APPENDIX E
RESPONSE TO COMMENTS

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SWQB hosted a public meeting in Albuquerque, NM on September 29, 2009 to discuss the Public Comment Draft Middle Rio Grande Watershed TMDL. The following changes were made to the Final Draft document in response to public comment received at the meeting and afterwards:

1. Questions were raised during the public meeting regarding the references to the State water quality standards in Section 2.3. SWQB agreed to simplify Section 2.3 so that it only lists the water quality standards directly related to the TMDL, specifically dissolved aluminum and *E.coli*.

2. Questions were raised by a number of MS4 permittees during the public meeting regarding the strict language in Section 6.4. Comment Sets A, D, F, and G also questions the use of the chosen language. SWQB had discussions with EPA R6 following the public meeting and agreed to change the language from phrases such as "shall" to "should" and "should consider."

3. EPA R6 requested that flows be provided in Table 2.3 for USGS gages upstream of the study area.

4. Appendix F was added based on public comment.

Written comments received during the 45-day public comment period:

A. Bernalillo County Public Works
B. Andy Smith
C. Pueblo of Sandia
D. City of Albuquerque Aviation Department
E. Southern Sandoval County Arroyo Flood Control Authority
F. Albuquerque Metropolitan Arroyo Flood Control Authority
G. Middle Rio Grande Stormwater Quality Team

Written comments received after the 45-day public comment period:

H. Pueblo of Santa Ana

Comment Set A:

County of Bernalillo

State of New Mexico

BOARD OF COUNTY COMMISSIONERS
ALAN B. ARMIJO, CHAIR
DISTRICT 1,
ART DE LA CRUZ, VICE CHAIR
DISTRICT 2
MAGGIE HART STEBBINS, MEMBER
DISTRICT 3
MICHAEL C. WIENER, MEMBER
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THADDEUS LUCERO, COUNTY MANAGER

KAREN L. MONTOYA, ASSESSOR
MAGGIE TOULOUSE OLIVER, CLERK
MERRI RUDD, PROBATE JUDGE
DARREN P. WHITE, SHERIFF
PATRICK J. PADILLA, TREASURER

Bernalillo County Public Works
2400 Broadway S.E.
Albuquerque, NM 87102
505-848-1500
Fax 505-848-1510

September 29, 2009

Ms. Heidi Henderson, TMDL Coordinator
New Mexico Environment Department
Surface Water Quality Bureau
1190 St. Francis Drive
Santa Fe, NM 87505

Re: Comments about public comment draft, TMDL for the Middle Rio Grande Watershed

Dear Ms. Henderson:

The Bernalillo County Public Works Division, Water Resources Program, has reviewed the September 16, 2009 Public Comment Draft of the Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, and submits the following comments.

In general, Bernalillo County applauds the Environment Department for their use of the flow duration approach to evaluating pollutant loads. The approach effectively addresses the difficulty of determining target and actual pollutant loads over the broad range of streamflow regimes observed for surface water bodies in New Mexico.

Bernalillo County has particular concerns about the projection in Section 4.4.2 that the *E. coli* load for the Rio Grande (Isleta Pueblo bnd to Alameda Street bridge) assessment unit (AU) must be reduced by more than 80% to achieve the target load under most flow conditions. This level of reduction is nearly impossible, given that over 46% of fecal bacteria originate from wildlife beyond human control.

Further, we are concerned about the comparison of arithmetic means for measured *E. coli* loads against geometric means from *E. coli* water quality criteria in Section 4.4.2, possibly overestimating measured loads and needed reductions to achieve target loads.

Finally, we are concerned about the inclusion in Section 6.4 of proscriptive language that appears to impose regulatory requirements under this TMDL for stormwater discharge permittees in the watershed.

Please see our specific comments about these issues below.

The following are specific comments from Bernalillo County, arranged by section of the draft TMDL.

- **Executive Summary, Page 1, Paragraph 1.** For clarity we recommend appending the following formula to the end of the paragraph: "[TMDL = WLA + LA + MOS]". MKM

SWQB Response: *Thank you for the comments. The addition has been made to the document.*

- **Executive Summary, TMDL summary sheets**
  - Page numbers for the summary sheets are out of order with the remainder of the document.
  - For each assessment unit, the scope/size of the sub-watershed shown on the summary sheet (>17,000 mi^2) exceeds the size of the entire watershed (3,204 mi^2 for USGS HUC 13020203) cited in *Description and Land Ownership* (Page 3, Section 2.1, Paragraph 2). Please clarify this apparent discrepancy.
  - For each assessment unit, the percent forest shown under the Land Use/Cover heading (>90%) exceeds the percent forest for the entire watershed (9%) cited in *Description and Land Ownership* (Page 3, Section 2.1, Paragraph 2). Please clarify this apparent discrepancy.

SWQB Response: *It is noted that the page numbers are incorrect and will be addressed in the final version of the TMDL document. The entire watershed described in the Executive Summary tables for each Assessment Unit (AU) is calculated as the watershed from the most downstream point of the AU to the Rio Grande headwaters. The values in Section 2.1 describe only the USGS HUC 13020203. It is for these reasons that the percent forest land cover differs as well. Clarifying language has been added to make clear were values apply to the entire upstream watershed versus the 8-digit HUC watershed.*

- **Section 2.0 Background**
  - The "2005 MRG Tributary study" is mentioned in the first paragraph on Page 3, but is not included in the References (Section 9.0). Is the "MRG Tributary study" different from the March to October 2005 watershed sampling performed by NMED? If so, is a copy of the "MRG Tributary study" available for review?

SWQB Response: *SWQB sampled both the mainstem of the Middle Rio Grande as well as tributaries to the Middle Rio Grande in 2005. The MRG tributary report is not yet available. However, the results of water quality assessments performed following the MRG tributary survey are available on the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List.*

- **Section 2.1 Description and Land Ownership**
  - In Paragraph 3 of Section 2.1 on Page 3, Natural Heritage New Mexico is cited, but the role of this agency in the preparation of the TMDL is not defined. What was their role?

SWQB Response: *A statement has been added to this section of the document to clarify the citation of Natural Heritage New Mexico.*

- **Section 2.2 History and Geology**
  - In Paragraph 2 of Section 2.2 on Page 4, it is stated that the Sandia Mountains "reach to over 11,000 feet," while the highest point in the Sandia Mountains is Sandia Peak at 10,378 feet.

SWQB Response: *The citation is from Roadside Geology of New Mexico (Chronic, 1987). Upon further research, a number of values were found that describe the highest point of the Sandia Mountains. To be conservative, the statement has been changed to "reach over 10,000 feet".*

- **Section 2.3 Water Quality Standards**
  - In the fourth paragraph on Page 10, it is stated that "The appropriate tribal WQS will be used in the TMDL calculations in this document." Please expand this statement to clarify that the appropriate state OR tribal WQS is used for TMDL calculations, depending on the affected assessment unit, and the rationale for using different standards for different assessment units.

SWQB Response: *Per oral public comment at the TMDL public meeting on September 29, 2009, SWQB agreed to remove discussions of Water Quality Standards (WQS) other than those directly related to the TMDL document, ie: dissolved aluminum and E.coli. These changes have been made to Section 2.3. Language has also been added to the end of Section 2.3 to clarify the use of Tribal WQS.*

- **Section 2.4.1 Survey Design**
  - In Paragraph 1 of Section 2.4.1 on Page 11, it is stated that "Surface water grab samples were analyzed for a variety of chemical/physical parameters." In Table 2.2 of Section 2.4.1 on Page 11, footnote (a) cites "Grab and composite samples collected throughout 2005." Please clarify or correct this apparent discrepancy.
  - Please provide a list of the chemical/physical parameters for which water samples were analyzed (perhaps as an appendix to the TMDL).

SWQB Response: *Both grab and composite samples were collected and analyzed during the 2005 water quality survey. The statement in Section 2.4.1 has been clarified. A list of the water chemistry parameters that were sampled for in 2005 is listed in Section 4.0 of Water Quality Monitoring of the Middle Rio Grande, 2000-2007 Annual Report (NMED/SWQB, 2008) available online at: http://www.nmenv.state.nm.us/swqb/Rio_Grande/Middle/2008Report.pdf*

- **Section 2.4.2 Hydrologic Conditions**
  - In Table 2.3 of Section 2.4.2 on Page 13, please indicate which of the listed USGS gages were used to determine streamflows in TMDL calculations.
  - In Figure 2.7 of Section 2.4.2 on Page 15, there is a nearly 10-year gap in streamflow data. We are concerned about the reliability of the streamflow data used for TMDL calculations in this assessment unit. Please add language addressing this concern.

SWQB Response: *Table 2.3 is included in order to present all active gages in the MRG area; Figures 2.4-2.7 represent the flow for the four USGS gages used in the load duration curves in the TMDL. SWQB has confirmed with USGS staff that there is no flow data available for USGS Gage 08329928 from October 1995 to June 2003 due to lack of funding for data collection at that site. According to An Approach for Using Load Duration Curves in the Development of TMDLs (USEPA, 2007),*

> *"The lack of instream flow data at most water quality monitoring locations would typically be identified as a significant data gap for application of watershed and water quality models. However, since the incremental watershed LDC approach makes use of drainage area ratio-based flow estimates, the lack of flow information at these locations is not limiting."*

There were also no E.coli sampling events used in this TMDL prior to 2004 and therefore there were flow data available at this gage for all of the E.coli samples.

- **Section 3.1 Target Loading Capacity** *(for aluminum)*
  - In Paragraph 2 of Section 3.1 on Page 16 it is stated that "The chronic criterion was exceeded 4 of 8 times on the Rio Grande (San Marcial at USGS gage to Rio Puerco) AU." In contrast, Table C.1 of Appendix C shows that the chronic criterion for dissolved aluminum was exceeded in 8 of 28 samples taken in the Rio Grande (San Marcial at USGS gage to Rio Puerco) AU. Please explain or correct this apparent discrepancy.

SWQB Response: . *The impairments addressed in this TMDL document are included on the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List. The determination of these impairments was based on the application of the Procedures for Assessing Use Attainment for the State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Water Quality Monitoring and Assessment Report (January 2008). Section 3.0 of the 2008 AP reads:*

> *"When data from multiple stations are used to assess a single AU, the data should be from stations and sampling events that are 1) spatially independent (generally more than 200 meters apart), and 2) temporally independent (generally collected at least seven days apart). If one or both of these conditions are not met, the data from the non-independent stations should be averaged before application of the assessment procedures."*

Thus, the samples that were not spatially or temporally independent were averaged. The Assessment Protocols were then applied to the averaged value. The statement in the TMDL regarding 4 of 8 exceedences reflects the fact that averaging of the non-independent samples occurred. Details of the assessments are available on the Assessment Summary Sheets, which are made available for public inspection as part of the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List public record. A statement of clarification has been added to Sections 3.1 and 4.1.

- **Section 3.2 Flow** *(for aluminum)*
  - In Figure 3.1 of Section 3.2 on Page 17, please identify the USGS gage by number in the figure. In addition, the term "moist conditions" is a misnomer for conditions in which streamflow exceeds the "mid-range flows" condition. Perhaps the terms "moist conditions" and "mid-range flows" can be reversed throughout the TMDL document for better reader understanding.
  - In the second paragraph on Page 17, it will be helpful to include a more detailed explanation of the computational method used to produce the Aluminum Load Duration Curve in Figure 3.2 on Page 18. Assuming that the Aluminum Loading Duration Curve (Figure 3.2) was produced with values from the Flow Duration Curve (Figure 3.1) and a water quality standard for aluminum from 20.6.4.900 NMAC, please indicate whether the acute or the chronic WQS for dissolved aluminum was used in the calculations.

SWQB Response: *The USGS Gage number was added to the title of Figure 3.1. SWQB staff attended a training with Bruce Cleland and EPA R6 in February 2007. The development of the flow and load duration curves in this TMDL was based on this training as well as a research article by Bruce Cleland and guidance from the EPA Office of Wetlands, Oceans, and Watersheds. The use of "moist" and "mid-range" in the TMDL is consistent with the literature research. Language was added to Section 3.2 regarding the use of the chronic dissolved aluminum WQS in the development of the load duration curve. References to the EPA document have been added to Section 3.2 as well as Section 9.0. The Cleland (2003) reference remains in Section 3.2. Both references provide detailed explanations of both flow and load duration curve development.*

- **Section 3.3 Calculations** *(for aluminum)*
  - In Equation 1 of Section 3.3 on Page 19, we recommend inserting the units "(MG/gal)" after the 10^{-6} factor, and revising the units of "flow" to "(MGD)".
  - In Equation 2 of Section 3.3 on Page 19, we recommend revising the units of "critical flow" to "(MGD)".
  - In Table 3.1 of Section 3.3 on Page 19, we recommend indicating that the cited chronic water quality criterion is for *dissolved* aluminum.
  - In Table 3.1 of Section 3.3 on Page 19, the superscripts and footnotes use different conventions.

SWQB Response: *The requested changes have been made to Section 3.3.*

- **Section 3.4.1 Waste Load Allocation** *(for aluminum)*
  - In Paragraph 1 of Section 3.4.1 on Page 19, we recommend inserting the word "dissolved" between "chronic" and "aluminum" in the fifth sentence.
  - In Paragraph 1 of Section 3.4.1 on Page 20, we recommend inserting the words "based on design flow and the chronic water quality standard for dissolved aluminum from 20.6.4.900 NMAC" after the word "assigned" in the last sentence.
  - In Paragraph 2 of Section 3.4.1 on Page 20, we recommend inserting the words "based on design flow and the chronic water quality standard for dissolved aluminum from 20.6.4.900 NMAC" after the word "assigned" in the last sentence.

SWQB Response: *The requested changes have been made to Section 3.4.1.*

- **Section 3.4.2 Load Allocation** *(for aluminum)*
  - The reference to "table 4.4" in the first sentence of Paragraph 1 in Section 3.4.2 on Page 21 is apparently a typographical error. Perhaps the reference should be to Table 3.2.
  - Equation 3 should be rearranged as follows to correspond with the computational method described in the preceding sentence: LA = TMDL – WLA – MOS.

SWQB Response: *The reference to Table 4.4 was corrected and a statement of clarification was added to Equation 3.*

- In Table 3.2 of Section 3.4.2 on Page 21, the preface "WLA:" should be added to each NPDES permit cited, so that the summation in the "Total Waste Load Allocation" row is clearly understood. In addition, we recommend moving the "Load Allocation" row to the bottom of Table 3.2 to better correspond with the computational method described in the first sentence of Section 3.4.2. Finally the word "Dissolved" should be inserted before "Aluminum" in the title of Table 3.2.

