protocol, New Mexico Environment Department Surface Water Quality Bureau.

NMED (2015). Procedures for assessing water quality standards attainment for the state of New Mexico CWA §303(d) /§305(b) integrated report: assessment protocol, New Mexico Environment Department Surface Water Quality Bureau.

Parametrix (2009). Updated freshwater aquatic life criteria for aluminum (Exhibit 2 of direct testimony of Robert W. gensemer, Ph.D.). Albany, OR, Parametrix.

Santore, R. C., A. C. Ryan, F. Kroglund, P. Rodriguez, W. Stubblefield, A. Cardwell, W. Adams and E. Nordheim (2018). "Development and application of a biotic ligand model for predicting the chronic toxicity of dissolved and precipitated aluminum to aquatic organisms." Environ Toxicol Chem **37**(7): 70-79.

Sposito, G. (1995). The Environmental Chemistry of Aluminum-Second Edition.

Windward (2015). Biotic Ligand Model Windows® Interface, Research Version 3.1.2.37: User's Guide and Reference Manual, October 2015. Seattle, WA, Windward Environmental LLC.

WQCC (2010). Order and Statement of Reasons for Amendment of Standards, lines 514-516 (pleading log document # 134). State of New Mexico Water Quality Control Commission. In the matter of the Petition to Amend 20.6.4 NMAC Standards for Interstate and Intrastate Surface Waters, The Triennial Review. WQCC NO. 08-13. October 14, 2010., Water Quality Control Commission.

Tables

Table R1. Summary of dataset

Parameter	Date Range	Numbers of Samples: Total	Estimated	BDL	Numbers of Locations
Unfiltered Al	2005-01-24 to 2017-11-28	1357	0	42	117
10-µm filtered Al	2013-08-09 to 2017-10-05	159	0	0	36
5-µm filtered Al	2013-08-09 to 2015-10-22	24	0	0	8
1-µm filtered Al	2013-08-09 to 2017-10-05	39	0	0	12
0.45-µm filtered Al	2005-01-24 to 2017-11-28	1434	0	157	117
0.2-µm filtered Al	2013-08-09 to 2015-10-22	24	0	0	8
0.02-µm filtered Al	2014-07-29 to 2015-10-22	20	0	9	9
pH	2005-04-27 to 2017-11-28	657	368	0	73
DOC	2005-03-18 to 2017-10-05	893	324	0	90
Ca	2005-01-24 to 2017-11-28	1430	0	0	117
Mg	2005-01-24 to 2017-11-28	1430	0	1	117
Na	2005-01-24 to 2017-11-28	1329	0	0	117
K	2005-01-24 to 2017-11-28	1329	0	0	117
SO_4	2005-03-18 to 2017-11-28	1415	753	118	78
Cl	2005-03-18 to 2017-11-28	1415	754	117	78
Alkalinity	2005-01-24 to 2017-11-28	935	421	1	99
SSC	2005-03-18 to 2017-10-05	1388	1388	66	106
NM AWQC	2005-01-24 to 2017-11-28	1430	0	0	117
EPA AWQC	2005-04-27 to 2017-10-05	600	0	0	65
BLM AWQC	2005-04-27 to 2017-10-05	601	0	0	65

AWQC = ambient water quality criteria, BDL = below detection limit, BLM = biotic ligand model, EPA = Environmental Protection Agency, DOC = dissolved organic carbon, NM = New Mexico, SSC = suspended sediment concentration

Table R2. Summary of statistical comparisons of aluminum concentrations by sample preparation, sample type, and location type

Sample Preparation	Aluminum Concentration (ug/L)*: Natural Background	Aluminum Concentration (ug/L)*: Downstream	p-value: F-test (variance)	p-value: t-stat (geomean)	p-value: KS (dist)
UF (all)	12372 (1.01) [167]	10159 (0.99) [1184]	0.788	0.304	0.205
UF (WT)	36213 (0.73) [120]	27876 (0.70) [842]	0.498	0.111	0.077
UF (WS)	618 (0.50) [31]	575 (0.72) [238]	**0.023****	0.762	0.524
UF (WP)	1036 (0.53) [8]	686 (0.73) [37]	0.378	0.435	0.274
UF (WM)	1647 (0.37) [8]	3749 (0.52) [67]	0.367	**0.034****	0.059
10-µm (all)	2717 (0.46) [39]	2597 (0.53) [120]	0.297	0.824	0.411
10-µm (WT)	2717 (0.46) [39]	2597 (0.53) [120]	0.297	0.824	0.411
10-µm (WS)	NA	NA	NA	NA	NA

10-µm (WP)	NA	NA	NA	NA	NA
10-µm (WM)	NA	NA	NA	NA	NA
0.45-µm (all)	465 (0.47) [163]	474 (0.53) [1263]	0.062	0.843	0.069
0.45-µm (WT)	500 (0.45) [120]	590 (0.44) [904]	0.932	0.097	**0.001****
0.45-µm (WS)	365 (0.57) [31]	232 (0.65) [274]	0.385	0.078	0.079
0.45-µm (WP)	320 (0.57) [8]	243 (0.65) [37]	0.769	0.606	0.324
0.45-µm (WM)	746 (0.20) [4]	742 (0.48) [48]	0.165	0.988	0.677

* Geometric mean (standard deviation of log10-transformed values) [number of observations]

** natural background and downstream concentrations were significantly different (p<0.05) for the particular statistical test (KS – Kolmogorov-Smirnov non parametric test)

NA – not applicable UF – unfiltered WM – snowmelt sample WP – persistent water sample (baseflow) WS – surface water sample (baseflow) WT – storm water sample (stormflow)

