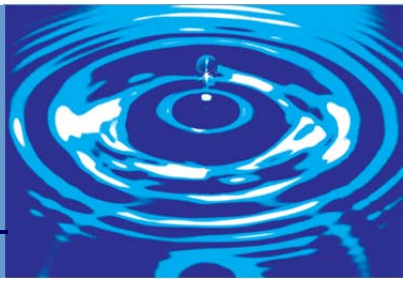
State of New Mexico

Water Quality Control Commission



FINAL

2016 - 2018

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

RECORD OF DECISION

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HUC: 11040001 - Cimarron Headwaters

Carrizozo Creek (OK bnd to headwaters)
AU:NM-2701_40 WQS: 20.6.4.702

1996 Action: Listed for chloride and removal of riparian habitat. Data are from one station (DCR701.000103) sampled in 1986. Chloride data indicate Full Support, Impacts Observed for the fishery use (1/3).

1998 Action: Chloride will be removed as a cause of non-support for this reach and will be listed on the 1998 305(b) report as Full Support, Impacts Observed for chloride. The reach will continue to be listed on the 1998 303(d) report with unknown as the cause of non-support.

2002 Action: The Dry Cimarron watershed was intensively surveyed by SWQB in 2000. The reach will be listed as Not Supporting for DO (6/8) and chronic aluminum (3/9). The reach will be listed as Full Support, Impacts Observed for chloride and temperature (1/8).

2004 Action: Aluminum was incorrectly assessed for the last listing cycle. Since multi-day data were available, means were determined and compared to the chronic criterion. There were 1 of 3 exceedences using seasonal means. Therefore, aluminum will be removed as a cause of non support. Also, according to the survey lead, the DO measurements are not reliable because the only access point in this AU was a beaver bog. A healthy warmwater fishery was also present. Because of limited access and a naturally low DO condition due to the beaver bog, dissolved oxygen will be removed as a cause of non support.

2008 Action: This AU was not sampled during the 2006 survey, and may not be perennial.

2012 Action: WQS citation changed to 20.6.4.702 with CWAL use per EPAs approval of NMAC 1/14/2011.

Dry Cimarron R (Perennial reaches OK bnd to Long Canyon)
AU:NM-2701_00 WQS: 20.6.4.702

1996 Action: Previously listed under "Dry Cimarron River, perennial portions" and listed for temperature, pH, salinity (TDS), fecal coliform, total ammonia and stream bottom deposits. Temperature data indicated the fishery use was not supported at 3 of 4 stations (5/5, 4/4, and 5/5) while it was supported at only one station (0/5). Data for pH are similar and indicate full support (0/5) for the fishery use at one station (same station as temperature), while the use was not supported at the other stations (4/5, 2/5, 5/5). Total dissolved solids (salinity) data indicated that the fishery use was not supported at 2 stations (DCR701.000102, 5/5 and DCR701.000105, 5/5), while it was supported at 2 stations (0/5 and 0/5). Fecal coliform data indicated full support of the contact recreation use at two stations (DCR701.000105, 0/1 and DCR701.002010, 0/1) and Full Support, Impacts Observed at station DCR701.000102 (1/1). Total ammonia data indicated that the fishery use was partially supported at 3 stations (2/5,2/5, and 2/4), while it was full support at station DCR701.002010, 0/5. A biological assessment was conducted in 1990 by the NMED. The biological assessment found that the fishery use for station DCR701.002010 was not supported (40% of reference). Station DCR701.000110 was full support (90% of reference) and station DCR701.000102 was Full Support, Impacts Observed (75% of reference) for the

fishery use.

1998 Action: Fecal coliform will be removed as a cause of non-support for this reach but will be listed on the 1998 305(b) list as Full Support, Impacts Observed. The reach will continue to be included on the 1998 303(d) list as not Supported for stations below DCR701.0002010 with temperature, TDS, pH, total ammonia and stream bottom deposits as the causes of non-support.

2002 Action: This reach was defined by segmenting "Dry Cimarron River, perennial portions" into two assessment units. The Dry Cimarron watershed was intensively surveyed by SWQB in 2000. The reach will be listed as Not Supporting for TDS (10/45) and temperature based on thermograph data and temperature assessment protocol (data indicate an exceedence of the segment specific criteria of 25 C for more than 6 consecutive hours). This reach will be de-listed for pH (0/40), total ammonia (0/37), and stream bottom deposits (benthic and sediment sampling stations are reference sites).

2004 Action: This AU should be listed as Category 5B because CWF is not an existing use and likely not an attainable use.

2006 Action: WQS was changed during the 2005 triennial review process. AU was split at Long Canyon for 2006 survey. Aquatic life use was changed to Warmwater (temperature criterion of 32.2 degrees C). The max temperature from the 2000 survey was 30.0. Therefore, temperature was removed as a cause of non support.

2008 Action: As of the date of this review (4/4/08), EPA Region 6 has not approved the 2005 triennial proposal to create WQ standard segment 20.6.4.702 under which this AU would fall. Therefore, this AU still falls under 20.6.4.701 and the associated designated uses to make 2008 impairment determinations. This AU unit was intensively surveyed in 2006. There were 4 of 7 exceedences of the segment-specific 1,200 mg/L total dissolved solids criterion. There were 3 of 7 exceedences of the segment-specific 600 mg/L sulfate criterion. Dissolved oxygen concentration and saturation data lead to a conclusion of non support. The maximum temperature measured by thermograph was 30 degrees C, and the criterion of 25 degrees C was also exceeded for > 6 consecutive hours for > 3 consecutive days. Therefore, total dissolved solids, sulfate, dissolved oxygen, and temperature were added as causes of impairment. Note that both the temperature and dissolved oxygen impairments were measured at station DCR at Wiggins Road which has wetland characteristics and may not be representative of the rest of the AU

2010 Action: TMDLs were prepared for sulfate and TDS (2009).

2012 Action: WQS citation changed to 20.6.4.702 with CWAL use per EPAs approval of NMAC 1/14/2011. A WQCC hearing in 2012 will consider a proposal to change the aquatic life use to coolwater.

2014 Action: A UAA was conducted to support changing the aquatic life use for this segment from coldwater 25 to coolwater. Amendment was effective July 2012 and EPA approved November 2012.

Dry Cimarron River (Long Canyon to Oak Ck)
AU:NM-2701_02 WQS: 20.6.4.702

2008 Action: As of the date of this review (4/4/08), EPA Region 6 has not approved the 2005 triennial proposal to create WQ standard segment 20.6.4.702 under which this AU would fall. Therefore, this AU still falls under 20.6.4.701 and the associated designated uses to make 2008 impairment determinations. This AU unit was intensively surveyed in 2006. There were 2 of 6 exceedences of the 235 cfu/100mL E. coli criterion for secondary contact. There were 3 of 7 exceedences of the segment-specific 1,200 mg/L total dissolved solids criterion. Therefore, E. coli and total dissolved solids were added as causes of impairment.

2010 Action: TMDLs were prepared for E. coli and TDS (2009).

2012 Action: WQS citation changed to 20.6.4.702 with CWAL use per EPAs approval of NMAC 1/14/2011.

2014 Action: A UAA was conducted to support changing the aquatic life use for this segment from coldwater 25 to coolwater. Amendment was effective July 2012 and EPA approved November 2012.

Dry Cimarron River (Oak Creek to headwaters)
AU:NM-2701_01 WQS: 20.6.4.701

1996 Action: Previously listed as "Dry Cimarron River, perennial portions" and listed for temperature, pH, salinity (TDS), fecal coliform, total ammonia and stream bottom deposits. Temperature data indicated the fishery use was not supported at 3 of 4 stations (5/5, 4/4, and 5/5) while it was supported at only one station (0/5). Data for pH are similar and indicate full support (0/5) for the fishery use at one station (same station as temperature), while the use was not supported at the other stations (4/5, 2/5, 5/5). Total dissolved solids (salinity) data indicated that the fishery use was not supported at 2 stations (DCR701.000102, 5/5 and DCR701.000105, 5/5), while it was supported at 2 stations (0/5 and 0/5). Fecal coliform data indicated full support of the contact recreation use at two stations (DCR701.000105, 0/1 and DCR701.002010, 0/1) and Full Support, Impacts Observed at station DCR701.000102 (1/1). Total ammonia data indicated that the fishery use was partially supported at 3 stations (2/5,2/5, and 2/4), while it was full support at station DCR701.002010, 0/5. A biological assessment was conducted in 1990 by the NMED. The biological assessment found that the fishery use for station DCR701.002010 was not supported (40% of reference). Station DCR701.000110 was full support (90% of reference) and station DCR701.000102 was Full Support, Impacts Observed (75% of reference) for the fishery use.

1998 Action: Fecal coliform will be removed as a cause of non-support for this reach but will be listed on the 1998 305(b) list as Full Support, Impacts Observed. The reach will continue to be included on the 1998 303(d) list as not Supported for stations below DCR701.0002010 with temperature, TDS, pH, total ammonia and stream bottom deposits as the causes of non-support.

2002 Action: This reach was defined by segmenting "Dry Cimarron River, perennial portions" into two assessment units. The Dry Cimarron watershed was intensively surveyed by SWQB in 2000. This reach will be de-listed for pH (1/8 at 8.87 which is within meter error range of 0.2), TDS (0/8), temperature (no exceedences of 25 C standard based on thermograph data), total ammonia (0/17), and stream bottom deposits (benthic data indicate 87% of reference and percent fines are lower than the reference).

2008 Action: As of the date of this review (4/4/08), EPA Region 6 has not approved the 2005 triennial proposal to change the aquatic life use from CWAL to MCWAL and WWAL. Therefore, CWAL is still in effect and was the ALU used for the 2008 impairment determinations. This AU unit was intensively surveyed in 2006. No impairments were determined.

2012 Action: WQS citation is 20.6.4.701 with CWAL use per EPAs approval of NMAC 1/14/2011.

Long Canyon (Perennial reaches abv Dry Cimarron)
AU:NM-2701_20 WQS: 20.6.4.702

1996 Action: Previously listed for temperature and total ammonia. Data are from one station (DCR701.000505) sampled in 1990. Temperature data indicated that the fishery use was not supported (2/4). Total ammonia data indicated that the use was supported (0/5).

1998 Action: Total ammonia will be removed as a cause of non-support for this reach. The reach will continue to be listed on the 1998 303(d) list with temperature as the cause of non-support.

2002 Action: The Dry Cimarron watershed was intensively surveyed by SWQB in 2000. The reach will continue to be listed as Not Supporting for temperature based on thermograph data and temperature assessment protocol (data indicate an exceedence of the segment specific criteria of 25 C for more than 6 consecutive hours).

2004 Action: This AU should be listed as Category 5B because CWF is not an existing use and likely not an attainable use.

2006 Action: WQS was changed during the 2005 triennial review process. Aquatic life use was changed to warmwater (temperature criterion of 32.2 degrees C). The exceedence rate of the applicable criterion of 32.2 was < 9.7%. Therefore, temperature was removed as a cause of non support.

2008 Action: As of the date of this review (4/4/08), EPA Region 6 has not approved the 2005 triennial proposal to create WQ standard segment 20.6.4.702 under which this AU would fall. Therefore, this AU still falls under 20.6.4.701 and the associated designated uses to make 2008 impairment determinations. This AU unit was intensively surveyed in 2006. There were 4 of 6 exceedences of the 235 cfu/100mL E. coli criterion for secondary contact. There were 3 of 4 exceedences of the 5 ug/L total recoverable selenium criterion for both wildlife habitat and aquatic life uses. There were 2 of 8 exceedences of the temperature criterion of 25 degrees C. A thermograph was deployed May 2008 to confirm the listing. Therefore, E. coli, temperature, and total recoverable selenium were added as causes of impairment.

2010 Action: The maximum temperature recorded from April 25, 2008, to March 3, 2009, was 25.5°C. According to the 2010 temperature assessment protocol, this AU is impaired for temperature because the segment-specific criterion of 25 degrees C was exceeded. Therefore, temperature continues to be listed as a cause of non-support. TMDLs were prepared for E. coli and selenium (2009).

2012 Action: WQS citation changed to 20.6.4.702 with CWAL use per EPAs approval of NMAC 1/14/2011. A WQCC hearing in 2012 will consider a proposal to change the aquatic life use to coolwater.

2014 Action: A UAA was conducted to support changing the aquatic life use for this segment from coldwater 25 to coolwater. Amendment was effective July 2012 and EPA approved November 2012. Therefore, the 2010 temperature listing was removed (max temp 25.5 degreees C, new WQC 29).

Oak Creek (Dry Cimarron to headwaters)
AU:NM-2701_10 WQS: 20.6.4.701

1996 Action: Listed for temperature, total ammonia, pH, and Removal of Riparian Habitat. There are two stations with data from 1990. Station DCR701.001501 indicated full support of the fishery use for all parameters (0/5). Station DCR701.001507 indicated Full Support, Impacts Observed for all three parameters (1/1). This station was also the reference site for a 1990 biological survey, which indicates full support for the fishery use.

1998 Action: The chemical and biological data supports upgrading this reach to full support. However the reach will continue to be listed as Partially Supporting with unknown as the cause on non-support.

2002 Action: The Dry Cimmarron watershed was intensively surveyed by SWQB in 2000. The reach will be de- listed for cause Unknown because survey data indicates Full Support for known contaminants.

2008 Action: As of the date of this review (4/4/08), EPA Region 6 has not approved the 2005 triennial proposal to change the aquatic life use from CWAL to MCWAL and WWAL. Therefore, CWAL is still in effect and was the ALU used for the 2008 impairment determinations. This AU unit was intensively surveyed in 2006. There were 3 of 6 exceedences of the 235 cfu/100mL E. coli criterion for secondary contact. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds, as well as low dissolved oxygen. Therefore, E. coli and nutrients were added as causes of impairment.

2010 Action: TMDLs were prepared for E. coli and nutrients (2009).

2012 Action: WQS citation is 20.6.4.701 with CWAL use per EPAs approval of NMAC 1/14/2011.

HUC: 11080001 - Canadian Headwaters

Caliente Canyon (Vermejo River to headwaters)
AU:NM-2306.A_151 WQS: 20.6.4.309

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. There were 2 of 2 exceedences of the specific conductance criterion of 500 umhos/cm. Therefore, specific conductance will be added as a cause of non support. This AU will be placed in Category 5B because it probably is incorrectly classified as a HQCWF due to low flows and high base temperatures.

2008 Action: A TMDL was completed for specific conductance.

Canadian River (Cimarron River to CO border)
AU:NM-2305.A_200 WQS: 20.6.4.305

1996 Action: Previously listed for stream bottom deposits and fecal coliform. There are five sampling stations on this reach. All data are from 1988 and 1993 surveys. Fecal coliform data indicate full support at station CRB306.019020 (0/1), and Full Support, Impacts Observed at station CRB306.019010 (1/3). There are no data to support the listing of stream bottom deposits for this LWWF.

1998 Action: This reach will be listed as Full Support, Impacts Observed on the 1998 305(b) list with fecal coliform as the cause. The reach has been dropped from the 1998 303(d) list.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen (based on grab data). Therefore, nutrients were added as a cause of non support. A sonde should be deployed to verity %DO saturation exceedences.

2012 Action: A TMDL was prepared for nutrients (2011).

Chicorica Creek (Canadian River to East Fork Chicorica)
AU:NM-2305.A_250 WQS: 20.6.4.305

1996 Action: Previously listed for, fecal coliform, plant nutrients, and stream bottom deposits. There is one sampling station on this reach. All data are from 1989 and 1993 surveys. There is supporting data for the fecal coliform listing (1/1) as Full Support, Impacts Observed and also for the plant nutrients listing. There are no data to support the listing of stream bottom deposits.

1998 Action: The reach continues to be listed on the 1998 303(d) list as Partially Supporting for plant nutrients. The reach will be included in the 1998 305(b) report as Full Support, Impacts Observed for fecal coliform.

2008 Action: Name was changed to Chicorica Creek (Canadian River to East Fork Chicorica). This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. A Level 2 nutrient assessment indicated full support because there were only two indicators present (total nitrogen and total phosphorus values above applicable numeric thresholds). Therefore, nutrients were removed as a cause of non support.

Doggett Creek (Raton Creek to headwaters)
AU: NM-2305.A_255 WQS: 20.6.4.99

2016 Action: Stations in this AU were previously assigned to Raton Creek (Chicorica Creek to headwaters).

Hunter Creek (Throttle Reservoir to headwaters)
AU:NM-2305.A_040 WQS: 20.6.4.98

1996 Action: Previously listed for fecal coliform. There is one sampling station on this reach. There is one data point (600/100ml) from 1989 that indicate Full Support, Impacts Observed.

1998 Action: The reach was removed from the 303(d) list and will be added to the 305(b) list as Full Support, Impacts Observed.

2016 Action: WQS Citation was corrected from 20.6.4.305 to 20.6.4.98. Attainment status was also changed to not assessed because no data since n=1 in 1989.

Lake Maloya
AU:NM-2305.B_20 WQS: 20.6.4.312

1998 Action: This lake is listed because there are fish consumption guidelines due to mercury contamination.

2008 Action: This AU was studied during the Lakes (2006) survey. Coldwater Aquatic Life is an existing use. Applying a CWAL temperature criterion of 20 degrees C, there were 2 of 6 exceedences. Therefore, temperature was added as a cause of impairment. There continues to be a fish advisory for mercury.

2010 Action: Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue even though there is a Fish Consumption Advisory.

Raton Creek (Chicorica Creek to headwaters)
AU:NM-2305.A_253 WQS: 20.6.4.305

1996 Action: Previously listed for metals (Cu), total ammonia and plant nutrients. There are two sampling stations on this reach. All data are from 1989, 1991, 1993, and 1995 surveys. The data ratios for dissolved copper are 0/3,03/ and 0/1 within the last 12 years. Data ratios for total ammonia within the last 12 years are 0/5,0/5, and 02. There are supporting data to justify supporting or removing the plant nutrients listing.

1998 Action: Copper and total ammonia will be removed as causes of non-support for this reach. This reach will continue to be listed on the 1998 303(d) list with plant nutrients as the cause of non-support.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. There were 2 of 5 exceedences of the E. coli criterion. A Level 2 nutrient assessment confirmed the nutrient impairment due to total nitrogen and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen. Therefore, nutrients was retained, and E. coli was added as a cause of impairment.

2012 Action: TMDLS were drafted for nutrients and e. coli (2011).

Stubblefield Lake
AU:NM-9000.B_101 WQS: 20.6.4.99

1998 Action: This lake is listed because there are fish consumption guidelines due to mercury contamination.

2006 Action: WQS change to 20.6.4.99 based on 2005 triennial review. Warmwater Aquatic Life is an existing use.

2008 Action: This AU was studied during the Lakes (2006) survey. No impairments were identified as a result of this survey. There continues to be a fish advisory for mercury.

Una de Gato Creek (Chicorica Creek to HWY 64)
AU:NM-2305.A_254 WQS: 20.6.4.305

1996 Action: Previously listed for fecal coliform and stream bottom deposits. There are three sampling stations on this reach. All data are from a 1989 survey. Fecal coliform ratios are 1/1, 0/1, and 0/2. There are no data to support the listing of stream bottom deposits on this LWWF.

1998 Action: Fecal coliform and stream bottom deposits will be removed as causes of non-support on the 303(d) list. The reach has therefore been dropped from the 1998 303(d) list. The reach will be listed as Full Support, Impacts Observed for fecal coliform at one station.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen. Therefore, nutrients was added as a cause of impairment. The sonde DO data were recorded at a station 13 miles upstream of the rest of the nutrient field assessment.

2012 Action: A TMDL was prepared for nutrients (2011).

Una de Gato Creek (HWY 64 to headwaters)
AU:NM-2305.A_030 WQS: 20.6.4.305

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds. Therefore, nutrients was added as a cause of impairment.

2012 Action: A TMDL was prepared for nutrients (2011).

VanBremmer Creek (HWY 64 to headwaters)
AU:NM-2306.A_140 WQS: 20.6.4.309

2004 Action: This was a secondary site during the 2002 Canadian part I survey (sampled 3 times). There were 1 of 2 exceedences of the turbidity criterion of 25 NTU, 2 of 4 exceedences of the temperature criterion of 20 degrees C, and 3 of 3 exceedences of the specific conductance criterion of 500 umhos/cm. Therefore, turbidity, temperature, and specific conductance will be added as causes of non support. This AU will be listed as Cateogry 5B -- This trib to the Vermejo R probably does not belong in WQS 20.6.4.309 (should be CWF, not HQCWF); WQS 20.6.4.305 incl the Vermejo, but does not specify tribs and would not be protective of resident CWF. Vermejo Park has fisheries data. Also, additional data are needed (thermograph, sonde, bugs).

2006 Action: All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2010 Action: It was not possible to apply the interim turbidity assessment protocol because there was only one data point. Therefore, the turbidity listing remains.

Vermejo River (Canadian River to Rail Canyon)
AU:NM-2305.A_210 WQS: 20.6.4.305

1996 Action: Previously listed for metals (Se). There are four sampling stations on this reach. All data are from 1988, 1989 and 1993 surveys. Selenium data indicate full support (0/2).

1998 Action: This reach has been removed from the 1998 303(d) list.

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. The station at I-25 was sampled five times. The flow was <10 cfs, so the TDS criterion did not apply. This reach went dry during late summer and fall. Both drought and diversion contributed to the dry condition of Vermejo River. At Dawson, water is diverted to the Maxwell Wildlife Refuge and to Stubblefield Lake. During parts of 2002 the entire flow of the Vermejo appeared to be diverted. This AU will be listed as Category 4C - Impairment (low and no flow) due to diversion.

2012 Action: 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:NM-2305.A_220 WQS: 20.6.4.309

1996 Action: Previously listed for stream bottom deposits. There are two sampling stations on this reach. All data are from a 1989 survey. There are supporting data for adding total phosphorus at station CRB306.014020 as Full Support, Impacts Observed.

1998 Action: The reach continues to be listed on the 1998 303(d) list as Partially Supporting for stream bottom deposits.

2000 Action: A 1999 fall survey was conducted to determine the validity of the Stream Bottom Deposit listing. An embeddedness of 39%, a percent fines of 25%, width/depth ratio was 31.6 and an entrenchment ratio of 3.5 rates the stream bottom as fully supporting for aquatic life. WQS for SBD are currently being met.

2006 Action: This AU was intensively studied in 2002. There were 6 of 7 exceedences of the specific conductance criterion. The temperature criterion was exceeded for >4 consecutive hours for > 3 consecutive days. Therefore, temperature and specific conductance were added as causes of non support.

2008 Action: TMDLs were prepared for specific conductance and temperature.

Vermejo River (York Canyon to North Fork Vermejo River)
AU:NM-2305.A_230 WQS: 20.6.4.309

2006 Action: The AU was intensively sampled in 2002. The temperature criterion was exceeded for >4 consecutive hours for > 3 consecutive days. Benthic macroinvertebrates were sampled at the station @ Juan Baca Canyon and compared to the reference station Vermego River Below Leandro Creek. The bio score was 61% of reference. There were 31% fines at the study station compared to 44% fines at the reference station. Therefore, temperature and Benthic Macroinvertebrates - Bioassessments will be added as a cause of non support.

2008 Action: A TMDL was prepared for temperature.

2016 Action: AU name was corrected to Vermejo River (York Canyon to North Fork Vermejo River).

York Canyon (Vermejo R to Left Fork York Canyon)
AU:NM-2306.A_153 WQS: 20.6.4.309

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. There were 2 of 7 exceedences of the turbidity criterion of 25 NTU, 7 of 7 exceedences of the specific conductance criterion of 500 umhos/cm. Therefore, turbidity and specific conductance were listed as causes of non support. There was 1 of 7 exceedences of total mercury detected. There is an inactive coal mine with processing and rail facilities in the watershed. Reclamation is in progress. This may be moved to Category 4B if it is determined that the reclamation is directed at reducing the impairments.

2006 Action: All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2008 Action: A TMDL was prepared for specific conductance.

2016 Action: AU name corrected to York Canyon (Vermejo R to Left Fork York Canyon).

HUC: 11080002 - Cimarron

Cieneguilla Creek (Eagle Nest Lake to headwaters)
AU:NM-2306.A_065 WQS: 20.6.4.309

1996 Action: Previously listed for turbidity, fecal coliform, stream bottom deposits and plant nutrients. There are five sampling stations on this reach. All data are from 1992 and 1993 surveys. Turbidity ratios are 0/6,2/10,3/9,3/9, and 3/8. Fecal coliform ratios are 1/3,1/3,0/3,1/3, and 1/6. A biological assessment was performed on Cieneguilla Creek in 1993. Five biological stations were surveyed on this stream. The upper most station (CC1) was used as the reference site for this survey. Another station above the WWTP (CC3) was also FS (87%). A station located at the WWTP and near a horse corral was NS (54%). The station immediately down stream from the WWTP was FS (80%). The most down stream station (CC5) was only PS (61%). This is attributed to the accumulation of impacts from the upper watershed.

1998 Action: Fecal coliform will be listed on the 1998 305(b) report as Full Support, Impacts Observed. The reach will continue to be listed on the 303(d) list as Not Supported for turbidity, stream bottom deposits, and plant nutrients.

2000 Action: Field assessments were conducted using the draft Nutrient Assessment Protocol and draft Source Documentation Protocol. No plant nutrient impairments were found along this reach. There were no exceedences of nutrient related criteria such as total phosphorus, nitrogen, pH and dissolved oxygen during any sampling season. As well, there were no observations of nutrient over-enrichment noted on field sheets during any sampling season. A biological assessment was conducted in October 1998, which indicated that water quality is very good with possible to slight organic pollution. Stream botttom deposit assessment indicated impairment at at least 2 stations. Turbidity criterion was exceeded 16/35 times. Comfirmation samples for fecal coliform were taken in 1998 and 1999. Average concentration of Aluminum in 4-day chronic sampling was 292 ug/L; 1 lead sample exceeded the acute criterion. Data from one thermograph exceeded the HQCWF criterion 110/3,884 times. Aluminum (chronic) and Temperature will be added as a cause of non-support. TMDLs were developed to address stream bottom deposits, turbidity, and fecal coliform.

2002 Action: This reach will be de-listed for temperature based on a re-evaluation of the thermograph data collected in 1999; The maximum temperature was 22.46°C. However, temperatures did exceed 20°C for no more five consecutive hours, but not on consecutive days. A TMDL was developed for chronic Al.

2004 Action: TMDLs for fecal coliform, chronic Al, and turbidity were revised in order to add wasteload allocations for the Village of Angel Fire WWTP discharge into Cieneguilla Creek. Muncipal Point Source was added as a Probable Source of pollution to the 303(d) list for these parameters.

2006 Action: All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. These historic fecal coliform listings will be retained until E. coli data are collected to determine whether there is any impairment of contact uses. E. coli data must be collected before TMDL development can occur.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. The fecal coliform criterion was changed to E. coli during the 2005 triennial, and there were 0 of 4 exceedences of the chronic aluminum criterion. There were 4 of 6 exceedences of the E. coli criterion (235 cfu/100mL single sample). Additional E. coli data were collected in 2007 once a week (n=5 duplicates each sampling event) by NMSU during a bacteria source tracking study of tributaries to Eagle Creek. There were 11 of 34 exceedences (32.4%) of the the E. coli criterion, thus confirming the conclusion of Non Support. These data were not collated with SWQBs data prior to assessment because different sample analysis methods were used. A thermograph recorded criterion exceedences for >4 consecutive hours for > 3 consecutive days, with a maximum temperature of 27.1 degrees C. The sedimentation/siltation impairment was confirmed according to the 2008 Assessment Protocols because the M-SCI score was 52 and the percent fines was not applicable because there was ~2mm of silt on the riffle surface. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen. Therefore, aluminum and fecal coliform were removed, sedimentation and turbidity remain, and nutrients and temperature were added as causes of non support.

2010 Action: There were 11 of 16 exceedences of the interim turbidity numeric translator of 25 NTU with an M-SCI score of 52.56 (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity.

2012 Action: TMDLs were prepared for nutrients, e. coli, and temperature in 2010.

Cimarron River (Canadian River to Cimarron Village)
AU:NM-2305.1.A_10 WQS: 20.6.4.306

1996 Action: Previously listed as "Cimarron River from the Canadian River to Turkey Creek" and listed for turbidity, plant nutrients and stream bottom deposits. There are three sampling stations on this reach. All data are from 1988 and 1989 surveys. There is no turbidity standard for a warmwater fishery. There are supporting data to justify the plant nutrients listing but not the stream bottom deposits listing.

1998 Action: Stream bottom deposits will be removed as a cause of non-support for this reach. This reach will continue to be included on the 1998 303(d) list with plant nutrients as a cause.

2000 Action: The 4-day average from the spring sampling for this site was 162ug/l. Results of four other samples collected in the summer and fall were all less than detect. Plant nutrients will remain listed as a cause of non-support. Aluminum (chronic) will be added as a cause of non-support. A TMDL was written for this reach (under the original reach name) in 1999.

2002 Action: The original listed reach was split into two assessment units because it spanned two different water quality standard segments. The Nutrient Assessment protocol was performed June 2000. This reach was determined not be nutrient enriched following the level one nutrient assessment analysis. A summary of the nutrient assessment is in the administrative record. Plant nutrients were removed as a cause of non-support. A de-list letter was prepared (under the original reach name).

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. The 1998 survey data used to determine aluminum impairment was re-assessed in light of the split. The assessment was done incorrectly for both the upper and lower portion. Aluminum was sampled at the USGS gage in Springer. There was one exceedence of the chronic criterion of 0.087 mg/L during the spring run. The seasonal mean was 0.045 mg/L. Therefore, there were no exceedences of the chronic criteria using seasonal means. Therefore, chronic aluminum will be removed as a cause of non support.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. Aluminum data collected during this survey confirm that aluminum is not a problem (0 of 4 exceedences) and the TMDL should be withdrawn. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen. Therefore, nutrients were added as causes of impairment.

2012 Action: TMDLs were prepared for nutrients in 2010.

Cimarron River (Cimarron Village to Turkey Creek)
AU:NM-2306.A_040 WQS: 20.6.4.309

1996 Action: Previously listed as "Cimarron River from the Canadian River to Turkey Creek" and listed for turbidity, plant nutrients and stream bottom deposits. There are three sampling stations on this reach. All data are from 1988 and 1989 surveys. There is no turbidity standard for a warmwater fishery. There are supporting data to justify the plant nutrients listing but not the stream bottom deposits listing.

1998 Action: Stream bottom deposits will be removed as a cause of non-support for this reach. This reach will continue to be included on the 1998 303(d) list with plant nutrients as a cause.

2000 Action: The 4-day average from the spring sampling for this site was 162ug/l. Results of four other samples collected in the summer and fall were all less than detect. Plant nutrients will remain listed as a cause of non-support. Aluminum (chronic) will be added as a cause of non-support. A TMDL was written for this reach (under the original reach name) in 1999.

2002 Action: The original listed reach was split into two assessment units because it spanned two different water quality standard segments. The Nutrient Assessment protocol was performed June 2000. This reach was determined not be nutrient enriched following the level one nutrient assessment analysis. A summary of the nutrient assessment is in the administrative record. Plant nutrients were removed as a cause of non-support. A de-list letter was prepared (under the original reach name).

2004 Action: The 1998 survey data used to determine aluminum impairment was re-assessed in light of the split. The assessment was done incorrectly for both the upper and lower portion. Aluminum was sampled at the station above the town of Cimarron. There were four exceedences of the chronic criterion of 0.087 mg/L during the spring run. The seasonal mean was 0.1625 mg/L. Therefore, there was one exceedence of the chronic criteria using seasonal means which should have lead to a conclusion of FSIO. Therefore, chronic aluminum will be removed as a cause of non support.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. Aluminum data collected during this survey confirm that aluminum is not a problem (0 of 4 exceedences) and the TMDL should be withdrawn. There were 3 of 4 exceedences of the arsenic criterion for domestic water supply. A thermograph recorded criterion exceedences for >4 consecutive hours for > 3 consecutive days, with a maximum temperature of 26.2 degrees C. Therefore, arsenic and temperature were added as causes of non support.

2010 Action: There were 2 of 9 exceedences of the interim turbidity numeric translator of 25 NTU. There are no benthic macroinvertebrate data available. Therefore, this AU is noted as Non Support (5C) for turbidity.

2012 Action: Sonde data from 2006 were assessed with the revised turbidity assessment protocol to confirm the 2010 turbidity listing. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other combined turbidity-allowable duration thresholds were exceeded. Therefore, this AU is Full Support for turbidity.

Cimarron River (Turkey Creek to Eagle Nest Lake)
AU:NM-2306.A_130 WQS: 20.6.4.309

1996 Action: Previously listed for total phosphorus. This listing is supported at station 11550 with ratios of 4/15 within 10 years. The ratio at station 11505 is 1/16.

1998 Action: This reach is included in the 1998 303(d) list as Not Supported for total phosphorus at the upper station only.

2000 Action: Total Phosphorus exceeded the criterion 0/15 times. There is no longer a standard associated with total phosphorus. The Nutrient Assessment Protocol indicated no impairment due to nutrient loading on this reach. A de-list letter was written for total phosphorus.

2002 Action: Corrected 303(d) list with above 2000 comments on nutrients.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. There were 3 of 4 exceedences of the arsenic criterion for domestic water supply. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds, as well as low dissolved oxygen. Therefore, arsenic and nutrients were added as causes of impairment.

2010 Action: There were 0 of 8 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

Eagle Nest Lake
AU:NM-2306.B_00 WQS: 20.6.4.315

1996 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: This lake was in intensively sampled in 2005. There were 4 of 6 exceedences of the domestic water supply arsenic criterion of 2.3 ug/L. There were 6 of 6 exceedences of the high quality cold water aquatic life criterion of 6.0 mg/L. Therefore, both arsenic and dissolved oxygen were added as causes of non support.

2010 Action: Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue even though there is a Fish Consumption Advisory.

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Greenwood Canyon (Middle Ponil Creek to headwaters)
AU:NM-2306.A_122 WQS: 20.6.4.309

2008 Action: This AU was surveyed in 2006. There were 3 of 4 exceedences of the chronic aluminum criterion. Therefore, aluminum was added as a cause of non support.

2010 Action: There were 1 of 5 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2014 Action: Aluminum listing based on previous dissolved aluminum WQC. Additional data are needed to determine if this water is impaired for total recoverable aluminum prior to TMDL scheduling for this parameter.

McCrystal Creek (North Ponil to headwaters)
AU:NM-2306.A_112 WQS: 20.6.4.309

2000 Action: Data from one thermograph exceeded the HQCWF criterion 57/4,853 times with a maximum temperature of 22.48°C. Temperature will be added as a cause of non-support for this reach

2008 Action: This AU was surveyed during 2006 to establish baseline conditions as soon as possible after ONRW status was established for surface waters in the Valle Vidal. A thermograph was deployed to verify the temperature listing but buried in sediment and the data are sporadic so the data were not assessable. This AU continues to be listed for temperature.

2010 Action: There were 2 of 6 exceedences of the interim turbidity numeric translator of 25 NTU. There are no benthic macroinvertebrate data. Therefore, this AU is noted as Non Support (5C) for turbidity.

2012 Action: The USFS submitted thermograph data collected in 2009. Data from two locations (lower and mid) exceeded 23 degrees C, and both exceeded the 20 degree C criterion for >4 hours on >3 consecutive days. Therefore, this AU remains listed for temperature.

2014 Action: USFS_NMSU data thermograph data from 2010 confirm the temperature listing (max temp 25.4 degrees C).

Middle Ponil Creek (Greenwood Creek to headwaters)
AU:NM-2306.A_124 WQS: 20.6.4.309

2008 Action: This AU was created and surveyed during 2006 to establish baseline conditions as soon as possible after ONRW status was established for surface waters in the Valle Vidal. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen. Therefore, nutrients was added as a cause of impairment. Chlorophyll a data should be collected to confirm the impairment.

2010 Action: There were 1 of 5 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2012 Action: A TMDL for nutrients was prepared (2011).

Middle Ponil Creek (South Ponil to Greenwood Creek)
AU:NM-2306.A_121 WQS: 20.6.4.309

1998 Action: Previously listed for total phosphorus and stream bottom deposits. There are two sampling stations on this reach. All data are from a 1989 survey. There are supporting data for a total phosphorus listing at station CRB306.011065 (3/5) but not for station CRB306.011050 (0/5).

2000 Action: Total Phosphorus exceeded 0/9. There is no longer a standard associated with total phosphorus. The Nutrient Assessment Protocol will be used to assess nutrient loadings to this reach. Two stations were evaluated for stream bottom deposits, with a maximum %fines measurement of 46% and embeddedness of 55%. Data from one thermograph exceeded the HQCWF criterion 170/1,630 times with a maximum temperature of 25.5°C. This site also exceeded the Temperature Protocol for a one-time maximum temperature (23°C). Turbidity criterion was exceeded 4/16 times. Total Organic Carbon (TOC) criterion was exceeded 1/8 times. Stream Bottom Deposits will be retained, and temperature, turbidity, and TOC will be added as a cause of non-support.

2002 Action: There is no longer a total phosphorus standard for this reach. The Nutrient Assessment protocol was performed June 2000. This reach was determined not be nutrient enriched following the level one nutrient assessment analysis. A summary of the nutrient assessment is in the administrative record. A de-list letter was prepared for total phosphorus. TMDLs were written for turbidity and temperature. In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality

coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of FSIO.

2006 Action: All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2008 Action: Previously named Middle Ponil Creek (South Ponil to headwaters), this AU was split to acknowledge the Valle Vidal boundary because all surface waters in the Valle Vidal were granted ONRW status. This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. A thermograph deployed at South Ponil confirmed the temperature listing (max temperature of 27.6 degrees C). The AU was determined to be non support for unidentified biological impairment according to the 2008 Assessment Protocols because the M-SCI score was 49 but the measured percent fines was only 16. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. Therefore, turbidity and temperature remains, sedimentation/siltation was removed, and Benthic-Macroinvertebrate Bioassessments (Streams) was added as a cause of non support.

2010 Action: There were 1 of 9 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

Moreno Creek (Eagle Nest Lake to headwaters)
AU:NM-2306.A_060 WQS: 20.6.4.309

1996 Action: Previously listed for fecal coliform and plant nutrients. There is one sampling station on this reach. All data are from 1992 and 1993 surveys. There are supporting data for fecal coliform with a ratio of 2/3. A biological assessment was conducted on Moreno Creek in 1993. The assessment of one station on Moreno Creek was Full Support, Impacts Observed (70%). The degradation at his site was attributed to poor habitat (58%).

1998 Action: This reach is on the 1998 303(d) list as Partially Supported for fecal coliform and plant nutrients.

2000 Action: Confirmation samples for fecal coliform were taken in 1998 and 1999, with one of the summer samples measuring 220cfu/100ml. The turbidity criterion was exceeded 4/10 times. Field assessments were conducted in November of 1999 using the draft Nutrient Assessment Protocol and draft Source Documentation Protocol, and no plant nutrient impairments or exceedances of nutrient related criteria, including total phosphorus, nitrogen, pH and dissolved oxygen were observed. There were no observations of nutrient over-enrichment noted on field sheets during the samplings season.
The biological condition of Moreno Creek is rated as being 70% of the reference conditions, which according to the 1998 Assessment Protocol rates this stream as full support, impacts observed. The macroinvertebrate community as a whole is acceptable, although there is a shift in the community to midges, which is reflected in the full support, impacts observed

statement.
TMDLs were developed to address fecal coliform and turbidity.

2006 Action: All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. These historic fecal coliform listings will be retained until E. coli data are collected to determine whether there is any impairment of contact uses. E. coli data must be collected before TMDL development can occur.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. A thermograph recorded criterion exceedences for >4 consecutive hours for > 3 consecutive days, with a maximum temperature of 27.4 degrees C. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds, as well as low dissolved oxygen. There were 1 of 6 exceedences of the E. coli criterion (235 cfu/100mL single sample). Additional E. coli data were collected in 2007 once a week (n=5 duplicates each sampling event were averaged) by NMSU during a bacteria source tracking study of tributaries to Eagle Creek. There were 4 of 34 exceedences of the the E. coli criterion (11.8%), thus confirming the conclusion of Full Support. These data were not collated with SWQB data prior to assessment because different sample analysis methods were used. Therefore, temperature and nutrients were added as causes of impairment. Fecal Coliform was removed as a cause of impairment because recent E. coli data indicates Full Support.

2010 Action: There were 1 of 9 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

North Ponil Creek (Seally Canyon to headwaters)
AU:NM-2306.A_162 WQS: 20.6.4.309

2008 Action: This AU was created and surveyed during 2006 to establish baseline conditions as soon as possible after ONRW status was established for surface waters in the Valle Vidal. There were 2 of 4 exceedences of the chronic aluminum criterion (87 ug/L). There was 1 of 1 exceedence (38.8 pCi/L) of the adjusted gross alpha criterion for domestic water supply (15.0 pCi/L). There was 1 of 1 exceedence (6.36 pCi/L) of the radium 226+228 criterion for domestic water supply (5.0 pCi/L). A thermograph deployed above Seally Canyon recorded exceedences for >4consecutive hours for >3 consecutive days (max temperature of 29.3 degrees C). Therefore, aluminum, gross alpha, radium 226+228, and temperature were added as causes of impairment.

2010 Action: There were 2 of 5 exceedences of the interim turbidity numeric translator of 25 NTU. There are no benthic macroinvertebrate data available to confirm the listing. Therefore, this AU is noted as Non Support (5C) for turbidity.

2012 Action: Sonde data from 2006 were assessed with the revised turbidity assessment protocol to confirm the 2010 turbidity listing. The turbidity threshold of 23 NTU was exceeded for greater than the allowable duration of 72 hours. Therefore, this AU remains listed for turbidity (5A). A TMDL for temperature was prepared (2011).

2014 Action: Aluminum listing based on previous dissolved aluminum WQC. Additional data are needed to determine if this water is impaired for total recoverable aluminum prior to TMDL scheduling for this parameter.

North Ponil Creek (South Ponil Creek to Seally Canyon)
AU:NM-2306.A_110 WQS: 20.6.4.309

1996 Action: Previously listed for temperature, fecal coliform and stream bottom deposits. There are two sampling stations on this reach. All data are from a 1989 survey. Temperature data are not supporting for station CRB306.011045 (4/5) and Full Support, Impacts Observed for station CRB306.011060 (1/5). Fecal coliform data are 0/1 and 1/1. Total phosphorus was 0/6 at the lower station and 1/6 at the upper station.

1998 Action: This reach will be listed on the 1998 305(b) report as Full Support, Impacts Observed for fecal coliform, temperature, and total phosphorus at the upper station. The reach is listed as Not Supported on the 1998 303(d) list with temperature and stream bottom deposits as the cause.

2000 Action: Data from two thermographs exceeded the HQCWF temperature criterion 383 of 3,263 measurements. The turbidity criterion was exceeded 13/20 times. Two stations were evaluated for stream bottom deposits; the maximum % fines <2mm measured is 79.9% fines. Monitoring at two stations documented 3/13 exceedances of the Total Phosphorus criterion. TMDLs were developed to address temperature, turbidity, stream bottom deposits, and Total Phosphorus. Fecal coliform was removed from the 1998-2000 303(d) list but remained listed in the 1998 305(b) Report as full support, impacts observed (FSIO).

2002 Action: This assessment unit will be de-listed for total phosphorus. There is no longer a total phosphorus standard for this reach. The Nutrient Assessment protocol was performed June 2000. This reach was determined not be nutrient enriched following the level one nutrient assessment analysis. A summary of the nutrient assessment is in the administrative record.

2006 Action: Sedimentation/siltation impairment was re-assessed using the current Assessment Protocol. The biological condition at North Ponil Creek at FR 1950 was 96% of reference using Cieneguilla Creek at Crooked Creek as a reference. The lower station was 79% of reference. As a result, sedimentation/siltation was removed as a cause of non support.

2008 Action: Previously named North Ponil Creek (South Ponil to McCrystal Creek), this AU was split to acknowledge the Valle Vidal boundary because all surface waters in the Valle Vidal were granted ONRW status. This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. A thermograph deployed above South Ponil confirmed the temperature listing (max temperature of 27.4 degrees C). There were 2 of 6 exceedences of the E. coli criterion. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. Therefore, turbidity and temperature remains, nutrients, and E. coli were added as causes of non support. Chlorophyll a data should be collected to confirm the impairment.

2010 Action: An EMAP bio/hab survey was performed in 2007 at station North Ponil Creek above South Ponil Creek. There were 20 percent fines. There were 3 of 9 exceedences of the interim turbidity numeric translator of 25 NTU, with an M-SCI score of 55.6 (threshold of 56.7). Therefore, this AU is noted as Non Support for turbidity.

Ponil Creek (Cimarron River to HWY 64)
AU:NM-2306.A_100 WQS: 20.6.4.306

1996 Action: Previously listed for temperature, conductivity, turbidity, fecal coliform and total phosphorus and lumped as "Ponil Creek (Cimarron River to confl of North and South Ponil," this AU was split in 2006 so the AU did not span two water quality standard segments. The assessment of the pre-1998 data and the original lumped AU is retained in the below paragraphs in italics. It is retained in the 2012 version of the ROD for a historic record of the listing. Both AUs are part of SWQB's 2006 intensive survey, so rather that re-assess based on the split, the listings will be retained for both AUs and re-assessed with data collected in 2006 for the 2008 list.

2006 Action: Previously lumped as "Ponil Creek (Cimarron River to confl of North and South Ponil," this AU was split in 2006 so the AU did not span two water quality standard segments. This AU is part of SWQBs 2006 intensive survey, so rather that re-assess based on the split, the listings for turbidity, temperature, stream bottom deposits, and chronic aluminum are retained and will be re-assessed with data collected in 2006 for the 2008 list.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. There were 0 of 4 exceedences of the chronic aluminum criterion. A thermograph deployed above the Cimarron River did not record any data above the criterion of 32.2 degrees C (max of 26.8 degrees C). The original basis for the previous sedimentation/siltation listing was incorrect (SWQB has never listed based on embeddedness alone, and the USGS station mentioned as the basis for the previous listing is not in this AU). All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. There were 2 of 6 exceedences of the E. coli criterion. Therefore, aluminum, sedimentation/siltation, and temperature were removed, turbidity was retained, and E. coli was added as a causes of impairment.

2010 Action: Turbidity was removed as a cause of non support because this AU falls under 20.6.4.306 which did not have an applicable criterion for turbidity prior to the 2005 triennial which removed all numeric turbidity criteria. Therefore, there is no numberic interim translator for turbidity in this AU. An EMAP bio/hab survey was performed the station above the confluence with the Cimarron River. Ute Creek was used as a reference site. The RBP score at the study site was 38 as compared to the reference site score of 54 (i.e., 70% of reference). There were 6 percent fines at the study site, and 12 percent fines at the reference site. Therefore, Benthic-Macroinvertebrate Bioassessments (Streams) was added as a cause of non support.

Ponil Creek (HWY 64 to confl of North and South Ponil)
AU:NM-2306.A_101 WQS: 20.6.4.309

2006 Action: Previously lumped as "Ponil Creek (Cimarron River to confl of North and South Ponil," this AU was split in 2006 so the AU did not span two water quality standard segments. This AU is part of SWQBs 2006 intensive survey, so rather that re-assess based on the split, the listings for turbidity, temperature, stream bottom deposits, and chronic aluminum are retained and will be re-assessed with data collected in 2006 for the 2008 list. The assessment of the pre-1998 data and the original lumped AU is retained in the above ROD entry in italics. It is retained there for a historic record of the listing.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. There were 0 of 4 exceedences of the chronic aluminum criterion. Thermographs deployed above NM 64 and below the North and South confluence confirm the temperature listing (max temp of 29.4 and 25.9 degrees C, respectively). The original basis for the previous sedimentation/siltation listing was incorrect (SWQB has never listed based on embeddedness alone, and the USGS station mentioned as the basis for the previous listing is not in this AU). All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. There were 3 of 6 exceedences of the E. coli criterion. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen. Therefore, aluminum and sedimentation/siltation were removed, temperature and turbidity were retained, and E. coli and nutrients were added as causes of impairment.

2010 Action: An EMAP survey was performed in 2007. The bio score was 67% of reference using Ponil abv HWY 64 as the study site and Ute Creek as the reference site. There were 4 of 9 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Non Support for turbidity.

Rayado Creek (Cimarron River to Miami Lake Diversion)
AU:NM-2305.3.A_80 WQS: 20.6.4.307

1996 Action: Previously listed for stream bottom deposits and fecal coliform. There is only one sample station on this reach. There is only one data point in the STORET database for fecal coliform. This value is less than the fecal coliform criteria for this segment.

1998 Action: Fecal coliform will be removed as a cause of non-support for this reach. This reach will continue to be listed on the 1998 303(d) list with stream bottom deposits as the cause.

2000 Action: Stream bottom deposits will be retained as a cause of non-support.

2002 Action: A TMDL was developed for stream bottom deposits.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. No new data were collected with respect to the sedimentation/siltation listing. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen (based on grab data). Therefore, sedimentation/siltation remains, and nutrients was added as a cause of impairment. A sonde should be deployed at the station to confirm the nutrient impairment.

Rayado Creek (Miami Lake Diversion to headwaters)
AU:NM-2306.A_051 WQS: 20.6.4.309

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. There were 2 of 7 exceedences of the E. coli criterion. A thermograph deployed at the station near NM 21 recorded exceedences for >4 hours for >3 consecutive days (max temperature of 27.3 degrees C). Therefore, E. coli and temperature were added as causes of impairment.

2010 Action: There were 1 of 12 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

Shuree Pond (North)
AU:NM-2306.B_30 WQS: 20.6.4.314

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Shuree Pond (South)
AU:NM-2306.B_31 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Sixmile Creek (Eagle Nest Lake to headwaters)
AU:NM-2306.A_064 WQS: 20.6.4.309

1996 Action: Previously listed for fecal coliform and plant nutrients. There is one sampling station on this reach. All data are from 1992 and 1993 surveys. Fecal coliform data indicate Full Support, Impacts Observed for the contact recreation use (1/3). A biological assessment conducted by NMED in 1990 indicates full support of the fishery use. The biological assessment was 83% of the reference site. There are no indications of plant nutrient enrichment on this reach.

1998 Action: The reach will be included on the 305(b) list as Full Support, Impacts Observed for fecal coliform. The reach has been removed from the 1998 303(d) list.

2000 Action: Confirmation samples for fecal coliform were taken in 1998 and 1999, with 2 summer samples exceeding the water quality criterion. One sampling station on this reach exceeded the turbidity criterion 5/10 times. Field assessments were conducted using the draft Nutrient Assessment Protocol and draft Source Documentation Protocol; no plant nutrient impairments or exceedances of nutrient related criteriawere found along the reach. No observations of nutrient over-enrichment were noted during sampling season. A biological assessment conducted in 1993 indicated that the water quality is good with some organic pollution present. TMDLs were developed to address fecal coliform and turbidity.

2006 Action: All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen. There were 2 of 6 exceedences of the E. coli criterion. A thermograph deployed above US 64 recorded exceedences for >4 hours for >3 consecutive days (max temperature of 28.1 degrees C). Therefore, nutrients, E. coli, and temperature were added as causes of impairment. Fecal coliform was removed because the water quality criteria were replaced with E. coli during the 2005 triennial.

2010 Action: There were 2 of 9 exceedences of the interim turbidity numeric translator of 25 NTU. There are no benthic macroinvertebrate data available to confirm the listing. Therefore, this AU is noted as Non Support (5C) for turbidity.

South Ponil Creek (Middle Ponil Creek to headwaters)
AU:NM-2306.A_123 WQS: 20.6.4.309

2010 Action: Previously named "South Ponil Creek (Ponil Creek to headwaters), this AU was split at Middle Ponil Creek to due to differences in land uses and differing assessment conclusions derived from assessing each station separately. There were 0 of 7 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

Springer Lake
AU:NM-2305.1.B_10 WQS: 20.6.4.317

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: WQS change to 20.6.4.99 based on 2005 triennial review and analysis that this is not an in-line reservoir so it is not covered under 20.6.4.306. Warmwater Aquatic Life and Irrigation are existing uses.

2008 Action: This AU was studied during the Lakes (2006) survey. No impairments were identified as a result of this survey. There continues to be a fish advisory for mercury.

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Ute Creek (Perennial prt Cimarron River to headwaters)
AU:NM-2306.A_068 WQS: 20.6.4.309

1996 Action: Previously listed for turbidity, total phosphorus and total organic carbon. There is one sampling station on this reach. All data are from a 1989 survey. Turbidity ratios are 2/5. Total phosphorus ratios are 2/5 and Total organic

carbon ratios are 1/1.

1998 Action: Total organic carbon will be removed as a cause of non-support on the 1998 303(d) list and will be listed on the 1998 305(b) list as Full Support, Impacts Observed. This reach will continue to be listed on the 303(d) list as Partially Supporting for turbidity and total phosphorus.

2000 Action: Turibidity criterion was not exceeded on this reach; total phosphorus was not exceeded on this reach.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. There were 3 of 4 exceedences of the arsenic criterion. There were 2 of 6 exceedences of the E. coli criterion. The temperature criterion of 20 degrees C was exceeded for >6 consecutive hours for >3 consecutive days, with a maximum recorded temperature of 24.8. Therefore, arsenic, E. coli, and temperature were added as causes of non support.

2010 Action: There were 4 of 9 exceedences of the interim turbidity numeric translator of 25 NTU. There are no benthic macroinvertebrate data. Therefore, this AU is noted as Non Support (5C) for turbidity.

2014 Action: This AU now falls under 20.6.4.303 NMAC. The max thermograph temp of 24.8 degrees C does not exceed the 32.2 WQC. The turbidity AP does not apply to MWWAL. The previous arsenic listing was based on DWS WQC which no longer apply to this water. Therefore, temperature, turbidity, and e. coli were removed as causes of impairment.

HUC: 11080003 - Upper Canadian

Canadian River (Conchas Reservoir to Mora River)
AU:NM-2305.A_000 WQS: 20.6.4.305

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. There were 2 of 13 exceedences of the E. coli criterion. Therefore, E. coil was added as a cause of non support.

2012 Action: A TMDL was prepared for e. coli (2011).

2016 Action: AU name was corrected from "Canadian River (Conchas River to Mora River)" to "Canadian River (Conchas Reservoir to Mora River)."

Canadian River (Mora River to Cimarron River)
AU:NM-2305.A_100 WQS: 20.6.4.305

1996 Action: Previously listed for plant nutrients and stream bottom deposits. There are two sampling stations on this reach. The fishery use is a LWWF and accordingly the stream bottom deposits listing has been dropped. Data was reviewed to assess the plant nutrients listing and it has been determined that this listing is not supported. There are several reports on this segment of the river that do not include any indications of nutrient enrichment. Chemical parameters of nitrogen, phosphorus, and DO are within watershed norms.

1998 Action: This reach has been removed from the 1998 303(d) list.

Charette Lake (Lower)
AU:NM-2305.5_10 WQS: 20.6.4.308

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2008 Action: This AU was studied during the Lakes (2006) survey. No impairments were identified as a result of this survey.

Charette Lake (Upper)
AU:NM-2305.5_20 WQS: 20.6.4.308

2016 Action: There is a fish consumption advisory for mercury. Therefore, mercury in fish tissue was added as a cause of impairment.

Conchas Reservoir
AU:NM-2304_00 WQS: 20.6.4.304

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2000 Action: Conchas Reservoir was characterized in a report titled New Mexico Clean Lakes Program: Lake Water Quality Assessment for FY 89 as oligo-mesotrophic based on the Carlson index for chlorophyll a and total phosphorus concentrations. Phytoplankton density ranged from 57 to 156 cells per ml. The Shannon-Wiener diversity indices listed in the BIOS data tables indicate the algal diversity to be good to excellent (i.e., greater than 2.0). Thermal stratification and dissolved oxygen depletion in the bottom third of the water column (i.e., 3.0 mg/l) was observed during August at the dam and Ute Creek outlet stations. Conversely, the Horseshoe station was well mixed and oxygenated throughout the year. Water quality standards were attained. Although the data for this lake is dated, it is still listed in the State's 305(b) Report as impaired for nutrients and therefore will be listed on the 303(d) List until new data are collected to either verify or refute the listing.

Manueles Creek (Ocate Creek to headwaters)
AU:NM-2306.A_090 WQS: 20.6.4.309

1996 Action: Previously listed for reduction of riparian vegetation and streambank destabilization.

1998 Action: This reach will continue to be listed as Partially Supported on the 1998 303(d) list with unknown as the cause.

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. There were no exceedences of water quality standards for any dissolved metals, total metals, fecal coliform, or field parameters. A thermograph was deployed and recorded no exceedences of the temperature criterion. Therefore, unknown will be removed as a cause of non support.

Ocate Creek (Ocate to Wheaton Creek)
AU:NM-2306.A_070 WQS: 20.6.4.309

1996 Action: Previously listed for reduction of riparian vegetation and streambank destabilization.

1998 Action: This reach will continue to be listed as Partially Supported on the 1998 303(d) list with unknown as the cause.

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. The site was dry in early fall and summer due to drought and diversion. The site was sampled five times for dissolved metals, nutrients, ions, field parameters, ions, Hg, and Se. There were no exceedences of the standards. Therefore, unknown will be removed as a cause of non support. This AU will be listed as Category 4C because diversion (flow modification) "pollution" is de-watering the channel.

HUC: 11080004 - Mora

Coyote Creek (Mora River to Williams Canyon)
AU:NM-2306.A_020 WQS: 20.6.4.309

1996 Action: New listing for turbidity, total phosphorus, fecal coliform, total ammonia, and stream bottom deposits. There are four sampling stations on this reach. All data are from 1986, 1992 and 1993 surveys. Data ratios for turbidity are 0/6, 0/6, 0/6, and 0/1. Total phosphorus ratios are 1/6, 0/6, 1/6, and 0/1. Fecal coliform data indicate Full Support, Impacts Observed 1/1(230 /100 ml) in 1986. Total ammonia ratios are 0/4, 0/4, and 0/4.

1998 Action: Turbidity and total ammonia will be removed as causes of non-support for this reach. Total phosphorus will be removed as a cause of non-support but will be listed on the 1998 305(b) list as Full Support, Impacts Observed for this parameter and fecal coliform. This reach will continue to be listed as Not Supported on the 1998 303(d) list with stream bottom deposits as the cause.

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. There were 8 of 19 exceedences (42%) of the specific conductance criterion (all at the station one mile above the Mora River at Thal Ranch), likely exacerbated by dry conditions during the survey. A thermograph deployed at Coyote Creek @ State Park recorded 7 days where the temperature exceeded the criterion of 20 degree C for more than 6 consecutive hours. Therefore, temperature and specific conductance will be added as causes of non support. This AU will be placed in Category 5B because there is a healthy trout fishery in this reach, so the conductivity criterion does not seem appropriate. Benthic scores were 93% of reference and percent fines were actually lower than the reference station (7 vs. 11). Therefore, SBD will be removed as a cause of non support.

2008 Action: TMDLs were completed for specific conductance and temperature.

2016 Action: Previously listed under Coyote Creek (Mora River to Black Lake) before AU split. Coyote Creek is specifically named in 20.6.4.309 NMAC, but physically is located in the 20.6.4.307 NMAC definition. This AU is under WQS review. HQCWAL may not be attainable in this AU.

Coyote Creek (Williams Canyon to Black Lake)
AU:NM-2306.A_022 WQS: 20.6.4.309

2016 Action: Previously listed under Coyote Creek (Mora River to Black Lake) before AU split. Coyote Creek is specifically named in 20.6.4.309 NMAC, but physically is located in the 20.6.4.307 NMAC definition. This AU is under WQS review.

Encantada (Enchanted) Lake
AU:NM-2305.3.B_10 WQS: 20.6.4.313

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Little Coyote Creek (Black Lake to headwaters)
AU:NM-2306.A_024 WQS: 20.6.4.309

1996 Action: New listing for metals (Al), turbidity and stream bottom deposits. There are four sampling stations on this reach. All data are from a 1991 survey. No dissolved aluminum data was collected. Turbidity remains for all stations with the exception of CRB306.005078. Temperature is added to the list for all but station CRB306.00507. This is a partially supporting listing. Total phosphorus is also added to the list for all stations. This is a not supporting listing.

1998 Action: Aluminum was removed as a cause of non-support. Turbidity and stream bottom deposits were retained and phosphorus and temperature were added as causes of non-support.

2000 Action: Total phosphorus will be removed from the list; there is no longer a standard associated with total phosphorus

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. There was major road construction during the 1991 survey that contributed to turbidity and other impairments. The area around the construction has since been re-vegetated. There were 0 of 9 exceedences of the turbidity criterion of 25 NTU. Therefore, turbidity will be removed as a cause of non support. There were 2 of 8 exceedences (25%) of the upper pH criterion. A sonde deployed above HWY recorded an overall 30% exceedence rate of the upper criterion (maximum value 9.3). A thermograph deployed at State Park recorded 7 days where the temperature exceeded the criterion of 20 degree C for more than 6 consecutive hours. Therefore, temperature and pH will be added as a cause of non support. This AU will be placed in Category 5B because sonde data indicates FS for pH using draft protocol while grab data indicates NS. Also, thermograph was placed d/s of diversion. Benthic macroinvertebrates and pebble counts were collected @ HWY 434 and

compared to Rio de las Casas. The biological score was 83% and there were 33% fines at the station compared to 11% at the reference. This AU is full support for SBD/sedimentation according to the Stream Bottom Deposit Assessment Protocol and best professional judgment (since the bio score was between 70-83%). Therefore, SBD/sedimentation was removed as a cause of non support. The nutrient assessment protocol was performed on 07/11/02 at the site at HWY 434. Total nitrogen values were above the ecoregion criteria of 0.3 mg/L in >15% of the samples, total phosphorus values were above the ecoregion criteria of 0.03 mg/L in >15% of the samples the percent DO saturation was greater than 110%, and the pH was greater than 9.0 for > 2 hours. Since three or more indicators were present at both sites, nutrients will be added as a cause of non support.

2006 Action: The thermograph data from the 2002 Canadian Part 1 survey were re-evaluated. The thermograph was unknowingly placed downstream of a diversion and most of the streamflow was diverted during the summer, which contributed to the exceedences noted above. According to NMAC 20.6.4.11.I (as amended through February 16, 2006), numeric criteria for temperature adopted under the Water Quality Act do not apply when changes in temperature in a surface water of the state are attributable to the reasonable operation of irrigation and flood control facilities that are not subject to federal or state water pollution control permitting. Based on the exception to the applicability of water quality standards noted above, temperature was removed as a cause of non-support.

2008 Action: A TMDL was completed for nutrients.

Maestas (Lost) Lake
AU:NM-2305.3.B_20 WQS: 20.6.4.313

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Manuelitas Creek (Sapello River to Rito San Jose)
AU:NM-2305.3.A_21 WQS: 20.6.4.307

1996 Action: Listed for turbidity and stream bottom deposits. Turbidity values at two stations were 1/5 and 4/5. This data are misleading in that the sampling took place during a runoff event from a rain. For example at the lower station values were above criteria until the last day when the flows subsided and were then within the reach criteria. A biological assessment conducted by NMED in 1990 indicates full support of the fishery use. The biological assessment was 90% of the reference site. It is the opinion of the biologist conducting this assessment that stream bottom deposits do not impact this reach. The high quality biology at this site indicates that the temporary turbidity exceedences are not impairing the reach.

1998 Action: This reach has been removed from the 1998 303(d) list.

2004 Action: This AU was intensively sampled in 2002 during the Canadian Part 1 survey. No impairments were noted.

Middle Fork Lake of Rio de la Casa
AU:NM-2306.B_10 WQS: 20.6.4.313

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Mora River (Canadian River to USGS gage east of Shoemaker)
AU:NM-2305.A_020 WQS: 20.6.4.305

1996 Action: Previously listed for metals chronic (Pb), total ammonia and fecal coliform. There is only one sample station on this reach. All data are from a 1986 survey. Total ammonia had an acute exceedence ratio of 0/5 and a chronic exceedence ratio of 1/5. There are no dissolved lead data in STORET therefore there is insufficient data to modify the listing. Fecal coliform data are limited to 1/1 data (440/100 ml).

1998 Action: This reach will be listed on the 1998 303(d) list with lead (chronic) as the cause of non-support. The reach will be listed as Full Support, Impacts Observed on the 1998 305(b) list with fecal coliform and chronic total ammonia as a cause.

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. There were 0 of 8 exceedences of the hardness dependent chronic lead criterion. Therefore, lead will be removed as a cause of non support. There were 2 of 9 dissolved oxygen measurements lower than the 5.0 mg/L criterion. Therefore, dissoloved oxygen will be added as a cause of non support. This AU will be categorized as 5C -- A sonde will be deployed to verify the DO listing.

2006 Action: A sonde was re-deployed in 2006 during the Canadian Part 2 survey to verify the dissolved oxygen listing. According to the Large Dissolved Oxygen Dataset Assessment Protocol, a combined instantaneous minimum of 5.0 milligrams per liter (mg/L) and 90% saturation or a percent saturation instantaneous minimum of 75% is allowable for warmwater aquatic life uses. The results from the 10-day sonde deployment in 2006 indicated a combined instantaneous minimum of 7.9 mg/L and 87.5% saturation. Since the DO concentration (in mg/L) is well above the 5.0 mg/L minimum, there were no exceedences observed for the combined results. Furthermore, the results indicated that the percent saturation instantaneous minimum was 86%, which is above the 75% minimum value. Thus no exceedences were observed for the percent saturation instantaneous minimum. The results from the deployment clearly indicate that the DO was above the minimum allowable concentration and had saturation values between 75% and 120% verifying Full Support for dissolved oxygen. Therefore, dissolved oxygen was removed as a cause of non support.

Mora River (HWY 434 to Luna Creek)
AU:NM-2306.A_000 WQS: 20.6.4.309

1996 Action: Previously listed for total phosphorus, fecal coliform, turbidity, and stream bottom deposits. There are two sampling stations on this reach. All data are from a 1986 survey. Data at two stations had ratios of 5/5 and 1/5 for total phosphorus. Turbidity ratios are similar at 4/5 and 1/4. Fecal coliform ratios are 1/1 and 0/1.

1998 Action: This reach will continue to be listed on the 1998 303(d) list with total phosphorus, turbidity, and stream bottom deposits as the cause above stations 0030. The reach will be listed on the 1998 305(b) lists as Full Support, Impacts Observed for fecal coliform.

2000 Action: Total phosphorus will be removed from the list; there is no longer a standard associated with total phosphorus

2004 Action: Previously called "Mora River (Rio la Casa to headwaters)," this reach was intensively sampled during the 2002 Canadian part 1 survey. There were 2 of 16 exceedences of the turbidity criterion of 25 NTU. Therefore, turbidity will be removed as a cause of non support. A thermograph deployed at Mora River @ Cleveland recorded no exceedences of the 20 degree C criterion. There were 15 of 16 exceedences of the specific conductance criterion of 500 umhos/cm. Therefore, specific conductance will be added as a cause of non support. This AU will be categorized as 5B - Mineral spring in the area and inflow from wetlands may be contributing to exceedences. Benthic scores were 70% of reference and percent fines were 464% of reference. Therefore, the SBD listing remains.

2006 Action: Previously called "Mora River (HWY 434 to headwaters)", this AU was changed to "Mora River (HWY 434 to Luna Creek)" because Luna and Lujan Creeks converge to form the Mora River near Chacon, NM.

2008 Action: TMDLs were completed for specific conductance and sedimentation/siltation.

2012 Action: TMDLs were updated in 2011 due to new NPDES discharge.

Mora River (USGS gage east of Shoemaker to HWY 434)
AU:NM-2305.3.A_00 WQS: 20.6.4.307

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. Sondes were deployed at the stations Mora River above WWTP and below WWTP. The sondes were only deployed for 3 days, so the 7 day minimum could not be determined. The sonde data applied to percentages indicated impairment while grab data did not. Therefore, dissolved oxygen will be added as a cause of non support. This AU will be listed as Category 5C because sonde data indicates impairment while grab data does not. The potential for excessive nutrients in the Mora River were first noted through visual observation. To address this concern, data collected during 1999, 2002, and 2004 from seven stations in the assessment unit were collated and applied to the nutrient assessment protocol. Total nitrogen values were above the Southern Rockies ecoregion criteria of 0.30 mg/L in >15% (48%) of the samples, total phosphorus values were above the ecoregion criteria of 0.0.025 mg/L in >15% (28%) of the samples, and the percent dissolved oxygen (DO) saturation was greater than 120% in >15% (51%) of the samples. Chlorophyll a and ash free dry mass (AFDM) samples collected at the station above the WWTP exceeded numeric thresholds detailed in the nutrient assessment protocol as well. Since three or more indicators were present above threshold values, the reach was determined to be Not Supporting for Nutrient/Eutrophication Biological Indicators. This water will be listed as Category 5C to acknowledge that additional data are needed.

2008 Action: A TMDL was completed for nutrients.

Morphy (Murphy) Lake
AU:NM-2305.3.B_30 WQS: 20.6.4.99

2000 Action: Morphy Lake was characterized in a report titled, New Mexico Clean Lakes Program, Classification Phase I, Final Report, September 1982 by water temperatures that were nearly isothermal during the summer, with only slight dissolved oxygen stratification occurring. Aquatic macrophyte coverage reached nearly 100% and pond weed was observed year-round. The pH was alkaline, exceeding 9.0 (maximum 9.3). Chlorophyll maxima were observed in the fall. Algal diversity was particularly high. No algal blooms were detected and phosphorus was determined to be limiting. Although the data for this lake is dated, it is still listed in the State's 305(b) Report as impaired for dissolved oxygen, nutrients, pH and siltation and therefore will be listed on the 303(d) List until new data are collected to either verify or refute the listing.

2006 Action: WQS change to 20.6.4.99 based on 2005 triennial review and analysis that this is not an in-line reservoir so it is not covered under 20.6.4.307. Marginal Coldwater, Warmwater Aquatic Life and Irrigation are existing uses.

2008 Action: The sedimentation/siltation listing was removed because there were no data or applicable assessment protocols available to make this determination.

2014 Action: Nutrient, DO, and pH listings were removed. No protocol and/or data to confirm -- data are old (1982).

North Fork Lake of Rio de la Casa
AU:NM-2306.B_20 WQS: 20.6.4.313

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Pacheco Lake
AU:NM-9000.B_093 WQS: 20.6.4.313

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Rio la Casa (Mora River to confl of North and South Forks)
AU:NM-2306.A_030 WQS: 20.6.4.309

1996 Action: Previously listed for turbidity and stream bottom deposits. There is one sampling station on this reach. All data are from 1988. Turbidity data indicated full support (0/2).

1998 Action: Turbidity was removed as a cause of non-support. Stream bottom deposits was retained as a cause of non-support.

2004 Action: Rio la Casa was intensively sampled during the Canadian 1 study (2002). The Rio la Casa sampling station is used as a reference station for several AUs in the Canadian study. There were 11% fines at the station. Therefore, SBD will be removed as a cause of non support.

Sapello River (Manuelitas Creek to headwaters)
AU:NM-2305.3.A_30 WQS: 20.6.4.307

1996 Action: Previously listed for stream bottom deposits. A biological assessment conducted by NMED in 1990 indicates full support of fishery use. The biological assessment was 80% of the reference site.

1998 Action: This reach has been removed from the 1998 303(d) list.

2006 Action: This AU was intensively surveyed during the Canadian Part 1 (2002) survey. There were no impairments determined as the result of the survey.

Sapello River (Mora River to Manuelitas Creek)
AU:NM-2305.3.A_20 WQS: 20.6.4.307

1996 Action: Previously listed for turbidity. While listed for turbidity, there are no applicable numeric turbidity criteria for this marginal coldwater and warmwater fishery. A biological assessment conducted by NMED in 1990 indicates Full Support, Impacts Observed for the fishery use. The biological assessment was 70% of the reference site with references to in stream impacts from human activities.

1998 Action: This reach is listed as Partially Supported on the 1998 303(d) list with unknown as the cause.

2004 Action: This reach was intensively sampled during the 2002 Canadian part 1 survey. This reach had very low flow due to drought conditions. The site was sampled eight times for fecal coliform, dissolved metals, nutrients, ions, field parameters, ions, Hg, and Se. There were no exceedences of the standards. Therefore, unknown will be removed as a cause of non support.

2006 Action: Benthic macroinvertebrates surveys and pebble counts were conducted at the top and bottom of the assessment unit in March 2006. The bio score as a percent of reference and percent increase in fines at the downstream station, Sapello River @ Emplazado, as compared to the reference station, Sapello River below Manuelistas Creek at HWY 518, were 53% and 40%, respectively. Therefore, Sedimentation/Siltation was added as a cause of non support.

2008 Action: A TMDL was prepared for sedimentation/siltation.

Sparks Creek (Maestas Creek to headwaters)
AU:NM-2305.3.A_26 WQS: 20.6.4.307

2016 Action: Previously named "Manuelitas Creek (Maestas Creek to headwaters)," this AU is actually Sparks Creek according to USGS topo maps. The AU name and associated station name were revised accordingly.

HUC: 11080005 - Conchas

Conchas Reservoir
AU:NM-2304_00 WQS: 20.6.4.304

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2000 Action: Conchas Reservoir was characterized in a report titled New Mexico Clean Lakes Program: Lake Water Quality Assessment for FY 89 as oligo-mesotrophic based on the Carlson index for chlorophyll a and total phosphorus concentrations. Phytoplankton density ranged from 57 to 156 cells per ml. The Shannon-Wiener diversity indices listed in the BIOS data tables indicate the algal diversity to be good to excellent (i.e., greater than 2.0). Thermal stratification and dissolved oxygen depletion in the bottom third of the water column (i.e., 3.0 mg/l) was observed during August at the dam and Ute Creek outlet stations. Conversely, the Horseshoe station was well mixed and oxygenated throughout the year. Water quality standards were attained. Although the data for this lake is dated, it is still listed in the State's 305(b) Report as impaired for nutrients and therefore will be listed on the 303(d) List until new data are collected to either verify or refute the listing.

2010 Action: This lake is also listed for PCBs in fish tissue because there are fish consumption guidelines due to PCB contamination.

Conchas River (Conchas Reservoir to headwaters)
AU:NM-2305.A_010 WQS: 20.6.4.305

1996 Action: Previously listed for metals (Al) and stream bottom deposits. There is one sampling station on this reach. There is no dissolved aluminum data. Because it is a limited warmwater fishery, stream bottom deposits was proposed to be removed as a cause of non-support.

1998 Action: The reach was removed from the 303(d) list.

HUC: 11080006 - Upper Canadian-Ute Reservoir

Canadian River (TX border to Ute Reservoir)
AU:NM-2301_00 WQS: 20.6.4.301

1996 Action: Previously listed for metals (mercury), salinity, plant nutrients and stream bottom deposits. There are two sampling stations on this reach. A 1988 intensive survey by NMED found no exceedences of the mercury criteria (0/1). The survey also found that the levels of nitrogen and phosphorus were low. There were no exceedences of the TDS (salinity) criteria for USGS station 07227140 (1969-1986). As the reach is designated as a limited warmwater fishery, stream bottom deposits was proposed to be removed.

1998 Action: The reach was removed from the 303(d) list.

Canadian River (Ute Reservoir to Conchas Reservoir)
AU:NM-2303_00 WQS: 20.6.4.303

1996 Action: Previously listed for metals (Hg), plant nutrients and stream bottom deposits. There are two sampling stations on this reach. Mercury data indicate full support for the fishery use as there were no exceedences of criteria in the last 10 years (0/3). The fishery use is a LWWF and accordingly the stream bottom deposits listing has been dropped. Data was reviewed to assess the plant nutrients listing and it has been determined that this listing is not supported. There are several reports on this segment of the river that do not include any indications of nutrient enrichment. Chemical parameters of nitrogen, phosphorus, and DO are within watershed norms.

1998 Action: This reach has been removed from the 1998 303(d) list.

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. There were 2 of 5 exceedences of the E. coli criterion. Therefore, E. coil was added as a cause of non support.

2012 Action: 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).

Pajarito Creek (Canadian River to headwaters)
AU:NM-2303_10 WQS: 20.6.4.303

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. There were 3 of 7 exceedences of the applicable E. coli criterion. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen and total phosphorus above applicable numeric thresholds, as well as low dissolved oxygen. Therefore, E. coli and nutrients were added as causes of impairment.