SWQB Response: *The "Load Allocation" row was moved and the word "dissolved" was inserted into the title of Table 3.2.*

- We recommend creating a new **Section 3.4.3** entitled **Load Reductions Computation**, beginning with the last sentence of the first paragraph on Page 22.
- In Table 3.3 of Section 3.4.2 (future Section 3.4.3) on Page 22, we recommend inserting the units abbreviation "(lbs/day)" after "Measured Loads" and "Target Loads" labels in the table. In addition, footnote (a) to Table 3.3 does not clearly describe which measured values (all values vs. values exceeding WQS) were used to compute the arithmetic mean of Measured Aluminum concentration. Please clarify.
- At the end of Section 3.4.2 (future Section 3.4.3), please add a statement (similar to the one included for *E. coli* in Section 4.4.2 on Page 45) regarding the application of calculated percent reduction values for aluminum.

SWQB Response: *In reviewing this section in response to this comment as well as the comments of others NMED recognizes that for this TMDL calculating a percent reduction is particularly challenging. This is largely for the reasons noted in the comments above – the samples collected and the impairment determinations are based on exceedences of the State's single sample criterion and the TMDL is written to the address the monthly geometric mean standard of Sandia and Isleta Pueblos. As such any simple comparison of these numbers is fraught with challenge and, in this case, will result in an over estimation of the actual reduction necessary.*

Furthermore, neither Section 303 of the Clean Water Act nor Title 40, Part 130.7 of the Code of Federal Regulations requires states to include discussions of percent reductions in TMDL documents. Although NMED believes that it is often useful to discuss the magnitude of water quality exceedences in the TMDL, the "percent reduction" value is can both be calculated in multiple ways and as a result can often misinterpreted. This is clearly the case in this situation. Table 3.3 and the associated discussion have been removed.

- **Section 3.5 Identification and Description of Pollutant Source(s)** *(for aluminum)*
  - In Table 3.4 of Section 3.5 on Page 23, the magnitude of aluminum discharges from nonpoint sources is shown to be 590-9150 lbs/day. In contrast, Table 3.2 in Section 3.4.2 on Page 21 shows calculated Load Allocations (from nonpoint sources) of 38.8 – 1171 lbs/day for aluminum. Please explain or correct this apparent discrepancy.

SWQB Response: *The values listed in Table 3.4 are the values for "measured load" presented in Table 3.3. The references to these values have been removed from Table 3.4.*

- **Section 3.6 Linkage of Water Quality and Pollutant Sources***(for aluminum)*
  - We recommend revising the last sentence of Paragraph 3 in Section 3.6 on Page 24 to read "The February 2005 sample exceeds the chronic WQS of 0.87 mg/l for dissolved aluminum."
  - In order for the reader to be able to corroborate the last sentence of Paragraph 4 in Section 3.6 on Page 24, Appendix C of the TMDL must be revised to include streamflows measured when samples for aluminum analysis were collected.

SWQB Response: *The last sentence in Paragraph 3 was edited based on your suggestion. Additionally, streamflow from USGS gage 08358400 has been added to Appendix C.*

- **Section 3.7 Margin of Safety** *(for aluminum)*
  - In the second paragraph under the heading *"Explicit Margin of Safety"* in Section 3.7 on Page 25, it is not clear if the alternative MOS of 5 percent was applied to the dry flow hydrologic zone (as stated in the first sentence) or to the low flow hydrologic zone (as stated in the last sentence). Please clarify.

SWQB Response: *The language in Section 3.7 was changed to reflect that the paragraph should discuss "dry flow" rather than "low flow."*

- **Section 3.9 Future Growth** *(for aluminum)*
  - In Paragraph 2 of Section 3.9 on Page 26 it is stated that "According to the calculations, the overwhelming source of aluminum loading is from nonpoint sources." In fact, it is not intuitively obvious which calculations support this statement. Please include a reference to Table 3.2 to assist the reader in evaluating the comparative load calculations.
  - We recommend adding the following sentences to the end of Paragraph 2 of Section 3.9 on Page 26: "The existing Middle Rio Grande-Albuquerque Reach Watershed Restoration Action Strategy (Albuquerque Reach Watershed Group, 2008) defines a framework for design, implementation and maintenance of BMPs in the northern portion of the watershed addressed by this TMDL. See Section 6.0 for details."

SWQB Response: *A reference to Table 3.2 has been added to Section 3.9 along with the suggested language regarding the MRG-Albuquerque Reach WRAS.*

- **Section 4.0 Bacteria**
  - Paragraph 4 of Section 4.0 on Page 27 seems like a generic statement that would be better placed in the Introduction to the TMDL.
  - In Table 4.1 of Section 4.0 on Page 27, three of the four exceedence frequencies shown for *E. coli* do not correspond to the monitoring data provided in Appendix D. Table D.1 of Appendix D for Rio Grande (non-Pueblo Alameda to Angostura Diversion) shows 6 exceedences over 45 samples, while Table 4.1 shows 6 exceedences over 17 samples for the same AU. Table D.3 of Appendix D for Rio Grande (Rio Puerco to Isleta Pueblo bnd) shows 3 exceedences over 25 samples, while Table 4.1 shows 2 exceedences over 7 samples for the same AU. Table D.4 of Appendix D for Rio Grande (San Marcial at USGS gage to Rio Puerco) show 17 exceedences over 63 samples, while Table 4.1 shows 14 exceedences over 35 samples for the same AU. Please explain or correct these apparent discrepancies.

SWQB Response: *The statement referred to in the first comment has been moved into the first paragraph of Section 4.0. The impairments addressed in this TMDL document are included on the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List. The determination of these impairments was based on the application of the Procedures for Assessing Use Attainment for the State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Water Quality Monitoring and Assessment Report (January 2008). Section 3.0 of the 2008 AP reads:*

> *"When data from multiple stations are used to assess a single AU, the data should be from stations and sampling events that are 1) spatially independent (generally more than 200 meters apart), and 2) temporally independent (generally collected at least seven days apart). If one or both of these conditions are not met, the data from the non-independent stations should be averaged before application of the assessment procedures."*

Thus, the samples that were not spatially or temporally independent were averaged. The Assessment Protocols were then applied to the averaged value. The statement in the TMDL regarding exceedences reflects the fact that averaging of the non-independent samples occurred.

Details of the assessments are available on the Assessment Summary Sheets, which are made available for public inspection as part of the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List public record. A statement of clarification has been added to Sections 3.1 and 4.1.

- **Section 4.1 Target Loading Capacity** *(for bacteria)*
  - In Paragraph 2 of Section 4.1 on Page 28, we recommend adding language explaining the Clean Water Act requirement for protecting downstream water quality standards that is the basis for the decision to use Pueblo of Sandia or Pueblo of Isleta WQS in certain AUs.

SWQB Response: *The regulations concerning the protection of downstream water quality criteria and designated uses is found in 40 CFR §131.10(b). It reads:*

> *(b) In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.*

Additionally, 40 CFR §122.4(d) prohibits the issuance of NPDES permits that do no comply with the affected States' water quality standards. It reads:

> *No permit may be issued:…(d)When the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States.*

The State of New Mexico, the Pueblo of Sandia, and the Pueblo of Isleta have water quality standards for E.coli and the Tribal standards are lower than the State of New Mexico water quality standards. The regulations in 40 CFR §131.10(b) require the development of the TMDL using the tribal standards in order to be protective of the downstream standards. The regulations in 40 CFR §122.4(d) require allocations and effluent limits to be developed using the tribal standards in order to be protective of the downstream waters. A statement addressing this issue has been added to Section 2.3.

- **Section 4.2 Flow** *(for bacteria)*
  - For Figures 4.5 - 4.7 in Section 4.2 on Pages 31-33, a more detailed explanation of the methodology used to produce the criterion curves would be helpful. (The last paragraph on Page 33 provides a good starting point.)

SWQB Response: *Just as in Section 3.2, references to the EPA document have been added to Section 4.2 as well as Section 9.0. The Cleland (2003) reference remains in Section 4.2. Both references provide detailed explanations of both flow and load duration curve development.*

- **Section 4.3 Calculations** *(for bacteria)*
  - We recommend inserting the words "geometric mean" before the words "*E. coli*" in the second sentence of Paragraph 1 of Section 4.3 on Page 33. Please replace the word "and" with the word "through" between the words "Tables 4.2" and "4.5" in the same sentence.
  - We recommend revising Equation 1 of Section 4.3 on Page 33 as follows: "C as cfu/100mL * 1,000 mL/L * 1 L/0.264 gallons * 10^6 gallons/MG * Q as MG/day = cfu/day"
  - For internal consistency, Equation 1 of Section 4.3 on Page 33 should be renumbered throughout the TMDL document as Equation 4.
  - In Paragraph 2 of Section 4.3 on Page 33, we recommend inserting the phrase "and the numerical criterion for *E. coli*" at the end of the second sentence.
  - In Tables 4.2 – 4.5 of Section 4.3 on Pages 34-35, we recommend adding footnotes indicating the specific WQS from which the *E. coli* geometric mean criterion for each table was drawn.
  - In Table 4.3 of Section 4.3 on Page 34, the statement made in footnote (b) cannot be corroborated from the monitoring results provided in Table D.3 of Appendix D. Measured flows should be added to Table D.3 of Appendix D to permit corroboration by the reader.

SWQB Response: *The requested changes have been made to Section 4.3.*

- **Section 4.4.1 Waste Load Allocation** *(for bacteria)*
  - In Table 4.6 of Section 4.4.1 on Page 36, footnotes (1) and (2) have no corresponding superscripts in the table.
  - In Table 4.7 of Section 4.4.1 on Page 37, NM DOT Dist 3 is listed as a Phase II Permittee, although NM DOT Dist 3 is one of four agencies jointly issued a Phase I Stormwater Discharge Permit by EPA Region 6. We recommend removing NM DOT Dist 3 from Table 4.7. In addition, Kirtland AFB is misspelled in Table 4.7.
  - In the third sentence of the last paragraph on Page 38 of Section 4.4.1, we recommend removing the phrase "In addition, the current" from the beginning of the sentence.
  - In Table 4.8 of Section 4.4.1 on Page 40, it appears that Waste Load Allocations have been omitted for Rio Grande (Rio Puerco to Isleta Pueblo bnd) and Rio Grande (San Marcial at USGS gage to Rio Puerco). Further, the (a), (b) and (c) superscripts do not match any footnotes in Table 4.8. Finally, the WLA results for permit NM0027863 should be moved down two lines to match the row header. (It should be noted that Page 41 is missing, suggesting that part of Table 4.8 has been omitted from the document.)
  - In Table 4.8 of Section 4.4.1 on Page 40, we question the classification of discharges under Phase I and Phase II stormwater permits as "point sources" to which waste load allocations can be assigned. Please clarify the regulatory justification for this approach.

SWQB Response: *The suggested grammatical changes have been made to Section 4.4.1. Unfortunately, a page was omitted in the Public Comment Draft of the TMDL document and a portion of Table 4.8 was indeed missing. The comments regarding Table 4.8 are clarified when the entire table is included.*

As stated in Section 4.4.1, the Phase 1 permit covers all areas within the incorporated limits of the City of Albuquerque and the permittees include the City of Albuquerque, UNM, AMAFCA, and NM Department of Transportation District 3. Per EPA, NM DoT District 3 is also a Phase 2

permittee and would also be responsible for those areas outside the incorporated limits of the City of Albuquerque under the Phase 2 permit.

In November 2002, the EPA Office of Wetlands, Oceans, and Watersheds and the Office of Wastewater Management issued a memo to all the Regional Water Division Directors (available online: http://www.epa.gov/npdes/pubs/final-wwtmdl.pdf) that specifically addressed the issue of the assignment of WLA to storm water discharges. The memo states that NPDES-regulated storm water discharges must be addressed by the wasteload allocation component of a TMDL (40 CFR §130.2(h)). The memo also states that storm water discharges that are regulated under Phase 1 and Phase II of the NPDES storm water program are point sources that must be included in the WLA portion of the TMDL (40 CFR §130.2(h)).

- **Section 4.4.2 Load Allocation** *(for bacteria)*
  - We recommend that Equation 2 of Section 4.4.2 on Page 42 be reformatted as follows, to better correlate with the explanatory text preceding it: LA = TMDL – WLA – WOS. In addition, for internal consistency, Equation 2 should be renumbered as Equation 5 throughout the document.
  - In Table 4.9 of Section 4.4.2 on Page 42, the NPDES permit cited in footnote (a) is not shown in Table 4.8 of Section 4.4.1 on Page 40. Please correct or clarify this apparent discrepancy.
  - In Table 4.10 of Section 4.4.2 on Page 42, we recommend adding the preface "WLA:" before each NPDES permit number so that the Total Waste Load Allocation summation is easily understood. Also, none of the NPDES permits cited in Table 4.10 are shown in Table 4.8 of Section 4.4.1 on page 40. Please correct or clarify this apparent discrepancy.
  - In Table 4.11 of Section 4.4.2 on Page 43, we recommend adding the preface "WLA:" before each NPDES permit number so that the Total Waste Load Allocation summation is easily understood. In addition, it is not clear how the WLA values for NPDES permits NMS000101 and NMR040000 were determined. WLAs for these permits are shown as "Variable" in Table 4.8 of Section 4.4.1 on Page 40. Please clarify.
  - In Table 4.12 of Section 4.4.2 on Page 43, we recommend adding the preface "WLA:" before each NPDES permit number so that the Total Waste Load Allocation summation is easily understood. In addition, it is not clear how the WLA values for NPDES permits NMS000101 and NMR040000 were determined. WLAs for these permits are shown as "Variable" in Table 4.8 of Section 4.4.1 on Page 40. Please clarify.
  - In Tables 4.9 – 4.12 of Section 4.4.2, we recommend moving the Load Allocation row to the bottom of each table to better correlate with the explanation of LA derivation at the beginning of the Section.