Figures

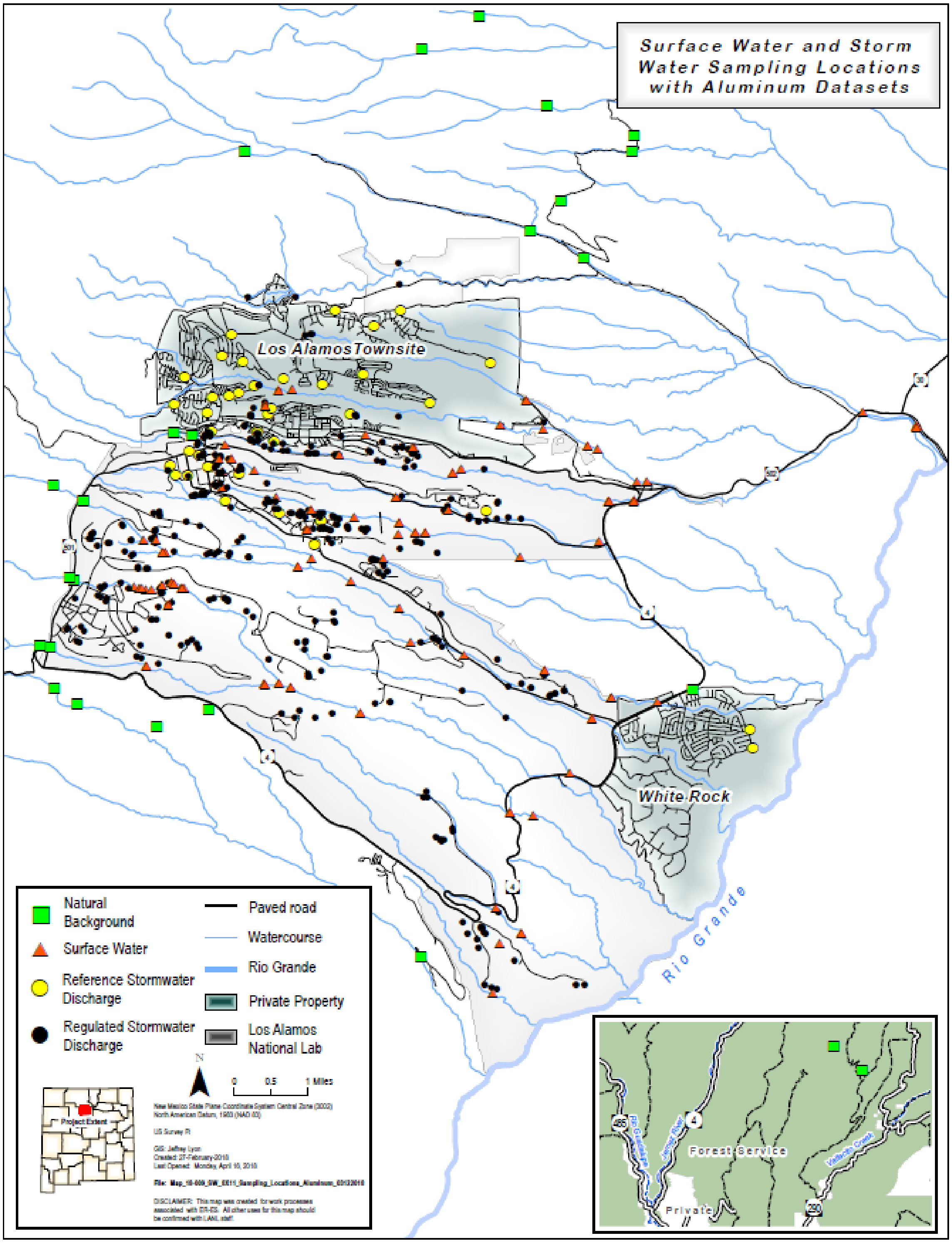

Figure M1. Map of study area.

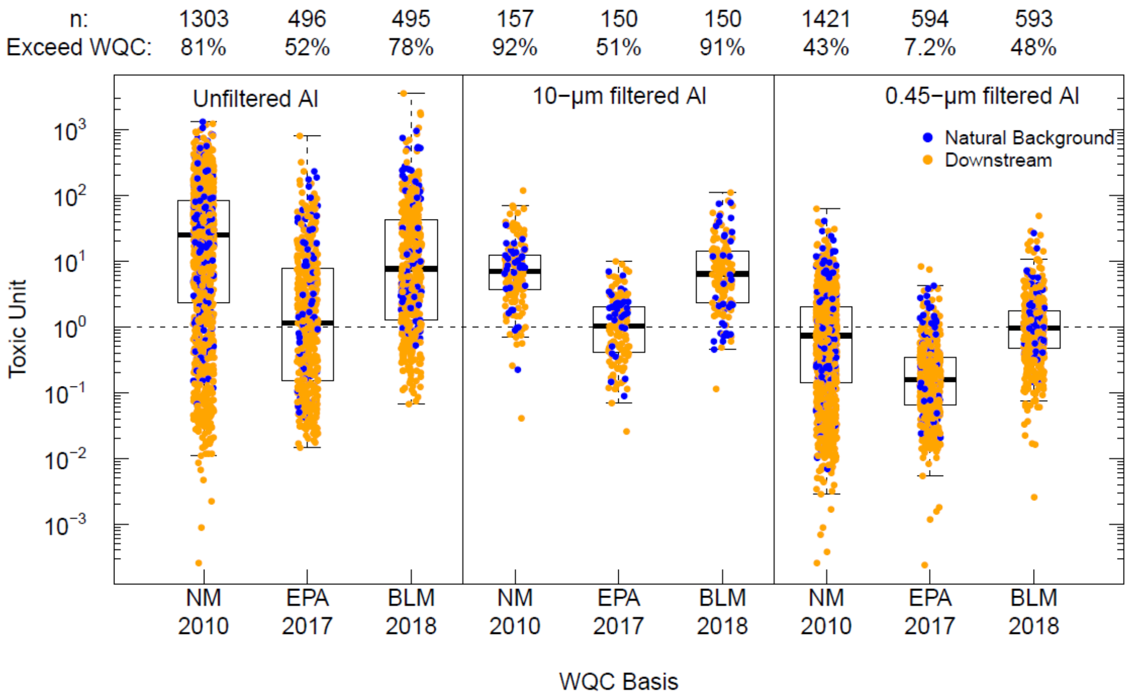

Figure R1. Aluminum toxic units (i.e., reported aluminum concentration/corresponding AWQC) for natural background and LANL surface water location samples using various sample preparations (i.e., unfiltered or filtered using specified filter pore size) are summarized for different AWQC calculation approaches. Sample types include baseflow, stormflow, and snowmelt. All results are for natural background and downstream locations.

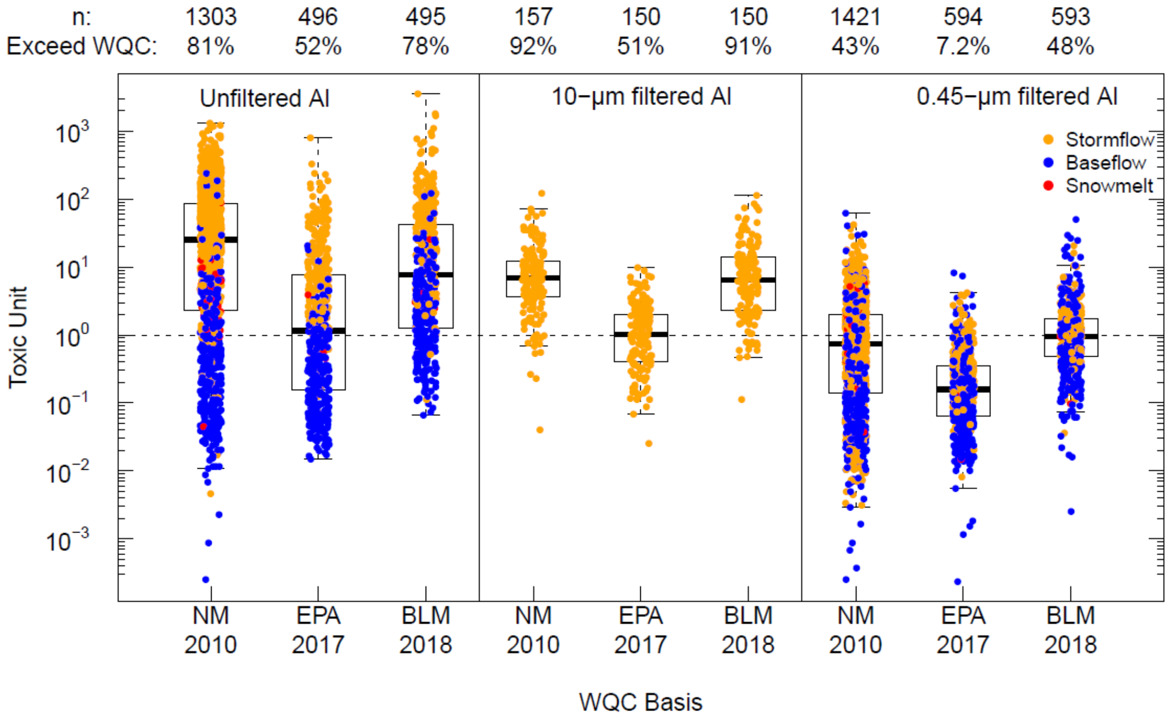

Figure R2. Aluminum toxic units (i.e., reported aluminum concentration/corresponding AWQC) for various sample types and sample preparations (i.e., unfiltered or filtered using specified filter pore size) are summarized for different AWQC calculation approaches. Sample types include baseflow, stormflow, and snowmelt. All results are for natural background and downstream locations.