2012 Action: TMDLs were prepared for e. coli and nutrients (2011).

Ute Reservoir
AU:NM-2302_00 WQS: 20.6.4.302

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2000 Action: Ute Reservoir was characterized (in a report titled, New Mexico Clean Lakes Program: Lake Water Quality Assessment for FY 89) as oligo-mesotrophic based on the Carlson index for chlorophyll a and total phosphorus concentrations. Total nitrogen to total phosphorus ratios indicate phosphorus is the limiting nutrient for algal growth. Phytoplankton density ranged from 57 to 156 cells per ml. The Shannon-Wiener diversity indices listed in the BIOS data tables indicate the algal diversity to be good to excellent (i.e., greater than 2.0). Thermal stratification and dissolved oxygen depletion in the bottom third of the water column (i.e., 3.0 mg/l) was observed during August at the dam and Ute Creek outlet stations. Conversely, the Horseshoe station was well mixed and oxygenated throughout the year. Water

quality standards were attained. Although the data for this lake is dated, it is still listed in the State's 305(b) Report as impaired for metals (Al) and siltation and therefore will be listed on the 303(d) List until new data are collected to either verify or refute the listing.

2008 Action: This AU was studied during the Lakes (2006) survey. There were 2 of 12 exceedences of the chronic aquatic life criterion, confirming the previous aluminum listing. The sedimentation/siltation listing was removed because there were no data or applicable assessment protocols available to make this determination. There continues to be a fish advisory for mercury. Therefore, this AU continues to be listed for aluminum as well as mercury in fish tissue.

2016 Action: PCBs in Fish Tissue was added based on the most current Fish Consumption Advisories (available at: https://www.env.nm.gov/swqb/advisories/). 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

Ute Creek (Perennial prt Bueyeros Ck to Palo Blanco Creek)
AU:NM-2303_20 WQS: 20.6.4.303

2008 Action: This AU was intensively surveyed during the Canadian Part 2 (2006) watershed survey. No impairments were identified.

2016 Action: Previously named "Ute Creek (Ute Reservoir to headwaters)", this AU was split at Bueyeros Creek due to the change in hydrological character, and shortened to acknowledge that Palo Blanco and Holkeo Creeks join to form Ute Creek.

Ute Creek (Ute Reservoir to Bueyeros Creek)
AU:NM-2303_23 WQS: 20.6.4.98

2016 Action: Previously named "Ute Creek (Ute Reservoir to headwaters", this AU was split at Bueyeros Creek due to the change in hydrological character.

HUC: 11080008 - Revuelto

Revuelto Creek (Canadian River to headwaters)
AU:NM-2301_10 WQS: 20.6.4.301

1996 Action: Previously listed for metals, total ammonia and plant nutrients. Limited total ammonia data within the last 12 years has a ratio of 0/3. The levels of ammonia seen are approximately 20% of the criteria value. This stream is an intermittent stream according to USGS.

1998 Action: This reach was removed from the 1998 303(d) list.

HUC: 11100101 - Upper Beaver

Clayton Lake
AU:NM-9000.B_030 WQS: 20.6.4.316

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: WQS changed to 20.6.4.99 based on 2005 triennial review. Marginal Coldwater, Warmwater Aquatic Life and Irrigation are existing uses.

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

HUC: 12050001 - Yellow House Draw

Tule Lake
AU:NM-9000.B_104 WQS: 20.6.4.98

2000 Action: Though possibly of natural origin, concentrations of Boron exceeded standard for livestock watering. This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat with the cause being the narrative standard of toxic substances.

2002 Action: Re-evaluation of the Playa Lakes 1994 NMED/SWQB Report and associated data do not indicate any impairment due to Toxic Substances. Non toxicity tests were performed during the 1993 study. Therefore, Toxic Substances was removed as a cause of non support. The boron criterion of 5 mg/L was exceeded during the 1993 survey at concentration of 13 mg/L. Also, the system was noted to be eutrophic. Therefore, boron and plant nutrients will be listed as Full Support, Impacts Observed.

HUC: 12050002 - Blackwater Draw

Dennis Chavez Lake (Curry)
AU:NM-9000.B_036 WQS: 20.6.4.99

2000 Action: Low oxygen value was below acceptable threshold resulting in use impairment. This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat and limited warmwater fishery with the cause being the narrative standard of toxic substances.

2002 Action: Secondary Contact and limited warmwater fishery were added as existing uses. Re-evaluation of the Playa Lakes 1994 NMED/SWQB Report and associated data do not indicate any impairment due to Toxic Substances. Non toxicity tests were performed during the 1993 study. Therefore, Toxic Substances was removed as a cause of non support. Dissolved oxygen was measured at 4 mg/L during the 1993 survey during before noon. This is the lower acceptable limit for a limited warmwater fisher. Also, the system was noted to be eutrophic. Therefore, dissolved oxygen will and plant nutrients be listed as Full Support, Impacts Observed until further study.

2006 Action: WQS changed to 20.6.4.99 based on 2005 triennial review. Existing use upgraded to Warmwater Fishery.

Green Acres Lake
AU:NM-9000.B_046 WQS: 20.6.4.99

2000 Action: Low oxygen value was below acceptable threshold resulting in use impairment. This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat and marginal coldwater fishery with the cause being the nutrients and organic enrichment.

2002 Action: Warmwater Fishery were added as existing uses. The dissolved oxygen concentration during the 1993 survey were below the lower limit of 6.0 mg/L for an existing use of marginal coldwater fishery. Therefore, dissolved oxygen will be listed as FSIO until further study. The nutrient and organic enrichment list was changed to plant nutrients for consistency with the narrative standards.

2006 Action: WQS was changed to 20.6.4.99 based on 2005 triennial review. Marginal Coldwater and Warmwater Aquatic Life are existing uses.

2014 Action: Nutrient listing was removed. No protocol and/or data to confirm -- data are old (1994).

Ingram Lake
AU:NM-9000.B_050 WQS: 20.6.4.99

2000 Action: This playa lake has been affected for years with urban runoff, meat packing plant blood pits, solid waste dump encroachment, cheese processing plant wste, and municipal waste water facility discharge. This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat limited warmwater fishery and livestock watering with the cause being toxic substances.

2002 Action: Re-evaluation of the Playa Lakes 1994 NMED/SWQB Report and associated data do not indicate any impairment due to Toxic Substances. Ingram Lake was eutrophic according to Carlson's indices for phosphorus. Therefore, the listing was changed from Toxic Substances to FSIO for plant nutrients until further study.

2006 Action: WQS was changed to 20.6.4.99 based on 2005 triennial review. Warmwater Aquatic Life is an existing use.

HUC: 12080001 - Lost Draw

Lane Salt Lake
AU:NM-9000.B_072 WQS: 20.6.4.98

2000 Action: This water is threatened by historic discharge from produced water (oil extraction industry). This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat with the cause being the narrative standard of toxic substances.

2002 Action: Boron was added as Full Support Impacts Observed due to one measurement at 150 mg/L (standard of 5 mg/L). Radium 256 and 228 was added as Full Support Impacts Observed due to one measurement at 256 pCi/L (standard of 30 pi/L).

2006 Action: WQS changed to 20.6.4.98 based on triennial review.

HUC: 12080004 - Mustang Draw

Lane Salt Lake
AU:NM-9000.B_072 WQS: 20.6.4.98

2000 Action: This water is threatened by historic discharge from produced water (oil extraction industry). This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat with the cause being the narrative standard of toxic substances.

2002 Action: Boron was added as Full Support Impacts Observed due to one measurement at 150 mg/L (standard of 5 mg/L). Radium 256 and 228 was added as Full Support Impacts Observed due to one measurement at 256 pCi/L (standard of 30 pi/L).

HUC: 13010005 - Conejos

Canada Tio Grande (Rio San Antonio to headwaters)
AU:NM-2120.A_903 WQS: 20.6.4.123

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. DO sonde data indicated impairment (combined instantaneous minimum of 2.8 mg/L with 41.1% sat). The maximum thermograph temperature was 27.2 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no total aluminum data available to determine exceedences of the applicable hardness-based 2011 NMAC criteria. An AU Comment was added. Therefore, DO (5C) and temperature were added as causes of impairment. Further evaluation is needed to determine if excessive nutrients is the cause of the DO impairment.

2014 Action: A Level 2 nutrient assessment was performed which documented exceedences of both TP and TN causal thresholds, as well as the dissolved oxygen response threshold. USFS_NMSU thermograph data indicate temperature impairment (max temp 24.8 degrees C). Therefore, the DO (response variable) impairment was changed to nutrients (causal variable) during 2012 listing cycle, and temperature continues to be listed.

Rio de los Pinos (New Mexico reaches)
AU:NM-2120.A_900 WQS: 20.6.4.123

1996 Action: Previously listed for metals (Al), total phosphorus, temperature and stream bottom deposits. Data on this reach are limited to single grab sample data collected at two times during 1990. The first sampling was during April and the second during August. For temperature, the ratios at four of five sampling stations (URG120.031010, URG120.031020, URG120.031030 and URG120.031040) were 1/2 with all exceedences during the summer sampling. Station URG120.031050 had no exceedences. Temperature will be classified as Full Support, Impacts Observed at the exceeding stations and full support at. URG120.031050. For total phosphorus, the results were similar but with the exceedences occurring during the spring sampling. Stations URG120.031010, URF120.031030 and URG120.031050 all had 1/2 ratios with stations URG120.031020 and URG120.031040 having 0/2 exceedences. For aluminum, only one station had an exceedence. At station URG120.031010, 1/1 samples collected exceeded the screening criteria. There were no exceedences of the acute criteria.

1998 Action: This reach will be listed as Full Support, Impacts Observed on the 1998 305(b) list with aluminum, total phosphorus, and temperature as the causes. The reach continues to be listed as Partially Supporting on the 1998 303(d) list with stream bottom deposits as the cause.

2000 Action: Data reviewed from 8/09/90 shows that the aluminum listing on the Rio de los Pinos is erroneous. The SLD Analytical Report from the 1990 results shows digested aluminum at <0.3 mg/L. The STORET retrieval stated dissolved aluminum = 300 ug/L. This is obviously a data entry error and the listing for aluminum will be deleted.

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality study. Benthic macroinvertebrate and pebble count data were collected at Rio de lost Pinos at the NMDGF area for comparison to reference condition at Rio Los Pinos at the FS boundary. The biological condition was 86% of reference condition at this site with 25% fines. Combined geomorphologic and benthic macroinvertebrate data from this station combined with the fact that a second Rio Los Pinos station is a reference station indicate Full Support for stream bottom deposits. The dissolved oxygen criterion (>=6.0 mg/L) was exceeded on 17 May at Station 1 (5.32 mg/L) and at Station 2 (5.68 mg/L). A total of eight samples were collected at each station. However, the proportion of exceedences was such that this reach will be listed as Full Support Impacts Observed for dissolved oxygen.

2004 Action: In 2002, two thermographs were deployed on Rio de los Pinos at USGS gage and Rio de los Pinos at the USFS bridge. At the USGS gage, recorded temperatures from July 2 through August 31, 2002 exceeded the HQCWF criterion 508 of 1,446 times (35%) with a maximum temperature of 29.8°C. At the USFS bridge in 2002, recorded temperatures from July 2 through August 31, 2003 exceeded the HQCWF criterion 344 of 1,446 times (24%) with a maximum temperature of 27.7°C. In 2003, two thermographs were re-deployed at these two stations. At the USGS gage, recorded temperatures from July through August 31, 2002 exceeded the HQCWF criterion 246 of 1,446 times (17%) with

a maximum temperature of 25.3°C. At the USFS bridge in 2003, recorded temperatures from July 2 through August 31, 2003 exceeded the HQCWF criterion 387 of 1,446 times (27%) with a maximum temperature of 27.1°C. Therefore, temperature will be added as a cause of non support.

2006 Action: A TMDL was prepared for temperature.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The maximum thermograph temperature was 25.5 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. There were 2 of 5 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no total aluminum data available to determine exceedences of the applicable hardness-based 2011 NMAC criteria. An AU Comment was added. Therefore, temperature was retained as a cause of impairment.

Rio San Antonio (CO border to Montoya Canyon)
AU:NM-2120.A_902 WQS: 20.6.4.123

2004 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality study. Previously listed as Rio San Antonio (CO border to headwaters), this AU was split to acknowledge the changing character between at Montoya Canyon. The station near the CO border at Ortiz was dry during the summer sampling run.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. DO sonde data indicated impairment (combined instantaneous minimum of 5.37 mg/L with 70.4% sat). The maximum thermograph temperature was 24.7 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. Therefore, DO (5C) and temperature were added as causes of impairment. Further evaluation is needed to determine if excessive nutrients is the cause of the DO impairment.

Rio San Antonio (Montoya Canyon to headwaters)
AU:NM-2120.A_901 WQS: 20.6.4.123

1996 Action: Previously listed for stream bottom deposits, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits as the cause of non-support.

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality study. Benthic macroinvertebrate and pebble count data were collected at for comparison to reference condition at Rio Los Pinos. The biological condition was 73% of reference condition at this site with 31% fines. There were 17% fines at the reference station which corresponds to an 82% increase in fines at the sample condition. Combined geomorphologic and benthic macroinvertebrate data from this water body indicate Full Support Impacts Observed for stream bottom deposits. The dissolved oxygen standard (>=6.0 mg/L) was exceeded on 18 October at Station 4 (5.15 mg/L). The proportion of exceedences was such that this reach is listed as Full Support Impacts Observed for dissolved oxygen.

2004 Action: Previously listed as Rio San Antonio (CO border to headwaters), this AU was split to acknowledge the different character above at Montoya Canyon. Thermograph data from station 4 (Forest Road 87) indicate non-support

for temperature for this AU, as instantaneous temperature readings exceeded 23°C (maximum = 26.97°C). Therefore, temperature will be added as a cause of non support.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. DO sonde data indicated impairment (combined instantaneous minimum of 4.17 mg/L with 56.2% sat). There were 3 of 4 exceedences of the applicable 235 cfu/100 mL e. coli criterion. The maximum thermograph temperature was 25.7 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. Therefore, temperature was retained, and DO (5C) and e. coli were added as causes of impairment. Further evaluation is needed to determine if excessive nutrients is the cause of the DO impairment.

HUC: 13020101 - Upper Rio Grande

Acid Canyon (Pueblo to headwaters)
AU:NM-97.A_002 WQS: 20.6.4.98

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, copper, mercury, zinc, PCBs (for both human health and wildlife habitat), and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 to 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. Copper (7/13 acute, 2/4 chronic [IR Cat 5C -- the two exceedences may have been mis-characterized as non-storm flow in the Intellus database]), PCBs (human health and wildlife habitat), and adjusted gross alpha were determined to be causes of non-support in this AU. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

2016 Action: As suspected and noted in 2014 ROD, two dissolved copper data points were originally mis-characterized as non-storm flow in the Intellus database. These two Water Type assignments in Intellus were corrected to indicate these were collected during storm events. Therefore, they were not assessed against chronic copper WQC, leading to 0/2 exceedences and the removal of the chronic copper impairment.

Alamitos Creek (Rio Pueblo to headwaters)
AU:NM-2120.A_411 WQS: 20.6.4.123

2014 Action: USFS_NMSU data thermograph data from 2010-2011 continue to indicate full support for temperature (max temp 18.6 degrees C).

Apache Canyon (Rio Fernando de Taos to headwaters)
AU:NM-98.A_002 WQS: 20.6.4.123

2010 Action: This AU was assessed for primary contact per EPA Region 6 instruction. There were 4 of 25 exceedences of the E. coli criterion of 410 cfu/100 mL. Therefore, E. coli was added as a cause of non support.

2012 Action: NMEDs Hydrology Protocol (http://www.nmenv.state.nm.us/swqb/Hydrology/) was performed at this AU on 5/23/11. The Level 1 survey at Apache Canyon immediately upstream of the confluence with the Rio Fernando de Taos scored 19.5 in the field (Photo 1). Because this site scored in the grey zone between intermittent and perennial, supporting information was used to make a final determination. The USFS has two sampling stations on Apache Canyon that bracket a private section (AP01 and AP02, respectively). USFS Carson National Forest E. coli monitoring report summaries indicate that during certain times of the year, there is no flow at the mouth of Apache Canyon and USFS flow observations indicate barely discernable flow at their sampling stations (see Table 1 in this entry of 2012 version of the ROD). A stakeholder with twenty years of experience in this watershed observed that Apache Canyon does not go dry, and did not go dry during the summer 2011 drought (Jerry Yeargin, personal communication 08/04/11). Considering both sets of observations, the 1.1 Water in the Channel Level 1 indicator score was not adjusted. Therefore, the final score remains 19.5, indicating a perennial stream reach per Table 5 of the Hydrology Protocol. The USFS submitted data for this AU - SWQB did not have any stations in this AU during the 2009 URG study. There were 4 of 18 exceedences of the E. coli criterion of 235 cfu/100 mL. Therefore, E. coli remains a cause of non support.

Arroyo del Palacio (Rio Grande to headwaters)
AU:NM-98.A_004 WQS: 20.6.4.98

2012 Action: DOE Oversite Bureau submitted blank-corrected PCB data for various waterbodies in the Rio Grande and Rio Chama watersheds The total PCB criterion of 0.64 ng/L for Human Health associated with Aquatic Life Use was exceeded 3 of 3 times. Therefore, PCBs was added as a cause of impairment.

Arroyo Seco Creek (perennial prt HWY 522 to headwaters)
AU:NM-2119_31 WQS: 20.6.4.99

2014 Action: E. coli data provided by Taos Pueblo indicate FS for e. coli (1/11 exceedences).

Bitter Creek (Red River to headwaters)
AU:NM-2120.A_705 WQS: 20.6.4.123

1996 Action: Previously listed for metals (aluminum), stream bottom deposits, reduction of riparian vegetation and streambank destabilization. Aluminum data indicate an exceedence ratio of 3/3 at station URG120.028530.

1998 Action: The reach will be listed for aluminum at station URG120.028530 and stream bottom deposits.

2000 Action: The aluminum criterion was exceeded in 3/4 samples, with an acute level of 750ug/L. Sand and gravel operation plus land development above the gravel operations have led to very high levels of sediment transport and deposition throughout this reach. An ongoing 319(h) program is attempting to stabilize this area. Metals (Al acute) and Stream bottom deposits will be retained as causes of non-support.

2002 Action: TMDLs were drafted for acute aluminum and stream bottom deposits as part of the Red River TMDLs document.

2004 Action: Molycorp submitted monitoring data for various stations on Red River and Cabresto Creek. Since no new data was available for Bitter Creek, the listings remain.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and 2 of 4 exceedences of the applicable hardness-based 2011 NMAC chronic criteria. An AU Comment was added. No acute aluminum criteria were exceeded. An EMAP survey documented 0% sand & fines (there were 4% sand & fines documented in a representative riffle during the same survey). The benthic macroinvertebrate M-SCI was 77.1. The turbidity threshold of 23 NTU was exceeded for greater than the allowable duration of 72 consecutive hours (107 hours). Therefore, aluminum (chronic) was retained, sedimentation/siltation was removed, and turbidity was added as a cause of impairment.

Bull Creek Lake
AU:NM-9000.B_023 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Cabresto Creek (Red River to headwaters)
AU:NM-2120.A_701 WQS: 20.6.4.123

1996 Action: Previously listed for turbidity and stream bottom deposits. There have been no exceedences (0/5) of the turbidity criteria in the last five years. The cumulative turbidity ratio from three stations for 10 years is 1/21.

1998 Action: Turbidity will be removed as a cause of non-support. This reach is listed as Partially Supported on the 303(d) list with stream bottom deposits as the cause.

2000 Action: The aluminum criterion was exceeded in 4 of 4 samples. One station was evaluated along this reach for SBD. The reach had 7% fines <2mm (FS) and an embeddedness of 38.3%(FS); WQS are currently being met for SBD. A new listing will be added for Metals (Al chronic).

2004 Action: Molycorp submitted monitoring data for various stations on Red River and Cabresto Creek. Nine stations were sampled along Cabresto Creek Oct 6-7, 2002 and Mar 23, 2003. There were 0 of 17 exceedences of the dissolved aluminum chronic screening criterion 0.1305 ug/L (= 1.5 x 0.087 ug/L). Combining the most recent 5 years of available

data (1999-2003), there were 4 of 21 (19%) total exceedences of the chronic screening criterion. The Assessment Protocol states that when consecutive day data are available, means will first be calculated and then compared to the chronic criterion. The 1999 spring data used to develop the existing aluminum data was re-assessed in this fashion because it was collected on consecutive days, leading to one exceedence of the chronic criteria for aluminum. According to this re-assessment, Cabresto Creek should not have been listed for aluminum. More recent multi-season data submitted by Molycorp for multiple stations along Cabresto Creek did not show any exceedences (0 of 17). Due to this new data and the incorrect assessment of the 1999 data, the listing for aluminum was removed from the list. There were no exceedences of the hardness-dependent criteria for chromium, cadmium, copper, nickel, or zinc.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found. There were 1 of 8 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and 1 of 8 exceedences of the applicable hardness-based 2011 NMAC chronic criteria. No acute aluminum criteria were exceeded. An EMAP survey documented 14.3% sand & fines, indicating full support for this Mountain sediment class site. The benthic macroinvertebrate M-SCI was 77.5.

2014 Action: USFS_NMSU data thermograph data from 2010-2011 continue to indicate full support for temperature (max temp 21.1 degrees C. 4T3 of 20 not exceeded).

Cabresto Lake
AU:NM-2120.B_20 WQS: 20.6.4.134

2010 Action: Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue even though there is a Fish Consumption Advisory.

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Canada Aqua (Arroyo La Mina to headwaters)
AU:NM-98.A_003 WQS: 20.6.4.98

2012 Action: DOE Oversite Bureau submitted blank-corrected PCB data for various waterbodies in the Rio Grande and Rio Chama watersheds The total PCB criterion of 0.64 ng/L for Human Health associated with Aquatic Life Use was exceeded 4 of 4 times. Therefore, PCBs was added as a cause of impairment.

Columbine Creek (Red River to headwaters)
AU:NM-2120.A_702 WQS: 20.6.4.123

2014 Action: USFS_NMSU data thermograph data from 2010-2011 continue to indicate full support for temperature (max temp 13.7 degrees C).

Comanche Creek (Costilla Creek to headwaters)
AU:NM-2120.A_827 WQS: 20.6.4.123

1996 Action: Listed for total phosphorus, metals (Al, chronic), and stream bottom deposits. Some total phosphorus exceedences were recorded from 5-10 year data (1/16,1/4,1/12,3/12,1/10,2/10). Nonpoint source projects have been implemented in this watershed. Eight stations have been sampled within 5 years with no exceedences seen for total phosphorus. This is a total of 0/15 samples at the same stations sampled previously. Results for aluminum are similar which is expected since the source of phosphorus and aluminum in this watershed is from eroding soils. In the 5-10 year time period data ratios were 2/6, 0/3, 2/6, 2/6, 2/6, 2/7, and 2/6. In the last 5 years the data ratios are 0/2, 1/2, 1/2, 0/1, 0/2, and 0/1.

1998 Action: This reach is listed as Partially Supported on the 303(d) list with total phosphorus, aluminum and stream bottom deposits as the cause.

2000 Action: There is no longer a water quality standard for total phosphorus for the designated use of high quality coldwater fishery. Therefore, total phosphorus was removed as a cause of impairment. Total phosphorus concentrations will be measured during the Upper Rio Grande intensive study to verify the de-listing.

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality study. Benthic macroinvertebrate and pebble count data were collected at two sites for comparison to reference condition at Casias Creek. The biological condition was 71% and 62% of reference condition at these sites. There were 27.6 % fines at the reference site Casias Creek and 44% and 34% fines at the Comanche Creek above Costilla and Comanche Creek @ Upper Exclosure, respectively. Combined geomorphologic and benthic macroinvertebrate data from this water body indicate Full Support Impacts Observed for stream bottom deposits. There were 0 of 16 exceedences for dissolved aluminum at the two sites. Therefore, aluminum will be removed as a cause of Non Support. Total phosphorus was measured eight times at both stations. Twelve of these measurements were below the detection limit. 0.04 mg/L and 0.071 mg/L were measured at Comanche Creek @ Upper Exclosure during the summer sampling run. 0.04 mg/L and 0.05 mg/L were measured at Comanche Creek above Costilla on during on 8/1/00 and 5/17/00, respectively.

2004 Action: Thermograph data from Station 11 (Comanche Creek below upper exclosure) indicate non-support for temperature as instantaneous readings exceeded 23°C (maximum = 27.1°C). Temperature will be added as a cause of non-support. Thermograph data from this station were collected during 2002 as the thermograph data from the 2000 intensive survey were inadvertently compromised.

2006 Action: A TMDL was developed for temperature. Name was extended to headwaters. Sedimentation/siltation impairment was re-assessed using the current Assessment Protocol. As a result, sedimentation/siltation was added as a cause of non support.

2008 Action: This AU was surveyed during 2006 to establish baseline conditions as soon as possible after ONRW status was established for surface waters in the Valle Vidal. 2006 thermograph data confirmed the existing listing. There were only 3% fines measured at station Comanche Creek above Costilla Creek, and the M-SCI score for benthic macroinvertebrates was 59. Therefore, according to the 2008 assessment protocol for sedimentation, this AU was determined to be full support for sedimentation/siltation.

2010 Action: There were 0 of 6 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2012 Action: This AU was partially surveyed during the 2009 Upper Rio Grande study. The maximum thermograph temperatures were 23.1 and 26.1 degrees C at the WPS confluence and upper sampling locations, respectively, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days in both thermograph data sets. Therefore, temperature was retained. 2009 USFS thermograph data submitted for the 2012 listing cycle confirm the temperature listing.

2014 Action: 2010-2012 USFS_NMSU and SWQB WPS thermograph data confirm the temperature listing (max temp 26.3 degrees C).

Cordova Creek (Costilla Creek to headwaters)
AU:NM-2120.A_823 WQS: 20.6.4.123

1996 Action: Previously listed for turbidity, stream bottom deposits and total phosphorus. 0/9 samples at 2 stations show exceedences of the turbidity criteria. Total phosphorus is not supporting (5/10) at station the downstream station while the upstream station is fully supporting (0/3) for total phosphorus.

1998 Action: Turbidity will be removed as a cause of non-support. The reach will continue to be listed as Not Supported for total phosphorus and stream bottom deposits on the 1998 303(d) list.

2000 Action: The stream is impaired by total phosphorus, stream bottom deposits, and turbidity, which are potentially a result of increased sedimentation from NM196 and increased runoff due to snowmaking at the Ski Rio Ski Area. TMDLs were developed for total phosphorus, stream bottom deposits, and turbidity to address impairments.

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality survey. The dissolved oxygen standard (³6.0 mg/L) was exceeded for two samples (5.88 mg/L on 01 August; 5.82 mg/L on 02 August) out of eight at Station 35. No exceedences were detected out of eight samples at Station 36. Thus, this water body is in full support of the dissolved oxygen standard, but impacts have been observed that warrant close attention during future surveys. There were 0 of 16 turbidity exceedences during the 2000 study. Therefore, turbidity will be removed as a cause of Non Support for this reach. There is no longer a water quality standard for total phosphorus for the designated use of high quality coldwater fishery. The Nutrient Assessment protocol was performed July 2000. This reach was determined not be nutrient enriched following the level one nutrient assessment analysis. A summary of the nutrient assessment is in the administrative record. Therefore, total phosphorus will be removed as a cause of Non Support for this reach.

2004 Action: Although there were 0 of 16 turbidity exceedences during the 2000 study, visual observation and photodocumentation continues to show that Cordova Creek is impacted by sedimentation and turbidity following storm events due to the above mentioned causes. Nonpoint source projects are being implemented in this watershed.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 consecutive hours. An EMAP survey documented 21.0% and

27.6% sand & fines, with associated LRBS_NOR values of -1.45 and 1.57, indicating non support for these Mountain and Foothills sediment class sites (note this AU straddles two sediment site classes). Therefore, the sedimentation listing was retained.

Costilla Creek (CO border to Diversion abv Costilla)
AU:NM-2120.A_810 WQS: 20.6.4.123

1996 Action: Previously listed for stream bottom deposits only. The assessment review found that turbidity and metals (Al, acute) should be added to this listing due to 3/9 (33%) of turbidity readings within 5 years being above the criteria. 1/6 values exceeded the acute aluminum criteria and 2/6 (33%) exceeded the chronic aluminum criteria.

1998 Action: This reach is listed as Partially Supported on the 303(d) list with turbidity, aluminum, and stream bottom deposits as the cause.

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality survey. The turbidity standard (25 NTU) was exceeded for both spring samples (87.7 NTU on 16 May; 44.7 NTU on 17 May) at Station 39. These values may be attributable to natural causes (i.e., spring runoff) or the operation of irrigation or flood control facilities (flows are at bankfull from spring to fall due to dam operations). However, benthic macroinvertebrate data indicate suboptimal habitat conditions, thus this reach is considered to still be in Partial Support of the turbidity standard. Benthic macroinvertebrate and percent fines data was used to assess potential stream bottom deposits utilizing the Protocol for the Assessment of Stream Bottom Deposits. The biological condition was 56% of reference and had 24% fines at the sample station. The reference site used for comparison was Rio Hondo @ the USGS gage. According to the protocol, stream bottom deposits will be noted as Full Support, Impacts Observed. The seasonal arithmetic means for aluminum were 0.075, 0.060, and <0.01 mg/L for spring, summer, and fall, resepectively. Arithmetic means were used because multiple day sampling data were available for aluminum. Therefore, aluminum will be noted as Full Support.

2004 Action: While preparing TMDLs for this assessment unit, it was determined that the station used to make these original listings (and the subsequent follow-up sampling in 2000) was actually upstream of this assessment unit. SWQB has actually never been able to sample this AU because it goes dry during the irrigation season (see gage and thermograph data). Therefore, turbidity will be removed as a cause of non-support, and this AU will be listed as Category 4C because it is impaired by the pollutant "flow modification" due to diversion. The the upstream AU - Costilla Creek (Diversion to Comanche Creek)-was reassessed below.

Costilla Creek (Comanche Creek to Costilla Dam)
AU:NM-2120.A_830 WQS: 20.6.4.123

1996 Action: Previously listed for metals (Al, chronic) and turbidity. Turbidity values for 0-10 years at 3 stations were 1/17, 0/2 and 0/4. Aluminum has been recorded at acute levels at stations Costilla065 and Costilla095.

1998 Action: Remove turbidity as a cause on non-support for this reach. Aluminum will continue to be listed as a cause of non-support.

2002 Action: The reach was sampled during the 2000 Upper Rio Grande intensive water quality survey. Aluminum criterion was exceeded once; dissolved copper acute criterion was exceeded once; the hardness-dependent acute criterion of dissolved zinc was exceeded once. Aluminum, copper, and zinc will be noted as Full Support, Impacts Observed.

2004 Action: The seasonal arithmetic means for aluminum were 0.075, 0.070, and <0.01 mg/L for spring, summer, and fall, resepectively, at Station 40. Arithmetic means were use because SWQB had multiple day sampling data for aluminum. The seasonal arithmetic means for aluminum were 0.077 and <0.013 mg/L for summer and fall, resepectively, at Station 12. There was only one data point for spring at this station, so the result was taken times 1.5 and compared to the chronic criterion of 0.087 mg/L. This value, 0.09 mg/L, exceeded the criterion for aluminum. Therefore, aluminum will be noted as Full Support, Impacts Observed. One exceedence (0.02 mg/L) above the hardness-dependent acute criterion (0.006 mg/L) and chronic criterion (0.004mg/L) for dissolved copper was detected on 16 May at Station 12. The mean value for samples collected at this station for this parameter was below the chronic criterion, thus only a violation of the acute criterion is recognized. However, the proportion of exceedences was such that this water body will be noted as Full Support, Impacts Observed for copper. One exceedence (0.09 mg/L) above the hardness-dependent acute criterion (0.062 mg/L) and chronic criterion (0.063 mg/L) for dissolved zinc was detected on 17 May at Station 40. The mean value for samples collected at this station for this parameter was below the chronic criterion, thus only a violation of the acute criterion is recognized. However, the proportion of exceedences was such that this water body will be noted as Full Support, Impacts Observed for zinc.

2008 Action: This AU was surveyed during 2006 to establish baseline conditions as soon as possible after ONRW status was established for surface waters in the Valle Vidal. This AU continues to be listed as full support for all designated uses based on the results of this survey.

2010 Action: There were 0 of 4 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2012 Action: This AU was partially surveyed during the 2009 Upper Rio Grande study. No impairments were found.

2014 Action: USFS_NMSU data thermograph data from 2010-2011 continue to indicate full support for temperature (max temp 22.7 degrees C. 4T3 of 20 not exceeded).

Costilla Creek (Diversion abv Costilla to Comanche Creek)
AU:NM-2120.A_820 WQS: 20.6.4.123

2004 Action: This AU was intensively sampled during the 2000 Upper Rio Grande survey. The data were reassessed in 2003 because the lowest station in the assessment unit was previously mistakenly associated with the assessment unit downstream. There were three stations in this AU: Costilla above Costilla @ HWY 196 (station 39), Costilla above Amalia @ HWY 196 (station 38), and Costilla below Comanche Creek (station 6). A thermograph deployed in 2002 at the first station recorded a maximum temperature of 25.81 degrees C. Therefore, temperature will be listed as a cause of non support. There were 3 of 24 exceedences of the turbidity criterion of 25 NTU.

2006 Action: A TMDL was developed for temperature.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The maximum thermograph temperature was 21.2 degrees C, and the criterion (20 degrees C) was not exceeded for > 4 hours for >3 consecutive days. Therefore, temperature was removed as a cause of impairment.

Cow Lake
AU:NM-2120.B_40 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

DP Canyon (Grade control to upper LANL bnd)
AU:NM-128.A_14 WQS: 20.6.4.128

2016 Action: Previously named "DP Canyon (Los Alamos Canyon t to LANL bnd)," this AU was split at the grade control structure. Data provided by LANs indicate this AU is ephemeral, and hydrologically influenced from storm water runoff from impervious surfaces. Available Intellus data were pulled for station DP below the TA-21 meadow (08-09) and DP immediately below the grade control structure (11-15) to assess this newly defined AU. At these two stations, there were 6/7 and 7/12 gross alpha, 0/1 and 9/23 PCB wildlife habitat, and 0/1 and 23/23 PCB human health WQC exceedences, respectively. Therefore, these parameters are noted as causes of impairment.

DP Canyon (Los Alamos Canyon to grade control)
AU:NM-128.A_10 WQS: 20.6.4.128

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, copper, PCBs (for both human health and wildlife habitat), and adjusted gross alpha were determined to be causes of non support.. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

2016 Action: Previously named "DP Canyon (Los Alamos Canyon t to LANL bnd)," this AU was split at the grade control structure. Data provided by LANs indicate this AU is intermittent, and hydrologically influenced from storm water runoff from impervious surfaces in the upper watershed, groundwater stored within the alluvium near the grade control structure, and DP spring.

East Fk Rio Santa Barbara (R Santa Barbara to headwaters)
AU:NM-2120.A_424 WQS: 20.6.4.123

2014 Action: USFS_NMSU data thermograph data from 2010-2011 indicate full support for temperature (max temp 14.3 degrees C).

Elk Lake
AU:NM-9000.B_039 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Embudo Creek (Canada de Ojo Sarco to Picuris Pueblo bnd)
AU:NM-2111_40 WQS: 20.6.4.114

1996 Action: Previously listed as "Embudo Creek (Rio Grande to Picuris Pueblo bnd)" and listed for metals (chronic Al), turbidity, temperature, and stream bottom deposits. There are 4 sampling stations from a 1994 survey used to assess this reach. Temperature values were: 0/17, 1/9, 0/9 and 0/9. In 5-10 year data the values were similar. There appears to be no justification for a temperature listing on this reach. Aluminum exceeded the chronic screening criteria at stations URG111.021505 (2/5) and URG111.021590 (2/3) with similar results from 5-10 year data. Turbidity exceeded the criteria in 2/9 (22%) of the samples. Embudo Creek at USGS gauge station was sampled for macroinvertebrates in 1994. This station was NS (54%) with a habitat score of 36% compared to the reference. The write-up cites severe siltation as a cause of non-support.

1998 Action: Temperature will be removed as a cause of non-support for this reach. The reach will continue to be listed as Not Supported for turbidity, aluminum, and stream bottom deposits.

2004 Action: This assessment unit was intensively sampled as part of the URG II 2001 survey. The assessment unit was split where the stream leaves the canyon and enters the developing valley. There were 0 of 3 exceedences of the chronic aluminum criteria using seasonal means (because consecutive day data were available) and 0 of 8 turbidity exceedences. Therefore, aluminum and turbidity will be removed as causes of non support. A benthic marcroinvertebrate survey was performed using Rio Santa Barbara at the Santa Barbara Campground as a reference. The bio score was 59% of reference, with 9% fines. Therefore, benthic macroinvertebrate bioassessments will be added while SBD/sedimentation/siltation will be removed as a cause of non support. The AU will be listed as category 5C until the cause of impairment is determined.

2008 Action: The 2004 thermograph data were re-assessed to verify full support for temperature.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. A Level 2 nutrient survey documented exceedences of TN causal thresholds, as well as chlorophyll response thresholds. No sonde data were available. Therefore nutrients (5C) was added (and benthic macroinvertebrate bioassessment was removed because its a response variable) as a cause of impairment. This nutrient listing is marginal.

2014 Action: Sonde data collected in 2012 indicated FS. Nutrient listing remains due to presence of chlorophyll indicator.

Embudo Creek (Rio Grande to Canada de Ojo Sarco)
AU:NM-2111_41 WQS: 20.6.4.114

1996 Action: Previously listed as "Embudo Creek (Rio Grande to Picuris Pueblo bnd)" and listed for metals (chronic Al), turbidity, temperature, and stream bottom deposits. There are 4 sampling stations from a 1994 survey used to assess this reach. Temperature values were: 0/17, 1/9, 0/9 and 0/9. In 5-10 year data the values were similar. There appears to be no justification for a temperature listing on this reach. Aluminum exceeded the chronic screening criteria at stations URG111.021505 (2/5) and URG111.021590 (2/3) with similar results from 5-10 year data. Turbidity exceeded the criteria in 2/9 (22%) of the samples. Embudo Creek at USGS gauge station was sampled for macroinvertebrates in 1994. This station was NS (54%) with a habitat score of 36% compared to the reference. The write-up cites severe siltation as a cause of non-support.

1998 Action: Temperature will be removed as a cause of non-support for this reach. The reach will continue to be listed as Not Supported for turbidity, aluminum, and stream bottom deposits.

2004 Action: This assessment unit was intensively sampled as part of the URG II 2001 survey. The assessment unit was split where the stream leaves the canyon and enters the developing valley. There were 0 of 3 exceedences of the chronic aluminum criteria using seasonal means (because consecutive day data were available) and 2 of 8 turbidity exceedences. Therefore, aluminum will be removed and turbidity will remain a cause of non support. A benthic marcroinvertebrate survey was performed using Santa Cruz River in Cundiyo as a reference. The bio score was 65% of reference, with 24% fines. This AU goes through episodes of heavy sedimentation followed by scouring. During previous surveys, the cobble was 100% embedded with sand. Heavy sediment inputs in Dixon come from roads running perpendicular to the river. Also, dry watercourses in Dixon are used as roads. Therefore, sedimentation/siltation will be added as a cause of non support.

2006 Action: TMDLs were developed for sedimentation/siltation (SBD) and turbidity. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The maximum thermograph temperature was 28.9 degrees C (segment-specific max of 25), and the segment-specific 6T3 criterion (22 degrees C) was not exceeded for > 4 hours for >3 consecutive days. Therefore, temperature was added as a cause of impairment. There were no new sedimentation data. Available turbidity data suggests continued impairment.

Fawn Lake (East)
AU:NM-2120.B_60 WQS: 20.6.4.134

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Fawn Lake (West)
AU:NM-2120.B_61 WQS: 20.6.4.134

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Gold Creek (Comanche Creek to headwaters)
AU:NM-2120.A_835 WQS: 20.6.4.123

2008 Action: This AU was surveyed in 2006. There were 2 of 4 exceedences of the chronic aluminum criterion. The maximum recorded temperature via thermograph was 25.4 degrees C (criterion of 20 degrees C) Therefore, aluminum and temperature were added as causes of non support.

2010 Action: There were 0 of 4 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2012 Action: A TMDL for temperature was prepared (2011).

2014 Action: Aluminum listing based on previous dissolved aluminum WQC. Additional data are needed to determine if this water is impaired for total recoverable aluminum prior to TMDL scheduling for this parameter.

Goose Lake
AU:NM-2120.B_12 WQS: 20.6.4.133

1998 Action: Not listed

2000 Action: Listed for siltation, nutrients, and fish guidelines.

2002 Action: The cause of Fish Guidelines was removed because this is not on the current fish consumption guidelines.

2012 Action: This lake was sampled in 2009. The sedimentation/siltation listing was removed because there were no data or applicable assessment protocols available to make this determination. Data from multiple indicators (TP, TN, chlorophyll a, DO, secchi, and % blue-green algae) all suggest Goose Lake is fully supporting with respect to nutrients. Therefore, nutrients was removed as a cause of impairment.

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Graduation Canyon (Pueblo Canyon to headwaters)
AU:NM-97.A_005 WQS: 20.6.4.98

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, copper, and PCBs (for both human health and wildlife habitat) were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and copper (acute 5C 2/2) were determined to be causes of non-support in this AU. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Grassy Creek (Comanche Creek to headwaters)
AU:NM-2120.A_836 WQS: 20.6.4.123

2010 Action: There were 2 of 4 exceedences of the interim turbidity numeric translator of 25 NTU. There are no benthic macroinvertebrate data available. Therefore, this AU is noted as Non Support (5C) for turbidity.

Guaje Canyon (San Ildefonso bnd to headwaters)
AU:NM-9000.A_005 WQS: 20.6.4.98

2002 Action: Gross Alpha was listed as Non Support because the Livestock Watering criterion of 15 pCi/L was exceeded four times in time-weighted composite samples in 2001. The uranium-corrected gross alpha minus plutonium and americium exceedences were as follows (pCi/L): 481.73, 194.27, 464.26, and 441.02. Selenium was listed as Non Support because the Wildlife Habitat chronic screening criterion of 7.5 mg/L (5.0 mg/L x 1.5) was exceeded four times in time-weighted composite samples in 2000 and 2001. Selenium exceedences were as follows (ug/L): 8.8, 17.3, 34.5, and 17.6. Los Alamos National Laboratory collected all data used in these assessments during storm events in 2000 and 2001.

2004 Action: Selenium will remain listed as Non Support. There was an additional exceedence of the Wildlife Habitat chronic screening criterion of 7.5 ug/L (5.0 ug/L x 1.5) in 2002 during stormwater quality sampling. Total selenium exceedences were as follows (ug/L): 10.0 and 10.0 at station GU-0.01 on 7/31/02 (counted as one exceedence according to the Assessment Protocol, section 2.1.2). These data were collected by the NMED DOE Oversite Bureau. There were

three additional selenium exceedences as follows in LANL 2002 time-weighted storm water samples (ug/L): 8.12, 10.1, and 9.06. Gross Alpha will remain listed as Non Support. There was one additional exceedences of the Livestock Watering criterion of 15 pCi/L at station GU-0.01 (692.99 pCi/L) in 2002. This datum was collected by the NMED DOE Oversite Bureau. In the LANL time-weighted composite 2003 storm event data set, there were three additional exceedences at the station above Rendija Canyon (2183.47, 1135.54, and 1851.93 pCi/L) and one additional exceedence at the station at SR-502 (2959.34 pCi/L). All these data were calculated as uranium-corrected gross alpha minus plutonium and americium.

2006 Action: Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The Livestock Watering criterion of 15 pCi/L Adjust Gross Alpha was exceeded 8 of14 times (8/12 at Guaje abv Rendija). The uranium-corrected gross alpha minus plutonium and americium exceedences were used in this determination. The selenium criterion (5.0 mg/L) for Wildlife Habitat was exceeded 7 of 17 times (7/11 at Guaje @ SR-502). Therefore, gross alpha and selenium remain as a cause of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Adjusted gross alpha remains, selenium was removed, and aluminum was added as a cause of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2012 Action: 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). NMED must complete the process detailed in 20.6.4.15 NMAC Subsection C in order to a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. No impairments were determined (n=2). The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Heart Lake
AU:NM-2120.B_70 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Holman Creek (Comanche Creek to headwaters)
AU:NM-2120.A_837 WQS: 20.6.4.123

2008 Action: This AU was surveyed in 2006. The maximum recorded temperature via thermograph was 25.1 degrees C (criterion of 20 degrees C) Therefore, temperature was added as a cause of non support.

2010 Action: There were 0 of 4 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2012 Action: A TMDL for temperature was prepared (2011).

Horseshoe Lake
AU:NM-2120.B_90 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Horseshoe Lake (Alamitos)
AU:NM-2120.B_25 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Italianos Creek (Rio Hondo to headwaters)
AU:NM-2120.A_440 WQS: 20.6.4.123

2016 Action: USFS_NMSU data thermograph data from 2010-2011 indicate full support for temperature (max temp 15.96 degrees C).

Jicarita Creek (Rio Santa Barbara to headwaters)
AU:NM-2120.A_442 WQS: 20.6.4.123

2016 Action: USFS_NMSU data thermograph data from 2010-2011 indicate full support for temperature (max temp 14.8 degrees C).

Jose Vigil Lake
AU:NM-2118.B_20 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Kwage Canyon (Pueblo Canyon to headwaters)

AU:NM-97.A_003 WQS: 20.6.4.98

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. There was only one sampling event for this AU, so the data are considered Not Assessed. There were PCB (wildlife habitat and human health) as well as adjusted gross alpha and radium 226+228 exceedences during this one sampling event, so the IR Category is 3B. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

LaBelle Creek (Comanche Creek to headwaters)
AU:NM-2120.A_839 WQS: 20.6.4.123

2008 Action: This AU was surveyed in 2006. The maximum recorded temperature via thermograph was 26.0 degrees C (criterion of 20 degrees C) Therefore, temperature was added as a cause of non support.

2010 Action: There were 0 of 4 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2012 Action: A TMDL for temperature was prepared (2011).

Latir Creek (Costilla Creek to headwaters)
AU:NM-2120.A_824 WQS: 20.6.4.123

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found. There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no total aluminum data are available to determine exceedences of the applicable hardness-based 2011 NMAC chronic criteria. An AU Comment was added.

Little Costilla Creek (Comanche Creek to headwaters)
AU:NM-2120.A_840 WQS: 20.6.4.123

2014 Action: USFS_NMSU data thermograph data from 2010-2011 continue to indicate full support for temperature (max temp 19.7 degrees C).

Little Tesuque Creek (Rio Tesuque to headwaters)
AU:NM-2118.A_34 WQS: 20.6.4.121

1996 Action: Exceedances of turbidity criterion are documented at all stations. The listing for Cd is not supported. 1/10 (10%) samples on the reach for dissolved cadmium were reported as greater than the chronic screening criteria. This sample did not meet quality control requirements because the dissolved portion exceeded the reported total Cd concentration. Acute exceedences of aluminum were observed at 3 stations. Listed for turbidity and metals (Al and Cd).

1998 Action: The reach is listed on the 1998 303(d) list as Not Supported with aluminum and turbidity as causes of non-support. Cadmium will be removed as a cause of non-support for this reach.

2004 Action: This reach was intensively sampled as part of the URG II survey in 2001. There were 0 of 8 turbidity exceedences at the station above Hyde Park and 0 of 8 turbidity exceedences at the station at the first HWY 475 crossing during the survey. Therefore, turbidity will be removed as a cause of non-support. The acute aluminum standard of 0.77 ug/L was not exceeded during any of the ten sampling events at either station. During the 4-day spring run, the mean of the results (0.138 ug/L) exceeded the chronic criteria of 0.087 ug/L at the station above Hyde Park. The mean of the results (0.5 ug/L) also exceeded the chronic criteria of 0.087 ug/L at the station at the first HWY 475 crossing. Means were calculated and compared against the chronic criterion because consecutive day data were available. Because there was more than one exceedence of the chronic criterion, aluminum will be retained as a cause of non-support. WQS 20.6.4.114 should include a statement regarding "tributaries of the Rio Tesuque below the Santa Fe national forest boundary" so that the assessment unit Little Tesuque Creek (Rio Tesuque to USFS boundary) would fall clearly under this WQS instead of 20.6.4.121 (where it currently resides). Regardless of this proposed WQS change, it will still be listed for aluminum.

2006 Action: A TMDL for aluminum was prepared.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found. There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no total aluminum data are available to determine exceedences of the applicable hardness-based 2011 NMAC chronic criteria. An AU Comment was added.

Los Alamos Canyon (DP Canyon to upper LANL bnd)
AU:NM-9000.A_06B WQS: 20.6.4.128

1996 Action: This AU was previously lumped into "Los Alamos Canyon (within LANL)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, copper, mercury, PCBs (both for human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

Los Alamos Canyon (DP Canyon to upper LANL bnd)
AU:NM-9000.A_063 WQS: 20.6.4.128

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in

the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat), total mercury, and adjusted gross alpha were determined to be causes of non-support in this AU. The PCB acute WQC of 2 ug/L was also exceeded during two sampling events. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Los Alamos Canyon (Los Alamos Rsvr to headwaters)
AU:NM-127.A_00 WQS: 20.6.4.127

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. No impairments were identified. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Los Alamos Canyon (NM-4 to DP Canyon)
AU:NM-9000.A_006 WQS: 20.6.4.128

1996 Action: This AU was previously lumped into "Los Alamos Canyon (within LANL)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, copper, zinc, mercury, PCBs (both for human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Los Alamos Reservoir
AU:NM-9000.B_077 WQS: 20.6.4.127

2002 Action: Marginal coldwater fishery was added as an existing use. In 2000, the Cerro Grande fire within the contributing watershed resulted in debris flows, erosion, and sedimentation that filed Los Alamos reservoir with organic debris, sediments, and potential contaminants adhered to the sediments. Physical and chemical changes resulted. Fish kill was observed. Therefore, this reservoir was listed as Not Supporting for unknown toxicity until further study.

2004 Action: The existing fishery use was changed to Coldwater Fishery.

2006 Action: The WQS was upgraded as a result of the 2005 triennial review. Cause of impairment was changed from "unknown toxicity" to "other."

2008 Action: The Cerro Grande fire (2000) within the contributing watershed resulted in debris flows, erosion, and sedimentation that filed Los Alamos reservoir with organic debris. Sedimentation rates for the contributing watershed have since recovered to pre-fire rates (USFS presentation March 2008). Sediments have been dredged, and inflow into the reservoir has been piped around the reservoir (as of Oct 2007). Therefore, "other" was removed asa cause of impairment. There are current plans (as of March 2008) to re-engineer the dam to comply with new OSE Dam Safety requirements, and to re-vitalize the dam for recreational and water supply (Pajarito Ski Area snow making) uses.

Lost Lake
AU:NM-2120.B_13 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Manzanita Creek (Rio Hondo to headwaters)
AU:NM-2120.A_441 WQS: 20.6.4.123

2016 Action: USFS_NMSU data thermograph data from 2010-2011 indicate full support for temperature (max temp 7.5 degrees C).

Middle Fork Lake
AU:NM-2120.B_55 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Nambe Lake
AU:NM-2118.B_10 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Nat Lake II
AU:NM-9000.B_087 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Nat Lake IV
AU:NM-9000.B_088 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

No Fish Lake
AU:NM-2120.B_65 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

North Fork Tesuque Creek (Tesuque Creek to headwaters)
AU:NM-2118.A_32 WQS: 20.6.4.121

1996 Action: Not on 1996 303(d) list. At two stations from a 1994 survey ratios for total phosphorous were 1/4 and 3/15 (20%). In this survey biological assessments were also conducted. The North Tesuque Creek site was selected as the survey reference site because of its high quality habitat and in-stream characteristics. In this case the biological assessment will override the physical/chemical data.

1998 Action: The reach will be added to the 305(b) list as Full Support, Impacts Observed for total phosphorus.

2008 Action: Name changed from Tesuque Creek (North Fork) to North Fork Tesuque Creek (Tesuque Creek to headwaters).

Pioneer Creek (Red River to headwaters)
AU:NM-2120.A_703 WQS: 20.6.4.123

1996 Action: Previously listed for turbidity, stream bottom deposits, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits and turbidity as the cause of non-support.

2000 Action: Excessive bedload was observed during all visits. Pioneer Creek has been channelized. Its mouth has been moved 1/2 to 1/4 miles downstream (personal communication with local residents in October 1999). This channelization has reduced the stream gradient, greatly increasing the amount of sediment deposition in this part of the

creek. Turbidity criterion was exceeded 4/4 times. Stream bottom deposits and turbidity will be retained as a cause of non-support.

2002 Action: A TMDL was drafted for turbidity as part of the Red River TMDLs. Benthic macroinvertebrate and percent fines data was collected fall of 2001 in order to assess potential stream bottom deposits utilizing the Protocol for the Assessment of Stream Bottom Deposits. The biological condition was 63% of reference and had 54% fines at the sample station. The reference site used for comparison was Columbine Creek. The percent fines observed at this reference site was 4%. According to the protocol, stream bottom deposits will be noted as Full Support, Impacts Observed. A de-list letter was prepared.

2004 Action: Molycorp submitted monitoring data for various stations on Red River and Cabresto Creek. Since no new data was available for Pioneer Creek, the turbidity listing remains.

2006 Action: A TMDL was developed for turbidity. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. An EMAP survey documented 54.3% sand and fines with a LRBS_NOR of -1.61, indicating non support for this Mountain sediment class site. Therefore, sedimentation/siltation was added as a cause of non support. Sonde turbidity data for re-assessment were rejected based on the calibration worksheet so the turbidity listing remains.

Pioneer Lake
AU:NM-2120.B_97 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Placer Creek (Red River to headwaters)
AU:NM-2120.A_706 WQS: 20.6.4.123

1996 Action: Previously listed for stream bottom deposits, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits as the cause of non-support.

2000 Action: The bottom 1/2 mile of this runs parallel to a National Forest Service road and eventually runs down the middle of the road delivering high sediment loads to the Red River. Aluminum criterion was exceeded 4/4 times with an acute level of 1075ug/L. Stream Bottom Deposits will be retained, and Aluminum (acute) will be added as a cause of non-support.

2002 Action: A TMDL was drafted for acute aluminum as part of the Red River TMDLs. Benthic macroinvertebrate and percent fines data was collected fall of 2001 in order to assess potential stream bottom deposits utilizing the Protocol for

the Assessment of Stream Bottom Deposits. The biological condition was 72% of reference and had 28% fines at the sample station. The reference site used for comparison was Columbine Creek. According to the protocol, stream bottom deposits will be noted as Full Support, Impacts Observed. A de-list letter was prepared.

2004 Action: Molycorp submitted monitoring data for various stations on Red River and Cabresto Creek. Since no new data was available for Placer Creek, the listing remains.

2006 Action: A TMDL was developed for Al acute.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. There were 1 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and 1 of 4 exceedences of the applicable hardness-based 2011 NMAC chronic total aluminum criteria. No samples exceeded either the dissolved or total acute aluminum criteria. Therefore, aluminum was removed as a cause of impairment.

Placer Fork (Columbine Creek to headwaters)
AU:NM-2120.A_444 WQS: 20.6.4.123

2016 Action: USFS_NMSU data thermograph data from 2010-2011 indicate full support for temperature (max temp 11.44 degrees C).

Pojoaque River (San Ildefonso bnd to Pojoaque bnd)
AU:NM-2111_20 WQS: 20.6.4.114

1996 Action: Previously listed as "Pojoaque River from mouth on Rio Grande to Nambe Dam" and listed for turbidity, stream bottom deposits and nutrients. There is limited 5-10 year data, 0/6 samples at 2 stations from 1987 are greater than the 50 NTU standard. In the Best Professional Judgment of the Surveillance and Nonpoint staff this stream reach is not impacted by nutrients. There have been no documented cases of algal growth. There are no numeric stream standards for nutrients for this stream classification. Stream bottom deposits and extreme low flow events impact this reach.

1998 Action: This reach will upgraded to Full Support for turbidity and nutrients. The reach will continue to be listed on the 303(d) list as Partially Supported for Stream Bottom Deposits.

2002 Action: Name was revised because previous name included portions of tribal land.

2010 Action: The sedimentation/siltation listing was removed because there were no sedimentation (stream bottom deposit) assessment protocols developed at the time of the historic listing. There are no data to support this listing.

2012 Action: DOE Oversite Bureau submitted blank-corrected PCB data for various waterbodies in the Rio Grande and Rio Chama watersheds The total PCB criterion of 0.64 ng/L for Human Health associated with Aquatic Life Use was exceeded 4 of 5 times. Therefore, PCBs was added as a cause of impairment.

Policarpio Canyon (La Junta Ck to headwaters)
AU:NM-2120.A_443 WQS: 20.6.4.123

2016 Action: USFS_NMSU data thermograph data from 2010-2011 indicate full support for temperature (max temp 16.77 degrees C).

Powderhouse Creek (Costilla Creek to headwaters)
AU:NM-2120.A_832 WQS: 20.6.4.123

2014 Action: USFS_NMSU data thermograph data from 2010-2011 continue to indicate full support for temperature (max temp 18.8 degrees C).

Pueblo Canyon (Acid Canyon to headwaters)
AU:NM-9000.A_043 WQS: 20.6.4.98

1996 Action: This AU was previously lumped into "Pueblo Canyon (NM 502 to headwaters)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, adjusted gross alpha, and PCBs (for both human health and wildlife habitat) were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2012 Action: Application of the SWQB Hydrology Protocol (survey date 6/4/09) indicate this assessment unit is intermittent (Hydrology Protocol score of 16.5 with 4.1% days with no flow at LANL gage E060- see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Pueblo Canyon (Los Alamos Canyon to Los Alamos WWTP)
AU:NM-99.A_001 WQS: 20.6.4.98

1996 Action: This AU was previously lumped into "Pueblo Canyon (NM 502 to headwaters)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Adjusted gross alpha, aluminum, copper, zinc, and PCBs (for both human health and wildlife habitat) were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Pueblo Canyon (Los Alamos WWTP to Acid Canyon)
AU:NM-97.A_006 WQS: 20.6.4.98

1996 Action: This AU was previously lumped into "Pueblo Canyon (NM 502 to headwaters)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Adjusted gross alpha and PCBs (for both human health and wildlife habitat) were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2012 Action: 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). NMED must complete the process detailed in 20.6.4.15 NMAC Subsection C in order to a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat 3/3 so IR Cat 5C) and adjusted gross alpha were determined to be causes of non-support in this AU. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Red River (Placer Creek to headwaters)
AU:NM-2120.A_710 WQS: 20.6.4.123

2000 Action: The exceedence ratio for chronic Al was 8/8 with a mean concentration of 254ug/l. A new listing will be added for metals (Al chronic).

2002 Action: A TMDL was drafted for chronic aluminum as part of the Red River TMDLs.

2004 Action: Molycorp submitted monitoring data for various stations on Red River and Cabresto Creek. There were 0 of 2 exceedences of the dissolved aluminum chronic criterion of 0.1305 ug/L (=1.5 x 0.087 ug/L). Combining the most recent 5 years of available data (1999-2003), there were 8 of 10 total exceedences of the chronic criterion. Therefore, the listing remains. There were no exceedences of the hardness-dependent criteria for chromium, cadmium, copper, nickel, or zinc.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. There were 1 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and 1 of 4 exceedences of the applicable hardness-based 2011 NMAC total aluminum chronic criteria. No samples exceeded either the dissolved or total acute aluminum criteria. A Level 2 nutrient survey documented exceedences of both TP and TN causal thresholds, as well as chlorophyll response thresholds. Therefore, aluminum was removed, and nutrients was added as a cause of impairment.

Red River (Rio Grande to Placer Creek)
AU:NM-2119_10 WQS: 20.6.4.122

1996 Action: Previously listed for metals (Al, Cd, Zn), turbidity, and stream bottom deposits. The cumulative exceedance ratio for chronic Al impacts is 5/51. The chronic Cadmium criterion was exceeded 0/51 times. There have been no acute exceedences of aluminum or cadmium within the last 10 years. The acute Zinc criterion was exceeded 4/9 times on the reach. A March 1996 report by NMED documented high concentrations of aluminum, cadmium, copper, and zinc in groundwater seeps to the Red River (Red River Groundwater Investigation, March 1996). These concentrations exceeded acute criteria and indicated that acute criteria would be exceeded in the Red River. At station URG120.028025, toxicity testing indicated chronic toxicity in a water sample collected on April 15, 1997. A biological survey was conducted in 1992 at eight stations along the Red River. Seven of these stations are in the referenced reach. According to the survey write-up, the stream bottom habitats show a downstream pattern of decline due to channel alteration, loss of vegetation and a reduction of available stream bottom substrate due to mineral deposition. Turbidity is Full Support, Impacts Observed at all stations.

1998 Action: This reach is included on the 1998 303(d) list as Not Supported with metals and stream bottom deposits as the cause of non-support. Turbidity has been dropped as a cause of non-support but will be listed on the 1998 305(b) list as Full Support, Impacts Observed.

2000 Action: Chronic Al criterion was exceeded 24/24 times; Zn criterion was exceeded 0/24 times; Cd criterion was exceeded 0/24 times; and Cu criterion was exceeded 0/24 times. Al will be retained as a cause of non-support at all stations. Zn, Cd, and Cu will be removed as causes of non-support. 9 stations were evaluated for stream bottom deposits; 2 of 9 stations are considered partially supporting. This reach is considered full support, impacts observed for Stream Bed

Deposits and will be added to the 305(b) report as FSIO.

2002 Action: A TMDL was drafted for chronic aluminum as part of the Red River TMDLs.

2004 Action: Molycorp submitted monitoring data for various stations on Red River and Cabresto Creek. Thirty-three stations were sampled along this portion of the Red River in 2002 and 2003. There were 77 of 123 exceedences of the dissolved aluminum chronic screening criterion 0.1305 ug/L (= 1.5 x 0.087 ug/L). Combining the most recent 5 years of available data (1999-2003), there were 101 of 147 (68.7%) total exceedences of the chronic screening criterion. Therefore, the listing remains. There were no exceedences of the hardness-dependent criteria for chromium, cadmium, copper, nickel, or zinc. There were also two chronic water and one chronic sediment toxicity tests (on 10/25/00) with significant effect noted as compared to controls or reference conditions collected between 1999-2003 (see http://www.epa.gov/earth1r6/6wq/ecopro/watershd/monitrng/toxnet/nm.pdf). Additionally, three sites were tested by CEC on 10/25/00 the request of Molycorp. The sites handled by CEC (downstream of Junebug Campground, downstream of Hansen Creek, and Goat Hill Campground) The results of that toxicity testing found significant effects on C. dubia reproduction at the site downstream of Hansen Creek and from Goat Hill Campground for water tests. Significant reproductive effects were also seen for C. dubia at all three sites and P. promelas survival at Junebug Campground for sediment tests. According to the Assessment Protocol, since significant effects were noted in more than one chronic test, both Water Bioassay - Chronic and Sediment Bioassay - Chronic will be added as a cause of non support.

2006 Action: Al acute TMDL was developed.

2008 Action: The chronic water and sediment toxicity test were repeated at a station near the bottom of the assessment unit. Repeat chronic water and sediment toxicity testing was performed on samples collected 9/17/07. After 7 days of exposure to both Ceriodaphnia dubia and Pimephales promelas, there were no significant effects in either test organisms exposed to water collected below the Fish Hatchery at the USGS gage. Therefore, Water Bioassay - Chronic was removed as a cause of non support. There were significant effects to Ceriodaphnia dubia after 7 days of sediment exposure (secondary endpoint of reproduction). There were no significant effects to Pimephales promelas after 7 days of sediment exposure. Also, during revisions to the 2008 Assessment Protocols, significant effects in acute or chronic sediment toxicity test results were removed as potential causes for listing. Therefore, Sediment Bioassay - Chronic was removed as a cause of non support.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. During the most recent triennial review, the New Mexico WQCC adopted a hardness-dependent total aluminum criteria that replaced the aquatic life use dissolved aluminum criteria. EPA Region 6 has taken no action on this change as of this writing (12/15/11). Where available, SWQB assessed available total aluminum data against the WQCC-approved total aluminum criteria to determine impairment status. There were 22 of 30 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and 5 (0 or 1 per nine stations) of 31 exceedences of the applicable hardness-based 2011 NMAC total aluminum chronic criteria. Therefore, aluminum was removed as a cause of impairment.

2014 Action: Sonde turbidity data were assessed. Turbidity remains FS because the SEV numeric thresholds were not exceeded.

Rendija Canyon (Guaje Canyon to headwaters)
AU:NM-9000.A_045 WQS: 20.6.4.98

2002 Action: Selenium was listed as cause of Partial Support because the Wildlife Habitat chronic screening criterion of 7.5 mg/L (5.0 mg/L x 1.5) was exceeded two times in time-weighted composite samples 2000 and 2001. Selenium exceedences were as follows (ug/L): 10.0 and 28.3. Los Alamos National Laboratory collected all data used in these assessments during storm events in 2000 and 2001.

2006 Action: WQS was changed based on 2005 triennial review. Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were assessed. There are no new data to include in the assessment. Selenium remains as a cause of non support.

2008 Action: This AU is likely ephemeral, but EPA has not yet approved 20.6.4.97 and UAAs have not been prepared at the time of this writing (6/4/08). Therefore, this AU will be noted as WQS Reference 20.6.4.98 for now.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. There were no data in the 2004-2008 dataset to support the previous selenium listing. Therefore, selenium was removed as a cause of impairment. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

Rio Chiquito (Picuris Pueblo bnd to headwaters)
AU:NM-2120.A_421 WQS: 20.6.4.123

2004 Action: This stream reach was seasonally sampled during the URG II 2001 survey. There were 2 of 3 exceedences of the turbidity criterion of 25 NTU. Therefore, turbidity will be added as a cause of non support.

2008 Action: The 2004 turbidity listing was based on very limited 2001 grab data. A sonde was deployed for one week in November of 2004. There were 0 of 165 exceedences of hourly readings. The sonde exceedence rate was 0%, with a maximum reading of 12.5 NTU. The combined 2001 grab and 2004 sonde exceedence rate was 1.2%. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2012 Action: This stream reach was not sampled during the 2009 URG survey due to lack of resources and access. The November 2004 sonde turbidity were assessed against the current AP given the 2008 ACTION. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 consecutive hours (max value 12.5). Therefore, this reach is noted as Full Support for Turbidity.

Rio Chupadero (USFS bnd to headwaters)
AU:NM-2118.A_40 WQS: 20.6.4.121

1996 Action: Listed for metals (Al, Ni), turbidity, stream bottom deposits and total phosphorus. Turbidity datum for the last five years have an exceedance ratio of 0/5; the exceedance ratio over the last ten years is 7/27. All exceedances occurred during spring runoff with a maximum value of 30 NTU. The acute Aluminum criterion was exceeded 1/4 times. In 1988 1/1 sample was greater than the chronic criteria for dissolved nickel. Later samples collected in 1991-93 were all below the criteria. Over the last ten years, nickel results have exceeded criterion 1/13 times. Total phosphorus data over the last ten years have exceeded criterion 5/36 times and 0/1 time in the past 5 years. An additional station within 5 years has a ratio of 1/4.

1998 Action: The reach is listed as Not Supported on the 1998 303(d) list with turbidity, Al and stream bottom deposits as the cause of non-support. Nickel will be removed as a cause of non-support based on the most recent data. The reach will be listed as Full Support, Impacts Observed on the 1998 305(b) report with total phosphorus as the cause.

2004 Action: This reach was surveyed as part of the 2001 URGII survey. The Rio Chupadero was sampled just upstream of the Rio en Medio diversion. The reference site was Rio Nambe above Nambe Reservoir. Although there were 43% fines at the Rio Chupadero site, but the benthic score was 81% of reference. Therefore, stream bottom deposits will be removed as a cause of non support. There were 4 of 8 exceedences of the turbidity criterion (10 NTU) at the station "above summer homes" and 1of 8 turbidity exceedences at the station at Borrego Canyon. The tubidity exceedences were minor in magnitude and all but 1 on 10/02/2001 were due to natural causes (ie., spring snowmelt). Benthic macroinvertebrates in this reach do not indicate impairment (81% of reference). Turbidity will remain listed as a cause of non support -- additional data are needed to determine whether exceedences due to natural causes. The acute alumium standard of 0.77 ug/L was not exceeded during any of the sampling events at either station. During the 3-day spring run, the mean of the results (0.218 ug/L) exceeded the chronic criteria of 0.087 ug/L at the station "above summer homes." The mean of the results (0.13 ug/L) also exceeded the chronic criteria of 0.087 ug/L at the station at at Borrego Canyon. Means were calculated and compared against the chronic criterion because consecutive day data were available. Because there was more than one exceedence of the chronic criterion, aluminum will be retained as a cause of non-support. As aluminum is naturally occurring in this area and therefore exceedences were only noted in association with snowmelt runoff, this reach will be categorized in 5B before a TMDL is scheduled.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. There were 0 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no total aluminum data are available to determine exceedences of the applicable hardness-based 2011 NMAC chronic criteria. Therefore, aluminum will be removed as a cause of impairment.

Rio en Medio (non-pueblo lands Pojoaque R to Aspen Ranch)
AU:NM-2118.A_41 WQS: 20.6.4.121

1996 Action: Listed for metals (Al, Cd), turbidity, and total phosphorus. The Cadmium ratio in the last 5 years are 0/7. The ratio for Cd data collected between five and ten years ago data is 1/13. Al exceedance ratio for the last five years is 0/7 and 6/12 for data that is 5-10 years old. Turbidity ratios are 0/7 over the last five years and 6/24 for data collected 5 to 10 years ago. Total phosphorus data collected in the last five years exceeded the criterion 0/6 times and 5/51 times for data 5-10 years old. A biological assessment was conducted on this reach in 1994 and found this station to be Fully Supporting (84%). The HBI for this station was 2.21, which is rated as excellent for organic pollution.

1998 Action: Cadmium and aluminum will be removed as causes of non-support. The reach is Full Support, Impacts Observed for turbidity and total phosphorus. The biological data are sufficient to classify the reach as Full Support.

Rio Fernando de Taos (R Pueblo d Taos to USFS bnd at canyon)
AU:NM-2120.A_512 WQS: 20.6.4.123

1996 Action: This AU was previously lumped into "Rio Fernando de Taos (Rio Pueblo de Taos to Tienditas Creek)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. Amigos Bravos also submitted data for this AU. The maximum thermograph temperature above the confluence with Rio Pueblo de Taos was 25.1 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. A Level 2 nutrient survey documented exceedences of both TP and TN causal thresholds, as well as the chlorophyll response threshold. There were 11 of 29 exceedences of the E. coli criterion of 235 cfu/100 mL, and 14 of 28 exceedences of the stream-specific SC criterion of 500 us/cm. A Level II sedimentation survey documented 68.8% and 57.3% sand & fines with associated LRBS_NOR values of -2.20 and -1.19 at sites abv Rio Pueblo de Taos and Fred Baca Park, respectively, indicating non support for these Foothills sediment class sites. Therefore, temperature and specific conductance remain, and e. coli, nutrients and sedimentation/siltation were added as causes of non support. Benthic macroinvertebrate data also indicate impairment as a response variable.

2014 Action: 2011 grab data submitted by Amigos Bravos for DO, e. coli, SC, pH, and temperature from three sampling events at Fred Baca Park document continued dissolved oxygen (nutrient response variable), e. coli, and SC impairment.

Rio Fernando de Taos (Tienditas Creek to headwaters)
AU:NM-98.A_001 WQS: 20.6.4.123

2006 Action: Previously included under the AU "Rio Fernando de Taos (Rio Pueblo de Taos to headwaters)", this AU split occurred during the 2006 listing cycle at Tienditas Creek near Valle Escondido where the character of the channel appears to become interrupted based on observations made during a 2006 study of the upper reach. This assessment unit break reflects the 20.6.4.123 NMAC standards segment, which applies to "perennial reaches of tributaries to the Rio Grande in Taos and Rio Arriba counties" not included in other standards segments. The SWQB Watershed Protection Section completed a special study of E. coli levels in the upper 3 miles of Rio Fernando de Taos and the Apache Canyon tributary to assess impacts from livestock grazing. The study demonstrated instances when grazing on the Flechado Allotment probably increased E. coli levels in Apache Canyon and this portion of the Rio Fernando de Taos in 2006. There were 1 of 20 exceedences of the applicable E. coli secondary contact criterion of 2507 cfu/100mL. Therefore, this AU is noted as Full Support for secondary contact.

2008 Action: The USFS Carson National Forest in cooperation with SWQB collected E. coli data in 2007 (combined with above 2006 data and assessed for 2008 cycle). There were 0 of 5 exceedences of the 2507 cfu/100mL criterion, for a combined 1 of 25 exceedence rate. Therefore, this AU continues to be noted as Full Support for secondary contact. NOTE (2/13/09): Following the 2005 triennial, EPA took no action regarding the applicability of secondary contact uses in proposed WQS segment 20.6.4.98. EPAs Record of Decision for the approval of the 2008 Integrated List notes that

"...criteria found in § 20.6.4.900 NMAC are the applicable water quality standards since the intermittent water in question is expressly exempted from § 20.6.4.123 NMAC." Accordingly, EPAs Record of Decision states "Data are sufficient to support a conclusion that the Primary Body Contact Use standard is exceeded for the Fernando de Taos, Unclassified Intermittent Waters within the Classified Perennial Waters of the § 20.6.4.123 NMAC." Therefore, this AU is listed as Non Support for primary contact.

2012 Action: NMEDs Hydrology Protocol (http://www.nmenv.state.nm.us/swqb/Hydrology/) was performed at this AU on 5/23/11. The Level 1 survey on the Rio Fernando de Taos at the HWY 64 crossing (28RFerna031.7 = USFS RFDT01) scored 27.25 in the field, indicating perennial according to Table 5 of the Hydrology Protocol (see Appendix A). Supporting information (i.e., stream flow observation) was also considered to make the final determination. USFS Carson National Forest E. coli monitoring report summaries indicate continual flow at this station and there was also surface flow during all SWQB 2009 site visits (see Table 1 in 2012 version of the ROD). Documented flow observations by the USFS and SWQB across various seasons and multiple years also support a perennial determination; therefore, the Level 1 score was not adjusted. A stakeholder with twenty years of experience in this watershed observed that this upper reach of the Rio Fernando de Taos has gone dry during the summer 2011 drought (Jerry Yeargin, personal communication 08/04/11). USFS data submitted during the public comment period also document that the channel was dry during three of four sampling events in 2011. A reduction in the 1.1 Water in the Channel Level 1 indicator score from "Strong" to "Moderate" to reflect this information would still result in a conclusion of perennial for this reach per Table 5 of the Hydrology Protocol (final score 25.25) . Therefore, the conclusion is still perennial. This AU was surveyed during the 2009 Upper Rio Grande study. Amigos Bravos and the USFS also submitted data for this AU. There were 20 of 45 exceedences of the E. coli criterion of 235 cfu/100 mL. Therefore, E. coli remains a cause of non support.

2014 Action: DWS, HQCWAL, IRR, LW, and WH designated uses were changed from Not Assessed to Full Support based on data assessments for the 2012 Integrated List (the only identified impairment was E. coli).

Rio Fernando de Taos (UFSF bnd at canyon to Tienditas Creek)
AU:NM-2120.A_513 WQS: 20.6.4.123

1996 Action: This AU was previously lumped into "Rio Fernando de Taos (Rio Pueblo de Taos to Tienditas Creek)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2012 Action: NMEDs Hydrology Protocol (http://www.nmenv.state.nm.us/swqb/Hydrology/) was performed at two locations in this AU on 5/23/11. The Level 1 survey at Rio Fernando de Taos immediately downstream of the elk exclosure scored 27.5 in the field. Supporting information (i.e., stream flow data) was also considered to make the final determination. The USFS has two sampling stations on Rio Fernando de Taos on the downstream and upstream side of the SWQB sampling location (NMED09 and RFDT03, respectively). Flow observations and USFS Carson National Forest E. coli monitoring report summaries indicate there was no or very minimal flow at these sampling stations during certain times of the year (see Table 1 in 2012 version of the ROD). USFS data submitted during the public comment period also document that the channel was dry during three of four sampling events in 2011. Given that the stream goes dry during certain times of the year, a reduction in the 1.1 Water in the Channel Level 1 indicator score from "Strong" to "Moderate" is warranted to accurately represent flow conditions in this stream. This changed the final score to 25.5, which still indicates a perennial stream reach per Table 5 of the Hydrology Protocol. The Level 1 survey on the Rio Fernando de Taos at Capulin Campground scored 27.5 in the field, indicating perennial according to Table 5 of the Hydrology Protocol.