SWQB Response: *The suggested grammatical changes have been made to Section 4.4.2. The footnote below Table 4.9 and the permits in Table 4.10 are referenced in Table 4.8, which as noted previously was unfortunately missing from the Public Comment Draft of the TMDL document. The WLA for the NMR040000 and NMS000101 permits is listed as "variable" for the sake of space in Table 4.8. The details of the WLA for these permits are detailed in Tables 4.11 and 4.12. A footnote has been added to Table 4.8 for clarification. The location of the LA rows in Tables 4.10-4.12 has been moved.*

- Beginning with the last paragraph of Section 4.4.2 on Page 43, we recommend starting a new **Section 4.4.3** entitled **Load Calculations**. In this last paragraph, it is not clear which specific measured E. coli concentrations were used in Equation 1 (future Equation 4) to determine actual loading. Please add an explanatory statement similar to the one included for aluminum in the first paragraph on Page 22 of Section 3.4.2 (future Section 3.4.3).
- In Tables 4.13 – 4.16 of Section 4.4.2 (future Section 4.4.3) on Pages 44-45, we recommend citing the applicable Appendix D table number in the appropriate footnote for each table. In addition, each table in Appendix D should be expanded to include measured flows, to allow reader corroboration of mean *E. coli* concentration for each flow condition shown in Tables 4.13 – 4.16 with raw data in Appendix D. Finally, we recommend adding the units abbreviation "(cfu/day)" after "Measured Loads" and "Target Loads" in each table.
- In Tables 4.13 – 4.16 of Section 4.4.2 (future Section 4.4.3) on Pages 44-45, we are concerned that **arithmetic** means for measured *E. coli* concentrations are compared against **geometric** means for *E. coli* water quality criteria when determining load reduction percentages. Because arithmetic means are generally higher than geometric means for *E. coli*, we are concerned that using arithmetic means for measured *E. coli* concentrations may overestimate measured loads, resulting in higher computed percent reductions needed to achieve target loads. Please provide justification for using arithmetic rather than geometric means for measured *E. coli* concentrations in these computations.
- Bernalillo County has particular concerns about the projection in Table 4.15 of Section 4.4.2 on Page 45 that the *E. coli* load for the Rio Grande (Isleta Pueblo bnd to Alameda Street bridge) AU must be reduced by more than 80% to achieve the target load under most flow conditions. This level of reduction is nearly impossible, given the finding from the October 2005 *Middle Rio Grande Microbial Source Tracking Report* that 46.4% of fecal bacteria present in the Rio Grande originate from wildlife beyond human control. We request that NMED add a statement acknowledging this reality to the last paragraph in Section 4.4.2 on Page 45, similar to the statement included for aluminum in Section 3.3 on Page 19.

SWQB Response: *In reviewing this section in response to this comment as well as the comments of others NMED recognizes that for this TMDL calculating a percent reduction is particularly challenging. This is largely for the reasons noted in the comments above – the samples collected and the impairment determinations are based on exceedences of the State's single sample criterion and the TMDL is written to the address the monthly geometric mean standard of Sandia and Isleta Pueblos. As such any simple comparison of these numbers is fraught with challenge and, in this case, will result in an over estimation of the actual reduction necessary.*

Furthermore, neither Section 303 of the Clean Water Act nor Title 40, Part 130.7 of the Code of Federal Regulations requires states to include discussions of percent reductions in TMDL documents. Although NMED believes that it is often useful to discuss the magnitude of water quality exceedences in the TMDL, the "percent reduction" value is can both be calculated in multiple ways and as a result can often misinterpreted. This is clearly the case in this situation.

For these reasons Tables 4.13-4.16 and the associated discussion have been removed. Statements in Section 3.3 have been duplicated in Section 4.3.

- **Section 4.5 Identification and Description of Pollutant Sources** *(for bacteria)*
  - For Point pollutant sources in Table 4.17 of Section 4.5 on Page 46, the computation methodology for the magnitude (cfu/day) for each AU is not clearly defined. Please clarify how these values were determined.
  - In Table 4.17 of Section 4.5 on Page 46, footnote (a) discusses point source and nonpoint source percentage calculations, although the table itself shows no percentages for point and nonpoint sources. Please clarify.

SWQB Response: *The magnitude values in Table 4.17 (now Table 4.13) were derived from the measured load values displayed in Tables 4.12-4.16. These values have been removed from Table 4.17 (now Table 4.13). The Point Source values are derived from the NPDES permits. Clarification has been added to footnote (a) and footnote (c) has been removed.*

- **Section 4.6 Linkage Between Water Quality and Pollutant Sources** *(for bacteria)*
  - We recommend adding the following statement at the end of the first paragraph in the subsection entitled "*E. coli Data*" in Section 4.6 on Page 47: "Higher r-values indicate stronger correlations between the variables compared."
  - In the second sentence of the second paragraph in the subsection entitled "*E. coli Data*" in Section 4.6 on Page 47, we recommend adding the words "Table D.4 of" after the words "Data in". In the same sentence, the statement that "elevated E. coli levels occur during both rainfall and non-rainfall events" cannot be corroborated by the reader from information presented in Table D.4 of Appendix D. Appendix D should be expanded to include measured rainfall associated with each sampling event.
  - In the third sentence of the second paragraph in the subsection entitled "*E. coli Data*" in Section 4.6 on Page 47, the described number of samples collected (43) in the Rio Grande (San Marcial gage to Rio Puerco) does not correspond to the number of samples shown in Table D.4 of Appendix D (63) for the same AU. Please clarify or correct this apparent discrepancy.
  - For the first through third paragraphs on Page 48 in Section 4.6, we recommend providing citations to the applicable Appendix D table in each paragraph, showing the actual correlation computations, and clearly identifying which samples were used to determine the correlation between rainfall and *E. coli* concentration for each AU.

- In the third paragraph on Page 48 in Section 4.6, a correlation coefficient of r = 0.77 is described although the paragraph states that, in the Rio Grande (non-pueblo Alameda to Angostura Diversion) AU, the "highest exceedence … occurred on **the one day** when rainfall was recorded …". We are concerned about the determination of a correlation between rainfall and *E. coli* concentration for this AU based on a single observation. Please explain.

SWQB Response: *The suggested grammatical changes have been made to Section 4.6. The notation in Section 4.6 about 43 E.coli samples has been corrected to read 63. Rainfall data has been added to the tables in Appendix D.*

The Pearson correlation coefficient was calculated using all available data as provided in Appendix D. The observation made regarding the exceedences in the Rio Grande (non-pueblo Alameda to Angostura Diversion) assessment unit merely intends to point out that the highest exceedence (5300 cfu/100 mL) occurred on the only sampling event where rainfall occurred the previous day.

- **Section 4.9 Future Growth** *(for bacteria)*
  - We recommend adding the following sentences at the end of the final paragraph on Section 4.9 on Page 50: "The existing Middle Rio Grande-Albuquerque Reach Watershed Restoration Strategy (Albuquerque Reach Watershed Group, 2008) defines a framework for design, installation and maintenance of BMPs in the northern portions of this watershed. See Section 6.0 for details."

SWQB Response: *The suggested grammatical changes have been made to Section 4.9.*

- **Section 6.2 Clean Water Act §319(h) Funding Opportunities**
  - We recommend adding the word "(impaired)" after the words "category 4 or 5" in Paragraph 1 of Section 6.2 on Page 54.

SWQB Response: *The suggested grammatical changes have been made to Section 6.2.*

- **Subsection 6.4(B) Specific SWMP/SWPP Requirements**
  - In Paragraph 4 of Subsection 6.4(B) on Page 56, it is stated that "Compliance with the following provisions will constitute compliance with the requirements of this TMDL." According to the NMED website (http://www.nmenv.state.nm.us/swqb/TMDL/),"TMDLs are not regulatory documents, but they can be used to issue or modify permits for point sources." Because TMDLs are non-regulatory, it concerns us that there is a reference to "the requirements of this TMDL" in the document. Please clarify.
  - In Item 1 of Subsection 6.4(B) on Page 56, it is stated that "Permittees **shall** submit an approvable Bacteria Reduction Plan to the EPA within 12 months of notification [that the TMDL has been approved by EPA]." In Item 2 of Subsection 6.4(b) on Page 57, it is stated that "Within 18 months of notification [that the TMDL has been approved by EPA], the permittee **shall** prepare and submit to the EPA either a TMDL monitoring plan or a commitment to participate in a coordinated regional monitoring plan." Including such mandatory language leaves the impression that the TMDL itself creates regulatory requirements for NPDES permitees in the watershed, which conflicts with the non-regulatory nature of TMDLs as described by NMED. Please correct or clarify this apparent discrepancy.

SWQB Response: *The abbreviation "WLA" has been added to the statement in Paragraph 4 of Subsection 6.4(B) in order to clarify that "requirements" referred to are in reference specifically to the WLAs assigned in the TMDL. The term "shall" in Items 1 and 2 of Subsection 6.4(B) has been replaced with the terms "should" and "should consider." As noted in the paragraph immediately preceding Subsection 6.4, the language in Subsection 6.4 was submitted for inclusion by EPA R6 and the ultimate decision about TMDL implementation will be decided during the NPDES permit process. EPA does not have the authority to approve Implementation Plans in TMDLs and states that fact in every TMDL approval letter we receive from EPA R6. For example, the approval letter for the Jemez River TMDLs (September 2009) reads:*

> *"Included in this TMDL submittal was a TMDL Implementation Plan. Presently, EPA has no duty to approve or disapprove implementation plans under Section 303(d) of the Clean Water Act (CWA). Therefore, EPA is taking no action to approve or disapprove the TMDL Implementation Plan submitted by NMED."*

The Implementation Section is merely a suggested guide for future permit development or other relevant watershed activities.

- **Appendix A: Conversion Factor Derivation**
  - We recommend revising the calculations shown in Appendix A to read as follows:

    Flow (MG/day) x Concentration (mg/L) x CF (L – lb/MG – mg) = Load (lb/day)

    CF = 10^6 gal/MG x 3.785 L/gal x 1 lb/454,000 mg = 8.34 L – lb/MG – mg

<u>SWQB Response:</u> *The suggested changes have been made to Appendix A.*

- **Appendix C: Aluminum Data**
  - Table C.1 of Appendix C should be expanded to include a streamflow measurement for each sampling event, to allow reader corroboration of statements made in the TMDL.

- **Appendix D: E. coli Data**
  - Tables D.1, D.2, D.3 and D.4 should be expanded to include a streamflow measurement and a rainfall measurement for each sampling event, to allow reader corroboration of statements made in the TMDL.
  - Table D.4 should be reformatted to fit on a single page or relabeled to clarify that it is continued on a second page.

<u>SWQB Response:</u> *Flow data have been added to Appendix C and Appendix D now includes both flow and rainfall data.*

Thank you for this opportunity to review and comment on the "Public Comment Draft Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed." Please contact me at (505) 848-1507 with questions or comments.

Best regards,

Mary Murnane
Program Manager
Water Resources Program
Public Works Division

CC: Tom Zdunek, Deputy County Manager for Public Works
Steve Miller, Director, Infrastructure Planning and Geo-Resources Department

Comment Set B:

From: Andy Smith [cofam5@yahoo.com]
Sent: Tuesday, October 20, 2009 3:53 PM
To: Henderson, Heidi, NMENV
Subject: TMDL Comments

COMMENTS ON THE TMDL DRAFT, SUBMITTED 20 OCTOBER 2009, IN RESPONSE TO THE NMED REQUEST

The quality and depth of the draft TMDL are appreciated and it is good to see the attention NMED is paying to our drinking water quality and to see excellent young people getting involved in the crusade.

The TMDL purpose was well stated in the introductory letters and it includes identifying possible pollutants and sources and finding ways to limit the extents of any releases. However, the limited scope of this draft is of great concern, because the Middle Rio Grande river is now being used as a drinking water (DW) source for about a half-million people. Of greatest concern is the fact that most of the 70 or so potential drinking water pollutants which are listed by the EPA are not addressed. This may be because the river is not yet classified by the State as such a major DW source and because the existing Source Water Assessment document does not include this use.

Micro-organisms

Of special concern is the large number of micro-organisms that are recognized by the EPA and are not covered. Most are much smaller than the E-coli, which is covered. In addition, the Rio Rancho and other city waste water treatment plant discharge pipes are just upstream of the intake to our drinking water plant and those discharges include a wide variety of industrial, agricultural, medical and other possible chemical, biological and other pollutants. All of these possible pollutants should be addressed to properly characterize the source water and because the drinking water treatment plant seems to have limited filtration capabilities (in the nano-meter to pico-meter range) because it only uses particle flocculation and charcoal filtration.

For disinfection, it uses ozone and chlorine and some of the potential emerging biological contaminants may be practically indestructable (highly resistant to heat, chemicals, etc.). The prions, that cause brain disintegration, are a good example of such pollutants and they are now being studied as possible water pollutants, because their infections have been found among some of the game animals. Conversations with Stanley Prusiner, who received the Nobel Prize for his contributions to the prion discovery, made this disinfection resistance point very clear and all of the subsequent disinfection tests have proven this disturbing fact to be true. The prion is a deformed protein which the body can reproduce. It is chemically identical to one of our natural chemicals but it is configured differently and the difference is deadly.

Emerging Pollutants

In addition to the prion, there are a number of emerging pollutants that should be addressed, by us, even though they are not yet on the main EPA

list, because we and the public are becoming increasingly aware of their danger. An ongoing new news feature, in the New York Times, is evidence of this, as it addresses some of the hazardous materials that are now present in our treated drinking water. A good example of that group of newly recognized contaminants is the pharmaceuticals. The NM Amigos Bravos group and many others have expressed concerns about these. Also, we have a few unique contaminant candidates, in this New Mexico area, which should be considered, by all of us, because we are downstream of the large national nuclear research and production labs. Plutonium is on this list and one of our community volunteer study groups (AVAT) has suggested that the protection limits should be lower that they presently are, based on the outstanding work that has been done by Arjun Makhijani.

The NMED is at the center of the activities of concern to many of us, as they are related to our drinking water quality, and we would appreciate a priority effort aimed at the updating of the MRG Source Water Assessment, the expansion of this and other TMDL documents to include these potential hazards and the correction of the NM Surface Water Quality Standards (NMAC 20.6.4), to reflect the present and extremely important new use of this water, for drinking. Perhaps our greatest concern, with these documents is the lack of proper attention to the possible biological contaminants, as discussed, and the detailed and frequent sampling and testing that they require.

Albuquerque has enjoyed some of the purest drinking water in the World, for most of its history, and this water quality may, in some way, have contributed to the fact that we have among the lowest rates of heart disease, cancer and stroke in the country. Test data has shown us to have only small fractions of many of the allowable concentrations of the EPA pollutants, in the past - and many were never found in our deep-well water. Our new addition of river water to the DW mix has changed all of that and it is important for us to upgrade our standards, testing , treatment, etc. to properly meet this new challenge and we hope that the NMED and the DoH will do all they can to help us.

We recognize that the important effort expansions, in this area, may require additional NMED funding and we will be happy to do all we can to encourage our legislators to support such targeted increases. We will also be happy to urge EPA support, so that the needed tests, data, standards, etc. can be provided. We would like to see a complete EPA baseline chemical, biological and radiological contaminant profile of the river water, as soon as possible.