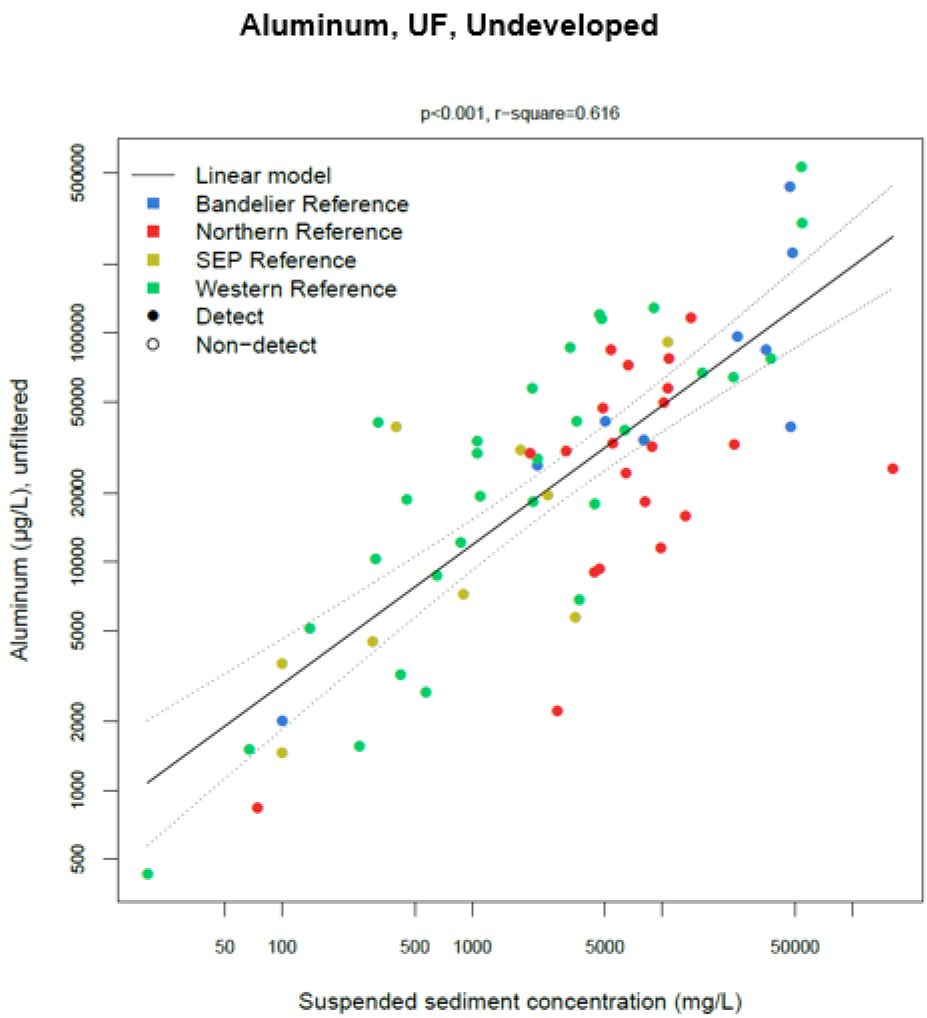

Figure R3. Aluminum (UF) and SSC correlation in natural background surface water samples.

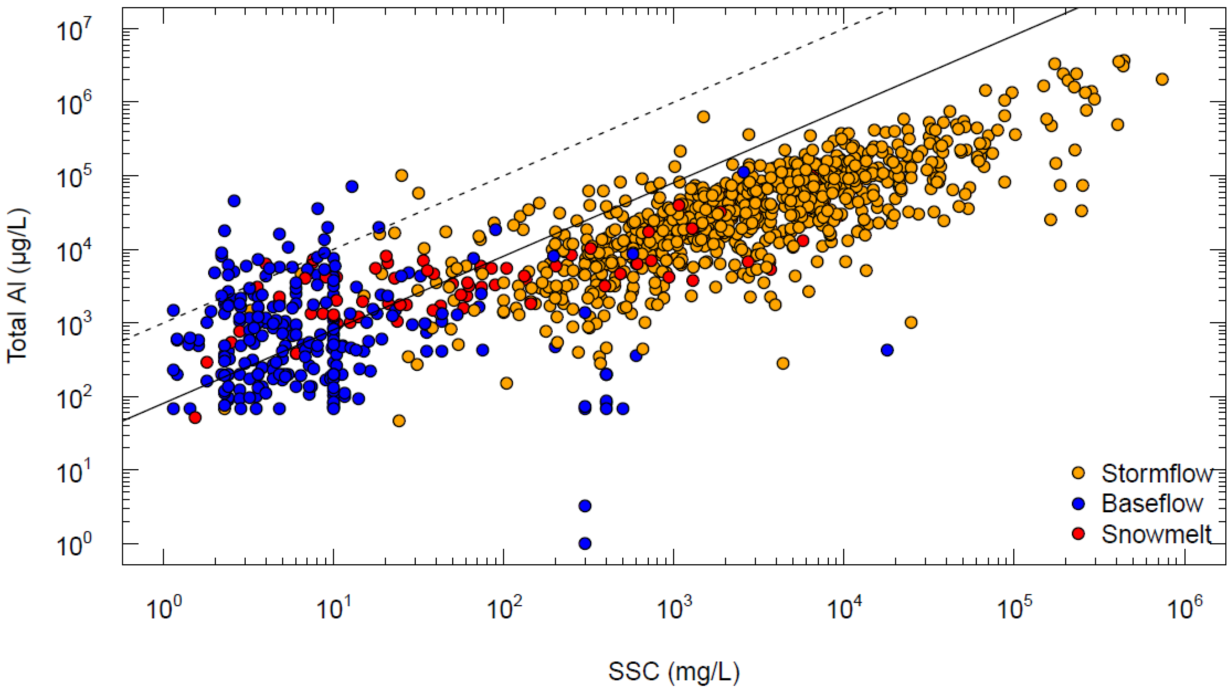

Figure R4. Aluminum concentrations vs. suspended sediment concentration, by sample type for natural background and downstream surface waters. Solid line represents 8% aluminum in SSC. Dashed line represents maximum possible 100% aluminum in SSC. Regression equation using all data: log10(Total Al) = 0.613*log10(SSC) + 2.37 [r^2 = 0.685]; regression equation using only stormflow data: log10(Total Al) = 0.662*log10(SSC) + 2.22 [r^2 = 0.594].

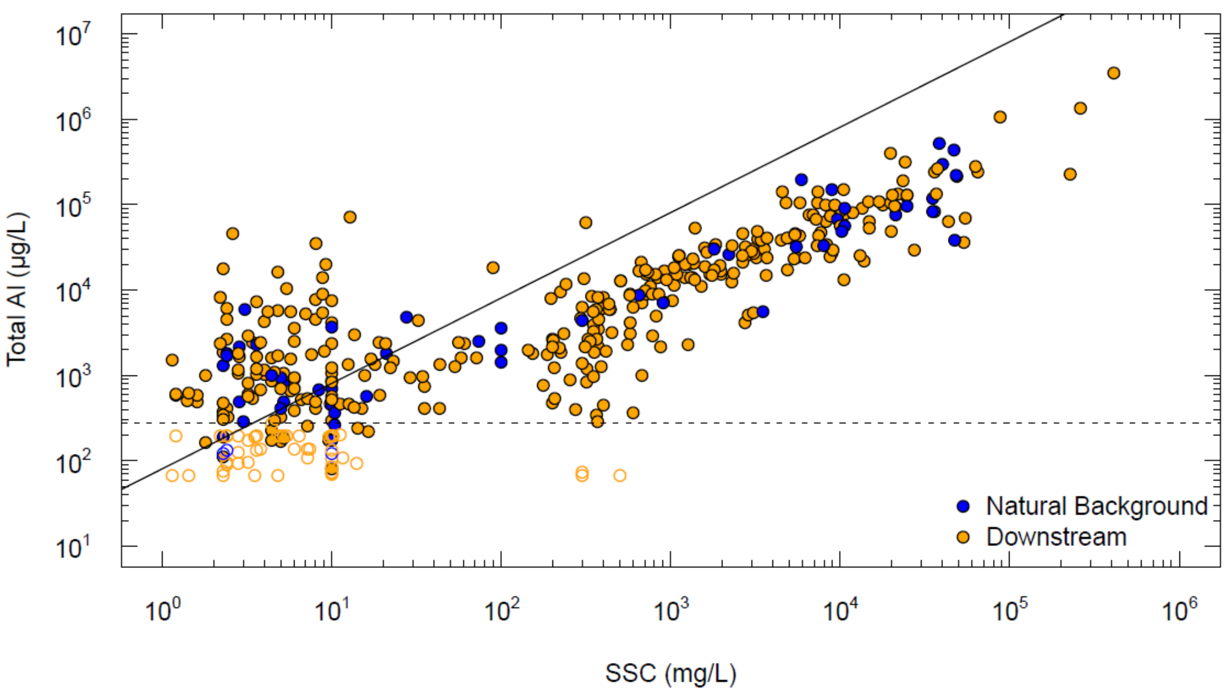

Figure R5. Solubility evaluations of aluminum, with respect to amorphous $Al(OH)_3(s)$ for natural background and downstream locations. Solid line represents 8% aluminum in SSC. Solid points represent samples oversaturated with respect to amorphous $Al(OH)_3(s)$. Horizontal dashed line approximates the solubility limit of amorphous $Al(OH)_3(s)$ in the water samples evaluated.