Flow data are not available for this location. Amigos Bravos and the USFS submitted data for this AU - SWQB did not have any stations in this AU during the 2009 URG study. There were 8 of 46 exceedences of the E. coli criterion of 235 cfu/100 mL. There were 0 of 27 exceedences of the stream-specific SC criterion of 500 us/cm. Therefore, E. coli was listed as a cause of non support.

2014 Action: Combined SWQB, Amigos Bravos, and Taos Pueblo data from May 1, 2008 - 2013 continue to indicate impairment for e. coli (6/26 = 23%). SC remains full support based on this combined data set (2/24 = 8%).

Rio Frijoles (Rio Medio to Pecos Wilderness)
AU:NM-2118.A_60 WQS: 20.6.4.121

1996 Action: Previously listed for total phosphorus, reduction of riparian vegetation and streambank destabilization. All data are from a 1988 survey. For total phosphorus, the exceedence ratio was 1/5, full support, impacts observed.

1998 Action: Previously listed for total phosphorus, reduction of riparian vegetation and streambank destabilization. All data are from a 1988 survey. For total phosphorus, the exceedence ratio was 1/5, full support, impacts observed.

2004 Action: This stream reach was seasonally sampled during the URG II 2001 survey. There were 1 of 3 exceedences (33% exceedence rate) of the turbidity criterion of 10 NTU. A thermograph was deployed. There were no exceedences of the temperature criterion on 20 degrees C. There were no other exceedences of water quality standards. Therefore, cause unknown will be removed as a cause of non support.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found. There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no total aluminum data are available to determine exceedences of the applicable hardness-based 2011 NMAC total aluminum chronic criteria. An AU comment was added.

Rio Grande (Embudo Creek to Rio Pueblo de Taos)
AU:NM-2111_12 WQS: 20.6.4.114

1996 Action: Previously named "Rio Grande from Guaje Canyon to the confluence with the Rio Pueblo de Taos" and listed for metals (Hg and Al), turbidity, temperature, stream bottom deposits and pH. The cumulative ratio of pH exceedances over 7 stations is 7/137, although no single station ratios fall below full support. pH will be removed from the list. For temperature, the cumulative ratio of criterion exceedences at 12 stations is 2/100. Temperature should be removed from the list. Five stations have aluminum data; three of those stations are Full Support, Impacts Observed. Over the last five years the ratios for chronic aluminum at three NMED stations are 1/3, 1/3, and 1/3. Ratios for the two USGS stations are 1/14 and 0/4 for the last five years. Turbidity is not supported at 6 stations. There is a ratio of 2/9 exceedences of mercury greater than detection in data prior to 1989 at USGS station 08276500. The greatest value was 0.2 ug/l. Twelve samples reported for total mercury at this site since 1990 have been less than detection (0.1 ug/l). NMED has collected twenty-five Hg samples in this segment in the last 10 years. All have been reported back as less than detection (0.1 ug/l). The ROD should be modified to show the cumulative ratio of exceedences for mercury is 2/41 in the last 10 years and 0/31 within the last 5 years. USGS samples were collected quarterly and NMED samples were grab samples from various dates. SWQB believes that this is adequate data to support a change in the listing.

1998 Action: As per the assessment protocol, one exceedence of the chronic screening level, aluminum will be listed on the 305(b) list as Full Support, Impacts Observed. The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits.

2002 Action: Name was changed to remove tribal portions. Only a portion of this reach was studied during the 2000 intensive study. Additional sites are included in the 2001 intensive study. During the 2000 study, benthic macroinvertebrates and pebble count data were collected to assess attainment of the narrative stream bottom deposit standard. The station below Rio Pueblo de Taos at the USGS gage was 93% of biological reference condition using the Rio Grande at the CO border as the reference station. There were 45% fines at the reference station and 25% fines at the sample station. The reach starts incising into basalt near this location, resulting in very little geologic sediment input at this station compared to the reference site near the Colorado border. Therefore, stream bottom deposits will be removed as a cause of Non Support.

2004 Action: This assessment unit was split at Embudo Creek based on the results of the 2000 URG 1 and 2001 URG 2 surveys. The URG 2 survey included a station immediately above the confluence with Embudo Creek. There was no exceedence of any criterion at this station.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The turbidity threshold of 23 NTU was exceeded for greater than the allowable duration of 72 consecutive hours (142 hours). Therefore, turbidity was added as a cause of impairment.

Rio Grande (Ohkay Owingeh bnd to Embudo Creek)
AU:NM-2111_10 WQS: 20.6.4.114

1996 Action: This AU was previously lumped into "Rio Grande (non-pueblo Santa Clara to Embudo Creek) " prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: This AU is a result of a split of "Rio Grande (non-pueblo Santa Clara to Embudo Creek)." This newly defined AU remains listed for turbidity, and PCBs in fish tissue because the current advisory extends from Cochiti Reservoir to Embudo Creek.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found. Turbidity re-assessment with sonde data was inconclusive; therefore, the listing remains.

2014 Action: During the 2012 listing cycle, the conclusion that the benthic macroinvertebrate community was impaired due to data collected downstream of Embudo Creek was re-evaluated. This station is not representative of the AU because it is at the very upstream end. In addition, the cause of potential impairment to the benthic macroinvertebrate community (i.e., the response) has been identified as turbidity.

Rio Grande (Red River to CO border)
AU:NM-2119_05 WQS: 20.6.4.122

1996 Action: Previously listed under "Rio Grande from Rio Pueblo de Taos to the NM-CO border" and listed for turbidity, stream bottom deposits and temperature. Only 1/37 (3%) samples collected from four stations in this reach exceeded the temperature criteria. Turbidity was 1/8(13%) at each of the four stations on this reach.

1998 Action: Temperature will be upgraded to Full Support. Turbidity will be listed on the 305(b) report as Full Support, Impacts Observed. The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits.

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive survey. The dissolved oxygen standard (>=6.0 mg/L) was exceeded on 16 May at Station 7 (5.5 mg/L). Seven samples were taken during the 2000 study. The proportion of exceedences was such that this reach is Full Support Impacts Observed for dissolved oxygen. Seven of eight samples (maximum = 9.36) were outside the allowable pH range (6.6-8.8) at Station 7. Thus, this reach is listed as Non Support for pH. Seven of eight samples (maximum = 9.36) were outside the allowable pH range (6.6-8.8) at Station 7. Thus, this reach is listed as Non Support for pH. Benthic macroinvertebrates and pebble count data were collected to assess attainment of the narrative stream bottom deposit standard. Rio Grande at the CO border (Lobotos) was considered to be reference station. Therefore, stream bottom deposits will be removed as a cause of Non Support.

2004 Action: Elevated pH levels are often indicative of nutrient enrichment. The Nutrient Assessment Protocol was not completed in this area, so SWQB does not have adequate data to determine whether nutrient enrichment is occurring. SWQB is in the process of refining our Nutrient Assessment Protocol and determining nutrient criteria. This AU will be studied as part of that effort to determine whether nutrient enrichment is contributing to elevated pH levels in this AU. Therefore, this AU will be listed under Category 5C as needing additional information. TMDL was drafted for temperature (April 2004).

2006 Action: A TMDL was prepared for temperature.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The maximum thermograph temperature at the station above the confluence with Red River was 22.7 degrees C, but the criterion (20 degrees C) was exceeded for > 6 hours for >3 consecutive days. pH sonde data exceeded the upper criteria limit (8.8) in 33.5% of measurements (maximum value 8.99). Therefore, temperature and pH remain listed as causes of non support.

Rio Grande (Rio Pueblo de Taos to Red River)
AU:NM-2119_00 WQS: 20.6.4.122

1996 Action: Previously listed under "Rio Grande from Rio Pueblo de Taos to the NM-CO border" and listed for turbidity, stream bottom deposits and temperature. Only 1/37 (3%) samples collected from four stations in this reach exceeded the temperature criteria. Turbidity was 1/8(13%) at each of the four stations on this reach.

1998 Action: Temperature will be upgraded to Full Support. Turbidity will be listed on the 305(b) report as Full Support, Impacts Observed. The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were determined.

Rio Grande (Santa Clara Pueblo bnd to Ohkay Owingeh bnd)
AU:NM-2111_11 WQS: 20.6.4.114

1996 Action: This AU was previously lumped into "Rio Grande (non-pueblo Santa Clara to Embudo Creek) " prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: This AU is a result of a split of "Rio Grande (non-pueblo Santa Clara to Embudo Creek)." This newly defined AU remains listed for turbidity, and PCBs in fish tissue because the current advisory extends from Cochiti Reservoir to Embudo Creek.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found. There were no sonde data available to re-assess for turbidity; therefore, the listing remains.

Rio Grande del Rancho (Rio Pueblo de Taos to HWY 518)
AU:NM-2120.A_501 WQS: 20.6.4.123

1996 Action: New listing for conductivity turbidity, and stream bottom deposits. There are no ten-year data for turbidity or conductivity. Going back to 1986 there are four data points for conductivity. There are no exceedences of the criteria. Conductivity is fully supporting. There are three data points for turbidity from 1986-87. All values are less than the criteria, the maximum value is 6.2 and the mean value is 2.3 NTU.

1998 Action: Turbidity and conductivity are removed from the 1998 303(d) list as causes of non-support. This reach is listed as Partially Supported on the 303(d) list with stream bottom deposits as the cause.

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality survey. The conductivity criterion (400 mS/cm) was exceeded every time it was sampled at Station 21 (maximum = 710 mS/cm). Thus, this water body is in Non Support for the conductivity standard. One exceedence (210/100 mL) of the fecal coliform criterion (200/100 mL) was detected on 01 August at Station 21. Thus this reach will be listed as Full Support Impacts Observed for the fecal coliform standard. Benthic macroinvertebrates and pebble count data were collected to assess attainment of the narrative stream bottom deposit standard. The sampling station at the USGS gage was 71% of biological reference condition using Rio Hondo a t the USGS gage as the reference station. There were 7 % fines measured at the reference station and there were 33% fines documented at the sampling station. During the analyses, SWQB also compared percent fines at the C4 sampling station to the average percent fines of 16.5 at this Rosgen classification of stream. Therefore, stream bottom deposits will be removed as a cause of Non Support.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The maximum thermograph temperatures at the gage near Talpa and above the confluence with Rio Pueblo de Taos were 23.4 and 28.6 degrees C, respectively, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days in both data sets. A Level 2 nutrient survey documented exceedences of both TP and TN causal thresholds, as well as the chlorophyll response threshold. There were 12 of 13 exceedences of the stream-specific SC criterion of 300 us/cm. Therefore, specific conductance remains, and temperature and nutrients were added as causes of non support.

2014 Action: Data collected and submitted by Taos Pueblo documented 3/23 exceedences of the applicable e. coli criteria. Therefore, e. coli was added as a cause of impairment.

Rio Hondo (Rio Grande to USFS bnd)
AU:NM-2120.A_600 WQS: 20.6.4.129

1996 Action: Previously listed for temperature, pH, total ammonia, and stream bottom deposits. The cumulative ratio of temperature over the last ten years is 0/74. The cumulative ratio of pH measurements over the last ten years is 0/73. The cumulative ratio of measurements for total ammonia over the past ten years is 0/78. The stream bottom deposits listing was for runoff from the ski area parking lot. BMPs have been put into place and the biological score for the station located immediately below the parking lot in a 1992 survey was 83% of the reference score. Stream bottom deposits should be removed as a cause of nonsupport. The nutrient listing is limited to one station, HON8, which is immediately below the WWTP. The biological assessment shows a high nutrient index at this station.

1998 Action: All previously listed parameters have been removed as causes of non-support. This reach has been removed from the 1998 303(d) list.

2002 Action: One value for pH (8.92) on 19 October at Station 28 was outside the allowable range (6.6-8.8). However, the proportion of exceedences was such that this reach is listed as Full Support Impacts Observed for pH. The temperature criterion (20°C) was exceeded twice at Station 28 (21.7°C on 31 July; 21.9°C on 01 August). Thus, this water body is in Partial Support of the temperature standard. A thermograph will need to be deployed to verify this listing and to generate data for temperature TMDLs if needed.

2006 Action: A TMDL was developed for temperature. WQS was changed to 20.6.4.129.

2010 Action: Amigos Bravos submitted data for assessment. The only E. coli data that met SWQB QA/QC requirements for assessment according to a review by the SWQB QA Officer were from 12/3/07 and 3/10/08 because these data met the required holding time according to the submitted sampling plan. There were 0 of 10 exceedences of the 235 cfu/100mL criterion for E. coli for data that met the required holding time. Therefore, E. coli is noted as Full Support.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The maximum thermograph temperature at the station above the confluence with Rio Grande was 23.2 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. Amigos Bravos and SWQB e. coli data were combined and assessed. There were 3 of 59 exceedences of the 235 cfu/100 mL criterion. Therefore, e. coli remains full support, and temperature remains listed. HQCWAL may not be attainable in this reach given the elevation and topography.

2014 Action: 2011 grab data submitted by Amigos Bravos for DO, e. coli, SC, pH, and temperature from three sampling events do not document any exceedences of applicable WQC.

Rio Hondo (South Fork Rio Hondo to Lake Fork Creek)
AU:NM-2120.A_602 WQS: 20.6.4.129

2006 Action: The WQS was changed from 20.6.4.123 to 20.6.4.129. A waste load allocation for nutrients was previously completed for the Rio Hondo in 1981. Recent 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 SWQ 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.

2010 Action: Amigos Bravos submitted data for assessment. The only E. coli data that met SWQB QA/QC requirements for assessment according to a review by the SWQB QA Officer were from 12/3/07 and 3/10/08 because these data met the required holding time according to the submitted sampling plan. There were 0 of 2 exceedences of the 235 cfu/100mL criterion for E. coli at two stations for data that met the required holding time. Therefore, E. coli is noted as Not Assessed.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found.

Rio Hondo (USFS bnd to South Fork Rio Hondo)
AU:NM-2120.A_601 WQS: 20.6.4.129

2014 Action: 2011 grab data submitted by Amigos Bravos for ammonia, DO, e. coli, SC, pH, and temperature from three sampling events do not document any exceedences of applicable WQC.

Rio Medio (Rio Frijoles to headwaters)
AU:NM-2118.A_53 WQS: 20.6.4.121

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found. There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no total aluminum data are available to determine exceedences of the applicable hardness-based 2011 NMAC total aluminum chronic criteria. An AU comment was added.

Rio Pueblo (Picuris Pueblo bnd to headwaters)
AU:NM-2120.A_410 WQS: 20.6.4.123

1996 Action: Previously listed for turbidity, nutrients and stream bottom deposits. This station was monitored as part of a 1994 Intensive Stream Survey. The aggregated ratio of exceedences for turbidity within the last five years is 1/44 and 0/12 in the 5-10 year interval. A biological assessment was conducted on this reach in 1994. The biological assessment found one station (RP050) to be Full Support, Impacts Observed (78% of reference), while another station (RP25) was partial support (68% of reference) for the fishery use. The Hilsenhoff Biotic Index for both of these sites indicated that nutrient enrichment was not a problem (2.56 for RP050 and 2.17 for RP25). The ROD will be revised to reflect this information. This reach will continue to be listed as Partially Supporting with stream bottom deposits as the cause of non-support.

1998 Action: Turbidity and nutrients have been removed as a source of non-support for this reach. The reach is included as Partially Supported in the 1998 303(d) report with stream bottom deposits as the cause. Rename this reach

from Rio Pueblo from the confluence with the Rio Santa Barbara to headwaters to the above name.

2004 Action: This stream reach was intensively surveyed during the URGII 2001 survey. Benthic macroinvertebrates bioassessments and concurrent pebble counts were performed at three locations and compared against the Rio Santa Barbara at the Santa Barbara Campground: Rio Pueblo @ HWY 75 near the confl (62% of ref bio score with 12% fines), Rio Pueblo @ HWY 75/518 near gage (68% of ref bio score with 8% fines), and Rio Pueblo near Flechado Campground (90% of ref bio score with no fines data - all cobble). Therefore, stream bottom deposits will be removed as a cause of non support and benthic macroinvertebrate bioassessments will be added as a cause of non support.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. A Level 2 nutrient survey documented exceedences of both TP and TN causal thresholds, as well as the chlorophyll response threshold. The M-SCI score was 76.0. Therefore, benthic macroinvertebrates was removed, and nutrients was added as causes of non support.

Rio Pueblo de Taos (Arroyo del Alamo to R Grande del Rancho)
AU:NM-2119_30 WQS: 20.6.4.122

1996 Action: Previously listed under "Rio Pueblo de Taos from the mouth on the Rio Grande to Rio Grande del Rancho" and previously listed for temperature, total ammonia, chlorine, and fecal coliform. Temperature is partially supporting at a single station with a criterion exceedance ratio of 2/10; all other stations show no exceedences. For total ammonia, all stations are fully supporting with the exception of station URG119.23515 (5/11) which is not supporting. For fecal coliform, station URG119.023510 (1/1) is full supporting, impacts observed. Station URG119.023525 (2/2) is partially supporting for fecal coliform. Aluminum should be added as Full Support, Impacts Observed at stations URG119.023505 (1/1) and URG119.23525 (1/1) for the chronic screening criteria. Chlorine was removed because the only identified source of chlorine on the reach was the Taos WWTP. SWQB has no ambient chlorine data. The Taos plant has gone to UV disinfection and no longer uses chlorine.

1998 Action: Chlorine has been removed as a cause of non-support. The 1998 303(d) list continues to show this reach as Partially Supported with temperature, total ammonia, and fecal coliform as causes of non-support.

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality survey. The previously listed reach was split into two assessment units. Thermograph data from Station 15 indicate non-support of the temperature standard for this water body, as instantaneous temperature readings exceeded 23°C (maximum = 28.26°C) and temperature exceeded 20°C for more than six consecutive hours in a 24-hour cycle for more than three (maximum interval = 48) consecutive days. Therefore, this reach will be listed Non Support for temperature. The fecal coliform criterion (200/100 mL) was exceeded (310/100 mL) on 30 October at Station 15. Six total fecal coliform samples were taken during the 2000 study. Because there were fewer than seven samples, the number of exceedences was such that this reach is Full Support Impacts Observed for fecal coliform. There were 0 of 16 ammonia exceedences. Therefore, total ammonia will be removed as a cause of Non Support. Benthic macroinvertebrates and pebble count data were collected to assess attainment of the narrative stream bottom deposit standard. The sampling station below the Taos WWTP was 43% of biological reference condition using Rio Hondo as the reference station. There were 85% fines documented at the sampling station. Combined geomorphologic and benthic macroinvertebrate data from this reach indicate Partial Support for stream bottom deposits due to sediment inputs observed from 1998 through 2000.

2004 Action: TMDL drafted for SBD and temperature.

2006 Action: TMDLs for sedimentation/siltation (SBD) and temperature.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. A Level II sedimentation survey documented 49.0% sand and fines with a LRBS_NOR value of -1.15, indicating full support for this Foothills sediment class site. The maximum thermograph temperature was 26.9 degrees C, and the criterion (20 degrees C) was exceeded for > 6 hours for >3 consecutive days. A Level 2 nutrient survey documented exceedences of both TP and TN causal thresholds, as well as chlorophyll, DO, and pH response thresholds. Sonde data used in the nutrient assessment for station RPM5 (= USGS gage 08276300 below Los Cordovas) were submitted by Taos Pueblo. Amigos Bravos (site PS1) and SWQB e. coli data were combined and assessed. There were 1 of 8 exceedences of the 235 cfu/100 mL criterion. Therefore, e. coli and sedimentation/siltation are both full support, temperature remains listed, and nutrients was added as a cause of non support.

2014 Action: Data submitted by Taos Pueblo and Amigos Bravos indicate FS for e.coli (2/76 exceedences).

Rio Pueblo de Taos (R Grande del Rancho to Taos Pueblo bnd)
AU:NM-2120.A_511 WQS: 20.6.4.123

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality survey. The conductivity criterion (400 mS/cm) was exceeded for seven of eight samples (maximum = 490.3 mS/cm) at Station 22. Thus, this reach is listed as Non Support for conductivity. Thermograph data from Station 27 indicate non-support of the temperature standard for this water body, as instantaneous temperature readings exceeded 23°C (maximum = 27.23°C) and temperature exceeded 20°C for more than six consecutive hours in a 24-hour cycle for more than three (maximum interval = 11) consecutive days. Therefore, this reach is listed as Non Support for temperature. The fecal coliform criterion (200/100 mL) was exceeded (270/100 mL) on 30 October at Station 22. Two total fecal coliform samples were taken during the 2000 study. Because there were fewer than seven samples, the number of exceedences was such that this reach is in Full Support Impacts Observed for fecal coliform.

2006 Action: The name was changed to indicate tribal jurisdiction. A TMDL was prepared for temperature.

2010 Action: Amigos Bravos submitted data for assessment. The only E. coli data that met SWQB QA/QC requirements for assessment according to a review by the SWQB QA Officer were from 12/3/07 and 3/10/08 because these data met the required holding time according to the submitted sampling plan. There were 0 of 9 exceedences of the 235 cfu/100mL criterion for E. coli for data that met the required holding time. Therefore, E. coli is noted as Full Support.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. A Level I sedimentation survey documented 20.0% sand and fines, indicating full support for this Foothills sediment class site. The maximum thermograph temperature was 25.6 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. A Level 2 nutrient survey documented exceedences in the TN causal threshold, and no response thresholds. Sonde data used in the nutrient assessment for station RPM8 (= at HWY 240 immediately upstream of Rio Grande del Rancho) submitted by Taos Pueblo are in agreement with SWQB sonde data. Amigos Bravos and SWQB e.

coli and specific conductance data were combined and assessed. There were 9 of 45 exceedences of the 235 cfu/100 mL criterion for e. coil, and 1 of 43 exceedences of the 400 us/ criterion for specific conductance. Therefore, nutrients are full support, temperature remains, specific conductance was removed, and e. coli was added as a cause of non support.

2014 Action: Combined SWQB, Amigos Bravos, and Taos Pueblo data from May 1, 2008 - 2013 continue to indicate impairment for e. coli (10/88 = 11.4%).

Rio Pueblo de Taos (Rio Grande to Arroyo del Alamo)
AU:NM-2119_20 WQS: 20.6.4.122

1996 Action: Previously listed under "Rio Pueblo de Taos from the mouth on the Rio Grande to Rio Grande del Rancho" and previously listed for temperature, total ammonia, chlorine, and fecal coliform. Temperature is partially supporting at one station with a criterion exceedance ratio of 2/10; all other stations show no exceedences. For total ammonia, one station is not supporting (5/11); all others are fully supporting. For fecal coliform, station URG119.023510 (1/1) is full supporting, impacts observed. Station URG119.023525 (2/2) is partially supporting for fecal coliform. Aluminum should be added as Full Support, Impacts Observed at stations URG119.023505 (1/1) and URG119.23525 (1/1) for the chronic screening criteria. Chlorine was removed because the only identified source of chlorine on the reach was the Taos WWTP. SWQBhave no ambient chlorine data. The Taos plant has gone to UV disinfection and no longer uses chlorine.

1998 Action: Chlorine has been removed as a cause of non-support. The 1998 303(d) list continues to show this reach as Partially Supported with temperature, total ammonia, and fecal coliform as causes of non-support.

2002 Action: This reach was sampled during the 2000 Upper Rio Grande 1 intensive water quality survey. The previously listed reach was split into two. Thermograph data from Station 14 indicate non-support of the temperature standard for this water body, as instantaneous temperature readings exceeded 23°C (maximum = 25.06°C) and temperature exceeded 20°C for more than six consecutive hours in a 24-hour cycle for more than three (maximum interval = 38) consecutive days. Therefore, this reach will be listed as Non Support for temperature. The turbidity criterion (50 NTU) was exceeded (55.8 NTU) on 18 October at Station 14. The proportion of exceedences was such that this water body is in full support of the turbidity standard, but impacts have been observed that warrant close attention during future surveys. Combined geomorphologic and benthic macroinvertebrate data from this water body indicate full support for stream bottom deposits. Biological condition was 100% of the reference condition at Red River below the Fish Hatchery. There were 17% fines at the reference station and 16% fines at the sampling station, resulting in a 0% increase in fines. There were 0 of 3 fecal coliform exceedences leading to a listing of Full Support. There were 0 of 14 total ammonia exceedences. Therefore, total ammonia will be removed as a cause to Non Support.

2006 Action: A TMDL was prepared for temperature.

2010 Action: Amigos Bravos submitted data for assessment. The only E. coli data that met SWQB QA/QC requirements for assessment according to a review by the SWQB QA Officer were from 12/3/07 and 3/10/08 because these data met the required holding time according to the submitted sampling plan. There were 0 of 2 exceedences of the 235 cfu/100mL criterion for E. coli for data that met the required holding time. Therefore, E. coli is noted as Full Support.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The maximum thermograph temperature was 24.4 degrees C, and the criterion (20 degrees C) was exceeded for > 6 hours for >3 consecutive days. A Level 2 nutrient survey documented exceedences of both TP and TN causal thresholds, as well as the pH grab data response threshold (no sonde data are available). Amigos Bravos and SWQB e. coli data were combined and assessed. There were 2 of 21 (9.5%) exceedences of the 235 cfu/100 mL criterion. Therefore, e. coli remains full support, temperature remains listed, and nutrients (5C) was added as a cause of non support.

2014 Action: Sonde data collected September 2012 show exceedences of the pH nutrient response variable. Combined SWQB and Amigos Bravos data from May 1, 2008-2013 indicate FS for e. coli (0/14 exceedences).

Rio Quemado (Santa Cruz River to Rio Arriba Cnty bnd)
AU:NM-2118.A_52 WQS: 20.6.4.121

2004 Action: This reach was sampled seasonally only during the 2001 URGII survey. There were 2 of 3 turbidity exceedences. Therefore, turbidity will be added as a cause of non support. This reach will be placed in 5C because the turbidity exceedences were likely due to natural causes (i.e., snowmelt runoff and summer thunderstorms) and additional data are needed.

2008 Action: The 2004 turbidity listing was based on very limited 2001 grab data. A sonde was deployed for one week in November of 2004. There were 6 of 216 exceedences of hourly readings. These exceedences were likely due to the fact that there was a private driveway that crossed the stream immediately upstream of the sonde deployment location. The sonde exceedence rate was 2.8%. The combined 2001 grab and 2004 sonde exceedence rate was 3.6%. Therefore, turbidity was removed as a cause of non support.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. There were 2 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no total aluminum data are available to determine exceedences of the applicable hardness-based 2011 NMAC chronic criteria. An AU comment was added. There were 2 of 4 exceedences of the 235 cfu/100 mL e. coli criterion. Therefore, e. coli was added as a cause of non support.

Rio Santa Barbara (non-pueblo Embudo Ck to USFS bnd)
AU:NM-2120.A_419 WQS: 20.6.4.123

1996 Action: Listed for stream bottom deposits and metals (Al). At station URG120.022025 there was 1/3 exceedences of the chronic screening criteria for aluminum within the last five years.

1998 Action: Aluminum has been removed as a cause of non-support for this reach but will be listed on the 1998 (305) list as Full Support, Impacts Observed. This reach is listed as Partially Supported on the 303(d) list with stream bottom deposits as the cause.

2004 Action: This reach was sampled during the 2001 URGII survey. There were 2 of 7 turbidity exceedences. Benthic macroinvertebrate sampling and pebble counts were completed at the station above the Rio del Pueblo and compared to a reference station (Rio Santa Barbara @ gage @ campground). The biological score was 71% of reference with 5% fines. Therefore, stream bottom deposits will be removed, and turbidity and benthic macroinvertebrate bioassessment will

be added as a cause of non support. Both of the turbidity exceedences were minor (36 and 37 NTUs compared to the criterion on 25 NTUs) and occurred following a summer storm. Additional data are needed to determine if turbidity exceedences were due to natural causes.

2006 Action: A TMDL for turbidity was developed. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2010 Action: Previously named "Rio Santa Barbara (Picuris Pueblo bnd to USFS bnd)," the name was changed and endpoint moved downstream to include private inholdings within the exterior boundary of Picuris Pueblo.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. The maximum thermograph temperature was 25.1 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other turbidity-allowable duration thresholds were exceeded. There are no new benthic macroinvertebrate data. Therefore, turbidity was removed, and temperature was added as a cause of non support. Benthic macroinvertebrates impairment may be a response to elevated temperatures.

2014 Action: Picuris Pueblo is downstream of this assessment unit and has turbidity WQC for this watercourse. SWQB has reviewed the sonde data, and continues to believe that this AU should be noted as full support for turbidity because the temporal pattern of the 15 of 168 exceedences of Picuris WQC of 10 NTU indicate very short term elevated turbidity with quick recovery (<2 hours) to values well below the WQC. There were 3 of 8 exceedences (37%) of the primary contact E. coli WQC of 235 cfu/100 mL during the 2009 survey. Therefore, E. coli was added as a cause of impairment. This administrative error was caught before development of the URG E. coli TMDL bundle. A TMDL was developed in 2012. The benthic macroinvertebrates response variable was removed as a cause of impairment.

Rio Tesuque (Tesuque Pueblo to Tesuque Creek)
AU:NM-2111_31 WQS: 20.6.4.114

1996 Action: Previously named Tesuque Creek (Tesuque Pueblo to Little Tesuque Creek) listed for turbidity, temperature, dissolved oxygen and fecal coliform. There is only one sample station on this segment, URG111.003305. All data are from a 1994 survey. For turbidity, 0/9 samples exceeded the criteria. For temperature, 1/9 (11%) exceeded the criteria. For dissolved oxygen, 0/9 samples exceeded the criteria. For fecal coliform, 0/3 samples exceeded the criteria.

1998 Action: Turbidity, dissolved oxygen, and fecal coliform will be upgraded to Full Support and removed as causes of non-support. The reach will be listed as Full Support, Impacts Observed on the 1998 305(b) list for temperature.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found.

San Cristobal Creek (Rio Grande to headwaters)
AU:NM-2120.A_680 WQS: 20.6.4.123

2014 Action: USFS_NMSU data thermograph data from 2010-2011 continue to indicate full support for temperature (max temp 14.3 degrees C).

San Leonardo Lake
AU:NM-2120.B_14 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Santa Cruz Lake
AU:NM-2118.B_00 WQS: 20.6.4.121

2012 Action: This lake was sampled in 2009. There were 2 of 6 temperature exceedences. Therefore, temperature was added as a cause of impairment.

Santa Cruz River (San Clara Pueblo bnd to Santa Cruz Dam)
AU:NM-2111_50 WQS: 20.6.4.114

1996 Action: Previously listed for stream bottom deposits and turbidity.

1998 Action: The reach will continue to be listed as Not Supported for Stream bottom deposits, turbidity and total phosphorus.

2000 Action: The Santa Cruz River from the mouth on the Rio Grande to Santa Cruz Dam was removed from the draft 303(d) list believing that the entire reach was on Santa Clara Pueblo land. New information shows that all but the lower two miles are on private or BLM land. The Santa Cruz River will be put back on the list with all but the lower two miles as the impaired reach. The mileage will be adjusted on this reach of the Santa Cruz River to reflect the change. There is no longer a water quality standard for total phosphorus for the designated use of high quality coldwater fishery. Therefore, total phosphorus was removed as a cause of impairment. Total phosphorus concentrations will be measured during the Upper Rio Grande Part 2 (2001) intensive study to verify the de-listing.

2002 Action: The name was revised to remove tribal portions. Ten total phosphorus measurements were taken during the 2001 intensive study. Six of these were below the detection limit. Detected concentrations ranged from 0.038 to 0.087 mg/L.

2004 Action: Name was revised with correct pueblo boundary. This reach was intensively sampled during the 2001 URGII survey. There were 0 of 8 turbidity exceedences. Benthic macroinvertebrates and concurrent pebble count was not collected during the 2001 survey, so there is insufficient data to determine stream bottom impairment according to our current protocol. Therefore, turbidity will be removed, and stream bottom deposits will remain as causes of non support. This AU will be categorized as 5C because biological data are needed to verify impairment due to sedimentation.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. A Level I sedimentation survey documented 34.3% sand and fines, indicating full support for this Xeric sediment class site. The maximum thermograph temperatures were 31.2 and 30.9 degrees C at stations abv Cuarteles diversion and @ Cuarteles, respectively, and the segment-specific 6T3 criterion (22 degrees C) was exceeded for > 6 hours for >3 consecutive days at both sites. There were 3 of 4 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no total aluminum data are available to determine exceedences of the applicable hardness-based 2011 NMAC chronic criteria. An AU comment was added. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other turbidity-allowable duration thresholds were exceeded. There were 3 of 5exceedences of the 235 cfu/100 mL e. coli criterion. Therefore, sedimentation/siltation was removed, and temperature and e. coli were added as causes of impairment.

Serpent Lake
AU:NM-2120.B_95 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

South Fork Acid Canyon (Acid Canyon to headwaters)
AU:NM-97.A_029 WQS: 20.6.4.98

2014 Action: Previously included under "Acid Canyon (Pueblo Canyon to headwaters)," a separate assessment unit was created for this tributary because available data led to different assessment conclusions. All available 2004 - 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. Dissolved copper (acute), dissolved zinc (acute), PCBs (human health and wildlife habitat), and adjusted gross alpha were determined to be causes of non-support in this AU. The associated impairment listings were revised according to this re-assessment. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

South Fork Lake
AU:NM-2120.B_58 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

South Fork Tesuque Creek (Tesuque Creek to headwaters)
AU:NM-2118.A_33 WQS: 20.6.4.121

1996 Action: Listed for metals (Al) and total phosphorus. The ratio of total phosphorus samples greater than the criteria is 1/10 (10%) for 5-10 year data. 1/3 samples collected in the last five years exceeded the chronic screening criteria for dissolved aluminum. In this reach 1/3 samples collected at various times in 1994 exceeded the chronic screening level for

aluminum. A biological assessment was conducted on this reach in 1994. The assessment found the station to be 100% of the reference condition.

1998 Action: This reach will be listed on the 1998 305(b) list as Full Support, Impacts Observed for total phosphorous and dissolved aluminum.

2008 Action: Name changed from Tesuque Creek (South Fork) to South Fork Tesuque Creek (Tesuque Creek to headwaters).

Tesuque Creek (Rio Tesuque to confl of forks)
AU:NM-2118.A_31 WQS: 20.6.4.121

1996 Action: This reach was not listed on the 1996 list. Station URG118.003405 is not supported, 3/9 (33%) for turbidity. Station URG118.003441 is full support.

1998 Action: The reach will be listed on the 1998 303(d) list as Not Supporting for turbidity. Rename this reach from Tesuque Creek at its confluence with Little Tesuque Creek to the above reach

2004 Action: Previously named Tesuque Creek (Little Tesuque Creek to confl of forks). This reach was surveyed as part of the 2001 URG II survey. There were 3 of 8 exceedences of the turbidity criterion (10 NTU) and 5 of 8 exceedences of the specific conductance criterion (300 umhmos) at the station across from the Tesuque Post office, and 2 of 8 turbidity exceedences and 0 of 8 specific conductance exceedences at the station near Bishops Lodge. Therefore, turbidity will be remain a cause of non support and specific conductance will be added as a cause of non support. This assessment unit will be listed in category 5b because the tubidity exceedences were minor in magnitude and likely due to natural causes (ie., spring snowmelt).

2008 Action: This AU was assessed incorrectly for the 2004 list. The station across from the Tesuque Post office is not in this assessment unit. There were 0 of 8 specific conductance exceedences at the station near Bishops Lodge. The original turbidity listing was based on limited 2001 grab data. A sonde was deployed for one week in November of 2004. There were 2 of 212 exceedences of hourly readings. The sonde exceedence rate was 0.9%. The combined 2001 grab and 2004 sonde exceedence rate was 1.8%. Therefore, both the specific conductance and turbidity listings were removed.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found. 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).

Trampas Lake (East)
AU:NM-2120.B_86 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Trampas Lake (West)
AU:NM-2120.B_85 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Unnamed Arroyo (Rio Pueblo de Taos to Taos WWTP)
AU:NM-99.A_005 WQS: 20.6.4.99

2012 Action: This perennial effluent channel was surveyed for e. coli, nutrients, and ammonia during the 2009 Upper Rio Grande study. It was also sampled two times in 2011 in response to a fish kill, and one e. coli data point was submitted by Amigos Bravos. There were 0 of 11exceedences of the 940 cfu/100 mL e. coli criterion. There were 2 of 10 and 5 of 10 exceedences of the acute and chronic pH and temperature dependent total ammonia criteria, respectively. A Level 2 nutrient survey documented exceedences of both TP and TN causal thresholds, as well as the chlorophyll and DO saturation grab data response thresholds (no sonde data are available). Therefore, ammonia and nutrients were added as causes of impairment.

2014 Action: Additional 2011 data submitted by Amigos Bravos continue to indicate impairment. The new Town of Taos WWTP came online in 2012 incorporating the aeration lagoons from the old plant with a Membrane Bio Reactor (MBR) system. The facility also uses Ultra Violet Disinfection. According to the NPDES permit (NM0024066), the WWTP is required to monitor for various pollutants, including total nitrogen, total phosphorus, ammonia, and e. coli

Ute Creek (Costilla Creek to headwaters)
AU:NM-2120.A_821 WQS: 20.6.4.123

1996 Action: Not previously listed. Samples collected in 1987 show a 1/4 ratio of exceedences of the total phosphorus criteria.

1998 Action: This stream reach will be listed as Full Support, Impacts Observed for total phosphorus on the 1998 305(b) list.

2012 Action: This AU was surveyed during the 2009 Upper Rio Grande study. No impairments were found.

Vidal Creek (Comanche Creek to headwaters)
AU:NM-2120.A_841 WQS: 20.6.4.123

2014 Action: USFS_NMSU data thermograph data from 2010-2011 indicate temperature impairment (max temp 23.2 degrees C).

Walnut Canyon (Pueblo Canyon to headwaters)
AU:NM-97.A_004 WQS: 20.6.4.98

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. PCBs (for human health) were determined to be a cause of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health, 2/2 = IR Cat 5C) and acute dissolved copper (2/2 = IR Cat 5C) based on 2007 data were determined to be causes of non-support in this AU. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

West Fk Rio Santa Barbara (R Santa Barbara to headwaters)
AU:NM-2120.A_422 WQS: 20.6.4.123

2014 Action: USFS_NMSU data thermograph data from 2010-2011 indicate full support for temperature (max temp 15.8 degrees C).

Williams Lake
AU:NM-2120.B_75 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

HUC: 13020102 - Rio Chama

Abiquiu Creek (Rio Chama to headwaters)
AU:NM-2113_50 WQS: 20.6.4.116

1996 Action: New listing for stream bottom deposits and plant nutrients. SWQBwere unable to find documentation to support these listings.

1998 Action: The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits and plant nutrients.

2000 Action: One station was evaluated for stream bottom deposits. The reach had 87% fines <2mm (NS). According to the Assessment Protocol, this reach is considered not supporting its designated use. Plant nutrients will remain listed as a cause of non-support. The cumulative exceedence ratio of the DO criterion is 2/8; The standard is 6.0mg/l, so the reach is partially supporting. The cumulative exceedance ratio of the fecal coliform criterion is 1/3; the standard is 2000 cfu/100mL.

Stream bottom deposits and plant nutrients will be retained, and DO will be added to the reach as causes of non-support. Fecal coliform will be added to the 305(b) report as FSIO.

2004 Action: In order to provide more information for the nutrient assessment protocol, SWQB staff attempted to assess Abiquiu Creek for nutrient impairment in June 2002, but the creek was dry. Staff revisited Abiquiu Creek on July 24th 2002 when there was water flowing in the stream. Level I and Level II assessments were done on this reach of Abiquiu Creek. This survey was conducted during a fairly high flow event, which may have been caused from recent rainstorm events. On July 24, 2002 a data-collecting sonde multi-parameter water analysis probe was also deployed in Abiquiu Creek and programmed to record temperature, DO, conductivity, and pH every fifteen minutes for one full day. Samples for nutrients and major ions, including TDS were also collected, as well as water samples for an algal bioassay. Photodocumentation was also utilized to document visual observations such as riparian condition. Macroinvertebrates using EPAs Rapid Bioassessment Protocols. Results There were no exceedances of nutrient related criteria such as total phosphorus, nitrogen, and pH during this sampling survey on July 24, 2002. Lower than standard levels (< 6.0 mg/L) of dissolved oxygen were found in Abiquiu Creek during summer 1999 and 2002 sampling. High levels of DO were not recorded, and do not indicate high plant productivity levels. The algal bioassay determined that algal productivity on this reach is moderate. The reach was determined to be nitrogen limited. It appeared that productivity is not a problem on Abiquiu Creek. Results from the macroinvertebrate bioassessment survey in July 2002 indicate good water quality conditions. The HBI (Hilsenhoff biotic index) from the July 2002 samples at the Hwy 84 Bridge indicated good water quality conditions. The value of 5.3 indicated good water quality conditions as it relates to nutrients, with some organic pollution. In 1999, during the REMAP survey at the same site, the HBI value of 4.987 indicated good water quality conditions. At the same location in 1988, the HBI was 4.3625, which indicated very good water quality conditions with possible slight organic pollution. The # of taxa in 2002 (singe count of # of unique taxa) indicated higher taxa richness (33) than from 1988 and 1999 from this site. This metric is an indication of biodiversity, and it generally decreases with degraded habitat or diminished water quality. Based on the above, nutrient overenrichment is determined not to be a cause of nonsupport for this reach. The Protocol for the Assessment for Stream Bottom Deposits was utilized in this assessment. Data collected in 1999 as part of the Regional Environmental Monitoring and Assistant Program (REMAP) study indicated that Abiquiu Creek is a reference site. Therefore, biological score as a % of reference was 100%. Even though the sediment (as % fines) was somewhat high (87%), the biology was not impaired.Therefore, plant nutrients and SBD/sedimentation/siltation were removed as a cause of non support. A TMDL was drafted to address dissolved oxygen.

2014 Action: This AU was sampled during the 2012 Chama River survey. There were 3/7 e. coli exceedences. There are no long-term DO data available to re-assess the DO listing. Therefore, e. coli was added and DO remains.

Abiquiu Reservoir
AU:NM-2114_00 WQS: 20.6.4.117

2000 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: In January 2006, a fish consumption advisory based on the presence of PCBs in fish tissue was put into effect for this reservoir.

2010 Action: This water body was surveyed in 2007. There were 3 of 5 grab dissolved oxygen measurements that were below the criterion on 6.0 mg/L. Therefore, dissolved oxygen was added as a cause of impairment. In February 2009, a fish consumption advisory based on the presence of mercury and PCBs in fish tissue were noted for this reservoir.

2014 Action: This AU was sampled during the 2012 Chama River survey. There were 0 of 4 DO exceedences. Therefore, DO was removed as a cause of impairment.

2016 Action: Assessment of 2014 nutrient causal and response data do not indicate impairment.

Arroyo del Toro (Rio Chama to headwaters)
AU:NM-98.A_006 WQS: 20.6.4.98

2012 Action: DOE Oversite Bureau submitted blank-corrected PCB data for various waterbodies in the Rio Grande and Rio Chama watersheds The total PCB criterion of 0.64 ng/L for Human Health associated with Aquatic Life Use was exceeded 2 of 2 times. Therefore, PCBs was added as a cause of impairment.

Burns Lake (Rio Arriba)
AU:NM-9000.B_025 WQS: 20.6.4.99

2014 Action: This AU was sampled during the 2012 Chama River survey. Although the assessment was incomplete, both causal and response nutrient indicators were present. Therefore, nutrients was added as a cause of impairment (IR Cat 5C).

2016 Action: Assessment of 2014 nutrient causal and response data indicate impairment (TN and TP exceedences, 3/3 chl-a). Therefore, nutrients remains a cause of impairment.

Canada de Horno (Rio Chama to headwaters)
AU:NM-98.A_005 WQS: 20.6.4.98

2012 Action: DOE Oversite Bureau submitted blank-corrected PCB data for various waterbodies in the Rio Grande and Rio Chama watersheds The total PCB criterion of 0.64 ng/L for Human Health associated with Aquatic Life Use was exceeded 2 of 2 times. Therefore, PCBs was added as a cause of impairment.

Canjilon Ck (Perennial portions Abiquiu Rsrv to headwaters)
AU:NM-2116.A_030 WQS: 20.6.4.119

1996 Action: Previously listed for metals (aluminum), conductivity, turbidity, total phosphorus and stream bottom deposits. All data are from sampling at four stations in 1990. Ratio for aluminum is 0/6. Ratio for conductivity is 4/15. Ratio for turbidity is 2/19. Ratio for total phosphorus is 4/18.

1998 Action: Aluminum will be removed as a cause of non-support for this reach. Conductivity, turbidity and total phosphorus will be retained as a cause of non-support at the two lower stations. The reach will continue to be listed on the 303(d) list as Not Supporting for Stream Bottom Deposits.

2000 Action: The cumulative exceedence ratio of the conductivity standard is 12/16; the standard is 500umhos. Measurements exceeded the turbidity standard of 25 NTU 6/16 times. One station was evaluated for stream bottom deposits; the reach had 21% fines, which is considered fully supporting. Temperature exceeded the standard 4 of 16 times. DO exceeded the standard of 6.0 mg/L 2/16 times, which is considered partially supporting. The TOC standard of 7 mg/L was exceeded 7/15 times. Conductivity and turbidity will remain as causes of non-support for the reach, and temperature, DO, and TOC will be added as causes of non-support. Total phosphorus no longer has a standard associated with it.

2002 Action: According to SWQB staff comments, USFS correspondence, and data from the REMAP study, this reach goes dry. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are related to high quality coldwater fishery, so they do not apply to this reach.

2006 Action: The name was modified to Canjilon Ck (Perennial portions Abiquiu Rsrv to headwaters). The data used for the 2004 de-listing action, as well as comments from the USFS and the perennial nature of Canjilon Creek, were reconsidered. As a result, specific conductance (12 of 17 measurements above 500umhos, or 70%), turbidity (7 of 16 measurements above 25 NTU, or 44%), and temperature (4 of 18 instantaneous readings above 20 degrees C, or 22%) were added back to the list as impairments. Dissolved oxygen was not added back as an impairment because only 2 of 18 (11%) dissolved oxygen values were below 6.0 mg/L (both 5.95 mg/L). SWQB plans to intensively sample the Rio Chama watershed in 2007 to check these listings and propose any necessary changes to existing water quality standards. For example, it is unlikely that the perennial portions of Canjilon Creek meet the definition of a high quality cold water fishery since the entire assessment unit is not perennial.

2010 Action: This AU was surveyed in 2007. The following exceedences were documented: 2 of 5 for chronic aluminum, 3 of 6 for specific conductance, and 5 of 6 for the applicable interim turbidity numeric translator. A thermograph recorded a maximum temperature of 32.8 degees C. A level II nutrient assessment indicated impairment. Therefore, specific conductance, turbidity, and temperature remain, and nutrients was added as a cause of impairment. Benthic macroinvertebrate data are needed to confirm the turbidity listing. Periphyton and sonde deployment should occur to confirm the nutrient listing. The 2007 thermograph may have been in a non-perennial reach. Reclassification of aquatic life for this AU should be considered.

2012 Action: Thermograph deployment in 2010 confirms temperature listing (max temp 25.9 degrees C). Periphyton data collected in 2010 did not indicate nutrient problem. Available 2010 sonde re-deployment data were inconclusive (<72 hours). Therefore, nutrients and turbidity remain listed as (5C) -- sonde data needed to verify these listings prior to TMDL development. TMDLs prepared for temperature and specific conductance in 2011.

2014 Action: This AU was sampled during the 2012 Chama River survey. The maximum thermograph temperature was 28.5 degrees C at station 29Canjil019.6. There were 7/7 SC exceedences. Insufficient data were collected to re-assess turbidity and nutrients. Therefore, temperature, specific conductance, nutrients and turbidity remain listed (5C).

Canjilon Lake (a)
AU:NM-2116.B_10 WQS: 20.6.4.134

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012. This AU was sampled during the 2012 Chama River survey. No impairments were identified. The nutrient assessment was incomplete (leaning full support).

2016 Action: Assessment of 2014 nutrient causal and response data do not indicate impairment.

Canjilon Lake (c)
AU:NM-2116.B_12 WQS: 20.6.4.134

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Canjilon Lake (e)
AU:NM-2116.B_14 WQS: 20.6.4.134

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Canjilon Lake (f)
AU:NM-2116.B_15 WQS: 20.6.4.134

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Canones Creek (Abiquiu Rsvr to Chihuahuenos Ck)
AU:NM-2116.A_010 WQS: 20.6.4.119

1996 Action: Listed for metals (aluminum), total phosphorus and turbidity. The ratio for aluminum data are 1/1 for acute levels of aluminum. Total phosphorus and turbidity data both have ratios of 5/5. This reach was included in a 1991 biological survey and was rated as only 36% of the reference site. The site had a degraded habitat as a result of loss of riparian habitat, irrigation return flows, and impacts from the community of Canones.

1998 Action: This reach is listed as Not Supporting designated uses with aluminum, total phosphorus, and turbidity as the cause.

2000 Action: The upper thermograph deployed in the reach exceeded the HWCWF criterion 19/3,984 times, exceeding the standard of a one-time maximum temperature of 23C; the thermograph at the lower station did not exceed. Turbidity criteria of 25 NTU was exceeded 3/16 times. TOC criteria of mg/L was exceeded 5/16 times. Fecal coliform samples exceeded the criteria of 200 cfu/100mL 2/3 times. The dissolved Al 4-day average was 167.5 ug/L; the chronic criterion is 87 ug/L. Turbidity and metals (Al chronic) will be retained as causes of non-support for this AU. Temperature, TOC, and fecal coliform will be added as causes of non-support. There is no longer a standard associated with Total phosphorus

2002 Action: In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support. The thermograph data collected at the upper station during the 1999 study was re-assessed. Closer inspection of the exceedences indicates that the thermograph was out of the water during the period of exceedence because the there was a steep spike in the recorded temperature up the ambient air temperature, then a steep decrease in temperature at the end of the brief period. Benthic macroinvertebrate data collected at this site does not indicate impairment. The thermograph at the lower station did not indicate impairment and did not exceed the Temperature Protocol. Therefore, temperature was removed as a cause of Non Support.

2004 Action: TMDLs were drafted for turbidity, aluminum, and fecal coliform.

2014 Action: This AU was sampled during the 2012 Chama River survey. The max thermograph temperature was 29.7 degrees C. There were 4/7 e. coli exceedences. There were 0/2 exceedences of the hardness-dependent acute and chronic WQC for total aluminum. The turbidity SEV numeric thresholds were not exceeded. Therefore, temperature was added, fecal coliform was changed to e. coli, and aluminum and turbidity were removed.

2016 Action: Previously part of "Canones Creek (Abiquiu Reservoir to headwaters)," this AU was split due to conflicting assessment temperature conclusions from multiple stations in the original AU as well as a change in hydrologic character.

Canones Creek (Chihuahuenos Creek to headwaters)
AU:NM-2116.A_012 WQS: 20.6.4.119

2016 Action: Previously part of "Canones Creek (Abiquiu Reservoir to headwaters)," this AU was split due to conflicting assessment temperature conclusions from multiple stations in the original AU as well as a change in hydrologic character. A 2014 thermograph recorded a max temp of 19.1 degrees C. Therefore, this AU is noted as full support for temperature. There are no other data available for this AU.

Canones Creek (Rio Chama to Jicarilla Apache bnd)
AU:NM-2116.A_100 WQS: 20.6.4.119

2014 Action: This AU was sampled as part of the 2012 Rio Chama survey. Data from a thermograph deployed at Hwy 84 in 2012 exceeded the HQCWF criterion. However, the thermograph was placed below a diversion that impacts the bottom 1 mile of the creek and is not representative of the entire AU. A thermograph will be placed above the diversion in

2014 to collect data to assess this AU for temperature.

2016 Action: The max temp at of 2014 thermograph re-deployment was 26.5 degrees C. Therefore, temperature was added as a cause of impairment.

Cecilia Canyon Creek (Rio Capulin to USFS bnd)
AU:NM-2116.A_042 WQS: 20.6.4.119

1996 Action: Previously listed for stream bottom deposits, turbidity, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits and turbidity as the cause of non-support.

2000 Action: Turbidity criterion was exceeded 0/6 times. One station was evaluated for stream bottom deposits. The reach had 40% fines and an embeddedness of 30%. This is considered partially supporting. Stream bottom deposits will be retained as a cause of non-support.

2010 Action: This AU was surveyed in 2007. There were 26 percent fines, but the M-SCI score was 59.45 (threshold of 56.70). Therefore, sedimentation/siltation (stream bottom deposits) was removed as a cause of impairment.

2014 Action: This AU was sampled during the 2012 Chama River survey (limited sampling). No impairments were found.

Chavez Creek (Rio Brazos to headwaters)
AU:NM-2116.A_081 WQS: 20.6.4.119

2000 Action: Thermograph data exceeded the HQCWF criterion of 26C 160/864 times. Non-permitted stream modifications were carried out on the reach, and stream bottom deposits and turbidity were documented. Turbidity exceeded the criterion 1/8 times. Temperature will be added as a cause of non-support, and stream bottom deposits and turbidity will be added to the 305(b) report as FSIO. Total Phosphorus no longer has a standard associated with it.

2002 Action: The Nutrient Assessment protocol was performed June 2000. This reach was determined to be nutrient enriched following the level one nutrient assessment analysis. A level two analyses is in process at the time of this writing. A summary of the nutrient assessment is in the administrative record. Plant Nutrients was added as a cause of non-support.

2004 Action: Plant nutrients was prematurely listed in 2002 based on only a level one analysis. Subsequent level two analysis did not indicate plant nutrient impairment (the algal level was moderately productive). Therefore, plant nutrients was removed as a cause of impairment. A TMDL was written for temperature.

2014 Action: This AU was sampled during the 2012 Chama River survey. The max thermograph temperature was 27.2 degrees C. Therefore, temperature remains listed.

2016 Action: Thermographs re-deployed in 2014 document max temperatures of 29.0 and 27.8 degrees C. HQCWAL may not be attainable.

Chihuahuenos Creek (Canones Creek to headwaters)
AU:NM-2116.A_016 WQS: 20.6.4.119

1996 Action: Previously listed for stream bottom deposits, turbidity, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits and turbidity as the cause of non-support.

2000 Action: Turbidity criterion was exceeded 0/6 times. One station was evaluated for stream bottom deposits; the reach had 54% fines. TOC exceeded its criterion of 7 mg/L 1/8 times. Stream bottom deposits will be retained as a cause of non-support, and TOC will be added to the 305(b) report as FSIO.

2004 Action: The original SBD/sedimentation assessment of the 1999 data was performed incorrectly. Because the biological score was 93% of reference, the determination is full support according to the Stream Bottom Deposit Assessment Protocol even thought the percent fines are somewhat high (57%). Therefore, SBD/sedimentation was removed.

2014 Action: This AU was sampled during the 2012 Chama River survey. There were 70.5 % sand and fines, LRBS - 1.53. there were 2/3 exceedences of the hardness-dependent chronic WQC for total aluminum. Therefore, sediment and total aluminum chronic (5C) were added as a cause of impairment. Additional total Al and concurrent hardness data are needed prior to TMDL development (n<4).

Clear Creek (Rio Gallina to headwaters)
AU:NM-2116.A_043 WQS: 20.6.4.119

1996 Action: Previously listed for stream bottom deposits and turbidity. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits and turbidity as the cause of non-support.

2000 Action: Turbidity criterion was exceeded 0/6 times. One station was evaluated for stream bottom deposits. The station had 51% fines, which is not supporting its designated use; Stream bottom deposits will be retained as a cause of non-support.

2010 Action: This AU was surveyed in 2007. There were 21 percent fines at the station at FR 76, and the M-SCI score was 73.04 (threshold of 56.70). Therefore, sedimentation/siltation (stream bottom deposits) was removed as a cause of impairment.

2014 Action: This AU was sampled (limited) during the 2012 Chama River survey. No impairments were found.

Coyote Creek (Rio Puerco de Chama to headwaters)
AU:NM-2116.A_022 WQS: 20.6.4.119

1996 Action: Listing based on 5/5 exceedences for total phosphorus and turbidity. A biological assessment was conducted on Coyote Creek in 1991. The station was found to be NS (56%) as compared to the reference station.

1998 Action: This reach will be listed as Not Supported with total phosphorus and turbidity as causes.

2000 Action: One station was evaluated for stream bottom deposits; the reach had 39% fines, which is considered partially supporting its designated use. Total phosphorus no longer has a standard associated with it. Turibidty criterion was exceeded 0/6 times. Temperature exceeded its standard of 20C 1/8 times. TOC exceeded its standard of 7 mg/L 6/8 times. Stream bottom deposits and TOC will be added as causes of non-support. Temperature will be added to the 305(b) report as FSIO.

2002 Action: In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC will be removed as a cause of Non Support.

2004 Action: The original SBD/sedimentation assessment of the 1999 data was performed incorrectly. Because the biological score was 100% of reference (the site on this creek is considered to be reference condition), the determination is full support according to the Stream Bottom Deposit Assessment Protocol even thought the percent fines are somewhat high (39%). Therefore, SBD/sedimentation was removed.

2014 Action: This AU was sampled during the 2012 Chama River survey. There were 81 % sand and fines, with an LRBS of -1.92. Therefore, sedimentation was added as a cause of impairment.

El Rito Creek (Perennial reaches above HWY 554)
AU:NM-2112.A_20 WQS: 20.6.4.115

1996 Action: Previously listed for turbidity, stream bottom deposits and nutrients. Turbidity data from a 1990 survey is the only available data. Ratios for turbidity were 1/1, 1/1, and 0/1. No specific data are available for the causes stream

bottom deposits and nutrients.

1998 Action: Turbidity will be listed as Full Support, Impacts Observed on the 1998 305(b) list. The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits and plant nutrients.

2000 Action: The turbidity criterion of 10NTU was exceeded 2/8 times. TOC exceeded its criterion 1/6 times. Two stations were evaluated for stream bed deposits; a maximum %fines of 18% was measured. Plant nutrients will be retained as a cause of non-support. Turbidity will be added as a cause of non-support. TOC will be added to the 305(b) report as FSIO.

2002 Action: Turbidity was removed as a cause of Non Support after re-evaluation of the data and collection of additional sonde data. The two exceedences from the 1999 survey were within the analytical error of the instrumentation, the narrative turbidity standard was not exceeded, and a qualitatative assessment of the benthic macroinvertebrate population indicated no impairment. Quantitative benthic macroinvertebrate samples were taken during 2002. Identification, enumeration, and analyses are in progress. An YSI multi-parameter sonde was deployed between 06/10/02 17:00 to 06/12/02 08:45. Turbidity samples were logged every 15 minutes. The mean value was 5.7 NTUs. The turbidity standard of 10 NTU was exceeded 4 times out of 172 readings (2.3%). For the spring 1999 run, the 4-day average was 363 ug/l of dissolved aluminum. The chronic criterion is 87ug/l. The criterion was not exceeded during the summer or fall runs. Therefore, this AU is Full Support for aluminum. This data was erroneous apply to the reach El Rito below El Rito during the 2000 assessment cycle.

2004 Action: A level 2 Plant Nutrient Assessment was performed June 2002. Results indicated no impairment. Therefore, plant nutrients was removed as a cause of impairment.

2014 Action: This AU was sampled during the 2012 Chama River survey. There were 3/7 e. coli exceedences. Although the nutrient assessment was incomplete, there were both causal and response variables present. USFS_NMSU data thermograph data from 2010 indicate temperature impairment (max temp 26.6 degrees C), but SWQBs more recent 2012 thermograph data do not (max temp 17.7 degrees C) . Therefore, nutrients, temperature (both 5C) and e. coli were added as causes of impairment. Data from the 2012 survey were collected from a station where the flow was later determined to be dominated by groundwater. While some of these data exceeded criterion, they are likely not representative of this AU. Additional data will be collected from a nearby site in 2014 to address this.

2016 Action: Although there were TP exceedences in the 2014 dataset, there were no nutrient response variables present. The max thermograph temp was 25.0 degrees C. Therefore, nutrients was removed and temperature remains.

El Rito Creek (Perennial reaches below HWY 554)
AU:NM-2113_40 WQS: 20.6.4.116

2000 Action: For the spring run, the 4-day dissolved aluminum average was recorded as 536.25ug/l; the chronic criterion is 87ug/l. A new listing will be added for metals (Al chronic) for this reach.

2002 Action: According to SWQB staff comments and data from the REMAP study, this reach goes dry. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are related

to high quality coldwater fishery, so they do not apply to this reach. Also, the above listing for aluminum was erroneous anyway because the data pertained to the upper reach, and assessment of the data indicated full support (see above).

2008 Action: This AU is likely not perennial. It went dry during the last intensive survey

2014 Action: This AU was sampled during the 2012 Chama River survey. There were 2/7 e. coli exceedences. Although the nutrient assessment was incomplete, there were both causal and response variables present. Therefore, nutrients (5C) and e. coli were added as causes of impairment.

El Vado Reservoir
AU:NM-2117_00 WQS: 20.6.4.120

2000 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2010 Action: This waterbody was surveyed in 2007. There were 3of 5 dissolved oxygen measurements below the criterion of 6.0 mg/L. Therefore, dissolved oxygen was added as a cause of non support. Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue even though there is a Fish Consumption Advisory.

2014 Action: This AU was sampled during the 2012 Chama River survey. There were 0/4 measurements below the DO WQC of 6.0 (min 6.44, avg 7.6), Both causal and response nutrient indicators were present, but the assessment was incomplete. Therefore, DO was removed, and nutrients was added as a cause of impairment.

2016 Action: Assessment of 2014 nutrient causal and response data do not indicate impairment (TP exceedences but only 1/4 chl-a exceedences). Therefore, nutrients was removed.

Heron Reservoir
AU:NM-2117_10 WQS: 20.6.4.120

2002 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2010 Action: This waterbody was surveyed in 2007. There were no new impairments noted. Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue even though there is a Fish Consumption Advisory.

2014 Action: This AU was sampled during the 2012 Chama River survey. There were 2/4 exceedences of the 20 degrees C temperature WQC. Therefore, temperature was added as a cause of impairment.

2016 Action: Assessment of 2014 nutrient causal and response data do not indicate impairment.

Hopewell Lake
AU:NM-2112.B_00 WQS: 20.6.4.134

2000 Action: Hopewell Lake was characterized (in a report titled, New Mexico Clean Lakes Program, Classification Phase I, Final Report, September 1982) by high pH (>9.0 in the summer photic zone) moderate temperature stratification and hypolimnetic dissolved oxygen depletion during the summer. Phosphorus concentrations increased during the fall as chlorophyll a concentrations declined. Macrophytes covered approximately 25% of the lake bottom during the summer and fall. The algal population was dominated by a blue-green algae. Phosphorous was limiting or co-limiting. Although the data for this reservoir is dated, it is still listed in the State's 305(b) Report as impaired for pH, dissolved oxygen, turbidity, nuisance algae and siltation and therefore will be listed on the 303(d) List until new data are collected to either verify or refute the listing.

2002 Action: Hopewell Lake was intensively surveyed in 1999. Data indicate Full Support for pH (0/1), dissolved oxygen (0/8), and turbidity (0/1). Hopewell Lake will continue to be listed for plant nutrients and bottom deposits until further study.

2008 Action: The sedimentation/siltation listing was removed because there were no data or applicable assessment protocols available to make this determination.

2012 Action: The 1982 data are old, and it is unclear how they were used to determine the original impairment listings. There is no basis for the nutrient listing because there were no data or applicable assessment protocols available to make this determination. The results of the 1999 survey (n=1) do not indicate potential nutrient, pH, DO, or turbidity impairment. An n=1 is insufficient to determine use support. Therefore, this lake was changed to Not Assessed and will be prioritized for study during the next Rio Chama watershed survey (2012).

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012. This lake was sampled as part of the 2012 Chama River survey (limited, n-2). Both nutrient causal and response variables were present. Therefore this lake is noted as impaired for nutrients (5C -- assessment incomplete).

2016 Action: Assessment of 2014 nutrient causal and response data indicate impairment (TP exceedences plus one high TN; 2/3 chl-a). Therefore, nutrients remains a cause of impairment.

Nabor Creek (Rio Chamita to CO border)
AU:NM-2116.A_111 WQS: 20.6.4.98

1996 Action: Previously listed for total phosphorus and total ammonia. One station is on the reach (URG116.020040). Total phosphorus data indicate Full Support, Impacts Observed for the fishery use (1/4). Total ammonia data indicate full support for the fishery use (0/4).

1998 Action: Total ammonia will be removed as a cause of non-support for this reach. Total phosphorus will be upgraded to Full Support, Impacts Observed and will be listed on the 1998 305(b) report.

2000 Action: There is no longer a standard associated with total phosphorus. The Nutrient Assessment Protocol will be used to assess nutrient loading on this reach.

2014 Action: This AU was sampled (n=1) during the 2012 Chama River survey. This AU is not perennial -- there were only isolated pools by the second visit.

Placer Creek (Hopewell Lake to headwaters)
AU:NM-2112.A_03 WQS: 20.6.4.115

2014 Action: This AU was sampled during the 2012 Rio Chama survey. The maximum thermograph temperature was 23.74 degrees C. Therefore, temperature was added as a cause of impairment.

Placer Creek (Rio Vallecitos to Hopewell Lake)
AU:NM-2112.A_02 WQS: 20.6.4.115

2014 Action: This AU was sampled during the 2012 Rio Chama survey. No impairments were identified.

Poleo Creek (Rio Puerco de Chama to headwaters)
AU:NM-2116.A_023 WQS: 20.6.4.119

1996 Action: Listing based on one station at Forest Road 103 (URG116.010050, 1991 data). Total phosphorus and turbidity data, 4/5 and 5/5, exceed the criteria values. All other parameters are below criteria values.

1998 Action: Listing based on one station at Forest Road 103 (URG116.010050, 1991 data). Total phosphorus and turbidity data, 4/5 and 5/5, exceed the criteria values. All other parameters are below criteria values.

2000 Action: Total phosphorus no longer has a standard associated with it. Turbidity exceeded its standard 0/6 times. One station was evaluated for stream bottom deposits, and was observed to have 71% fines <2mm. The temperature criterion was exceeded 2/8 times. TOC exceeded its criterion 1/8 times. Stream bottom deposits will be retained as a cause of non-support; Temperature will be added as a cause of non-support; TOC will be added to the 305(b) report as FSIO.

2002 Action: In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion

has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. There were 56.2 percent sand and fines, LRBS of -1.73. Turbidity sonde data did not exceed the SEV numeric thresholds. Therefore, turbidity was removed, and sedimentation added as a cause of impairment.

Polvadera Creek (Canones Creek to headwaters)
AU:NM-2116.A_011 WQS: 20.6.4.119

1996 Action: Previously listed for stream bottom deposits, turbidity, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits and turbidity as the cause of non-support.

2000 Action: Stream bottom deposits were evaluated at one station along this reach; the reach had 71% fines <2mm. Temperature was exceeded 2/8 times, resulting in partial support. TOC was exceeded 1/8 times. Stream bottom deposits will be retained as a cause of non-support. Temperature will be added as a cause of non-support, and TOC will be added to the 305(b) report as FSIO.

2004 Action: The original SBD/sedimentation assessment of the 1999 data was performed incorrectly. Because the biological score was 67% of reference, the determination is full support according to the Stream Bottom Deposit Assessment Protocol even thought the percent fines are somewhat high (71%). Therefore, SBD/sedimentation was removed. 2002 thermograph confirmed temperature listing and a TMDL was drafted. Temperature is assumed to be the cause of benthic macroinvertebrate impairment.

2006 Action: Sedimentation/siltation impairment was re-assessed using the current Assessment Protocols. The biological condition at Polvadera Creek was 67% of reference. As a result, sedimentation/siltation was added back as a cause of non support.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. There were 30.5 percent sand and fines, LRBS of -0.63. The max themorgraph temperature was 20 degrees C. Therefore, sedimentation and temperature were removed as a causes of impairment.

Rio Brazos (Chavez Creek to Jicarilla Apache bnd)
AU:NM-2116.A_084 WQS: 20.6.4.119

2014 Action: This AU was sampled during the 2012 Rio Chama survey. No impairments were found.

Rio Brazos (Rio Chama to Chavez Creek)
AU:NM-2116.A_080 WQS: 20.6.4.119

1996 Action: Previously listed for temperature, turbidity, chlorine, nutrients and stream bottom deposits. One sampling station is on the reach (URG116.008005). Data for temperature and turbidity are 0/2. Total residual chlorine data are 1/1 exceedences from 1986 data however there are no known sources of chlorine on this reach. A review of data related to the nutrients listing show that total phosphorus values at this station are well below the criteria of 0.1 mg/l and nitrate levels are also low with levels reported as less than 0.04 mg/l. No specific reason for the previous listing can be found.

1998 Action: Temperature, turbidity, chlorine, and nutrients will be removed as causes of non-support for this reach. Chlorine will be listed as Full Support, Impacts Observed on the 1998 305(b) list. The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits.

2000 Action: Temperature was exceeded 463/1,752 times with a maximum temperature of 27C. Temperature will be added as a cause of non-support. This reach has been highly modified by highway construction. The natural substrate has been replaced with rounded stones of an almost homogenous size. Although the substrate has been highly modified, it does not have signs of heavy sediment load. WQS are currently being met for stream bottom deposits.

2004 Action: A TMDL was prepared for temperature.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. The max themorgraph temperature was 31.3 degrees C. Although the nutrient assessment was incomplete, both causal and response variables were present. Therefore, temperature remains, and nutrients (5C) was added as a cause of impairment.

2016 Action: There was 1/2 TP exceedences and no nutrient response variables present in the 2014 dataset. Therefore, nutrients was removed as a cause of impairment.

Rio Capulin (Rio Gallina to headwaters)
AU:NM-2116.A_041 WQS: 20.6.4.119

2010 Action: This AU was surveyed in 2007. There were 4 of 7 E. coli exceedences. Therefore, E. coli was added as a cause of impairment.

2014 Action: This AU was sampled (limited parameters) during the 2012 Chama River survey. There were 2/7 e. coli exceedences. Therefore, the listing remains.

Rio Cebolla (Rio Chama to headwaters)
AU:NM-2116.A_050 WQS: 20.6.4.119

2000 Action: Conductivity exceeded its standard of 500 umhos 2/3 times. Temperature exceeded its criterion of 20C 1/8 times. Conductivity will be added as a cause of non-support, and temperature will be added to the 305(b) report as FSIO.

2002 Action: According to SWQB staff comments, USFS correspondence, and data from the REMAP study, this reach goes dry. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are related to high quality coldwater fishery, so they do not apply to this reach.

2008 Action: This AU is likely not perennial. It went dry during the last intensive survey.

2014 Action: This AU was sampled (n=1) during the 2012 Chama River survey. The sampling station was not in a perennial portion. Survey staff comment that this AU rarely has flow in it recently (last ten years). Therefore, this AU remains Not Assessed.

Rio Chama (Abiquiu Reservoir to El Vado Reservoir)
AU:NM-2115_00 WQS: 20.6.4.118

2014 Action: This AU was sampled during the 2012 Rio Chama survey. No impairments were found.

2016 Action: The max 2014 thermograph temperature was 24.0 degrees C (WQC = 26).

Rio Chama (El Vado Reservoir to Rito de Tierra Amarilla)
AU:NM-2116.A_003 WQS: 20.6.4.119

2014 Action: This AU is the result of a split of AU "Rio Chama (El Vado Rsvr to Rio Brazos." There were no stations representative of this AU during the 2012 Rio Chama survey. Therefore, all existing listings are retained. This AU was sampled during the 2012 Rio Chama survey. No new impairments were identified. Additional nutrient, thermograph, e. coli, and total aluminum data are needed to re-assess the impairment listings. Therefore, all listings remain (5C for total Al); all others have TMDLs in place).

Rio Chama (Little Willow Creek to CO border)
AU:NM-2116.A_002 WQS: 20.6.4.119

2010 Action: This AU was surveyed in 2007. There were 2 of 6 and 2 of 7 exceedences for applicable chronic aluminum and E. coli criteria, respectively. The maximum temperature recorded via thermograph was 23.7 degrees C (criterion of 20 degrees C). There were 3 of 8 exceedences of the interim turbidity numeric translator of 25 NTU, but an M-SCI score of 73.03 (threshold of 56.70). Therefore, aluminum, E. coli, and temperature, were added as causes of impairment.

2012 Action: TMDLs were prepared for e. coli and temperature (2011).

2014 Action: This AU was sampled during the 2012 Rio Chama survey. There were 0/2 exceedences of the hardness-dependent total recoverable aluminum WQC. There were 1/7 e. coli exceedences. The max thermograph temperature was 27.3 degrees C. Therefore, temperature remains, and aluminum and e. coli were removed.

2016 Action: Although there were TP exceedences in the 2014 data set, no nutrient responses were documented. Therefore, nutrients remains full support.

Rio Chama (Ohkay Owingeh to Abiquiu Dam)
AU:NM-2113_00 WQS: 20.6.4.116

1996 Action: Previously listed for turbidity, pH, dissolved oxygen, unionized ammonia, nutrients and stream bottom deposits. There are no numeric turbidity criteria for this reach. The pH data available at two stations in the 0-5 year interval have a cumulative exceedance ratio of 0/79. Data in the 5-10 year interval is available from six stations with a cumulative ratio of 6/53. Data for dissolved oxygen from two stations within the last 5 years has a cumulative ratio of 0/79. Data from 5-10 years has a cumulative ratio of 0/50. Total ammonia data are available from one station in the last five years with a ratio of 0/9. Five stations have data for total ammonia in the 5-10 year time frame. The cumulative ratio at these stations is 1/34. In the only station with a criteria exceedence, a three day average was calculated, which did not exceed the chronic criteria. During the data review for this reach it was noted that there had been 1/10 (10%) acute exceedence of the dissolved aluminum criteria.

1998 Action: Turbidity, dissolved oxygen, and unionized ammonia have been removed as causes of non-support. This reach will be listed as Full Support, Impacts Observed for aluminum on the 1998 305(b) list. No data either to support listing or de-listing can be found for nutrients. There is no numeric turbidity criteria for this reach therefore turbidity will be removed. The pH data available at two stations in the 0-5 year interval has a cumulative exceedance ratio of 0/79. Data in the 5-10 year interval is available from six stations with a cumulative ratio of 6/53. This reach is Partially Supporting for pH. Data for dissolved oxygen from two stations within the last 5 years has a cumulative ratio of 0/79. Data from 5-10 years has a cumulative ratio of 0/50. This reach is fully supporting for dissolved oxygen. Total ammonia data are available from one station in the last five years with a ratio of 0/9. Five stations have data for total ammonia in the 5-10 year time frame; the cumulative ratio at these stations is 1/34. In the only station with a criteria exceedence, a three day average was calculated, which did not exceed the chronic criteria. This reach is Full Support for total ammonia. During the review for this reach it was found that there had been 1/10 (10%) acute exceedence of the dissolved aluminum criteria. This reach will be listed as Full Support, Impacts Observed for aluminum on the 1998 305(b) list. No data either to support listing or de-listing can be found for nutrients. The reach will continue to be listed on the 303(d) list as Partial Support for nutrients and pH.

2000 Action: There were no exceedances of plant nutrient criteria. pH measurements exceeded the pH criterion 1/24 times. DO exceeded its criterion of 6 mg/L 3/24 times. The 4-day average of dissolved aluminum was 410 ug/L, which exceeded the chronic criterion of 87 ug/L. There were no "unknown" constituents detected at this survey; therefore Unknown will be removed as a cause of non-support. DO will be added to the 305(b) report as FSIO, and Metals (Al chronic) will be added as a cause of non-support.

2002 Action: The name was revised to remove sections of the reach that are under tribal jurisdiction.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. No impairments were found.