Andy Smith
Public Health Advocate

SWQB Response: *Thank you for the comments and your continued interest in the water quality of the Middle Rio Grande. SWQB recognizes your concern for the drinking water supply of the Albuquerque area.*

The impairments addressed in this TMDL are included on the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List. Water quality data collected during SWQB surveys is compared to the existing Standards for Interstate and Intrastate Surface Waters (NMAC, 2007). Determination of impairment of a waterbody is based on the application of the Procedures for Assessing Use Attainment for the State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Water Quality Monitoring and Assessment Report (January 2008). As you noted, there are currently no existing surface water quality standards for some chemicals. SWQB cannot assess impairment of a waterbody for a certain chemical if there is no water quality standard to which it can be compared.

The NMED Department of Energy-Oversight Bureau is currently collecting radionuclide samples in the Rio Grande. The data available for the development of the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List indicated no impairment for radionuclide parameters.

NMED has proposed to add the public water supply use to the Albuquerque reach of the Rio Grande and radionuclide criteria for an upstream reach of the Rio Grande in the current triennial review rulemaking. The Department's proposal would not add criteria for other pollutants at this time.

Bacterial criteria are established under the Clean Water Act for recreational contact, but not for drinking water. As for other emerging contaminants, such as pharmaceuticals and personal care products (PPCPs), EPA has not yet recommended water quality criteria at the national level, though monitoring and research are ongoing. EPA discusses PPCPs on its website at http://www.epa.gov/ppcp/faq.html. The risks posed by low levels of these contaminants in water to aquatic life and human health remain uncertain.

Most of SWQB's surface water quality efforts, such as monitoring, certifying NPDES permits, establishing TMDLs, and implementing restoration efforts, are triggered by the water quality standards. Developing water quality criteria is a scientifically rigorous process that culminates in a formal rulemaking. Any person may petition to amend the water quality standards with documentation to support new or revised criteria.

Comment Set C:

Joe M. Lujan
Governor

E. Scott Paisano
Lt. Governor

(505) 867-3317
Fax (505) 867-9235

www.sandiapueblo.nsn.us

October 20, 2009

RECEIVED
OCT 26 2009
SURFACE WATER QUALITY BUREAU

Heidi Henderson, TMDL Coordinator
NEW MEXICO ENVIRONMENT DEPARTMENT
Surface Water Quality Bureau
P.O. Box 5469
Santa Fe, NM 87502

RE: Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed

Dear Ms. Henderson:

On behalf of the Pueblo of Sandia, please extend our appreciation to the New Mexico Environment Department for acknowledging our tribal waters in the development of the Middle Rio Grande Watershed Total Maximum Daily Load (TMDL).

Our environment department has reviewed the TMDL and has the following comments and/or insertions:

1. The Executive Summary states that an "A TMDL documents the amount of a pollutant a waterbody can assimilate without violating a state's water quality standard". The Pueblo of Sandia would like to have the following inserted "or a tribe's water quality standard".

2. The Executive Summary states that a "pre-survey public meeting in Albuquerque" was held. The Pueblo of Sandia would like to have the date of this meeting inserted into the text. This would benefit anyone who would like to reference this public meeting.

3. The 1.0 Introduction states that an "A TMDL documents the amount of a pollutant a waterbody can assimilate without violating a state's water quality standard". The Pueblo of Sandia again, would like to have the following inserted "or a tribe's water quality standard".

4. The Pueblo of Sandia would like to request a copy of the 2005 survey data for the Rio Grande (non-Pueblo Alameda Street Bridge to Angostura Diversion) that was collected for dissolved aluminum even though it was determined not to be an impairment for this stretch.

Once again, thank you for the continued consultation with our environment department and assistance on this project. If you have any questions or concerns, please contact Frank Chaves, environment director, or Scott Bulgrin, water quality manager of my staff at (505) 867-4533.

Sincerely,

Joe M. Lujan
Governor

SJB/

cc: Curry Jones, USEPA Region 6TMDL Team Leader
Linda Adams, USEPA Region 6NM TMDL Coordinato,
Marcy Leavitt. NMED Water & Wastewater Division Director
Glenn Saums, NMED Acting Surface Water Bureau Chief
Frank Chaves, Pueblo of Sandia Environment Department
Scott Bulgrin, Pueblo of Sandia Environment Department
File

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<u>SWQB Response:</u> *Thank you for the comments and your continued support of SWQB sampling efforts in the Middle Rio Grande. The requested changes have been made to the Executive Summary and Section 1.0. Per your request, the dissolved aluminum data for the Rio Grande (non-Pueblo Alameda Street Bridge to Angostura Diversion) was submitted to Mr. Joe Lujan, Mr. Scott Bulgrin, and Mr. Milton Bluehouse on October 29, 2009.*

Comment Set D:

CITY OF ALBUQUERQUE

October 27, 2009

Martin J. Chávez
Mayor

Nicholas S. Bakas
Director of Aviation

Heidi Henderson
New Mexico Environment Department
Surface Water Quality Bureau
P.O. Box 5469
Santa Fe, NM, 87502

Re: Comments on the Draft Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, September 16, 2009

Dear Ms. Henderson,

The City of Albuquerque Aviation Department is pleased to have an opportunity to comment on the Public Comment Draft Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed (September 16, 2009).

- Table 2-2: The TMDL should include a map showing the individual segments and the locations of the 2005 surface water sampling stations within those segments. The maps of the entire middle Rio Grande good for an overview, but not useful on a segment-specific basis to see where sampling stations were located.

- Page 37-38: The application of the "jurisdictional approach" should be more comprehensively described. While it is clear that the area of the watershed is being divided by segment, it is not clear how that is applied in terms of discharging storm water. Is the percentage of the jurisdiction used to determine a volume of discharge or responsible for a reduction of *e coli*?

- Page 56: The TMDL states "*After EPA approves the final TMDL, existing MS4 permittees will be notified of the TMDL provisions and schedule. Industrial stormwater permittees are not expected to be a significant source of bacteria but if any are identified, similar actions will be required.*" The industrial storm water permittees that are located within the MS4 should not be individually responsible for developing a Bacterial Reduction Plan, developing or participating in a bacterial monitoring plan, and annual reporting. If necessary, the MS4 permittee should have the responsibility of working with industrial storm water permittees for these requirements. To require that individual industrial storm water permittees complete the same requirements as the MS4 could result in expensive duplicative efforts that do not provide appreciable benefit to reducing the impairment.

If you have any questions about these comments, please contact me at 244-7836 (office) or email me at calbrecht@cabq.gov.

Sincerely,

Christopher P. Albrecht, Environmental Manager
City of Albuquerque Aviation Department
Planning and Development

P.O. Box 9948

Albuquerque

New Mexico

87119-1048

www.cabq.gov

SWQB Response: *Thank you for the comments.*

Comment 1:

Figures 2.1-2.3 display each Assessment Unit as well as the enumerated sampling locations as detailed in Table 2.2. SWQB can provide detailed to information to interested parties regarding specific site locations. Additionally, the NMED –New Mexico Atlas website (http://www.nmenv.state.nm.us/NMAtlas/index.html) is a useful tool for mapping sites of environmental interest, including SWQB sampling locations state-wide.

Comment 2:

Details of the jurisdictional area approach were removed from the main document for simplicity and readability of the document. SWQB developed the MS4 portion of the WLA based on discussions with EPA R6, recommendations from the TMDLs to Stormwater Permits Handbook (USEPA, 2008), and previously developed SWQB MS4 TMDLs. Section 4.4.1 of the TMDLs to Stormwater Handbook discusses the approach used in the Draft Middle Rio Grande TMDL, i.e. aggregated WLA for all stormwater sources. Section 4.3.2.2 discussed the Load Duration Approach and states:

> *"TMDLs developed using the load duration approach most often identify the portion of the loading capacity for the stormwater WLA(s) on the basis of jurisdictional area… Because a load duration curve establishes a flow-variable loading capacity, the framework allows for source-specific allocations to be adjusted by flow zone. To target loading controls and put the load duration results in a more digestible format, the load duration curve is usually divided into different flow zones representing different conditions (e.g., low flow, high flow)."*

For the Draft MRG TMDL, separate WLA were assigned to both the Phase I and Phase II permittees. These allocations were further divided between the two affected Assessment Units; Rio Grande (Isleta Pueblo boundary to Alameda Street Bridge) and Rio Grande (non-Pueblo Alameda to Angostura Diversion). First, the contributing watershed was determined to begin at Cochiti Reservoir as displayed in Figure 4.9. Second, the watershed area from the Isleta Pueblo boundary to Cochiti Reservoir was determined along with the watershed area from Alameda Street Bridge to Cochiti Reservoir. The jurisdictional area of the Phase I permit encompasses the incorporated areas of the City of Albuquerque, however this incorporated area falls within both affected Assessment Units. As a result, the incorporated area of the City of Albuquerque was divided at the Alameda Street Bridge in order to account for the Assessment Unit break at the bridge. The percentage of the incorporated area of the City of Albuquerque that fell into each AU was then determined to be a percentage of the whole watershed. The Phase I WLA percentages are discussed in Section 4.4.1 of the Draft TMDL. A similar approach was taken for the Phase II permittees. The percentage of urbanized areas (as described in the Phase II permit) were similarly determined as a percentage of the whole watershed. The Phase II WLA percentages are also discussed in Section 4.4.1.

Appendix F was also added to the Final TMDL for further explanation of this approach.

Comment 3:

The Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) became effective on September 29, 2008. This permit authorizes operators of stormwater discharges associated with industrial activity located in an area where EPA is the permitting authority to discharge to waters of the United States.

> *Section 2.2.1 of the MSGP reads:*
> *"If at any time you become aware, or EPA determines, that your discharge causes or contributes to an exceedance of applicable water quality standards, you must take corrective action as required in Part 3.1, document the corrective actions as required in Parts 3.4 and 5.4, and report the corrective actions to EPA as required in Part 7.2."*
>
> *Section 2.2.2.1 of the MSGP reads:*
> *"Existing Discharge to an Impaired Water with an EPA Approved or Established TMDL. If you discharge to an impaired water with an EPA approved or established TMDL, EPA will inform you if any additional limits or controls are necessary for your discharge to be consistent with the assumptions of any available wasteload allocation in the TMDL, or if coverage under an individual permit is necessary in accordance with Part 1.6.1."*

As noted in the paragraph immediately preceding Section 6.4 in the Public Comment Draft TMDL, the language in Section 6.4 was provided to SWQB by EPA R6. This language was provided so that the permittees have an opportunity to be aware of potential future permit requirements. As stated in the Public Comment Draft TMDL:

> *"It is the responsibility of EPA Permit Writers to develop a permit that complies with the allocations provided in the TMDL. The exact manner in which this in implemented (specific BMPs, numeric effluent limits etc.) to achieve this goal is up to the discretion of the EPA permit writer and need not follow this implementation guidance."*

Comment Set E:

Southern Sandoval County Arroyo Flood Control Authority

BOARD OF DIRECTORS
John Chaney
Mark Conkling
Steven M. House
Donald A. Rudy
Wm. C. "Dub" Yarbrough

David Stoliker, P.E.
Executive Director

October 27, 2009

NOV 02 2009

Heidi Henderson
New Mexico Environment Department SWQB
P.O. Box 5469
Santa Fe, New Mexico 87502

Subject: SSCAFCA Review of Public Comment Draft - TMDL of the Middle Rio Grande Watershed

Dear Ms. Henderson:

I am in receipt of the proposed TMDL for the middle Rio Grande and appreciate the ability to comment. Thank you.

In reviewing this information, SSCAFCA is struck by the potential impacts that may result and the uncertainty that we have in the information provided. We have explored other information that appears to contradict or negate some of the information that is contained in the document. One example of our uncertainty is the variability of the results as seen in Table D.1. Specifically, the testing data for 7/27/05 in the upper reach of the Rio Grande between the Alameda Bridge and Angostura Diversion shows that the variation in the reported information is from 488.4 to 41.1 cfu/100 ml. Said another way, the variation is from non-compliance to compliance. Two samples appear to be analyzed at Hwy 550 with two different results; one out of compliance with a result of 488.4 cfu's/100 ml and one in compliance with a result of 325.5 cfu's/100 ml. Two other samples taken at the Alameda Bridge on the same day have similar regulatory outcomes of compliance with results of 41.7 cfu's/ml and 62.2 cfu's/ml respectively. Given the potential impact of this rule, this variation is unacceptable. Rather than proceed down a path of uncertainty, I would ask that you withdraw this proposed TMDL and allow further scientific investigation to flush out technical uncertainties and irregularities. This further investigation should include addressing additional technical comments provided by the Storm Water Quality Team of which SSCAFCA is a signatory. It has been my experience that cooperative partnerships work when addressing tough issues. SSCAFCA is willing to form a cooperative partnership to address this issue of bacteria in the Rio Grande.

SSCAFCA is committed to doing our part in protecting the environment. We have established regulatory requirements for all development to treat the "first flush" of storm water run-off. We are designing and constructing storm water quality facilities in every

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facility that we have. We are extremely proud of our wetlands water quality facility in Haynes Park and our recently completed water quality facilities located in the Venada Arroyo (at the Rio Grande in the Rio Rancho Bosque), in the Black Arroyo (located in AMAFCA's Black Dam) and in the Montoyas Arroyo (located in the Sportsplex Dam).

If you have any questions or comments, please call me.

Sincerely,

David Stoliker, PE
Executive Engineer

<u>SWQB Response:</u> *Thank you for the comments.*

That E.coli data available in Appendix D shows results ranging from 41.1 cfu/100 mL to 488.4 cfu/100 mL. These samples were collected throughout the Rio Grande (non-Pueblo Alameda Street Bridge to Angostura Diversion) by SWQB staff operating under the NMED/SWQB Standard Operating Procedures for Data Collection. There were two discrete samples each taken at the Highway 550 bridge (32RGrand464.2) and Alameda Bridge (32RGrand445.4) sites on July 27, 2005. The samples denoted with a "c" following the STORET ID indicate a composite sample that was collected using the method described in Section 7.6 of the 2007 NMED/SWQB Standard Operating Procedures for Data Collection and the samples without a "c" indicate a grab sample.

SWQB recognizes that the data is variable due to the dynamic nature of the Rio Grande and is also typical of E coli impairments throughout the state. The data collected in this Assessment Unit was applied to the Procedures for Assessing Use Attainment for the State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Water Quality Monitoring and Assessment Report (January 2008) and based on the application of this protocol, the Assessment Unit was determined to be impaired for E.coli and is included on the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List. This AU had been continuously listed for fecal coliform at least prior to the 1998-2000 CWA §303(d)/§305(b) Integrated List. SWQB developed a fecal coliform TMDL for this AU in 2002.