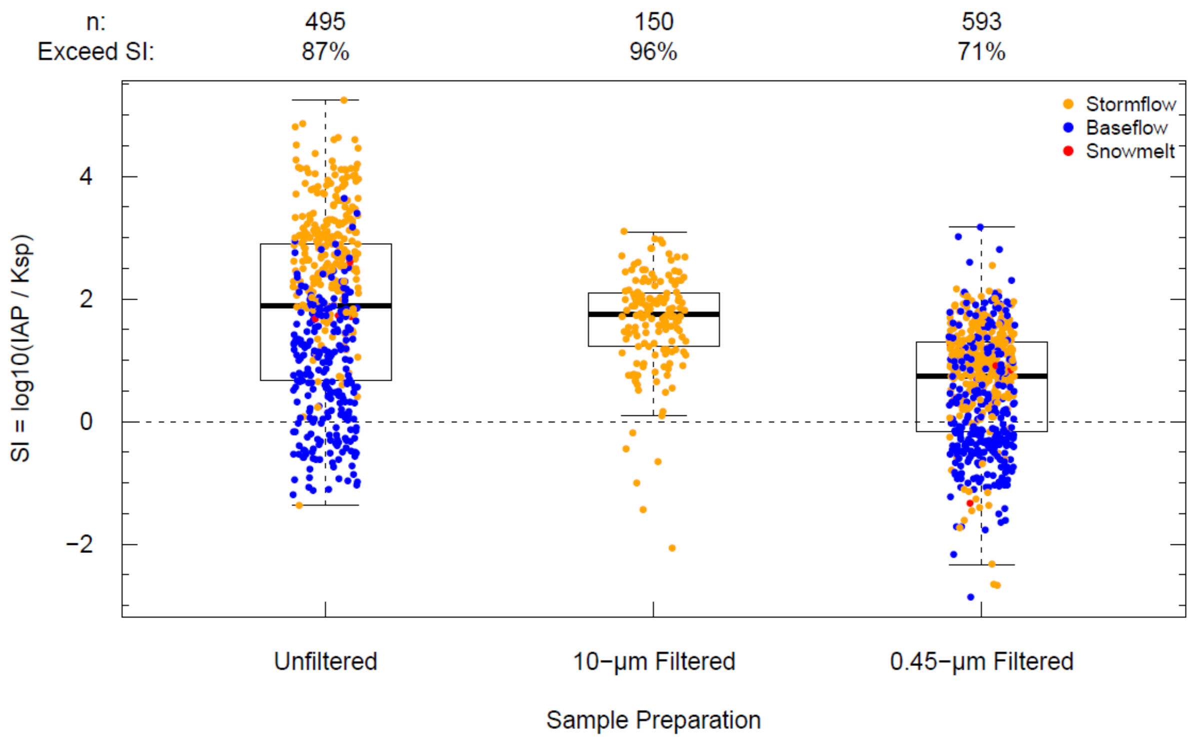

Figure R6. Saturation index calculations for amorphous $Al(OH)_3(s)$ under different sample preparation for natural background and downstream locations.

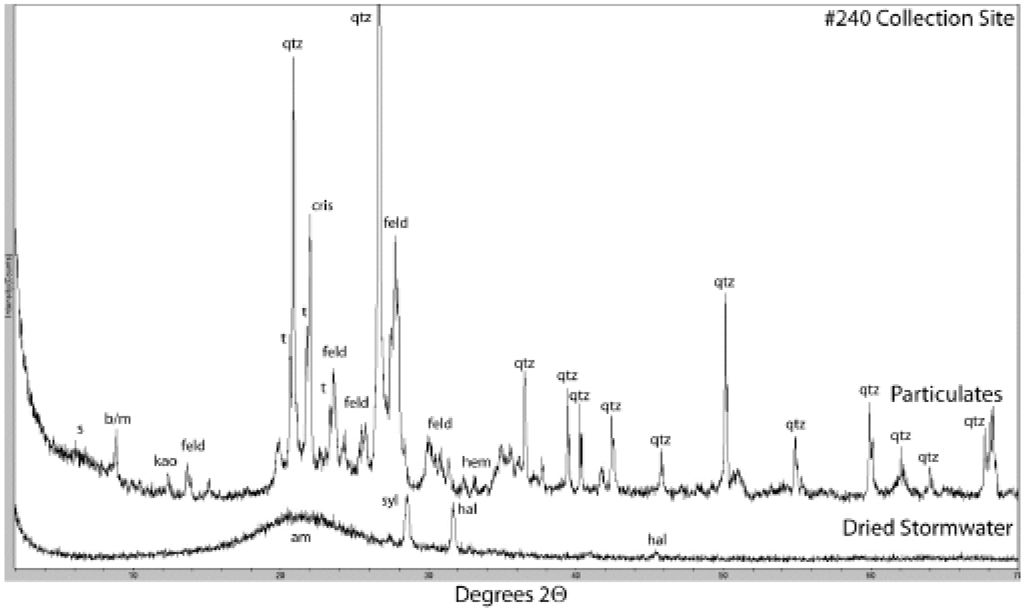

Figure A-21 **XRD patterns from dried storm water and suspended sediment particulates from the same storm water sample (E240). The dried storm water was dominated by amorphous matter (broad hump at 20–30°2θ), sylvite (syl), and halite (hal). The amorphous hump (coupled with SEM/EDS) appears to be aluminosilicate. Sylvite and halite are primarily from precipication during storm water evaporation. Suspended sediment particulates are typical of the Bandelier Formation and dominated by orthoclase/sanidine (feld), albite (feld), quartz (qtz), trydimite (t), and cristobalite (c) with minor amounts of mica (biotite or muscovite [b/m]), smectite, hematite (hem), and kaolinite (kao).**

Figure R7. XRD analysis of precipitated dissolved solids in natural background stormflow sample.

E240 Storm Water Suspended-Sediment Analysis

0.2-µm Cellulose Nitrate Filter

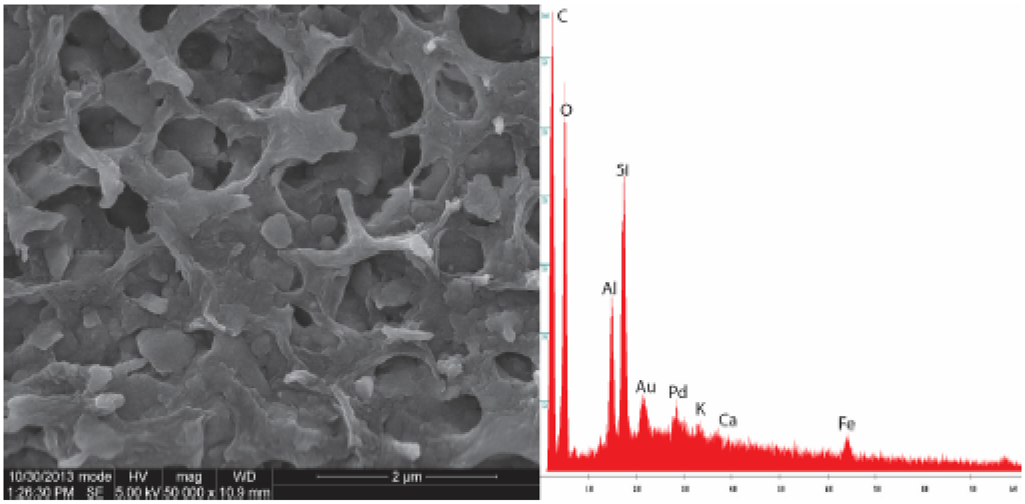

Figure A-15 **Retentate exhibiting an amorphous morphology dominated by aluminum and silicon; aluminum/silicon ratio of 1/2. There are minor amounts of potassium, calcium, and iron. The particles appear to have filled most of the porosity opposed to residing on the filter surface. Particulates on the surface typically are well rounded.**

Figure R8. SEM/EDS analysis results of natural background stormflow sample particles retained on 0.2µm filters after passing 1µm filter.