2016 Action: The max 2014 thermograph temperature was 24.5 degrees C (WQC = 31).

Rio Chama (Rio Brazos to Little Willow Creek)

AU:NM-2116.A_001 WQS: 20.6.4.119

1996 Action: Previously listed for total phosphorus, total ammonia, turbidity, chlorine and stream bottom deposits. The exceedance ratios for for total phosphorus, total ammonia, and turbidity are all 0/10 from samples collected in 1988. More recent data are not available. Total residual chlorine data from 1986 was 1/1 at 2 stations. There are no known sources of chlorine on this segment although it would receive impacts from the Rio Chamita that did have chlorine impacts from this time period. The Chama WWTP has however begun de-chlorination since this time and no exceedences have been reported within the last 5 years.

1998 Action: The total phosphorus, total ammonia and turbidity will be removed as causes of non-support for this reach. As per the assessment protocol the reach will be listed as Full Support- Impacts Observed on the 1998 305(b) list with chlorine as a cause. The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits.

2000 Action: Stream bottom deposits were evaluated at one station; the %fines <2mm were measured at <1%. A 4-day dissolved Aluminum average of 113 ug/L was observed during the spring sampling; no aluminum was detected during the summer or fall. Temperature at the bottom of the AU exceeded the HQCWF criterion 363/1,704 times with a maximum temperature of 26C. Metals (Al Chronic) will be added to the 305(b) report as FSIO, and temperature will be added as a cause of non-support.

2004 Action: A TMDL was prepared for temperature.

2010 Action: This AU was surveyed in 2007. There were 3 of 7 and 2 of 7 exceedences for applicable chronic aluminum and E. coli criteria, respectively. The maximum temperature recorded via thermograph was 26.3 degrees C (criterion of 20 degrees C). A level II nutrient assessment documented the presence of four indicators. There were 2 of 8 exceedences of the interim turbidity numeric translator of 25 NTU. Benthic macroinvertebrate data were not available to confirm the turbidity listing. Therefore, temperature remains, and aluminum, E. coli, nutrients, and turbidity (5C) were added as causes of impairment. Benthic macroinvertebrate data are needed to confirm the turbidity listing.

2012 Action: The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other combined turbidity-allowable duration thresholds were exceeded. A Level II nutrient assessment was re-done using 2010 sonde data. Sonde included full support for pH, and but >72 hours DO data available due to probe malfunction. Chlorophyll, grab DO, and grab pH data exceeded their threshold, as did available TN and TP data. Therefore, the nutrient listing was confirmed, and turbidity will be removed. TMDLs were prepared for e. coli and nutrients (2011).

2014 Action: This AU was sampled during the 2012 Rio Chama survey. There were 1/2 exceedences of the hardness-dependent total recoverable aluminum chronic WQC. There were 0/7 e. coli exceedences. The max thermograph temperature was 30.9 degrees C. Nutrient causal indicators were present, but response were not -- assessment is incomplete. Therefore, temperature and nutrients remain, and aluminum and e. coli were removed.

2016 Action: Although there were TP exceedences in the 2014 dataset, no nutrient responses were documented. Therefore, nutrients was removed as an impairment.

Rio Chama (Rito de Tierra Amarilla to Rio Brazos)
AU:NM-2116.A_000 WQS: 20.6.4.119

2010 Action: This AU was surveyed in 2007. There were 3 of 6 and 2 of 12 exceedences for applicable chronic aluminum and E. coli criteria, respectively. The maximum temperature recorded via thermograph was 28.6 degrees C (criterion of 20 degrees C). A level II nutrient assessment documented the presence of four indicators. There were 5 of 7 exceedences of the interim turbidity numeric translator of 25 NTU at the station above the La Puente gage, with an M-SCI score of 56.31 (threshold of 56.70) below the gage. Therefore, aluminum, E. coli, temperature, nutrients, and turbidity were added as causes of impairment. One or more of these causes of impairment is likely the reason the benthic macroinvertebrate score was slightly below the threshold. A sonde should be deployed to confirm the nutrient impairment.

2012 Action: The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other combined turbidity-allowable duration thresholds were exceeded. A Level II nutrient assessment was re-done using 2010 sonde data. Sonde included several pH values > 8.8, and all DO data were >120% saturation. Therefore, the nutrient listing was confirmed (pH was not listed because it is a response variable), and the turbidity listing was removed. TMDLs were prepared for e. coli , nutrients, and temperature in 2011.

2014 Action: This AU is the result of a split of AU "Rio Chama (El Vado Rsvr to Rio Brazos." There were no stations representative of this AU during the 2012 Rio Chama survey. Therefore, all existing listings are retained.

Rio Chamita (Rio Chama to CO border)
AU:NM-2116.A_110 WQS: 20.6.4.119

1996 Action: Listed for temperature, turbidity, total phosphorus, total ammonia, chlorine, fecal coliform and stream bottom deposits. There are five stations on this reach with data within the last 12 years. The cumulative exceedance ratios for temperature at these stations is 12/40. The cumulative exceedance ratio for turbidity is 3/19. The cumulative exceedance ratios for total phosphorus is 22/43. The cumulative exceedance ratio for total ammonia is 19/36. Chlorine data are available at 3 stations, with a cumulative exceedance ratio of 3/3 for the 5-10 year period and 0/2 for the last 5 years. The Chama WWTP has begun de-chlorination prior to discharge. Fecal coliform data are also available only from these three stations; a cumulative exceedance ratio for the last 10 years is 2/6.

1998 Action: Station 0005 will be listed as Not Supported with temperature as the cause. Turbidity data indicate that the fishery use is not supported at 1/4 stations on the reach. Total phosphorus data indicate the fishery use is not supported at 2 stations; Full Support, Impacts Observed at 1 station; and full support at 1 station. Total ammonia data indicate that the fishery use is not supported at 3/4 stations, and full support at 1/4. Fecal coliform data indicate full support of the contact recreation use at 2 stations, but will be listed as Full Support, Impacts Observed at station URG116.020035 on the 1998 305(b) list. The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits.

2000 Action: Temperature was exceeded 498/5,253 times. The maximum temperature recorded was 24.5C. The turbidity criterion was exceeded 1/27 times on the reach. Stream bottom deposits were evaluated at 2 stations in the AU; the maximum % fines <2mm was found to be 24%. Total Phosphorus was exceeded 6/6 times at the sampling location below the WWTP. The 4-day chronic Ammonia criteria was exceeded 4/8 times during fall low-flow conditions. Fecal

coliform samples from below the WWTP 2/2 times. No in-stream chlorine samples were able to be collected due to significant interference under ambient conditions. Dissolved aluminum exceeded the chronic criterion. TOC exceed the criterion of 7 mg/L 4/8 times. A new listing will be added for metals (Al chronic) below the WWTP. TMDLs were developed to address temperature, total phosphorus, total ammonia, and fecal coliform.

2002 Action: The 303(d) list was corrected to include total ammonia and fecal coliform as causes of impairment. In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support. In 2000, the total phosphorus standard for HQCWF was removed. Subsequently, total phosphorus listings were changed to the narrative "plant nutrient" listing and these waters were assessed based on the Nutrient Assessment Protocol. SWQB conducted field assessments on the Rio Chamita on July 18, 2000. The Rio Chamita was determined not to be nutrient enriched following the level one nutrient assessment analysis. Additional information can be found in the administrative record.

2004 Action: TMDL was approved for aluminum.

2006 Action: A Level II nutrient assessment was performed based on data collected in 2006. Both the nitrogen and phosphorus levels exceeded the ecoregion criteria in 2 of 2 samples. The DO concentration fell below the criterion for > 1 hour on 8 consecutive days of deployment, with a low of 3.94 mg/L. The chlorophyll a concentration (11.36 ug/cm2) exceeded the threshold of 10 ug/cm2. Since four indicators were present, this AU will be listed for Nutrient/Eutrophication Biological Indicators.

2010 Action: This AU was surveyed in 2007. There were 6 of 14 and 6 of 14 exceedences for applicable chronic aluminum and E. coli criteria, respectively. There were 3 of 16 ammonia exceedences. Maximum temperatures recorded via thermograph were 25.3 and 28.5 degrees C (criterion of 20 degrees C). A level II nutrient assessment documented the presence of three indicators. There were 7of 15 exceedences of the interim turbidity numeric translator of 25 NTU, with an M-SCI score of 48.66 (threshold of 56.70). Therefore, aluminum, ammonia, temperature, and nutrients remain, and turbidity and E. coli were added as causes of impairment. One or more of these causes of impairment is likely the reason the benthic macroinvertebrate score was below the threshold. A sonde should be deployed to confirm the nutrient impairment.

2012 Action: TMDLs were prepared for e. coli and nutrients (2011).

2014 Action: This AU was sampled during the 2012 Rio Chama survey. There were 0/2 exceedences of the hardness-dependent total recoverable aluminum chronic WQC. There were 2/7 e. coli exceedences. There were 3/5 exceedences

of the temperature and pH dependent chronic ammonia WQC. The max thermograph temperature was 28.4 degrees C. Both causal and response nutrient indicators were present -- assessment is incomplete. The turbidity SEV numeric thresholds were not exceeded. Therefore, temperature, e. coli, ammonia, and nutrients (5C) remain; and aluminum and turbidity were removed.

2016 Action: 2014 sonde data confirm the nutrient impairment (min = 4.19 mg/L).

Rio del Oso (Perennial prt Rio Chama to headwaters)
AU:NM-2112.A_10 WQS: 20.6.4.115

1996 Action: Previously listed for stream bottom deposits, turbidity, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits and turbidity as the cause of non-support.

2000 Action: Turbidity exceeded its criterion of 10 NTU 3/8 times. One station was evaluated for stream bottom deposits; the reach had 95% fines<2mm. Temperature exceeded its criterion 2/8 times. TOC was exceeded 2/8 times. DO exceeded its 6.0 mg/L standard 1/8 times. Turbidity and stream bottom deposits will be retained as causes of non-support. Temperature and TOC will be added as causes of non-support. DO will be added to the 305(b) report as FSIO.

2002 Action: According to SWQB staff comments and data from the REMAP study, this reach goes dry. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are not effect these two uses, so they do not apply to this reach. Also, the TOC standard was removed from the New Mexico Water Quality Standards in 2002.

2008 Action: This AU is likely not perennial. It went dry during the last intensive survey.

2012 Action: DOE Oversite Bureau submitted blank-corrected PCB data for various waterbodies in the Rio Grande and Rio Chama watersheds The total PCB criterion of 0.64 ng/L for Human Health associated with Aquatic Life Use was exceeded 4 of 4 times. Therefore, PCBs was added as a cause of impairment.

2014 Action: This AU was visited (n=1) during the 2012 Rio Chama survey. There are no new PCB data to confirm so the listing remains.

Rio Gallina (HWY 96 to headwaters)
AU:NM-2116.A_040 WQS: 20.6.4.119

1996 Action: Previously listed for turbidity, nutrients and stream bottom deposits. Turbidity data indicate full support of the criteria with a 0/5 ratio. Total phosphorus data have a ratio of 2/5.

1998 Action: Turbidity is removed as a cause of non support for this reach. Total phosphorus is added as a cause of non-support. Because it is likely that the nutrients listing is related to the total phosphorus listing, nutrients will no longer

be listed as a cause of non-support. The reach will continue to be listed on the 303(d) list as Not Supporting for stream bottom deposits.

2000 Action: Stream bottom deposits were evaluated at two stations, with 44% fines and 88% fines <2mm. Stream bottom deposits will be retained as a cause of non-support.

2006 Action: A de-list rationale for stream bottom deposits (sedimentation/siltation) was prepared as part of the Lower Rio Chama TMDL bundle (2004). The RBP score for the benthic macroinvertebrates was 75% of reference at the upper station and 57% of reference at the lower station. See the Administration Record for additional details.

2010 Action: Name was changed to match WQS language. This AU was surveyed in 2007. There were 0 of 6 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, turbidity is noted as Full Support.

2014 Action: This AU was sampled (limited) during the 2012 Rio Chama survey. No impairments were found.

Rio Gallina (Perennial prt Rio Chama to HWY 96)
AU:NM-2115_10 WQS: 20.6.4.451

2014 Action: This AU was sampled during the 2012 Rio Chama survey. The 2012 survey location was not representative of the perennial portions of this AU. Therefore, this AU is noted as Not Assessed. Preliminary investigations indicate that there may by only short spring fed perennial reaches in this AU. SWQB plans to determine if there are any representative sampling stations in 2014.

Rio Nutrias (Perennial prt Rio Chama to headwaters)
AU:NM-2116.A_060 WQS: 20.6.4.119

2000 Action: The turbidity standard of 25Ntu was exceeded 3/8 times. The temperature standard of 20C was exceeded 1/8 times. Turbidity will be added as a cause of non-support, and temperature will be added to the 305(b) report as FSIO.

2004 Action: TMDL was drafted for turbidity.

2014 Action: The AU was sampled during the 2012 Rio Chama survey. There were 4/7 e. coli, and 7/8 SC exceeedences. The max thermograph temperature was 27.4 degrees C. The turbidity SEV numeric thresholds were exceeded. Therefore, turbidity remains, and temperature and e. coli were added as causes of impairment. The lower station went dry during the survey - AU name changed accordingly. An AU split may also be warranted for this long AU.

2016 Action: The max thermograph temp in 20014 was 18.6 degrees C. Therefore, the temperature listing was removed.

Rio Ojo Caliente (Arroyo El Rito to Rio Vallecitos)
AU:NM-2113_10 WQS: 20.6.4.116

1996 Action: Previously listed for turbidity and stream bottom deposits. There are no numeric turbidity criteria for this warmwater fishery.

1998 Action: Turbidity will be removed as a cause of non-support. The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits.

2000 Action: One station was evaluated for stream bottom deposits and measured at 42% fines <2mm and an embeddedness of 54%. The temperature standard of 31C was exceeded 1/8 times. The pH standard of 6.6 to 8.8 was exceeded 1/8 times, with a measurement of 9.65. A 4-day dissolved aluminum average was measured at 362.5 ug/L, exceeding the chronic criterion of87 ug/L. Stream bottom deposits will be retained as a cause of non-support, metals (Al chronic) will be added as a cause of non-support, and temperature and pH will be added to the 305(b) report as FSIO.

2004 Action: Rio Ojo Caliente is not perennial at the point where the samples used to make a prior determination of impairments were collected. This finding removes Rio Ojo Caliente from the criteria of 20.6.4.116 NMAC, which apply to perennial reaches. It is the determination by NMED that applicable standards for these non-perennial portions are subject to criteria protecting the uses of livestock watering and wildlife habitat, which the Water Quality Control Commission (WQCC) applies to all waters. The metals standards for the livestock watering and wildlife habitat designated uses were not violated on this reach. The Rio Ojo Caliente data does not violate water quality standards for metals (Al) and should be removed from the 2002-2004 303(d) list. Therefore, aluminum was removed as a cause of non support. NMED reiterates that standards applicable to 20.6.4.116 NMAC do apply to all perennial reaches of the Rio Ojo Caliente. The original SBD/sedimentation assessment of the 1999 data was performed incorrectly. Because the biological score was 100% of reference (the site on this creek is considered to be reference condition), the determination is full support according to the Stream Bottom Deposit Assessment Protocol even thought the percent fines were somewhat high (42%). Therefore, SBD/sedimentation was removed as a cause of non support.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. Both causal and response nutrient indicators were present -- assessment is incomplete. Therefore, nutrients was added (5C) as a cause of impairment.

2016 Action: Previously "Rio Ojo Caliente (Rio Chama to Rio Vallecito)", this AU was split. 2014 sonde data confirm the nutrient listing (min 4.85 mg/L, large diel swings).

Rio Ojo Caliente (Rio Chama to Arroyo El Rito)
AU:NM-2113_11 WQS: 20.6.4.116

2016 Action: Previously "Rio Ojo Caliente (Rio Chama to Rio Vallecito)", this AU was split. Coldwater ALU is not attainable in this lower AU. WQS is under review.

Rio Puerco de Chama (Abiquiu Reservoir to HWY 96)
AU:NM-2115_20 WQS: 20.6.4.118

2000 Action: The temperature standard was exceeded 2/8 times. The fecal coliform standard of 400 cfu/100mL were exceeded 2/3 times. DO was exceeded 1/8 times. Temperature and fecal coliform will be added as causes of non-support, and DO will be added to the 305(b) report as FSIO.

2010 Action: Name was changed from "Rio Puerco de Chama (Abiquiu Reservoir to Poleo Creek)" to "Rio Puerco de Chama (Abiquiu Reservoir to HWY 96)" to match 20.6.4.119 NMAC. This AU was surveyed in 2007. There were 2 of 7 and 2 of 7 exceedences for applicable chronic aluminum and E. coli criteria, respectively. The maximum temperature recorded via thermograph was 33.7 degrees C (criterion of 26 degrees C). A level II nutrient assessment documented the presence of three indicators. Therefore, temperature remains, and aluminum, E. coli, and nutrients were added as causes of impairment. Sonde and chlorophyll data are needed to confirm the nutrient listing.

2012 Action: Chlorophyll data collected in 2010 did not indicate nutrient problem. Available 2010 sonde re-deployment data were inconclusive (<72 hours). Therefore, nutrients remains listed as 5C -- sonde data needed to verify these listings prior to TMDL development. TMDLs prepared for temperature and e. coli in 2011.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. There were 2/4 e. coli exceedences. Thermograph and sonde data were not collected. There were 0/5 exceedences of the old 87 ug/L dissolved aluminum WQC, and no accessible total recoverable aluminum data because our 10 micron filtering requirement when turbidity > 30 NTU was not yet in place. Therefore, nutrients, temperature, and e. coli remain, and aluminum was removed.

Rio Puerco de Chama (HWY 96 to headwaters)
AU:NM-2116.A_020 WQS: 20.6.4.119

1996 Action: Listed for total ammonia, total phosphorus and stream bottom deposits. Total ammonia and total phosphorus data from one station (URG116.010040) in 1991 indicate the fishery use is full support as there were no exceedences of criteria.

1998 Action: Total ammonia and total phosphorus will be removed as a cause of non-support. The reach will continue to be listed on the 303(d) list as Partial Support for stream bottom deposits.

2000 Action: TOC measurements exceeded the standard 2/3 times. No data were collected to verify the Stream bottom deposits listing, which will be retained as a cause of non-support. TOC will be added as a cause of non-support.

2002 Action: In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2010 Action: Name was changed from "Rio Puerco de Chama (Poleo Creek to the headwaters)" to "Rio Puerco de Chama (HWY 96 to the headwaters)" to match 20.6.4.119 NMAC. This AU was surveyed in 2007. The benthic macroinvertebrate M-SCI score at FR 103 was 62.25 (threshold of 56.70). There were 1 of 8 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, sedimentation/siltation was removed, and turbidity is noted as Full Support.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. No impairments were found.

Rio Tusas (Perennial prt Rio Vallecitos to headwaters)
AU:NM-2113_30 WQS: 20.6.4.116

1996 Action: Listed for turbidity and stream bottom deposits. There are no numeric turbidity criteria for this warmwater fishery.

1998 Action: Turbidity will be removed as a cause of non-support for this reach. The reach will continue to be listed on the 303(d) list as Partial Support for Stream Bottom Deposits.

2000 Action: Stream bottom deposits were evaluated at 2 stations, which had 39 and 67% fines <2mm. Stream bottom deposits will be retained as a cause of non-support.

2006 Action: An incorrect Assessment Unit note referring to a de-list letter for sedimentation was removed from the list.

2010 Action: This AU was surveyed in 2007. The benthic macroinvertebrate M-SCI score above Rio Vallecitos was 62.14 (threshold of 56.70). A level II nutrient assessment documented the presence of three indicators. Therefore, sedimentation/siltation was removed, and nutrients was added as a cause of non support.

2012 Action: TMDL was prepared for nutrients in 2011.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. Both nutrient causal and response variables were present. Therefore, the nutrient listing remains.

2016 Action: 2014 data continue to indicate nutrient impairment. Thermograph max temp was 31.7 degrees C. Therefore, temperature was added as an impairment.

Rio Vallecitos (Rio Tusas to headwaters)
AU:NM-2112.A_00 WQS: 20.6.4.115

1996 Action: Listed for metals (copper and zinc acute, aluminum chronic), temperature, total phosphorus, turbidity and stream bottom deposits. Data are available from six stations on this reach. For copper, zinc, and aluminum 1/1 exceedence is noted at station 6029 that is identified as being immediately below a gypsum mine drain. All other stations have a cumulative ratio of 0/10 for each parameter. Temperature at the stations is 1/3 for both downstream stations and 0/10 at the upstream stations. For total phosphorus the ratios are 1/1 and 1/3 at the two stations immediately below the

mine and 0/12 for all others. Turbidity is variable throughout with a cumulative exceedance ratio of 3/ 6.

1998 Action: Because the impacts noted were attributable to a point source, these minimal data sets will be considered sufficient to cause Partially Supporting listing for aluminum, copper, and zinc. The reach will be listed as Full Support, Impacts Observed for temperature, total phosphorus, and turbidity on the 1998 305(b) list. The reach will continue to be listed on the 303(d) list as Partial Support for stream bottom deposits.

2000 Action: Data from two thermographs have a cumulative exceedance ratio of the HQCWF temperature criterion 493/6,061 times. The chronic aluminum criteria of 87 ug/L was exceeded in both an upper and lower station with measurements of 750 ug/L and 555 ug/L, respectively. The acute criterion for aluminum (750 ug/L) was also exceeded 2/12 times. Turbidity measurements exceeded the standard of 10 NTU 8/16 times. There is no longer a standard associated with total phosphorus, so the Nutrient Assessment Protocol will be used forthwith. TOC criteria was exceeded 2/15 times. Stream bottom deposits were evaluated at 1 station on the AU; 10% fines were recorded with an embeddedness of 33%. Metals (Al chronic) and Metals (Al acute) will be retained as causes of non-support. Temperature, turbidity, and TOC will be added as causes of non-support.

2002 Action: In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2004 Action: TMDLs were drafted for temperature, turbidity, and aluminum.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. There were 0/7 grab turbidity values > 7NTU, and the SEV turbidity numeric translator was not exceeded. There were 0/3 exceedences of the hardness-dependent total recoverable aluminum WQC. The max thermograph temperature was 30.7 degrees C. Therefore, temerature remains listed, and aluminum and turbidity were removed.

2016 Action: Both nutrient causal (TP) and response (DO min) variables were present in the 2014 data set. The max thermograph temp was 28.2 degrees C. Therefore, temperature remains and nutrients was added. HQCWAL may not be attainable - WQS review needed.

Rito de Tierra Amarilla (HWY 64 to headwaters)
AU:NM-2116.A_072 WQS: 20.6.4.119

1996 Action: New listing based on 1988 data at station URG116.017020. The total phosphorus ratio at this station is 2/2.

1998 Action: This reach is listed as Not Supported with total phosphorus as the cause of non-support.

2000 Action: Water quality standards, as assessed using the 1998 Assessment Protocol, are currently being met for total phosphorus on the Upper Rito de Tierra Amarilla.

2002 Action: Previously named Rito de Tierra Amarilla at US Highway 84 Bridge.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. There were 2/3 exceedences of the hardness-dependent total recoverable aluminum chronic WQC. The max thermograph temperature was 23.45 degrees C. Therefore, temerature and aluminum (5C because n<4) were added as causes of impairment.

Rito de Tierra Amarilla (Rio Chama to HWY 64)
AU:NM-2116.A_070 WQS: 20.6.4.119

2000 Action: The stream is 100% embedded with silt runoff from land use activities. Turbidity criteria was exceeded 4/8 times. The HQCWF criterion was exceeded 194/864 times with a maximum temperature of 29.5C. Stream bed deposits, turbidity, and temperature will be added as causes of non-support.

2002 Action: Previous named Lower Rito de Tierra Amarilla at US Highway 112 culvert.

2004 Action: TMDLs were written for temperature, turbidity, and SBD/sedimentation.

2014 Action: This AU was sampled during the 2012 Rio Chama survey.
There were 2/5 exceedences of the segment-specific SC WQC. No thermograph, sonde, or sedimentation data are available to confirm the SC listing and re-assess the other listings. Therefore, temerature, turbidity, and sedimenation remain listed, and specific conductance was added.

2016 Action: Both nutrient causal (TN and TP) and response (DO min 4.6 mg/L) variables were present in the 2014 data set. The max thermograph temp was 27.2 degrees C. WQS review recommended before proceeding with SC TMDL (sonde data still needed to confirm) -Cool water ALU more appropriate on basis of ecoregion (21d) and fish community.

Rito Encino (Rio Puerco de Chama to headwaters)
AU:NM-2116.A_021 WQS: 20.6.4.119

1996 Action: Listing based on 5/5 exceedences for total phosphorus and turbidity.

1998 Action: This reach will be listed as Not Supported with total phosphorus and turbidity as causes.

2000 Action: Total phosphorus no longer has a standard associated with it. The Nutrient Assessment Protocol will be used to assess nutrient loading on this reach. Turbidity exceeded its standard of 25 NTU 1/8 times. Conductivity measurements exceeded the standard of 500 umhos 1/8 times. TOC exceeded the criterion 2/8 times. TOC will be added as a cause of non-support. Turbidity and conductivity will be added to the 305(b) report as FSIO.

2002 Action: In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. There were 2/3 exceedences of the e. coli WQC. There were 45.7 percent sand and fines, with a LRBS of -1.31. Therefore, sedimentation and e coli were added as causes of impairment.

Rito Redondo (Rito Resumidero to headwaters)
AU:NM-2116.A_026 WQS: 20.6.4.119

1996 Action: Previously listed for total organic carbon and stream bottom deposits. Ratios for total organic carbon are 2/5 and 1/5 from a 1986 survey.

1998 Action: The reach is listed as Partially Supporting with total organic carbon and stream bottom deposits as the cause of non-support.

2000 Action: Stream bottom deposits were assessed and found to be fully supporting the AU"s designated use. The TOC standard of 7 mg/L was exceeded 4/8 times. TOC will be retained as a cause of non-support and stream bottom deposits will be removed.

2002 Action: In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific

dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2014 Action: This AU was sampled during the 2012 Rio Chama survey. No impairments were found.

Rito Resumidero (Perennial prt R Puerco de Chama to hdwt)
AU:NM-2116.A_025 WQS: 20.6.4.119

1996 Action: Previously listed for total ammonia, total organic carbon and stream bottom deposits. Ammonia data from 1986 have ratios of 0/6 and 0/6. Total organic carbon data from the same event are 1/5 and 1/5.

1998 Action: Total ammonia will be removed as a cause of non-support for this reach. The reach will be listed on the 1998 305(b) list as Full Support, Impacts Observed with total organic carbon as the cause. The reach will continue to be listed on the 303(d) list as Not Supporting for stream bottom deposits.

2000 Action: The station evaluated for stream bottom deposits had 30% fines <2mm, which is considered partially supporting. TOC measurements exceeded the criterion 2/8 times. Stream bottom deposits will be retained as a cause of non-support, and TOC will be added as a cause of non-support.

2002 Action: In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2010 Action: This AU was surveyed in 2007. There were 0 of 10 exceedences of the interim turbidity numeric translator of 25 NTU. The benthic macroinvertebrate M-SCI score above Rio Vallecitos was 54.82 (threshold of 56.70), but there was only 7 percent fines (<2 mm) above the Forest Road 103 diversion. Therefore, sedimentation/siltation was removed, and Benthic Macroinvertebrates - Bioassessments (5C) was added as a cause of non support.

2014 Action: This AU was surveyed during the 2012 Chama study. The entire stream is diverted just upstream of the SWQB historic sampling station, deeming this station unsampled for the majority of parameters. The "perennial prt" below the spring was only sampled once for metals (n=1 is insufficient to assess metals WQC). The benthic macroinvertebrate M-SCI score was 73.7. Therefore, Benthic macroinvert. community impairment was removed, and Low Flow Alteration

was added a cause of impairment.

Sexto Creek (Rio Chamita to CO border)
AU:NM-2116.A_112 WQS: 20.6.4.119

2014 Action: This AU was sampled (limited) during the 2012 Rio Chama survey. The max thermograph temperature was 26.7 degrees C. Therefore, temperature was added as a cause of impairment.

Willow Creek (Jicarilla Apache bnd to headwaters)
AU:NM-2116.A_140 WQS: 20.6.4.119

2014 Action: This AU was sampled (limited) during the 2012 Rio Chama survey. No impairments were found.

HUC: 13020201 - Rio Grande-Santa Fe

Alamo Creek (Cienega Creek to headwaters)
AU:NM-2110_20 WQS: 20.6.4.113

1996 Action: Previously listed for metals (unknown). There are no data, historical or otherwise, for this reach.

1998 Action: This reach will continue to be listed as partially supporting for metals (unknown) and will be sampled as part of the 1998-1999 for the Santa Fe River TMDL Project.

2000 Action: Access was limited to the portion of the reach that flows under I-25. On several occasions, across all seasons, SWQB staff went to sample the reach and found that it was not flowing. The portion of Alamo Creek that enters into the Santa Fe River was inaccessible through private lands. Communications with SWQB staff indicate that the listing for metals may have been based on a historic smelter along Alamo Creek. The existence of this smelter is not documented anywhere. Historic data, for 1984, show no exceedences of metals. Also, there were no metals criterion in 1984, they were not promulgated until 1991. However, using today's standards and a hardness of 318, the following calculations can be made. Boron is reported as 160 micrograms or .160 milligrams. Today's standard is 5000 micrograms or 5 milligrams. Cadmium is reported as 4 micrograms/liter (total) and the standard is 3.4 micrograms/liter dissolved. Using the partitioning coefficient, the dissolved concentration is 1.4 micrograms/liter. Chromium is reported as 16 micrograms/liter (total) and the standard is 100 micrograms/liter dissolved. Using the partitioning coefficient, the dissolved concentration is 2.655 micrograms/liter. If there were flow in Alamo Creek, any contributions of metals from Alamo Creek would flow to the Santa Fe River. Downstream from the confluence of Alamo Creek with the Santa Fe River there were no exceedences for any metals in any samples during Fall 1999.

Ancho Canyon (North Fork to headwaters)
AU:NM-9000.A_046 WQS: 20.6.4.128

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. PCBs (for human health) was

determined to be a cause of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health) was determined to be causes of non-support in this AU. The associated impairment listings were revised according to this re-assessment. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Ancho Canyon (Rio Grande to North Fork Ancho)
AU:NM-9000.A_054 WQS: 20.6.4.128

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Apache Canyon (perennial prt Galisteo Creek to headwaters)
AU:NM-2118.A_14 WQS: 20.6.4.121

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. No impairments were found. SWQB's sampling station above I25 is not in the perennial portion (dries up during the survey); access to the perennial portion is difficult.

Arroyo de la Delfe (Pajarito Canyon to headwaters)
AU:NM-128.A_16 WQS: 20.6.4.128

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, mercury, and adjusted

gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: ll available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. Adjusted gross alpha was determined to be a cause of non-support in this AU. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Canada del Buey (within LANL)
AU:NM-128.A_00 WQS: 20.6.4.128

2006 Action: Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The Livestock Watering criterion of 15 pCi/L Adjust Gross Alpha was exceeded 6 of 6 (exceedences included 4/4 at CDB abv SR-4; and 1/1 at CDB near TA-46 and CDB-2.0). The uranium-corrected gross alpha minus plutonium and americium exceedences were used in this determination. The acute aluminum criterion (0.75 mg/L) for Limited Aquatic Life was exceeded 5 of 13 times (exceedences included 3/7 at CDB abv SR-4 and 2/6 at CDB near TA-46). The Radium 226+228 criterion for livestock watering (30 pCi/L) was exceeded 2 of 2 times (2/2 at CDB abv SR-4). Therefore, gross alpha, aluminum, and radium 226+228 were added as causes of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, PCBs (for human health), and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Canon de Valle (below LANL gage E256)
AU:NM-128.A_01 WQS: 20.6.4.128

2006 Action: Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The Livestock Watering criterion of 15 pCi/L Adjust Gross Alpha was exceeded 2 of 2 times at CDV abv Water. The uranium-corrected gross alpha minus plutonium and americium exceedences were used in this determination. The acute aluminum criterion (0.75 mg/L) for Limited Aquatic Life was exceeded 8 of 11 times (exceedences included 5/5 at CDV abv Water, 2/5 at CDV blw MDA P, and 1/1 at CDV @ Water). Therefore, gross alpha and aluminum were added as a causes of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum and adjusted gross alpha remain causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. Adjusted gross alpha was determined to be a cause of non-support in this AU. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Canon de Valle (LANL gage E256 to Burning Ground Spr)
AU:NM-126.A_00 WQS: 20.6.4.126

2006 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, copper, PCBs (for both human health and wildlife habitat), and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha was determined to be causes of non-support in this AU. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess

against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Canon de Valle (upper LANL bnd to headwaters)
AU:NM-9000.A_051 WQS: 20.6.4.98

2006 Action: Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The chronic dissolved aluminum criterion screening value (87 ug/L x 1.5 = 130.5 ug/L) for Aquatic Life was exceeded 6 of 8 times (exceedences included 6/7 at CDV abv SR-501). The hardness-dependent dissolved lead criterion (3.75 ug/L) for Aquatic Life was exceeded 2 of 8 times (exceedences included 2/4 at CDV abv SR-501). The total selenium criterion (5.0 ug/L) for Wildlife Habitat was exceeded 2 of 8 times (exceedences included 2/4 at CDV abv SR-501). Therefore, aluminum, selenium, and lead were added as a causes of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, PCBs (for human health), and adjusted gross alpha were determined to be causes of non support; selenium and lead were de-listed. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2012 Action: Application of the SWQB Hydrology Protocol (survey date 7/22/08) indicate this assessment unit is ephemeral (Hydrology Protocol score of 5.5 with 97.0% days with no flow at LANL gage E253 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). NMED must complete the process detailed in 20.6.4.15 NMAC Subsection C in order to a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health) and adjusted gross alpha was determined to be causes of non-support in this AU. The associated impairment listings were revised according to this re-assessment. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Capulin Creek (Rio Grande to headwaters)
AU:NM-2118.A_72 WQS: 20.6.4.121

1996 Action: Previously listed for stream bottom deposits and turbidity. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits and turbidity as the cause of non-support.

2004 Action: This assessment unit was intensively sampled as part of the URG II survey in 2001. This creek is located in Bandelier National Monument and must be hiked into to access. The creek was only visited during the fall sampling run. There were 0 of 1 turbidity exceedences. Therefore, turbidity will be removed as a cause of non support. A biological survey indicated biological impairment (70% of reference) using Rio Nambe as a reference site. A concurrent pebble count was not conducted, so there is insufficient data to determine stream bottom impairment according to our current protocol. Therefore, SBD/sedimentation/siltation and benthic macroinvertebrate bioassessments will remain as a cause of non support.

2006 Action: This AU was re-assessed. The 1996 Dome Fire extensively burned this watershed, leading to increased erosion of the already erosive natural geology in the area (Bandelier Tuff). There are no land uses in the watershed that are impacting the stream. Because the sedimentation impacts (and hence the impacts to the benthic macroinvertebrate community) are due to natural causes - NMAC 220.6.4.13.A(2) --, these causes of impairment were removed.

Chaquehui Canyon (within LANL)
AU:NM-128.A_03 WQS: 20.6.4.128

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. No impairments were identified. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Cienega Creek (Perennial prt of Santa Fe R to headwaters)
AU:NM-2110_10 WQS: 20.6.4.113

1996 Action: Previously listed for fecal coliform and chlorine. There is one sampling station on this reach. All data are from a 1986 survey. For chlorine, the ratio of exceedences was 1/1, full support, impacts observed. For fecal coliform, the ratio of exceedences was 1/1, full support, impacts observed. For ammonia, chronic, the ratio of exceedences was 1/5, full support, impacts observed.

1998 Action: This reach will sampled in 1998-1999 for the Santa Fe River TMDL Project and thus will remain on the 303(d) list partially supporting for fecal coliform, total ammonia and chlorine.

2000 Action: High levels of fecal coliform were found in samples collected by the City of Santa Fe during high flow events in 1995. No exceedances were observed during fall sampling, although a hog pen in the floodplain of Cienega Creek continues to be a concern. SWQB is obtaining an amperiometric titration instrument to evaluate chlorine in the stream. No ammonia exceedences were observed. Fecal coliform and total residual chlorine will remain listed until data becomes available to allow for de-listing.

2002 Action: One station was sampled in August and September of 2001 to assess various listed criteria. Based on field and equipment notes, total residual chlorine data from earlier studies is suspect because it is uncertain whether the second phase of the field measurement necessary to remove interferences was completed at the time of sampling. During the 2001 study, there were 0 of 8 exceedences at the station below La Cienega. Therefore, total residual chlorine will be removed as a cause of Non Support. There were 0 of 5 fecal coliform exceedences. Therefore, fecal coliform will be removed as a cause of Non Support.

2006 Action: The AU was extended to include the portion from La Cienega to headwaters (previously NM-2110_15) because there was no reason for the AU split.

2010 Action: There were 0 of 4 exceedences of the interim turbidity numeric translator of 50 NTU. Therefore, this AU is noted as Full Support for turbidity.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. No impairments were found.

Deer Creek (Galisteo Creek to headwaters)
AU:NM-2118.A_13 WQS: 20.6.4.98

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. No impairments were found.

Galisteo Ck (Perennial prt 2.2 mi abv Lamy to hdwts)
AU:NM-2118.A_12 WQS: 20.6.4.121

2014 Action: A UAA was conducted for perennial reaches of Galisteo Creek and its tribs. The original AU was then split 2.2 miles abv Lamy (blw Canoncito). Perennial reaches below this point were reclassified as segment 139 and reaches above this point were retained in segment 121. Amendment was effective February 14, 2013. EPA approved the changes June 5, 2013.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. The max thermograph temperature was 31.8 degrees C at Spirit Valley Rd. Therefore, temperature was added as a cause of impairment. High quality CWAL may not be attainable in the lower portion of this AU.

Galisteo Ck (Perennial prt Kewa bnd to 2.2 mi abv Lamy)
AU:NM-2118.A_10 WQS: 20.6.4.139

1996 Action: Previously listed for stream bottom deposits, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits as the cause of non-support.

2002 Action: As determined by SWQB fish surveys, this assessment unit does not contain a coldwater fishery and likely did not in 1975. The system is intermittent with perennial reaches.

2004 Action: This assessment unit was intensively sampled as part of the URG II survey in 2001. Galisteo Ck at Galisteo (59% fines) was used as a reference to determine potential stream bottom deposit impairment. Galisteo Ck at Cerrillos had 76% fines and the benthics were non-impaired. Therefore, stream bottom deposits will be removed as a cause of non-support. The specific conductance criterion of 300 umhos was exceeded in 14 of 14 measurements. Therefore, specific conductance will be added as a cause of non-support. 5 of 14 instanteous temperature readings taken during site visits were greater than 20 degrees C. A thermograph was deployed at Galisteo Ck at Galisteo summer 2003. The temperature exceeded 23 degrees C and exceeded 20 degrees C for greater than four hours. Therefore, temperature will be added as a cause of non-support. This reach is misclassified as a HQCWF according to fisheries data, thus this AU will be categorized under 5B.

2012 Action: Thermographs were deployed in 2010 at Galisteo. The maximum temperature was 29.7 degrees C. Therefore, temperature remains listed. HQCWAL with WQ criterion of 20 degrees C may not be appropriate. WQS is under review. Application of the SWQB Hydrology Protocol at various locations in this AU (including several survey dates between 2008 - 2012) indicate this assessment unit has perennial portions - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

2014 Action: A UAA was conducted for perennial reaches of Galisteo Creek and its tribs. The original AU was then split 2.2 miles abv Lamy (blw Canoncito). Perennial reaches below this point were reclassified as segment 139 with the Coolwater aquatic life use. Amendment was effective February 14, 2013. EPA approved the changes June 5, 2013. Specific conductance is no longer an applicable WQC. This AU remains impaired for temperature (5C, max thermograph temp 29.7 within instrument error).

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. No impairments were found. Thermograph deployments to verify the temperature listing were unsuccessful; therefore, the temperature listing remains.

Las Huertas Ck (Perennial prt Santa Ana Pueblo bnd to hws)
AU:NM-2108.5_00 WQS: 20.6.4.111

1998 Action: Previously listed for stream bottom deposits, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

2006 Action: Name was changed to incorporate to extend the reach and cover all perennial portions.

2008 Action: This AU was intensively surveyed as part of the Middle Rio Grande Tributaries (2005) survey. The AU was determined to be Full Support for sedimentation/siltation, but Non Support for unidentified biological impairment according to the 2008 Assessment Protocols because the M-SCI score was 47.07 but the measured percent fines was only 8. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds. Therefore, sedimentation/siltation was removed, and Benthic-Macroinvertebrate Bioassessments (Streams) and nutrients were added as causes of non support. A sonde should be deployed to confirm the nutrient impairment.

2010 Action: Name was changed to acknowledge tribal portion. There were 2 of 13 exceedences for the interim turbidity numeric translator of 10 NTU with an M-SCI score of 47.09 (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity and Benthic-Macroinvertebrate Bioassessments (Streams) was removed.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. There were 2/6 excursions of the nutrient response variable DO. No new sonde data were collected. Therefore, this nutrient impairment remains (IR Cat 5c).

Lummis Canyon (Upper Trail to headwaters)
AU:NM-97.A_001 WQS: 20.6.4.98

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. There was only one sampling event for this AU, so the data are considered Not Assessed. The PCB WQC for human health was exceedences during this one sampling event, so the IR Category is 3B. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Mortandad Canyon (within LANL)
AU:NM-9000.A_042 WQS: 20.6.4.128

2002 Action: Gross Alpha was listed as cause of Partial Support because the Livestock Watering criterion of 15 pCi/L was exceeded two times in time-weighted composite samples in 2001. The uranium-corrected gross alpha minus plutonium and americium exceedences were as follows (pCi/L): 27.08 and 30.93. Selenium was listed as Full Support Impacts Observed because the Wildlife Habitat chronic screening criterion of 7.5 mg/L (5.0 mg/L x 1.5) was exceeded one time in 2001 at 7.76 ug/L. Los Alamos National Laboratory collected all data used in these assessments during storm events in 2000 and 2001.

2004 Action: Gross Alpha will remain listed as Non Support. There was additional exceedences of the Livestock Watering criterion of 15 pCi/L (647.24 pCi/L) in 2002. This datum was collected by the NMED DOE Oversite Bureau. In the time-weighted composite LANL 2003 storm event data set, there were two additional exceedences at the station below Effluent Canyon (209.54 and 351.58 pCi/L). All these data were calculated as uranium-corrected gross alpha minus plutonium and americium. Selenium will be added as Non Support because there was an additional exceedence of the Wildlife Habitat chronic screening criterion of 7.5 ug/L (5.0 ug/L x 1.5) on 9/3/2003 of 7.88 ug/L in stormwater collected by LANL.

2006 Action: Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The Livestock Watering criterion of 15 pCi/L Adjust Gross Alpha was exceeded 7 of 7 at Mortandad blw Effluent Canyon (E200). The uranium-corrected gross alpha minus plutonium and americium exceedences were used in this determination. The acute aluminum criterion (0.75 mg/L) for Limited Aquatic Life was exceeded 9 of 14 times at Mortandad blw Effluent Canyon (E200). The selenium criterion (5.0 mg/L) for Wildlife

Habitat was exceeded 3 of 18 times at Mortandad blw Effluent Canyon (E200). Therefore, selenium and gross alpha remain, and aluminum was added as a cause of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum and adjusted gross alpha remain, selenium was removed, and copper was added as a cause of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat), dissolved copper (acute), and adjusted gross alpha were determined to be causes of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

North Fork Ancho Canyon (Ancho Canyon to headwaters)
AU:NM-9000.A_055 WQS: 20.6.4.128

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Adjusted gross alpha and PCBs (for both human health and wildlife habitat) were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU, based on two sampling events (IR Cat 5C). Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Pajarito Canyon (Arroyo de La Delfe to Starmers Spring)
AU:NM-126.A_01 WQS: 20.6.4.126

1996 Action: This AU was previously lumped into "Pajarito Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Adjusted gross alpha and aluminum were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. No impairments were identified. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Pajarito Canyon (lower LANL bnd to Two Mile Canyon)
AU:NM-128.A_08 WQS: 20.6.4.128

1996 Action: This AU was previously lumped into "Pajarito Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

2006 Action: Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The Livestock Watering criterion of 15 pCi/L Adjust Gross Alpha was exceeded 11 of 11 times (exceedences included 1/1 at PA-4.54, 4/4 Abv SR-4, 2/2 Abv TA-18, and 4/4 Abv 3-mile). The uranium-corrected gross alpha minus plutonium and americium exceedences were used in this determination. The acute aluminum criterion (0.75 mg/L) for Limited Aquatic Life was exceeded 21 of 35 times (exceedences included 1/1 at 1.0 mi above 2-mile, 4/10 Abv SR-4, 6/9 Abv TA-18, 7/11 Abv 3-mile, and 3/4 above 2-mile). The selenium criterion (5.0 mg/L) for Wildlife Habitat was exceeded 5 of 42 times (exceedences included 0/1 at 1.0 mi above 2-mile, 2/15 Abv SR-4, 1/10 Abv TA-18, 1/12 Abv 3-mile, and 1/5 above 2-mile). The radium 226+228 criterion (30 pCi/L) for Livestock Watering was exceeded 2 of 15 times (exceedences included 2/3 above 3-mile). Therefore, selenium, gross alpha, radium 226+228, and aluminum were added as a causes of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, copper, adjusted gross alpha, and PCBs (for both human health and wildlife habitat) were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate

hardness-dependent metals criteria by sampling event. PCBs (human health) was determined to be a cause of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

2016 Action: Previously named "Pajarito Canyon (within LANL below Arroyo de La Delfe)," this AU was split at Two Mile Canyon. Data provided by LANs indicate this AU is ephemeral.

Pajarito Canyon (Rio Grande to LANL bnd)
AU:NM-9000.A_040 WQS: 20.6.4.98

1996 Action: This AU was previously lumped into "Pajarito Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. No impairments were identified. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe)
AU:NM-128.A_06 WQS: 20.6.4.128

2016 Action: Previously named "Pajarito Canyon (within LANL below Arroyo de La Delfe)," this AU was split at Two Mile Canyon. Data provided by LANs indicate this AU is intermittent or ephemeral, depending on the hydrologic year. Intellus data (2010 - 2015) were pulled for the station Pajarito abv Two Mile to assess this newly defined AU. There were 2/4 dissolved copper, 3/3 gross alpha, 2/3 PCB wildlife habitat, and 3/3 PCB human health WQC exceedences. Therefore, these parameters are noted as causes of impairment.

Pajarito Canyon (upper LANL bnd to headwaters)
AU:NM-9000.A_048 WQS: 20.6.4.98

1996 Action: This AU was previously lumped into "Pajarito Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, copper, PCBs (for both human health and wildlife habitat), and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments. Although the station name in this reach is noted as "perennial," the station was completely dry when visiting the site with EPA Region 6 in 2009.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health), arsenic (human health), selenium (wildlife habitat and chronic ALU), and adjusted gross alpha were determined to be causes of non-support in this AU. The PCB wildlife habitat WQC was exceeded during 4/9 sampling events, yet the four most recent were not indicating a potential trend towards attainment of this WQC (IR Cat 5C). All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

2016 Action: Flow data from LANL gage E240 for the period September 2009 - August 2014 document that this AU is not perennial. Therefore, the WQS reference was changed to 20.6.4.98 NMAC.

Pajarito Canyon (within LANL above Starmers Gulch)
AU:NM-128.A_07 WQS: 20.6.4.128

1996 Action: This AU was previously lumped into "Pajarito Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. Adjusted gross alpha was determined to be a cause of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Potrillo Canyon (above Water Canyon)
AU:NM-128.A_09 WQS: 20.6.4.128

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010

- 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. Adjusted gross alpha was determined to be a cause of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Rio Grande (Cochiti Reservoir to San Ildefonso bnd)
AU:NM-2111_00 WQS: 20.6.4.114

2004 Action: There were 3 of 6 exceedences of the turbidity criterion on 50 NTU at the USGS gage in White Rock. Therefore, turbidity was listed as Non Support.

2006 Action: In January 2006, a fish consumption advisory based on the presence of PCBs in fish tissue was put into effect. The advisory covers Abiquiu Reservoir, Cochiti Reservoir, and the Rio Grande from Rito de los Frijoles to Pojoaque Creek. Therefore, PCBs in Fish Tissue was added as a cause of non support. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2010 Action: PCBs in Fish Tissue remains as a Probable Cause because there are fish consumption guidelines for PCBs from Cochiti Reservoir to Embudo Creek.

2012 Action: SWQB only sampled gross alpha and e. coli here during the 2009 URG study because this AU is scheduled to be monitored as part of the 2014 MRG survey. Available RACER, USGS, and DOE-OB data from the 2009 Upper Rio Grande study area were queried and assessed. There were 8 of 15 exceedences of the adjusted gross alpha criterion (15pCi/L). There were and 12 of 23 exceedences of the human health PCB criterion (0.00064 ug/L). There were 5 of 20 exceedences of the 235 cfu/100mL e. coli criterion. Therefore, e. coli, PCBs and adjusted gross alpha were added as causes of impairment.

2016 Action: This AU was sampled during the MRG (2014) survey. Data available from Intellus (primarily stormwater data) and the USGS were also assessed. There were 0/8 E. coli exceedences. There were 2/38 exceedeneces of the dissolved aluminum irrigation use WQC. There were 4/32 and 6/32 exceedences of the acute and chronic ALU total recoverable selenium WQC, respectively. There were 7/38 exceedences of the dissolved thallium WQC for human health (all exceedences were J flagged, and the more recent thallium data were all non detect). There were 3/18 and 5/18 exceedences of the total recoverable cyanide acute ALU and wildlife habitat WQC, respectively (the more recent data were all below the respective WQC). There were 34/65 adjusted gross alpha exceedences. There were 4/29 and 20/29 exceedences of the Wildlife Habitat and Human Health PCB WQC, respectively. The PCB in Fish Tissue advisory remains in effect. The current turbidity AP is not applied to reaches with dual ALU designations. Therefore, E. coli was

removed; gross alpha, PCBs, and turbidity remain; and dissolved aluminum, thallium (5C), cyanide (5C) and selenium were added as causes of impairment.

Rio Grande (non-pueblo Angostura Div to Cochiti Rsrv)
AU:NM-2108_00 WQS: 20.6.4.110

2016 Action: This AU was sampled during the Middle Rio Grande (2014) survey. NMED DOE OB data were also assessed. The max thermograph temperature was 26.6 degrees C. There were 2/4 adjusted gross alpha exceedences, and 2/2 exceedences of the PCB human health WQC. Therefore, temperature, PCBs (5C), and gross alpha were listed as a causes of impairment.

Rio Grande (non-pueblo HWY 550 Bridge to Angostura Div)
AU:NM-2105.1_02 WQS: 20.6.4.106

1996 Action: This AU was previously lumped into "Rio Grande (non-pueblo Alameda Bridge to Angostura Diversion)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: This AU is the result of the split of the AU named "Rio Grande (non-pueblo Alameda Bridge to Angostura Diversion)." All readily available data that were not assessed for the previous listing cycle were collated and assessed and compared to the conclusions of the previous list. There were 1 of 13 exceedences of the E. coli criterion (410 cfu/100 mL) utilizing the past five years of data. Therefore, the E. coli listing was not carried over to this newly defined AU.

Rito de los Frijoles (Rio Grande to Upper Crossing)
AU:NM-2118.A_70 WQS: 20.6.4.121

1996 Action: The segment was originally listed due to the levels of DDT in fish that led the National Park Service to issue a fishing closure. A 1996 consultant report stated that remediation of DDT contaminated soil and sediment was not warranted on the basis of ecological risk, potential human health impacts, or direct risk to cultural resources.

1998 Action: Because the fishing closure is still in effect, the stream was retained on the list.

2004 Action: This reach was intensively during the 2001 URGII survey. There were no exceedences of 4,4-DDT or derivatives in water during the survey. The USGS sampled this area extensively as part of the NAWQA program in the early 90s. According to NPS staff, the fishing ban is still in effect in part due to potential DDT levels still remaining in fish, and in part due to conflicting recreational uses (this is a bosque picnic area). In 1996, a consultant prepared the report noted above which identified "hotspots." Sediments in these areas were remediated. Other potential areas of low level contamination were identified, but with no discernable pattern. The assumption is that DDT contamination was the result of both inappropriate washing of containers used to mix DDT-based pesticides into a grease pit that drained to the creek, as well as spraying of individual trees for pest management. The later source would explain the patchy nature of the contamination. As noted above, the report concluded additional remediation would not warranted based on ecological risk and other factors. Also, the NPS needed to consider the impacts of removing several acres of healthy riparian bosque in order to access and remove any remaining contaminated sediments in an area where the exact location of contamination could not be determined. The NPS plans to leave the fishing ban in effect indefinitely. Therefore, the DDT listing

remains. There were 5 of 16 turbidity exceedences and 2 of 5 fecal coliform exceedences. A thermograph was deployed near the visitor center. The temperature criterion of 20 degrees C was exceeded for more than four consecutive hours for more than three consecutive days. Therefore, fecal coliform, turbidity, and temperature will be added as causes of non support. This AU will be categorized as 5C because biological data are needed to verify impairment due to turbidity. Exceedences were marginal (11.1, 12.7, 10.7, 10.8, and 13.5 NTUs compared to the criterion of 10 NTUs).

2006 Action: Rito de los Frijoles (Rio Grande to headwaters) was split at Upper Crossing. Fish tissue data was collected September 2001. The values warrant a continued fishing ban, DDT listing, and a state fish consumption advisory. Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The chronic screening value for aluminum (87 ug/L x 10.5 = 130.5 ug/L) for High Quality Cold Water Aquatic Life was exceeded 5 of 14 times (exceedences included 2/6 At Rio Grande and 3/7 At Bandelier). The Radium 226+228 criterion for domestic water supply (5 pCi/L) was exceeded 7 of 10 times (exceedences included 2/4 At Rio Grande, 4/5 At Bandelier, and 1/1 At Headquarters). Therefore, aluminum and radium 226+228 were added as causes of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum was determined to be a cause of non support. There were 1 of 5 exceedences of the radium 226+228 criterion. Therefore, radium 226+228 was removed as a cause of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2016 Action: This AU was sampled Dec 2014 - June 2015 (n=4). There were 2/4 exceedences of the chronic total recoverable aluminum WQC. Therefore, aluminum remains listed. There is no new information on the historic fishing ban due to potential DDT contamination from a past spill event.

Rito de los Frijoles (Upper Crossing to headwaters)
AU:NM-2118.A_74 WQS: 20.6.4.121

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum was determined to be a cause of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

San Pedro Creek (San Felipe bnd to headwaters)
AU:NM-9000.A_004 WQS: 20.6.4.125

2008 Action: This AU was intensively surveyed as part of the Middle Rio Grande Tributaries (2005) survey. The AU was determined to be Full Support for sedimentation/siltation, but Non Support for unidentified biological impairment according to the 2008 Assessment Protocols because the M-SCI score was 47.07 but the measured percent fines was only 8. Therefore, Benthic-Macroinvertebrate Bioassessments (Streams) was added as a cause of non support.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. Both causal (TN and TP) and response (DO) data indicated nutrient impairment. Therefore, benthic macroinvertebrate impairment was replaced with nutrients (IR Category 5c), as excessive nutrients were likely negatively impacting the benthic macroinvertebrate community.

Sandia Canyon (Sigma Canyon to NPDES outfall 001)
AU:NM-9000.A_047 WQS: 20.6.4.126

2002 Action: PCBs were listed as Non Support because the because the Wildlife Habitat chronic screening criterion of 0.021 ug/L (0.014 ug/L x 1.5) was exceeded on, 7/14/2002, and 8/7/2003 with values of 0.11* and 0.078* ug/L on 7/4/2002, 0.11 ug/L on 7/14/2002, and 0.23 and 0.14 ug/L on 8/7/2003. These data were collected by LANL, analyzed using the 40 CFR Part 136 AROCLOR method, and compiled by the DOE Oversite Bureau. *Data J-flagged

2006 Action: Originally listed under AU Sandia Canyon (San Ildefonso Pueblo bnd to headwaters), AU was split due to 2005 WQS triennial review. Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The Livestock Watering criterion of 15 pCi/L Adjust Gross Alpha was exceeded 2 of 4 (exceedences included 2/2 at station Below the Wetlands). The uranium-corrected gross alpha minus plutonium and americium exceedences were used in this determination. The chronic aluminum screening value (87 ug/L x 1.5 = 130.5 ug/L) for Coldwater Aquatic Life was exceeded 13 of 20 times at station Below the Wetlands. The total mercury criterion (0.77 ug/L) for Wildlife Habitat was exceeded 7 of 20 times at station Below the Wetlands. The total PCB criterion of 0.64 ng/L for Human Health associated with Aquatic Life Use was exceeded 10 of 21 times at station Below the Wetlands. Therefore, PCBs in Water remains, and aluminum, mercury, and gross alpha were added as causes of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, mercury, adjusted gross alpha and PCBs (for both human health and wildlife habitat) remain listed, and copper was added as a cause of non support. The assessed data can be accessed at at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat), acute dissolved copper, dissolved thallium (human health 2/13, both J flagged = IR Cat 5C), and adjusted gross alpha were determined to be causes of non-support in this AU. There were also 3/3 exceedences of the chronic AL WQC for PCBs below the wetland. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. An IR Category 4b demonstration for dissolved copper was prepared by a third party (LANL) for the 2014 listing cycle. Additional information on these assessment and the IR Cat 4b demo are available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

2016 Action: LANL is conducting a segment-specific temperature study. Depending upon the results, a segment-specific temperature criterion may be pursued in the future (IR Category 5B). The required IR Category 4b progress report for the dissolved copper impairment is available at: https://www.env.nm.gov/swqb/303d-305b/2014-2016/LANL/index.html. The progress report notes that development of the stormwater management plan was suspended. If progress does not occur by the next reporting cycle, the IR 4b categorization may be removed.

Sandia Canyon (within LANL below Sigma Canyon)
AU:NM-128.A_11 WQS: 20.6.4.128

2006 Action: Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The Livestock Watering criterion of 15 pCi/L Adjust Gross Alpha was exceeded 3 of 3 at station Above the Firing Range. The uranium-corrected gross alpha minus plutonium and americium exceedences were used in this determination. The acute aluminum criterion (750 ug/L) for Limited Aquatic Life was exceeded 2 of 9 times at station Above the Firing Range. The total mercury criterion (0.77 ug/L) for Wildlife Habitat was exceeded 2 of 10 times at station Above the Firing Range. The total PCB criterion of 0.64 ng/L for Human Health associated with Limited Aquatic Life Use as well as the criterion of 0.014 ug/L was exceeded 4 of 8 times (exceedences included 2/2 at SA-6.0 and 2/6 at Above the Firing Range). Therefore, PCBs in Water, aluminum, mercury, and gross alpha were added as causes of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, mercury, adjusted gross alpha and PCBs (for both human health and wildlife habitat) remain listed, and copper was added as a cause of non support. The assessed data can be accessed at at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. There were also 2/2 exceedences of the acute AL WQC for PCBs at SR-4 (LANL gage E125). All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Santa Fe Lake
AU:NM-2118.B_30 WQS: 20.6.4.133

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Santa Fe River (Cochiti Pueblo bnd to Paseo del Canon)
AU:NM-2110_02 WQS: 20.6.4.113

1996 Action: This AU was previously lumped into "Santa Fe River (Cochiti Pueblo bnd to the Santa Fe WWTP)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: This AU was previously listed as part of "Santa Fe River (Cochiti Pueblo bnd to the Santa Fe WWTP)" which was split. There were 2 of 8 exceedences of the interim turbidity numeric translator of 50 NTU with an M-SCI score of 43.46 (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity.

2012 Action: The AU name was changed to clarify the downstream boundary. A sonde was deployed for three days in August 2010. These sonde turbidity data were re-assessed using SWQBs revised turbidity AP. Turbidity impairment thresholds and durations were not exceeded (max value 12.1 for one hour). The specific DO criteria of 4.0 mg/L under 20.6.4.113 was not met 40.3% of the time (29/72 hourly data points). The Level II nutrient assessment was re-done using recent data (2007 to present) and the current nutrient assessment protocol. Both total nitrogen (2/5) and total phosphorus (5/5) were above their ecoregional thresholds, the DO % saturation threshold was exceeded using grab data (3/4), and sonde data are non support for DO. There are no new sedimentation/siltation data. Therefore, sedimentation remains (TMDL complete), turbidity was removed, and the DO listing was replaced with nutrients because DO is a response variable for nutrients.

2014 Action: A UAA was conducted to support reclassification of the SFR below the WWTF to coolwater aquatic life and primary contact. Amendment was effective February 14, 2013. EPA approved the changes June 5, 2013.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. Both causal (TN,TP) and response (DO, chlorophyll) indicators were documented above their respective thresholds. There were 48% sands and fines measured in this Xeric Sediment class (threshold 74%). Therefore, nutrients remain listed, and sedimentation was removed.

Santa Fe River (Guadalupe St to Nichols Rsvr)
AU:NM-9000.A_062 WQS: 20.6.4.137

2014 Action: A UAA was conducted to support classification of the SFR (Guad St to Nichols Rsv) as an intermittent stream in a new segment with coolwater aquatic life use. Amendment was effective February 14, 2013. EPA approved the changes June 5, 2013. AU was split. Original name was Santa Fe River (WWTP to Nichols Rsv)

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey, as well as for limited parameters 2012-2013. There were 3/11 E. coli, and 3/11 chronic and 1/11 acute total rec. aluminum exceedences. Therefore, E. coli and chronic total recoverable aluminum were added.

Santa Fe River (Nichols Reservoir to headwaters)
AU:NM-2118.A_21 WQS: 20.6.4.121

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. There were 2/5 chronic total rec. aluminum exceedences at station above McClure (no total Al data were collected at the station above Nichols). Therefore, aluminum was added as a cause of impairment. Segment-specific total rec. aluminum criteria may be warranted as this closed (i.e., no public access or land use) municipal drinking water supply watershed with naturally low hardness. Therefore, this AU is noted as IR Category 5B.

Santa Fe River (Paseo del Canon to Santa Fe WWTP)
AU:NM-2110_00 WQS: 20.6.4.113

1996 Action: This AU was previously lumped into "Santa Fe River (Cochiti Pueblo bnd to the Santa Fe WWTP)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: This AU was previously listed as part of "Santa Fe River (Cochiti Pueblo bnd to the Santa Fe WWTP)" which was split. There were 1 of 5 exceedences of the interim turbidity numeric translator of 50 NTU. Therefore, this AU is noted as Full Support for turbidity. An EMAP survey was performed at new station Santa Fe River at County Road 56 in November 2009. There were 5% fines. Benthic macroinvertebrate data were not back at time of initial assessment, but these data are not needed for the sedimentation/siltation assessment because regardless of the results of the bio survey, this AU would be noted as Full Support for sedimentation/siltation because there were less than 20% fines in the representative riffle. Therefore, this AU is noted as Full Support for sedimentation/siltation. A Level II nutrient assessment indicated impairment based on available nitrogen, phosphorus, and DO data. No recent DO sonde data are available. Therefore, DO and nutrients remain listed as causes of impairment. Sonde data and chlorophyll a data are needed to verify these assessments.

2012 Action: A sonde was deployed for three days in August 2010 (sample duration <72 hours). The available sonde data did not exceed the specific DO criteria under 20.6.4.113. The Level II nutrient assessment was re-done using recent data (2007 to present) and the current nutrient assessment protocols. Both total nitrogen (8/8) and total phosphorus (7/8) were above their ecoregional thresholds, and the DO % saturation threshold was exceeded based on grab data (4/7). Therefore, DO was removed, and nutrients remains a cause of impairment.

2014 Action: A UAA was conducted to support reclassification of the SFR below the WWTF to coolwater aquatic life and primary contact. Amendment was effective February 14, 2013. EPA approved the changes June 5, 2013.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey, as well as for limited parameters 2012-2013. Nutrient causal (TN and TP) as well as response (chlorophyll) indicators were documented. There were 3/9 E. coli exceedences. Therefore, nutrients remains, and E. coli was added as a cause of impairment.

Santa Fe River (Santa Fe WWTP to Guadalupe St)
AU:NM-9000.A_061 WQS: 20.6.4.136

2006 Action: There were 4 of 5 exceedences of the Wildlife Habitat criterion, and 5 of 5 exceedences of the Human Health criterion for PCBs based on data SWQB collected in 2005 and data NMED/LANL collected in 2002-2003. Therefore, PCBs in Water Column was added as a cause of non support.

2008 Action: This AU was surveyed as part of the Middle Rio Grande Tributaries (2005) survey when water was available to sample (two municipal drinking water reservoirs are above this AU). There were 3 of 3 exceedences of the chronic aluminum criterion, based on non stormwater data. Therefore, aluminum was added as a cause of non support.

2010 Action: This AU was assessed for primary contact per EPA Region 6 instruction. There were 4 of 12 exceedences of the E. coli criterion of 410 cfu/100 mL. Therefore, E. coli was added as a cause of non support.

2012 Action: This AU was re-assessed using the revised criterion in 20.6.4.98 of 940 cfu/100mL. There were 3 of 12 exceedences of the E. coli criterion The PCB data were also re-assessed to include available 2007 data and remove tributary data. There were 3 of 5 exceedences of the Wildlife Habitat criterion, and 5 of 5 exceedences of the Human Health criterion for PCBs. Therefore, E. coli and PCBs continue to be listed causes of non support. Application of the SWQB Hydrology Protocol (survey date 6/28/08) indicate this assessment unit is intermittent (Hydrology Protocol score of 9.0) at the station below Frenchies Field, and perennial near the top of the AU (score of 21.0) at the station below Cerro Gordo Road - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). McClure and Nichols Reservoirs impound water on the Santa Fe River for municipal water supply purposes.

2014 Action: A UAA was conducted to support classification of the SFR (WWTF to Guad St) as an ephemeral stream in a new segment with limited aquatic life use. Amendment was effective February 14, 2013. EPA approved the changes June 5, 2013. AU was split. Original name was Santa Fe River (WWTP to Nichols Rsvr). Aluminum listing based on previous dissolved aluminum WQC. Additional data are needed to determine if this water is impaired for total recoverable aluminum prior to TMDL scheduling for this parameter.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey, as well as for limited parameters 2012-2013. There were 3/11 E. coli, and 3/6 acute and 5/6 chronic total rec. aluminum exceedences. There are no new PCB data. Therefore, E. coli, aluminum, and PCBs remains.

Ten Site Canyon (Mortandad Canyon to headwaters)
AU:NM-128.A_17 WQS: 20.6.4.128

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, arsenic, copper, silver, zinc, adjusted gross alpha and PCBs (for both human health and wildlife habitat) were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. All previous aluminum listings were carried over (IR Cat

5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Three Mile Canyon (Pajarito Canyon to headwaters)
AU:NM-9000.A_091 WQS: 20.6.4.128

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, copper, and adjusted gross alpha were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. Adjusted gross alpha was determined to be a cause of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Two Mile Canyon (Pajarito to headwaters)
AU:NM-128.A_15 WQS: 20.6.4.128

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum, adjusted gross alpha, and PCBs (for both human health and wildlife habitat) were determined to be causes of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Water Canyon (Area-A Canyon to NM 501)
AU:NM-126.A_03 WQS: 20.6.4.126

1996 Action: This AU was previously lumped into "Water Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum was determined to be a cause of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. No impairments were identified. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Water Canyon (Rio Grande to lower LANL bnd)
AU:NM-9000.A_044 WQS: 20.6.4.98

1996 Action: This AU was previously lumped into "Water Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

Water Canyon (upper LANL bnd to headwaters)
AU:NM-9000.A_052 WQS: 20.6.4.98

1996 Action: This AU was previously lumped into "Water Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

2006 Action: Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The chronic screening value for aluminum (87 ug/L x 10.5 = 130.5 ug/L) for Aquatic Life was exceeded 9 of 10 times Above SR-501. Therefore, aluminum was added as a cause of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum remains a cause of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2012 Action: 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).

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. No impairments were identified. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

Water Canyon (within LANL above NM 501)
AU:NM-128.A_12 WQS: 20.6.4.128

1996 Action: This AU was previously lumped into "Water Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

Water Canyon (within LANL below Area-A Cyn)
AU:NM-128.A_13 WQS: 20.6.4.128

1996 Action: This AU was previously lumped into "Water Canyon (Rio Grande to headwaters)" prior to the 2006 list. See the 2012 version of the ROD for historical record.

2006 Action: Available LANL, DOE, and NMED DOE Oversite Bureau data from 2001 to 2005 were queried from the RACER database in late 2005 and assessed. The Livestock Watering criterion of 15 pCi/L Adjust Gross Alpha was exceeded 10 of 12 times (exceedences included 4/4 At SR-4, 4/4 Below MDA AB, and 2/4 Below SR-4). The uranium-corrected gross alpha minus plutonium and americium exceedences were used in this determination. The acute aluminum criterion (0.75 mg/L) for Limited Aquatic Life was exceeded 16 of 33 times (exceedences included 2/3 Above S Site Canyon, 6/8 At SR-4, 3/10 Below MDA AB, and 5/10 Below SR-4). The selenium criterion (5.0 mg/L) for Wildlife Habitat was exceeded 13 of 42 times (exceedences included 5/10 At SR-4, 5/13 Below MDA AB, and 3/13 Below SR-4). The hardness-dependent acute cadmium criterion of 2.0 ug/L for Limited Aquatic Life Use was exceeded 2 of 33 times (exceedences included 2/8 At SR-4). The hardness-dependent acute copper criterion of 13.4 ug/L for Limited Aquatic Life Use was exceeded 2 of 33 times (exceedences included 2/8 At SR-4). The hardness-dependent acute zinc criterion of 117 ug/L for Limited Aquatic Life Use was exceeded 2 of 33 times (exceedences included 2/8 At SR-4). The human health criterion of 9.0 ug/L arsenic related to Limited Aquatic Life Use was exceeded 2 of 33 times (exceedences included 2/8 At SR-4). The vanadium criterion of 100 ug/L related to Livestock Watering Uses was exceeded 2 of 33 times (exceedences included 2/8 At SR-4). Therefore, selenium, gross alpha, arsenic, cadmium, copper, vanadium, zinc, and aluminum were added as a causes of non support.

2010 Action: SWQB conducted a special survey from 2006-2007 on the Pajarito Plateau. These data were combined with available LANL and NMED DOE Oversite Bureau data collected from 2004 - 2008. Aluminum and adjusted gross alpha remain, and PCBs were added as a cause of non support. The assessed data can be accessed at http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/index.html. See also the Preface at the beginning of the 2010 - 2012 ROD for additional information on the Pajarito Plateau survey and data assessments.

2014 Action: All available 2004 2013 surface water quality data from priority watershed stations on the Pajarito Plateau were downloaded from Intellus and collated with SWQBs 2006-2007 Pajarito survey data. Final metal, PCB, and radionuclide assessment datasets were prepared, with preference given to more recent data following the steps noted in the Preface to the 2014 Integrated List. Concurrent hardness was calculated and used to determine the appropriate hardness-dependent metals criteria by sampling event. PCBs (human health and wildlife habitat) and adjusted gross alpha were determined to be causes of non-support in this AU. All previous aluminum listings were carried over (IR Cat 5C) due to inadequate data to assess against newer hardness-dependent total recoverable aluminum criteria. Additional information on these assessment is available at: http://www.nmenv.state.nm.us/swqb/303d-305b/2014-2016/index.html.

HUC: 13020202 - Jemez

American Creek (Rio de las Palomas to headwaters)
AU:NM-2106.A_44 WQS: 20.6.4.98

1996 Action: Previously listed for temperature, stream bottom deposits and turbidity. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with temperature, stream bottom deposits and turbidity as the cause of non-support.

2002 Action: This stream was removed from the 303(d) list because it is not perennial and, therefore, does not fall under WQS 20.6.4.108. During seven sampling visits in 1998, there was no flow in the channel. Therefore, no water quality data could be collected. Designated uses that apply to this ephemeral water are livestock watering and wildlife habitat. Water quality standards for stream bottom deposits, turbidity, and temperature do not apply. A de-list letter was prepared.

2006 Action: The WQS was changed due to the 2005 triennial review.

2008 Action: This AU was originally part of the Jemez (2005) intensive survey. The station was removed as a full intensive rotation during initial planning meetings because of logistical concerns. It was re-added at the request of the USFS because of their concerns about potential nutrient impairment. Limited sampling (n=2) for nutrients was performed by USFS Jemez SO staff. There was insufficient data to determine whether or not there is any nutrient impairment.

2016 Action: This AU was sampled during the Jemez (2013) watershed survey. Max thermograph temperature was 19.56 degrees C. No impairments were found. Coldwater ALU is an existing use (salmonids seen during 2013 survey).

Calaveras Creek (Rio Cebolla to headwaters)
AU:NM-2106.A_53 WQS: 20.6.4.108

2000 Action: The stream is 100% embedded with silt runoff from the road and associated drainage ditches from the point that the road intercepts the stream. Stream bottom deposits will be listed as a cause of non-support.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The AU was determined to be full support for sedimentation/siltation according to the 2008 Assessment Protocols because the M-SCI score was 71. Therefore, sedimentation/siltation was removed as a cause of non support.

2010 Action: There were 3 of 11 exceedences of the interim turbidity numeric translator of 25 NTU, but an M-SCI score of 70.96 (threshold of 56.70). Therefore, this AU is noted as Full Support for turbidity.

2016 Action: This AU was sampled during the Jemez (2013) watershed survey. There were 3/3 total recoverable aluminum exceedences. Therefore, aluminum was listed as a cause of impairment.

Clear Creek (Rio de las Vacas to San Gregorio Lake)
AU:NM-2106.A_54 WQS: 20.6.4.108

2000 Action: TOC samples exceeded criteria 11/11 times. Turbidity samples exceeded criteria 3/7 times. TOC and turbidity will be listed as causes of non-support.

2002 Action: TMDLs for turbidity and TOC were developed. In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The AU was determined to be non support for unidentified biological impairment according to the 2008 Assessment Protocols because the M-SCI score was 56 but the measured percent fines was only 17. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. Therefore, turbidity remains, and Benthic-Macroinvertebrate Bioassessments (Streams) was added as a cause of non support.

2010 Action: There were 1 of 7 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2016 Action: This AU was sampled during the Jemez (2013) survey. There were 2/6 E. coli exceedences. The max thermograph temperature was 23.16 degrees C. Both nutrient causal and response indicators were present. Therefore,

the observed effect of changes to the benthic macroinvertebrate community was replaced with temperature and nutrients as causes of impairment. E. coli was also added.

Clear Creek (San Gregorio Lake to headwaters)
AU:NM-2106.A_55 WQS: 20.6.4.108

2016 Action: This AU was sampled during the Jemez (2013) survey. Both nutrient causal and response indicators were present. There were 4/4 total recoverable aluminum chronic WQC exceedences. Therefore, nutrients and aluminum were added as cause of impairment.

East Fork Jemez (San Antonio Creek to VCNP bnd)
AU:NM-2106.A_13 WQS: 20.6.4.108

1996 Action: Previously named "Jemez River (East Fork)," this AU was split after the 2001 Valle Caldera survey. The entire AU was originally listed for nutrients, chlorine, and stream bottom deposits. There are two stations on this reach that were last sampled in 1987. For nutrients, no exceedences were found, thus indicating full support. For chlorine, station MRG106.011001 had an exceedence ratio of 1/1, full support, impacts observed.

1998 Action: Nutrients will be dropped from the list while chlorine will be added to the 305(b) report as full support, impacts observed. Stream bottom deposits were retained as causes of non-support.

2000 Action: The station evaluated for stream bottom deposits had less than 2% fines <2mm. Turbidity samples exceeded criterion 2/7 times. TOC exceeded its criterion 1/3 times. A new listing will be added for turbidity, and TOC will be added to the 305(b) report as FSIO.

2006 Action: Name change to VCNP boundary. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum acute criterion was exceeded 3 of 9 times, and the chronic criterion was exceeded 9 of 9 times. The arsenic criterion was excceded 6 of 9 times. The temperature criterion was exceeded for >4 consecutive hours for >3 consecutive days. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. Therefore, turbidity remains, and aluminum, arsenic, and temperature were added as causes of non support.

2010 Action: There were 1 of 17 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity. TMDLs were prepared for temperature and arsenic (2009). 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.

2016 Action: This AU was sampled during the Jemez (2013) survey. The max thermograph temperature was 23.14 degrees C. There were 3/4 total recoverable aluminum chronic WQC exceedences. There were 0/4 arsenic exceedences. Therefore, temperature and aluminum remain, and arsenic was removed as a cause of impairment.