As discussed in Sections 3.3 and 4.3, the TMDL is calculated by multiplying the applicable water quality standard, the flow, and a conversion factor. Water quality data is not used in the calculation of the TMDL. Water quality data is used in the determination of impairment during the development of the CWA §303(d)/§305(b) Integrated List. 40 CFR 130.7 requires states to develop TMDLs for impaired, or water quality-limited, segments. SSCAFCA comments relate to the development of Watershed Based Plans that could include tools such as source identification to implement this TMDL.

SWQB is in receipt of the comments submitted by the Mid Rio Grande Storm Water Quality Team and has responded to those comments in Comment Set G. SWQB appreciates SSCAFCA's continued efforts to improve water quality through numerous structural and wetland projects in the Middle Rio Grande watershed.

Comment Set F:

Ronald D. Brown, Chairman
Janet Saiers, Vice Chair
Danny Hernandez, Secretary Treasurer
Tim Eichenberg, Asst. Secretary Treasurer
Daniel F. Lyon, Director

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OCT 30 2009

October 27, 2009

Heidi Henderson
Surface Water Quality Bureau, NM Environment Department
P.O. Box 5469
Santa Fe, NM, 87502

Subject: Comments on Draft TMDL for the Middle Rio Grande Watershed

Dear Ms. Henderson:

This letter contains comments on the Draft Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed that are being submitted by the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) as requested in your Notice of a 45-Day Public Comment Period and Community Meeting. Briefly, AMAFCA objects to the proposed TMDL for E coli in the Middle Rio Grande for the following reasons:

1. There is a large natural source of E coli bacteria in the river as documented by New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) monitoring data.

2. No data or information has been presented to show that a high natural concentration of E coli bacteria has impacted the river or human health in any way.

3. An alternative calculation of E coli concentrations in the proposed TMDL suggests that the NMED has overstated the degree of non-compliance with the stream standard, supports the position that the coliform loads are due to natural phenomenon and leads to questions regarding load calculations in the document.

Our concerns are discussed below. Because the North Diversion Channel (NDC) joins the river upstream from the Alameda Bridge, our comments are principally focused on the reach of the river from the Alameda Bridge to the Angostura dam.

Point 1 – Large Natural Sources of Coliform Are Present.
Our most strident objection to the TMDL deals with the lack of recognition of natural sources of E coli bacteria in the river. Figure 4.8 in the TMDL appears to show that the highest exceedance of the stream standard for E coli above the Alameda Bridge occurs during low flow conditions. The document attributes high concentrations of E coli under low flow conditions to point sources (page 21).

Above the Alameda Bridge, there are only three small permitted discharges: one for the town of Bernalillo and two for Rio Rancho. The permit conditions for point sources in the middle Rio Grande for flow and coliform criteria are summarized in Table 1. Your monitoring data showed that these discharges are in compliance with their permit criteria. During the "Dry Conditions" (Q < 647 cfs) and "Low Flow Conditions" (Q < 359 cfs) the principal source of coliforms must therefore be attributed to natural sources. We examined the monitoring data from the TMDL report (Appendix D) and noted numerous instances of high E coli concentrations at sampling locations above the NDC on days with little or no flow in this channel (Q ≤ 2 cfs) and presumably little or no rainfall in the watershed.

Table 1. NPDES permit values for flow and coliform bacteria for discharges to the Middle Rio Grande.

Wastewater Treatment Plant	Qmax (Mgal/d & cfs))	Parameter	30 d Average	Daily Maximum
Albuquerque	76 (118)	F. coli	100	200
Belen	1.2 (1.86)	E. coli	126	410
Bernalillo	0.8 (1.24)	F. coli	100	200
Los Lunas	0.9 (1.39)	E. coli	126	410
Rio Rancho Plt 2	5.5 (8.51)	F. coli	100	200
Rio Rancho Plt. 3	.85 (1.32)	F. coli	100	200
Bosque Farms	.5 (.77)	E. coli	126	410
Socorro	-	E. coli	126	410

The NMED coliform data supports the conclusion that natural sources are the principal cause of high concentrations of E coli in the river under low flow conditions. There is a large and growing body of literature on natural sources of E coli that include mammalian and avian populations, sediments, and even regrowth of coliform organisms in sediments and soils in warm climates. Based on our observation of large permanent populations of water fowl (especially geese and ducks) and aquatic mammals (beaver and muskrat), we believe that these organisms are the most likely sources of E coli in this reach of the river, and therefore, high concentrations should be considered to be natural.

SWQB Response: *Thank you for your comments.*

Section 3.2 of the Draft MRG TMDL states:

> *"The pattern of impairment can be examined to see if it occurs across all flow conditions, corresponds strictly to high flow events, or conversely, only to low flows. Impairments observed in the low flow zone typically indicate the influence of point sources, while those further left generally reflect probable nonpoint source contributions."*

This statement is included as a general statement related to load duration curves. Figure 4.8 shows exceedences of both the single sample and geometric mean criterion across most flow regimes. The TMDL does not negate the non-point source contribution of E.coli bacteria nor does it attempt to explain each E.coli exceedence noted in the water quality monitoring data. The fact that these data seem to contradict a general rule of load duration curve interpretation is an issue to be addressed during permit implementation.

SWQB recognizes that there are natural sources of E.coli bacteria in the Middle Rio Grande watershed (Parsons, 2005). However, the fact that NPDES and MS4 permitees discharge to the Rio Grande (non-Pueblo Alameda Street Bridge to Angostura Diversion) AU, requires SWQB to assign a WLA to those permittees, regardless of whether they are contributing to the impairment of the waterbody or not.

40 CFR § 130.2(i) defines a TMDL as follows:

> *"Total maximum daily load (TMDL). The sum of the individual WLAs for point sources and LAs for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure…"*

40 CFR § 130.2(h) defines a WLA as follows:

> *"Wasteload allocation (WLA). The portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality-based effluent limitation."*

The limited monitoring results in Appendix E.5 for the facilities in the Rio Grande (non-Pueblo Alameda Street Bridge to Angostura Diversion) may not indicate a permit violation, however, it should be noted that a number of samples exceed the Pueblo of Sandia single sample E.coli criterion.

Point 2 – Impact of High Coliform Concentrations.

The NMED data shows that coliform bacteria are consistently present in the Middle Rio Grande above the Alameda Bridge. The geometric mean concentration for the data reported in the proposed TMDL was 72 cfu/100 mL for E coli. AMAFCA is not aware of any data or studies that have shown impairment of the river or human health problems as a result of these high concentrations. While AMAFCA recognizes that E coli is a very useful indicator of the possible presence of pathogenic bacteria in drinking water, we believe it is a very poor indicator of potential threats to the environment or human health in the Middle Rio Grande where it is clear that natural sources of E coli and related bacteria are present. Before a costly TMDL is issued, AMAFCA insists that the NMED justify its implementation by demonstrating this impairment or threat.

<u>SWQB Response:</u> *States are required to develop TMDLs for segments that do not meet applicable water quality standards.*

40 CFR § 130.7(c)(1) reads:

> *"Each State shall establish TMDLs for the water quality limited segments identified in paragraph (b)(1) of this section, and in accordance with the priority ranking. For pollutants other than heat, TMDLs shall be established at levels necessary to attain and maintain the applicable narrative and numerical WQS with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. Determinations of TMDLs shall take into account critical conditions for stream flow, loading, and water quality parameters."*

40 CFR § 130.7(c)(1)(ii) reads:

> *"TMDLs shall be established for all pollutants preventing or expected to prevent attainment of water quality standards as identified pursuant to paragraph (b)(1) of this section…"*

*NMED proposed water quality standards for Escherichia coli (E.coli) during the 2005 Triennial Review. E.coli water quality standards were approved by the WQCC and EPA and have been effective since August 2007. The rationale for the establishment of these E.coli standards is based on the Final EPA Rule- Water Quality Standards for Coastal and Great Lakes Recreation Waters (40 CFR § 131***).** *40 CFR § 131 states that the recommended values apply to enterococci regardless of origin unless a sanitary survey shows that sources of the indicator bacteria are non-human and an epidemiological study shows that the indicator densities are not indicative of a human health risk.*

The Executive Summary of <u>Implementation Guidance for Ambient Water Quality Criteria for Bacteria</u> (EPA, 2004) states:

> *"Although there have been few studies investigating the impact of fecal contamination from animal source, it is inappropriate to conclude that these sources present no risk to human health from waterborne pathogens, particularly when the animals in question are likely to have had frequent contact with humans and may harbor and shed human pathogens."*

Additionally, Section 3.2 discusses recent evidence that warm-blooded animals other than humans may be responsible for transmitting pathogens capable of causing illness in humans.

Point 3 – Alternative Analysis of E coli Concentrations.

The waste loads presented in the TMDL for the river above the Alameda Bridge are calculated using flows measured at the Alameda Bridge. However, during the SWQB study E coli concentrations were measured at several locations upstream from this point. Under low flow conditions there are no significant tributaries above this point (the aggregate maximum flows from the Rio Rancho and Bernalillo wastewater treatment plants represent less than 3% of the minimum flow in the river during any of the sampling events for the study), hence, this assumption is reasonable and introduces little error. Therefore, AMAFCA believes that the same reasoning can be applied to the E coli data, so that instead of calculating loads based on individual coliform concentrations, the mean geometric concentration should be used in the load calculations. This is justified because there are no point sources between the uppermost sampling point (the Angostura dam) and the Alameda bridge under low flow conditions except the three wastewater plants which contribute a negligible load (less than 3 %). We also argue that geometric means of E coli concentrations are justified when Rio Grande flows are high but NDC flows are negligible ($\leq$ 2 cfs), as again, the sole sources of coliform bacteria are natural sources and the three permitted point source discharges.

The events in which multiple E coli samples were collected are presented in Table 2 (page 5) along with the daily mean flows of the Rio Grande at the Alameda bridge and in the NDC. This data shows that the geometric mean E coli concentrations for each of the multiple sampling events was less than the NM state stream standard of 126 cfu/100 mL except the samples collected on 10/28/5 which slightly exceeded the standard at 131 cfu/100 mL.

Examination of this data shows no apparent relationship between E coli concentrations in the river and sample location. On some days (i.e. 7/27/5), the highest E coli concentrations are near the upper end of the reach while on others (i.e. 10/26/5) they are at the lowest end of the reach. This observation is consistent with AMAFCA's interpretation that the sources of coliform bacteria in this reach of the river are primarily natural.

Finally, an even closer examination of the data suggests a possible error in NMED's analysis. Reference to Figure 4.8 in the draft TMDL document shows a sequence of samples collected under very low flow conditions, Q < 359 cfs. However, according to USGS data, the lowest daily average flows measured at the Alameda Bridge during any of the sampling events was 383 cfs on 10/26/5. Use of erroneously low flow values will result in correspondingly low loads. The NMED should explain the source of flow data used in their load calculations.

AMAFCA is deeply committed to protection of the environment and human health. In the past 10 years we have spent more than $20,000,000 to achieve this goal on projects that have resulted in cleaner urban runoff, development of environmental sanctuaries for wildlife and plants, and providing open space for public use and recreation. We support the objective of the TMDL

process which states that "Management of the load to improve stream water quality should be a goal to be attained." However, the proposed TMDL and supporting data does not:

1. Demonstrate that there is any environmental impairment of the middle reach of the Rio Grande by enteric coliform bacteria.

2. Document that elevated concentrations of this parameter is caused by anthropogenic activities.

Furthermore, because the high concentrations of E coli appear to be caused by natural sources, we do not believe there are any control strategies that can be undertaken to reduce their concentrations. Therefore, we strongly object to implementation of this TMDL.

AMAFCA looks forward to working with the NMED on all of its projects to protect the water quality of the Middle Rio Grande. Please contact us if you would like to discuss this or other topics.

Sincerely,
AMAFCA

Jerry M. Lovato, P.E.
Drainage Engineer

Cc: Roland Penttila, City of Albuquerque
Kathy Trujillo, New Mexico Department of Transportation
Vern Hershberger, University of New Mexico
AMAFCA File 028 060000

Table 2. Summary of E coli and flow data for days in which multiple samples were collected on the Rio Grande upstream from the Alameda Bridge.

		E coli (cfu/100mL)		Q (cfs)		
Location	Date	Data	G. Mean	Alameda	NDC	Load (cfu/d)
Rio Grande Below Angostura Diversion Works - 30RGrand473.7	3/23/2005	10.8		963	2	
Rio Grande abv Hwy 550 Bridge - 32RGrand464.2	3/23/2005	11		963	2	
Rio Grande above Rio Rancho WWTF #3 - 32RGrand458.0	3/23/2005	13.4		963	2	
Rio Grande above Alameda Bridge - 32RGrand445.4	3/23/2005	41.4	16.0	963	2	5.84E+11
Rio Grande Below Angostura Diversion Works - 30RGrand473.7	5/26/2005	27.5		5730	2.8	
Rio Grande abv Hwy 550 Bridge - c - 32RGrand464.2c	5/26/2005	32.7		5730	2.8	
Rio Grande abv Hwy 550 Bridge - 32RGrand464.2	5/26/2005	42.8		5730	2.8	
Rio Grande above Rio Rancho WWTF #3 - 32RGrand458.0	5/26/2005	42.6		5730	2.8	
Rio Grande above Alameda Bridge - c - 32RGrand445.4c	5/26/2005	40.4		5730	2.8	
Rio Grande above Alameda Bridge - 32RGrand445.4	5/26/2005	47.3	38.3	5730	2.8	8.30E+12
Rio Grande Below Angostura Diversion Works - 30RGrand473.7	6/23/2005	13.4		4430	1.4	
Rio Grande abv Hwy 550 Bridge - c - 32RGrand464.2c	6/23/2005	23.1		4430	1.4	
Rio Grande abv Hwy 550 Bridge - 32RGrand464.2	6/23/2005	22.6		4430	1.4	
Rio Grande above Rio Rancho WWTF #3 - 32RGrand458.0	6/23/2005	35		4430	1.4	
Rio Grande above Alameda Bridge - c - 32RGrand445.4c	6/23/2005	81.3		4430	1.4	
Rio Grande above Alameda Bridge - 32RGrand445.4	6/23/2005	249.5	41.3	4430	1.4	6.93E+12
Rio Grande Below Angostura Diversion Works - 30RGrand473.7	7/27/2005	98.5		481	0.38	
Rio Grande abv Hwy 550 Bridge - 32RGrand464.2	7/27/2005	488.4		481	0.38	
Rio Grande abv Hwy 550 Bridge - c - 32RGrand464.2c	7/27/2005	325.5		481	0.38	
Rio Grande above Rio Rancho WWTF #3 - 32RGrand458.0	7/27/2005	41.1		481	0.38	
Rio Grande above Alameda Bridge - 32RGrand445.4	7/27/2005	62.2		481	0.38	
Rio Grande above Alameda Bridge - c - 32RGrand445.4c	7/27/2005	41.7	108.9	481	0.38	1.98E+12
USGS 8329918-Rio Grande at Alameda Bridge	8/24/2005	100		472	2	
Rio Grande Below Angostura Diversion Works - 30RGrand473.7	8/24/2005	52.1		472	2	
Rio Grande abv Hwy 550 Bridge - c - 32RGrand464.2c	8/24/2005	50.4		472	2	
Rio Grande above Rio Rancho WWTF #3 - 32RGrand458.0	8/24/2005	7.2		472	2	
Rio Grande above Alameda Bridge - c - 32RGrand445.4c	8/24/2005	77.6	43.0	472	2	7.69E+11
Rio Grande above Alameda Bridge - 32RGrand445.4	9/28/2005	149.7		553	92	
Rio Grande above Rio Rancho WWTF #3 - 32RGrand458.0	9/28/2005	90.9		553	92	
Rio Grande abv Hwy 550 Bridge - 32RGrand464.2	9/28/2005	95.9		553	92	
Rio Grande Below Angostura Diversion Works - 30RGrand473.7	9/28/2005	90.9	104.4	553	92	2.19E+12
Rio Grande above Alameda Bridge - 32RGrand445.4	10/26/2005	231		383	1.2	
Rio Grande above Rio Rancho WWTF #3 - 32RGrand458.0	10/26/2005	133.4		383	1.2	
Rio Grande abv Hwy 550 Bridge - 32RGrand464.2	10/26/2005	153.9		383	1.2	
Rio Grande Below Angostura Diversion Works - 30RGrand473.7	10/26/2005	63.1	131.5	383	1.2	1.91E+12