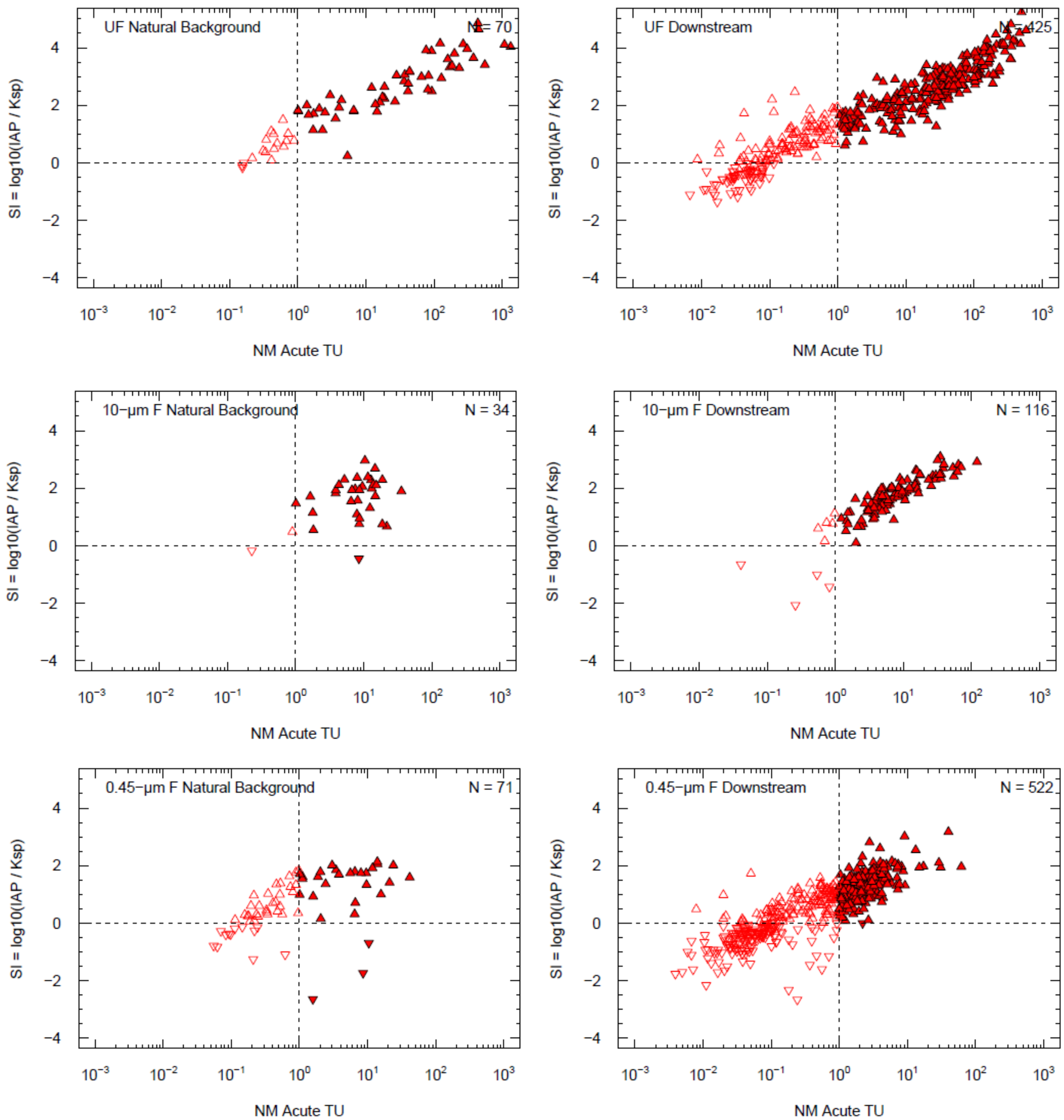

Figure R9. Comparison of solubility exceedance with New Mexico Hardness-based AWQC toxic units for aluminum concentrations from natural background and downstream locations, by filter size. Upward triangles are over-saturated and downward triangles are under-saturated, open triangles are TU<1, solid triangles are TU>1. UF = unfiltered, F = filtered.

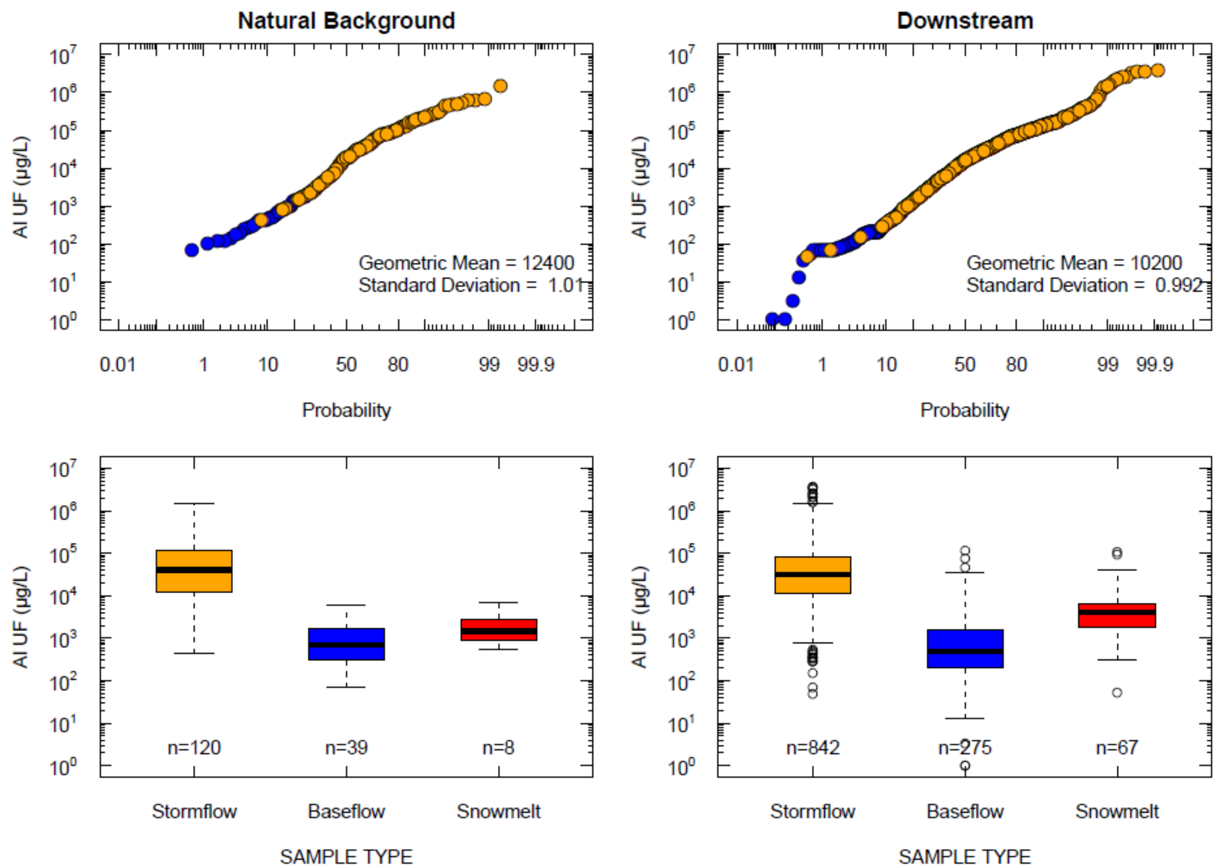

Figure R10. Comparison of total aluminum concentrations for samples from natural background and downstream locations. Boxplots characterize the range of concentrations observed in samples of different type (i.e., Stormflow; Baseflow; Snowmelt). Color of points in top panels represents the sample types, consistent with the bottom panels.