East Fork Jemez (VCNP to headwaters)
AU:NM-2106.A_10 WQS: 20.6.4.108

1996 Action: Previously named "Jemez River (East Fork)," this AU was split after the 2001 Valle Caldera survey.

2004 Action: This reach was intensively surveyed during the Valle Caldera 2001-2002 special study. Sonde and grab data indicate pH impairment, including 7/23 grab values, 61/297 September 2001 sonde values, and 92/193 July 2001 sonde values greater than 8.8. There were 0 of 17 exceedences of the dissolved oxygen criterion of 6.0 mg/L using grab data. Percentages applied to sonde data indicate impairment, while the draft large DO dataset protocol indicates no impairment. Thermograph data from the USGS indicated 10 exceedences of the 23 degrees C. SWQB thermograph data indicated a max temperature of 28.3 degress C. Sonde data indicated 15% exceedence rate of turbidity. There were 17 of 19 exceedences of the chronic aluminum criterion of 0.087 mg/L. Therefore, turbidity will remain and temperature, dissolved oxygen, pH, and aluminum will be added as causes of non support. This reach will be listed as Category 5B because aluminum is naturally high in this watershed, and the sonde and grab DO data gave conflicting results. Also, these may indicate nutrient impairment. A TMDL was prepared for turbidity as part of the 2003 Jemez bundle TMDLs.

2006 Action: A TMDL was prepared for temperature. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2014 Action: Aluminum listing based on previous dissolved aluminum WQC. Additional data are needed to determine if this water is impaired for total recoverable aluminum prior to TMDL scheduling for this parameter.

2016 Action: This AU was sampled during the Jemez (2013) survey. Sonde data were provided by VCNP staff. Turbidity exceeded 23 NTUs for > 72 hours. The max thermograph temperature was 22.9 degrees C (4T3 19.97 C). Both nutrient causal and response variables were present. There were 2/4 and 3/4 total recoverable aluminum acute and chronic, respectively, WQC exceedences. Therefore, temperature was removed, DO and pH were replaced with nutrients, and aluminum and turbidity remains as causes of impairment. This AU was impacted by the 2011 Las Conchas fire.

Fenton Lake
AU:NM-2106.B_00 WQS: 20.6.4.108

2000 Action: Fenton Lake was characterized (in a report titled, New Mexico Clean Lakes Program, Classification Phase I, Final Report, September 1982) as having dissolved phosphorous and kjeldahl-N concentrations that were high during the summer relative to other lakes. Moderate temperature and dissolved oxygen stratification was observed. The algal population was dominated by blue-green algae. Chlorophyll concentrations declined dramatically by the time of fall sampling, as turnover was nearly complete. Phosphorus was the sole limiting nutrient for phytoplankton during all seasons. Although the data for this reservoir is dated, it is still listed in the State's 305(b) Report as impaired for total

phosphorus, nuisance algae and siltation and therefore will be listed on the 303(d) List until new data are collected to either verify or refute the listing.

2002 Action: There is no longer a standard for total phosphorus for high quality coldwater fishery. Nusiance algae was replaced with Plant nutrients and Siltation was replaced with Bottom deposits to be consistent with the language in our narrative standards.

2006 Action: This reservoir was sampled in one time during summer 2005. Although there were no exceedences of any numeric criteria, one data point is not enough to determine designated use attainment. Therefore, this assessment unit is labeled "not assessed." Nutrient and sediment assessment protocols for lakes and reservoirs to determine impairment of NMs narrative water quality standards for these two parameters are under development. Therefore, there were no changes may to the listings as a result of the survey.

2008 Action: The sedimentation/siltation listing was removed because there were no data or applicable assessment protocols available to make this determination.

2016 Action: This AU was studied during the Jemez (2013) survey. Both causal (TP) and response (pH, chl-a, and % cyano) nutrient thresholds were exceeded. Therefore, nutrients remains a cause of impairment.

Jaramillo Creek (East Fork Jemez to headwaters)
AU:NM-2106.A_12 WQS: 20.6.4.108

2004 Action: This reach was intensively surveyed during the Valle Caldera 2001-2002 special study. Thermograph data indicated a max temperature of 26.09 degress C. Sonde data (20%) and grab dat (23%) indicated turbidity impairment. There were 17 of 17 exceedences of the chronic aluminum criterion and 3 of 17 exceedences of the acute aluminum criterion. Therefore, turbidity, temperature, and aluminum will be added as causes of non support. This reach will be listed as Category 5B because aluminum is naturally high in this watershed.

2006 Action: TMDLs were written for temperature and turbidity. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2014 Action: Aluminum listing based on previous dissolved aluminum WQC. Additional data are needed to determine if this water is impaired for total recoverable aluminum prior to TMDL scheduling for this parameter.

2016 Action: This AU was sampled during the Jemez (2013) survey. Both nutrient causal and response indicators were present. Turbidity was > 23 NTU for > 72 hours. The max thermograph temperature was 22.81 degrees C, 4T3 19.57 (WPS Effectiveness Monitoring data). There were 3/4 total recoverable aluminum chronic WQC exceedences. Therefore, nutrients was added, and aluminum and turbidity remain, and temperature was removed as a cause of impairment.

Jemez River (Jemez Pueblo bnd to Rio Guadalupe)

AU:NM-2105_71 WQS: 20.6.4.107

1996 Action: Previously listed for metals (As) and fecal coliform. In the aggregated 10 year data set for arsenic at three stations, the ratio of exceedences to samples is 0/20. Additional data from the recently completed USGS study of the middle Rio Grande also support this change to full support. For fecal coliform, the data set is limited. Ratios for three stations are 1/2, 0/3, and 0/2. Station MRG105.006050 will be listed as Full Support, Impacts Observed while stations MRG105.006010 and MRG105.007015 will be changed to full support.

1998 Action: Arsenic was removed as a cause of non-support. Per the assessment protocol, the reach was removed from the 303(d) list and will be listed on the 305(b) list as Full Support, Impacts Observed for fecal coliform.

2002 Action: Revised name to remove portion under tribal jurisdiction.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum chronic criterion was exceeded 5 of 22 times. The arsenic criterion for human health (9.0 ug/L) was exceeded 21 of 23 times. The boron criterion for irrigation (750 ug/L) was exceeded 6 of 24 times. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, and total phosphorus values above applicable numeric thresholds, as well as low dissolved oxygen. The AU was determined to be non support for unidentified biological impairment according to the 2008 Assessment Protocols because the M-SCI score was 43 but the measured percent fines was only 13. Therefore, aluminum, arsenic, boron, nutrients, and Benthic-Macroinvertebrate Bioassessments (Streams) were added as causes of non support. Arsenic occurs naturally in ground water in the Jemez watershed. A sonde should be deployed to confirm nutrient impairment (DO data was compromised during survey).

2010 Action: A sonde was re-deployed in 2008. The minimum DO measured was 5.35 mg/L with a saturation of 73.3%, leading to a conclusion of Non Support for dissolved oxygen. Even though the DO threshold was exceeded, multi-day sonde data from 2008 do not show large diurnal fluctuations typically associated with nutrient enrichment. The exceedences occurred on a single day (8/30/2008). The remainder of deployment, DO was between 6.05 - 8.12 mg/L and 78.5 - 107.3% saturation. Also, this reach of the Jemez River should be reclassified as coolwater (once that aquatic life designation is established in 20.6.4 NMAC) with a 5.0 mg/L DO criterion. Under such a designation, the long-term dataset would be in support of DO. Based on this evidence, the coolwater designation recommendation, and the fact that the chlorophyll a concentration was below the ecoregional threshold value, this reach was determined to be Fully Supporting for nutrients.This reach of the Jemez River should be reclassified as coolwater (once that aquatic life use is established in 20.6.4 NMAC) with a 5.0 mg/L criterion. Under such a designation, it would be in support of DO. Therefore, nutrients was removed and dissolved oxygen was added as a cause of non support. There were 10 of 24 exceedences of the interim turbidity numeric translator of 25 NTU with an M-SCI score of 42.68 (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity and Benthic-Macroinvertebrate Bioassessments (Streams) was removed. This AU will be listed under Category 5B to indicate the need for a WQ standard review. TMDLs were prepared for arsenic and boron (2009).

2016 Action: This AU was sampled during the Jemez (2013) survey. Turbidity thresholds were not exceeded. The max thermograph temperature was 29.6 degrees C. Both nutrient causal and response variables were present. There were 4/4 arsenic HH, and 1/4 total recoverable aluminum ALU exceedences. There were 2/5 exceedences of the boron irrigation WQC. There were 2/8 E. coli exceedences. Therefore, aluminum and turbidity were removed; DO was replaced with

nutrients; temperature and E. coli were added; and boron and arsenic (HH) remain causes of impairment.

Jemez River (Rio Guadalupe to Soda Dam nr Jemez Springs)
AU:NM-2105.5_10 WQS: 20.6.4.107

1996 Action: Previously listed under "Jemez River from Rio Guadalupe to the confluence of the East Fork of the Jemez River and San Antonio Creek" and listed for turbidity, conductivity, plant nutrients, stream bottom deposits and chlorine. Data from four stations were used in the turbidity assessment. Station MRG105.009035 (3/6) was determined to be partially supported. All other stations were full support with 0/12 exceedences. Data for conductivity were available from only two stations. Station MRG106.009505 was partially supported with a 2/5 ratio. Station MRG106.009510 was 0/11 or full support for conductivity. Per the assessment protocol, two stations, MRG105.009035 and MRG105.009510, were 1/1 or Full Support, Impacts Observed for chlorine.

1998 Action: Chlorine was removed a cause of non-support. Turbidity, conductivity, plant nutrients and stream bottom deposits were retained as causes of non-support.

2000 Action: Turbidity exceeded its criterion 14/28 times; one station was used to evaluate stream bottom deposits, where 26 %fines <2mm were observed. WQS are currently being met for plant nutrients. The conductivity criterion was exceeded 0/28 times. Aluminum exceeded the acute criterion 2/4 times. TMDLs were prepared for turbidity and stream bottom deposits. A new listing will be added for metals (Al acute).

2002 Action: A TMDL was prepared for acute aluminum. The original assessment unit "Jemez River from Rio Guadalupe to the confluence of the East Fork of the Jemez River and San Antonio Creek" was split into two because they fall under two different water quality standard segments.

2006 Action: Name was changed during 2005 Jemez survey due to change in WQS 20.6.4.107.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum chronic criterion was exceeded 5 of 9 times. The arsenic criterion for human health (9.0 ug/L) was exceeded 8 of 9 times, and the criterion for irrigation (100 ug/L) was exceeded 2 of 9 times. The boron criterion for irrigation (750 ug/L) was exceeded 4 of 9 times. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds, as well as low dissolved oxygen. The AU was determined to be full support for sedimentation/siltation and non support for unidentified biological impairment according to the 2008 Assessment Protocols because the M-SCI score was 37 but the measured percent fines was only 17. The temperature criterion was exceeded for >6 consecutive hours for >3 consecutive days, with a maximum recorded temperature of 29.1 degrees C. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. Therefore, turbidity and aluminum remain, sedimentation/siltation was removed, and arsenic, boron, nutrients, temperature, and Benthic-Macroinvertebrate Bioassessments (Streams) were added as causes of non support. Arsenic occurs naturally in ground water in the Jemez watershed.

2010 Action: There were 12 of 40 exceedences of the interim turbidity numeric translator of 25 NTU with an M-SCI score of 36.90 (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity and Benthic-Macroinvertebrate Bioassessments (Streams) was removed. TMDLs were completed for arsenic, boron, plant nutrients, and temperature (2009). 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.

2016 Action: This AU was sampled during the Jemez (2013) survey. Turbidity exceeded 23 NTU for > 72 hours. The max thermograph temperature was 29.0 degrees C. Both nutrient causal and response variables were present. There were 4/4 and 2/4 arsenic human health ALU and irrigation, respectively, exceedences. There were 2/4 total recoverable aluminum ALU exceedences. There were 4/4 exceedences of the boron irrigation WQC. There were 2/8 E. coli exceedences. Therefore, all previous listings remain, and arsenic for irrigation uses and E. coli were added as causes of impairment.

Jemez River (Soda Dam nr Jemez Springs to East Fork)
AU:NM-2106.A_00 WQS: 20.6.4.108

1996 Action: Previously listed under "Jemez River from Rio Guadalupe to the confluence of the East Fork of the Jemez River and San Antonio Creek" and listed for turbidity, conductivity, plant nutrients, stream bottom deposits and chlorine. Data from four stations were used in the turbidity assessment. Station MRG105.009035 (3/6) was determined to be partially supported. All other stations were full support with 0/12 exceedences. Data for conductivity were available from only two stations. Station MRG106.009505 was partially supported with a 2/5 ratio. Station MRG106.009510 was 0/11 or full support for conductivity. Per the assessment protocol, two stations, MRG105.009035 and MRG105.009510, were 1/1 or Full Support, Impacts Observed for chlorine.

1998 Action: Chlorine was removed a cause of non-support. Turbidity, conductivity, plant nutrients and stream bottom deposits were retained as causes of non-support.

2000 Action: Turbidity criterion was exceeded 14/28 times. Plant nutrient impairment was assessed using the draft Nutrient Assessment Protocol and draft Source Documentation Protocol; no impairments or exceedances of nutrient-related criteria were found. The HBI showed a calculated value of 4.84, which suggests good water quality with some organic pollution present. One station was used to assess stream bottom deposits, which was observed to have 26% fines <2mm; the aluminum criterion was exceeded with a 4-day average of 947 ug/L. Conductivity measurements did not exceed the criterion over 28 samples. A TMDL was developed to address turbidity and stream bottom deposits; a new listing will be added for metals (Al acute).

2002 Action: A TMDL was prepared for acute aluminum. The original assessment unit "Jemez River from Rio Guadalupe to the confluence of the East Fork of the Jemez River and San Antonio Creek" was split into two because they fall under two different water quality standard segments.

2006 Action: Name was changed during 2005 Jemez survey due to change in WQS 20.6.4.108.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum chronic criterion was exceeded 4 of 8 times. The arsenic criterion for human health (9.0 ug/L) was exceeded 3 of 8 times, and the

criterion for domestic water supply (2.3 ug/L) was exceeded 7 of 8 times. The AU was determined to be full support for sedimentation/siltation and non support for unidentified biological impairment according to the 2008 Assessment Protocols because the M-SCI score was 55 but the measured percent fines was only 19. The temperature criterion was exceeded for >4 consecutive hours for >3 consecutive days, with a maximum recorded temperature of 27.0 degrees C. Values of pH below the criterion range of 6.6-8.8 were measured via sonde 98.6 percent of the time, with a minimum pH of 6.32. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. Therefore, turbidity and aluminum remain, sedimentation/siltation was removed, and arsenic, temperature, pH, and Benthic-Macroinvertebrate Bioassessments (Streams) were added as causes of non support. Arsenic occurs naturally in ground water in the Jemez watershed. Based on data from stations above and below and other field observations, low pH appears to be the result of geothermal groundwater inputs. Only 1 of 22 grab sample pH values were below the 6.6 - 8.8 range.

2010 Action: There were 4 of 21 exceedences of the interim turbidity numeric translator of 25 NTU with an M-SCI score of 54.95 (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity and Benthic-Macroinvertebrate Bioassessments (Streams) was removed. A TMDL was prepared for arsenic (2009). 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.

2016 Action: This AU was sampled during the Jemez (2013) survey. There are no turbidity or pH (1/13 [min 6.56] grab exceedences) LTD to re-assess. The max thermograph temperature was 25.5 degrees C. There were 3/4 arsenic HH and DWS exceedences. There were 2/4 and 3/4 total recoverable aluminum acute and chronic, respectively, ALU exceedences. There were 2/7 E. coli exceedences. Therefore, arsenic, aluminum, pH, and turbidity remain; and E. coli was added as a cause of impairment.

Jemez River (Zia Pueblo bnd to Jemez Pueblo bnd)
AU:NM-2105_75 WQS: 20.6.4.106

2008 Action: This AU was seasonally surveyed (n=3) during the Jemez (2005) watershed survey. The arsenic criterion for human health (9.0 ug/L) was exceeded 3 of 3 times. The boron criterion for irrigation (750 ug/L) was exceeded 2 of 3 times. Therefore, arsenic and boron were added as causes of non support. Arsenic occurs naturally in ground water in the Jemez watershed.

2010 Action: TMDLs were prepared for arsenic and boron (2009).

2016 Action: This AU was sampled during the Jemez (2013) survey. Arsenic (4/4 H and DWS) and Boron (3/4 DWS) data still indicate impairment. The max thermograph temperature was 36.25 degrees C. There were 2/7 E. coli exceedences. Level 2 sediment survey documented 95.2 percent sand and fines, and an LRBS of -2.12. Therefore, arsenic and boron remain; and temperature, sedimentation, and E. coli were added as causes of impairment.

La Jara Creek (East Fork Jemez to headwaters)
AU:NM-2106.A_11 WQS: 20.6.4.108

2004 Action: This reach was intensively surveyed during the Valle Caldera 2001-2002 special study. There were 3 of 3 exceedences of the chronic aluminum criterion. Therefore, aluminum will be added as a cause of non support. This reach will be listed as Category 5B because aluminum is naturally high in this watershed.

2016 Action: This AU was sampled during the Jemez (2013) survey. There were 3/5 exceedences of the total rec. aluminum chronic ALU criterion. Therefore, aluminum remains a cause of impairment.

Redondo Creek (Sulphur Creek to headwaters)
AU:NM-2106.A_21 WQS: 20.6.4.108

1996 Action: Previously named "Redondo Creek (Sulphur Creek to headwaters)," this AU was split after the 2001 Valle Caldera survey. The entire AU was originally listed for partially supported for total phosphorus and fecal coliform. Data on this segment are very limited. Ten-year data are limited to one station (USGS 355223106371710)with two sampling events in 1996 and 1997. For total phosphorus, this station shows 0/2 samples greater than the criterion that indicates full support. For fecal coliform, there have been only two samples collected. The exceedences ratio of 1/2 will result in a listing of Full Support, Impacts Observed for fecal coliform.

1998 Action: Phosphorus was removed as a cause of non-support. As per the assessment protocol, the reach was upgraded to Full Support, Impacts Observed for fecal coliform and will be placed on the 305(b) list.

2000 Action: Total phosphorus criterion was exceeded 7/10 times; turbidity crtierion was exceeded 2/7 times; the criterion for HQCWF 82/1,796 times with a maximum temperature of 24C. A TMDL was developed to address total phosphorus; fecal coliform was added to the 305(b) report as FSIO; New listings will be added for turbidity and temperature.

2002 Action: The Nutrient Assessment protocol was performed June 2000. This reach was determined not be nutrient enriched following the level one nutrient assessment analysis. A summary of the nutrient assessment is in the administrative record.

2004 Action: TMDLs were developed for turbidity and temperature as part of the 2003 Jemez bundle TMDLs.

2006 Action: Name change at VCNP boundary. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2008 Action: Basic field parameters were collected in this AU during the Jemez (2005) intensive survey. A thermograph was also deployed at the station above Sulphur Creek. The maximum recorded temperature was 22.6 degrees Celsius, and the criterion of 20 degrees Celsius was not exceeded for more than 4 consecutive hours. No new aluminum data were collected. Therefore, aluminum remains, and temperature was removed as a cause of impairment.

2010 Action: There were 7 of 9 exceedences of the interim turbidity numeric translator of 25 NTU with no available benthic macroinvertebrate data. Therefore, this AU is noted as Non Support for turbidity. There is already a TMDL for

turbidity. There are no data to support an aluminum listing for this reach. This aluminum listing was carried over because the original AU was split, but all aluminum data and associated exceedences were upstream of the VCNP boundary. Therefore, aluminum was removed as a cause of impairment.

2016 Action: Previously split at the Valles Caldera Boundary, the upper (NM-2016.A_25) and lower AUs were merged back into this AU ID. This AU was sampled during the Jemez (2013) survey. There were 4/6 pH excursions. There were 1/3 total recoverable aluminum exceedences at both stations. There are no LTD data to re-assess turbidity. Therefore, aluminum was not carried over from the upper AU, turbidity remains, and pH was added. Several periods of dry channel were documented during the survey. AU may not be perennial -- HP and WQS review needed

Redondo Creek (VCNP bnd to headwaters)
AU:NM-2106.A_25 WQS: 20.6.4.108

2006 Action: All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2014 Action: Aluminum listing based on previous dissolved aluminum WQC. Additional data are needed to determine if this water is impaired for total recoverable aluminum prior to TMDL scheduling for this parameter.

Rio Cebolla (Fenton Lake to headwaters)
AU:NM-2106.A_52 WQS: 20.6.4.108

1996 Action: Previously listed for temperature, stream bottom deposits and total phosphorus. For temperature, two of three stations have an exceedences ratio of 1/5. The other station has a ratio of 0/5. These stations will be given a Full Support, Impacts Observed. For total phosphorus, the ranking is based on station ratios of 0/6, 0/5, and 1/5. Station MRG106.008045 will be given a Full Support, Impacts Observed while the others are listed as full support.

1998 Action: Temperature and phosphorus were removed as causes of non-support. Stream bottom deposits were retained as a cause of non-support.

2000 Action: Thermograph data exceeded the HQCWF criterion 54/1,587 times with a maximum temperature of 22.5C; stream bed deposits on the AU were observed to be 42% fines <2mm, with a mean embeddedness of 75%. Stream bottom deposits will remain on the list, and temperature will be added as a cause of non-support.

2004 Action: TMDLs were prepared for temperature and SBD (i.e., sedimentation/siltaion).

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum chronic criterion was exceeded 2 of 5 times. The sedimentation/siltation impairment was confirmed according to the 2008 Assessment Protocols. The maximum recorded temperature via a thermograph deployed 6/15/05 to 8/30/05 was 20.1 degrees C, and the criterion was never exceeded for > 4 consecutive hours for > 3 consecutive days. Therefore, sedimentation/siltation remains, temperature was removed, and aluminum was added as a cause of non support. Aluminum is naturally high in this watershed.

2010 Action: There were 4 of 32 exceedences of the interim turbidity numeric translator of 25 NTU with M-SCI scores of 48.90 and 34.75 (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity. Naturally-occurring fine gravel tuff substrate may be contributing to a low benthic macroinvertebrate score.

2016 Action: This AU was sampled during the Jemez (2013) survey. There were 1/4 total recoverable aluminum exceedences. The turbidity probe failed during sonde deployment, so no LTD data to re-assess. There were 8.6 % sand and fines. Both causal and response nutrient thresholds were exceeded (DO within instrument accuracy). Therefore, sedimentation and aluminum were removed, nutrients was added, and turbidity remains. IR Cat 5c (sonde data needed).

Rio Cebolla (Rio de las Vacas to Fenton Lake)
AU:NM-2106.A_50 WQS: 20.6.4.108

1996 Action: Previously listed for pH, stream bottom deposits and total ammonia. The listing for pH is supported as 3/5 pH samples collected in a 1989 survey were outside the allowable range. This reach will be listed as not supported for pH. For total ammonia, 0/5 samples collected as part of the same survey exceeded the chronic criteria. This segment is fully supporting for total ammonia.

1998 Action: Ammonia was removed as a cause of non-support. Stream bottom deposits and pH were retained as causes of non-support.

2000 Action: The pH criteria were exceeded 0/7 times. Stream bottom deposits were evaluated as 28% fines <2mm and mean embeddedness of 53%. Stream bottom deposits will remain on the list as a cause of non-support.

2004 Action: A TMDL was prepared for stream bottom deposits (i.e., sedimentation/siltation).

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The AU was determined to be full support for sedimentation/siltation according to the 2008 Assessment Protocols because although there was a >28% increase over reference in percent fines, the M-SCI score was 65. Therefore, sedimentation/siltation was removed as a cause of non support.

2010 Action: There were 6 of 19 exceedences of the interim turbidity numeric translator of 25 NTU with an M-SCI score of 64.53 (threshold of 56.70). Therefore, this AU is noted as Full Support for turbidity.

2016 Action: This AU was sampled during the Jemez (2013) survey. The max thermograph temperature was 23.52 degrees C. A Level 2 sedimentation survey documented 54.3 % sand and fines, with an LRBS of -1.23 (Mountain Sediment Class thresholds are 20% and -1.1). Therefore, temperature and sedimentation were listed as causes of impairment.

Rio de las Vacas (Clear Creek to headwaters)
AU:NM-2106.A_46 WQS: 20.6.4.108

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum chronic criterion was exceeded 2 of 4 times. Therefore, aluminum was added as a cause of non support. Aluminum is naturally high in this watershed.

2010 Action: There were 0 of 10 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2016 Action: This AU was sampled during the Jemez (2013) survey. There were 3/4 total rec. aluminum chronic ALU exceedences. Therefore, aluminum remains a cause of impairment.

Rio de las Vacas (Rio Cebolla to Clear Creek)
AU:NM-2106.A_40 WQS: 20.6.4.108

1996 Action: Previously listed for temperature, stream bottom deposits and total ammonia. For total ammonia, 0/9 samples from two stations collected in 1989 exceeded the criteria. Temperature exceedences (3/5) were reported at station MRG106.008535. This reach is not supported for temperature. Station MRG106.008515 was full support for temperature.

1998 Action: Ammonia was removed as a cause of non-support. Temperature and stream bottom deposits were retained as causes of non-support.

2000 Action: Thermograph data from three locations exceeded the temperature criterion 596/5,380 times; three stations were evaluated for stream bed deposits, with a maximum % fines of 16%; TOC exceeded criterion 11/22 times. Temperature will remain listed, and TOC will be added as a cause of non-support for this reach.

2002 Action: In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2006 Action: Name was changed during 2005 Jemez survey.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds. The existing temperature impairment was confirmed (maximum temperature 27.2 degrees

C). Therefore, temperature remains, and nutrients was added as a cause of non support.

2010 Action: There were 1 of 10 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity A TMDL was prepared for plant nutrients (2009).

2016 Action: This AU was sampled during the Jemez (2013) survey. The max thermograph temperature in the WPS Effectiveness Monitoring dataset was 25.2 degrees C. Both causal and response nutrient thresholds indicate continued nutrient impairment. Therefore, temperature and nutrients remain causes of impairment.

Rio Guadalupe (Jemez River to confl with Rio Cebolla)
AU:NM-2106.A_30 WQS: 20.6.4.108

1996 Action: Previously listed for conductivity, turbidity, stream bottom deposits and fecal coliform. Two stations from a 1987 survey were used in the assessment for conductivity. Station 08323000 was 1/1 for conductivity exceedences making it Full Support, Impacts Observed. Station MRG106.007501 was 2/11 or partially supported for conductivity. Turbidity measurements are available from one station. Station MRG106.007501 is Full Support, Impacts Observed (1/6) for turbidity. Fecal coliform data are also available from one station. Station MRG106.007501 has a 1/2 ratio of exceedences. Per the assessment protocol, this reach is Full Support, Impacts Observed for fecal coliform and turbidity.

1998 Action: Turbidity and fecal coliform were removed as causes of non-support. Conductivity and stream bottom deposits were retained as causes of non-support.

2000 Action: Conductivity criterion was exceeded 1/7 times; the turbidity criterion of 14NTU 2/7 times; stream bottom deposits were evaluated at 2 stations, the lower of which had a %fines value of 28%; fecal coliform was removed from the 1998-2000 303(d) list but remained listed in the 1998 305(b) report as FSIO; total phosphorus was exceeded 2/6 times; the 4-day average concentration of aluminum at the site was 262 ug/L, although there were no exceedances of the acute criterion. Aluminum (chronic) will be added as a cause of non-support; fecal coliform will remain in the 305(b) report as FSIO, and TMDLs were developed to address turbidity and stream bottom deposits.

2002 Action: A TMDL was prepared for chronic aluminum.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum listing was confirmed (5 of 9 exceedences). A thermograph at the station above the Jemez River recorded a maximum temperature of 25.7 degrees C, while a thermograph at Porter Landing exceeded the criterion >4 consecutive hours for >3 consecutive days. The AU was determined to be full support for sedimentation/siltation impairment according to the 2008 Assessment Protocols because there was only 15% fines and the M-SCI score was 64. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. Therefore, aluminum and turbidity remain, temperature was added, and sedimentation/siltation was removed as a cause of non support.

2010 Action: There were 10 of 27 exceedences of the interim turbidity numeric translator of 25 NTU but an M-SCI score of 63.96 (threshold of 56.70). Therefore, this AU is noted as Full Support for turbidity A TMDL was prepared for

temperature (2009). 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.

2016 Action: This AU was sampled during the Jemez (2013) survey. The max thermograph temperature was 24.8 degrees C. Turbidity LTD data were > 23 NTU for > 72 hours. There were > 15% SC exceedences in LTD data. Both causal and response nutrient thresholds were exceeded. There were 0/4 total rec. aluminum exceedences. Therefore, aluminum was removed; temperature remains; and turbidity, specific conductance, and nutrients were added.

Rito de las Palomas (Rio de las Vacas to headwaters)
AU:NM-2106.A_43 WQS: 20.6.4.108

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The AU was determined to be impaired for temperature (maximum recorded temperature at NM 126 was 27.4 degrees C). The AU was determined to be impaired for sedimentation/siltation impairment according to the 2008 Assessment Protocols because the M-SCI score was 52 and there > 28% increase over reference in percent fines. Therefore, temperature and sedimentation/siltation were added as causes of non support.

2010 Action: There were 2 of 12 exceedences of the interim turbidity numeric translator of 25 NTU with an M-SCI score of 51.64 (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity. TMDLs were prepared for temperature and sedimentation/siltation (2009).

2016 Action: This AU was sampled during the Jemez (2013) survey. Sedimentation survey and sonde deployment (needed to assess turbidity and nutrients) did not occur during the 2013 survey due to intermittent flow. The max recorded temp was 21.6 degrees C. Therefore, temperature was removed as a cause of impairment, and sedimentation and turbidity remain. AU may not be perennial -- HP and WQS review needed.

Rito de los Indios (San Antonio Creek to headwaters)
AU:NM-2106.A_24 WQS: 20.6.4.108

2004 Action: This reach was intensively surveyed during the Valle Caldera 2001-2002 special study. There were 1 of 17 exceedences of the chronic lead criterion and 7 of 17 exceedences of the chronic aluminum criterion. Therefore, aluminum will be added as a cause of non support. This reach will be listed as Category 5B because aluminum is naturally high in this watershed.

2010 Action: A TMDL was prepared for plant nutrients (2009).

2014 Action: Aluminum listing based on previous dissolved aluminum WQC. Additional data are needed to determine if this water is impaired for total recoverable aluminum prior to TMDL scheduling for this parameter.

2016 Action: This AU was sampled during the Jemez (2013) survey. LTD data provided by the Valles Caldera NP staff indicate nutrient (TP causal, DO response) and turbidity impairment. The max SWQB thermograph temp was 24.6 degrees C. There were 0/4 total rec. aluminum exceedences. Therefore, aluminum was removed, and temperature, nutrients, and turbidity were added.

Rito Penas Negras (Rio de las Vacas to headwaters)
AU:NM-2106.A_42 WQS: 20.6.4.108

1996 Action: Previously listed for temperature, turbidity and stream bottom deposits. There are no data, historical or otherwise, for this reach. Data collection began in Spring of 1998 on this reach under existing 104(b)(3) and 319(h) grant monies.

1998 Action: This reach will continue to be listed as partially supporting for temperature, turbidity and stream bottom deposits.

2000 Action: Stream bottom deposits were evaluated and have 27% fines <2mm and embeddedness of 58%; thermograph data from three thermographs exceeded the temperature criterion 206/5,431 times with a maximum temperature of 24C; turbidity data did not exceed its criterion over 7 samples; TOC exceeded its criterion 3/7 times. Stream bottom deposits and temperature will be retained as causes of non-support; TOC will be added as a cause of non-support.

2002 Action: TMDLs were developed for stream bottom deposits, temperature, and TOC. In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The temperature impairment was confirmed (maximum recorded temperature at NM 126 was 25.6 degrees C). There are no new data regarding the sedimentation/siltation listing. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds, as well as low dissolved oxygen (grab data). Therefore, temperature and sedimentation/siltation remain, and nutrients was added as a cause of non support.

2010 Action: There were 4 of 11 exceedences of the interim turbidity numeric translator of 25 NTU with no recent benthic macroinvertebrate data available. Therefore, this AU is noted as Non Support for turbidity (5C). A TMDL was prepared for plant nutrients (2009).

2016 Action: This AU was sampled during the Jemez (2013) survey. Sedimentation survey and sonde deployment (needed to assess turbidity and nutrients) did not occur during the 2013 survey due to intermittent flow. The max

recorded temp was 23.14 degrees C. Therefore, temperature, sedimentation and turbidity remain causes of impairment. AU may not be perennial -- HP and WQS review needed.

San Antonio Creek (East Fork Jemez to VCNP bnd)
AU:NM-2106.A_20 WQS: 20.6.4.108

1996 Action: Previously named "San Antonio Creek (East Fork Jemez to headwaters)," this AU was split based on the 2001 Valle Caldera study and originally listed for total phosphorus, temperature, turbidity, chlorine, stream bottom deposits and fecal coliform. There are two stations on this reach that were last sampled in 1987. For turbidity, the ratio of exceedences at the two stations was 0/11 or full support. The total phosphorus ratio at station MRG106.010010 is 2/12 (17%) or partially supported and 1/6 or Full Support, Impacts Observed at station MRG106.100001. The exceedence ratio for temperature at station MRG106.010010 was 3/12 or partially supported and 0/6 or full support at station MRG106.100001. Fecal coliform data are available at station MRG106.010010 only. Two samples were collected in 1987 both of which were well under the criteria. Fecal coliform is full support for this reach. 1/1 sample for chlorine at station MRG106.010010 was above the criteria. As per the assessment, the reach is Full Support, Impacts Observed for chlorine.

1998 Action: Turbidity, chlorine and fecal coliform were removed from the list as causes of non-support. Phosphorus, temperature and stream bottom deposits were retained as causes of non-support.

2000 Action: Thermograph data from two locations had exceedances 201/3,592 times with a maximum temperature of 24.5C; the total phosphorus criterion was exceeded 0/15 times; stream bottom deposits were evaluated at 2 stations, with a maximum measured 12% fines <2mm and mean embeddedness 44%; TOC criterion was exceeded 1/3 times; turbidity criterion was exceeded 6/14 times over 2 stations. Temperature will be retained as a cause of non-support; a new listing will be added for turbidity; TOC will be added to the 305(b) report as FSIO.

2004 Action: Turbidity, chlorine and fecal coliform were removed from the list as causes of non-support. Phosphorus, temperature and stream bottom deposits were retained as causes of non-support.

2006 Action: Name change at VCNP boundary.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum chronic criterion was exceeded 5 of 9 times. The arsenic criterion for domestic water supply (2.3 ug/L) was exceeded 5 of 9 times. The AU was determined to be non support for unidentified biological impairment according to the 2008 Assessment Protocols because the M-SCI score was 54 but the measured percent fines was only 16. The temperature criterion was exceeded for >4 consecutive hours for >3 consecutive days, with a maximum recorded temperature of 23.5 degrees C. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. Therefore, turbidity and temperature remain, and arsenic, aluminum, and Benthic-Macroinvertebrate Bioassessments (Streams) were added as causes of non support. Arsenic occurs naturally in ground water in the Jemez watershed.

2010 Action: There were 7 of 27 exceedences of the interim turbidity numeric translator of 25 NTU with an M-SCI score of 53.67 at the lower station (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity and Benthic-Macroinvertebrate Bioassessments (Streams) was removed. TMDL was prepared for arsenic (2009). 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. This AU may need to be split.

2016 Action: This AU was sampled during the Jemez (2013) survey. There were 2/4 and 4/4 total rec. aluminum acute and chronic, respectively, exceedences. There were 0/4 arsenic exceedences. The max thermograph temp was 24.9 degrees C. There are no sonde data at the bottom of the AU to re-assess turbidity. Therefore, turbidity, temperature, and aluminum remain, and arsenic was removed as a cause of impairment.

San Antonio Creek (VCNP bnd to headwaters)
AU:NM-2106.A_26 WQS: 20.6.4.108

2014 Action: SWQB WPS thermograph data from three stations and two years (2012 - 2013) still indicate temperature impairment.

2016 Action: This AU was studied during the Jemez (2013) survey. VCNP sonde data and SWQB Effectiveness Monitoring data were also assessed. The max thermograph temp was 26.5 degrees C. Both causal and response nutrient thresholds were exceeded. Turbidity was > 23 NTU for > 72 hours. There were 3/3 total rec. aluminum chronic WQC exceedences. Therefore, DO and pH were changed to nutrients, temperature was retained, and aluminum and turbidity were added. AU may not be perennial -- HP and WQS review needed.

San Gregorio Lake
AU:NM-2106.B_10 WQS: 20.6.4.134

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012. This AU was surveyed during the 2011 Puerco/Zuni survey. No impairments were found. The nutrient assessment was incomplete (n=1).

2016 Action: This AU was studied during the Jemez (2013) survey. Both causal (TP) and response (chl-a) nutrient thresholds were exceeded. Therefore, nutrients were added as a cause of impairment.

Sulphur Creek (Redondo Creek to headwaters)
AU:NM-2106.A_22 WQS: 20.6.4.124

1996 Action: Previously named "Sulphur Creek (Redondo Creek to headwaters)," this AU was split based on the 2001 Valle Caldera study. This reach has extreme pH violations. At two stations on this reach the cumulative pH exceedence ratio is 8/8. The cause of this is unknown but is most likely from natural causes. The exceedences ratio for temperature is 1/6 which will be listed as Full Support, Impacts Observed. No other concerns were noted on this reach.

1998 Action: The reach will be listed with pH as the cause of non-support.

2000 Action: Data outside of the pH criterion were measured 6/7 samples; Conductivity criterion was exceeded 3/8 times; turbidity criterion was exceeded 1/7 times. pH will remain listed and conductivity will be listed as causes of non-support; turbidity will be added to the 305(b) report as FSIO.

2004 Action: TMDLs were written for pH and conductivity as part of the 2003 Jemez TMDL bundle. A Use Attainability Analysis was submitted to EPA because the low pH values in this spring fed tributary are naturally occurring.

2006 Action: Sulphur Creek above Redondo Creek was broken out as a separate water quality standard segment (NMAC 20.6.4.124) as a result of unique, naturally low pH conditions, with a segment specific pH range of 2.0 to 9.0. The Sulphur Creek AU was split into two AUs at the VCNP boundary. The aquatic life use was changed from high quality coldwater to limited aquatic life, thus removing the specific conductance criterion. Therefore, pH and specific conductivity were removed as causes on non support and the associated TMDLs will be withdrawn.

2016 Action: Previously split at the Valles Caldera Boundary, the upper (NM-2016.A_23) and lower AU was merged back into this AU ID. There were 2/4 total rec. aluminum chronic WQC exceedences. Therefore, aluminum was added as a cause of impairment. There were periods of no flow during the 2013 survey.

Sulphur Creek (San Antonio Creek to Redondo Creek)
AU:NM-2106.A_27 WQS: 20.6.4.108

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum chronic criterion was exceeded 7 of 8 times, acute criterion 2 of 8 times, and irrigation criterion 2 of 8 times. pH was below the range of 6.6-8.8 5 of 12 times during grab sampling, and 59.1% of the time during sonde deployment. Specific conductance was exceeded 2 of 12 times. Therefore, aluminum, pH, and specific conductance were listed as causes of non support. This AU may be moved under 20.6.4.124 during the 2009 WQS triennial so TMDLs for pH and specific conductance are not warranted at this time. The impacts of naturally-occurring low pH on dissolved aluminum levels should also be explored to determine if metals criteria also need to be revisited in this AU.

2010 Action: There were 2 of 12 exceedences of the interim turbidity numeric translator of 25 NTU with no recent benthic macroinvertebrate data available. Therefore, this AU is noted as Non Support for turbidity (5C).

2012 Action: Segment-specific criteria of 2.0 to 8.8 for pH and 800 us/cm for specific conductance (SC) were added to 20.6.4.108 NMAC. Therefore, this AU is now full support for pH (0/12) and SC (0/12) based on the 2005 survey data.

2016 Action: This AU was sampled during the Jemez (2013) survey. The max thermograph temp was 26.65 degrees C. There are no sonde data to re-assess turbidity. There were 2/4 total rec. aluminum chronic WQC exceedences. There were 3/6 pH excursions. Therefore, aluminum and turbidity remain, and temperature and pH were added. Low pH is naturally occurring in this watershed. There were periods of no flow during the 2013 survey. HP needed -- this AU may not be perennial.

Sulphur Creek (VCNP to headwaters)

AU:NM-2106.A_23 WQS: 20.6.4.124

2006 Action: Sulphur Creek above Redondo Creek was broken out as a separate water quality standard segment (NMAC 20.6.4.124) as a result of unique, naturally low pH conditions, with a segment specific pH range of 2.0 to 9.0. The Sulphur Creek AU was split into two AUs to account at the VCNP boundary. The aquatic life use was changed from high quality coldwater to limited aquatic life, thus removing the specific conductance criterion. Therefore, pH and specific conductivity were removed as causes on non support and the associated TMDLs will be withdrawn.

Vallecito Ck (Jemez Pueblo bnd to Div abv Ponderosa)
AU:NM-2105.5_20 WQS: 20.6.4.98

1996 Action: Previously listed for temperature, total ammonia, pH, stream bottom deposits and fecal coliform. 2/11 (18%) of the samples from surveys conducted in 1986-1987 were above the criteria for temperature. This listing will remain with a partially supporting status. For total ammonia 1/11 samples were above the chronic criteria value. This listing for nonsupport will be changed to Full Support, Impacts Observed. For pH, 6/11 samples were above the criteria. The not supporting listing for pH will remain. For fecal coliform, 1/1 samples exceeded the criteria. Per the assessment protocol, fecal coliform and ammonia are Full Support, Impacts Observed.

1998 Action: Fecal coliform and ammonia were removed as a cause of non-support. Temperature, stream bottom deposits and pH were retained as causes of non-support.

2000 Action: The temperature criterion was exceeded 3/7 times; the pH criteria were not exceeded over 7 samples; turbidity criterion was exceeded 5/7 times. Temperature and stream bottom deposits will continue to be listed, and turbidity will be added, as causes of non-support.

2002 Action: According to SWQB staff survey notes, this reach goes dry. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are related to coldwater fishery use, so they do not apply to this reach. Also, the name was revised from "Vallecito Creek from the eastern Jemez Pueblo boundary to the Village of Ponderosa."

2006 Action: Name was changed during 2005 Jemez survey.

2016 Action: This AU was sampled during the Jemez (2013) survey. There were 4/4 arsenic human health exceedences. Therefore, arsenic was listed as a cause of impairment.

Vallecito Ck (Perennial Prt Div abv Ponderosa to headwaters)
AU:NM-2105.5_21 WQS: 20.6.4.107

2000 Action: Thermograph data exceeded the HQCWF criterion 38/1,797 times with a maximum temperature of 21.5C. Temperature will be added as a cause of non-support.

2002 Action: There is a site-specific criterion of 25ºC. This temperature was never exceeded during thermograph deployment. Therefore, temperature was removed as a cause of Non Support. Also, the name was revised from "Paliza

Creek from Paliza Campground to the headwaters."

2006 Action: Name was changed to during 2005 Jemez survey and to more accurately reflect NMAC 20.6.4.107. This portion of Vallecito Creek that flows through Paliza Canyon is sometimes referred to as Paliza Creek.

2008 Action: This AU was intensively surveyed during the Jemez (2005) watershed survey. The aluminum chronic criterion was exceeded 3 of 8 times, acute criterion 2 of 8 times. Therefore, aluminum was added as a cause of non support.

2010 Action: There were 4 of 24 exceedences of the interim turbidity numeric translator of 25 NTU with M-SCI scores of 54.23 and 34.68 (threshold of 56.70). Therefore, this AU is noted as Non Support for turbidity.

2012 Action: Application of the SWQB Hydrology Protocol (9/10/2008 survey date) indicate there are perennial portions in this AU (Hydrology Protocol score of 29.5 at Paliza Campground - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

2016 Action: This AU was sampled during the Jemez (2013) survey. There were 1/5 total rec. aluminum exceedences. Turbidity was > 23 NTU for > 72 hours. The Mountain sedimentation class thresholds were used due to the proximity to this class, and both exceeded (%sand and fines 65.8%, LRBS -1.22). Therefore, aluminum was removed, turbidity remains, and sediment was added as a cause of impairment.

Virgin Canyon (Rio Guadalupe to headwaters)
AU:NM-2106.A_31 WQS: 20.6.4.108

2016 Action: This AU was sampled during the Jemez (2013) survey. No impairments were identified.

HUC: 13020203 - Rio Grande-Albuquerque

Abo Arroyo (Rio Grande to headwaters)
AU:NM-2103.A_40 WQS: 20.6.4.103

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) watershed survey. No impairments were found. There were 2/7 exceedences of the proposed change to 410 cfu/100 mL. If the October 2015 proposed revisions to 20.6.4.206 NMAC are approved by the EPA, E. coli will become Non Support.

Rio Grande (Arroyo Canas to Rio Puerco)
AU:NM-2105_11 WQS: 20.6.4.105

2016 Action: Previously named "Rio Grande (San Marcial at USGS gage to Rio Puerco), this AU was sampled during the Middle Rio Grande (2014) survey and split. There were 3/8 E. coli, 2/4 chronic dissolved copper, and 2/4 exceedences of the acute and chronic total recoverable aluminum WQC, at the lowest station in the AU. Therefore, E. coli and aluminum remain, and copper was added as a cause of non support. The existing dissolved aluminum TMDL will

be revised.

Rio Grande (Isleta Pueblo boundary to Tijeras Arroyo)
AU:NM-2105_50 WQS: 20.6.4.105

1996 Action: Previously listed as "Rio Grande from the northern boundary of Isleta Pueblo to the southern boundary of Santa Ana Pueblo" and listed for metals (Al), total ammonia, chlorine, stream bottom deposits and fecal coliform. For aluminum, there are four stations for making the assessment. Data from these stations collected in 1991 exceeded the chronic screening criterion 9/29 times. There were no exceedences of the acute criteria. Additional information considered to be of greater confidence has recently been issued from the USGS 1994-1996 surveys of the Rio Grande from Isleta Pueblo to the Jemez River. In this database 0/57 Rio Grande samples were found to have dissolved aluminum levels greater than the chronic screening criteria. This reach will be listed as full support for aluminum. For total ammonia there are six stations that may be used for the assessment. Generally, in a time frame prior to 1988, there were numerous exceedences of the chronic screening criteria for ammonia. In WQS 2105, 11/21 samples exceeded the chronic screening criteria for ammonia at a single station from 1988 through 1992. From 1993 through 1997 there has been only one exceedence of the criteria (1/10). A similar pattern is seen at another station where 5/20 samples from 1988-1992 exceeded the criteria but have had 0/13 exceedances within the last five years. One four-day sampling event in 1988 documented a four-day chronic exceedence at station 5740 in 1988. There have been no four-day sampling events since then. For fecal coliform, there have been 0/28 samples with values greater than the criteria value.

1998 Action: Aluminum and stream bottom deposits were removed as causes of non-support. The reach continued to be listed as partially supported with ammonia, chlorine and fecal coliform listed as causes of non-support.

2000 Action: Total ammonia was exceeded 0/58 times; fecal coliform was exceeded 21/74 times. Fecal coliform will be retained as a cause of non-support.

2002 Action: The original assessment unit "Rio Grande from the northern boundary of Isleta Pueblo to the southern boundary of Santa Ana Pueblo" was split into two because they fall under two different water quality standard segments. A TMDL was prepared for fecal coliform.

2008 Action: This AU was part of the SWQB Middle Rio Grande (2005) intensive survey, as well as additional water quality survey work (2006 - 2007) funded by the US Bureau of Reclamation. The data from five stations were collated and assessed according to the 2008 Assessment Protocols and associated addendum. There were 4 of 16 exceedences of the 410 cfu/100 ml single sample E. coli criterion for secondary contact use. A sonde deployed by a UNM graduate student (Van Horn) from 6/2/06 through 10/15/07 recorded minimum saturation values below 75% for more than three consecutive hours. During the 2005 triennial, all fecal coliform criteria were replaced with E. coli criteria. Therefore, fecal coliform was removed, and E. coli and dissolved oxygen were added as causes of non support. NOTE (2/13/09): EPAs Record of Decision states that "EPA concludes that the public participation process regarding the listing of two assessment units/dissolved oxygen pollutant combinations, i.e., NM-2105_50 and NM-2105.1_00, is inconsistent with federal requirements and the New Mexico Water Quality Control Commission Continuing Planning Process (CPP) and Water Quality Management Plan (WQMP). Consequently, EPA is taking a disapproval action and de-listing these assessment units/dissolved oxygen pollutant-combinations." EPA requested that NMED Public Notice the addition of these assessment units/dissolved oxygen pollutant-combination to the New Mexico § 303(d) List during either an

addendum to the 2008 Integrated List or during the New Mexico 2010 Integrated List submission.

2010 Action: All readily available data that were not assessed for the previous listing cycle were collated and assessed and compared to the conclusions of the previous list. There were 4 of 20 exceedences of the E. coli criterion (410 cfu/100 mL) utilizing the past five years of data. Thermographs deployed above Rio Bravo bridge and at the I-25 bridge both recorded excursions above the 32.2 degrees C criterion (max temperature of 33.1 degrees C for both). Sondes deployed by a UNM graduate student (Van Horn) from 6/2/06 through 12/31/07 above Rio Bravo bridge (n=53,635) and at the I-25 bridge (n=43,244) recorded minimums of 0.04 mg/L with 0.06% saturation and 0.12 mg/L with 1.7% saturation, respectively. The data. metadata, and general project QAPP are on the Sevilleta LTER website: http://sev.lternet.edu/project_details.php?id=SEV190. The SWQB QA Officer reviewed the associated Statement of Work which included QA/QC information specific to the sonde data, and found these data meet SWQB QA/QC requirements. Therefore, the E. coli listing remains, and temperature and dissolved oxygen were added as causes of impairment. PCBs in Fish Tissue was added as a Probable Cause because there are fish consumption guidelines for PCBs from I-25 to US 550. The fish consumption advisory for PCBs in channel catfish and white bass issued in 2009 is based on data from fish tissue collected 9-10 June 2008 between Bernalillo and Los Padillas. Seven channel catfish, ranging in size from 345 to 440 mm (total length), and 6 white bass, ranging in size from 240 to 260 mm (total length), were composited (keeping species separate) and analyzed for a variety of contaminants, including PCBs. The results from the channel catfish indicated a total PCB concentration of 0.0056 mg/g and a PCB Toxic Equivalency Quotient (TEQ) of 0.1576 pg/g. The PCB TEQ is a calculated value, based on the sum of the concentrations of the 12 dioxin-like PCB congeners, with each concentration multiplied by an equivalency factor, to represent the toxic equivalency of dioxin. The total PCB result corresponds to a recommendation of <= 8 meals per month; the PCB TEQ result corresponds to a recommendation of <= 3 meals per month. The results from the white bass indicated a total PCB concentration of 0.1769 mg/g and a PCB TEQ of 3.1655 pg/g. Both of these results correspond to a recommendation of 0 meals per month. The meals per month recommendation is according to published guidance from the US Environmental Protection Agency (Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Volume 2: Risk Assessment and Fish Consumption Limits, Third Edition, 2000) using cancer risk at a 1 in 100,000 risk level.

2016 Action: Previously named "Rio Grande (Isleta Pueblo bnd to Alameda Bridge)," this AU was sampled during the Middle Rio Grande (2014) survey and split due conflicting assessment conclusions from multiple stations in the original AU as well as a change in hydrologic character. There were 9/27 E. coli exceedences at Isleta Pueblo's Black Bridge station available in EPA's WQX database. The maximum USCOE thermograph temperatures were 32.09 and 32.15 degrees C at I-25 and upstream of the Isleta Diversion Dam, respectively. The station upstream of the Isleta Diversion Dam also recorded DO concentrations below 5.0 mg/L (min of 3.07) for greater than 4 hours. Therefore, E. coli and DO remain, and temperature was removed as a cause of non support. The PBC in Fish Tissue advisory is also still in effect.

Rio Grande (non-pueblo Alameda Bridge to HWY 550 Bridge)
AU:NM-2105.1_00 WQS: 20.6.4.106

1996 Action: This AU was previously lumped into "Rio Grande (non-pueblo Alameda Bridge to Angostura Diversion)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: This AU is the result of the split of the AU named "Rio Grande (non-pueblo Alameda Bridge to Angostura Diversion)." All readily available data that were not assessed for the previous listing cycle were collated and assessed

and compared to the conclusions of the previous list. There were 4 of 27 exceedences of the E. coli criterion (410 cfu/100 mL) utilizing the past five years of data. A sonde deployed by a UNM graduate student (Van Horn) from 6/2/06 through 12/31/07 above Alameda bridge (n=41,624) recorded minimums of 0.43 mg/L with 6.4% saturation. The data, metadata, and general project QAPP are on the Sevilleta LTER website: http://sev.lternet.edu/project_details.php?id=SEV190. The SWQB QA Officer reviewed the associated Statement of Work which included QA/QC information specific to the sonde data, and found these data meet SWQB QA/QC requirements. There were no new ambient toxicity testing data available at the time of assessment. Therefore, the E. coli and Ambient Bioassays - Acute Aquatic Toxicity listings were carried over to this newly defined AU, and dissolved oxygen was added as a cause of impairment. PCBs in Fish Tissue was added as a Probable Cause because there are fish consumption guidelines for PCBs from I-25 to US 550. The fish consumption advisory for PCBs in channel catfish and white bass issued in 2009 is based on data from fish tissue collected 9-10 June 2008 between Bernalillo and Los Padillas. Seven channel catfish, ranging in size from 345 to 440 mm (total length), and 6 white bass, ranging in size from 240 to 260 mm (total length), were composited (keeping species separate) and analyzed for a variety of contaminants, including PCBs. The results from the channel catfish indicated a total PCB concentration of 0.0056 mg/g and a PCB Toxic Equivalency Quotient (TEQ) of 0.1576 pg/g. The PCB TEQ is a calculated value, based on the sum of the concentrations of the 12 dioxin-like PCB congeners, with each concentration multiplied by an equivalency factor, to represent the toxic equivalency of dioxin. The total PCB result corresponds to a recommendation of <= 8 meals per month; the PCB TEQ result corresponds to a recommendation of <= 3 meals per month. The results from the white bass indicated a total PCB concentration of 0.1769 mg/g and a PCB TEQ of 3.1655 pg/g. Both of these results correspond to a recommendation of 0 meals per month. The meals per month recommendation is according to published guidance from the US Environmental Protection Agency (Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Volume 2: Risk Assessment and Fish Consumption Limits, Third Edition, 2000) using cancer risk at a 1 in 100,000 risk level.

2012 Action: DOE Oversite Bureau submitted blank-corrected PCB data for various waterbodies in the Rio Grande and Rio Chama watersheds The total PCB criterion of 0.64 ng/L for Human Health associated with Aquatic Life Use was exceeded 13 of 14 times, and the Wildlife Habitat criterion of 14 ng/L was exceeded 11 of 14 times. The adjusted gross alpha criterion of 15 pCi/L for Livestock Watering was exceeded 4 of 4 times. Therefore, PCBs and gross alpha were added as causes of impairment. This AU is noted as IR Category 5C because additional data would help determine whether or not an AU split is warranted prior to TMDL development.

2016 Action: This AU was sampled during the Middle Rio Grande (2014) survey. USCOE, USGS, WQX, and NMED DOE OB data for the station above Alameda were also assessed. There were 1/26 E. coli exceedences. USCOE DO sonde data did not indicate DO impairment (i.e., DO concentration was not below the WQC for greater than 4 consecutive hours). There were 12/15 adjusted gross alpha exceedences. There were 6/9 and 9/9 exceedences of the Wildlife Habitat and Human Health PCB WQC, respectively. The PCB in Fish Tissue advisory remains in effect. The Bioassay results are old, and available WQ data indicate the potential reasons for these toxicity test results (i.e., PCBs and gross alpha). Therefore, DO, E. coli, and the Bioassay- based listings were removed, while the gross alpha and PCB listings remain.

Rio Grande (non-pueblo HWY 550 Bridge to Angostura Div)
AU:NM-2105.1_02 WQS: 20.6.4.106

1996 Action: This AU was previously lumped into "Rio Grande (non-pueblo Alameda Bridge to Angostura Diversion)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2016 Action: This AU was sampled during the Middle Rio Grande (2014) survey. No impairments were found.

Rio Grande (Rio Puerco to Isleta Pueblo bnd)
AU:NM-2105_40 WQS: 20.6.4.105

1996 Action: Previous listed for metals (Hg) and stream bottom deposits. There are three stations for making the assessment. In 1994, these stations had a combined ratio of 0/9 for mercury upgrading the reach to full support. In a January 9, 1998 letter to NMED, Jim Brooks of the U.S. Fish & Wildlife Service, New Mexico Fishery Resources Office stated that "... a total maximum daily load for siltation in the middle and lower Rio Grande in New Mexico would not improve habitat conditions for the native fish fauna".

1998 Action: Metals (mercury) and stream bottom deposits were removed as causes of non-support, therefore the reach was removed from the 303(d) list.

2008 Action: This AU was part of the SWQB Middle Rio Grande (2005) intensive survey, as well as additional water quality survey work (2006 - 2007) funded by the US Bureau of Reclamation. The data from six stations were collated and assessed according to the 2008 Assessment Protocols and associated addendum. There were 2 of 7 exceedences of the 410 cfu/100 ml single sample E. coli criterion for secondary contact use. During the 2005 triennial, all fecal coliform criteria were replaced with E. coli criteria. Therefore, fecal coliform was removed, and E. coli was added as a cause of non support.

2010 Action: All readily available data that were not assessed for the previous listing cycle were collated and assessed and compared to the conclusions of the previous list. There were no additional E. coli data for comparison. Therefore, the E. coli listing remains. A thermograph deployed at Los Lunas recorded excursions above the 32.2 degrees C criterion (max temperature of 33.1 degrees C). Therefore, temperature was added as a cause of impairment.

2016 Action: This AU was sampled as part of the Middle Rio Grande (2014) survey. There were 1/8 E. coli exceedences at both the Bernardo near HWY 60 and Belen (309 bridge) stations. The max thermograph temperature was 32.9 degrees C. Therefore, E. coli was removed, and temperature remains a cause of impairment.

Rio Grande (San Marcial at USGS gage to Arroyo Canas)
AU:NM-2105_10 WQS: 20.6.4.105

1996 Action: Previously listed for pesticides, stream bottom deposits and total ammonia. There have been 0/18 exceedences of the total ammonia chronic screening criteria in the past ten years. This reach should be upgraded to full support for total ammonia. In 1987 there was a 1/1 hit for chlordane at station MRG105.000125. There has been no follow-up sampling at this station. This station will be listed as Full Support, Impacts Observed. Two other stations on this reach have ratios of 0/1 and 0/8 for chlordane. These stations will be listed as full support. In a January 9, 1998 letter to NMED, Jim Brooks of the U.S. Fish & Wildlife Service, New Mexico Fishery Resources Office stated that "... a total maximum daily load for siltation in the middle and lower Rio Grande in New Mexico would not improve habitat conditions for the native fish fauna".

1998 Action: Stream bottom deposits and ammonia were removed as causes of non-support. The reach was upgraded to Full Support, Impacts Observed and therefore removed from the 303(d) list. It will be listed as Full Support, Impacts Observed on the 305(b) list for chlordane.

2008 Action: Name changed to "Rio Grande (San Marcial at USGS gage to Rio Puerco)." This AU was part of the SWQB Middle Rio Grande (2005) intensive survey, as well as additional water quality survey work (2006 - 2007) funded by the US Bureau of Reclamation. The data from ten stations were collated and assessed according to the 2008 Assessment Protocols and associated addendum. There were 4 of 8 exceedences of the aluminum 87 ug/L aluminum criterion for aquatic life (chronic). There were 14 of 35 exceedences of the 410 cfu/100 ml single sample E. coli criterion for secondary contact use. aluminum and E. coli were added as causes of non support.

2010 Action: All readily available data that were not assessed for the previous listing cycle were collated and assessed and compared to the conclusions of the previous list. There were 3 of 13 exceedences of the E. coli criterion (410 cfu/100 mL). There were also 4 of 8 exceedences of the chronic aluminum criterion (87 ug/L). Therefore, both the E. coli and aluminum listings remain.

2016 Action: Previously named "Rio Grande (San Marcial at USGS gage to Rio Puerco), this AU was sampled during the Middle Rio Grande (2014) survey and split. The max thermograph temperature was 36.8 degrees C. There were 1/8 E. coli, and 2/5 exceedences of the acute and chronic total recoverable aluminum WQC, at the lowest station in the AU. Therefore, temperature was added, E. coli was removed, and aluminum remains a cause of non support. The existing dissolved aluminum TMDL will be revised.

Rio Grande (Tijeras Arroyo to Alameda Bridge)
AU:NM-2105_51 WQS: 20.6.4.105

2016 Action: Previously named "Rio Grande (Isleta Pueblo bnd to Alameda Bridge)," this AU was sampled during the Middle Rio Grande (2014) survey and split due conflicting assessment conclusions from multiple stations in the original AU as well as a change in hydrologic character. There were 1/8 E. coli exceedences at the Rio Bravo station. The maximum USCOE thermograph temperature at this station was 32.94, and recorded DO concentrations were below 5.0 mg/L (min of 3.43) for greater than 4 hours. Therefore, temperature (IR Cat 5C) and DO remain, and E. coli was removed as a cause of non support. The PBC in Fish Tissue advisory is also still in effect.

Tijeras Arroyo (Four Hills Bridge to headwaters)
AU:NM-9000.A_001 WQS: 20.6.4.99

1996 Action: This AU was previously lumped into "Tijeras Arroyo (Rio Grande to headwaters)" prior to the 2012 list. See the 2012 version of the ROD for historical record.

2008 Action: This upper AU was intensively surveyed as part of the Middle Rio Grande Tributaries (2005) survey. The AU was determined to be Full Support for sedimentation/siltation, but Non Support for unidentified biological impairment according to the 2008 Assessment Protocols because the M-SCI score was 34.97 but the measured percent fines was only 12. A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and

chlorophyll a values above applicable numeric thresholds as well as low DO (low DO may be due to groundwater input vs. nutrient enrichment based on the pattern of exceedences). Therefore, Benthic-Macroinvertebrate Bioassessments (Streams) and nutrients were added as causes of non support. This entire AU may not be perennial.

2012 Action: Previously named Tijeras Arroyo (Rio Grande to headwaters), this AU was split to acknowledge the changes in hydrology and geology as the canyon transitions from the mountains to the alluvium in the foothills. This upper AU is often referred to as Tijeras Creek or Tijeras Canyon.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. Both causal (TN and TP) and response (chlorophyll) data indicated nutrient impairment. SWQB plans to revise the nutrient AP in 2016. This listing based on chlorophyll response (no DO response documented) should be verified before proceeding with a TMDL. Therefore, benthic macroinvertebrate impairment was replaced with nutrients (IR Category 5c), as excessive nutrients were likely negatively impacting the benthic macroinvertebrate community.

Tijeras Arroyo (Rio Grande to Four Hills Bridge)
AU:NM-9000.A_070 WQS: 20.6.4.98

1996 Action: This AU was previously lumped into "Tijeras Arroyo (Rio Grande to headwaters)" prior to the 2012 list. See the 2012 version of the ROD for historical record.

2012 Action: Previously named Tijeras Arroyo (Rio Grande to headwaters), this AU was split to acknowledge the changes in hydrology and geology as the canyon transitions from the mountains to the alluvium in the foothills. 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). NMED must complete the process detailed in 20.6.4.15 NMAC Subsection C in order to a waterbody under 20.6.4.97 NMAC. Until such time, this waterbody will remain under 20.6.4.98 NMAC.

HUC: 13020204 - Rio Puerco

La Jara Creek (Perennial reaches abv Arroyo San Jose)
AU:NM-2107.A_46 WQS: 20.6.4.109

2006 Action: This AU was intensively studied in 2004. There were 3 of 7 exceedences of the chronic aluminum criterion. Therefore, aluminum was added as a cause of non support.

2008 Action: TMDL for aluminum was completed (2007).

2010 Action: There were 0 of 9 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2012 Action: Application of the SWQB Hydrology Protocol (9/16/2008 survey date) indicate there are perennial portions in this AU (Hydrology Protocol score of 32.0 above the irrigation ditch - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

2014 Action: This AU was surveyed during the 2011 Puerco/Zuni study. There were 2/7 exceedences of the hardness-dependent total aluminum criteria. There is no longer an applicable dissolved Al WQC for this AU. Therefore, the dissolved Al listing was changed to total Al.

Nacimiento Ck (Perennial prt HWY 126 to San Gregorio Rsvr)
AU:NM-2107.A_42 WQS: 20.6.4.109

1996 Action: Previously listed for stream bottom deposits, nutrients, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits and nutrients as the cause of non-support.

2006 Action: Benthic macroinvertebrates and pebble count data collected at the station @ Eureka Road were compared to reference station La Hara above Irrigation Diversion. The bio score was 86 % of reference even though there was a 143% increase in percent fines. According to our SBD protocol, the conclusion is full support. Therefore, stream bottom deposits (sedimentation) was removed as a cause of non support.

2010 Action: There were 5 of 8 exceedences of the interim turbidity numeric translator of 25 NTU, but the benthic macroinvertebrate RBP score was 86 percent of reference. Therefore, this AU is noted as Full Support for turbidity.

2012 Action: Application of the SWQB Hydrology Protocol (9/16/08 survey date) indicate this AU is perennial (Hydrology Protocol score of 21.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

2014 Action: This AU was sampled during the 2011 Puerco/ Zuni survey. The numeric turbidity threshold SEV was exceeded. There were 2/6 exceedences of the hardness-dependent total recoverable Al WQC. The was 1/6 (39 ug/L) exceedence of the dissolved uranium WQC (30 ug/L). Therefore, turbidity, total Al - acute, and uranium were added as causes of impairment.

2016 Action: There were actually 3/8 and 2/8 exceedences of the hardness-dependent total recoverable chronic and acute aluminum WQC, respectively, as noted in the TMDL drafted late 2015.

Rio Puerco (Arroyo Chijuilla to northern bnd Cuba)
AU:NM-2107.A_40 WQS: 20.6.4.131

1996 Action: Previously listed for temperature and stream bottom deposits. The cumulative exceedence ratio on this reach is 8/11.

1998 Action: The listing was not changed.

2006 Action: This AU was intensively surveyed in 2004, and split into two. The "northern boundary of Cuba" is approximately one mile upstream of the HWY 550 bridge where there are a series of springs. There were 6 of 26 exceedences (23%) for chronic total ammonia criteria in tables NMAC 20.6.4.900. L and M. A nutrient assessment was performed at . TN, TP, DO concentration and saturation, and pH indicators all lead to a conclusion of impairment due to excessive nutrients. A thermograph was deployed @ HWY 550. The max temperature was 28.4 degrees C. There were 5 o f 19 exceedences of the chronic aluminum criteria. Benthic macroinvertebrates and pebble count data collected at the station @ 550 were compared to reference station Rio Hondo above the Rio Grande. The bio score was 33 % of reference and there was a 134% increase in percent fines. Therefore, temperature was removed; ammonia, nutrients, and aluminum were added, and sedimentation remains as causes of non support.

2008 Action: TMDLs were completed for chronic aluminum, nutrients, and sedimentation/siltation.

2014 Action: This AU sampled during 2011 Puerco/Zuni survey. There were 0/6 exceedences of the harness-based total Al WQC. There are no new sedimentation data to re-assess. The nutrient assessment is incomplete. Therefore, aluminum was removed, and sedimentation and nutrients remain.

2016 Action: The aluminum de-listing was inadvertently left on the 2014 Integrated List (see 2014 ROD). It's been removed. Also, there were 3 of 6 ammonia exceedences during the 2011 survey, so ammonia remained listed.

Rio Puerco (non-pueblo Arroyo Chico to Arroyo Chijuilla)
AU:NM-2105_22 WQS: 20.6.4.130

2014 Action: This AU was sampled during the 2011 Puerco survey. No impairments were documented.

Rio Puerco (non-pueblo Rio Grande to Arroyo Chico)
AU:NM-2105_20 WQS: 20.6.4.130

1996 Action: Previously listed for stream bottom deposits. The Rio Puerco from the mouth on the Rio Grande to Rito Olguin (Rio Grande, 2105), E, was listed for not fully supporting the use of limited warmwater fishery (LWWF) and the cause of not meeting this use was listed as stream bottom deposits. The definition of a LWWF on page 41, of the State of New Mexico Standards for Interstate and Intrastate Streams, is as follows: LWWF = a stream reach where intermittent flow may severely limit the ability of the reach to sustain a natural fish population on a continuous annual basis; or a stream where historical data indicate that water temperature may routinely exceed 32.2°C (90°F). NMED/SWQB solicited input from New Mexico Department of Game & Fish, U.S. Fish & Wildlife Service, University of New Mexico, Department of Biology and New Mexico State University, Department of Fishery and Wildlife Sciences concerning the stream bottom deposits (siltation) issues. The following questions were asked of all of the above mentioned entities. Only the U.S. Fish & Wildlife Service responded in writing. Question from NMED/SWQB to the U.S. Fish & Wildlife Service in a letter dated January 12, 1998: The questions being asked are: Does siltation, in and of itself, cause impairment to the fisheries of the lower and middle Rio Grande? Alternatively, have the native fish(es) adapted to a silty aquatic habitat, leaving other factors such as flows, nutrient loading, toxics etc., which may contribute more to the cause(s) of impairment to the fishery designated use? Response, from Jennifer Fowler-Propst, Field Supervisor, in summation, page 5 of the letter: "The

dilemma is that siltation is needed to provide the sandy substrate habitat required by the native fishes; and conversely, high levels of suspended sediments may be harmful to some fish and other aquatic species. There is almost no scientific information to demonstrate that concentrations of suspended sediment and amounts of siltation are harmful to New Mexico fishes; and to arbitrarily set TMDLs may not be very useful for protection of the lower and middle Rio Grande fisheries resources." Question from NMED/SWQB to the U.S. Fish & Wildlife Service in a letter dated February 2, 1998: Our question, in general, is: Does siltation in-and-of itself, with all other things being equal, contribute to or directly cause impairment to the fishery use for LWWF and WWF? Response, from Jennifer Fowler-Propst, Field Supervisor, in summation, page 2, paragraph 3, of the letter: "There are many intermittent streams in New Mexico including, for example, the Rio Puerco and Rio Salado. These streams are dry most of the year with the exception of high runoff events generally during the summer thunderstorms. These streams have very high suspended sediments and transport high sediment loads to the Rio Grande. The degree of siltation within intermittent streams and rivers, and its effect on limited warmwater fisheries is irrelevant, since perennial waters are required for fish survival."

1998 Action: Stream bottom deposits was removed as a cause of non-support and the reach was removed from the 303(d) list.

2002 Action: Name was revised to acknowledge tribal lands.

2006 Action: Upper limit of reach was changed to Arroyo Chijuilla. This AU was intensively surveyed in 2004. No impairments were identified.

2012 Action: Available USGS data from gage 8353000 between 2006 and 2009 document 2/5 of the e. coli criterion for primary contact, and 5/7 exceedences of the mercury criterion for wildlife habitat. Therefore, e. coli and mercury were added as causes of non support.

2014 Action: This AU was sampled during 2011 Puerco/Zuni survey. No there were 2/2 exceedences of the mercury wildlife habitat WQC at USGS station 8353000. The available USGS e. coli data for this station were rejected during SWQBs QA process. Therefore, mercury and e. coli listings remain. Additional data collection for these two parameters, along with additional station establishment along this very long AU, is recommended prior to TMDL development.

Rio Puerco (Perennial prt northern bnd Cuba to headwaters)
AU:NM-2107.A_44 WQS: 20.6.4.109

2006 Action: Previously part of Rio Puerco (Rito Olguin to headwaters) AU that was split. The "northern boundary of Cuba" is approximately one mile upstream of the HWY 550 bridge where there are a series of springs. This AU was intensively surveyed in 2004. No impairments were identified during the survey based on chemical/physical data collected @ CR13. Marginal Warmwater Aquatic Life is an existing use. This AU is Category 3 (no reliable monitored data and/or information available) with respect to Sedimentation/Siltation. This impairment was de-listed in 2006 based on the following arguments: (1) The original listing was based on best professional judgment, i.e., there were no actual data and thus flaws in the original analysis that led to the AU being listed; and (2) there are currently no data or information available to evaluate the general criteria for Sedimentation/Siltation in this AU.

2014 Action: WQS Citation changed to 20.6.4.109 because this AU contains perennial reaches. This AU was sampled during 2011 Puerco/Zuni study. There were 81.9 %sand and fines at the lower station, and a LRBS of -2.76. Therefore, this AU is listed for sedimentation.

Rito de los Pinos (Arroyo San Jose to headwaters)
AU:NM-2107.A_45 WQS: 20.6.4.98

2014 Action: This AU was sampled n=1 during 2011 Puerco/Zuni survey, so the AU is considered Not Assessed (n<2).

Rito Leche (Intermittent reaches above HWY 126)
AU:NM-2107.A_43 WQS: 20.6.4.98

1996 Action: Previously listed for stream bottom deposits, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits as the cause of non-support.

2006 Action: This AU was intensively sampled 2004. There was only flow in during Mar, April, and May sampling events, then the channel was dry due to diversion. Therefore, impairment due to sedimentation was removed, and impairment due to Low Flow Alteration was added (IR Category 4C).

2010 Action: There were 2 of 3 exceedences of the interim turbidity numeric translator of 25 NTU with no available benthic macroinvertebrate data. Therefore, this AU is noted as Non Support for turbidity. This reach may not be perennial.

2012 Action: Application of the SWQB Hydrology Protocol (survey date 6/16/09) indicate this assessment unit is intermittent at Cubita Rd (Hydrology Protocol score of 15.3 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). Appropriate WQS citation should be determined while assessing data for the 2014 listing cycle.

2014 Action: This reach was sampled during the 2011 Puerco/Zuni survey. No perennial reaches were identified/accessible so AU name and WQS Reference were changed accordingly. No impairments were identified.

San Pablo Canyon (Rio Puerco to headwaters)
AU:NM-2107.A_41 WQS: 20.6.4.98

1996 Action: Previously listed for turbidity, plant nutrients and stream bottom deposits. There is only one data point in the STORET data base for turbidity on this reach. A ratio of 1/1 will be listed as Full Support, Impacts Observed until additional information can be collected for a more complete assessment.

1998 Action: Per the assessment protocol, turbidity was removed as a cause of non-support. Plant nutrients and stream bottom deposits were retained as causes of non-support.

2006 Action: WQS changed to 20.6.4.98 because this reach only flows intermittently, flowing only April and May during our 2004 survey year. Warmwater Aquatic Life is an existing use. This AU is Category 3 (no reliable monitored data and/or information available) with respect to Sedimentation/Siltation and Nutrient/Eutrophication Biological Indicators. These impairments were de-listed in 2006 based on the following arguments: (1) The original listing was based on best professional judgment, i.e., there were no actual data and thus flaws in the original analysis that led to the AU being listed; and (2) there are currently no data or information available to evaluate the general criteria for Sedimentation/Siltation and Nutrient/Eutrophication Biological Indicators in this AU. Therefore, this AU was de-listed for these two impairments.

2012 Action: 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. An AU split should be considered while assessing data for the 2014 listing cycle.

2014 Action: This AU was sampled during the 2011 Puerco/Zuni survey. No impairments were identified.

Senorito Creek (Nacimiento Mine to headwaters)
AU:NM-2107.A_54 WQS: 20.6.4.109

2010 Action: There were 2 of 8 exceedences of the interim turbidity numeric translator of 25 NTU. Benthic macroinvertebrate data were not available to confirm the turbidity listing. Therefore, turbidity (5C) was added as a cause of impairment.

2014 Action: This AU was sampled during the 2011 Puerco/Zuni survey. The applicable turbidity SEV numeric threshold was not exceeded. Therefore, turbidity was removed as a cause of impairment.

Senorito Creek (San Pablo Canyon to Nacimiento Mine)
AU:NM-2107.A_52 WQS: 20.6.4.98

2014 Action: This AU was sampled (n=1 or 2 depending on parameter) during the 2011 Puerco/Zuni survey. No impairments were identified.