SWQB Response: *Section 3.0 of the Procedures for Assessing Use Attainment for the State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Water Quality Monitoring and Assessment Report (January 2008) discusses the use of spatially and temporally independent samples; samples that are not spatially or temporally independent are averaged. Details of the assessments are available on the Assessment Summary Sheets, which are made available for public inspection as part of the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List public record. SWQB generally does not have enough independent samples to calculate a monthly geometric mean for assessment purposes. Section 3.3 and Table 3.7 of the Assessment Protocol addresses the procedure for assessing primary and secondary contact uses. Additionally, 20.6.4.14 NMAC reads:*

> *B. Bacteriological Surveys: The monthly geometric mean shall be used in assessing attainment of criteria when a minimum of five samples is collected in a 30-day period.*

Therefore, at this time, SWQB can only apply the single sample E.coli criterion to the available E.coli data for assessment purposes. .

As displayed in Figure 2.7 and Figure 4.4, USGS gage 08329928 was used for the development of the flow and load duration curves. The flow at the Rio Grande near Alameda (08329928) USGS gage was 299 cfs on 10/26/2005. Figure E.1 displays the data downloaded from the USGS website for this gage and date. AMAFCA correctly notes the discharge from USGS gage 08329918 (Rio Grande at Alameda Bridge) was 383 cfs on 10/26/2005. The title of Figure 4.4 has been edited to clarify which USGS gage data was used.

SWQB appreciates the continued work by AMAFCA toward improved water quality in the Middle Rio Grande watershed. However, regardless of whether the sources are anthropogenic or natural, SWQB is obligated to develop a TMDL for impaired waterbodies per federal regulations.

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# ---------------------------------- WARNING ----------------------------------------
# The data you have obtained from this automated U.S. Geological Survey database
# have not received Director's approval and as such are provisional and subject to
# revision.  The data are released on the condition that neither the USGS nor the
# United States Government may be held liable for any damages resulting from its use.
# Additional info: http://waterdata.usgs.gov/nwis/help/?provisional
#
# File-format description:  http://waterdata.usgs.gov/nwis/?tab_delimited_format_info
# Automated-retrieval info: http://waterdata.usgs.gov/nwis/?automated_retrieval_info
#
# Contact:   gs-w_support_nwisweb@usgs.gov
# retrieved: 2009-03-16 15:36:04 EDT
#
# Data for the following site(s) are contained in this file
#    USGS 08329928 RIO GRANDE NR ALAMEDA, NM
# -------------------------------------------------------------------------------------
#
# Data provided for site 08329928
#    DD parameter statistic   Description
#    02   00060     00003     Discharge, cubic feet per second (Mean)
#
# Data-value qualification codes included in this output:
#     A  Approved for publication -- Processing and review completed.
#     P  Provisional data subject to revision.
#     e  Value has been estimated.
#
agency_cd       site_no datetime        02_00060_00003  02_00060_00003_cd
5s      15s     16d     14n     10s
USGS    08329928        10/24/2005      365     A
USGS    08329928        10/25/2005      313     A
USGS    08329928        10/26/2005      299     A
USGS    08329928        10/27/2005      292     A
USGS    08329928        10/28/2005      296     A
USGS    08329928        10/29/2005      380     A
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Figure E.1 Selected USGS discharge data for USGS gage 08329928

Comment Set G:

Mid Rio Grande Stormwater Quality Team
www.keepitriogrand.org

STORMWATER QUALITY TEAM PARTNERS
Albuquerque Metropolitan Arroyo Flood Control Authority • Bernalillo County
City of Albuquerque • Industrial & Water Conservation Bureau • NM Department of Transportation
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October 28, 2009

New Mexico Environment Department
P.O. BOX 5469
Santa Fe, NM 87502
Attn: Heidi Henderson, TMDL Coordinator

RE: Comments to the ***Public Comment Draft TMDL for the Middle Rio Grande Watershed*** dated September 16, 2009

Dear Ms. Henderson,

This letter is an official public comment to the ***Public Comment Draft TMDL for the Middle Rio Grande Watershed*** dated September 16, 2009. These comments are the combined efforts of the joint members of the Mid Rio Grande Stormwater Quality Team which represent the technical and educational outreach organization in the Middle Rio Grande watershed. We appreciate the opportunity to comment on this very important issue. The signatures of the representatives of the respective contributing organizations are at the end of this letter.

Collectively, we have significant concerns regarding both the technical basis and philosophical approach of the proposed E.coli TMDL for the Middle Rio Grande. We understand that establishing TMDLs is not easy, and we believe that bacterial TMDLs may be particularly complex. In our experience based on USGS data for the Rio Grande, the proposed TMDL will be impossible for MS4 permittees to consistently meet, regardless of the amount of money or effort expended. Much of what controls enteric bacterial concentrations in the river we cannot alter, and stormwater often has little to no predictable effect upon.

Variables including sampling locations in a shifting river, weather, water temperature, solar radiation, sediment scour/turbidity levels, sample handling & storage, imprecise lab analytical techniques and the level of wildlife populations are some of the host of factors creating unpredictable effects on the enteric bacterial concentrations. Since adopted TMDLs get incorporated into NPDES permit conditions, we feel we have a significant stake in this matter. Our concerns are at such level that we feel the NMED needs to withdraw the pending TMDL proposal for re-evaluation. In this letter we will attempt to identify many of our concerns below.

General Comments

We have graphically compared bacterial densities of E.coli and fecal coliform from 180 storm samples, 9 samples at Rio Grande at Central Bridge, 9 samples at Rio Grande at Alameda Bridge, 15 samples at Rio Grande at San Felipe, and 96 samples at the Rio Grande at Otowi Bridge. None of these comparisons show more than a very loose correlation between the two indicator bacteria. This is disturbing considering that E. coli densities should theoretically be less than fecal coliform densities from the same sample. We believe that this means the test methods currently being employed are inaccurate enough to be unusable in this investigation. See Attachment 1: "Comparisons of E.coli to Fecal Coliform Analyzed from the Same Sample"

Tests taken by USGS at the Otowi bridge since 1997 show that river water is already over the TMDL standard before the water gets to the Middle Rio Grande MS4 outfalls. The impairment of the river occurs before any effect of stormwater from the Urban Area. See Attachment 2: "Otowi E.coli Exceedences".

SWQB Response: *Thank you for your comments. First, SWQB feels many of the general concerns expressed by the MRG Stormwater Quality Team are outside of the scope of the TMDL development process. Many of the concerns should be addressed during the NPDES permit process and permit implementation.*

SWQB E.coli samples were collected by SWQB staff operating under the NMED/SWQB Standard Operating Procedures for Data Collection and analyzed per IDEXX Laboratories, Inc and Colilert® -18 procedures as described in Standard Methods for the Examination of Water and Wastewater, protocol 8310 B. The USGS E.coli data were collected by USGS staff operating under the National Field Manual for the Collection of Water-Quality Data (Chapter A.7). The data from both agencies is publically available and collected with EPA-approved methods and is therefore eligible to be included in water quality assessments.

The E.coli data available from the Rio Grande at Otowi Bridge, NM USGS gage (8313000) show results that range from 1800 cfu/100 mL to less than 1 cfu/100 mL from May 1997 to November 2009. The sources of the bacteria contributions to this watershed have not been quantified, however, the source of impairment in a waterbody is irrelevant when it comes to the requirement for the development of a TMDL (40 CFR § 130.7).

In a comparison of E.coli versus storm flows in the North Diversion Channel, there seems to be no relation between storm discharges and bacteria densities. There seems to be evidence that stormwater runoff from impervious surfaces (parking lot runoff), municipal, urbanized high-density areas, municipal point source discharges, onsite treatment systems (septic systems and similar decentralized systems) and waste from pets is not a significant cause of the bacterial impairment in the Middle Rio Grande. See Attachment 3: "Bacterial Densities at Alameda versus flows in the North Diversion Channel"

Most days of higher flows in the Rio Grande at Alameda do not correlate with storm flows. Dam discharges from Cochiti as well as other influences such as Jemez River have a greater influence on river flows than stormwater. Therefore, it would be incorrect to correlate bacteria counts to high flows and then make the conclusion that this is related to stormwater contributions. See Attachment 4 (a modification of NMED's Table D.1 by AMAFCA): "Summary of E.coli and Flow Data" and "Rio Grande Flows at Alameda versus North Diversion Channel inflows"

SWQB Response: *SWQB does not assert to what extent storm flows contribute to the flow volume or E.coli concentations of the Rio Grande. The list of sources listed in the MRG Stormwater Quality Team comments reflect a list of probable sources noted by field staff during water quality surveys and merely serves to present a list of sources that could be contributing to the impairment of the waterbody. The Probable Source list is included on the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List and has not been quantified. The compiled data in Attachment 3 and 4 could be useful during the NPDES permit process.*

Are the samples being taken at the same place in the river each time? For instance, samples taken in the shallows might produce markedly different bacterial results than samples taken the middle of the river. This could explain the differences between the SWQB samples and the USGS samples. We request that the sampling methodology be standardized to properly represent the river should the NMED go forward with a modified TMDL.

SWQB Response: *SWQB samples denoted with a "c" following the STORET ID indicate a composite sample that was collected using the method described in Section 7.6 of the 2007 NMED/SWQB Standard Operating Procedures for Data Collection while those without a "c" are grab samples. The location of grab sample collection generally did not vary between sampling events. The USGS data collections were collected by USGS staff operating under the National Field Manual for the Collection of Water-Quality Data (Chapter A.4). The site selection and data collection by both agencies conforms with EPA approved methods and is therefore sufficient in order that the data can be used for the water quality assessments.*

Figure 3.1 **Flow Duration Curve**; *USGS Rio Grande Floodway at San Marcial, New Mexico 1974-2009* (Page 17) - For categories of the flow duration analysis, the two classifications of moist conditions and dry conditions should be changed. A flow duration curve does not relate to dry and wet (or moist) years. The correct terminology is high or low flows.

SWQB Response: *SWQB staff attended a training with Bruce Cleland and EPA R6 in February 2007. The development of the flow and load duration curves in this TMDL was based on this training as well as a research article by Bruce Cleland and guidance from the EPA Office of Wetlands, Oceans, and Watersheds. The use of "moist" and "dry" in the TMDL is consistent with the literature research. References to the EPA document have been added to Section 3.2, 4.2 and Section 9.0. The Cleland (2003) reference remains in Sections 3.2 and 4.2. Both references provide detailed explanations of both flow and load duration curve development.*

Section 4.4.2 **Load Allocation** (pages 44 and 45) – It should be noted that using an arithmetic mean for E.coli densities may overstate loading. The geometric mean is more appropriate as it is the basis for the criterion for the river. NMED should consider using the geometric mean of measured loads to compare against stream criteria when calculating load reduction targets.

SWQB Response: *Section 3.0 of the Procedures for Assessing Use Attainment for the State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Water Quality Monitoring and Assessment Report (January 2008) discusses the use of spatially and temporally independent samples; samples that are not spatially or temporally independent are averaged. Details of the assessments are available on the Assessment Summary Sheets, which are made available for public inspection as part of the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List public record. SWQB generally does not have enough independent samples to calculate a geometric mean for assessment purposes. Section 3.3 and Table 3.7 of the Assessment Protocol addresses the procedure for assessing primary and secondary contact uses. Additionally, 20.6.4.14 NMAC reads:*

> *B. Bacteriological Surveys: The monthly geometric mean shall be used in assessing attainment of criteria when a minimum of five samples is collected in a 30-day period.*

Therefore, at this time, SWQB can only apply the single sample E.coli criterion to the available E.coli data for assessment purposes.

As far as the calculation of measured loads in the TMDL, in reviewing this section in response to this comment as well as the comments of others, NMED recognizes that for this TMDL calculating a percent reduction is particularly challenging. This is largely because the samples collected and the impairment determinations are based on exceedences of the State's single sample criterion and the TMDL is written to the address the monthly geometric mean standard of Sandia and Isleta Pueblos. As such any simple comparison of these numbers is fraught with challenge and, in this case, will result in an over estimation of the actual reduction necessary.

Furthermore, neither Section 303 of the Clean Water Act nor Title 40, Part 130.7 of the Code of Federal Regulations requires states to include discussions of percent reductions in TMDL documents. Although NMED believes that it is often useful to discuss the magnitude of water quality exceedences in the TMDL, the "percent reduction" value is can both be calculated in multiple ways and as a result can often misinterpreted. This is clearly the case in this situation.

For these reasons Tables 4.13-4.16 and the associated discussion have been removed. Statements in Section 3.3 have been duplicated in Section 4.3.

Section 4.6 **Linkage between Water Quality and Pollutant Sources** (Page 47 and 48) - We believe that it is statistically incorrect to apply the Pearson Coefficient to data that is not normally distributed (i.e. there is no correlation between rainfall and bacterial densities). We would like the NMED to provide the Kurtosis of the data to support the assumption of "normality" of the data.