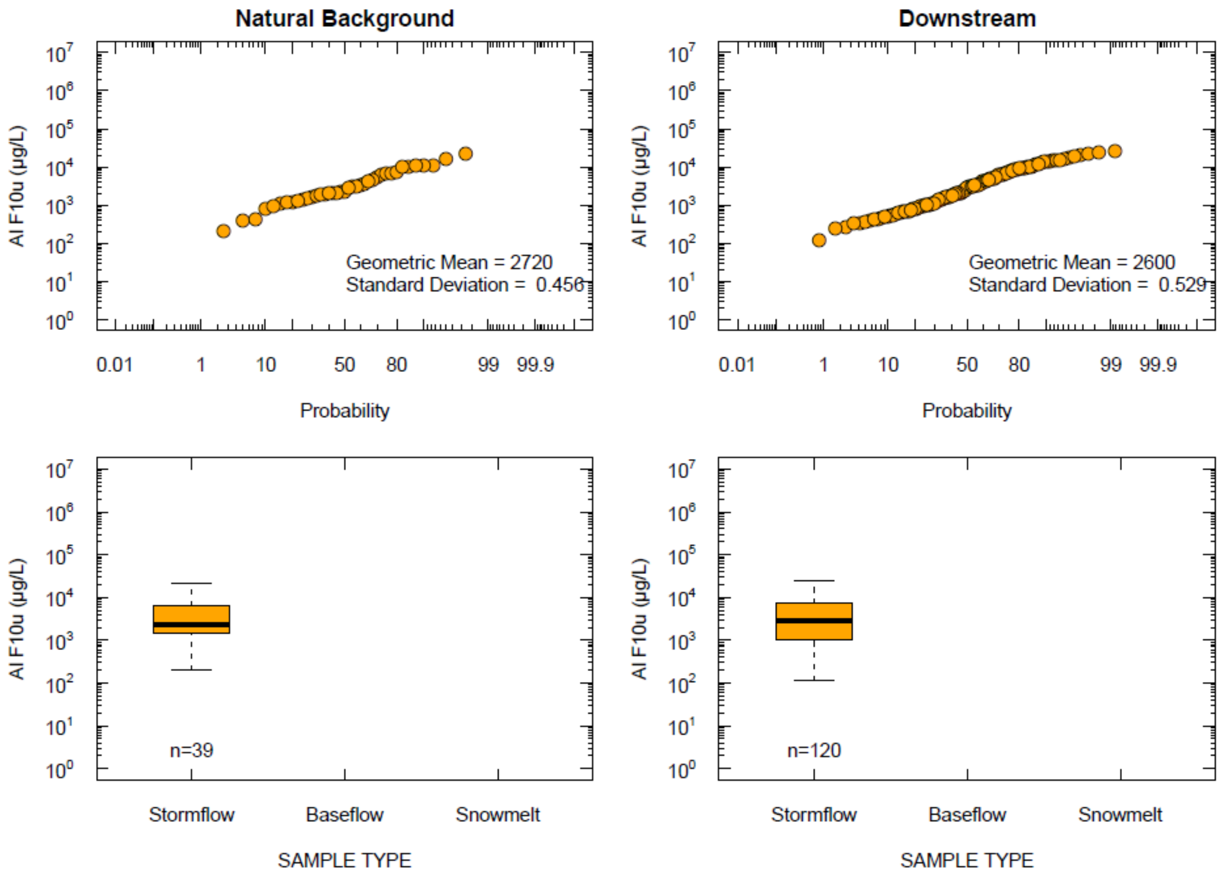

Figure R11. Comparison of 10-µm filtered aluminum for samples from natural background and downstream locations. Boxplots characterize the range of concentrations observed in samples of different type (i.e., Stormflow; Baseflow; Snowmelt). Color of points in top panels represents the sample types, consistent with the bottom panels.

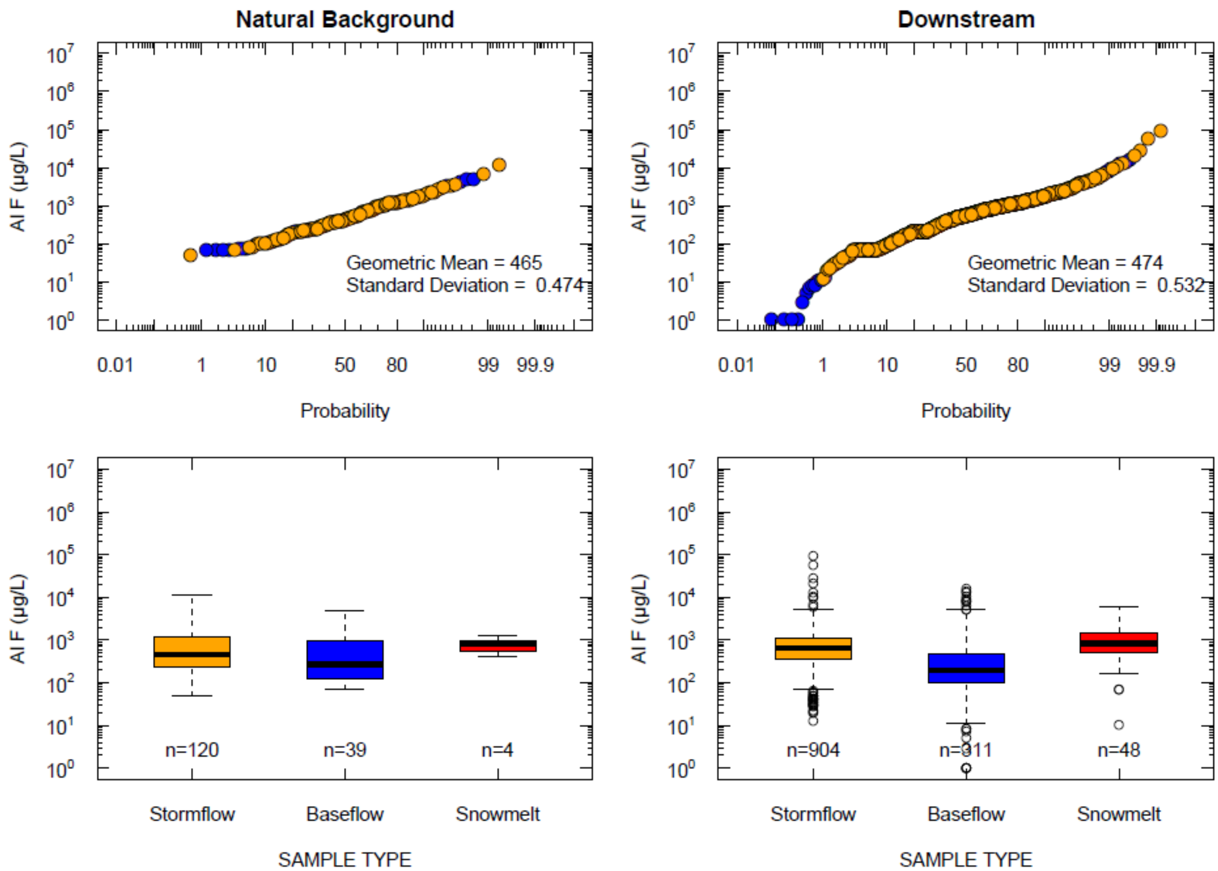

Figure R12. Comparison of 0.45-µm filtered aluminum concentrations samples from natural background and downstream locations. Boxplots characterize the range of concentrations observed in samples of different type (i.e., Stormflow; Baseflow; Snowmelt). Color of points in top panels represents the sample types, consistent with the bottom panels.