HUC: 13020207 - Rio San Jose

Bluewater Ck (Perennial prt R San Jose to Bluewater Rsvr)
AU:NM-2107.A_00 WQS: 20.6.4.109

1996 Action: Previously listed for total phosphorus due to exceedences at six out of nine stations.

2000 Action: There is no longer a phosphorus standard so the reach will be listed for plant nutrients until further information is collected.

2002 Action: The name was changed to Bluewater Creek (Rio San Jose to Navajo Nation bnd) to correct the assessment unit definition for tribal jurisdiction.

2006 Action: Name changed based on survey. This AU was intensively monitoring in 2004. A nutrient assessment was performed. TN, DO saturation, DO concentration, and chlorophyll a indicators lead to the conclusion of non support for nutrients. The maximum temperature recorded by thermograph was 26.3 degrees C (criterion of 20 degrees C), and the criterion was exceeded for > 6 hours for > 3 consecutive days. There were 1 of 4 exceedences of the chronic aluminum criterion. Therefore, nutrient remains, and temperature was added as causes of non support.

2008 Action: TMDLS were completed for temperature and nutrients (2007).

2010 Action: There were 0 of 8 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity.

2014 Action: This AU was sampled during the 2011 Puerco/Zuni study. AU name was changed to indicate perennial portions only. Thermograph data exceeded 24 degrees C. Insufficient data to re-assess nutrients. Sonde data needed to complete turbidity assessment. Therefore, temperature and nutrients remain.

Bluewater Creek (Perennial prt Bluewater Rsvr to headwaters)
AU:NM-2107.A_01 WQS: 20.6.4.109

1996 Action: Previously listed for metals (Al, Cd, Pb), temperature, turbidity, total phosphorus, and stream bottom deposits. Five stations provide assessment data for this reach. For aluminum, there were multiple exceedences of acute criteria at four out of five stations within five years. There were no exceedences of acute levels for lead. There were exceedences of the lead chronic screening criteria. Two stations had a cumulative exceedence ratio of 2/12. One exceedence of these criteria is allowable within a 5 year period. Therefore these reaches will be listed as Full Support, Impacts Observed for lead. There were no exceedences of the acute criteria or chronic screening criteria for cadmium at any of the five stations. Temperature is available for four stations. At station MRG106.005045, the exceedences ratio was 3/7 (43%) or not supporting. At the three other stations, the cumulative exceedance ratio was 5/36. Turbidity is similar. Turbidity will be listed as not supporting. Total phosphorus is partially supporting at six out of nine stations.

1998 Action: Lead and cadmium will be removed as causes of non-support on the 1998 303(d) list. The reach will be listed on the 1998 305(b) list as Full Support, Impacts Observed for lead. The reach continues to be included on the 1998 303(d) list for aluminum, temperature, turbidity, and stream bottom deposits.

2002 Action: The name was changed to Bluewater Creek (Navajo Nation bnd to headwaters) to correct the assessment unit definition for tribal jurisdiction. The size was also corrected.

2006 Action: Name changed based on survey. This AU was intensively monitoring in 2004. A nutrient assessment was performed. TN, TP, DO saturation, and chlorophyll a indicators lead to the conclusion of non support for nutrients. The maximum temperature recorded by thermograph was 27.9 degrees C (criterion of 20 degrees C), and the criterion was exceeded for > 6 hours for > 3 consecutive days. There were 1 of 4 exceedences of the chronic aluminum criterion.

Therefore, temperature remains, nutrients was added, and aluminum was removed as causes of non support. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. Additional data are needed to confirm the historic sedimentation/siltation listing.

2008 Action: TMDLS were completed for temperature and nutrients (2007).

2010 Action: There were 1 of 7 exceedences of the interim turbidity numeric translator of 25 NTU. Therefore, this AU is noted as Full Support for turbidity. The sedimentation/siltation listing was removed because there were no sedimentation (stream bottom deposit) assessment protocols developed at the time of the historic listing. There are no data to support this listing.

2012 Action: Application of the SWQB Hydrology Protocol (survey date 10/31/11) indicate this assessment unit may be intermittent at FR 178 (Hydrology Protocol score of 11.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). Appropriate WQS citation should be determined while assessing data for the 2014 listing cycle.

2014 Action: This AU was sampled during the 2011 Puerco/Zuni survey. Water quality data were collected at Bluewater Creek above Bluewater Lake at USGS gage 8341300. The maximum recorded thermograph temperature was 28.3 degrees C. A Level One nutrient assessment indicated Full Support. Therefore, temperature remains and nutrients was removed. Also, the name was changed to "Bluewater Creek (Perennial prt Bluewater Rsvr to headwaters)" to acknowledge interrupted nature of this AU. Application of the SWQB Hydrology Protocol (survey date 10/31/11) indicated potential intermittency at FR 178, upstream of the USGS gage station (Hydrology Protocol score of 11.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). A water quality standards review, and additional HPs to determine potential AU break(s) in this long AU, are warranted in this AU.

Bluewater Lake
AU:NM-2107.B_00 WQS: 20.6.4.135

2010 Action: Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue even though there is a Fish Consumption Advisory.

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012. This AU was surveyed during the 2011 Puerco/Zuni survey. Both causal and response variables related to nutrient enrichment were present. Therefore, nutrients was added as a cause of impairment.

Rio Moquino (Laguna Pueblo to Seboyettia Creek)

AU:NM-2107.A_10 WQS: 20.6.4.109

1996 Action: Previously listed for temperature and stream bottom deposits. There are no ten-year temperature data. Using 1978 to 1980 data the temperature exceedences ratio is 3/10 or not supporting for temperature.

1998 Action: Temperature and stream bottom deposits were retained on the list as causes of non-support.

2002 Action: Name was revised to remove tribal portion.

2006 Action: This AU was intensively sampled in 2004. There were 3 of 6 temperature exceedences based on grab data (no thermograph data available). TN, TP, and DO saturation indicators lead to a conclusion of nutrient impairment. Therefore, temperature was retained, and nutrients was added as a cause of non support. Data are not available to confirm sedimentation (SBD) listing.

2008 Action: TMDLs were completed for temperature and nutrients (2007).

2010 Action: There were 2 of 7 exceedences of the interim turbidity numeric translator of 25 NTU with an M-SCI score of 37.49. Therefore, this AU is noted as Non Support for turbidity. There may not be adequate flow in the lower portions of this reach to sustain a CWAL.

2014 Action: This AU was sampled during the 2011 Puerco/Zuni study. n=1 for most chemical parameters sampled (= Not Assessed). Thermograph data confirmed the temperature listing (max = 26.07 degreec C). Turbidity data did not exceed the associated SEV-based numeric threshold. The nutrient assessment was incomplete. There are no new sedimentation data. Therefore, the temperature, sediment, and nutrient listings remain, and turbidity was removed.

2016 Action: The sedimentation listing was changed to Not Assessed because no quantitative data or assessment protocols were used to make the 1998 determination. Therefore, the original basis for the determination was incorrect.

Rio Paguate (Laguna Pueblo bnd to headwaters)
AU:NM-2107.A_30 WQS: 20.6.4.109

1996 Action: New listing for metals (Se, Hg), stream bottom deposits and temperature. For selenium 0/16 samples were greater than the acute criteria, but 16/21 within the last ten years exceeded the chronic screening level. This reach is Not Supporting for selenium. For mercury there have been no exceedences of the acute criteria within the last ten years. The exceedence ratio for mercury in the last five years is 0/4 and 1/21 within the last ten years. This reach will be upgraded to Full Support for mercury. Temperature data are limited at several of the stations. USGS station 08349800 is the only station with data within the last ten years. This station is 2/5 within five years and 5/13 within six to ten years. This segment will be listed as Partial Support for temperature.

1998 Action: Mercury was removed as a cause of non-support. The reach will be listed as partially supported with selenium, temperature and stream bottom deposits.

2002 Action: Name revised from "Rio Paguate from inflow to Paguate Reservoir to headwaters" to removed tribal portions.

2006 Action: This AU was planned to be part of the 2004 survey, but cannot be assessed because no samples were taken. The downstream terminus of this AU is a reservoir, just inside the boundary of Laguna Pueblo. Above the pueblo boundary, the river was not accessible due to private land ownership, locked gates, and road washouts. The reservoir supports a trout fishery managed by Laguna Pueblo, suggesting water quality upstream of the reservoir is good and that temperature is not an impairment. Downstream of the dam that creates the reservoir, flow is ephemeral and probably leaves the pueblo land only during non-irrigation season or storm events. Also, 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. Therefore, the listings were removed, and this AU was changed to Not Assessed.

Rio San Jose (Grants BNSF RR crossing to headwaters)
AU:NM-97.A_028 WQS: 20.6.4.98

2014 Action: Previously "Rio San Jose (Horace Springs to Grants WWTP), this AU was split to discern the perennial and non-perennial portions. This AU is likely ephemeral.

Rio San Jose (non-tribal HWY 117 to Grants BNSF RR crossing)
AU:NM-9000.A_003 WQS: 20.6.4.99

1996 Action: Listed for metals (Hg, Cd) and total phosphorus. This stream segment is listed as unclassified. The total phosphorus criterion applies only to high quality coldwater fisheries so the total phosphorus listing should be removed. Within the last five years 0/7 samples for mercury exceeded the detection level of 0.1 Fg/l. For cadmium the ratios are 0/7 within five years and 0/9 from 5-10 years.

1998 Action: Total phosphorus, mercury and cadmium have been removed as causes of non-support for this reach. This reach is not included in the 1998 303(d) list.

2008 Action: This AU is likely ephemeral, but EPA has not yet approved 20.6.4.97 and UAAs have not been prepared at the time of this writing (6/4/08). Therefore, this AU will be noted as WQS Reference 20.6.4.98 for now.

2014 Action: Previously "Rio San Jose (Horace Springs to Grants WWTP), this AU was split to discern the perennial and non-perennial portions. This AU was sampled during the 2011 Puerco/Zuni survey. There were 2/2 exceedence of the human health WQC for dissolved arsenic at station 36RSanJo123.3. Therefore, this AU is listed for arsenic (5C).

2016 Action: Previously named "Rio San Jose (Horrace Springs to Grants BNSF RR crossing)", the AU name was changed to acknowledge tribal portion. Arsenic was re-assessed using the downstream station (36RSanJo111.0) in the assessment unit because station 36RSanJo123.2 is groundwater-driven and at the top of the AU. Station 36RSanJo111.0 had 0/7 arsenic exceedences. Therefore, the arsenic listing was removed.

Unnamed tributary (San Mateo Cr to mine outfall)

AU:NM-97.A_019 WQS: 20.6.4.97

2014 Action: This AU was included in the UAA for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities, June 2012. EPA provided technical approval January 30, 2013.

HUC: 13020209 - Rio Salado

Rio Salado (Rio Grande to Alamo Navajo bnd)
AU:NM-2103.A_10 WQS: 20.6.4.103

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. The max thermograph temperature was 29.4 degrees C. This thermograph was noted going in and out of exposure. A second thermograph should be deployed to confirm the listing before proceeding with a TMDL. Therefore, temperature was added as a cause of impairment (IR Cat 5c - additional data needed).

HUC: 13020211 - Elephant Butte Reservoir

Alamosa Creek (Perennial reaches abv Monticello diversion)
AU:NM-2103.A_30 WQS: 20.6.4.103

1996 Action: Listed for reduction of riparian vegetation and streambank destabilization.

1998 Action: The reach continues to be listed as Partially Supporting on the 1998 303(d) list with stream bottom deposits as the cause.

2006 Action: This AU was intensively sampled during the Lower Rio Grande Tribs (2004) survey. There are no changes as a result of the survey. Additional data are needed to confirm the historic sedimentation/siltation listing.

2010 Action: An EMAP bio/hab survey was performed below the USGS gage. The M-SCI score was 61.7 (the threshold value is 56.70) with 22 percent fines. Therefore, Sedimentation/Siltation was removed as a cause of non support.

2014 Action: This AU was sampled during the 2011-2012 Lower Rio Grande survey. The thermograph deployed from 4/28/2011 to 11/9/2014 exceeded 29 degrees C one time (1/4689 = 0.02%) at 29.2 degrees C. Given the dual ALU assignment (MCWAL and WWAL) and thermograph instrumentation error, this one excursion does not warrant a temperature listing. No impairments were identified.

Elephant Butte Reservoir
AU:NM-2104_00 WQS: 20.6.4.104

1996 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: Elephant Butte was studied by SWQB in 2003 and 2004 as part of a Clean Water Act 104b3 grant. The results of the study indicate that the reservoir may be subject to eutrophication from nutrient input and as a result of periodic reservoir draw down. Nutrient assessment protocols for lakes and reservoirs to determine impairment of NMs narrative plant nutrient water quality standard are under development.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. Elephant Butte was determined to be Fully supporting with respect to nutrients using the current nutrient assessment protocol for lake. No impairments were found. The fish consumption advisories are still in effect.

Rio Grande (Elephant Butte Rsvr to San Marcial at USGS)
AU:NM-2105_00 WQS: 20.6.4.105

2016 Action: This AU was sampled during the Middle Rio Grande (2015) survey. There were 2/4 exceedences of the acute and chronic total recoverable Al WQC. Therefore, total aluminum was listed as a cause of impairment.

HUC: 13030101 - Caballo

Caballo Reservoir
AU:NM-2102.B_00 WQS: 20.6.4.104

1996 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: This reservoir was intensively sampled in 2004. There 1 of 6 exceedences of aluminum criterion. There were no other exceedences noted during the survey.

2016 Action: This AU was sampled during the Middle Rio Grande Tribs (2014) survey. Nutrient causal and response data indicate impairment (TP exceedences, 2/3 chl-a). Therefore, nutrients was added as a cause of impairment. The fish consumption advisory is still in effect.

Las Animas Ck (perennial prt Animas Gulch to headwaters)
AU:NM-2103.A_50 WQS: 20.6.4.103

2010 Action: An EMAP bio/hab survey was performed at station Las Animas Creek above Box. The M-SCI score was 51.38 (the threshold value is 56.70) with 8 percent fines. Therefore, Benthic-Macroinvertebrate Bioassessments (Streams) was added as a cause of non support. Low M-SCI score that lead to biological impairment listing is likely due to inadequate time for recovery following scouring flow prior to sampling.

2014 Action: This AU was sampled during the 2011-2012 Lower Rio Grande survey. A second M-SCI score of 37.32 confirms the benthic macroinvertebrate impairment. There were 2/3 DO grab measurements below 6.0 mg/L in extremely shallow water with very little flow -- no sonde data are available to confirm. Therefore, benthic macroinvertebrate

impairment is retained, and DO was added (5C).

2016 Action: Dissolved oxygen impairment to MCAL, and benthic macroinvertebrate impairment to WWAL, were erroneously not entered into the database during 2014 cycle (see 2014 ACTION). Corrected.

Palomas Creek (perennial portion R Grande to headwaters)
AU:NM-2103.A_60 WQS: 20.6.4.103

2014 Action: This AU was sampled during the 2011-2012 Lower Rio Grande survey. No impairments were found.

Percha Ck (Perennial prt Wicks Gulch to Middle Percha Ck)
AU:NM-2103.A_20 WQS: 20.6.4.103

1996 Action: Previously listed for nutrients and stream bottom deposits. There are two sampling stations on this reach. There are no supporting data to justify the nutrients listing per the document titled, AIndices of Aquatic Community Integrity of Percha and Tierra Blanca Creeks in Perennial Segments Administered by the US Bureau of Land Management, Sierra County, New Mexico@. E.D. Weber and R.A. Cole, Department of Fishery and Wildlife Sciences, New Mexico State University, Las Cruces, New Mexico, January 20, 1996.

1998 Action: Nutrients will be removed as a cause of non-support for this reach. The reach continues to be listed as Partially Supporting on the 1998 303(d) list with stream bottom deposits as the cause.

2006 Action: This AU was intensively sampled during the Lower Rio Grande Tribs (2004) survey. There are no changes as a result of the survey. Additional data are needed to confirm the historic sedimentation/siltation listing.

2010 Action: An EMAP bio/hab survey was performed at Percha Box. Blue Creek was used as a reference site. The RBP score at the study site was 46 as compared to the reference site score of 48 (i.e., 95.8% of reference). There were 16 percent fines at the study site. Therefore, Sedimentation/Siltation was removed as a cause of non support.

2014 Action: This AU was sampled during the 2011-2012 Lower Rio Grande survey. No impairments were found.

Rio Grande (Caballo Reservoir to Elephant Butte Reservoir)
AU:NM-2103.A_00 WQS: 20.6.4.103

2006 Action: This reach was intensively sampled as part of the Lower Rio Grande (2004) survey. There were 16 of 61 (21.7%) exceedences of the DO criterion of 6 mg/L based on grab data. Therefore, DO was added as a cause of impairment (Category 5C - sonde and nutrient data are needed). The DO impairment may indicate excessive nutrients. Protocols for nutrients in large rivers are under development.

2014 Action: The AU was sampled during the 2011-2012 Lower Rio Grande survey. There were 1/8 and 2/10 grab DO exceedences below the Truth or Consequences WWTP and below E. Butte Dan stations, respectively. Therefore, DO remains listed (5C). Sonde data are needed to confirm listing. The dissolved oxygen impairment may indicate excessive nutrients. Protocols for nutrients in large rivers are under development.

2016 Action: The station below E. Butte was sampled during the Middle Rio Grande (2015) survey. No impairments were found. Sonde data are not available to re-assess the DO listing. Therefore, DO remains listed.

HUC: 13030102 - El Paso-Las Cruces

Burn Lake (Dona Ana)
AU:NM-9000.B_024 WQS: 20.6.4.99

2010 Action: This waterbody was sample two times during the 2008 lake survey. There were 2 of 2 exceedences of the chronic aluminum criterion. Therefore, aluminum was added as a cause of impairment.

Rio Grande (Anthony Bridge to NM192 bridge W of Mesquite)
AU:NM-2101_01 WQS: 20.6.4.101

1996 Action: This AU was previously lumped into "Rio Grande (International Mexico boundary to Leesburg Dam)" prior to the 2008 list. See the 2012 version of the ROD for historical record.

2006 Action: This reach was intensively sampled as part of the Lower Rio Grande (2004) survey. There were 5 of 18 exceedences (28%) of the E. coli criterion of 410 cfu/100ml. The WQS also changed from fecal coliform to E. coli. Therefore, this AU will be listed for E. coli.

2008 Action: A TMDL was completed for E. coli.

2014 Action: Originally under "Rio Grande (Anthony Bridge to Picacho Bridge, this AU was split and sampled during the 2011-2012 Lower Rio Grande survey. There were 5/32 (16%) e. coli exceedences in SWQB survey data combined with EBID data for the station at the bottom of the AU (42RGrand030.8). Therefore, e. coli remains listed.

Rio Grande (International Mexico bnd to Anthony Bridge)
AU:NM-2101_00 WQS: 20.6.4.101

1996 Action: This AU was previously lumped into "Rio Grande (International Mexico boundary to Leesburg Dam)" prior to the 2008 list. See the 2012 version of the ROD for historical record.

2006 Action: This reach was intensively sampled as part of the Lower Rio Grande (2004) survey. There were 7 of 20 exceedences (35%) of the E. coli criterion of 410 cfu/100ml. The WQS also changed from fecal coliform to E. coli. Therefore, this AU will be listed for E. coli.

2008 Action: A TMDL was completed for E. coli. The IBWC submitted data for IBWC station 13272 (Rio Grande upstream of American Dam. From Sept 2001 through May 2007, there were 42 of 81 exceedences of the E. coli criterion, confirming the existing E. coli impairment.

2014 Action: This AU was sampled during the 2011-2012 Lower Rio Grande survey. There were 19/63 and 10/51 e. coil exceedences in SWQB survey data combined with EBID data for stations at Corshesne Bridge and Sunland Park Bridge, respectively. There were 2/8 exceedences of the dissolved boron WQC for irrigation uses. Therefore, e. coil remains listed, and arsenic (DWS) and boron (IRR) were added as impairments.

Rio Grande (Leasburg Dam to one mile below Percha Dam)
AU:NM-2101_10 WQS: 20.6.4.101

1996 Action: Previously listed under "Rio Grande from Leasburg Dam to Caballo Reservoir" and listed for pH. There are two stations in this reach with pH data from a 1989 survey and have a cumulative exceedance ratio of 2/10. This reach will be listed as partially supporting for pH from station LRG101.000185 to the Caballo Reservoir dam.

1998 Action: The reach was retained with pH listed as the cause of non-support.

2000 Action: Rio Grande from Leasburg Dam to Caballo Dam (Rio Grande, 2101, 2102), E, Partially Supported, (LRG1-20000). Removed from the list due to incorrect listing (by USGS) of a pH value of 9.3. See letter from USGS. WQS are currently being met for pH on the LRG.

2002 Action: The original assessment unit "Rio Grande from Leasburg Dam to Caballo Reservoir" was split into two because they fall under two different water quality standard segments.

2006 Action: This reach was intensively sampled as part of the Lower Rio Grande (2004) survey. There were 4 of 23 exceedences (17.4%) of the E. coli criterion of 410 cfu/100ml. The WQS also changed from fecal coliform to E. coli. Therefore, E. coli will be added as a cause of non support.

2014 Action: This AU was sampled during the 2011-2012 Lower Rio Grande survey. There were 4/36 and 3/36 e. coil exceedences in SWQB survey data combined with EBID data for stations at Leasburg Dan and Haynor Bridge, respectively. Therefore, e. coil remains listed.

Rio Grande (NM192 bridge W of Mesquite to Picacho Bridge)
AU:NM-2101_03 WQS: 20.6.4.101

2014 Action: Originally under "Rio Grande (Anthony Bridge to Picacho Bridge, this AU was split and sampled during the 2011-2012 Lower Rio Grande survey. There were 1/31 e. coli exceedences in SWQB survey data combined with EBID data for the station at the Mesilla Diversion station in Las Cruces. Therefore, e. coli was removed as a cause of impairment.

Rio Grande (one mile below Percha Dam to Caballo Reservoir)
AU:NM-2102.A_00 WQS: 20.6.4.102

2004 Action: Previously listed under "Rio Grande from Leasburg Dam to Caballo Reservoir" and listed for pH. The original assessment unit was split into two because they fall under two different water quality standard segments. This AU

is only 1 mile long.

2006 Action: This reach was intensively sampled as part of the Lower Rio Grande (2004) survey. There were no changes as a result of the survey.

2010 Action: Two samples exceeded previous standard of 50 NTU (both samples were during the irrigation season). This AU is consider to be NOT ASSESSED for turbidity because SWQB does not have an interim turbidity assessment protocol for large rivers due to lack of benthic macroinvertebrate verification procedures. SWQB does not anticipate a protocol for large rivers in the foreseeable future.

2014 Action: This AU was sampled during the 2011-2012 Lower Rio Grande survey. There were 1/37 e. coil exceedences in SWQB survey data combined with EBID data for the stations below Caballo Dam. No impairments were found.

Rio Grande (Picacho Bridge to Leasburg Dam)
AU:NM-2101_02 WQS: 20.6.4.101

1996 Action: This AU was previously lumped into "Rio Grande (International Mexico boundary to Leesburg Dam)" prior to the 2008 list. See the 2012 version of the ROD for historical record.

2006 Action: This reach was intensively sampled as part of the Lower Rio Grande (2004) survey. There were 5 of 18 exceedences (28%) of the E. coli criterion of 410 cfu/100ml. The WQS also changed from fecal coliform to E. coli. Therefore, this AU will be listed for E. coli.

2008 Action: A TMDL was completed for E. coli.

2014 Action: This AU was sampled during the 2011-2012 Lower Rio Grande survey. There were 1/34 e. coli exceedences in SWQB survey data combined with EBID data for the station representing conditions at the bottom of the AU (42RGrand073.5). Therefore, e. coli was removed as a cause of impairment.

Tierra Blanca Creek (Rio Grande to headwaters)
AU:NM-2103.A_70 WQS: 20.6.4.98

2014 Action: This AU was sampled during the 2011-2012 Lower Rio Grande survey. Thermograph data did not exceed the applicable WQC (32.2 degrees C). Most parameters remain unassessed (n=1).

HUC: 13030202 - Mimbres

Bear Canyon Reservoir
AU:NM-2504_30 WQS: 20.6.4.806

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2000 Action: Bear Canyon Reservoir was characterized (in a report titled, New Mexico Clean Lakes Program, Classification Phase I, Final Report, September 1982 and a report titled, Lake Water Quality Assessment Surveys for Selected New Mexico Lakes, 1996) by hypolimnetic dissolved oxygen depletion and blue-green algal blooms during the summer. Chlorophyll a concentrations were exceedingly high during the summer, 128ug/l at the dam. Nitrogen concentrations exceeded 2 mgN/l in the photic zone, representing the highest observed nitrogen concentration. During the fall both the nutrient and chlorophyll concentrations and pH decreased considerably, while moderate stratification remained. Phosphorous was limiting or co-limiting in all seasons. Although the data for this reservoir is dated, it is still listed in the State's 305(b) Report as impaired for dissolved oxygen, nutrients and siltation and therefore will be listed on the 303(d) List until new data are collected to either verify or refute the listing.

2008 Action: This lake was scheduled to be surveyed during 2003. The reservoir was dry at that time because it was being dredged. The reservoir now maintains water and a put-and-take fishery (as of 2/5/08). The sedimentation/siltation listing was removed because there were no data or applicable assessment protocols available to make this determination.

2012 Action: This lake was sampled during the 2009 Mimbres watershed survey. DO from 1 of 3 sampling events was below 6.0 mg/L. Data from multiple indicators (TP, TN, chlorophyll a, DO, secchi depth, and %cyanobacteria) all suggest that Bear Canyon Reservoir is still impaired for nutrients; however the Nutrient Assessment Protocol for Lakes is not yet finalized. Excessive nutrients is likely the reason the DO level fell below the applicable criterion during one sampling event. The applicable temperature criterion (20 degrees C) was exceeded during the 6/24/09 sampling run. Therefore, nutrients remains, DO was removed, and temperature was added as a cause of impairment.

Cold Springs Creek (Hot Springs Creek to headwaters)
AU:NM-2803_11 WQS: 20.6.4.803

1996 Action: Listed for undetermined metals. Water samples were collected upstream of Cold Springs Creek and downstream of a sediment retention basin in November 1992 and February 1993 and analyzed for metals. Concentrations of dissolved copper (1.20 and 0.60 mg/L) and zinc (0.20 mg/L) exceeded acute criteria that indicate that the acute criteria would be exceeded in the receiving stream.

1998 Action: This reach is included in the 1998 303(d) list as not supported for copper and zinc.

2004 Action: This reach was to be surveyed as part of the 2002 Mimbres intensive survey. There was no flow during the entire survey. Only livestock watering and wildlife habitat uses apply. 1993 values did not exceed the zinc livestock watering criteria 25 mg/L. The copper criterion of 0.5 was exceeded in 1993. Neither criterion were exceeded in a 1998 sample event (<0.01 mg/L copper and 0.02 mg/L zinc). Therefore, copper and zinc were removed as causes of non support.

2008 Action: This AU went dry during the last intensive survey.

2012 Action: This AU was sampled during the 2009 Mimbres watershed survey. The chronic aquatic life criteria for lead and cadmium were exceeded 4 of 4 and 3 of 4 times, respectively. Therefore, lead and cadmium were added as causes of non support. 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:NM-2803_20 WQS: 20.6.4.803

1996 Action: Previously listed for temperature, fecal coliform, and total ammonia. There is only one sample station on this reach. All data are from a 1990 and 1995 surveys. For temperature, 1/2 of the samples taken in the 1990 survey exceeded the criteria, while 4/6 of the samples taken in the 1995 survey exceeded the criteria. For fecal coliform, 0/1 of the samples taken in the 1995 survey exceeded the criteria. For total ammonia, 0/6 of the samples taken in the 1995 survey exceeded the criteria.

1998 Action: Previously listed for temperature, fecal coliform, and total ammonia. There is only one sample station on this reach. All data are from a 1990 and 1995 surveys. For temperature, 1/2 of the samples taken in the 1990 survey exceeded the criteria, while 4/6 of the samples taken in the 1995 survey exceeded the criteria. For fecal coliform, 0/1 of the samples taken in the 1995 survey exceeded the criteria. For total ammonia, 0/6 of the samples taken in the 1995 survey exceeded the criteria.

2004 Action: This reach was to be surveyed as part of the 2002 Mimbres intensive survey. The station "Gallinas Creek above Mimbres" was dry during the entire survey and the stations "Gallinas Creek @ lower CG near 152" was dry during 6 of 8 sampling events. Only livestock watering and wildlife habitat uses apply (no impairments were determined for these uses based on the two sampling events with flow), therefore temperature was removed as a cause of non support. This AU will be listed as category 4C because irrigation diversions are altering the flow.

2012 Action: This AU was sampled during the 2009 Mimbres watershed survey. 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). Exceedences of TN and TP causal thresholds, as well as grab DO concentration thresholds indicate potential nutrient impairment. Therefore, the WQS reference was changed to 20.6.4.803 and nutrients (5C) was added as a cause of impairment. Field notes indicated interrupted pools during June 2009 - low DO readings may be result of groundwater input. Stringy, filamentous algae were observed. Sonde data and/or chlorophyll collection recommended prior to TMDL development.

Hanover Creek (Whitewater Creek to headwaters)
AU:NM-2803_31 WQS: 20.6.4.98

1996 Action: After consultation with staff from the NMED Silver City Office, Nonpoint Source Pollution Section of the SWQB, comments from the New Mexico Mining Association and Phelps Dodge Mining Company, it has been determined that this reach of Hanover Creek (Hanover Creek from the headwaters to Highway 152 Bridge) is ephemeral and should be removed from the 1998-2000 303(d) List as an impaired waterbody.

1998 Action: It has been dropped from the 1998 303(d) list.

2008 Action: This AU is likely ephemeral, but EPA has not yet approved 20.6.4.97 and UAAs have not been prepared at the time of this writing (6/4/08). Therefore, this AU will be noted as WQS Reference 20.6.4.98 for now.

Hot Springs Ck (Perennial prt of Mimbres R to headwaters)
AU:NM-2803_10 WQS: 20.6.4.803

1996 Action: Listed for reduction of riparian vegetation and streambank destabilization. There is no applicable data to support any listing on this reach. This is also an intermittent stream that flows only during rain events.

1998 Action: This reach will be retained on the 303(d) list with a cause of unknown.

2004 Action: This reach was to be surveyed as part of the 2002 Mimbres intensive survey. There was no flow during the entire survey. Only livestock watering and wildlife habitat uses apply. Unknown was removed as a cause of non support.

2008 Action: This AU is likely not perennial. It went dry during the last intensive survey.

2012 Action: The perennial portion is privately owned -- SWQB was denied access during during both Mimbres watershed surveys (2002 and 2009).

Mimbres R (Perennial reaches downstream of Willow Springs)
AU:NM-2803_00 WQS: 20.6.4.803

1996 Action: Previously listed for metals (Al), temperature, fecal coliform and stream bottom deposits. There are three sampling stations on this reach. All data are from 1990 and 1995 surveys. For metals, at station SWC803.000105, 0/1, of the samples exceeded the criteria in the 1990 survey, while 1/2 of the samples taken in the 1995 survey exceeded the criteria. At station SWC803.002501, 0/7 of the samples taken in 1990 exceeded the criteria, while 0/3 of the samples taken in 1995 exceeded the chronic screening level indicating Full Support, Impacts Observed. At station SWC803.002530, 0/1 of the samples taken in 1990 exceeded the criteria, while 0/3 of the samples taken in 1995 exceeded criteria. For temperature, the reach had a cumulative exceedance ratio of 15/31. Fecal coliform on the AU had a cumulative exceedance ratio of 4/8. There are three 1995 biological stations on this reach. One below San Lorenzo was 75%, another at Mimbres was 68% and another above the Gallinas River confluence was FS 81%. It is believed that these data may be more influenced by low flow conditions than water quality.

1998 Action: Fecal coliform and aluminum will be removed as causes of non-support for this reach, but will be added to the 305(b) list as Full Support, Impacts Observed for these parameters. The reach will continue to be included in the 303(d) list as Not Supported for temperature and stream bottom deposits.

2004 Action: Previously called "Mimbres River (Perennial reaches downstream of Sheppard Canyon)," the name was changed to match the WQS break and use a hydrologic break. This reach was intensively surveyed as part of the 2002 Mimbres study. A pebble count and benthic macroinvertebrate survey was performed at the Mimbres @ USGS gage site

and at station Dwyer near Rancho del Rio. There were 10% fines and 17% fines, respectively. The benthic macroinvertebrate data are not available at the time of this writing, but is irrelevant to the SBD listing decision (according to the Stream Bottom Deposit Assessment Protocol) because the fines are 20% or less. Therefore, stream bottom deposits will be removed as a cause of non support. There were 9 of 23 exceedences of the fecal coliform criterion. Thermographs at the USGS gage site and Gallinas site recorded 296 of 2862 and 296 of 2861 hourly readings greater than 24 degrees C, respectively. Therefore, temperature will remain and fecal coliform will be added as a cause of non support. This reach will be listed as Category 5B because CWF with WQS of 20 degrees C may not be appropriate.

2008 Action: A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds. Therefore, nutrients were added as a cause of impairment.

2012 Action: This AU was sampled during the 2009 Mimbres watershed survey. There were 8 of 18 exceedences of the E. coli criterion. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours (max sonde value was 10.3 NTU). Temperature was non support at both Royal John Bridge and Rancho del Rio. This AU is near the ecoregion boundary and is more closely associated with ecoregion 24b (Chihuahuan Desert). A Level 2 nutrient survey did not indicate potential impairment based on these thresholds. Therefore, temperature will remain, E. coli was added, and nutrients and fecal coliform were removed. Aquatic life use and/or criterion revision is recommended.

Mimbres R (Perennial reaches Willow Springs to Cooney Cny)
AU:NM-2804_00 WQS: 20.6.4.804

1996 Action: Listed for metals (Al), dissolved oxygen and stream bottom deposits. There are three sampling stations on this reach and data are from 1986, 1990 and 1995 surveys. For aluminum, the reach had a cumulative exceedance ratio of 1/12. For dissolved oxygen, the reach had a cumulative exceedance ratio of 2/26. For temperature (not previously listed), the reach had a cumulative exceedance ratio of 9/31. There is one 1995 biological assessment on this reach. The station at Cooney Campground was 56% of the reference site.

1998 Action: Aluminum will be removed as a cause of non-support for this reach and will be placed on the 305(b) list as Full Support, Impacts Observed. Dissolved oxygen will be kept as a cause of non-support for station 6048. Temperature will be added as a cause of non-support at station 3035. Stream bottom deposits will be retained as a cause of non-support.

2004 Action: Previously called "Mimbres River (Sheppard Canyon to Cooney Campground)," the name was changed to match the WQS break and use a hydrologic break. This reach was intensively surveyed as part of the 2002 Mimbres study. A pebble count and benthic macroinvertebrate survey was performed at the Nature Conservancy. This station was used as a reference for the lower AU. There were 20% fines. The benthic macroinvertebrate data are not available at the time of this writing, but is irrelevant to the SBD listing decision (according to the Stream Bottom Deposit Assessment Protocol) because the fines are 20% or less. Therefore, stream bottom deposits will be removed as a cause of non support. There were 2 of 10 dissolved oxygen measurements lower than the 6.0 mg/L criterion. Thermographs at the upper Nature Conservancy site and lower Nature Conservancy site recorded 0 of 2839 and 280 of 2835 hourly readings greater than 23 degrees C, respectively. The maximum temperature at the upper stie was 18.57 degree C. Therefore, dissolved oxygen and temperature will remain and as causes of non support. This reach will be listed as Category 5B because HQCWF with WQS of 20 degrees C may not be appropriate.

2008 Action: A Level 2 nutrient assessment indicated nutrient impairment due to total nitrogen, total phosphorus, and chlorophyll a values above applicable numeric thresholds, as well as low DO (grab data). Therefore, nutrients were added as a cause of impairment.

2012 Action: This AU was sampled during the 2009 Mimbres watershed survey. Temperature was non support at lower TNC station (maximum temp of 24.6 celsius). Although exceedence of TN, TP, and DO thresholds indicate potential nutrient impairment, consistently low DO concentration and saturation data indicate this location is dominated by groundwater input. Per 20.6.4.11 subsection I, numeric criteria for DO do not apply when these changes are due to natural causes. Therefore, temperature will remain listed (5B), and DO and nutrients will be removed as causes of non support. Aquatic life use and/or criterion revision is recommended.

San Vicente Arroyo (Mimbres R to Maudes Cny)
AU:NM-9000.A_026 WQS: 20.6.4.97

2014 Action: The originally AU was split. 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:NM-9000.A_025 WQS: 20.6.4.803

2012 Action: This AU was sampled during the 2009 Mimbres watershed survey. A Level 2 nutrient assessment was performed. San Vicente Arroyo had extreme fluctuations in DO ranging from 1.4 - 12.5 mg/L and 19.5 - 172.5 local percent saturation. This was likely due to loss/lack of flow during the sonde deployment. 5 out of 8 DO grab samples were below the instantaneous minimum percent saturation for WWAL described in the AP (75%saturation). 2 out of 8 grab samples were below the DO criterion for WWAL (5.0 mg/L). DO fluctuations in this reach do not appear to be caused by nuisance algae growth (chl-a well below threshold) but rather may be the result of a combination of environmental variables (e.g., stream flow conditions, sunlight, temperature, etc). The total phosphorus threshold was exceeded 5 of 8 times. Therefore, nutrients was added as a cause of non support. This reach may be intermittent - a Hydrology Protocol survey is recommended to determine the nature of the stream.

2014 Action: The originally AU was split. 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.

2016 Action: Previous named "San Vicente Arroyo (Perennial prt Maudes Cny to headwaters)," name was changed to differentiate with downstream ephemeral stream reach, and AU size corrected. HPs performed 5/16/12 at NM90 and at Ancheta Mill indicate a perennial system (scores of 20 and 21, respectively), although historic gage data confirm extended periods of low to no flow. Grab data submitted by the Silver City Watershed Keepers indicate continued large fluctuations in DO level combined with high specific conductance values, further indicating the influence of groundwater in this reach. The nutrient assessment protocol will be significantly revised in late 2016. Therefore, the nutrient listing will remain IR Category 5C until the upcoming revised protocol can be applied.

HUC: 13050003 - Tularosa Valley

Dog Canyon Creek (perennial portions)
AU:NM-2801_20 WQS: 20.6.4.801

2006 Action: This AU was intensively surveyed as part of the Tularosa (2004) survey. There were 2 of 6 exceedences of the 20 degree C temperature criterion. Therefore, temperature was added as a cause of non support. Thermograph data are needed.

2010 Action: Name was changed from "Dog Canyon (Tularosa Creek to headwaters)" to acknowledge that the flow does not reach the Tularosa River. Instead, it goes subsurface into the sand.

2012 Action: Thermographs were deployed in 2010 at Line Cabin and at the Nature Trail. Maximum temperature at both sites was 26.4 degrees C. Therefore, temperature remains listed. CWAL with WQ criterion of 20 degrees C may not be appropriate. WQS is under review.

2014 Action: This AU was sampled during the 2012 Sacramento Mountain study. The maximum thermograph temperature was 25.8 degrees C. Therefore, temperature remains listed. The WQC is under review.

Fresnal Canyon (La Luz Creek to Salado Canyon)
AU:NM-2801_41 WQS: 20.6.4.801

2014 Action: This AU was sampled during the 2012 Sacramento Mountains survey. There were 2/2 exceedences of the e. coli WQC. Therefore, e. coli was added as a cause of impairment (5C). This reach is often dry below Salado Canyon where the Alamogordo diversion is installed,

Fresnal Canyon (Salado Canyon to headwaters)
AU:NM-2801_44 WQS: 20.6.4.801

2014 Action: This AU was sampled during the 2012 Sacramento Mountains survey. The max thermograph temperature was 17 degrees C. The sedimentation assessment is incomplete, but the measured % sand and fines exceeded the numeric threshold.Therefore, temperature was added as a cause of impairment. Sediment survey L1 and L2 needed to complete sedimentation assessment.

Karr Canyon (Fresnal Canyon to headwaters)
AU:NM-2801_42 WQS: 20.6.4.801

2014 Action: This AU was sampled during the 2012 Sacramento Mountains study. There were 45.7% sand&fines with a LRBS of -1.17. Therefore, this AU is listed for sedimentation.

La Luz Creek (perennial portions)
AU:NM-2801_40 WQS: 20.6.4.801

2014 Action: This AU was sampled during the 2012 Sacramento Mountains study. No impairments were identified.

Lake Holloman
AU:NM-9000.B_113 WQS: 20.6.4.99

2010 Action: This water body was sampled in 2008. 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. The human health criterion for arsenic (9.0 ug/L was exceeded 2 of 4 times. Therefore, arsenic was added as a cause of non support. Per EPA Region 6 instruction, WWAL was added as a presumed use, and all waters falling under 20.6.4.99 NMAC are to be assessed against WWAL when data are available. Limited aquatic life might be a more realistic use based on salinity.

Nogal Creek (Tularosa Creek to Mescalero Apache bnd)
AU:NM-2801_10 WQS: 20.6.4.801

2014 Action: This AU was sampled during the 2012 Sacramento Mountains study. The maximum thermograph temperature was 25.7 degrees C. There were 2/4 e. coli exceedences. Therefore, temperature and e. coli were added as impairments.

Salado Canyon (Fresnal Canyon to headwaters)
AU:NM-2801_43 WQS: 20.6.4.801

2014 Action: This AU was sampled as part of the 2012 Sacramento survey. No impairments were identified.

2016 Action: A level 1 sedimentation survey recorded 29.1% sand and fines in this foothills sediment class AU. Therefore, sedimentation is full support.

Three Rivers (Perennial prt HWY 54 to USFS exc Mescalero)
AU:NM-2802_00 WQS: 20.6.4.802

1996 Action: Previously listed for temperature, conductivity, salinity and total phosphorus based on data at two stations during a 1987 survey. Temperature data from 1987 had a cumulative exceedance ratio of 9/10. Conductivity data from 1987 had a cumulative exceedance ratio of 9/9.

1998 Action: Salinity (no standard) and total phosphorus will be removed as a cause of non-support for this reach. Temperature and conductivity will be listed as causes of non-support at stations CCB802.002025 and CCB802.002015.

2006 Action: This AU was intensively surveyed as part of the Tularosa (2004) survey. There were 0 of 5 exceedences of the specific conductance criterion of 500 umhos/cm. There were 1 of 5 exceedences of the 20 degree C temperature criterion. There were 2 of 4 exceedences of the 235 cfu/100mL E. coli criterion. Therefore, temperature and specific

conductance were removed, and E. coli was added as a cause of non support.

2008 Action: The station used for the 2006 ACTION above (THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8) is actually indicative of water quality conditions in the upper assessment unit ["Three Rivers (USFS bnd to headwaters)"] . SWQB does not have any recent water quality sampling data in the reach from HWY 54 to the USFS boundary. 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:NM-2802_01 WQS: 20.6.4.802

2008 Action: This AU was intensively surveyed as part of the Tularosa (2004) survey. At station THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8, there were 0 of 5 exceedences of the specific conductance criterion of 500 umhos/cm. There were 1 of 5 exceedences of the 20 degree C temperature criterion. There were 2 of 4 exceedences of the 235 cfu/100mL E. coli criterion. Therefore, E. coli was added as a cause of non support.

2010 Action: There were 0 of 5 exceedences of the interim turbidity numeric translator of 10 NTU. Therefore, this AU is noted as Full Support for turbidity.

2014 Action: This AU was sampled as part of the 2012 Sacramento survey. There were 0/5 e. coli exceedences. Therefore, e. coli was removed as a cause.

Tularosa Creek (Old HWY 70 xing to Mescalero Apache bnd)
AU:NM-2801_01 WQS: 20.6.4.801

1996 Action: Listed as a LWWF (priority 7 reach) and for metals (Al, Hg). The Bureau received three letters from concerned groups in the area pertaining to this particular waterbody. Questions about the designated use prompted the Bureau to look into the applicability of the LWWF designation. A fish hatchery located on the river in Mescalero and operated by the U.S. Fish and Wildlife Service as well as other information contained in the letters led to a change in the designated use from a LWWF to a CWF. There is one sampling station (08481500) on this reach. All data are from 1989, 1990, 1991, 1992 and 1993 surveys. For aluminum (Al), 2/17 samples taken from 1989 to 1992 exceeded the criteria while 0/3 sample in the 1993 survey exceeded the criteria. For mercury (Hg), 1/10 samples taken from 1989 to 1991 exceeded the criteria. The designated use is fully supported for aluminum (Al) while it is fully supported, impacts observed for mercury (Hg).

1998 Action: This reach will be restored to the 303(d) list as a result of our decision to list all reaches where Riparian Habitat was moved as a Cause of non-support.

2002 Action: Revised name to acknowledge tribal jurisdiction.

2006 Action: The name was revised to match the language in the WQS segment. This AU was intensively surveyed as part of the Tularosa (2004) survey. The reach was sampled seven times for a variety of chemical/physical parameters. -

there were no exceedences of any parameters. There were 0 of 3 exceedences for E. coli. A sonde was deployed to assessed DO and pH. The nutrient assessment was performed, with a conclusion of full support. Therefore, Unknown was removed as a cause of non support.

2014 Action: This AU was sampled as part of the 2012 Sacramento survey. The nutrient assessment is incomplete (NS L1, leaning FS L2).

HUC: 13050004 - Salt Basin

Sacramento R (Perennial prt Scott Able Canyon to headwaters)
AU:NM-2805_02 WQS: 20.6.4.805

2014 Action: This AU was sampled during the 2012 Sacramento Mtn study. There were 74.4% fines with a LRBS of -2.5 during a Level 2 sedimentation survey. Therefore, sediment was added as a cause of impairment.

HUC: 13060001 - Pecos Headwaters

Beaver Creek (El Porvenir Creek to headwaters)
AU:NM-2212_04 WQS: 20.6.4.215

1996 Action: Previously listed as Beaver Creek for stream bottom deposits, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits as the cause of non-support.

2004 Action: This assessment unit was intensively sampled during the 2001 Upper Pecos Part 2 survey. There were no exceedences of any water quality standards. There is no new information available at this time (4/8/04) regarding the SBD/sedimentation/siltation listing.

2006 Action: The Protocol for the Assessment for Stream Bottom Deposits was utilized to assess the historic SBD listing. There was a 1450% increase in percent fines (2% vs. 31%), and biological score of 96% of reference, using Hollinger as the reference site. Therefore, sedimentation/siltation was removed as a cause of non support.

2008 Action: Sedimentation/siltation was inadvertently left on the 2006-2006 Integrated List even though the above de-list rationale was noted in the ROD. The impairment was removed from the list.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. A Level II sedimentation survey documented 25.7% sand and fines with a LRBS_NOR of -0.67, indicating full support for this Mountain sediment class site. No impairments were identified.

Bull Creek (Cow Creek to headwaters)

AU:NM-2214.A_091 WQS: 20.6.4.217

2004 Action: This assessment unit was intensively sampled during the 2001 Upper Pecos Part 2 survey. A thermograph recorded a maximum temperature of 26.6 degrees C. Therefore, temperature will be added as a cause of non support.

2006 Action: A temperature TMDL was prepared.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. The maximum thermograph temperature was 21.7 degrees C, and the criterion (20 degrees C) was not exceeded for > 4 hours for >3 consecutive days. Therefore, temperature was removed as a cause of impairment.

Cow Creek (Bull Creek to headwaters)
AU:NM-2214.A_102 WQS: 20.6.4.217

2004 Action: Previously called "Cow Creek (Pecos River to headwaters)", this assessment unit was split after it was intensively sampled during the 2001 Upper Pecos Part 2 survey. A thermograph deployed below the confluence with Bull Creek recorded a maximum temperature of 26.31 degrees C. A second thermograph was deployed in 2003 to verify the listing. There were also 9 of 9 turbidity exceedences, likely due to a high intensity wildfire in the upper reaches of this watershed in 2000. Therefore, temperature and turbidity will be added as causes of non support.

2006 Action: TMDLs were prepared for temperature and turbidity. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. The Protocol for the Assessment for Stream Bottom Deposits was utilized to assess the historic SBD listing. There was a 25% increase in percent fines (8% vs. 10%), and biological score was 86% of reference, using Cow Creek at the campground as the reference site. Therefore, sedimentation/siltation was removed as a cause of non support.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. A Level I sedimentation survey documented 34.7% sand and fines, indicating full support for this Foothills sediment class site. The maximum thermograph temperature was 23.3 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other turbidity-allowable duration thresholds were exceeded. Therefore, temperature was retained, and turbidity was removed as a cause of impairment.

Cow Creek (Pecos River to Bull Creek)
AU:NM-2214.A_090 WQS: 20.6.4.217

1996 Action: Previously listed for stream bottom deposits, reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with stream bottom deposits as the cause of non-support.

2004 Action: Previously called "Cow Creek (Pecos River to headwaters)", this assessment unit was split after it was intensively sampled during the 2001 Upper Pecos Part 2 survey. A thermograph deployed below the confluence with Bull Creek recorded a maximum temperature of 27.15 degrees C. A second thermograph was deployed in 2003 to verify the listing. There were also 8 of 8 turbidity exceedences, likely due to a high intensity wildfire in the upper reaches of this watershed in 2000. Therefore, temperature and turbidity will be added as causes of non support.

2006 Action: TMDLs were prepared for temperature and turbidity. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim. The Protocol for the Assessment for Stream Bottom Deposits was utilized to assess the historic SBD listing. Cow Creek at the campground was deemed a reference site. Therefore, biological score as a % of reference was 100%. There were 8% fines at this site. Therefore, sedimentation/siltation was removed as a cause of non support.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. A Level II sedimentation survey documented 41.9% sand and fines with a LRBS_NOR value of -0.85, indicating full support for this Foothills sediment class site. The maximum thermograph temperature was 23.1 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other turbidity-allowable duration thresholds were exceeded. There were 2 of 8 exceedences (302 and 307) of the 300 us/cm segment-specific specific conductance criterion, but sonde data (n=171 hours, 9/27/10 - 10/4/10) did not document any exceedences. Therefore, temperature was retained, and turbidity was removed as a cause of impairment. Specific conductance is noted as a parameter of concern given conflicting grab vs. sonde data.

2014 Action: There were 2 of 8 exceedences (302 and 307) of the 300 us/cm segment-specific specific conductance criterion, but sonde data (n=171 hours, 9/27/10 - 10/4/10) did not document any exceedences. Therefore, specific conductance is noted as a parameter of concern given conflicting grab vs. sonde data.

Dalton Canyon Creek (Perennial prt Pecos R to headwaters)
AU:NM-2214.A_070 WQS: 20.6.4.217

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. A Level I sedimentation survey documented 9.5% sand and fines, indicating full support for this Mountains sediment class site. There were 3 of 5 exceedences of the 300 us/cm segment-specific specific conductance criterion. Therefore, specific conductance was added as a cause of impairment.

El Porvenir Creek (Gallinas River to SFNF bnd)
AU:NM-2212_01 WQS: 20.6.4.215

1996 Action: This AU was previously lumped into "El Porvenir (Gallinas River to Hollinger Canyon)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2010 Action: A thermograph deployed at state road 65 recorded maximum temperatures of 24.6 and 23.8 in 2007 and 2008, respectively (criterion is 20 degrees C). There were 1 of 11 exceedences of the interim turbidity numeric translator of 10 NTU. Therefore, this AU is noted as Full Support for turbidity and temperature was added as a cause of impairment.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. There were 2 of 3 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no exceedences of the applicable hardness-based 2011 NMAC total aluminum chronic criteria. An AU Comment was added. There are no new temperature data.

El Porvenir Creek (SFNF bnd to Hollinger Canyon)
AU:NM-2212_05 WQS: 20.6.4.215

1996 Action: This AU was previously lumped into "El Porvenir (Gallinas River to Hollinger Canyon)" prior to the 2010 list. See the 2012 version of the ROD for historical record.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. There were 2 of 3 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and 1 of 3 exceedences of the applicable hardness-based 2011 NMAC criteria. An AU Comment was added. The M-SCI score was 52.5 (inconclusive).

El Rito (Pecos River to headwaters)
AU:NM-9000.A_050 WQS: 20.6.4.212

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. There were 2 of 5 exceedences of the primary contact 410 cfu/100mL criterion, and 2 of 5 exceedences of the applicable chronic ammonia criteria. Therefore, e. coli and ammonia (5C) were added as causes of impairment. Additional ammonia sampling and full Level 2 nutrient assessment recommended prior to TMDL development.

Falls Creek (Tecolote Creek to headwaters)
AU:NM-2212_12 WQS: 20.6.4.215

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. There were 2 of 5 exceedences of the 300 us/cm segment-specific specific conductance criterion. Therefore, specific conductance was added as a cause of impairment.

Gallinas River (Las Vegas Diversion to USFS bnd)
AU:NM-2212_00 WQS: 20.6.4.215

1996 Action: Previously listed for turbidity, stream bottom deposits and temperature. Turbidity information is available from three stations and has a cumulative exceedance ratio of 2/32. Temperature data are available from six stations with a cumulative exceedance ratio of 5/41. Aluminum should be added to the listing due to acute exceedences 3/17 at station HP32 during the last 5 years. This station is not supported for acute aluminum exceedences. Station UPR212.002530 also has shown one exceedence in the past five years and should be listed as Full Support, Impacts Observed. Three stations were selected for biological assessments on the Gallinas River above the diversion in 1993. The upper most station was selected as the reference site for this survey. The next downstream site was located just above the

confluence with Porvenir Creek was FS (96%). The next downstream site at the USGS gage near the diversion was Full Support, Impacts Observed (75%). The cited cause of reduced biological community at the lower site was impacts from sediment in the river.

1998 Action: Turbidity, stream bottom deposits and temperature were retained as causes of non-support. Aluminum was added as a cause of non-support.

2004 Action: This assessment unit was split after it was intensively sampled during the 2001 Upper Pecos Part 2 survey. Grab data at three stations indicated 2 or 24 temperature exceedences. Thermographs were deployed in 2003 at both the USFS boundary and near the USGS gage above the Las Vegas diversion. Both showed exceedences of 23 degrees C. Therefore, temperature shall remain a cause of non support. According to the survey lead, there are breeding populations of brown trout and rainbow trout all through this AU. At the forest service boundary location, water is warmed by slow passage through the beaver ponds above the campground - these ponds are full of trout. At the lower site, the water passing through the Las Vegas watershed is warmed significantly because of the nature of the canyon - much bedrock, little or no shade. There were 0 of 24 exceedences of the chonic aluminum criterion of 0.087 mg/L. There were 3 of 24 exceedences of the turbidity criterion of 10 NTU. Therefore, aluminum and turbidity will be removed as a cause of non support. There is no new information available at this time (4/8/04) regarding the SBD/sedimentation/siltation listing.

2006 Action: A TMDL was prepared for temperature. The Protocol for the Assessment for Stream Bottom Deposits was utilized to assess the historic SBD listing. Gallinas at FR 263 was deemed a reference site. Therefore, biological score as a % of reference was 100%. There were 23% fines at this site. Therefore, sedimentation/siltation was removed as a cause of non support.

2010 Action: Previously named "Gallinas River (Las Vegas diversion to headwaters)," this AU was split at USFS boundary where the river leaves a narrow confined canyon and enters a relatively broad, flat bottomed valley. A thermograph deployed at Montezuma recorded maximum temperatures of 26.2 and 23.8 in 2007 and 2008, respectively. The criterion is 20 degrees C. Therefore, the temperature listing remains for this newly split AU. There were 2 of 9 exceedences for the interim turbidity numeric translator of 10 NTU, but the M-SCI score was 63.8. Therefore, this AU is noted as Full Support for turbidity.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. There were 2 of 3 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no exceedences of the applicable hardness-based 2011 NMAC criteria. An AU Comment was added. The maximum thermograph temperature was 24.3 degrees C, and the criterion (20 degrees C) was exceeded for > 4 hours for >3 consecutive days. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other turbidity-allowable duration thresholds were exceeded. Therefore, temperature was retained as a cause of impairment.

Gallinas River (Pecos River to Aguilar Creek)
AU:NM-2213_20 WQS: 20.6.4.98

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. The combined minimum DO values of 5.0 mg/L and 90% saturation were exceeded for > 4 continuous hours. This AU is not perennial (USGS 08382500 gage data from 1/1/1951 to 9/7/2011 documents 8,848 days (40%) with zero daily flow). Upstream diversions may be contributing to

the loss of surface flow. Per survey staff, sonde was in a long isolated pool during part of the deployment - redeployment recommended. Therefore, dissolved oxygen (5C) was added as a cause of impairment.

Gallinas River (Perennial prt Aguilar Creek to Pecos Arroyo)
AU:NM-2213_21 WQS: 20.6.4.220

2010 Action: Previously discussed under "Gallinas River (San Augustin to Las Vegas diversion)" prior to the 2012 list, the AU break point was moved downstream to Aguilar Creek and this AU was split. See the 2012 version of the ROD for the historical record.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. A Level 2 nutrient survey documented exceedences of TN/TP causal thresholds, as well as chlorophyll and DO grab response thresholds. The maximum thermograph temperature was 31.9 degrees C (segment specific criterion of 30) at the La Liendre site. The turbidity threshold of 23 NTU was exceeded for greater than the allowable duration of 72 hours (101 consecutive hours); other turbidity-allowable duration thresholds were also exceeded. The impaired benthic macroinvertebrate community previously noted is likely a response to excessive nutrients and turbidity. Therefore, nutrients was retained, benthic macroinvertebrates was removed, and temperature and turbidity were added as causes of impairment.

Glorieta Ck (Perennial prt Glorieta CC WWTP to headwaters)
AU:NM-2214.A_082 WQS: 20.6.4.217

2012 Action: Previously part of AU "Glorieta Ck (Pecos River to headwaters)," this AU is the result of a split. This AU was surveyed two times during the 2010 Upper Pecos study (field parameters, nutrients and one e. coli sample only, no metals) because the sampling location went dry. There were 0 of 2 exceedences of the applicable ammonia criteria, and 1 of 2 exceedences of the specific conductance criteria at the station above the Glorieta CC WWTP. This station is likely not perennial, and thus not technically part of the AU because it is not in the perennial portion.

Glorieta Ck (Perennial prt Pecos R to Glorieta CC WWTP)
AU:NM-2214.A_081 WQS: 20.6.4.217

2004 Action: This AU was intensively sampled during the 2001 Upper Pecos survey. There were 3 of 16 exceedences of the dissolved nitrate criterion, 16 of 16 exceedences of the specific conductance criterion, 3 of 14 exceedences of the dissolved oxygen criterion, 2 of 16 exceedences of the acute ammonia criterion, and 3 of 15 exceedences of the turbidity criterion. A thermograph deployed at the station Glorieta above Pecos @ Pecos NHP recorded a maximum temperature of 29.38 degrees C. Therefore, these parameters were all listed as causes of non support. Results from the station immediately below the Glorieta Conference Center WWTP contributed to these impairment listings. Flow at this station is 100% effluent-dominated, therefore HQCWF is likely not an existing or attainable use in this entire AU. Accordingly, the Impairment Category for this AU is 5B.

2012 Action: Previously part of AU "Glorieta Ck (Pecos River to headwaters)," this AU is the result of a split. This AU was surveyed during the 2010 Upper Pecos study. A Level 2 nutrient survey documented exceedences of TN/TP causal thresholds, as well as chlorophyll response thresholds. There were 9 of 9 exceedences of the specific conductance criterion (143 hours of sonde data all exceeded as well). There were 1 of 9 exceedences of the applicable ammonia

criteria. The maximum thermograph temperature was 15.7 degrees C (criterion of 20) at the Cur Trail site. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other turbidity-allowable duration thresholds were exceeded. There were no exceedences of the DWS nitrate criterion. No available DO sonde data exceeded the combined instantaneous minimum. Therefore, specific conductance was retained; nutrients was added; and ammonia, nitrate, DO, turbidity, and temperature were removed as causes of impairment.

Holy Ghost Creek (Pecos River to headwaters)
AU:NM-2214.A_020 WQS: 20.6.4.217

1996 Action: Previously listed for metals (aluminum) and reduction of riparian vegetation. The data are from 1991 and 1992. The exceedence ratio of the 1.5 times the chronic screening criteria is 2/7. The chronic screening criterion is 130.5ug/l. The exceedences were 300ug/l and 200ug/l respectively.

1998 Action: The reach was retained on the 303(d) with metals (aluminum) as the cause of non-support.

2004 Action: This assessment unit was intensively sampled during the 2001 Upper Pecos Part 1 survey. There were 0 of 8 exceedences of the chronic aluminum criteria of 0.087 mg/L. Therefore, aluminum will be removed as a cause of non support.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. No impairments were found.

Johnson Lake
AU:NM-2214.B_10 WQS: 20.6.4.222

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Lake Katherine
AU:NM-2214.B_20 WQS: 20.6.4.222

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Lost Bear Lake
AU:NM-2214.B_30 WQS: 20.6.4.222

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Macho Canyon Creek (Pecos River to headwaters)
AU:NM-2214.A_071 WQS: 20.6.4.217

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. There were 2 of 5 exceedences of the 300 us/cm segment-specific specific conductance criterion. Therefore, specific conductance was added as a cause of impairment.

McAllister Lake
AU:NM-2211.3_00 WQS: 20.6.4.213

2006 Action: 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. Therefore, arsenic was added as a cause of impairment to aquatic life uses. NMED has collected fish tissue to be analyzed for arsenic to determine if a fish consumption advisory is warranted.

Monastery Lake
AU:NM-2214.B_40 WQS: 20.6.4.224

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Pecos Arroyo (Gallinas River to headwaters)
AU:NM-2213_22 WQS: 20.6.4.221

2010 Action: There were 2 of 4 E.coli exceedences at two stations in this AU. Therefore, E. coli was added as a cause of impairment.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. There were 5 of 5 exceedences of the 2007 NMAC dissolved aluminum chronic criterion (87 ug/L), and no exceedences of the applicable hardness-based 2011 NMAC criteria. An AU Comment was added. There were 2 of 10 exceedences of the e. coli criterion. Therefore, E. coli remains listed as a cause of impairment.

Pecos Baldy Lake
AU:NM-2214.B_50 WQS: 20.6.4.222

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Pecos River (Alamitos Canyon to Jack's Creek)
AU:NM-2214.A_002 WQS: 20.6.4.217

1996 Action: Previously listed for turbidity and metals (Zn, Pb, and Al). Turbidity data from three stations show a cumulative exceedance ratio of 7/49. This reach should have a listing of partially supported for turbidity. For chronic aluminum, the cumulative ratio for the three stations is 14/31. This reach should be listed as not supported for chronic aluminum. For chronic lead, the cumulative ratio at four stations is 0/33. Lead should be removed as a cause of nonsupport for this reach. Dissolved zinc data shows several exceedences of the acute criteria and has a cumulative exceedance ratio of 7/29. Stations UPR080 and UPR214.006020 should be listed as not supported for zinc. However,

there are pollution control requirements for metals in the decision document issued by NMED pursuant to an Administrative Order and Consent for the Terrero mine. The Surface Water Quality Bureau has reviewed the remediation document and believes that these requirements are stringent enough to implement all applicable water quality standards. The draft decision document was reviewed by EPA Region 6, (Superfund Division), and found to be acceptable. Because of these requirements, a TMDL for metals is not necessary.

1998 Action: Metals were removed from the 303(d) list and will be placed on the 305(b) Report as a cause of non-support. Turbidity was retained as a cause of non-support. NOTE: Pursuant to 40 CFR 130.7(b)(1)(iii), a waterbody is not required to be listed if other pollution control requirements required by State or federal authority are stringent enough to implement the appropriate water quality standards for such waters. Pollution control requirements for the old Terrero Mine are stringent enough to implement metals criteria applicable to Willow Creek and the Pecos River downstream of Willow Creek. Standards are anticipated to be met within the next two years.

2004 Action: This assessment unit was intensively sampled during the 2001 Upper Pecos Part 1 survey. There was one exceedence of the chronic aluminum standard of 0.087 mg/L in the spring using seasonal means. There were 7 of 23 exceedences (30.4%) of the turbidity criteria of 10 NTUs. Therefore, turbidity will be remain as a cause of non support. This reach will be placed in 5B because the turbidity exceedences only occurred in the spring and were likely due to snowmelt runoff.

2006 Action: A TMDL was prepared for turbidity. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2010 Action: Mercury in Fish Tissue was added as a Probable Cause because there are fish consumption guidelines for mercury from Pecos National Historical Park to the headwaters.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. Based on sonde data at Brush Ranch, the turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours (57.5 hours); no other turbidity-allowable duration thresholds were exceeded. Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue even though there is a Fish Consumption Advisory, and turbidity will be removed as a cause of impairment.

Pecos River (Canon de Manzanita to Alamitos Canyon)
AU:NM-2214.A_003 WQS: 20.6.4.217

2004 Action: Previously called "Pecos River (Canon del Oso to Alamitos Canyon)", this AU was intensively surveyed during the 2001 UPR 1 survey. There were 7 of 15 turbidity exceedences of the 10 NTU criterion. Thermographs were deployed in 2001 and 2003. The maximum temperature exceeded 23 degrees C both years. Therefore, temperature and turbidity will be listed as a cause of non support. This reach will be placed in 5B because the turbidity exceedences only occurred in the spring and were likely due to snowmelt runoff. Pecos National Historic Park staff are in the process of developing a plan to open the park for high quality recreational fishing. Although it is not a native trout fishery, there is an

exceptional population of brown trout. This is a joint effort of the Pecos NHP, NMDGF, and NMED, and others.

2006 Action: TMDLs were prepared for temperature and turbidity. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2010 Action: Mercury in Fish Tissue was added as a Probable Cause because there are fish consumption guidelines for mercury from Pecos National Historical Park to the headwaters.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. The maximum thermograph temperature was 25.5 degrees C (criterion of 20), and the criterion was exceeded for > 4 consecutive hours for >3 consecutive days. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours (26 hours total); no other turbidity-allowable duration thresholds were exceeded. Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue even though there is a Fish Consumption Advisory, temperature remains, and turbidity was removed.

Pecos River (Cow Creek to Canon de Manzanita)
AU:NM-2213_02 WQS: 20.6.4.216

1996 Action: This AU was previously lumped into "Pecos River (Tecolote Creek to Canon de Manzanita)" prior to the 2012 list. See the 2012 version of the ROD for historical record.

Pecos River (Jack's Creek to headwaters)
AU:NM-2214.A_000 WQS: 20.6.4.217

2010 Action: Mercury in Fish Tissue was added as a Probable Cause because there are fish consumption guidelines for mercury from Pecos National Historical Park to the headwaters.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. No impairments were found. Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue even though there is a Fish Consumption Advisory.

Pecos River (Santa Rosa Reservoir to Tecolote Creek)
AU:NM-2211.A_10 WQS: 20.6.4.211

2004 Action: Previously listed as "Pecos River (Sumner Reservoir to Canon del Oso)", this AU was split and renamed. This AU was intensively sampled during the 2001 UPR III survey. There were 0 of 15 exceedences of the chronic aluminum standard of 0.087 mg/L. Therefore, aluminum will be removed as a cause of non support. There is no new

information available at this time (4/8/04) regarding the SBD/sedimentation/siltation listing.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. There were 4 of 23 exceedences of the e. coli criterion. Therefore, e. coli was added as a cause of impairment. This entire assessment unit is not perennial. USGS 08382600 gage data from 1/1/1976 to 9/7/2011 documents 3596 days (28%) with zero daily flow. The sedimentation/siltation listing was removed because there was no basis (no data or protocol for non perennial assessment units) supporting this historic listing.

Pecos River (Sumner Reservoir to Santa Rosa Reservoir)
AU:NM-2211.A_00 WQS: 20.6.4.211

1996 Action: Previously listed for metals (Al), stream bottom deposits and fecal coliform. Assessments on this river reach are made using five stations. Two are USGS stations and three are NMED SWQB stations. For aluminum, there has been one exceedence of all stations within the last five years. This was an acute (1/4) exceedence at USGS station 08382650. The assessment protocols allow one exceedence within five years to be classified as full, support impacts observed. However, there have been more (2/4) exceedences of the chronic screening criteria at this station that would classify the reach as partial support for chronic exceedences of the Al screening criteria. All other stations are fully supporting for this criteria. For fecal coliform there have been 0/14 exceedences of the criteria within the last ten years. This reach is fully supporting for fecal coliform.

1998 Action: Fecal coliform was removed as cause of non-support. Metals (aluminum) and stream bottom deposits were retained as causes of non-support.

2004 Action: Previously listed as "Pecos River (Sumner Reservoir to Canon del Oso)", this AU was split and renamed. This AU was intensively sampled during the 2001 UPR III survey. There were 0 of 27 exceedences of the chronic aluminum standard of 0.087 mg/L. Therefore, aluminum will be removed as a cause of non support. There is no new information available at this time (4/8/04) regarding the SBD/sedimentation/siltation listing.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. A Level 1 sediment survey documented full support with 53.5% sand and fines in this Xeric sediment class site. A Level 2 nutrient survey documented exceedences of TN/TP causal thresholds, as well as the DO saturation grab data (7/17) response threshold. Therefore, sedimentation was removed, and nutrients (5C) was added as a cause of impairment. Sonde data are recommended to confirm the nutrient listing.

Pecos River (Tecolote Creek to Villanueva State Park)
AU:NM-2213_00 WQS: 20.6.4.216

1996 Action: This AU was previously lumped into "Pecos River (Tecolote Creek to Canon de Manzanita)" prior to the 2012 list. See the 2012 version of the ROD for historical record.

2012 Action: Previously part of AU "Pecos River (Tecolote Creek to Canon de Manzanita)," this AU is the result of a split at the downstream end of the state park. This AU was surveyed during the 2010 Upper Pecos study. A Level 1 sedimentation survey documented 51.5% sand and fines, indicating full support for this Xeric sediment class site. The

maximum thermograph temperature was 30.5 degrees C (segment-specific criterion of 30.0) at the site abv Tecolote. Therefore, sedimentation/siltation was removed, and temperature was added as a cause of impairment.

Pecos River (Villanueva State Park to Cow Creek)
AU:NM-2213_01 WQS: 20.6.4.216

1996 Action: This AU was previously lumped into "Pecos River (Tecolote Creek to Canon de Manzanita)" prior to the 2012 list. See the 2012 version of the ROD for historical record.

2012 Action: Previously part of AU "Pecos River (Tecolote Creek to Canon de Manzanita)," this AU is the result of a split at the downstream end of the state park. This AU was surveyed during the 2010 Upper Pecos study. A Level 1 sedimentation survey documented 44.2% sand and fines, indicating full support for this Xeric sediment class site. Therefore, sedimentation/siltation was removed as a cause of impairment.

Perch Lake
AU:NM-2211.B_40 WQS: 20.6.4.226

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Rio Mora (Pecos River to headwaters)
AU:NM-2214.A_040 WQS: 20.6.4.217

1998 Action: Listed for stream bottom deposits. Change listing description to read as above.

2004 Action: This assessment unit was intensively sampled during the 2001 Upper Pecos Part 1 survey. Benthic scores were 84% of reference and percent fines were lower at the study station than reference station (4 vs.7). Therefore, SBD will be removed as a cause of non support.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. No impairments were found.

Santa Rosa Reservoir
AU:NM-2211.B_00 WQS: 20.6.4.225

1998 Action: Listed for siltation and nutrients. This lake is also listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: This reservoir was intensively sampled in 2001. There were no exceedences of any numeric criteria. There is no documentation or justification for the historic sedimentation or nutrient listings as protocols have not been developed to determine these impairments for lakes, so these impairment listings were removed.

2012 Action: This reservoir was sampled as part of the 2010 Upper Pecos River watershed survey. No impairments were found as a result of the survey. The fish consumption advisory remains in effect.

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Spirit Lake
AU:NM-2214.B_80 WQS: 20.6.4.222

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Stewart Lake
AU:NM-2214.B_70 WQS: 20.6.4.222

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Storrie Lake
AU:NM-2211.5_00 WQS: 20.6.4.214

2006 Action: This lake was intensively sampled in 2001. There were no impairments identified as a result of this survey. This lake is listed because there are fish consumption guidelines due to mercury contamination.

Sumner Reservoir
AU:NM-2210_00 WQS: 20.6.4.210

1998 Action: Listed for siltation, nutrients, and nuisance algae. This lake is also listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: This reservoir was intensively sampled in 2003. There were no exceedences of chemical WQ parameters. There is no documentation or justification for the historic sedimentation or nutrient listings as protocols have not been developed to determine these impairments for lakes, so these impairment listings were removed.

2012 Action: This reservoir was sampled as part of the 2010 Upper Pecos River watershed survey. No impairments were found as a result of the survey. The fish consumption advisory remains in effect.

Tecolote Creek (I-25 to Blue Creek)
AU:NM-2212_10 WQS: 20.6.4.215

1996 Action: There were two Tecolote Creek listings in the 1996-1998 "303(d) List, Tecolote Creek from Blue Creek to the headwaters (5.6 miles) and Tecolote Creek from the Village of Tecolote to Blue Creek (20.8 miles). The uppermost reach was listed for turbidity, siltation, reduction of riparian vegetation and streambank destabilization. The lower reach was not included in the 1998-2000 "303(d) List. STORET data for this reach was assessed along with the lower reach (UPR212.004040, 0/4 exceedences for turbidity). Previously listed for temperature, conductivity, turbidity, stream bottom

deposits and total phosphorus. Three stations were used to assess temperature. The cumulative ratio of exceedences at these three stations was 0/87. There was a SWQB survey conducted in 1987 which shows 3/5 temperature exceedences at station UPR212.004010. This reach should be listed as partially supporting for this station only. The remainder of the reach is full support. Intensive survey information for conductivity was collected between 1988 and 1992 at several USGS stations. At station 08379187 0/347 samples exceeded the conductivity criteria of 300 umhos. Again at station UPR212.004010 3/5 samples exceeded the conductivity criteria. This station should be listed as partially supporting for conductivity. All others are fully supporting. Turbidity is another parameter for which there is extensive information. At USGS station 08379187 turbidity information was collected intensively over a day approximately every two months from 1988 to 1992. During this period 22/52 samples at this station exceeded the turbidity criteria. At USGS station 08379175, similar sampling was conducted. Here only 1/28 samples exceeded the criteria. At USGS station 08389178 only 1/11 samples exceeded the criteria. During a 1987 SWQB survey turbidity at stations UPR212.004020 and 4010 were 2/5 and 4/5 respectively. Therefore, station 08379187 is not supporting for turbidity, and stations UPR212.004020 and 4010 are partially supporting for turbidity. Total phosphorus should be listed as Full Support, Impacts Observed at stations 08379187 and 08379178 and fully supporting at all other stations.

1998 Action: This 1998 ACTION is for both reaches 107 and 108. Phosphorus was removed from the list as a cause of non-support. Temperature, conductivity, turbidity and stream bottom deposits were retained as causes of non-support. Combine and rename this reach Tecolote Creek from the Village of Tecolote to the headwaters 26.4 miles affected.

2002 Action: Name changed from "Tecolote Creek from the Village of Tecolote to the headwaters" because the village of Tecolote is at the confluence with the Pecos.

2004 Action: This assessment unit was intensively surveyed during the 2001 Upper Pecos River Part 2 study. The assessment unit was split back into two units -- Tecolote Creek (Blue Creek to headwaters) and Tecolote Creek (Village of Tecolote to Blue Creek) - because the stream changes from a wooded canyon to a broad valley at this point. There were no exceedence of any water quality standards in the upper assessment unit. A thermograph deployed above Blue Haven did not record any exceedences of the 20 degree criterion. A thermograph deployed in the lower unit near San Geronimo recorded 224 exceedences of 23 degrees C. There were 2 of 15 turbidity exceedences and 16 of 16 specific conductance exceedences in this lower unit. Therefore, specific conductance and temperature will remain while turbidity will be removed as cause of non support. This lower assessment unit will be placed in Category 5B because the change in stream character may warrant a change in water quality standards. Also, Wright Canyon Creek which flows into Tecolote has a specific conductance criterion of 450 uhmos. Benthic score was 87% of reference. Therefore, SBD will be removed as a cause of non support.

2010 Action: Upon review of specific conductance data (see 2004 Comment above), no changes to water quality standards are proposed. Therefore, AU was moved from Category 5B to 5A.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. A Level 2 nutrient survey documented exceedences of TN/TP causal thresholds, as well as chlorophyll (within concern range) and DO grab percent saturation response thresholds. There were 4 of 9 exceedences of the specific conductance criterion. The maximum thermograph temperature was 29.6 degrees C (criterion of 20). Therefore, specific conductance and temperature remain (both 5B), and nutrients (5C) was added as a cause of impairment. HQCWAL is likely not an existing use - WQS review needed. Sonde or second chlorophyll sample needed to confirm nutrient impairment.