Section 4.6 **Linkage Between Water Quality and Pollutant Sources** *Discussion* (Page 48) - Regarding the Bacterial Source Tracking Study, it should be noted that the consultant that created the study used wastewater inflows to the treatment plant as the model for their "human" contribution. As these inflows include many other sources than solely human sewage, only a portion of that 16% human can be reduced by best management practices.

SWQB Response: *SWQB TMDL documents commonly discuss the Pearson Coefficient as it relates to data in the TMDL. The Kurtosis of the data has also been calculated and the results for each of the four Assessment Units are positive, indicating a relatively peaked distribution.*

Thank you for the clarification regarding the Middle Rio Grande Microbial Source Tracking Study (Parsons, 2005). The TMDL document does not indicate the magnitude of E.coli loadings that may be addressed through Best Management Practices. However, this information may be useful during the NPDES permit process.

Section 4.7 **Margin of Safety (MOS)** (Page 49) - E.coli bacteria is not a "conservative" pollutant that does not degrade readily in the environment. Day-after reductions in densities in stormwater in a Texas study showed bacterial reductions in the original 15,000 colonies per 100 milliliters of 27%, 88%, and 96% in successive days after the storm. Lower water temperatures have lower bacterial densities but daily reductions are also less dramatic. Although bacterial densities can be used to compute loading, at worst, the loading is only temporary. This also makes bacteria different in terms of loading. In the normal mixing with the receiving water, the lower densities of the falling storm flows, and the naturally occurring die-off for several days after the storm rainfall, all tend to naturally reduce the impact to the receiving water in a short period of time. (See "Bacteria Die-Off Study" by Houston-Galveston Area Council dated August 31, 2005 and "Persistence of enteric bacteria in alluvial streams" by R.C. Jamieson et al published in the Journal of Environmental and Engineering Science dated May 14, 2004.)

SWQB Res ponse: *SWQB appreciates the references to bacteria studies in relation to the longevity of bacteria in the environment. Language reflecting this distinction has been added to Section 4.7.*

Section 6.4 **Stormwater Permitting Requirements and Presumptive Best Management Practices Approach** (pages 55 to 58) - NMED has stated that the TMDL is not a regulatory document. Therefore, the word "shall" should not be used anywhere in the TMDL document. However, the Middle Rio Grande MS4 permittees are concerned that TMDL "goals" will be converted into hard "maxima" and placed in our compliance requirements for future permits. In addition, the EPA cannot approve a permit that negatively impacts either cultural resources or listed species. This means that if, for example, AMAFCA reduces flows to the river because it's treating bacteria, USF&WS could argue that this contributes to decline of the endangered RGSM or Southwestern Willow Flycatcher. This could limit the actions of the permittees under the TMDL.

Any reduction in runoff to the river could impact the permittees obligations under the biological opinion of USF&WS. It could also impact compliance with Office of State Engineer Interstate Stream Commission obligations under the RG Compact.

SWQB Response: *Based on numerous public comments, the term "shall" in Items 1 and 2 of Subsection 6.4(B) has been replaced with the terms "should" and "should consider." As noted in the paragraph immediately preceding Subsection 6.4, the language in Subsection 6.4 was submitted for inclusion by EPA R6 and the ultimate decision about TMDL implementation will be decided during the NPDES permit process. EPA does not have the authority to approve Implementation Plans in TMDLs and states that fact in every TMDL approval letter we receive from EPA R6. For example, the approval letter for the Jemez River TMDLs (September 2009) reads:*

> *"Included in this TMDL submittal was a TMDL Implementation Plan. Presently, EPA has no duty to approve or disapprove implementation plans under Section 303(d) of the Clean Water Act (CWA). Therefore, EPA is taking no action to approve or disapprove the TMDL Implementation Plan submitted by NMED."*

The Implementation Section is merely a suggested guide for future permit development or other relevant watershed activities. Considerations regarding Endangered Species issues, Rio Grande Compact obligations, and other permit requirements will be addressed during the NPDES permit process.

Appendix D **E.coli Data** (Table D.1) – In this reach of "non-Pueblo Alameda Bridge to Angostura Diversion", samples were collected by both the NMSWQB and USGS. The densities of E.coli sampled by NMSWQB were significantly different than the densities in samples collected by the USGS. It should be noted that there was only 1 exceedence in 36 samples (3%) collected by the NMSWQB versus 5 exceedences in the 9 samples (56%) collected by the USGS. These were evaluated by the Mann-Whitney rank order test. Can NMED explain this variation in these diverse results? According to page 28 of the TMDL, "Overall, the target values for the bacteria TMDLs will be determined...(3) the ability to easily monitor and produce quantifiable and reproducible results."

Table D.2 shows only the exceedences of the State standards. This table should be corrected to show exceedences for Pueblo standards for the appropriate reaches. (See also Tables 4.4 and 4.5 as well as Figures 4.7 and 4.8 on pages 34 and 35.)

Sincerely,

Roland Penttila, P.E.
Stormwater Management Section
City of Albuquerque

Mary Murnane
Water Resources Program Manager
Bernalillo County

Tom Allen, Vice-Chair
Board of Supervisors
Ciudad Soil and Conservation District

attachments

Kevin Daggett, P.E.
Environmental Engineer
AMAFCA

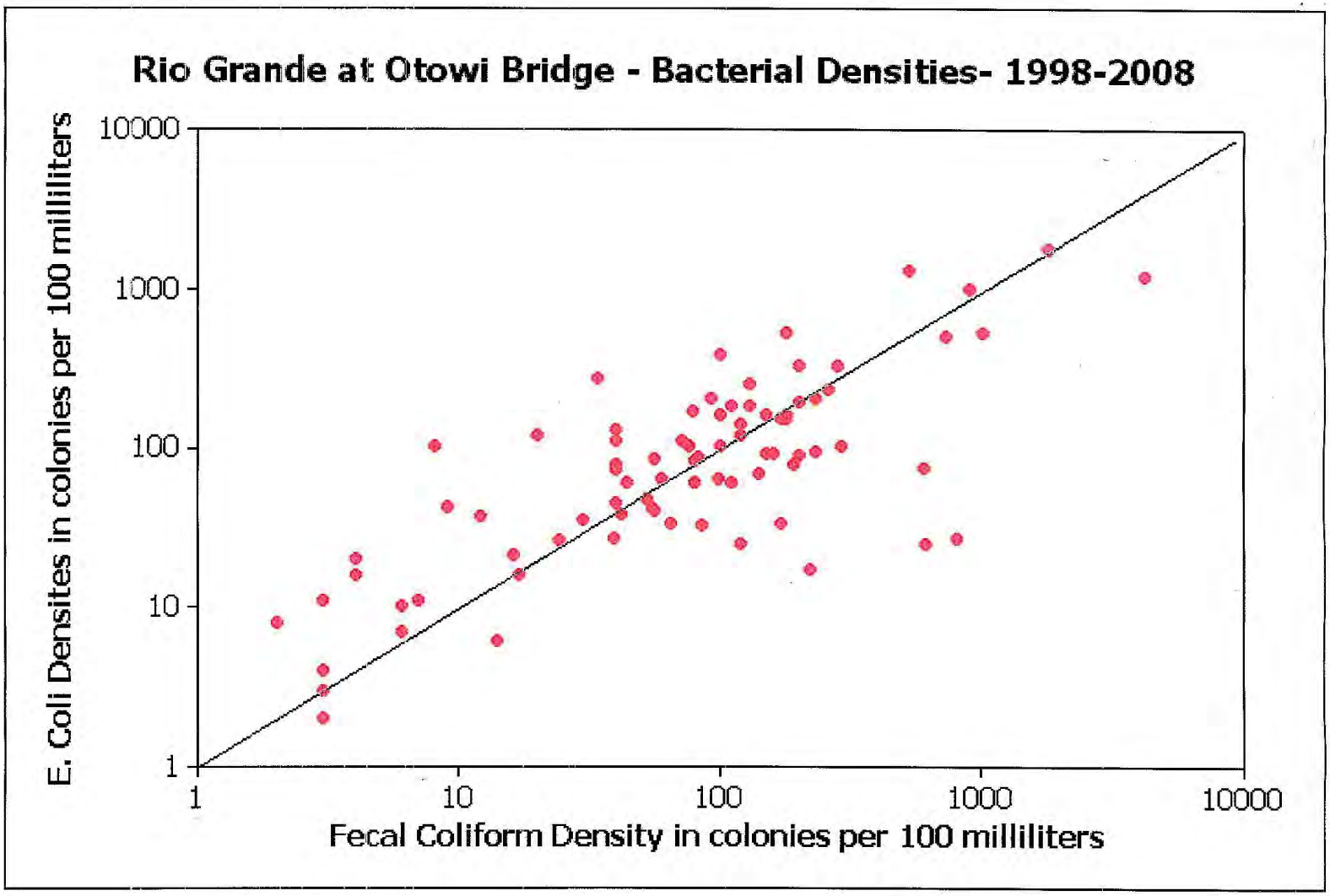
Vern Hershberger
Environmental Engineer
University of New Mexico

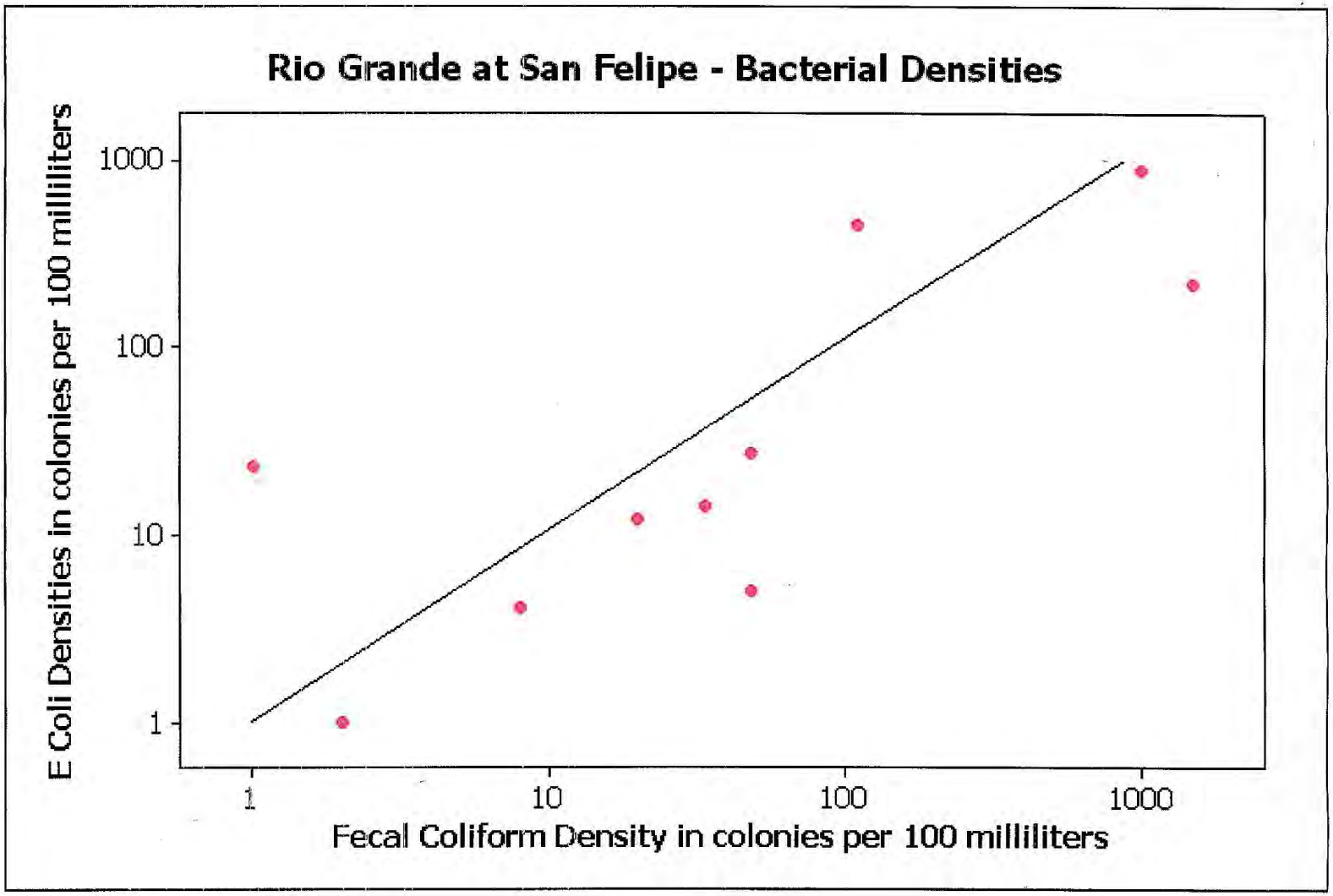
Trevor Alsop, P.E.
Drainage/Environmental Engineer
SSCAFCA