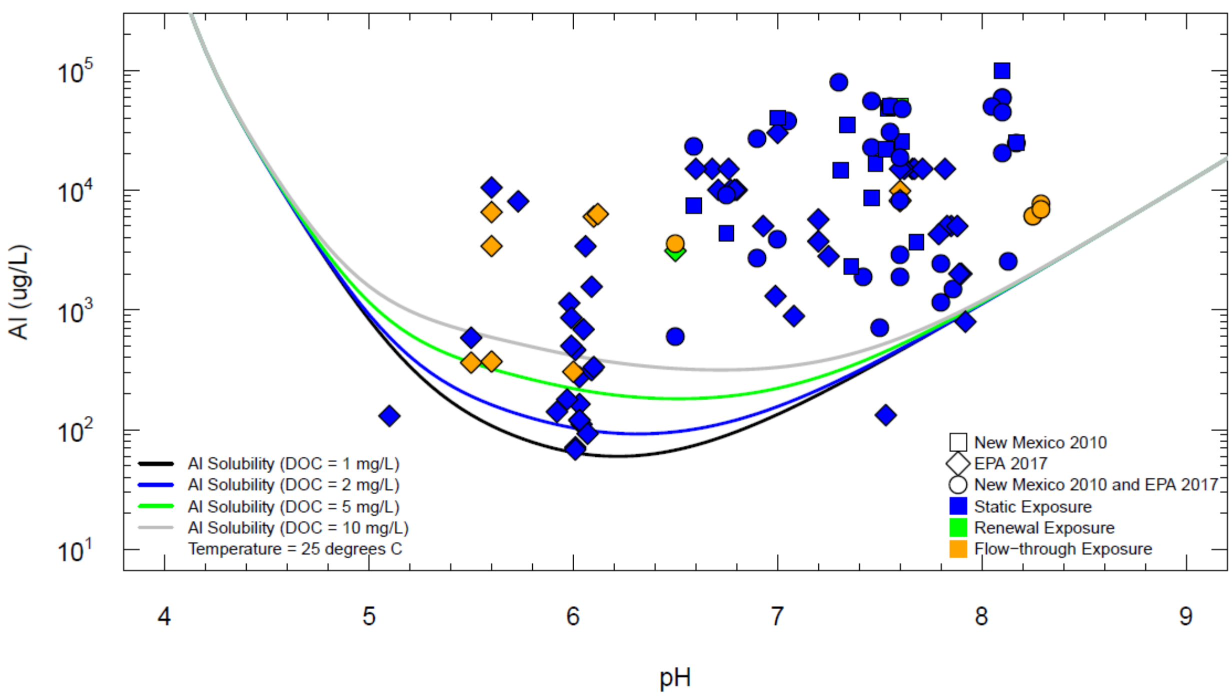

Figure D1. Aluminum effect concentrations from the toxicity database used to derive aluminum (Al) water quality criteria (AWQC) in New Mexico (GEI Consultants 2009, Gensemer 2009, Parametrix 2009) and EPA 2017 draft. Aluminum solubility limits were calculated based upon the solubility of amorphous $Al(OH)_3$ (s) over a range of pH and dissolved organic carbon (DOC) concentrations at 25° C.

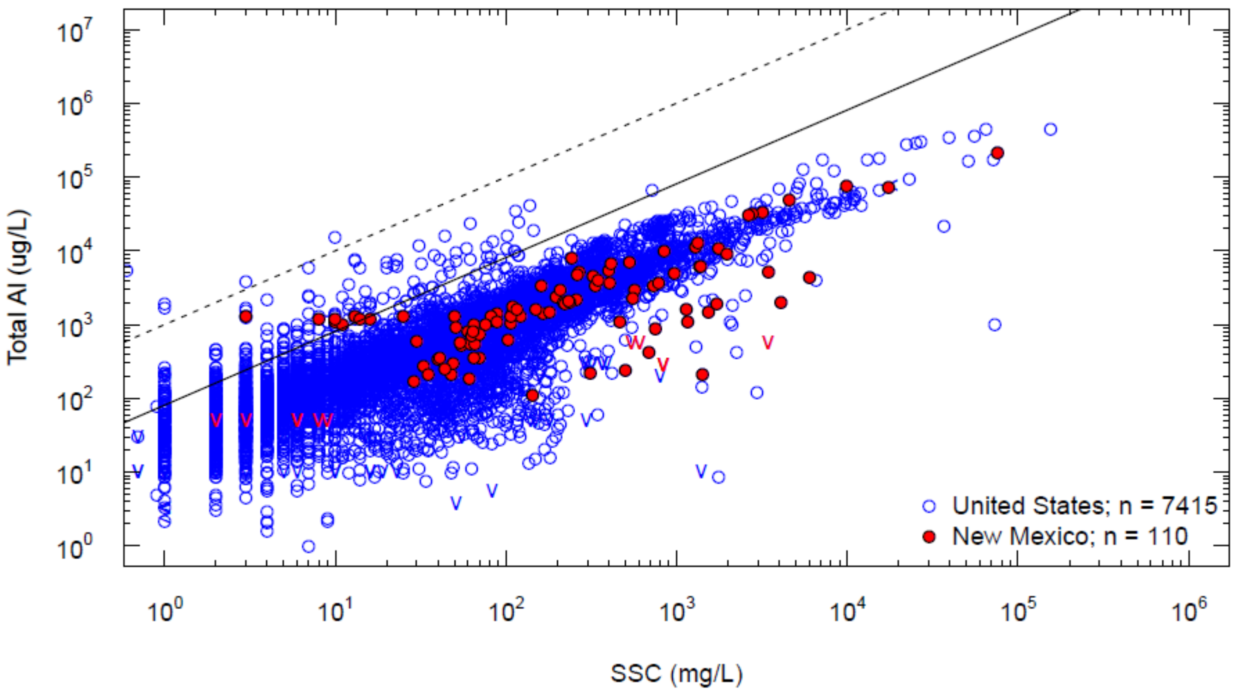

Figure D2. Total aluminum concentrations vs. suspended sediment concentration (SSC) in various surface waters of the United States. All data were obtained from the National Water Quality Monitoring Council data portal (https://www.waterqualitydata.us/portal/). Solid line represents 8% aluminum in SSC (i.e., 80,000 mg/Kg). Dashed line represents maximum possible 100% aluminum in SSC (i.e., 1,000,000 mg/Kg). V = non-detected aluminum concentration.