Tres Lagunas (Northeast)
AU:NM-2211.B_30 WQS: 20.6.4.212

2010 Action: This waterbody was sampled two times in 2007. There were 2 of 2 pH measurements greater than the upper applicable criteria of 8.8. Therefore, pH was added as a cause of non support. 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.

Truchas Lake (North)
AU:NM-2214.B_60 WQS: 20.6.4.222

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Truchas Lake (South)
AU:NM-2214.B_61 WQS: 20.6.4.222

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Willow Creek (Pecos River to headwaters)
AU:NM-2214.A_030 WQS: 20.6.4.217

1996 Action: Originally listed as two segments (see 2012 ROD for additional details). One segment was listed as the Terrero Mine drainage and the other listing was for the stream above the mine. These listings were combined into one listing with limitations on the affected mileage. The combined listings were metals (Cu, Zn, Cd, and Hg), conductivity, turbidity and stream bottom deposits. The turbidity listing of not supported appears to be valid for the entire reach. Exceedences ratios at three stations are 4/15, 8/12, and 5/17. The mercury listing should be upgraded to full support. The exceedence ratios for three stations are 0/10, 0/10, and 0/10. For copper, the listing is supported at station UPR214.00710 with an exceedences ratio of 8/10 for the chronic criteria. Two other stations UPR214.00716 and PECOSCON07 have exceedence ratios of 0/10. Cadmium follows the same pattern as copper. Station UPR214.00710 has 9/10 samples exceeding the acute criteria with stations UPR214.00716 and PECOSCON07 both with 0/10 ratios. Zinc has exceedence ratios of 9/10 and 3/15 (not supported) at stations UPR214.00710 and PECOSCON07 respectively. Station UPR214.007016 is full support. However, there are pollution control requirements for metals in the decision document issued by NMED pursuant to an Administrative Order and Consent for the Terrero mine. The Surface Water Quality Bureau has reviewed the remediation document and believes that these requirements are stringent enough to implement all applicable water quality standards. The draft decision document was reviewed by EPA Region 6, (Superfund Division), and found to be acceptable. Because of these requirements, a TMDL for metals is not necessary. All three stations show high ratios of exceedences for conductivity; the cumulative ratio is 32/44 which is not supporting for conductivity.

1998 Action: Metals were removed from the 303(d) list and will be placed on the 305(b) list as a cause of non-support. Turbidity, conductivity and stream bottom deposits were retained as a cause of non-support. NOTE: Pursuant to 40 CFR 130.7(b)(1)(iii), a waterbody is not required to be listed if other pollution control requirements required by State or federal authority are stringent enough to implement the appropriate water quality standards for such waters. Pollution control requirements for the old Terrero Mine are stringent enough to implement metals criteria applicable to Willow Creek and the Pecos River downstream of Willow Creek. Standards are anticipated to be met within the next two years.

2000 Action: Pursuant to 40 CFR 130.7(b)(1)(iii), a TMDL is not required if other pollution control requirements required by State or federal authority are stringent enough to implement the appropriate water quality standards for such waters. Pollution control requirements for the old Terrero Mine are stringent enough to implement standards criteria applicable to Willow Creek and the Pecos River downstream of Willow Creek. The upper Pecos Watershed is scheduled for an intensive watershed study in 2001 that will include Willow Creek and determine if water quality standards are being met on this reach. Remediation efforts continue to be implemented under the plan cited below. See document titled, "Final Decision Document Pecos Mine Operable Unit Upper Pecos Site Terrero, New Mexico, New Mexico Environment Department, April 9, 1998".

2002 Action: Water quality data taken during the above-mentioned 2001 Upper Pecos intensive watershed study at Willow Creek below White Drain indicate the designated use of high quality coldwater fishery is not being attained due to continued standards exceedences of chronic cadmium, acute zinc, and chronic zinc. The hardness-dependent chronic cadmium criteria of 3.62 ug/L and 5.3 ug/L during the summer and fall sampling runs, respectively, was exceeded due to arithmetic means of 7.0 ug/L and 13.3 ug/L during summer and fall sampling runs, respectively. The hardness-dependent acute zinc criteria of 195.32 ug/L, 202.30 ug/L, and 314.98 ug/L during spring, summer, and fall sampling runs, respectively, was exceeded due to arithmetic means of 1273.3 ug/L, 2400.0 ug/L, and 9533.3 ug/L during spring, summer, and fall sampling runs, respectively. The hardness-dependent chronic zinc criteria of 196.91 ug/L, 203.95 ug/L, and 317.54 ug/L during spring, summer, and fall sampling runs, respectively, was exceeded due to arithmetic means of 1273.3 ug/L, 2400.0 ug/L, and 9533.3 ug/L during spring, summer, and fall sampling runs, respectively. Additionally, there were 3 of 8 exceedences of the irrigation use dissolved zinc criterion of 2.0 mg/L and 4 of 8 exceedences of the domestic water supply use dissolved cadmium criteria. Therefore, chronic cadmium, acute zinc, and chronic zinc will be added as causes of Non Support. NOTE: Probable errors in the acute and/or chronic Zn hardness-dependent formulas have been identified in the current version of the WQS and will be corrected during the upcoming triennial review. Even so, the measured values are an order of magnitude above the calculated criteria. Minor corrections to the formulas will likely still lead to the conclusion of Non Support. Remediation efforts appear to have reduced copper concentrations to levels that do not exceed surface water quality standards. Total mercury levels taken during the 2001 survey were all non-detect with a detection limit of 0.2 ug/L. The acute total mercury criterion of 2.4 ug/L was not exceeded during the 2001 study. The chronic total mercury standard of 0.012 ug/L is below the detection limit of SLD, so it is not possible to determine whether the chronic standard is being exceeded unless ultra clean sampling methods and analysis methods are utilized. Therefore, chronic total mercury will be listed as FSIO until further study can be initiated to determine use attainment for this parameter.

2004 Action: During the 2001 survey, there were also 6 of 8 exceedences of the specific conductance criteria of 300 umhos/cm. Therefore, specific conductance was retained as a cause of non support. There was one exceedence of the turbidity criterion of 10 NTU. Therefore, turbidity will be removed as a cause of non support. Although benthic

macroinvertebrate and pebble count data are available, they were collected in two different areas. The benthic data are not from a representative reach. Therefore, the SBD/sedimentation list will remain until additional data are collected. There were also twelve chronic water and ten chronic sediment toxicity tests (between four locations on Willow Creek) with significant effect noted as compared to controls or reference conditions between 1999-2003 (see http://www.epa.gov/earth1r6/6wq/ecopro/watershd/monitrng/toxnet/nm.pdf). According to the Assessment Protocol, since significant effects were noted in more than one chronic test, both Sediment and Water Bioassay - Chronic will be added as a cause of non support. SWQB will meet with the Groundwater Quality Bureau to determine the status of the reclamation and to determine whether proposed reclamation efforts are stringent enough to meet existing water quality standards. The data are not currently available to determine the effects of the reclamation efforts on all impaired surface water quality parameters.

2006 Action: Reclamation activities in the area included excavation/consolidation of all associated waste(s), capping the waste pile with an impermeable liner, restoring Willow Creek and associated wetlands/riparian habitats, revegetation the operable unit, and diversion of both subsurface and surface water flows around the capped waste pile. Based on reclamation activities in the area and the availability of more recent WQ data, this AU was split at the fish barrier in the reclaimed section of Willow Creek. As part of the on-going cleanup efforts at Terrero Mine, Cyprus Amax Minerals Company performed quarterly compliance monitoring at both groundwater and surface water sites in 2005. They established two surface water quality compliance monitoring stations on Willow Creek below the fish barrier (WCD, and WSBDT which is a mix of surface water and seepage from the mine waste rock pile). There were 0/4 exceedences of any metals at station WCD. There were 1/8 cadmium exceedences and 2/8 zinc exceedences at station WSBDT. Therefore, cadmium was delisted, and zinc remains as a cause of non support. SWQB will continue to review the compliance monitoring data from the reclamation project in progress.

2008 Action: The above chronic water and sediment toxicity tests were repeated in this assessment unit to help determine whether or not on-going reclamation efforts are effective. Repeat chronic water toxicity tests were performed on water and sediment samples collected 9/24/07 at White Drain near the bottom of the assessment unit. There were significant effects to Ceriodaphnia dubia after 7 days of exposure to both water and sediment (secondary endpoint of reproduction in both). There were no significant effects to Pimephales promelas after 7 days of exposure to both water and sediment. Regarding the water toxicity testing, since significant effects were noted in no more than one water test and the endpoint was also secondary, Water Bioassay - Chronic was removed as a cause of non support. Regarding the sediment toxicity testing, during revisions to the 2008 Assessment Protocols, significant effects in acute or chronic sediment toxicity test results were removed as potential causes for listing. Therefore, Sediment Bioassay - Chronic was removed as a cause of non support. As part of the on-going cleanup efforts at Tererro Mine, Cyprus Amax Minerals Company performed quarterly compliance monitoring at both groundwater and surface water sites in the project area. They established three surface water quality compliance monitoring stations on Willow Creek below the fish barrier (WCD, ESS, and WSBDT). Stations ESS and WSBDT are both seeps, which are a mix of surface water and seepage from the mine waste rock pile. Data from 2005 through 2007 were assessed. Based on the 2008 Assessment Protocol addendum, the maximum value from these three stations were used to determine attainment with the acute aquatic life criterion, and the average value was used to determine attainment with the other WQ criterion for each quarter. Hardness data were not collected at the seep stations during 2005 and 2006, so the hardness data for station WCD were used to determine the applicable surface WQ criterion for all stations. There were more than one exceedence of the applicable chronic criteria in three years for both cadmium and zinc (5/12 and 6/12, respectively). Both cadmium and zinc concentrations and exceedences are trending downward from 2005 to 2007. There were 0/4 exceedences of the

applicable acute chromium criteria, and 1/4 of the applicable acute zinc criteria during the 2007 sampling year. Specific conductance and sedimentation are not part of the mine reclamation sampling so there is no new information regarding these impairments. Therefore, specific conductance, sedimentation/siltation, and chronic zinc remain, and chronic cadmium was added back as a cause of non support. Seep stations ESS and WSBDT have were dry during some sampling quarters in 2006 and 2007 because seepage from the waste rock pile has been reduced as part of the reclamation. The station of greatest concern continues to be WSBDT in the most downstream seep location nearest the Pecos River. The NMED Groundwater Bureau, mine, and consultants continue to work on solutions to this impacted surface water area. SWQB will continue to review the compliance monitoring data from the reclamation project in progress to re-evaluated impairment status each listing cycle.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. As part of the follow-up restoration efforts at Tererro Mine, consultant Daniel B. Stephens & Associates continues to monitor a variety of parameters in this AU as well - these data were combined with SWQBs prior to assessment. A Level 2 sediment survey documented non support with 28.6% sand and fines and an LRBS_NOR of -1.4 units in this Mountain sediment class site abv the fish barrier. There were 13 of 44 exceedences of the specific conductance criterion, and 0 of 60 exceedences of the dissolved cadmium and zinc chronic criteria. Therefore, specific conductance and sedimentation remain, and cadmium and zinc were removed as causes of impairment. A sediment survey at the station near the bottom of the AU may be warranted prior to TMDL development.

2014 Action: The 2012 ROD is correct to state that there were 0 of 50 exceedences of the dissolved cadmium and zinc chronic criteria. Available SC data from May 15, 2009 May 15, 2013, were collated and assessed. There were 6/14 (42.9%) and 7/16 (43.8%) exceedences of the 300 us/cm specific conductance criterion at stations above the barrier and below White drain, respectively. Therefore, specific conductance will remain as a cause of impairment.

2016 Action: A 10/2/14 Level 2 sedimentation survey documented 20 percent sand and fines, and an LRBS of -0.99 in this Mountain sediment class site. Therefore, the sedimentation listing was removed.

Wright Canyon Creek (Tecolote Creek to headwaters)
AU:NM-2212_18 WQS: 20.6.4.215

1996 Action: Previously listed for turbidity and total phosphorus. Data for turbidity comes from two USGS stations 08379185 and 08379182. Both of these stations, 8/31 and 33/107 respectively, indicate the fishery use is not supported. For total phosphorus, these stations have ratios of 1/23 and 3/22 respectively. Both stations are fully supporting for total phosphorus (1/23 and 3/22).

1998 Action: Total phosphorus was removed as a cause of non-support. Turbidity and stream bottom deposits were retained on the list as causes of non-support.

2004 Action: This assessment unit was intensively sampled during the 2001 Upper Pecos survey. There were 0 of 7 turbidity exceedences. Therefore, turbidity will be removed as a cause of non support. There is no new information available at this time (4/8/04) regarding the SBD/sedimentation/siltation listing.

2010 Action: The sedimentation/siltation listing was removed because there were no sedimentation (stream bottom deposit) assessment protocols developed at the time of the historic listing. There are no data to support this listing.

2012 Action: This AU was surveyed during the 2010 Upper Pecos study. A Level One sediment survey confirms full support for this parameter with 19% sands and fines in this Mountain sediment class site. No impairments were found.

HUC: 13060003 - Upper Pecos

Pecos River (Crockett Draw to Yeso Creek)
AU:NM-2207_01 WQS: 20.6.4.207

2016 Action: Previously "Pecos River (Salt Creek to Sumner Reservoir)", this AU was split into four AUs. The basis for the original 2006 DO listing was incorrect because it was based on % saturation; therefore this listing was removed. This AU was sampled during the Lower Pecos River (2013) watershed survey. No impairments were found. There were 3/8 exceedences of the proposed change to 410 cfu/100 mL. 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:NM-2207_00 WQS: 20.6.4.207

1996 Action: Previously listed for stream bottom deposits. A July 18, 1997 letter from U.S. Fish & Wildlife stated that siltation and sedimentation are not an issue for this reach of the Pecos River. Additional information is available in the report "Record of Decision Concerning the Development of Total Maximum Daily Loads for Segments 2206 and 2207 of the Pecos River".

1998 Action: The reach was removed from the 303(d) list.

2006 Action: This reach was intensively surveyed during the Lower Pecos (2003) survey. Sonde data indicate that the minimum % saturation exceeded for >3 hours contiguously. Therefore, this reach will be listed as non support for dissolved oxygen. The dissolved oxygen impairment may indicate excessive nutrients. Protocols for nutrients in large rivers are under development.

2016 Action: Previously "Pecos River (Salt Creek to Sumner Reservoir)", this AU was split into four AUs.The basis for the original 2006 DO listing was incorrect because it was based on % saturation; therefore this listing was removed. This AU was sampled during the Lower Pecos River (2013) watershed survey. The max thermograph temperature was 34.8. Therefore, temperature was added as a cause of impairment. The fish consumption advisories are still in effect.

Pecos River (Truchas Creek to Sumner Reservoir)
AU:NM-2207_03 WQS: 20.6.4.207

2016 Action: Previously "Pecos River (Salt Creek to Sumner Reservoir)", this AU was split into four AUs. The basis for the original 2006 DO listing was incorrect because it was based on % saturation; therefore this listing was removed. This

AU was sampled during the Lower Pecos River (2013) watershed survey. No impairments were found.

Pecos River (Yeso Creek to Truchas Creek)
AU:NM-2207_02 WQS: 20.6.4.207

2016 Action: Previously "Pecos River (Salt Creek to Sumner Reservoir)", this AU was split into four AUs. The basis for the original 2006 DO listing was incorrect because it was based on % saturation; therefore this listing was removed. This AU was sampled during the Lower Pecos River (2013) watershed survey. No impairments were found. There were 2/8 exceedences of the proposed change to 410 cfu/100 mL. If the October 2015 proposed revisions to 20.6.4.206 NMAC are approved by the EPA, E. coli will become Non Support.

HUC: 13060007 - Upper Pecos-Long Arroyo

Cottonwood Lake
AU:NM-9000.B_004 WQS: 20.6.4.228

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Figure Eight Lake
AU:NM-9000.B_044 WQS: 20.6.4.99

2016 Action: This AU was sampled during the Lower Pecos River (2013) survey. There were 2/4 DO measurements well below the 5.0 mg/L WQC (min of 0.19 mg/L). Both causal (TN) and response (% cyano and DO) nutrient thresholds were exceeded. Therefore, the DO impairment was changed to nutrients. A segment-specific DO criterion may be warranted in this small sinkhole lake.

Inkwell Lake
AU:NM-9000.B_002 WQS: 20.6.4.228

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Lake Van
AU:NM-9000.B_071 WQS: 20.6.4.99

2016 Action: This AU was sampled during the Lower Pecos River (2013) survey. The max temperature was 27.0 degrees C. Therefore, temperature was added as a cause of impairment.

Lea Lake
AU:NM-9000.B_001 WQS: 20.6.4.227

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

2016 Action: This AU was sampled during the Lower Pecos River (2013) survey. No impairments were found.

Mirror Lake
AU:NM-9000.B_003 WQS: 20.6.4.229

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

Pecos River (Eagle Creek to Rio Felix)
AU:NM-2206.A_03 WQS: 20.6.4.206

2016 Action: Previously "Pecos River (Brantley Reservoir to Rio Felix)", this AU was split into three AUs. This AU was sampled during the Lower Pecos River (2013) watershed survey. The max thermograph temperature at the station near Lake Arthur was 36.7 degrees C. Therefore, temperature was added as a cause of impairment. The fish consumption advisories are still in effect.

Pecos River (Rio Felix to Rio Hondo)
AU:NM-2206.A_00 WQS: 20.6.4.206

1996 Action: Previously listed for metals (Hg), dissolved oxygen, total ammonia, total dissolved solids and stream bottom deposits. A review of historical data and an intensive seasonal survey conducted by NMED in April, July and November of 1997 produced no supporting data for listing this reach of the Pecos River. A July 18, 1997 letter from U.S. Fish & Wildlife stated that siltation and sedimentation are not an issue for this reach of the Pecos River. Additional information is available in the report "Record of Decision Concerning the Development of Total Maximum Daily Loads for Segments 2206 and 2207 of the Pecos River".

1998 Action: The reach was removed from the 303(d) list.

2006 Action: This reach was intensively sampled as part of the Lower Pecos (2003) survey. There were no changes as a result of the survey.

2010 Action: Both DDT and PCBs in Fish Tissue were added as Probable Causes because there are fish consumption guidelines for these parameters from the north boundary of Brantley Wildlife Management Area to US 70.

2014 Action: Previously Pecos River (Rio Penasco to Salt Creek), the AU was contracted up to Rio Felix during survey planning for the 2013 survey.

2016 Action: Previously "Pecos River (Rio Felix to Salt Creek)", this AU was split into two AUs. This AU was sampled during the Lower Pecos River (2013) watershed survey. The max thermograph temperature was 34.3. Therefore,

temperature was added as a cause of impairment. The fish consumption advisories are still in effect.

Pecos River (Rio Hondo to Salt Creek)
AU:NM-2206.A_20 WQS: 20.6.4.206

2016 Action: Previously "Pecos River (Rio Felix to Salt Creek)", this AU was split into two AUs. This AU was sampled during the Lower Pecos River (2013) watershed survey. No impairments were found. The fish consumption advisories are still in effect. There were 2/8 exceedences of the proposed change to 410 cfu/100 mL. 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:NM-2206.A_02 WQS: 20.6.4.206

2016 Action: Previously "Pecos River (Brantley Reservoir to Rio Felix)", this AU was split into three AUs. This AU was sampled during the Lower Pecos River (2013) watershed survey. No impairments were found. The fish consumption advisories are still in effect.

HUC: 13060008 - Rio Hondo

Alto Lake
AU:NM-2209.B_30 WQS: 20.6.4.98

1998 Action: Listed for turbidity, siltation, nutrients nuisance algae, and dissolved oxygen.

2002 Action: Turbidity, siltation, nutrients nuisance algae, and dissolved oxygen were removed. The 1997 Clean Lakes report indicated both chronic and acute exceedences of the copper criteria. Copper was added as a cause of Non Support due to application of copper sulfate.

2014 Action: This AU was sampled during the 2012 Sacramento River survey. There were 0/4 exceedences of the hardness-dependent WQC for dissolved copper. Both TP causal and Secchi response nutrient variables were present -- nutrient assessment is incomplete. Therefore, copper was removed from the list and nutrients was added (5C). CORRECTION 6/9/14: One of the two TP exceedences was rejected due to a blank hit, so the nutrient assessment is inconclusive (not assessed). IR 5C listing remains because the rejected was not incorporated into the assessment until after the public comment period opened.

2016 Action: Assessment of 2014 nutrient causal and response data do not indicate impairment (TN and TP exceedences, but 1/3 chl-a). Therefore, nutrients was removed as a cause of impairment.

Bonito Lake
AU:NM-2209.B_10 WQS: 20.6.4.223

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012. This AU was sampled during the 2012 Sacramento River survey. No impairments were identified.

Carrizo Creek (Rio Ruidoso to Mescalero Apache bnd)
AU:NM-2209.A_22 WQS: 20.6.4.209

2004 Action: There were 2 of 8 exceedences of the fecal coliform criterion. Therefore, fecal coliform was listed as a cause of non support.

2006 Action: A TMDL was prepared for bacteria.

2010 Action: There were 2 of 16 exceedences of the interim turbidity numeric translator of 10 NTU. There are no benthic macroinvertebrate data available. Therefore, this AU is noted as Non Support (5C) for turbidity.

2014 Action: This AU was sampled during the 2012 Sacramento Mountain study. There were 2/8 exceedences of the e. coli WQC. The turbidity SEV numeric translator was not exceeded.Therefore, the fecal coliform listing was changed to e. coli and turbidity was removed.

Eagle Creek (Rio Ruidoso to Alto Lake)
AU:NM-98.A_007 WQS: 20.6.4.98

2014 Action: This AU was sampled during the 2012 Sacramento Mountain study. n=1 most parameters. No impairments identified. Impacted by Little Bear wildfire.

Grindstone Canyon (Carrizo Creek to Grindstone Rsvr)
AU:NM-98.A_008 WQS: 20.6.4.98

2014 Action: This AU was sampled during the 2012 Sacramento Mountains study. No impairments were identified.

Grindstone Canyon Reservoir
AU:NM-2209.B_20 WQS: 20.6.4.209

2014 Action: This AU was sampled during the 2012 Sacramento River survey. There were 2/4 exceedences of the 20 degrees C temperature WQC. Therefore, temperature was added as a cause of impairment (5B). This reservoir was constructed to provide public water supply for the town of Ruidoso. When there is adequate flow in the Rio Ruidoso to protect instream uses, flow is diverted from the Rio Ruidoso into this reservoir. This reservoir also captures runoff from Grindstone Canyon. HQCWAL may not be an existing or attainable use.

2016 Action: Assessment of 2014 nutrient causal and response data do not indicate impairment (TN exceedences but no response variables).

North Spring River (Rio Hondo to headwaters)
AU:NM-2206.A_40 WQS: 20.6.4.206

2016 Action: This AU was sampled for limited paramters during the Lower Pecos River (2013) watershed survey. No impairments were found. There were 2/6 exceedences of the proposed change to 410 cfu/100 mL. 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:NM-2208_10 WQS: 20.6.4.208

1996 Action: Previously listed for fecal coliform and stream bottom deposits. Samples collected at two stations within five years have a cumulative ratio of 0/6 exceedences. This reach is fully supporting for fecal coliform.

1998 Action: Fecal coliform was removed as a cause of non-support. Stream bottom deposits was retained as a cause of non-support.

2006 Action: This AU was sampled during the SWQB 2003 Rio Ruidoso/Rio Hondo intensive water quality survey. Name was changed to match WQS segment description. The Protocol for the Assessment for Stream Bottom Deposits was utilized to assess the historic SBD listing. Rio Bonito at the BLM Apple Orchard was deemed a reference site. Therefore, biological score as a % of reference was 100%. There were 21% fines at this site. Therefore, sedimentation/siltation was removed as a cause of non support. This AU was listed for Low Flow Alteration (Category 4C non pollutant) because diversions result in very low water during certain times of the year.

2014 Action: This AU was sampled during the 2012 Sacramento Mountains survey. A level 1 nutrient survey indicated potential nutrient impairment. The level 2 nutrient survey including sonde deployment as well as other sampling were postponed due to the 2012 Little Bear Fire. These data are scheduled for collection in 2014. Survey staff state that majority of AU has no water in most years; only perennial sections around BLM Apple Orchard likely due to groundwater inputs.

Rio Bonito (Perennial prt NM 48 near Angus to headwaters)
AU:NM-2209.A_10 WQS: 20.6.4.209

2006 Action: This AU was intensively surveyed as part of the Rio Penasco (2003) survey. Benthic macroinvertebrates and pebble count data collected at the station Rio Bonito above Bonito Lake were compared to reference station Rio Bonito @ Mescalero Apache boundary. The bio score was 55 % of reference. The fines at the station were 8%. Therefore, Benthic Macroinvertebrate Bioassessments (Streams) (5C) will be added as a cause of non support. There were 2 of 13 exceedences of the old fecal coliform criterion of 200 cfu/100 mL, so a fecal coliform TMDL was developed. The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. These historic fecal coliform listings will be retained (noted as 5C) until E. coli data are collected to determine whether there is any impairment of contact uses.

2010 Action: There were 1 of 12 exceedences of the interim turbidity numeric translator of 10 NTU. Therefore, this AU is noted as Full Support for turbidity.

2014 Action: This AU was sampled during the 2012 Sacramento Mountains study. There were 2/10 e. coil exceedences, and 7/13 exceedences of the 0.1 mg/L TP WQC. The maximum thermograph temperature of 29.7 degrees C at the HWY 48 bridge. Therefore, fecal coliform was replaced with e. coli, and total phosphorus and temperature were added as causes of impairment. This AU was impacted by the 2012 Little Bear Fire.

Rio Hondo (Perennial prt Pecos R to North Spring R)
AU:NM-2208_26 WQS: 20.6.4.206

2016 Action: This AU was sampled during the Lower Pecos River (2014) survey. No impairments were found. There were documented exceedences of the causal TN/TP nutrient thresholds -- response data needed to complete the nutrient assessment.

Rio Hondo (Perennial reaches Bonney Canyon to Rio Ruidoso)
AU:NM-2208_30 WQS: 20.6.4.208

1996 Action: Previously listed for fecal coliform, reduction of riparian vegetation and streambank destabilization. Two stations have been sampled for fecal coliform with in the last five years. Each station was 0/2 for fecal coliform exceedences. This reach is in full support for fecal coliform. No associated physical/chemical data are available for the reduction of riparian vegetation and streambank destabilization listings.

1998 Action: The reach will be listed with unknown as a cause on the 303(d) list.

2006 Action: This AU was intensively surveyed during the Rio Ruidoso/Rio Hondo (2003) survey. The only impairment determined as a result of the survey was fecal coliform. Therefore, Cause Unknown was removed. A TMDL was developed for fecal coliform. All numeric segment-specific turbidity criteria were removed during the 2005 triennial review, and replaced with General Criteria 20.6.4.13.J. New assessment methods to determine turbidity impairment based on this new language are not yet available. SWQB will retain historic turbidity listings in the interim.

2010 Action: Previously named "Rio Hondo (Perennial reaches Pecos River to Rio Ruidoso), this AU was split to acknowledge the WQS break at Bonney Canyon.

2014 Action: This AU was sampled during the 2012 Sacramento Mountains survey. There were 1/5 e. coli exceedences. Therefore, fecal coliform was removed as a cause of impairment because there is no longer a WQC for this contact use parameter (it was replaced by the e. coli WQC). The flow in the lower half of this AU is reduced due to diversion. This reach was impacted by 2012 fire and subsequent flooding. Additional nutrient, sonde, thermograph, sediment, and bacteria data will be collected 2014 and assessed for the 2016 Integrated List.

Rio Ruidoso (Carrizo Ck to Mescalero Apache bnd)
AU:NM-2209.A_20 WQS: 20.6.4.209

1996 Action: Previously listed for temperature, stream bottom deposits and turbidity. Temperature data are available from six stations along the reach with a cumulative exceedance ratio of 7/61. Turbidity data are available from five

stations with a cumulative exceedance ratio of 22/44. There are five biological assessment stations on this reach. The Rio Ruidoso at the reservation boundary was used as the reference site for this survey. The next down stream site in the town of Rio Ruidoso was PS with a 67% score. The next station was at the USGS gage near the race track. The score here was also 67% of the reference. The site immediately above the WWTP was FSIO with a 74% score. The site below the WWTP was PS at 58%. These scores reflect a general loss of habitat indicating only partial support of the aquatic life use. Both biological assessment stations on this reach were rated at 58% of the reference condition. This supports the listing as partially supported.

1998 Action: Temperature, stream bottom deposits and turbidity were retained as causes of non-support.

2002 Action: Plant nutrients was added as a cause of Partial Support based on plant nutrient assessments completed in 2002.

2006 Action: This AU was intensively surveyed as part of the Rio Penasco (2003) survey. Reference in name to "Seeping Springs Lakes" changed to US Hwy 70 Bridge because Seeping Springs Lakes is not a definitely location (several lakes in a series). SWQB assessed the presence of excessive nutrients in the summer of 2002 following the 2002 Nutrient Assessment Protocol. Zero of the 42 recorded pH measurements were outside the acceptable range of 6.6 to 8.8 indicating full support for pH. Both continuous data from the YSI sonde and grab data from the SWQB survey indicated non-support for DO saturation. Both continuous data from the YSI sonde and grab data from SWQB indicated full support for DO concentration. Grab data from SWQB indicated full support for TP and TN. The chlorophyll a concentration for this assessment unit was 3.77 ug/cm2. This value is well below the threshold value of 10 ug/cm2 indicating full support for chlorophyll a. The HBI scores from the three sampling locations along this assessment unit ranged from 3.42 to 4.86, indicating full support for macroinvertebrates. Since less that three indicators of nutrient impairment were present, nutrients was removed as a cause of non support. The Protocol for the Assessment for Stream Bottom Deposits was utilized to assess the historic SBD listing. Rio Ruidoso at the Mescalero Boundary was deemed a reference site. Therefore, biological score as a % of reference was 100%. There were 5% fines at this site. Therefore, sedimentation/siltation was removed as a cause of non support. TMDLs were prepared for temperature and turbidity.

2010 Action: There were 14 of 36 exceedences of the interim turbidity numeric translator of 10 NTU with an M-SCI score of 52.1 (threshold of 56.70) at the station at the top of the AU. Therefore, turbidity is noted as Non Support.

2014 Action: This AU was sampled during the 2012 Sacramento Mountains survey. Previously noted under AU "Rio Ruidoso (HWY 70 tp Mescalero Apache bnd)", this AU is the result of a split at Carrizo Creek to acknowledge landuse changes and difference in assessment conclusions. The maximum thermograph temperatures was 24.8 and 25.0 degrees C at the station ABV CARRIZO Ck and the Mescalero boundary, respectively, The turbidity numeric SEV was excdeeded. There were 4/10 exceedences of the 0.1 WQC for total phosphorus at the station above Carrizo Creek. The L2 nutrient assessment was incomplete, but leaning Full Support. Therefore, temperature and turbidity remain, and total phosphorus was added as a cause of impairment.

2016 Action: A level 2 nutrient survey was completed. No response variables (DO or chlorophyll) indicated impairment. There were 0/2 segment-specific TP exceedences taken two weeks apart in July 2014 at two stations in the AU. Assessment of the combined 2012 - 2014 TP dataset covering multiple parts of the hydrograph continues to indicate TP impairment.

Rio Ruidoso (Eagle Ck to US Hwy 70 Bridge)
AU:NM-2208_20 WQS: 20.6.4.208

1996 Action: Previously listed for turbidity, stream bottom deposits, plant nutrients and temperature. Turbidity should be removed from the listing as there are no numeric criteria for turbidity in a coldwater fishery. Temperature data are available from four stations on the Rio Ruidoso. The cumulative ratio of temperature exceedences for these stations is 0/64. This reach is fully supporting for temperature. Fecal coliform with a ratio of 1/5 since 1993 will be added as Full Support, Impacts Observed.

1998 Action: Turbidity and temperature were removed as a cause of non-support. Stream bottom deposits, and plant nutrients were retained as causes of non-support. Fecal coliform will be added to the 305(b) list as Full Support, Impacts Observed.

2002 Action: Plant nutrient assessments completed in 2002 confirm the listing.

2006 Action: This AU was intensively surveyed as part of the Rio Penasco (2003) survey. Reference in name to "Seeping Springs Lakes" changed to US Hwy 70 Bridge because Seeping Springs Lakes is not a definitely location (several lakes in a series). A TMDL was prepared for Plant Nutrients (TN and TP). Benthic macroinvertebrates and pebble count data collected at the station @ CR16 bridge near Hondo were compared to reference station Rio Ruidoso @ Mescalero bnd. The bio score was 86 % of reference even though there was a 238% increase in % fines. Therefore, sedimentation/siltation (SBD) was removed as a cause of non support.

2014 Action: This AU was sampled during the 2012 Sacramento Mountains survey. Previously noted under AU "Rio Ruidoso (Rio Bonito to HWY 70)", this AU is the result of a split at Eagle Creek to acknowledge the change in hydrologic character and difference in assessment conclusions. Additional sampling related to potential nutrient impairment was implemented by the Village of Ruidoso in this AU. There were 3 of 8 e. coli exceedences at both the GLENCOE-FR 443 and CR E002 stations. Causal indicators (specifically SWQB-collected TN data) as well as response indicators (specifically Village DO sonde data) were present at levels that did not met applicable threshold values. Additionally, the 0.1 mg/L segment-specific total phosphorus WQC was exceeded 7/23 times. The numeric turbidity SEV was exceeded. Therefore, nutrients remains listed, and e. coli and turbidity were added.

2016 Action: 2013 sonde data submitted by the Village of Ruidoso continues to document excursions of the DO criterion. A revised nutrients TMDL is being drafted.

Rio Ruidoso (Perennial prt Rio Bonito to Eagle Ck)
AU:NM-2208_21 WQS: 20.6.4.208

2014 Action: Previously noted under AU "Rio Ruidoso (Rio Bonito to HWY 70)", this AU is the result of a split at Eagle Creek to acknowledge the change in hydrologic character and difference in assessment conclusions.

Rio Ruidoso (US Hwy 70 Bridge to Carrizo Ck)

AU:NM-2209.A_21 WQS: 20.6.4.209

2014 Action: This AU was sampled as part of the 2012 Sacramento survey. Previously noted under AU "Rio Ruidoso (HWY 70 tp Mescalero Apache bnd)", this AU is the result of a split at Carrizo Creek to acknowledge landuse changes and difference in assessment conclusions. There were 11/14 e. coli exceedences. Both causal and response nutrient impairment indicators were present. Turbidity sonde data did not exceed SEV numeric thresholds. The maximum thermograph temperature was 25.7 degrees C/ Therefore, turbidity was removed, and e. coli, nutrients, and temperature are noted as causes of impairment.

2016 Action: A TMDL for E. coli was approved (2015).

HUC: 13060010 - Rio Penasco

Agua Chiquita (perennial portions McEwan Cny to headwaters)
AU:NM-2208_01 WQS: 20.6.4.208

2006 Action: This AU was intensively surveyed as part of the Rio Penasco (2003) survey. Benthic macroinvertebrates and pebble count data collected at the station Below Barrel Springs were compared to reference station Karr Canyon above Raven Road. The bio score was 62 % of reference, and the fines at the study site were lower than the fines at the reference site. Therefore, Benthic Macroinvertebrate Bioassessments (Streams) will be added as a cause of non support.

2014 Action: This AU was sampled during the 2012 Sacramento Mountain study. Aqua Chiquita was also split at McEwan Canyon to acknowledge the differing hydrologic characteristics and associated WQS citation in these two reaches. The turbidity SEV numeric threshold was exceeded. Therefore, turbidity was added as a cause of impairment. This is likely the cause of the benthic macroinvertebrate response. No other impairments were identified.

2016 Action: There were 2 of 5 exceedences of the 410 cfu/100 mL E. coli criterion during the last survey. Therefore, e. coli was added as a cause of impairment.

Agua Chiquita (Rio Penasco to McEwan Cny)
AU:NM-2208_02 WQS: 20.6.4.97

2014 Action: Hydrology Protocol-based UAA concluded this reach was ephemeral. UAA was approved by EPA in Oct 2013. Therefore, nutrient listing was removed because nutrient AP is only applicable to perennial streams.

Rio Penasco (HWY 24 to Cox Canyon)
AU:NM-2208_00 WQS: 20.6.4.208

1996 Action: Previously listed under "Rio Penasco, perennial portion" and listed for turbidity and stream bottom deposits. Turbidity should be removed from the listing as there are no numeric criteria for turbidity in a coldwater fishery. Five turbidity readings were collected during a 1990 survey the greatest reading was 2.0 NTU and the mean was 1.4 NTU.

1998 Action: Turbidity was removed as a source of non-support. Stream bottom deposits was retained as a source of non-support.

2002 Action: Previous listing was split into two because it spanned two water quality standard segments.

2006 Action: This AU was intensively surveyed as part of the Rio Penasco (2003) survey. Benthic macroinvertebrates and pebble count data collected at the station on USFS land below Mayhill were compared to reference station Karr Canyon above Raven Road. The bio score was 62 % of reference, and the % increase in fines was 52%. Therefore, Sedimentation/Siltation (SBD) was retained as a cause of non support.

2012 Action: Application of the SWQB Hydrology Protocol (survey date 10/28/08) indicate this assessment unit is perennial (Hydrology Protocol score of 30.0 but 2.0% no flow days of available gage data - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

2014 Action: This AU was sampled during the 2012 Sacramento Mountains survey. There were 16.3% sand&fines. The SEV numeric turbidity threshold was exceeded. Therefore, sedimentation was removed and turbidity was added as a cause of impairment. Coolwater may be a more appropriate ALU designation. WQS is under review.

2016 Action: A level 2 nutrient survey was completed. No response variables (DO or chlorophyll) indicated impairment.

Rio Penasco (Perennial prt Cox Canyon to headwaters)
AU:NM-2208_03 WQS: 20.6.4.208

2014 Action: This AU was sampled during the 2012 Sacramento Mountains survey. No impairments were identified.

Rio Penasco (Perennial prt Pecos River to HWY 24)
AU:NM-2206.A_10 WQS: 20.6.4.206

1996 Action: Previously listed under "Rio Penasco, perennial portion" and listed for turbidity and stream bottom deposits. Turbidity should be removed from the listing as there are no numeric criteria for turbidity in a coldwater fishery. Five turbidity readings were collected during a 1990 survey the greatest reading was 2.0 NTU and the mean was 1.4 NTU.

1998 Action: Turbidity was removed as a source of non-support. Stream bottom deposits was retained as a source of non-support.

2002 Action: Previous listing was split into two because it spanned two water quality standard segments.

2006 Action: This AU was intensively surveyed as part of the Rio Penasco (2003) survey. Benthic macroinvertebrates and pebble count data collected at the station on USFS land below Mayhill were compared to reference station Karr Canyon above Raven Road. The bio score was 62 % of reference, and the % increase in fines 52%. Therefore, Sedimentation/Siltation (SBD) was retained as a cause of non support. This reach may be ephemeral, so WWAL may not be existing or attainable.

2014 Action: This AU was sampled during the 2012 Sacramento Mountains survey. A level 1 nutrient survey indicated NS; the level 2 survey was incomplete. No other potential impairments were identified.

2016 Action: A level 2 nutrient survey was completed. No response variables (DO or chlorophyll) indicated impairment. Sedimentation surveys at station Rio Penasco at Helena Road blw USGS Gage 08397620 (59RPenas090.0, xeric sediment class) on 9/26/2012 and 10/24/2012 documented 13.3 and 37.1 percent fines, respectively. Therefore, sedimentation was removed as a cause of impairment.

HUC: 13060011 - Upper Pecos-Black

Avalon Reservoir
AU:NM-2204.B_00 WQS: 20.6.4.219

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2014 Action: There is no longer an advisory for mercury in fish tissue so this listing was removed.

Black River (Perennial reaches of Pecos River to headwaters)
AU:NM-2202.A_10 WQS: 20.6.4.202

1996 Action: Previously listed for metals (Al), reduction of riparian vegetation, streambank destabilization, unknown and salinity. There is no standard for salinity for this segment. Salinity will be removed as a cause of non-support. Two stations were sampled for aluminum and had a cumulative exceedance ratio of 1/2.

1998 Action: The reach will remain on the 303(d) list with a cause of unknown. It will also be listed in the 305(b) report as Full Support, Impacts Observed for aluminum.

2006 Action: This reach was sampled as part of the Lower Pecos (2003) survey. There were also two acute water toxicity tests with significant effect noted as compared to controls or reference conditions (see http://www.epa.gov/earth1r6/6wq/ecopro/watershd/monitrng/toxnet/nm.pdf). According to the Assessment Protocol, since significant effects were noted in more than one acute test, Water Bioassay - Acute will be added as a cause of non support.

2008 Action: The above 2003 test results were suspected to be false positive in part because there was no information indicating any potential cause of impairment in the chemical data that were concurrently collected during the 2003 survey. Therefore, repeat ambient toxicity testing was performed on water collected 8/13/07. After 96 hours of exposure to both Ceriodaphnia dubia and Pimephales promelas, there were no significant effects in either test organisms exposed to water collected at Higby Hole. Therefore, Water Bioassay - Acute was removed as a cause of non support.

2010 Action: SWQB sampled four stations four times on the Black River in 2007 and 2008 to gather information for the NM Department of Game and Fish related to a potential ONRW nomination for the Black River. There were 0 of 16 exceedences of any parameter sampled (ions, nutrients, semi-volatile and volatile organics). An EMAP bio/hab survey was also conducted. It was not possible to determine any potential sedimentation impairment because a suitable reference site could not be identified.

2016 Action: This AU was sampled as part of the Lower Pecos River (2013) watershed survey. No impairments were identified.

Blue Spring (Black River to headwaters)
AU:NM-2202.A_11 WQS: 20.6.4.202

2016 Action: This AU was sampled as part of the Lower Pecos River (2013) watershed survey. No impairments were identified.

Brantley Reservoir
AU:NM-2205_00 WQS: 20.6.4.205

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: This reservoir was intensively sampled in 2003. There were no exceedences of chemical WQ parameters. DDT was added as a cause of non support because of the May 2006 fish consumption advisory.

2010 Action: The current fish consumption advisory only listed DDT as the reason for the advisory. Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, this AU will not be listed for Mercury in Fish Tissue. The fish consumption advisory for mercury was also removed.

2016 Action: This AU was sampled during the Lower Pecos River (2013) survey. No impairments were identified. The fish advisories remain in effect.

Laguna Gatuna
AU:NM-9000.B_055 WQS: 20.6.4.98

2000 Action: Lake Water Quality Assessment Surveys, Playa Lakes 1992, NMED/SWQB, pages 1-20. Wildlife habitat designated use section 3100 L. Threatened by historic discharge from produced water facility. Narrative section on toxic substances in section 1105, paragraph F. "...from any substances at concentrations that are toxic to or will adversely affect plants and animals that use these environments for feeding, drinking, habitat or propagation..." Boron and Ra226 + Ra228 exist in concentration questionable in terms of toxicity though current truth to this unknown and probably premature to speculate about. This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat with the cause being the narrative standard of toxic substances.

Laguna Quatro
AU:NM-9000.B_059 WQS: 20.6.4.98

1998 Action: Not listed

2000 Action: Toxic Substances: Lake Water Quality Assessment Surveys, Playa Lakes 1992, NMED/SWQB, pages 1-20. Wildlife habitat designated use section 3100 L. Threatened by historic discharge from produced water facility. Narrative section on toxic substances in section 1105, paragraph F. "...from any substances at concentrations that are toxic to or will adversely affect plants and animals that use these environments for feeding, drinking, habitat or propagation..." Boron and Ra226 + Ra228 exist in concentration questionable in terms of toxicity though current truth to this unknown and probably premature to speculate about. This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat with the cause being the narrative standard of toxic substances.

Laguna Tres
AU:NM-9000.B_061 WQS: 20.6.4.98

1998 Action: Not listed

2000 Action: Toxic Substances: Lake Water Quality Assessment Surveys, Playa Lakes 1992, NMED/SWQB, pages 1-20. Wildlife habitat designated use section 3100 L. Threatened by historic discharge from produced water facility. Narrative section on toxic substances in section 1105, paragraph F. "...from any substances at concentrations that are toxic to or will adversely affect plants and animals that use these environments for feeding, drinking, habitat or propagation..." Boron and Ra226 + Ra228 exist in concentration questionable in terms of toxicity though current truth to this unknown and probably premature to speculate about. This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat with the cause being the narrative standard of toxic substances.

Laguna Uno
AU:NM-9000.B_066 WQS: 20.6.4.98

1998 Action: Not listed

2000 Action: Toxic Substances: Lake Water Quality Assessment Surveys, Playa Lakes 1992, NMED/SWQB, pages 81-98. Wildlife habitat designated use section 3100 L. Threatened by historic discharge from potash refining discharge to playa basin. Narrative section on toxic substances in section 1105, paragraph F. "...from any substances at concentrations that are toxic to or will adversely affect plants and animals that use these environments for feeding, drinking, habitat or propagation..." This playa will be listed on the 303(d) list for not meeting the designated use of wildlife habitat with the cause being the narrative standard of toxic substances.

Lower Tansil Lake/Lake Carlsbad (Carlsbad Municipal Lake)
AU:NM-2203.B_00 WQS: 20.6.4.218

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2006 Action: Previously named Tansil Lake (Carlsbad Municipal Lake)

2010 Action: Previously named Upper and Lower Tansil Lake. There is a current fish consumption advisory for PCBs. Available total mercury fish tissue data were compared to the methylmercury in fish tissue criterion (0.3 mg/kg) adopted during the 2005 triennial. None of the samples contained levels above the criterion. Methylmercury is a subset of total mercury (i.e., total mercury is a more conservative value). Therefore, PCBs in Fish Tissue was added and Mercury in Fish Tissue was removed as a cause of impairment. The fish consumption advisory for mercury was also removed.

2016 Action: This AU was sampled during the Lower Pecos River (2013) survey. No impairments were found. The PCB and DDT fish advisories remain in effect.

Pecos River (Avalon Reservoir to Brantley Reservoir)
AU:NM-2204.A_00 WQS: 20.6.4.204

2014 Action: DDT in Fish Tissue was added as Probable Causes because there are fish consumption guidelines for the Pecos River at the Brantley Wildlife Management Area.

2016 Action: This AU was sampled during the Lower Pecos River (2013) watershed survey. No impairments were found

Pecos River (Black River to Six Mile Dam Lake)
AU:NM-2202.A_00 WQS: 20.6.4.202

1996 Action: Previously listed for metals (Al), salinity, stream bottom deposits and total ammonia. Salinity should be upgraded to full support as there have been no exceedences of total dissolved solids, sulfate and chloride criteria in the last ten years. All total ammonia data are from the five to ten year interval. The cumulative ratio of samples from three stations is 0/15. Total ammonia should be upgraded to full support. The cumulative ratio of samples from three stations for aluminum is 0/7 over the last ten years. Aluminum should be upgraded to full support.

1998 Action: Salinity, ammonia and aluminum were removed as causes of non-support. Stream bottom deposits was retained as a cause of non-support.

2006 Action: This reach was intensively sampled as part of the Lower Pecos (2003) survey. There were no changes as a result of the survey.

2010 Action: The sedimentation/siltation listing was removed because there were no sedimentation (stream bottom deposit) assessment protocols developed at the time of the historic listing. There are no data to support this listing. PCBs in Fish Tissue was added as a Probable Cause because there are fish consumption guidelines for PCBs from the Texas border to Carlsbad Municipal Lakes.

2016 Action: Previous under "Pecos River (Black River to Lower Tansil Lake)", this AU was split. This AU was sampled during the Lower Pecos River (2013) watershed survey. There were 2/8 E. coli exceedences at the lowest station in the AU. Therefore, E. coli was added as a cause of impairment.

Pecos River (Brantley Reservoir to Rio Penasco)
AU:NM-2206.A_01 WQS: 20.6.4.206

2010 Action: Both DDT and PCBs in Fish Tissue were added as Probable Causes because there are fish consumption guidelines for these parameters from the north boundary of Brantley Wildlife Management Area to US 70. The Pecos River at the Brantley Wildlife Management Area also has an advisory for DDT in fish tissue.

2014 Action: Previously Pecos River (Brantley Reservoir to Rio Penasco), the AU was expanded up to Rio Felix during survey planning for the 2013 survey.

2016 Action: Previously "Pecos River (Brantley Reservoir to Rio Felix)", this AU was split into three AUs. This AU was sampled during the Lower Pecos River (2013) watershed survey. No impairments were found. The fish consumption advisories are still in effect.

Pecos River (Six Mile Dam Lake to Lower Tansil Lake)
AU:NM-2202.A_01 WQS: 20.6.4.202

2016 Action: Previous under "Pecos River (Black River to Lowe Tansil Lake)", this AU was split. This AU was sampled during the Lower Pecos River (2013) watershed survey. No impairments were found. The fish consumption guidelines remain in effect.

Pecos River (TX border to Black River)
AU:NM-2201_00 WQS: 20.6.4.201

1996 Action: Previously listed for temperature, metals (Al), stream bottom deposits and salinity. Extensive temperature data are available from the last two years. One station, LPR201.000505, had 1/5 exceedences that will be listed as Full Support, Impacts Observed. The cumulative ratio at all other stations was 0/154. Salinity should be removed as a cause of nonsupport as there have been no exceedences of the criteria for total dissolved solids, sulfate and chloride. Aluminum was monitored at two stations. Station LPR201.000505 was 1/1, or Full Support, Impacts Observed, for exceedences of the chronic screening ratio. Station 08407500 (USGS) was 1/7 within the last five years and 3/20 for the five to ten year interval. This station is also Full Support, Impacts Observed. There is one 1991 biological assessment on this reach. One station, LPR201.000505, was not supporting at 21% of the reference site. The assessment notes that it was probably due to poor substrate.

1998 Action: Temperature, metals and salinity were removed as causes of non-support. Stream bottom deposits was retained and biological criteria was added to causes of non-support.

2002 Action: Biological criteria was removed as a probable cause of impairment because the reduced benthic macroinvertebrate score was likely due to poor substrate conditions (see above comments). Stream bottom deposits will

be retained to indicate that both benthic macroinvertebrate communities and substrate characteristics need to be studied further and addressed. Listing both stream bottom deposits and biological criteria was redundant.

2006 Action: This reach was intensively surveyed in 2003. Sonde data indicate that the minimum % saturation exceeded for >3 hours contiguously. There were 8 of 23 exceedences of the boron criterion for irrigation use. Therefore, this reach will be listed as non support for dissolved oxygen and boron. The dissolved oxygen impairment may indicate excessive nutrients. Protocols for nutrients in large rivers are under development. All exceedences of boron occurred at stations below the brine springs at Malaga Bend.

2010 Action: The sedimentation/siltation listing was removed because there were no sedimentation (stream bottom deposit) assessment protocols developed at the time of the historic listing. There are no data to support this listing. PCBs in Fish Tissue was added as a Probable Cause because there are fish consumption guidelines for PCBs from the Texas border to Carlsbad Municipal Lakes.

2016 Action: This AU was sampled during the Lower Pecos River (2013) watershed survey.There were 4/8 E. coli and 0/5 dissolved boron exceedences at the station near Red Bluff. No sonde data were collected to re-assess the DO listing. Therefore, boron was removed, E. coli was added, and DO remains a cause of impairment. The fish consumption advisory remains in effect.

Rattlesnake Spring
AU:NM-2202.A_12 WQS: 20.6.4.99

2016 Action: This AU was sampled for limited parameters during the Lower Pecos River (2013) watershed survey. No impairments were found.

Sitting Bull Creek (Last Chance Canyon to Sitting Bull Spr)
AU:NM-9000.A_007 WQS: 20.6.4.99

1998 Action: The reach was listed with plant nutrients, stream bottom deposits, fecal coliform, temperature and total phosphorus listed as causes of impairment.

2000 Action: Total phosphorus will be removed as a cause of non-support due to the lack of a total phosphorus standard for the warmwater fishery use. The Nutrient Assessment Protocol will be used to assess nutrient loading on this reach.

2006 Action: WQS was changed to 20.6.4.99. This AU was intensively surveyed during the Lower Pecos (2003) survey. Significant improvements in land management have been made since this creek was last monitored, including erosion control, restriction of grazing, and improvement to sanitation facilities. There were 0 of 4 exceedences of the 32.2 degree C temperature criterion. Thermograph data are not available. There were 0 of 6 exceedence of the previous fecal coliform criterion. The nutrient assessment protocol was performed 7/12/2006. Exceedence ratios for ecoregion TN and TP criteria were both 0/5. pH and chlorophyll a values were all within exceptable ranges. The DO saturation ratio was 1/5. Because three or more indicator did not exceed acceptable ranges, the conclusion is full support for nutrients. Benthic macroinvertebrates and pebble count data collected at the base of the falls were compared to reference station Rio Bonito at the Apple Orchard. Although the % of Reference Bio Score falls below the 79% cut off for full support using the EPA

RBP III, there is only a 10% difference in these sites using the proposed NM M-SCI scoring criteria. The main reason for the low score is that the metric value for "Ratio of Shredder/Total No. of Ind." was zero. The low number of observed Shredders and the low %fines count is probably due to the sample station being below the falls in a relatively scoured location. Sitting Bull Creek is in Ecoregion 23 according to Omernik however, after visiting the site it should probably be placed in Ecoregion 24. Currently, SWQB does not have a comparable site in Ecoregion 24 to compare with. Also, the percent fines at the study site was only 8%. Per the assessment protocol, raw percent values of < 20% fines at the study site should be evaluated as fully supporting regardless of the percent attained at the reference site. Therefore, temperature, nutrients, sedimentation/siltation, and fecal coliform were removed as a causes of non support.

2016 Action: This AU was sampled for limited parameters during the Lower Pecos River (2013) survey. No impairments were identified.

Six Mile Dam Lake
AU:NM-2202.B_20 WQS: 20.6.4.202

2016 Action: This AU was sampled during the Lower Pecos River (2013) survey. Nutrient causal and response data indicate impairment (TN and TP exceedences, 2/2 chl-a). Therefore, nutrients was removed as a cause of impairment.

HUC: 13070002 - Delaware

Delaware River (Pecos River to TX border)
AU:NM-2202.A_20 WQS: 20.6.4.202

2016 Action: This AU was sampled as part of the Lower Pecos River (2013) watershed survey. No impairments were identified.

HUC: 14080101 - Upper San Juan

Gallegos Canyon (San Juan River to Navajo bnd)
AU:NM-9000.A_060 WQS: 20.6.4.99

2004 Action: This AU was sampled during the 2002 SJR study. SJRIP also provided data from 1994-2003. There were 23 of 30 exceedences of the total recoverable selenium wildlife habitat chronic screening criteria of 7.5 ug/l (5.0 ug/L x 1.5). Therefore, selenium was added as a cause of non support.

2006 Action: A TMDL was prepared for selenium in 2005. The WQS citation was changed from "unclassified" to 20.6.4.99.

2008 Action: For the 2006 listing cycle, there were no presumed uses for this AU that would have resulted in application of a pH criterion - Aquatic Life was added but it had no associated pH criteria. Per EPA Region 6 instruction on the 2008 Integrated List, WWAL was added as a presumed use to all waters falling under 20.6.4.99 NMAC. There were 0 of 60 recorded pH values taken by SJRIP outside of the criteria range of 6.6 to 9.0. Therefore, WWAL was noted as "fully

supporting" on the 2008 Integrated List.

2012 Action: Gallegos Canyon was not sampled during the 2010 SJR survey. Gallegos Canyon is a sandy channel that flows in response to seepage from irrigation of the NAPI (Navajo Agricultural Products Industry) fields on the mesa above. The Mancos shale in the area is the presumed source of selenium in the water.

2014 Action: Assessment of available Navajo Nation EPA 2008-2011 documents 5/5 exceedences of both the warm water chronic aquatic life and wildlife habitat criteria (5.0 ug/L). Therefore, selenium remains listed as a cause of impairment.

Navajo Reservoir
AU:NM-2406_00 WQS: 20.6.4.406

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2004 Action: This AU was intensively sampled during the 2002 SJR study. No new impairments were identified during this survey. This AU remains on the fish consumption guidelines for Mercury in Fish Tissue as these guidelines have not been updated since the last listing cycle.

2012 Action: This reservoir was sampled as part of the 2010 San Juan River watershed survey. This reservoir has both cold and warmwater uses - warmwater is full support. The applicable coldwater temperature criterion (20 degrees C) was exceeded during the 6/29/10 sampling run Therefore, temperature was added as a cause of impairment. The fish consumption advisory also remains in effect.

Navajo River (Jicarilla Apache Nation to CO border)
AU:NM-2407.A_00 WQS: 20.6.4.407

2012 Action: This AU was surveyed as part of the 2010 San Juan River watershed study. The maximum thermograph temperature was 27.1 degrees C, and 20.0 degrees C was exceeded for > 6 consecutive hours for > 3 consecutive days. Grab turbidity data (5/8) exceeded 7 NTU -- no sonde data available for assessment (sonde data needed). Fisheries data indicate coolwater would be a more appropriate ALU -- WQS review needed. Therefore, this AU will be listed for temperature (5B).

San Juan River (Animas River to Canon Largo)
AU:NM-2401_00 WQS: 20.6.4.408

1996 Action: Previously listed for metals (Hg), stream bottom deposits, salinity, and fecal coliform. Mercury data indicated full support of the fishery use as there were no exceedences of criteria (0/8) within the last 23 years. While there are no salinity (total dissolved solids) criteria for the reach, there were no exceedences of the total dissolved solids criteria for the Colorado River at Hoover Dam (723 mg/l). Fecal coliform data indicated that the contact recreation use was not supported at two stations (SJR 106 and SJR401.004020). Station SJR401.004010 indicated Full Support, Impacts Observed (1/2).

1998 Action: Mercury and salinity will be removed as a cause of non-support for this reach. The reach will continue to be listed as Not Supported with stream bottom deposits and fecal coliform (SJR106 and 4020).

2002 Action: Mercury in Fish Tissue (downstream of Hammond Diversion) was added as a Probable Cause because there are fish consumption guidelines from Hammond Diversion to the Hogback.

2006 Action: A TMDL was prepared for fecal coliform/E. coli and sedimentation/siltation. The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. Historic fecal coliform listings will be retained until E. coli data are collected to determine whether there is any impairment of contact uses. Available E.coli data from 2002 - 2006 were assessed. There were 49 of 133 exceedences of the single sample criterion of 410 cfu/100 mL. Therefore, the fecal coliform listing was replaced with E. coli.

2008 Action: The above 2002 toxicity test results were suspected to be false positive in part because there was no information indicating any potential cause of impairment in the chemical data that were concurrently collected during the 2002 survey. Therefore, repeat acute toxicity testing was performed on water collected 9/10/07 @ Blagg Property near the bottom of the assessment unit. There were significant effects to Ceriodaphnia dubia after 96 hours of exposure (primary endpoint of mortality). There were no significant effects to Pimephales promelas after 96 hours of exposure. Since significant effects were noted in no more than one water test, Water Bioassay - Acute was removed as a cause of non support.

2010 Action: There is no longer a fish consumption advisory for mercury. Therefore, Mercury in Fish Tissue was removed as a cause of impairment.

2012 Action: This AU was surveyed as part of the 2010 San Juan River watershed study. There were 0 of 24 exceedences of the 410 cfu/100 mL e. coli criterion. The turbidity threshold of 23 NTU was exceeded for greater than the allowable duration of 72 hours. Pebble counts were performed at three stations in order to assess for sedimentation using the NSL 2002 method (see 2004 ROD entry above for details). The median percent fines for this reach was 57% sand and fines. Therefore, E. coli was removed, sedimentation/siltation (TMDL complete) remains, and turbidity was added.

2014 Action: The turbidity AP was incorrectly applied during the 2012 listing cycle, as the turbidity AP states that this approach derived from the SEV index will not be applied to stream segments that list both a coldwater and a warmwater designated aquatic life use. Therefore, turbidity was removed.

2016 Action: The San Juan Soil and Conservation District submitted E. coli and nutrient data collected during 2013 - 2014. There were 21/50 exceedences of the applicable criterion E. coli criterion. Therefore, E. coli will be re-listed as impaired.

San Juan River (Canon Largo to Navajo Reservoir)
AU:NM-2405_10 WQS: 20.6.4.405

1996 Action: Previously listed for metals (Hg, Se), turbidity, and stream bottom deposits. Mercury (0/15) and selenium (0/6) data indicated full support of the fishery use as there were no exceedences of criteria within 14 years. Turbidity data

indicated the fishery use was not supported at station SJR104 (3/12), while there was Full Support, Impacts Observed for stations SJR405.005015 (1/8), SJR405.005035 (1/8) and SJR405.005045 (1/8).

1998 Action: Mercury and selenium will be removed as sources of non-support for this reach. The reach continues to be listed as Not Supported for turbidity (1 sta.) and stream bottom deposits. The reach will be listed as Full Support, Impacts Observed for turbidity at two stations.

2002 Action: Mercury in Fish Tissue (downstream of Hammond Diversion) was added as a Probable Cause because there are fish consumption guidelines from Hammond Diversion to the Hogback.

2004 Action: This assessment unit was intensively sampled as part of the 2002 SJR survey. The USBOR provided thermograph data for 2000-2002 for the Texas Hole. In 1992, a thermograph was deployed in the SJR near the Archuleta USGS gage as part of the SJRIP study. In 1999, a second thermograph was deployed near the dam. The maximum temperature for the available period of record was 22.81 degrees C on 7/12/01 at the Archuleta site. A thermograph was deployed by SWQB at Soaring Eagle Lodge 5/22/02 - 9/26/02. The maximum recorded temperature was 21.17 degrees C. According to the Temperature Protocol, this AU is full support for temperature. Turbidity was erroneously included as a cause of non-support on previous lists based on the information in the opening paragraph of this AU. When all stations are combined, there were a total of 3 out of 36 (8.3%) turbidity measurements in this AU when it was previously assessed. According to the Assessment Protocol, the entire AU should have been listed as Full Support Impacts Observed, not Partial Support. To verify this correction, a total of 143 turbidity measurements collected between 1994 and 2003 by the SWQB, USBOR, SJRIP, and USGS were collated and assessed against the criterion of 10 NTU. There were 21 out of 143 exceedences in this data set (14.7%). The mean of the measurements was 6.8 NTU, while the median was 4.8 NTU. According to the Assessment Protocol, this AU is Full Support for turbidity. Therefore, turbidity will be removed as a cause of non support. The USBOR also provided fecal coliform data from 2000 and 2001. The USBOR in conjunction with the San Juan Watershed Group provided E.coli data from 2003. There were 2 of 18 (11%) exceedences of the single sample fecal coliform criterion of 100 CFU/100mL. This AU has a historic listing for stream bottom deposits. SWQB and the USDA National Sedimentation Lab (NSL) implemented a special study to determine whether or not the AU is impaired due to excessive sedimentation (i.e., stream bottom deposits). Percent (%) fines data was the primary dataset used to determine whether or not the narrative SBD standard was being attained. In this study, the distribution of the % fines was determined to be log-normal, so medians and quartiles were used to define the central tendencies of the data. The fine sediment benchmark used to determine impairment was the 75th percentile of the %fines measured at reference sites in the San Juan and Animas Rivers (29.5 percent fines). The median value for % fines was determined for each reach (i.e., assessment unit) of concern. If the value (point or median depending on data availability) for % fines for the study reach was below the fine sediment benchmark (i.e., the 75th percentile of the reference condition), the reach was listed as Fully Supporting for Sedimentation/Siltation (SBD). If the median value for % fines for the reach is above the 75th percentile of the reference condition, the reach was listed as Non Supporting for Sedimentation/Siltation (SBD). The median percent fines for this reach was 12 percent. Therefore, Sedimentation/Siltation (Stream Bottom Deposits) will be removed as a cause of non support. See the SWQB website for additional details on the NSL study. This AU remains on the fish consumption guidelines for Mercury in Fish Tissue (downstream of Hammond Ditch) as these guidelines have not been updated since the last listing cycle.

2006 Action: The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. Historic fecal coliform listings will be retained until E. coli data are collected to determine

whether there is any impairment of contact uses. Available E.coli data from 2002 - 2006 were assessed. There were 3 of 23 exceedences of the single sample criterion of 410 cfu/100 mL.

2010 Action: There is no longer a fish consumption advisory for mercury. Therefore, Mercury in Fish Tissue was removed as a cause of impairment.

2012 Action: This AU was surveyed as part of the 2010 San Juan River watershed study. Pebble counts were performed at three stations in order to assess for sedimentation using the NSL 2002 method (see 2004 ROD entry above for details). The median percent fines for this reach was 29% sand and fines. No impairments were determined; therefore, this AU remains Full Support for all designated uses.

HUC: 14080104 - Animas

Animas River (Estes Arroyo to So. Ute Indian Tribe bnd)
AU:NM-2404_00 WQS: 20.6.4.404

1996 Action: Previously listed for stream bottom deposits and plant nutrients. Total phosphorus data from two stations, SJR404.00345 and SJR404.003001 indicate full support of the fishery use (0/10). There is no additional data to substantiate the listing for plant nutrients.

1998 Action: Plant nutrients have been removed as a cause of non-support for this reach. The reach continues to be listed as Partially Supported for stream bottom deposits.

2004 Action: This reach was intensively sampled during the 2002 SJR study. A thermograph deployed at Cedar Hill in 2003 recorded several temperatures greater than 23 degrees C (maximum temperature of 27.0 on 7/11/03). An additional thermograph deployed at Aztec had a max temp of 29.79 degrees on 7/19/03. Therefore, temperature will be added as causes of non support. This AU has a historic listing for stream bottom deposits. SWQB and the USDA National Sedimentation Lab (NSL) implemented a special study to determine whether or not the AU is impaired due to excessive sedimentation (i.e., stream bottom deposits). Percent (%) fines data was the primary dataset used to determine whether or not the narrative SBD standard was being attained. In this study, the distribution of the % fines was determined to be log-normal, so medians and quartiles were used to define the central tendencies of the data. The fine sediment benchmark used to determine impairment was the 75th percentile of the %fines measured at reference sites in the San Juan and Animas Rivers (29.5 percent fines). The median value for % fines was determined for each reach (i.e., assessment unit) of concern. If the value (point or median depending on data availability) for % fines for the study reach was below the fine sediment benchmark (i.e., the 75th percentile of the reference condition), the reach was listed as Fully Supporting for Sedimentation/Siltation (SBD). If the median value for % fines for the reach is above the 75th percentile of the reference condition, the reach was listed as Non Supporting for Sedimentation/Siltation (SBD). The median percent fines for this reach was 23 percent. Therefore, Sedimentation/Siltation (Stream Bottom Deposits) will be removed as a cause of non support. See the SWQB website for additional details on the NSL study. The potential for excessive nutrients in the Animas were noted through visual observation during the 2002 study. To address this concern, a workgroup was formed comprised of state and tribal environmental specialists and concerned citizens. The nutrient assessment protocol was performed on 8/26/03 at the site on the CO/NM border. Total phosphorus values were above

the ecoregion criteria of 0.07 mg/L in >15% of the samples, and the percent DO saturation was greater than 120%. The results of the benthic macroinvertebrate study are not available at this time, but are not expected to indicate nutrient impairment. The nutrient assessment protocol was performed on 10/07/03 at the site in Aztec just above the HWY 516 bridge. The percent DO saturation was greater than 120%. Since three or more indicators were not present at either site, this AU was determined to be full support for nutrients.

2006 Action: The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. Historic fecal coliform listings will be retained until E. coli data are collected to determine whether there is any impairment of contact uses. Available E.coli data from 2002 - 2006 were assessed. There were 0 of 20 exceedences of the single sample criterion of 410 cfu/100 mL.

2012 Action: Name was changed to acknowledge tribal portion. This AU was surveyed as part of the 2010 San Juan River watershed study. There were 3 of 16 exceedences of the 410 cfu/100 mL e. coli criterion, and 4 of 17 exceedences of the 0.1 mg/L total phosphorus criterion. The turbidity threshold of 23 NTU was exceeded for greater than the allowable duration of 72 hours. The maximum thermograph temperature was 29.2 degrees C, and 20.0 degrees C was exceeded for > 6 consecutive hours for > 3 consecutive days. Pebble counts were performed at three stations in order to assess for sedimentation using the NSL 2002 method (see 2004 ROD entry above for details). The median percent fines for this reach was 62% sand and fines. There was also close to an order of magnitude difference between two of the three % sand and fine values. Additional data is warranted to confirm the listing before proceeding with TMDL development for this reach. Coldwater aquatic life use may not be existing or attainable -- WQS review needed. Therefore, this AU remains listed for temperature (5B); and total phosphorus, e. coli, turbidity, and sedimentation (5C) were added.

2014 Action: Additional %sand&fines data were collected in 2012 in order to re-assess using NMs current (2014) sedimentation AP, which is applicable to this wadeable portion of the Animas River. The mean and median %sand&fines 2010-2012 data were 23% and 29%, respectively. This is below both the Foothlls and Xeric numeric thresholds. Therefore, sedimentation was removed as a cause of impairment.

2016 Action: The San Juan Soil and Conservation District submitted e. coli and nutrient data collected during 2013 - 2014. Although there were only 4/50 exceedences (8%) of the single grab criterion, the monthly geometric mean was exceeded 3 times in 2013 and 2 times in 2014. Therefore, the E. coli listing remains.

Animas River (San Juan River to Estes Arroyo)
AU:NM-2403.A_00 WQS: 20.6.4.403

1996 Action: Previously listed for metals (Hg, Se) and stream bottom deposits. Mercury (0/15) and selenium (0/8) data indicated full support of the fishery use as there were no exceedences of criteria.

1998 Action: Mercury and selenium will be removed as sources of non-support for this reach. The reach continues to be listed as Partially Supported for stream bottom deposits.

2004 Action: This reach was intensively sampled during the 2002 SJR study. In 1992, a thermograph was deployed near the "Animas at Farmington" USGS gage as part of the SJRIP study. The daily maximum temperature exceeded the criterion of 27 degrees C 154 of 3384 (4.6%) total records during the full period of record and 111 of 1364 (8.1%) between

7/8/99 and 4/1/03. According to the Assessment Protocol, this AU is in full support of temperature because the exceedence rate is < 15%. There were 2 of 13 (15%) exceedences of the single sample fecal coliform criterion of 400 cfu/100 mL based on 2002 SWQB data and 2002-2003 USGS data. Therefore, fecal coliform will be listed as a cause of non support. This AU may be listed as 5B because the proposed single sample E.coli criterion of 126/100mL was not exceeded (0 of 8). This AU has a historic listing for stream bottom deposits. SWQB and the USDA National Sedimentation Lab (NSL) implemented a special study to determine whether or not the AU is impaired due to excessive sedimentation (i.e., stream bottom deposits). Percent (%) fines data was the primary dataset used to determine whether or not the narrative SBD standard was being attained. In this study, the distribution of the % fines was determined to be log-normal, so medians and quartiles were used to define the central tendencies of the data. The fine sediment benchmark used to determine impairment was the 75th percentile of the %fines measured at reference sites in the San Juan and Animas Rivers (29.5 percent fines). The median value for % fines was determined for each reach (i.e., assessment unit) of concern. If the value (point or median depending on data availability) for % fines for the study reach was below the fine sediment benchmark (i.e., the 75th percentile of the reference condition), the reach was listed as Fully Supporting for Sedimentation/Siltation (SBD). If the median value for % fines for the reach is above the 75th percentile of the reference condition, the reach was listed as Non Supporting for Sedimentation/Siltation (SBD). The median percent fines for this reach was 26 percent. Therefore, Sedimentation/Siltation (Stream Bottom Deposits) will be removed as a cause of non support. See the SWQB website for additional details on the NSL study. The potential for excessive nutrients in the Animas were noted through visual observation during the 2002 study. To address this concern, a workgroup was formed comprised of state and tribal environmental specialist, as well as concerned citizens. The nutrient assessment protocol was performed on 8/25/03 at the site approx one mile above the SJR at Boyd Park. Total nitrogen values were above the ecoregion criteria of 0.42 mg/L in >15% of the samples, the percent DO saturation was greater than 120%, and the ash free dry mass of algal sampling was greater than 5 mg/cm2. The nutrient assessment protocol was also performed on 8/25/03 at the Flora Vista site. The chlorophyll a concentration was greater than 10ug/cm2, the percent DO saturation was greater than 120%, and the ash free dry mass of algal sampling was greater than 5 mg/cm2. Since three or more indicators were present at both sites, nutrients will be added as a cause of non support. There were also two acute sediment toxicity tests (on 4/18/02) with significant effect noted as compared to controls or reference conditions (see http://www.epa.gov/earth1r6/6wq/ecopro/watershd/monitrng/toxnet/nm.pdf). According to the Assessment Protocol, since significant effects were noted in more than one acute test, Sediment Bioassay - Acute will be added as a cause of non support.

2006 Action: A TMDL was prepared for nutrients and fecal coliform. The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. Historic fecal coliform listings will be retained until E. coli data are collected to determine whether there is any impairment of contact uses. Available E.coli data from 2002 - 2006 were assessed. There were 1 of 19 exceedences of the single sample criterion of 410 cfu/100 mL. Therefore, the fecal coliform listing was removed.

2008 Action: The above 2002 toxicity test results were suspected to be false positive in part because there was no information indicating any potential cause of impairment in the chemical data that were concurrently collected during the 2002 survey. Therefore, repeat acute toxicity testing was performed on sediment collected 9/10/07 @ Farmington at the bottom of the assessment unit. After 96 hours of exposure to both Ceriodaphnia dubia & Pimephales promelas, there were no significant effects in either test organisms exposed to sediment collected @ Farmington. Also, during revisions to the 2008 Assessment Protocols, significant effects in acute or chronic sediment toxicity test results were removed as potential causes for listing. Therefore, Sediment Bioassay - Acute was removed as a cause of non support.

2012 Action: This AU was surveyed as part of the 2010 San Juan River watershed study. There were 5 of 32 exceedences of the 410 cfu/100 mL e. coli criterion (including 2 of 13 exceedences at the most downstream station in the AU). A Level II nutrient assessment was performed on this AU because it is borderline between the "wadeable stream" and "non-wadeable river" categories used for assessment, and because it was previously assess for nutrients with the stream protocol during the 2004 cycle. Causal variables TN and TP exceeded their thresholds, as did the chlorophyll response variable. The maximum thermograph temperature was 29.9 degrees C, and 25.0 degrees C was exceeded for > 6 consecutive hours for > 3 consecutive days. Pebble counts were performed at three stations in order to assess for sedimentation using the NSL 2002 method (see 2004 ROD entry above for details). The median percent fines for this reach was 19% sand and fines. The turbidity threshold of 14 NTU was exceeded for greater than the allowable duration of 196 hours. Therefore, this AU remains listed for nutrients (TMDL complete), and temperature, turbidity, and e. coli were added.

2014 Action: The turbidity AP was incorrectly applied during the 2012 listing cycle, as the turbidity AP states that this approach derived from the SEV index will not be applied to stream segments that list both a coldwater and a warmwater designated aquatic life use. Therefore, turbidity was removed.

2016 Action: The San Juan Soil and Conservation District submitted e. coli and nutrient data collected during 2013 - 2014. The current E. coli listing was confirmed (13/49 exceedences of the applicable criterion). Therefore, E. coli remains listed.

Lake Farmington (Beeline Reservoir)
AU:NM-9000.B_006 WQS: 20.6.4.409

1998 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2004 Action: This AU was intensively sampled during the 2002 SJR study. There were no new impairments identified.

2006 Action: Coldwater and Warmwater Aquatic Life, and Municipal Water Supply are existing uses. This is the City of Farmingtons drinking water supply reservoir. Although currently designated by default for livestock watering and wildlife habitat, City of Farmington maintenance staff patrol the shores to discourage or prevent livestock use. This lake is also stocked for fishing. This reservoir needs its own Water Quality Standard segment.

2012 Action: Lake Farmington now has its own WQS segment (20.6.4.409 NMAC). This lake was sampled as part of the 2010 San Juan River watershed survey. This lake has both cold and warmwater uses - warmwater is full support. The applicable coldwater temperature criterion (20 degrees C) was exceeded during the 6/28/10 sampling run Therefore, temperature was added as a cause of impairment. The fish consumption advisory also remains in effect.

2014 Action: Lake Farmington has a segment-specific temperature criterion of 25 degrees C. No temperature measurements from the 2010 survey exceeded this value. Therefore, the temperature listing was removed because it was erroneous.

2016 Action: There is a fish consumption advisory for PCBs. Therefore, PCBS in Fish Tissue was added as a cause of impairment.

HUC: 14080105 - Middle San Juan

Jackson Lake
AU:NM-9000.B_005 WQS: 20.6.4.410

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012.

La Plata R (McDermott Arroyo to So. Ute Indian Tribe bnd)
AU:NM-2402.A_01 WQS: 20.6.4.402

1996 Action: Previously listed for metals (Hg, Se), salinity, plant nutrients and stream bottom deposits. Mercury (0/1) and selenium (0/6) data indicated full support of the fishery use as there were no exceedences of criteria. There have been some old data reports, from 1981 and earlier, of mercury above detection levels. This data are highly questionable. There are no applicable salinity or total dissolved solids criteria for this reach. There are no data to support the listing of stream bottom deposits.

1998 Action: Mercury, selenium, and salinity will be removed as causes of non-support for this reach. The reach continues to be listed as Partially Supported for plant nutrients.

2004 Action: Previously named La Plata River (San Juan River to CO border), this AU was split. This AU was intensively sampled during the 2002 SJR study. The Nutrient Assessment protocol was performed July 2002. This reach was determined to not be nutrient enriched following the level two nutrient assessment analysis. A summary of the nutrient assessment is in the administrative record. Plant nutrients were removed as a cause of non-support. The dissolved oxygen criterion of 6.0 mg/L was not achieved 62% of the time based on a sonde deployed under the bridge near LaPlata. Therefore, dissolved oxygen will be added as a cause of non support. This AU may be placed in Category 5B because sonde data indicates NS for DO using percentages, the grab data indicates FS for DO using percentages, and the sonde data applied to the draft large dataset DO protocol indicates NS for the LaPlata site. There were 2 of 7 exceedences of the single sample fecal coliform criterion of 400 cfu/100 mL. Therefore, fecal coliform will be added as a cause of non support. Benthic macroinvertebrates were collected and pebble counts were performed at two stations along the LaPlata according to our current Stream Bottom Deposit (Sedimentation/siltation) assessment protocol: immediately above the bridge at LaPlata (reference) and at the CO state line. There were 3% fines at the reference site and 2 % fines at the study site. The biological score at the CO border station was 53% of reference due large amount of simulidae in the sample. Therefore, Benthic Macroinvertebrate Bioassessments (Streams) will be added as a cause of non support.

2006 Action: A TMDL was prepared for dissolved oxygen and fecal coliform/E. coli. The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. Historic fecal coliform listings will be retained until E. coli data are collected to determine whether there is any impairment of contact uses.

Available E.coli data from 2002 - 2006 were assessed. There were 3 of 5 exceedences of the single sample criterion of 410 cfu/100 mL. Therefore, the fecal coliform listing was replaced with E. coli.

2012 Action: Name was changed to acknowledge tribal portion. This AU was surveyed as part of the 2010 San Juan River watershed study. There were 4 of 16 exceedences of the 410 cfu/100 mL e. coli criterion. The turbidity threshold of 23 NTU was not exceeded for greater than the allowable duration of 72 hours; no other combined turbidity-allowable duration thresholds were exceeded. A Level II nutrient assessment was performed. Causal variables TN and TP exceeded their thresholds, as did the dissolved oxygen response variable (sonde DO data indicate non support, and >25% of grab DO saturation data exceeded 120%). Excessive nutrients are also likely that reason for the high number of simulidae in the 2002 benthic macroinvertebrate sample. Therefore, the response variable DO was replaced with causal variable of nutrients, Benthic Macroinvertebrate Bioassessments was removed, and E. coli (TMDL complete) was retained.

La Plata River (San Juan River to McDermott Arroyo)
AU:NM-2402.A_00 WQS: 20.6.4.402

1996 Action: Previously listed for metals (Hg, Se), salinity, plant nutrients and stream bottom deposits. Mercury (0/1) and selenium (0/6) data indicated full support of the fishery use as there were no exceedences of criteria. There have been some old data reports, from 1981 and earlier, of mercury above detection levels. This data are highly questionable. There are no applicable salinity or total dissolved solids criteria for this reach. There are no data to support the listing of stream bottom deposits. This is a flow limited river reach.

1998 Action: Mercury, selenium, and salinity will be removed as causes of non-support for this reach. The reach continues to be listed as Partially Supported for plant nutrients.

2004 Action: Previously named La Plata River (San Juan River to CO border), this AU was split. This AU was intensively sampled during the 2002 SJR study. The Nutrient Assessment protocol was performed July 2002. This reach was determined to not be nutrient enriched following the level two nutrient assessment analysis. A summary of the nutrient assessment is in the administrative record. Plant nutrients were removed as a cause of non-support. There were 3 of 4 exceedences of the single sample fecal coliform criterion of 400 cfu/100 mL. Therefore, fecal coliform will be added as a cause of non support. The dissolved oxygen criterion of 6.0 mg/L was not achieved 22% of the time based on a sonde deployed near the USGS gage near Farmington. Therefore, dissolved oxygen will be added as a cause of non support. This AU may be placed in Category 5B because sonde data indicates NS for DO using percentages, the grab data indicates FS for DO using percentages, and the sonde data applied to the draft large dataset DO protocol indicates FS for the Farmington site. Also, this lower portion of the LaPlata is likely misclassified as a marginal coldwater fishery. Benthic macroinvertebrates were collected and pebble counts were performed at three stations along the LaPlata according to our current Stream Bottom Deposit (Sedimentation/siltation) assessment protocol: immediately above the bridge at LaPlata (reference) and near the USGS gage near Farmington. There was a 1000% change in percent fines (3% at the reference site vs. 30% at the study site). The biological score was 46% of reference. Therefore, Sedimentation/Siltation will be added as a cause of non support.

2006 Action: TMDLs were prepared for sedimentation/siltation and fecal coliform/ E. coli. The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. Historic fecal

coliform listings will be retained until E. coli data are collected to determine whether there is any impairment of contact uses. Available E.coli data from 2002 - 2006 were assessed. There were 1 of 7 exceedences of the single sample criterion of 410 cfu/100 mL. Therefore, the fecal coliform listing was removed.

2012 Action: This AU was surveyed as part of the 2010 San Juan River watershed study. There were 3 of 8 exceedences of the 410 cfu/100 mL e. coli criterion. The turbidity threshold of 23 NTU was exceeded for greater than the allowable duration of 72 hours. There are insufficient data to re-assess for DO (equipment failure resulting in <72 hours of DO data) and sedimentation/siltation. Therefore, DO and sedimentation/siltation were retained, and E. coli (TMDL complete) and turbidity were added. Application of the SWQB Hydrology Protocol (survey date 6/17/09) indicate this assessment unit is 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).

2014 Action: The turbidity AP was incorrectly applied during the 2012 listing cycle, as the turbidity AP states that this approach derived from the SEV index will not be applied to stream segments that is assigned both a coldwater and a warmwater designated aquatic life use. Therefore, turbidity was removed. In addition, the low flow alteration cause of impairment was removed, and the missing 2004 sedimentation TMDL probable sources list was added back.

San Juan River (Navajo bnd at Hogback to Animas River)
AU:NM-2401_10 WQS: 20.6.4.401

1996 Action: Previously listed for metals (Hg, Se), salinity and stream bottom deposits. Mercury (0/9) and selenium (0/13, within 22 years) data indicated full support of the fishery use as there were no exceedences of criteria. While there are no salinity (total dissolved solids) criteria for the reach, there were no exceedences of the total dissolved solids criteria for the Colorado River at Hoover Dam (723 mg/l).

1998 Action: Mercury, selenium, and salinity will be removed as causes of non-support for this reach. The reach continues to be listed as Partially Supported for stream bottom deposits.

2002 Action: Mercury in Fish Tissue (downstream of Hammond Diversion) was added as a Probable Cause because there are fish consumption guidelines from Hammond Diversion to the Hogback.

2004 Action: This AU was intensively sampled during the 2002 SJR study. In 1992, a thermograph has deployed near the "SJR at Farmington" USGS gage as part of the SJRIP study. The maximum temperature for the available period of record did not exceed the criterion of 32.2 degrees C. The USBOR provided fecal coliform data from 2000 and 2001. USGS fecal coliform data were also available from 2002 and 2003. There were 9 of 26 (35%) exceedences of the single sample fecal coliform criterion of 400 cfu/100 mL. Therefore, fecal coliform will be listed as a cause of non support. In addition, the USBOR in conjunction with the San Juan Watershed Group provided E.coli data collected in 2003. E. coli data were also collected during the 2002 SWQB intensive survey. There were 13 of 40 (33%) exceedences of the proposed E. coli criterion of 410/100 mL in this combined E. coli data set. This AU has a historic listing for stream bottom deposits. SWQB and the USDA National Sedimentation Lab (NSL) implemented a special study to determine whether or not the AU is impaired due to excessive sedimentation (i.e., stream bottom deposits). Percent (%) fines data was the primary dataset used to determine whether or not the narrative SBD standard was being attained. In this study, the distribution of the % fines was determined to be log-normal, so medians and quartiles were used to define the central

tendencies of the data. The fine sediment benchmark used to determine impairment was the 75th percentile of the %fines measured at reference sites in the San Juan and Animas Rivers (29.5 percent fines). The median value for % fines was determined for each reach (i.e., assessment unit) of concern. If the value (point or median depending on data availability) for % fines for the study reach was below the fine sediment benchmark (i.e., the 75th percentile of the reference condition), the reach was listed as Fully Supporting for Sedimentation/Siltation (SBD). If the median value for % fines for the reach is above the 75th percentile of the reference condition, the reach was listed as Non Supporting for Sedimentation/Siltation (SBD). The median percent fines for this reach was 23 percent. Therefore, Sedimentation/Siltation (Stream Bottom Deposits) will be removed as a cause of non support. See the SWQB website for additional details on the NSL study. This AU remains on the fish consumption guidelines for Mercury in Fish Tissue as these guidelines have not been updated since the last listing cycle.

2006 Action: A TMDL was prepared for fecal coliform/ E. coli. The associated water quality criteria for contact use support was changed from fecal coliform to E. coli during the 2005 triennial review. Historic fecal coliform listings will be retained until E. coli data are collected to determine whether there is any impairment of contact uses. Available E.coli data from 2002 - 2006 were assessed. There were 13 of 59 exceedences of the single sample criterion of 410 cfu/100 mL. Therefore, the fecal coliform listing was replaced with E. coli.

2010 Action: There is no longer a fish consumption advisory for mercury. Therefore, Mercury in Fish Tissue was removed as a cause of impairment.

2012 Action: This AU was surveyed as part of the 2010 San Juan River watershed study. There were 7 of 52 exceedences of the 410 cfu/100 mL e. coli criterion. The turbidity threshold of 23 NTU was exceeded for greater than the allowable duration of 72 hours. Pebble counts were performed at three stations in order to assess for sedimentation using the NSL 2002 method (see 2004 ROD entry above for details). The median percent fines for this reach was 56% sand and fines. Additional data is warranted to confirm the listing before proceeding with TMDL development for this reach. Therefore, this AU remains listed for E. coli (TMDL complete), and sedimentation/siltation (5C) and turbidity were added.

2014 Action: Additional %sand&fines data were collected in 2012 in order to re-assess using both the NSL large river and 2014 sedimentation AP approaches. The mean and median %sand&fines 2010-2012 data was 34% for both. This is above the NSL threshold of 29.5% but below the 2014 sedimentation AP thresholds of 37% and 74% for Foothills and Xeric, respectively. The turbidity AP was incorrectly applied during the 2012 listing cycle, as the turbidity AP states that this approach derived from the SEV index will not be applied to stream segments that list both a coldwater and a warmwater designated aquatic life use. Therefore, turbidity was removed, and sedimentation remains a cause of impairment (5C).

2016 Action: The San Juan Soil and Conservation District submitted e. coli and nutrient data collected during 2013 - 2014. The current E. coli listing was confirmed (24/29 exceedences of the applicable criterion). Therefore, E. coli remains listed.

HUC: 15020003 - Carrizo Wash

Quemado Lake
AU:NM-9000.B_096 WQS: 20.6.4.453

2000 Action: Quemado Lake was characterized (in a report titled, New Mexico Clean Lakes Program, Classification Phase I, Final Report, September 1982) by stratification and hypolimnetic dissolved oxygen depletion during the summer. Nitrogen was solely limiting. Though the blue-green algae were present, they did not dominate the phytoplankton. Total phosphorus concentration peaked at .230 mgP/l. Quemado Lake gives the most overwhelming aesthetic indication of impaired water quality due to obnoxious odors and unsightly stagnant masses produced by the death of surface films of algae, phytoplankton and macrophytes. Although the data for this lake is dated, it is still listed in the State's 305(b) Report as impaired for nuisance algae, nutrients and siltation and therefore will be listed on the 303(d) List until new data are collected to either verify or refute the listing.

2006 Action: This reservoir was intensively sampled in 2004. There were no exceedences of chemical WQ parameters. There is no documentation or justification for the historic sedimentation or nutrient listings as protocols have not been developed to determine these impairments for lakes, so these impairment listings were removed.

2012 Action: In 2004, there was only one sampling event (n=1). This is insufficient to determine use support, so all uses changed to Not Assessed.

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012. This AU was surveyed during the 2011 Puerco/Zuni survey. Both causal and response variables related to nutrient enrichment were present. Therefore, nutrients was added as a cause of impairment.

HUC: 15020004 - Zuni

McGaffey Lake
AU:NM-9000.B_083 WQS: 20.6.4.98

2000 Action: McGaffey Lake was characterized from April 11, 1990 to April 4, 1991 (in a report titled, New Mexico Clean Lakes Program, Phase I: Diagnostic - Feasibility Study for the Restoration and Watershed Management of McGaffey Lake, McKinley County, New Mexico, October 1994). McGaffey Lake is highly productive as evidenced by extensive macrophyte beds, high phytoplankton density and occasional fish die-offs. McGaffey Lake's ephemeral tributary system is an inadequate, unreliable and unpredictable water source. Prolonged drought during the period when the fieldwork was conducted precluded making the direct measurements necessary to construct nutrient and hydrologic budgets. Analyses of sediment, however, revealed that high concentrations of nutrients are present in lake bottom deposits. Thus internal nutrient loading, i.e. intermittent recycling of nutrients into the water column from the sediments, probably accounts for much of the lake's extreme eutrophic condition. The investigators obtained samples during a snowmelt runoff event in which a large amount of soil was washed into the lake from the adjacent road and parking area. These data indicate that direct overland runoff may also contribute importantly to McGaffey Lake's annual nutrient supply. Although the data for this lake is dated, it is still listed in the State's 305(b) Report as impaired for pH, nutrients, nuisance algae and siltation and

therefore will be listed on the 303(d) List until new data are collected to either verify or refute the listing.

2008 Action: The sedimentation/siltation listing was removed because there were no data or applicable assessment protocols available to make this determination.

2014 Action: This AU was surveyed during the 2011 Puerco/Zuni survey. There were 0/4 grab pH exceedences. The nutrient assessment was incomplete due to rejected data. Therefore, pH was removed and nutrients remains as a cause of impairment. Additional data are needed to confirm nutrient listing.

Ramah Reservoir
AU:NM-9000.B_110 WQS: 20.6.4.452

2014 Action: This AU was surveyed during the 2011 Puerco/Zuni survey. Both causal and response variables related to nutrient enrichment were present. Therefore, nutrients was added as a cause of impairment.

Rio Nutria (Tampico Draw to headwaters)
AU:NM-9000.A_033 WQS: 20.6.4.451

2014 Action: This AU was visited during the 2011 Puerco/Zuni survey. No flowing water or fish in pools was observed. Coolwater may not be attainable -- WQS under review.

Rio Nutria (Zuni Pueblo bnd to Tampico Draw)
AU:NM-9000.A_029 WQS: 20.6.4.451

1996 Action: Listed for mercury chronic (Hg). Water quality data from USGS 09386900 (Rio Nutria Near Ramah, NM) collected from 1988 to 1992 was assessed. There were 4 of 22 exceedences of the total mercury chronic screening criterion of 0.018 ug/L (=1.5 x 0.012 ug/L). The rest were non detects with a detection limit of 0.1 ug/L.

1998 Action: This reach will remain on the list as Partially Supporting its use until this metals listing can be verified.

2002 Action: Name was revised to remove portion under tribal jurisdiction.

2006 Action: This AU was intensively sampled in 2004, and split at Tampico Draw because the stream may be ephemeral above Tampico Draw. There were no exceedences of any WQS criteria monitored (including 0 of 8 for mercury). SWQB contracted with the USGS for mercury low level mercury monitoring (MDL 0.02 ug/L). There were 0 of 2 mercury exceedences using USGS data. Therefore, mercury was removed as a cause of non support. Warmwater Aquatic Life is an existing use. This reach contains Zuni Bluehead Suckers.

2012 Action: Application of the SWQB Hydrology Protocol (survey date 5/20/09) indicate this assessment unit is perennial (Hydrology Protocol score of 32.0 but 7.1% no flow days at USGS gage 09386900 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

2014 Action: This AU was sampled during the 2011 Puerco/Zuni survey. No impairments were identified.

HUC: 15020006 - Upper Puerco

Puerco River (non-tribal AZ border to Gallup WWTP)
AU:NM-9000.A_200 WQS: 20.6.4.99

2014 Action: This AU was sampled during the 2011 Puerco/Zuni survey. There were 3/6 exceedencces of both the applicable acute and chronic ammonia WQC.Therefore, ammonia was added as a cause of impairment.

HUC: 15040001 - Upper Gila

Beaver Creek (Perennial prt Taylor Ck to Mule Canyon)
AU:NM-2503_25 WQS: 20.6.4.503

2014 Action: This AU was sampled during the 2011 Gila survey. The maximum recorded temperature was 29.0 degrees C. The benthic macroinvertebrate score was 38.92. Therefore, this AU is listed for temperature (5B - the temperature WQC is under review). A second benthic macroinvertebrate sample is needed within 5 years to complete assessment of the narrative biological WQS.

2016 Action: AU name corrected to "Beaver Creek (Perennial reaches Taylor Ck to Mule Canyon)".

Black Canyon Creek (East Fork Gila River to headwaters)
AU:NM-2503_21 WQS: 20.6.4.503

1996 Action: Previously listed for metals (Al, chronic), temperature, and total phosphorus. Limited temperature data are available but do support a listing of not supported at stations GRB503.007523 and 7525. Stations 09565, 07543, and 09563 are Full Support, Impacts Observed. For total phosphorus, 1992 data indicated Full Support, Impacts Observed (1/1 at two stations). More recent data indicated full support (0/9 at two stations). For Al, a 0/6 ratio of exceedences to samples at two sites indicates full support.

1998 Action: Aluminum and phosphorus were removed as causes of non-support. Temperature was retained as a cause of non-support.

2002 Action: This assessment unit was intensively survey in 2000. There were 1 of 8 pH exceedences and 1 of 8 turbidity exceedences detected during this survey. A thermograph was deployed from 4/28/00 until 10/3/00 to determine the level of temperature impairment and to generate data for the SSTEMP model. The temperature criterion was exceeded 37% of the time. Temperature was retained as a cause of Non Support. A TMDL was prepared for temperature. There were 3 of 6 TOC exceedences. In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not

be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support.

2014 Action: This AU was surveyed as part of the Gila 2011 survey. The maximum recorded temperature was 26.2 degrees C. The benthic macroinvertebrate score was 51.87. Impairment to benthic macroinvertebrates is a response variable and likely due to excessive temperature. Therefore, the temperature listing remains (WQC is under review).

Canyon Creek (Middle Fork Gila River to headwaters)
AU:NM-2503_43 WQS: 20.6.4.503

1996 Action: Previously listed for plant nutrients. The phosphorus criteria was exceeded in on sample from 1992, (1/1, station GRB503.009571), indicating Full Support, Impacts Observed. Total phosphorus will be listed in the 1998 305(b) Report as FSIO.

1998 Action: Plant nutrients and unknown were retained as causes of non-support.

2002 Action: This assessment unit was intensively survey in 2000 and 2001. There were exceedences of 0.6%, 13.6%, 3%, and 53.3% of the temperature, dissolved oxygen, pH, and turbidity criteria, respectively, measured by YSI sondes. Turbidity was added as a cause of Non Support. A TMDL was prepared turbidity. A level two nutrient assessment was performed in 2001. The results of the assessment are in the administrative record. Plant Nutrients was retained as a cause of Non Support. A TMDL was prepared for plant nutrients.

2008 Action: The WQS reference was erroneously noted as 20.6.4.97 on the 2006-2008 Integrated List, even thought the AU was assessed against the correct WQS reference of 20.6.4.503. The WQS reference on the 2008-2010 Integrated List was corrected and is now noted as 20.6.4.503.

Diamond Ck (Perennial prt Bailey Ck to headwaters)
AU:NM-2503_24 WQS: 20.6.4.503

2014 Action: This AU was surveyed as part of the Gila 2011 survey. No impairments were identified.

Diamond Ck (Perennial prt East Fork Gila R to Bailey Ck)
AU:NM-2503_22 WQS: 20.6.4.503

1996 Action: Previously listed for temperature and total phosphorus. Values for both parameters are limited to one sample. Because of this limited data set the listing will be changed to Full Support, Impacts Observed based on 1/1 ratios at the stations.

1998 Action: The reach was removed from the 303(d) list and will be listed as Full Support, Impacts Observed on the 305(b) list.

2002 Action: According to SWQB staff comments, this reach goes dry. Therefore, the only designated uses that apply are livestock watering and wildlife habitat.

2006 Action: WQS was changed to 20.6.4.98.

2014 Action: Previously named Diamond Creek (East Fork Gila to headwaters), the AU was split to acknowledge change in character and fish species near Bailey Creek. Per the USFS, there is a perennial reach downstream of the Links Ranch, but it is more of a warm/cool water reach with species such as headwater chub and longfin dace. The WQS citation was changed to 20.6.4.503 to acknowledge perennial reaches. 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:NM-2503_20 WQS: 20.6.4.503

1996 Action: Previously listed as "East Fork of the Gila River from the confluence with West Fork to the confluence of Beaver and Taylor Creek" and listed for metals (Al), total ammonia, pH, total phosphorus, and total organic carbon. While aluminum exceeded the chronic screening level at station GRB503.007540 (2/3), there were no acute or chronic criteria exceedences. For total ammonia, the entire reach should be upgraded to full support based on 0/24 exceedences from four stations over ten years. The pH listing should be limited to station GRB503.007547 with 2/9 exceedences within the last five years. All other stations are fully supporting for pH. The total phosphorus listing of not supporting is verified at station 7540 (5/9). Station 7541 is Full Support, Impacts Observed and all other stations are full support. Total organic carbon is not supported at station 7540, but is full support at station 7547. A biological assessment was conducted in 1996 by NMED. The biological assessment of two stations (GRB503.007540 and GRB 503.007547) found that the fishery use was fully supported (100% and 96% of reference).

1998 Action: Ammonia was removed as a cause of non-support. Based on the biological data pH, phosphorus and total organic carbon were removed as causes of non-support. Aluminum was retained as a cause of non-support.

2002 Action: This assessment unit was intensively survey in 1999 and 2000. There were 1 of 8 turbidity exceedences and 2 of 8 aluminum exceedences. Aluminum was retained as a cause of Non Support. A TMDL was written for chronic aluminum.

2008 Action: Name was changed from Gila River (East Fork) to East Fork Gila River (Gila River to headwaters).

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. There were 2 of 8 exceedences of the chronic aluminum criterion. An EMAP bio/hab survey was performed at station East Fork Gila above West Fork. The M-SCI score of 53.37 was very near the threshold value of 56.70, with 4 percent fines. Therefore, aluminum was retained as a cause of impairment, and Benthic-Macroinvertebrate Bioassessments (Streams) was added as a cause of non support.

2014 Action: This AU was partially sampled as part of the Gila 2011 survey because it was part of the 2007 survey. The benthic macroinvertebrate M-SCI sore was 53.58. There were 1/5 exceedences of the hardness-dependent chronic total recoverable aluminum WQC, and 0/5 of the acute. Therefore, the benthic macroinvertebrate impairment listing is confirmed, and the aluminum listing was removed.

Gila River (Mogollon Ck to East and West Forks of Gila R)
AU:NM-2502.A_30 WQS: 20.6.4.502

1996 Action: Previously listed under as "Gila River (Mogollon Creek to Gila Hot Springs)." Additional data indicated turbidity (4/9) should be added to this reach for station GRB502.008055.

1998 Action: Turbidity was added as a cause of non-support.

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. The segment specific criterion of 28 degrees C was exceeded at the thermograph deployed at station NM 211 (max temp 29 degrees C). Therefore, temperature was added as a cause of impairment. Revision of WQ criterion for temperature to 29 degrees C (coolwater) may be warranted.

2012 Action: Name changed to Gila River (Mogollon Ck to East and West Forks of Gila R).

2014 Action: This station was partially sampled during the Gila 2011 survey because it was part of the 2007 survey. The max temperature recorded via thermograph was 29.1 degrees C. Therefore, temperature remainslisted (IR Cat 5B --the WQS in under review).

Gilita Creek (Middle Fork Gila R to Willow Creek)
AU:NM-2503_45 WQS: 20.6.4.503

1996 Action: Previously listed as "Gilita Creek from the confluence with Snow Canyon Creek to Willow Creek" and listed for metals (Al), temperature, and total phosphorus. Two stations define this reach. There was one exceedence the chronic screening level for aluminum but no exceedences of the acute or chronic criteria, indicating Full Support, Impacts Observed. The temperature listing should be changed to full support for station 7547 (0/6) and not supported at station 9587 (2/6). Total phosphorus should be upgraded to Full Support, Impacts Observed at station 7545 and full support (0/9) at station 9587. A biological assessment was conducted in 1996 by NMED. The assessment found full support of the fishery use (100% of reference at station GRB503.007545).

1998 Action: Based on the biological assessment the reach was removed from the 303(d) list. The reach will be placed on the 305(b) list as Full Support, Impacts Observed for aluminum.

2002 Action: This assessment unit was intensively survey in 2000. The temperature criterion was exceeded 17.8% of the time according to the thermograph data. Temperature was added as a cause of Non Support. Chronic aluminum was exceeded 3 of 8 times during the survey. Chronic aluminum was added as a cause of Non Support. pH measurements were outside of the water quality standard range of 6.6-9.0 during 1 of 8 measurements. Turbidity exceeded the 10 NTU water quality standard during 1 of 8 measuremetns. These exceedences led to a conclusion of Full Support, Impacts

Observed for both.

2014 Action: This AU was sampled during the Gila 2011 survey. The max thermograph temperature was 27.7 degrees C. There were 0 of 3 exceedences of the hardness-dependent total Al WQC. Therefore, aluminum was removed and temperature remains.

Iron Creek (Middle Fork Gila R to headwaters)
AU:NM-2503_44 WQS: 20.6.4.503

1996 Action: Previously listed for total phosphorus and temperature. Two stations, GRB503.009577 and 9578, define the assessment for this reach. For total phosphorus, these stations have exceedence ratios of 0/8 and 0/9 respectively. Total phosphorus is full supported for this reach. For temperature, the exceedence ratios are 0/6 and 0/6 within five years. This reach is full support for temperature. A 1996 biological assessment found full support of the fishery use (96% of reference at station GRB503.009577).

1998 Action: The reach was removed from the 303(d) list.

2014 Action: This station was a secondary site during the Gila 2011 survey. The maximum thermograph temperature was 24.15 degrees C. Therefore, temperature was added as a cause of impairment.

2016 Action: Temperature impairment was erroneously not entered into the database during 2014 cycle (see 2014 ACTION). Corrected. WQS is under review.

Lake Roberts
AU:NM-2504_20 WQS: 20.6.4.504

2002 Action: Listed for temperature, pH, and nutrients based on the 1996 lakes study.

2012 Action: In reviewing data collected in 1996 for the 2011 survey, it was determined that the previous listings were erroneous. This waterbody should be listed as Full Support based on data from three 1996 sampling events.

2014 Action: This AU was surveyed during the 2011 Gila survey. Both causal and response variables related to nutrient enrichment were present. Therefore, nutrients was added as a cause of impairment.

2016 Action: There is a fish consumption advisory for mercury. Therefore, Mercury in Fish Tissue was added as a cause of impairment.

Middle Fork Gila River (Canyon Creek to headwaters)
AU:NM-2503_41 WQS: 20.6.4.503

2014 Action: This AU is a result of "Middle Fork Gila River (Gila River to headwaters)" name change to the correct hydrologic description, and split at Canyon Creek. The maximum thermograph temperature was 27.9 degrees C. There were no exceedences of the applicable hardness-dependent total recoverable hardness WQC. Therefore, the

temperature listing remains, and turbidity and aluminum were removed. Temperature WQC is under review.

Middle Fork Gila River (West Fork Gila R to Canyon Creek)
AU:NM-2503_40 WQS: 20.6.4.503

1996 Action: Previously listed as "Middle Fork of the Gila River from the mouth on the West Fork of the Gila River to the USFS Ranger Station" and listed for metals (Al), temperature, turbidity, and total phosphorus. There were no exceedences of acute or chronic criteria for aluminum though the chronic screening level was exceeded 1 of 3 times at station GRB503.009560, indicating Full Support, Impacts Observed. For temperature, exceedence ratios at stations 9580 (1/6) and 9575 (0/6) support changing the listings to Full Support, Impacts Observed and full support respectively. Station 9560 has an exceedences ratio of 4/9 that would make it not supporting for temperature. Turbidity is Full Support, Impacts Observed at station 9560 and full support at stations 9575 and 9580. Total phosphorus is full support at all stations with a cumulative five year ratio of 0/27 at three stations. A biological assessment was conducted in 1996 by NMED. The biological assessment of three stations (GRB503.009580, GRB503.009575 and GRB503.009560) found full support of the fishery use (100% of reference at all sites).

1998 Action: Based on the biological information the reach was removed from the 303(d) list. The reach will go to the 305(b) list as Full Support, Impacts Observed for aluminum.

2002 Action: This assessment unit was intensively survey in 2000. The temperature criterion was exceeded 67% and 22.8% of the time according to thermographs at two stations. Temperature was added as a cause on Non Support.

2008 Action: Name was changed from Gila River (Middle Fork) to Middle Fork Gila River (Gila River to headwaters).

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. The default criterion of 20 degrees C plus 4 degrees C was exceeded at the thermograph deployed above the confluence with the West Fork (max temp 32.0 degrees C). There were also 3 of 8 exceedences of the chronic aluminum criterion. There were 3 of 8 exceedences of the interim turbidity numeric translator of 10 NTU. Therefore, temperature was retained, and aluminum and turbidity were added as a cause of impairment. WQS 20.6.4.503 may need revision. Benthic macroinvertebrate data were not available to confirm the turbidity listing.

2014 Action: This AU name was changed from "Middle Fork Gila River (Gila River to headwaters)" to correct hydrologic description error. This AU was partial sampled during the Gila 2011 survey since it was part of the Gila 2007 survey. The 4T3 of 20 degrees C was exceeded. Turbidity data did not exceed the applicable threshold and associated duration. There were no exceedences of the applicable hardness-dependent total recoverable hardness WQC. Therefore, the temperature listing remains, and turbidity and aluminum were removed. Temperature WQC is under review.

Mogollon Creek (Perennial prt USGS Gage 09430600 to hwtrs)
AU:NM-2503_02 WQS: 20.6.4.503

1996 Action: Previously listed for metals (Pb, Al) and stream bottom deposits. This reach is defined by USGS station 09430600. Aluminum at this station has a chronic screening level ratio of 5/14 making it not supporting for aluminum. At a hardness of 40 mg/l the chronic screening level was exceeded 2/16 with no exceedences of the acute level.

1998 Action: Aluminum, lead and stream bottom deposits were retained as causes of non-support.

2002 Action: This assessment unit was surveyed in 2001. Access to historic sampling sites was limited. A TMDL was written for chronic aluminum using historic STORET data. The sample station was dry on several occasions. Historic data indicated 0 of 7 lead exceedences while flowing. Lead was removed as a cause of Non Support. Historic and current water quality data do not indicate impairment due to stream bottom deposits narrative criteria. Stream bottom deposits was removed as a cause of Non Support.

2016 Action: The name was revised and mileage corrected. GIS line was split.

Sapillo Creek (Gila River to Lake Roberts)
AU:NM-2503_04 WQS: 20.6.4.503

1996 Action: Previously listed for nuisance algae. Three stations, GRB503.006530, 006520 and 006540 define the assessment of this reach. Total phosphorus data indicated full support (0/3, and 0/9) at stations 006520 and 006540 and Full Support, Impacts Observed (1/9) at station GRB503.006530. A 1996 biological assessment found that nutrients and nuisance algae were not a problem (Hilsenhoff Biotic Index of 4.55), but also found partial support of the fishery use (65% of reference at station GRB503.006530).

1998 Action: Nuisance algae were removed as causes of non-support. Biological impairment and unknown were added as causes of non-support.

2002 Action: This assessment unit was surveyed in 2001. Unknown was removed as a cause and replaced with the following results. There were 4 of 8 TOC exceedences of the criterion, so a TMDL was prepared. In 2002, The WQCC deleted the total organic carbon criterion (20.6.4.900C of NMAC) for the high quality coldwater fishery designated use. The TOC criterion was adopted in 1973. Before then, the water quality standards contained an ambient narrative criterion for combined COD/BOD. This criterion, adopted originally in 1967, stated that "materials in solution and in suspension which exert an oxygen demand, shall not be present in concentrations sufficient to reduce the dissolved oxygen in the stream to 50 percent of the saturation concentration or to 6.0 mg/l" for trout-producing and warm-water fish producing waters. In 1973, the Commission replaced this narrative criterion with the current numeric criterion for TOC, applicable to the high quality coldwater fishery designated use. Since then, this criterion has been rendered unnecessary. Over the years, the Commission has adopted use-specific and segment-specific dissolved oxygen criteria that offer a higher degree of protection than the TOC criterion. EPA considers the TOC criterion to be an artifact from an earlier time. Indeed, only one other state-Louisiana-still maintains a TOC criterion, and that number is used only as a discharge limitation for effluents and storm water discharges. TOC was removed as a cause of Non Support. Examination of benthic macroinvertebrate data collected in 2001 did not indicate any biological impairment. Biological impairment was removed as a cause of Non Support. Sonde data collected in 2001 indicated impairment for turbidity. Turbidity was added as a cause of Non Support. A TMDL for turbidity was prepared.

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. There were no identified impairments. There was one exceedence of the interim turbidity translator of 10 NTU at each of the two survey stations. Therefore, turbidity was removed as a cause of non support according to the 2010 Assessment Protocols.

Snow Canyon Ck (Perennial prt Gilita Ck to Snow Lake)
AU:NM-2503_46 WQS: 20.6.4.99

1996 Action: Previously listed for metals (Al), temperature, dissolved oxygen, total phosphorus, stream bottom deposits and turbidity. All assessments were based on single data points. Because of the limited data available this listing will be changed to Full Support, Impacts Observed for all parameters, except stream bottom deposits.

1998 Action: Aluminum, temperature, dissolved oxygen, total phosphorus and turbidity were removed as causes of non-support. Stream bottom deposits was retained as a cause of non-support.

2002 Action: This assessment unit was surveyed in 2001. There were 1 of 8 aluminum and 1 of 8 lead exceedences recorded. The channel was dry on 05/31/01 and 06/18/01. Historic and current water quality data do not indicate impairment due to stream bottom deposits narrative criteria. Stream bottom deposits was removed as a cause of Non Support.

2004 Action: Due to the above comment, the applicable water quality standards were reduced to Livestock Watering and Wildlife Habitat because the channel is ephemeral.

2006 Action: WQS were changed to 20.6.4.97.

2008 Action: This AU is likely ephemeral, but EPA has not yet approved 20.6.4.97 and UAAs have not been prepared at the time of this writing (6/4/08). Therefore, this AU will be noted as WQS Reference 20.6.4.98 for now.

2014 Action: This reach was surveyed as a lake output during the 2011 Gila survey. There is a short, perennial reach that exists due to dam leakage only. The AU is noted as 20.6.4.99 with an existing ALU of coldwater to match the source of this flow (Snow Lake, WQS Citation 20.6.4.504).

Snow Lake
AU:NM-2504_40 WQS: 20.6.4.504

2014 Action: This AU was surveyed during the 2011 Gila survey. Both causal and response variables related to nutrient enrichment were present. Therefore, nutrients was added as a cause of impairment.

2016 Action: There were 2 of 4 pH measurements greater than 8.8 during the 2011 survey. Therefore, pH was added as a cause of impairment. This was missed during the 2014 listing cycle due to a transcription error.

Taylor Creek (Perennial reaches Beaver Creek to headwaters)
AU:NM-2503_23 WQS: 20.6.4.503

1996 Action: Previously listed for turbidity, temperature and metals (Al, chronic). For turbidity, a 0/18 ratio of exceedences to samples within the last five years supports upgrading the nonsupport listing for turbidity to full support. Temperature data over the last the years indicates non-support (6/11 and 9/15). Aluminum data also indicates non-

support (2/3 and 1/3). Biological criteria at station GRB503.007550, FSIO 68% of the reference site.

1998 Action: Turbidity was removed as a cause of non-support. Temperature and metals were retained as causes of non-support. Biological criteria at station GRB503.007550, FSIO 68% of the reference site will be listed in the 1998 305(b) Report.

2002 Action: This assessment unit was surveyed in 2001. The temperature criterion was exceeded 51.6% of the time according to the thermograph data. Temperature was retained as a cause of Non Support. Chronic aluminum was exceeded 3 of 8 times during the survey. Chronic aluminum was retained as a cause of Non Support. TMDLs were written for temperature and chronic aluminum. The turbidity criterion was exceeded 3 of 8 times during the survey. Turbidity was added as a cause of Non Support.

2014 Action: Taylor Creek was previously two AUs, split at Wall Lake. AU NM-2503_24 Taylor Creek (Perennial reach above Wall Lake and AU: NM-2503_23 Taylor Creek (Beaver Creek to Wall Lake) were merged. During a large storm event in 2000, Wall Lake was completely filled with sediment. Since this event, NM Game and Fish has given up their lease. The filled-in lake bed is now privately-owned, and there are no plans for dredging or maintenance. This feature is no longer a viable waterbody, and is not a significant or publicly-owned. Therefore, Wall Lake was removed from the Integrated List, and the AU split on Taylor Creek at Wall Lake was removed as well.

This AU was sampled during the 2011 Gila survey. The max temperature was 27.95 degrees C. Both cause (TN/TP) and response (DO) variables indicted nutrient impairment.There were 1/4 exceedences of the hardness-dependent total recoverable aluminum criteria. The turbidity SEV numeric thresholds were not exceeded. Therefore, aluminum and turbidity were removed, temperature remains, and nutrients was added (5C - chlorophyll data are needed to confirm). Temperature WQC is under review.

Turkey Creek (Gila River to headwaters)
AU:NM-2503_03 WQS: 20.6.4.503

1996 Action: Previously listed for temperature. Data are from 1992 and 1975. The exceedence ratio was 1/1 in 1992 and 0/1 in 1975. The reach is Full Support, Impacts Observed. Turkey creek was sampled for biological assessment in 1992. It was selected as the reference site for its high quality habitat.

1998 Action: The reach was removed the 303(d) list. It will be added to the 305(b) list as Full Support, Impacts Observed for temperature.

2002 Action: This assessment unit was surveyed in 2000. The temperature criterion was exceeded 45% of the time according to the thermograph data. Temperature was added as a cause of Non Support. The dissolved oxygen criterion was exceeded 2 of 8 times during the survey. Dissolved oxygen was added as a cause of Non Support.

2014 Action: This AU was visited during the 2011 Gila survey. Access is difficult -- limited sampling. The max temerature was 28.2 degreec C. The minimum sonde DO value was 7.78 mg/L. Therefore, DO was removed and temperature remains as a cause of impairment (5B - WQC is under review).

West Fork Gila R (East Fork to Middle Fork)
AU:NM-2503_10 WQS: 20.6.4.503

1996 Action: Previously listed as "West Fork of the Gila River from the confluence with the East Fork of the Gila River to above the Gila Cliff Dwellings" and listed for turbidity. The turbidity listings should be downgraded to not supported based on 6/9 ratios at two stations. A biological assessment was conducted in 1996 by NMED. The assessment found full support of the fishery use (90% of reference at station GRB503.008055).

1998 Action: Based on the biological data, the reach was removed from the 303(d) list.

2002 Action: This assessment unit was intensively survey in 2000. The temperature criterion was exceeded 33.5% of the time according to the thermograph data. Temperature was added as a cause on Non Support.

2008 Action: AU Name was changed from Gila River (West Fork below Gila Cliff Dwellings) to West Fork Gila R (East Fork to Middle Fork) to clarify the location and acknowledge the entrance of a major tributary. This AU contains the confluence with Cliff Dweller Canyon.

2014 Action: This AU was sampled during the 2011 Gila survey. The max temperature was 28.9 degrees C. The M-SCI bug score was 55.83. Therefore, temperature remains listed (5B - WQC under review). A second benthic macroinvertebrate sample is needed within 5 years to complete assessment of the narrative biological WQS. Wildfire Impacts.

West Fork Gila R (Middle Fork to headwaters)
AU:NM-2503_30 WQS: 20.6.4.503

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. The default criterion of 20 degrees C plus 4 degrees C was exceeded at the thermograph deployed above the confluence with the West Fork (max temp 24.8 degrees C). Therefore, temperature was added as a cause of impairment. WQS 20.6.4.503 needs extensive revision.

2012 Action: Previous AUs from the Middle Fork to Cliff Dweller Canyon and Cliff Dweller Canyon to headwaters were merged because the split at the canyon was deemed unnecessary during 2011 survey planning (SJ).

2014 Action: Thermograph deployed in 2011 confirmed temperature listing (maximum temperature 24.1 degrees C). WQC is under review.

Willow Creek (Gilita Creek to headwaters)
AU:NM-2503_47 WQS: 20.6.4.503

1996 Action: Previously listed for plant nutrients. In 1992 NMED conducted an intensive survey of the upper Gila River watershed and found that nitrogen and phosphorus levels were low. During a 1996 survey, the creek was revisited and visually found to be free from excessive plant nutrients. Based on the professional judgement of NMED staff, plant nutrients are not impairing designated uses.

1998 Action: The reach was removed from the 303(d) list.

2014 Action: The AU was sampled as during the 2011 Gila survey. The maximum temperature was 25.5 degrees C. There were 2/6 exceedences of the hardness-dependent chronic total recoverable aluminum criteria. Therefore, temperature and aluminum were added as causes of impairment.

HUC: 15040002 - Upper Gila-Mangas

Bear Creek (Gila River nr Cliff to headwaters)
AU:NM-2503_01 WQS: 20.6.4.502

1996 Action: Previously listed for metals (Al, Cu, and Zn). There are no dissolved metals data available for this reach.

1998 Action: Aluminum, copper and zinc were retained as causes of non-support.

2002 Action: According to SWQB staff comments, this reach goes dry. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are related to other designated uses, so they do not apply to this reach. A de-list letter was prepared for metals.

2006 Action: WQS was changed to 20.6.4.98. According to SWQB Silver City staff, the Cypress Mine contributed to this stream reach previously going dry. This mine is now closed. SWQB is intensively studying Bear Creek in 2006. The results of this survey are not yet available, and therefore will be reported on the 2008 Integrated List.

Bill Evans Lake
AU:NM-2502.B_00 WQS: 20.6.4.505

2010 Action: This water body was surveyed in 2007. There were 2 of 4 grab temperature measurements that were above the MCWAL criterion on 25 degrees C mg/L. Therefore, temperature was added as a cause of impairment. This criterion was not exceeded in the spring when trout are stocked by NMG&F.

2012 Action: This lake is listed for mercury in fish tissue because there are fish consumption guidelines due to mercury contamination.

2014 Action: This AU was included in a petition to classify or revise WQS for 62 lakes. Amendments were effective June 14, 2012 and EPA approved November 26, 2012. The temperate listing was removed (0/2 exceedences of 29 degrees C).

2016 Action: A PCB fish advisory was added, so PCBs in Fish Tissue was added as a cause of impairment.

Carlisle Creek (Gila River to headwaters)
AU:NM-2502.A_02 WQS: 20.6.4.98

1996 Action: Previously listed as "Carlisle Creek , perennial portions in New Mexico" and listed for metals (Al, Cu, Zn, Cd). There are no metals data, historical or otherwise, to support this listing.

1998 Action: Aluminum, cadmium, copper and zinc were retained as causes of non-support.

2002 Action: According to SWQB staff comments, this reach goes dry. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are related to other designated uses, so they do not apply to this reach. A de-list letter was prepared for metals.

2006 Action: WQS was changed to 20.6.4.97

2008 Action: This AU is likely ephemeral, but EPA has not yet approved 20.6.4.97 and UAAs have not been prepared at the time of this writing (6/4/08). Therefore, this AU will be noted as WQS Reference 20.6.4.98 for now.

Gila River (AZ border to Red Rock)
AU:NM-2501_00 WQS: 20.6.4.501

1996 Action: Previously listed as "Gila River from the NM-AZ border to Mangas Creek" and listed for turbidity and stream bottom deposits. Turbidity data are from two stations both with an exceedence ratios of 2/3. This reach will be listed as not supported for turbidity.

1998 Action: Turbidity and stream bottom deposits were retained as causes of non-support.

2002 Action: The original reach was split into two because it spans two different water quality standard segments. Benthic macroinvertebrate sampling at the station Gila at Lower Box indicated Full Support Impacts Observed for stream bottom deposits (81% of reference biological score). A de-list letter was prepared under the original reach name. Effective February 23, 2000, the criterion of 25 NTU for primary contact recreation was removed. Since the narrative standard for turbidity still applies, SWQB examined benthic macroinvertebrate communities on the reach to determine whether turbidity impairment was occurring. Turbidity was removed as a cause of Non Support. A de-list letter was prepared under the original reach name.

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. The criterion of 32.2 degrees C was exceeded at the thermograph deployed at station Gila River at NM 92 Bridge (max temp 34.6 degrees C). Therefore, temperature was added as a cause of impairment.

Gila River (Mangas Creek to Mogollon Creek)
AU:NM-2502.A_10 WQS: 20.6.4.502

1996 Action: Previously listed for turbidity and stream bottom deposits. There are again very limited data on this reach. There is one station which has been monitored only once in 1992. An exceedence ratio of 3/3 for turbidity will result in a listing of not supported.

1998 Action: Stream bottom deposits and turbidity were retained as causes of non-support.

2002 Action: The original reach was split into two because it spans two different water quality standard segments. Benthic macroinvertebrate sampling at the station Gila below Mogollon Creek indicated Full Support Impacts Observed for stream bottom deposits (81% of reference biological score). A de-list letter was prepared. Effective February 23, 2000, the criterion of 25 NTU for primary contact recreation was removed. Since the narrative standard for turbidity still applies, SWQB examined benthic macroinvertebrate communities on the reach to determine whether turbidity impairment was occurring. Turbidity was removed as a cause of Non Support. A de-list letter was prepared.

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. The segment specific criterion of 28 degrees C was exceeded at the thermograph deployed at station NM 211 (max temp 28.7 degrees C). Therefore, temperature was added as a cause of impairment. Revision of WQ criterion for temperature to 29 degrees C (coolwater) may be warranted.

Gila River (Red Rock to Mangas Creek)
AU:NM-2502.A_00 WQS: 20.6.4.502

1996 Action: Previously listed as "Gila River from the NM-AZ border to Mangas Creek" and listed for turbidity and stream bottom deposits. Turbidity data are from two stations both with an exceedence ratios of 2/3. This reach will be listed as not supported for turbidity.

1998 Action: Turbidity and stream bottom deposits were retained as causes of non-support.

2002 Action: The original reach was split into two because it spans two different water quality standard segments. Benthic macroinvertebrate sampling at the station Gila below Mangus Creek indicated Full Support Impacts Observed for stream bottom deposits (71% of reference biological score). A de-list letter was prepared under the original reach name. Effective February 23, 2000, the criterion of 25 NTU for primary contact recreation was removed. Since the narrative standard for turbidity still applies, SWQB examined benthic macroinvertebrate communities on the reach to determine whether turbidity impairment was occurring. Turbidity was removed as a cause of Non Support. A de-list letter was prepared under the original reach name.

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. The segment specific criterion of 28 degrees C was exceeded at the thermograph deployed below the confluence with Mangas (max temp 30.5 degrees C). A level II nutrient assessment was performed. Excessive total nitrogen, phosphorus, and DO saturation based on grab data were documented. Therefore, temperature and nutrients were added as causes of impairment. Sonde data are needed to confirm the nutrient listing prior to TMDL development.

2014 Action: This AU was partially sampled during the Gila 2011 survey because it was sampled during the 2007 Gila survey. The nutrient assessment was incomplete (NA - leaning FS). There are insufficient data to re-assess temperature. Therefore, both listings remain.

Mangas Creek (Gila River to Mangas Springs)

AU:NM-2502.A_21 WQS: 20.6.4.502

1996 Action: Previously listed for turbidity, stream bottom deposits and plant nutrients. Limited turbidity data 1/3 will result in a change in the listing to Full Support, Impacts Observed for turbidity.

1998 Action: Turbidity was removed as a cause of non-support. Stream bottom deposits and plant nutrients were retained as causes of non-support.

2002 Action: Benthic macroinvertebrate sampling at the station Gila below Mangus Creek indicated Full Support Impacts Observed for stream bottom deposits (59% and 64% of reference biological score depending which reference station was used for comparison). A de-list letter was prepared. A level two nutrient assessment was performed in 2001. The results of the assessment are in the administrative record. Plant Nutrients was retained as a cause of Non Support. A TMDL was prepared for plant nutrients.

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. The segment specific criterion of 28 degrees C was exceeded at the thermograph deployed above the confluence with the Gila River (max temp 28.9 degrees C). A level II nutrient assessment was performed. Excessive total nitrogen, phosphorus, and DO saturation based on grab data were documented. Therefore, nutrients remain, and temperature was added as a cause of impairment.

2014 Action: This AU was partially sampled during the Gila 2011 survey because it was part of the 2007 Gila survey. The nutrient assessment was incomplete (NA - leaning FS). The max themograph temperature was 27.92 degrees C. Therefore, both listings remain.

HUC: 15040003 - Animas Valley

North Lordsburg Playa
AU:NM-9000.B_091 WQS: 20.6.4.98

2000 Action: Lake Water Quality Assessment Surveys, Playa Lakes 1993, NMED/SWQB, pages 25-36. Wildlife habitat and livestock watering uses do exist. Numeric standards, general standards and antidegradation policy do not place this playa on the list. This playa is currently meeting surface water quality standards and will not be listed on the 303(d) list.

2006 Action: WQS was changed to 20.6.4.98.

South Lordsburg Playa
AU:NM-9000.B_099 WQS: 20.6.4.98

2000 Action: Lake Water Quality Assessment Surveys, Playa Lakes 1993, NMED/SWQB, pages 25-36. Wildlife habitat and livestock watering uses do exist. Numeric standards, general standards and antidegradation policy do not place this playa on the list. This playa is currently meeting surface water quality standards and will not be listed on the 303(d) list.

2006 Action: WQS was changed to 20.6.4.98.

HUC: 15040004 - San Francisco

Apache Creek (Tularosa River to Hardcastle Canyon)
AU:NM-2603.A_44 WQS: 20.6.4.98

1996 Action: Previously listed for temperature, conductivity, total phosphorus and fecal coliform. There is only one sampling station on this reach. All data are from a 1990 survey. For temperature, 5/5 (100%) of the samples exceeded the criteria. For conductivity, 5/5 (100%) of the samples exceeded the criteria. For total phosphorus 4/5 (80%) of the samples exceeded the criteria. For fecal coliform, 1/1 (100%) of the samples exceeded criteria. The criteria for temperature, conductivity, and total phosphorus are not supporting the designated use. Fecal coliform is Full Support, Impacts Observed.

1998 Action: Fecal coliform was removed as a cause of non-support. Temperature, conductivity and total phosphorus were retained as causes of non-support.

2000 Action: HQCWF temperature criterion of 25C was exceeded 1/8 times. The conductivity standard was exceeded 7/8 times. Total phosphorus criterion was exceeded 8/8 times. Dissolved oxygen criterion was exceeded 1/8 times. Temperature and dissolved oxygen will be added to the 305(b) Report as FSIO; there is no longer a standard associated with total phosphorus; conductivity will be retained as a cause of non-support.

2002 Action: According to SWQB Silver City staff comment, this is a non-perennial reach in an intermittent channel. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are related to other designated uses, so they do not apply to this reach. A de-list letter was prepared for conductivity.

2006 Action: WQS changed to 20.6.4.98.

2010 Action: 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:NM-2603.A_50 WQS: 20.6.4.603

1996 Action: Previously listed for temperature, conductivity and plant nutrients. There is only one sample station on this reach. All data are from a 1992 survey. For temperature, 1/3 (33%) of the samples exceeded the criteria. For conductivity, 3/3 (100%) of the samples exceeded the criteria. Temperature is Full Support, Impacts Observed. Conductivity is partially supported.

1998 Action: Temperature was removed as a cause of non-support and will be listed in the 1998 305(b) Report as full support, impacts observed. Conductivity and plant nutrients were retained as causes of non-support.

2002 Action: A level two nutrient assessment was performed in 2001. The results of the assessment are in the administrative record. Plant Nutrients was retained as a cause of Non Support. A TMDL was prepared for plant nutrients. This assessment unit was intensively surveyed in 2001. The conductivity criterion was exceeded 15.7% of the time according to sonde data. Conductivity was retained as a cause of Partial Support. A TMDL was prepared for conductivity. The temperature criterion was exceeded 32.8% of the time according to sonde data. Temperature was added as a cause of Non Support. The upper pH criterion (8.8) was exceeded 46.9% of the time according to sonde data. pH was added as a cause of Non Support.

2014 Action: This AU was surveyed as part of the Gila 2011 survey. The maximum recorded temperature was 33.7 degrees C. There were 47.6% sand&fines, and a LRBS score of -1.36. The turbidity threshold was exceeded for greater than the maximum allowable time. There were 0/8 exceedences of the pH WQC. There were 6/7 exceedences of the 235 cfu/100 mL ecoli WQC. Both available sonde and grab data exceeded the SC WQC of 400 us/cm. The nutrient assessment was incomplete. Therefore, this AU is remains listed for temperature (WQC is under review), SC, and nutrients; pH was removed; and e. coli, sediment, and turbidity were added..

Mineral Creek (San Francisco R to headwaters)
AU:NM-2603.A_20 WQS: 20.6.4.98

1996 Action: Previously listed for metals (Al), temperature and turbidity. There are no data for this reach since 1975. This information is considered to be inadequate to make a listing. The stream will be sampled during the next intensive survey and reassessed to determine the appropriate listing.

1998 Action: The reach was removed from the 303(d) list.

2000 Action: Aluminum concentrations were at chronic toxicity levels 4/6 times; the termperature criterion was exceeded 5/10 times. Metals (Al chronic) and temperature will be added as a cause of non-support.

2002 Action: According to SWQB Silver City staff comment, this is a non-perennial reach. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are related to other designated uses, so they do not apply to this reach. A de-list letter was prepared for temperature.

2006 Action: WQS changed to 20.6.4.98.

Mule Creek (San Francisco R to Mule Springs)
AU:NM-2601_01 WQS: 20.6.4.601

1996 Action: Previously listed for reduction of riparian vegetation and streambank destabilization. A 1985 NMED survey of Mule Creek found that water quality standards were met in Mule Creek.

1998 Action: The reach was removed from the 303(d) list.

2000 Action: Field surveys confirmed that all applicable water quality standards for this reach are being met.

2014 Action: This AU was sampled during the 2011 Gila Survey. 2/7 grab DO data were below the 6.0 mg/L WQC -- groundwater influence suspected. Sonde data not available. Access is limited. Therefore, DO was added as Cause of impairment (5C).

Negrito Creek (Tularosa River to confl of N and S forks)
AU:NM-2603.A_42 WQS: 20.6.4.603

1996 Action: Previously listed for temperature and plant nutrients. There is only one sampling station on this reach. All data are from a 1990 survey. For temperature, 1/5 samples exceeded the criteria making this reach Full Support, Impacts Observed. The assessment review also found that for total phosphorus, 3/5 samples exceeded the criteria. Data for total phosphorus are partially supporting the designated use. A biological assessment was conducted at one station in 1990. This assessment indicated Full Support, Impacts Observed (76% of reference). The Hilsenhoff Biotic Index was 4.53 indicating plant nutrients were not a problem.

1998 Action: Temperature and plant nutrients were removed as causes of non-support with unknown listed as a cause of non-support.

2000 Action: Two stations were evaluated for stream bottom deposits; maximum % fines was 7%; maximum embeddedness was 54.13%. Thermograph data exceeded the temperature criterion 690/4829 times. The pH criterion was exceeded 1/11 times. SBD, temperature, and pH will be added to the 305(b) Report as FSIO.

2002 Action: The 1998 thermograph data was re-evaluated using the Temperature Assessment Protocol. The temperature exceeded 23 degrees Celsius, so the reach was listed as Non Support for temperature.

2014 Action: This AU was surveyed during Gila 2011 survey. Limited sampling was done. A maximum thermograph temperature of 24.4 degrees C was recorded. The reach went dry upstream of thermograph, which was in a pool wetted with ground water; criterion needs review. Therefore, temperature remains listed (5B).

North Fork Negrito Creek (Negrito Creek to headwaters)
AU:NM-2603.A_45 WQS: 20.6.4.603

2014 Action: This AU was surveyed during the 2011 Gila survey as a secondary station. No impairments were identified.

San Francisco River (AZ border to Box Canyon)
AU:NM-2601_00 WQS: 20.6.4.601

1996 Action: Previously listed as two segments (Dry Creek to Whitewater Creek and Border to Dry Creek), then joined as "San Francisco River from the AZ-NM Border to Whitewater Creek," then split back into two in 2002. SWQB does not

have any sampling stations in this lower AU due to limited physical access (GS, 2/2011).

1998 Action: The reach was removed from the 303(d) list because the original listing was based on data from a station in the upper AU (NM-2601_10).

2002 Action: Split back into the two as described above.

2014 Action: AU reach lengthened to Box Canyon. This AU was not sampled during the 2011 Gila survey because SWQB does not have any stations in this AU due to limited physical access.

San Francisco River (Box Canyon to Whitewater Creek)
AU:NM-2601_10 WQS: 20.6.4.601

1996 Action: Previously listed as two segments (Dry Creek to Whitewater Creek and Border to Dry Creek), then joined as "San Francisco River from the AZ-NM Border to Whitewater Creek," then split back into two in 2002. Previously listed for stream bottom deposits and nutrients this reach should have an additional listing of Full Support, Impacts Observed for aluminum (chronic). This listing is because of 1/2 exceedences of the chronic toxic screening criteria for aluminum in the past 5 years. There are two (1992 and 1996) biological assessments on this reach at one station. The 1996 biological assessment showed the reach FS (81%) of the reference while the 1992 biological assessment was FSIO (72%) of the reference.

1998 Action: The reach was removed from the 303(d) list.

2002 Action: Split back into the two as described above. Chronic lead was added as FSIO.

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. An EMAP bio/hab survey was performed at station Las Animas Creek above Box. The M-SCI score of 55.5 was very near the threshold value of 56.70, with 14 percent fines. Therefore, Benthic-Macroinvertebrate Bioassessments (Streams) was added as a cause of non support.

2014 Action: A second benthic macroinvertebrate sample was collected in 2011. The M-SCI was 56.3, confirming the listing. Therefore, the benthic macroinvertebrate listing remains (5C). The M-SCI likely should not be applied to this site that is more characteristic of a foothills site.

San Francisco River (Centerfire Creek to AZ border)
AU:NM-2602_20 WQS: 20.6.4.602

1996 Action: Previously listed as "San Francisco River from Largo Canyon to the New Mexico-Arizona border" and listed for temperature, pH, total ammonia and plant nutrients. There are two sampling stations on this reach; all data are from 1992 and 1995 surveys. For temperature, the cumulative exceedance ratio is 3/24. The cumulative exceedance ratio for pH is 4/24. The cumulative exceedance ratio of total ammonia is 4/24. The cumulative exceedance ratio of total phosphorus is 6/26. For temperature, station SFR602.006040 is fully supporting its designated use, while station SFR602.005035 is partially supporting its designated use. For pH, station SFR602.006040 is fully supporting impacts observed, its designated use, while station SFR602.005035 is partially supporting its designated use. For total ammonia,

station SFR602.006040 is fully supporting impacts observed, for its designated use, while station SFR602.005035 is fully supporting its designated use. For total phosphorus, station SFR602.006040 is fully supporting impacts observed, its designated use, while station SFR602.005035 is fully supporting its designated use. There are two biological assessments on this reach at one station from 1992 and 1995 that indicate full support of the fishery use. In 1992 station 6040 was 100% of the reference while station 6035 was 81% of the reference. (Data from 1987 collected from station 6040 was the reference). In 1996 station 6035 was 90% of the reference (station 6040 was the reference).

1998 Action: A portion of this reach, the San Francisco River from Centerfire Creek to the New Mexico Arizona border (15 miles) was retained on the 303(d) list with temperature, pH, ammonia and plant nutrients listed as causes of non-support.

2000 Action: 3 monitoring sites were evaluated for stream bottom deposits; the maximum % fines was 59% fines and 56.7% embeddedness. Samples exceeded the 25NTU turbidity standard 2/11 times. Thermograph data exceeded the 25C criterion 52/1,725 times with a maximum temperature of 28.5C. pH and total ammonia had 0/11 exceedances. Stream bottom deposits will be added to the 305(b) Report as FSIO; Temperature and plant nutrients will be retained as causes of non-support; Turbidity will be added as a cause of non-support.

2002 Action: Temperature and plant nutrients remain on the list. A level two nutrient assessment was performed in 2001. The results are in the administrative record. TMDLs were written for temperature and plant nutrients. Effective February 23, 2000, the criterion of 25 NTU for primary contact recreation was removed. Since the narrative standard for turbidity still applies, SWQB examined benthic macroinvertebrate communities on the reach to determine whether turbidity impairment was occurring. Turbidity was removed as a cause of Non Support. A de-list letter was prepared.

2010 Action: This AU was surveyed during the 2007 Gila/SFR survey. The segment specific criterion of 25 degrees C was exceeded during a thermograph deployment from 5/23/07 through 9/17/07. A level II nutrient survey indicated full support because only two indicators were present (total nitrogen and total phosphorus were above the ecorgion/ALU thresholds. Therefore, the nutrient listing was removed, and the temperature listing remains.

2012 Action: The M-SCI score at San Francisco River above Luna during the 2007 survey was 51.37 with 17 percent fines. Therefore, Benthic-Macroinvertebrate Bioassessments (Streams) was added as a cause of non support.

San Francisco River (NM 12 at Reserve to Centerfire Creek)
AU:NM-2602_10 WQS: 20.6.4.602

1996 Action: Previously listed as "San Francisco River from Largo Canyon to the New Mexico-Arizona border" and listed for temperature, pH, total ammonia and plant nutrients. There are two sampling stations on this reach; all data are from 1992 and 1995 surveys. The cumulative exceedance ratio for temperature was 3/24. The cumulative exceedance ratio for pH was 4/24. The cumulative exceedance ratio for total ammonia was 0/13. The cumulative exceedance ratio for total phosphorus was 6/26. For temperature, station SFR602.006040 is fully supporting its designated use, while station SFR602.005035 is partially supporting its designated use. For pH, station SFR602.006040 is fully supporting impacts observed, its designated use, while station SFR602.005035 is partially supporting its designated use. For total ammonia, station SFR602.006040 is fully supporting impacts observed, for its designated use, while station SFR602.005035 is fully supporting its designated use. For total phosphorus, station SFR602.006040 is fully supporting impacts observed, its

designated use, while station SFR602.005035 is fully supporting its designated use. There are two biological assessments on this reach at one station (1992 and 1995) that indicate full support of the fishery use. In 1992 station 6040 was 100% of the reference while station 6035 was 81% of the reference. (Data from 1987 collected from station 6040 was the reference). In 1996 station 6035 was 90% of the reference (station 6040 was the reference).

1998 Action: This reach was split into two. This portion was de-listed because the impairments occurred in the portion between Centerfire and the AZ border. A portion of this reach, the San Francisco River from Centerfire Creek to the New Mexico Arizona border (15 miles) was retained on the 303(d) list with temperature, pH, ammonia and plant nutrients listed as causes of non-support.

2002 Action: Stream bottom deposits were noted as Full Support Impacts Observed based on benthic macroinvertebrates collected at two stations: below Upper Box and above Reserve.

2008 Action: The name was changed to "San Francisco River (NM12 at Reserve to Centerfire Creek)" to match the naming convention at 20.6.4.602 NMAC.

2014 Action: This AU was sampled during the 2011 Gila survey. There were 2/7 E. coli exceedences, max thermograph temperature of 25.2 degrees C, and the turbidity numeric threshold was exceeded. Therefore, temperature, e. coli, and turbidity were added as causes of impairment. This AU experienced impacts from wildfire.

San Francisco River (Pueblo Ck to Willow Springs Cyn)
AU:NM-2601_21 WQS: 20.6.4.601

2014 Action: Previous AU "San Francisco River (Whitewater to NM 12 at Reserve)" was split into three to create this AU. This AU was not sampled during the 2011 Gila survey.

San Francisco River (Whitewater Ck to Pueblo Ck)
AU:NM-2601_20 WQS: 20.6.4.601

1996 Action: Previously listed for metals (Al) and stream bottom deposits. There are two sampling stations used to assess this reach. The ratio of exceedences to samples for chronic aluminum is 0/4. This reach is Fully Supporting for Aluminum. There is one 1996 biological assessment on this reach at two stations. The biological assessment showed the reach FS (90% and 84%) of the reference.

1998 Action: The reach was removed from the 303(d) list.

2000 Action: There were 0/18 exceedances of metals on the segment. 2 stations were evaluated for stream bed deposits; the maximum %fines was 50% and a max embeddedness of 82.3%. Stream bed deposits will be added as a cause of non-support.

2002 Action: Using the updated Stream Bottom Deposit protocol, the reach was determined to be Full Support Impacts Observed. Stream bottom deposits was removed as a cause of Non Support. A de-list letter was prepared.

2008 Action: The name was changed to "San Francisco River (Whitewater Creek to NM 12 at Reserve)" to match the naming convention at 20.6.4.601 NMAC.

2014 Action: Previous AU "San Francisco River (Whitewater to NM 12 at Reserve)" was split into three to create this AU. This AU was sampled during the 2011 Gila survey. There were 43.7% sand and fines, with an LRBS of -1.48. Therefore, this AU is listed for sedimentation.

San Francisco River (Willow Springs Cyn to NM 12 at Reserve)
AU:NM-2601_22 WQS: 20.6.4.601

2014 Action: Previous AU "San Francisco River (Whitewater to NM 12 at Reserve)" was split into three to create this AU. This AU was sampled during the 2011 Gila survey. There were 7/23 e. coli exceedences. Therefore, e. coli was added as causes of impairment.

Silver Creek (Mineral Creek to headwaters)
AU:NM-2603.A_21 WQS: 20.6.4.98

1996 Action: Previously listed for cyanide and aluminum. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with cyanide and aluminum as the causes of non-support.

2000 Action: Metals (Al chronic) had 0/6 exceedances. Cyanide had 0/6 exceedances. Temperature criterion was exceeded 1/6 times. Turbidity criterion of 10NTU was exceeded 2/6 times. Conductivity criterion was exceeded 2/6 times. Temperature will be added to the 305(b) Report as FSIO; turbidity and conductivity will be added as causes of non-support.

2002 Action: According to SWQB Silver City staff comment, this is a non-perennial reach. Therefore, the only designated uses that apply are livestock watering and wildlife habitat. The above causes of non-support are related to other designated uses, so they do not apply to this reach. A de-list letter was prepared for turbidity and conductivity.

2006 Action: WQS changed to 20.6.4.98.

South Fork Negrito Creek (Negrito Creek to headwaters)
AU:NM-2603.A_43 WQS: 20.6.4.603

1996 Action: Previously listed for reduction of riparian vegetation and streambank destabilization. No associated physical/chemical data are available.

1998 Action: The reach was retained on the 303(d) with unknown as the cause of non-support.

2000 Action: Thermograph data exceeded the temperature criterion 914/5,330 times. Temperature will be added as a cause of non-support.

2002 Action: A TMDL was written for temperature. Copper, lead, and zinc were added as Full Support Impacts Observed. There were 1 of 7 exceedences of the criteria during the 1998 survey. Staff believes the samples were contaminated at the time of sample due to backwashing of HCl rinse into a metal valve.

2008 Action: The name was changed from Negrito Creek (South Fork) to South Fork Negrito Creek (Negrito Creek to headwaters).

2014 Action: This AU was sampled during the 2011 Gila survey. The maximum thermograph recording was 28.27 degrees C. There were 2/4 e. coli exceedences. Therefore, temperature remains listed, and e. coli was added. The temperature WQC is under review.

Trout Creek (Perennial prt San Francisco R to headwaters)
AU:NM-2603.A_60 WQS: 20.6.4.603

1996 Action: Previously listed for total phosphorus. There is only one sample station on this reach. All data are from a 1992 survey. For total phosphorus, 1/1 (100%) of the samples exceeded the criteria. Through application of the assessment protocol total phosphorus is Full Support, Impacts Observed.

1998 Action: The reach was removed from the 303(d) list and will be added to the 305(b) list as Full Support, Impacts Observed for phosphorus.

2000 Action: The total phosphorus criterion was exceeded 8/8 times. Metals (Pb chronic) exceeded the chronic lead standard 1/6 times. There is no longer a standard associated with total phosphorus; Metals (Pb chronic) will be added to the 305(b) Report as FSIO.

2002 Action: According to SWQB Silver City staff comment, this is an ephemeral reach. Therefore, the only designated uses that apply are livestock watering and wildlife habitat.

2006 Action: WQS was changed to 20.6.4.97.

2008 Action: This AU may be ephemeral, but EPA has not yet approved 20.6.4.97 and UAAs have not been prepared at the time of this writing (6/4/08). Therefore, this AU will be noted as WQS Reference 20.6.4.98 for now.

2012 Action: Application of the SWQB Hydrology Protocol (10/9/2008 survey date) indicate there are perennial portions in this AU (Hydrology Protocol score of 34.0 at FR 19 bridge - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol). The name was changed, and the WQS reference was changed to 20.6.4.603.

2014 Action: This AU was sampled during the 2011 Gila survey. Limited sampling. The max temperature was 27.73 degrees C. Therefore, temperature was added as a cause of impairment (5C - the WQC is under review).

2016 Action: Temperature impairment was erroneously not entered into the database during 2014 cycle (see 2014 ACTION). Corrected.

Tularosa River (San Francisco R to Apache Creek)
AU:NM-2603.A_40 WQS: 20.6.4.603

1996 Action: Previously listed for temperature, pH, fecal coliform, total ammonia, total phosphorus and turbidity. There are two sampling stations on this reach; all data are from 1990, 1992 and 1995 surveys. Temperature had a cumulative exceedance ratio of 7/22 samples. pH had a cumulative exceedance ratio of 7/22. Fecal coliform samples had an exceedance ratio of 2/6. The criterion for total ammonia was exceeded 3/22 times. The total phosphorus criterion was exceeded 6/22 times. Turbidity had a cumulative exceedance ratio of 3/22. For temperature, stations SFR603.004035 and SFR603.004025 are partially supported their designated use. For pH, station SFR603.004035 is fully supporting its designated use, while station SFR603.004025 is Not Supporting its designated use. For fecal coliform, station SFR603.004035 is full supporting, impacts observed, while station SFR603.004025 is fully supporting its designated use. For total ammonia, stations SFR603.004035 and SFR603.004025 are fully support, impacts observed. For total phosphorus, station SFR603.004035 is Full Support, Impacts Observed, while station SFR603.004025 is fully supporting its designated use. For turbidity, station SFR603.004035 is partially supported, while station SFR603.004025 is fully supporting its designated use.

1998 Action: Fecal coliform, ammonia and phosphorus were removed as causes of non-support. Temperature, pH and turbidity were retained as causes of non-support.

2000 Action: Data from two thermographs had 17/5,432 exceedances of the segment-specific temperature criterion of 25C. There were 0/33 exceedances of the pH criterion. Turbidity samples had 0/33 exceedances of the 10NTU criterion. Three stations were evaluated for stream bottom deposits, with a maximum observed %fines of 28.6% fines and maximum embeddedness of 58.8. Conductivity criterion was exceeded 4/33 times. Stream bottom deposits will be added to the 305(b) Report as FSIO. Conductivity will be added as a cause of non-support.

2002 Action: A TMDL was written for conductivity.

2014 Action: The AIU was sampled during the 2011 Gila survey. At station Tularosa abv San Francisco River, there were 3/8 e. coli exceedences, a max thermograph record of 29.49 degrees C, and the turbidity numeric threshold was exceeded. There were 1/9 grab SC exceedences, and the max sonde SC was 263 us/cm. Therefore, temperature, turbidity, and e.coli were added, and SC was removed.

Whitewater Creek (San Francisco R to Whitewater Campgrd)
AU:NM-2603.A_10 WQS: 20.6.4.603

1996 Action: Previously listed for metals (Al), turbidity, stream bottom deposits and fecal coliform. There is one sampling station on this reach. The data support the turbidity and metals listings. For fecal coliform, 0/4 samples collected in the past ten years exceed the designated criteria. This reach is fully supporting for fecal coliform.

1998 Action: Fecal coliform was removed as a cause of non-support. Aluminum, turbidity, and stream bottom deposits were retained as causes of non-support.

2000 Action: Samples exceeded the chronic Aluminum criterion 2/7 times and zinc 1/7 times. 2 stations were evaluated for stream bottom deposits with a maximum %fines of 44% fines and embeddedness of 69.5%. Turbidity exceeded the 10NTU standard 4/12 times. Metals (Al chronic), stream bottom deposits, and turbidity will be retained as causes of non-support. Metals (Zn acute) will be added to the 305(b) Report as FSIO.

2002 Action: A TMDL was written for turbidity. A de-list letter was written for chronic aluminum because the exceedences were all at the station above the campground. Chronic aluminum was added as a cause of non support for the upper reach (see below). Using the updated Stream Bottom Deposit protocol, the reach was determined to be Full Support Impacts Observed. 9.2% fines were measured at the reference station of Whitewater Creek at Whitewater Campground. The sample station, Whitewater at Glennwood, had a biological score of 59% reference with 51.5% fines. Stream bottom deposits was removed as a cause of Non Support. A de-list letter was prepared.

2014 Action: The AU was sampled during the 2011 Gila survey. The numeric turbidity threshold was not exceeded. Therefore, turbidity was removed as a cause of impairment.

Whitewater Creek (Whitewater Campgrd to headwaters)
AU:NM-2603.A_12 WQS: 20.6.4.603

2000 Action: Metals (Al chronic) criterion was exceeded 2/7 times. Metals (Zn chronic) exceeded Zinc criterion 1/7 times. Stream bottom deposits were evaluated at 2 stations with a maximum 5 fines of 44% fines and embeddedness of 69.5%. There were no documented exceedances of the 10NTU turbidity criterion. Metals (Al chronic) was inadvertently added as a cause of non-support to the lower reach when it should have been added to this upper reach. Stream bottom deposits will be retained as a cause of non-support.

2002 Action: Chronic aluminum was added as a cause of Non Support. Whitewater Creek at Whitewater Campground is a reference station with 9.2% fines. Using the updated Stream Bottom Deposit protocol, the reach was determined to be Full Support Impacts Observed.

2004 Action: TMDL for aluminum.

2012 Action: Application of the SWQB Hydrology Protocol (10/8/2008 survey date) indicate this assessment unit is perennial (Hydrology Protocol score of 26.0 - see http://www.nmenv.state.nm.us/swqb/Hydrology/ for additional details on the protocol).

2014 Action: The AU was sampled during the 2011 Gila survey. There were 0/7 exceedences of the hardness dependent total recoverable aluminum criteria. Therefore, aluminum was removed as a cause of impairment.