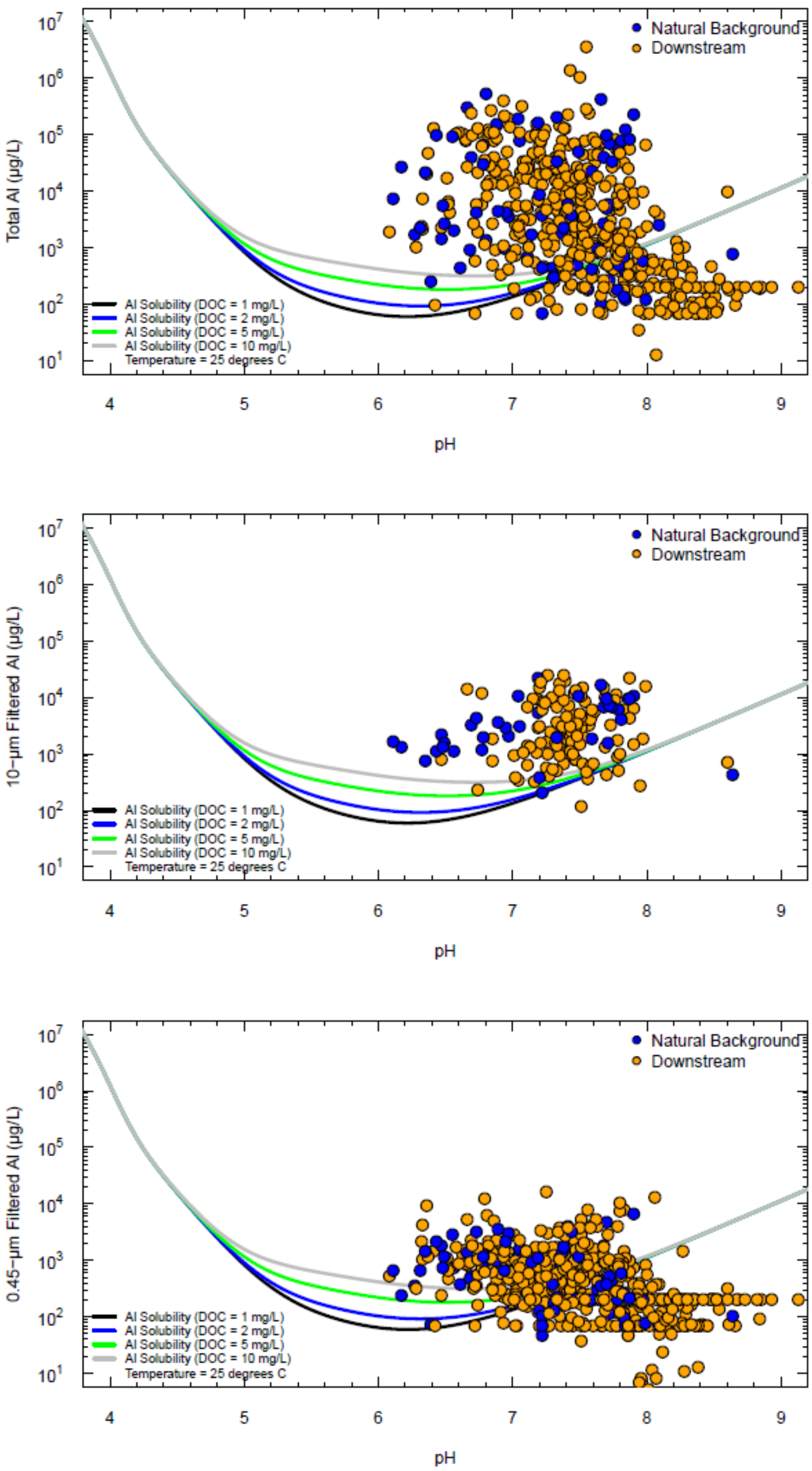

Figure D3. Observed pH and aluminum concentrations for samples from natural background and downstream locations with aluminum solubility limits calculated based upon the solubility of amorphous $Al(OH)_3$ (s) over a range of pH and dissolved organic carbon (DOC) concentrations at 25° C.

2018-2020 State of New Mexico Clean Water Act Section 303(d)/ Section 305(b) Integrated Report

Appendix D NPS Management Program Project Tracking

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Appendix D

NPS Management Program Project Tracking

Below are tables of all current and recently-completed projects managed by the NPS Management Program. These projects are tracked in EPA's Grants Reporting and Tracking System (GRTS). To view additional details for any of the projects in the below tables, click the associated Summary Report "VIEW" at: https://www.env.nm.gov/nmed_319_and_rsp_project_list/. This list is periodically updated and includes links to the GRTS database.

Table D-1. Current and recently-completed watershed based plans

Grant Number	Project Number	Project Title	Project End Date
99610116	14-F	Lower Animas WBP	06/15/2016
99610116	14-I	Ute Reservoir WBP for Water Quality Restoration	01/31/2018
99610116	15-S	Rio Fernando de Taos WBP (Part 1)	06/30/2018
99610117	16-F	Rio Fernando de Taos WBP (Part 2)	04/01/2019
99610117	16-G	Watershed-Based Planning within the Upper Agua Chiquita Drainage Basin	06/30/2019
99610117	16-H	Upper Pecos WBP Update and Revision	12/31/2018
99610117	16-I	WBP for the Upper Rio Grande Watershed, Comanche Creek Subwatershed	06/30/2019
99610117	16-J	Rio de las Vacas WBP	05/31/2020

Table D-2. Current and recently-completed watershed restoration implementation projects

Grant Number	Project Number	Project Title	Project End Date
99610116	14-C	Middle Rio de las Vacas Water Quality Improvement Project	12/31/2016
99610116	14-D	Ponil Creek Restoration Project, Phase II	10/31/2017
99610116	14-J	On-The-Ground Improvement Projects for the Upper Gallinas River and Porvenir Creek Phase II	06/30/2018
99610116	15-C	Upper Jaramillo Creek Water Quality Improvement Project (Part 3)	12/31/2017
99610116	15-D	Riparian Restoration along the Rio Cebolla, NM with Emphasis on Sediment Reduction	01/14/2017

Grant Number	Project Number	Project Title	Project End Date
99610116	15-E	Upper Gallinas River Monitoring	06/01/2018
99610116	15-R	Rio Nutrias Watershed Based Plan Implementation Phase I (Part 1)	06/30/2018
99610116	15-T	Jemez National Recreation Area Riparian Protection Project	06/30/2018
99610117	16-C	Temperature Reduction and Riparian Habitat Restoration in Upper Cow Creek	06/30/2020
99610117	16-D	Rio Nutrias Watershed Based Plan Implementation Phase I (Part 2)	12/31/2019
99610117	16-E	Las Cruces Workshop on Low Impact Development, Green Infrastructure, and Water Harvesting Techniques	12/30/2015
99610117	17-Q	Rio San Antonio Water Quality Improvement Project	06/30/2020
99610117	17-R	On-The-Ground Improvement Projects for the Mora River – Upper Canadian Plateau Phase 1A	06/30/2020
99610117	17-S	Upper Rio San Antonio Watershed On-The-Ground Restoration to Improve Water Quality	06/30/2020
99610117	17-T	Lower Animas Watershed Based Plan Implementation Projects	12/31/2020
99610118	18-C	Temperature Reduction and Erosion Reduction in Lower Cow Creek	12/31/2021

Table D-3. Current and recently-completed River Stewardship Program projects

Grant Number	Project Number	Project Title	Project End Date
99610116	14-G	Bank Stabilization and Habitat Enhancement, a Red River Restoration Project	06/30/2016
99610116	14-H	Selden Drain Restoration Program Phase II	06/30/2016
99610116	15-F	Gallinas Village River and Floodplain Restoration	06/30/2018
99610116	15-G	Pecos River Dalton Day Use Area River Restoration Project	06/30/2018
99610116	15-H	San Juan River Restoration Project (Part 2)	06/30/2018
99610116	15-I	Track Fire Burn Area Perennial Stream Restoration Project	06/30/2018

Grant Number	Project Number	Project Title	Project End Date
99610116	15-J	Middle Percha Creek Silver Fire Rehabilitation Project	06/30/2018
99610116	15-K	Red River Town Park Restoration Project	06/30/2018
99610116	15-L	Restoring Hydrologic Functioning to the Rito de los Indios, Valles Caldera National Preserve	06/30/2018
99610116	15-M	San Vicente Creek Urban Watershed Restoration Project	06/30/2018
99610116	15-N	Post-Fire Restoration of the Rito de los Frijoles at Bandelier National Monument Visitors' Center	05/07/2016
99610116	15-O	Rio Grande Corridor at Buckman Phase II	06/30/2018
99610116	15-P	Middle Jaramillo Creek Water Quality Improvement and Riparian Restoration Project	06/30/2018
99610116	15-Q	El Rito Creek Habitat Enhancement and Bank Stabilization Project	06/30/2018
99610117	17-C	Upper Rio San Antonio Watershed Restoration to Improve Water Quality	06/30/2020
99610117	17-D	Animas River Restoration Project	06/30/2019
99610117	17-E	Enhancing Aquatic Habitat Conditions in the Galisteo Creek in Galisteo, New Mexico	06/30/2020
99610117	17-F	Gila River Floodplain Restoration	06/30/2019
99610117	17-G	Rewinding the Gallinas River in the City of Las Vegas	06/30/2020
99610117	17-H	Restoring La Jara Creek from Damage from the Thompson Ridge Fire, Valles Caldera National Preserve	06/30/2019
99610117	17-I	Constructing Diverse Native Bosque Habitat on Two River Bars at the Pueblo of Santa Ana	06/30/2020
99610117	17-J	Restoration of Sawmill and Foreman Creeks, Comanche Creek Watershed	06/30/2019
99610117	17-K	Valle de Oro National Urban Wildlife Refuge Riparian, Wetland, and Water Quality Improvement	06/30/2019
99610117	17-L	Two Rivers Park Restoration Project	06/30/2020
99610117	17-M	Bosque del Bernalillo Storm Water Quality and Habitat Enhancement to the Rio Grande Project	06/30/2020
99610117	17-N	Post-Tres Lagunas Fire and Flooding Restoration Project for Holy Ghost Canyon, Creek, and Tributaries	06/30/2019

Grant Number	Project Number	Project Title	Project End Date
99610117	17-O	Village of Questa Fishing Park (Reach A) Stream Restoration Project	06/30/2020
99610117	17-P	Upper San Antonio Canyon Water Quality Improvement Project	06/30/2020