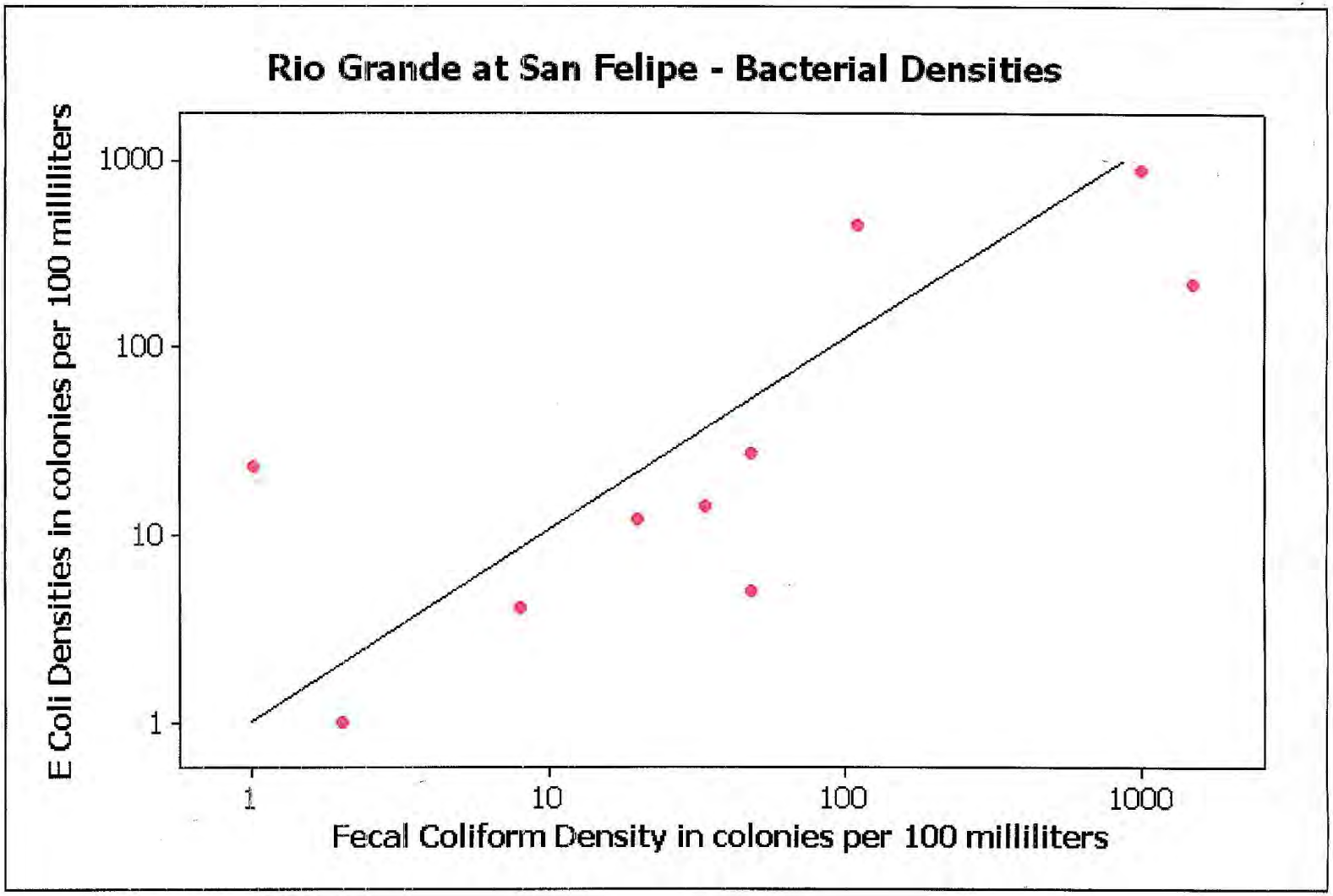
Katherine Trujillo, P.E.
Assistant District Engineer
NMDOT, District Three

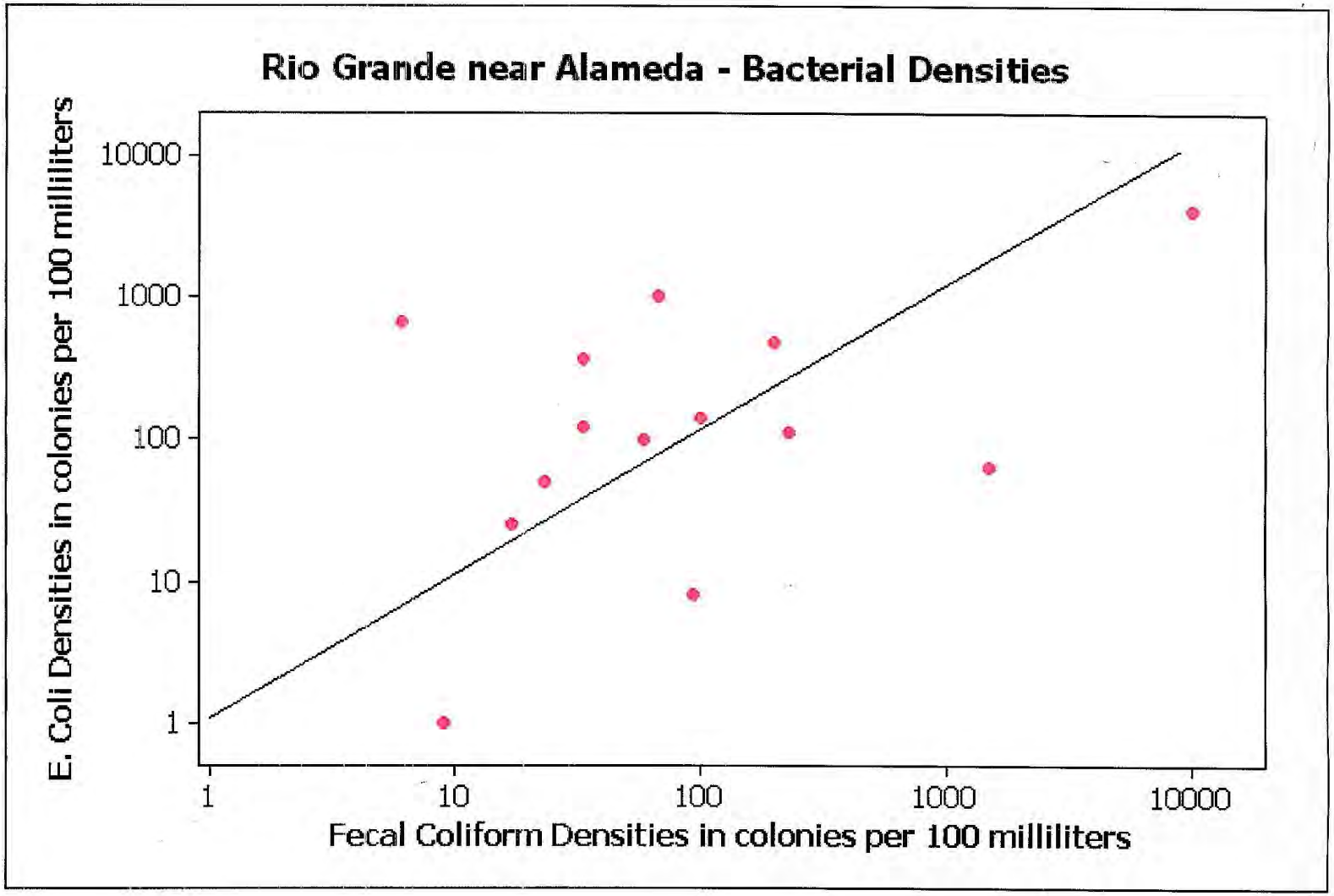
SWQB Response: *As previously noted, SWQB E.coli samples were collected by SWQB staff operating under the NMED/SWQB Standard Operating Procedures for Data Collection and analyzed per IDEXX Laboratories, Inc and Colilert® -18 procedures as described in Standard Methods for the Examination of Water and Wastewater, protocol 8310 B. The USGS E.coli data were collected by USGS staff operating under the National Field Manual for the Collection of Water-Quality Data (Chapter A.7). The data from both agencies is publically available and collected with EPA-approved methods and is therefore eligible to be included in water quality assessments. SWQB noted the differences in the E.coli data during the assessment process, but had no reason to discard either dataset as invalid. Due to the dynamic nature of the Rio Grande, varying E.coli results across a given time period are not atypical.*

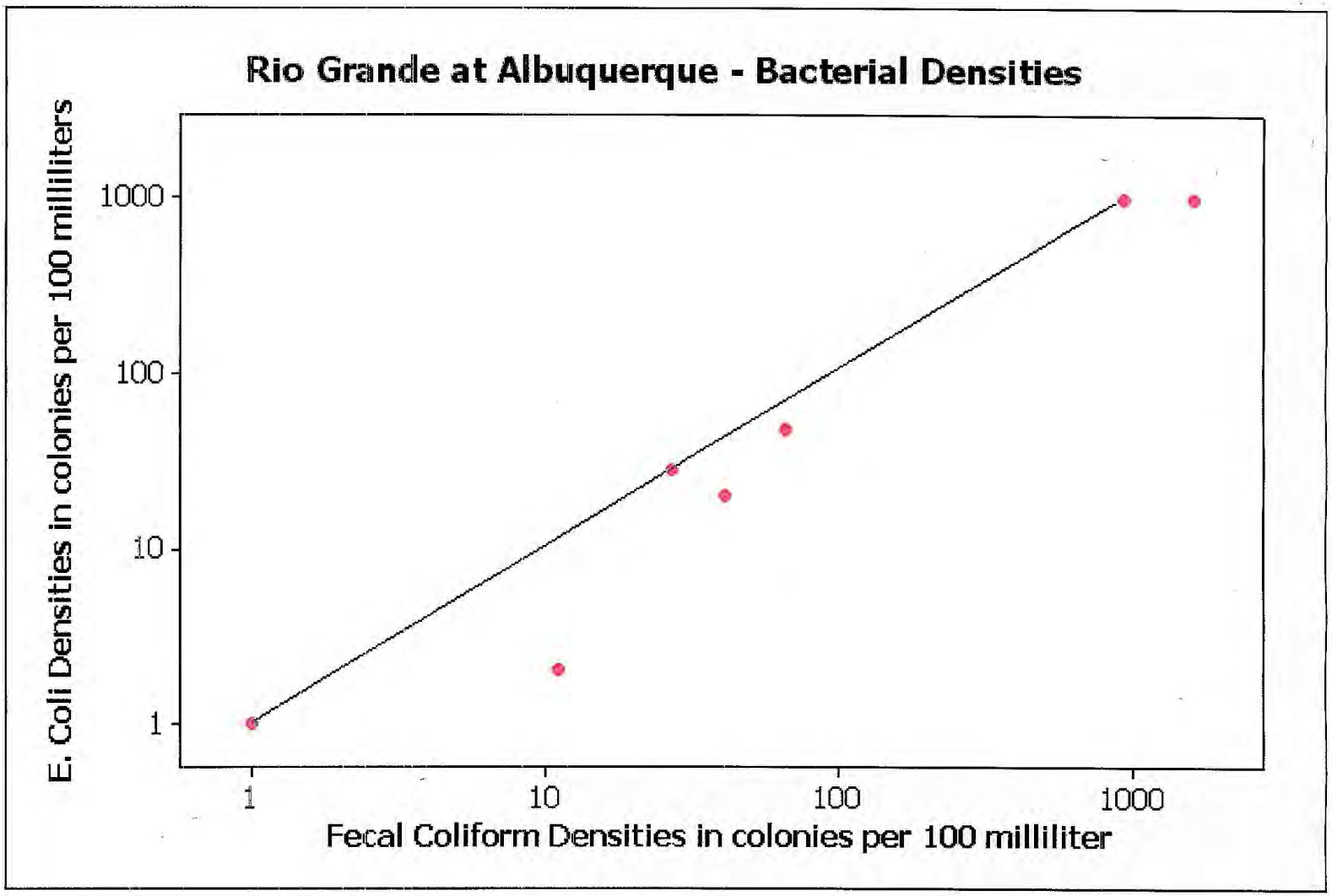
A footnote has been added to Tables D.1 and D.2 to indicate those samples that have exceeded the Tribal single sample E.coli criterion.

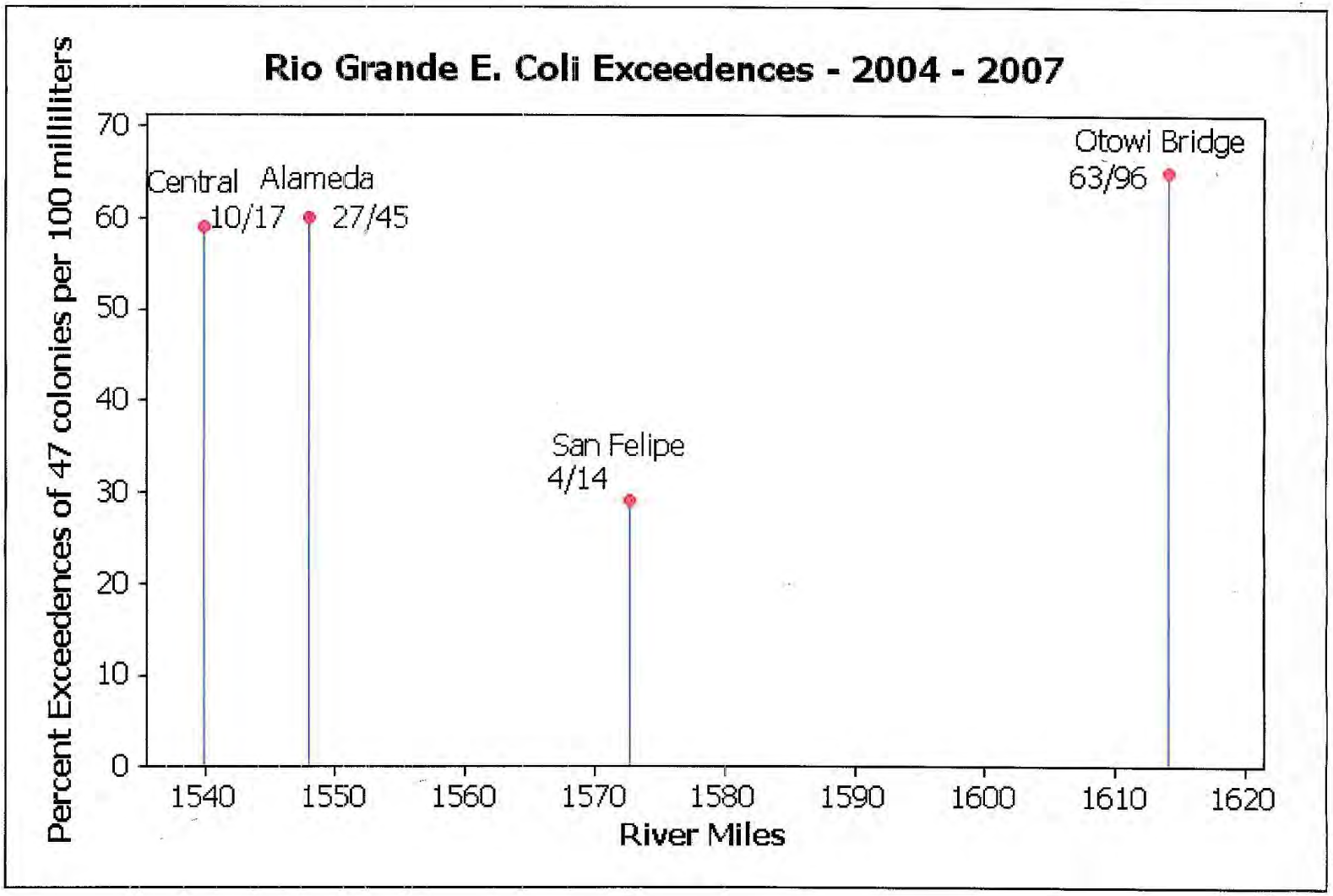

Rio Grande at Otowi Bridge - Bacterial Densities- 1998-2008
E. Coli Densites in colonies per 100 milliliters
10000
1000
100
10
1
1
10
100
1000
10000
Fecal Coliform Density in colonies per 100 milliliters

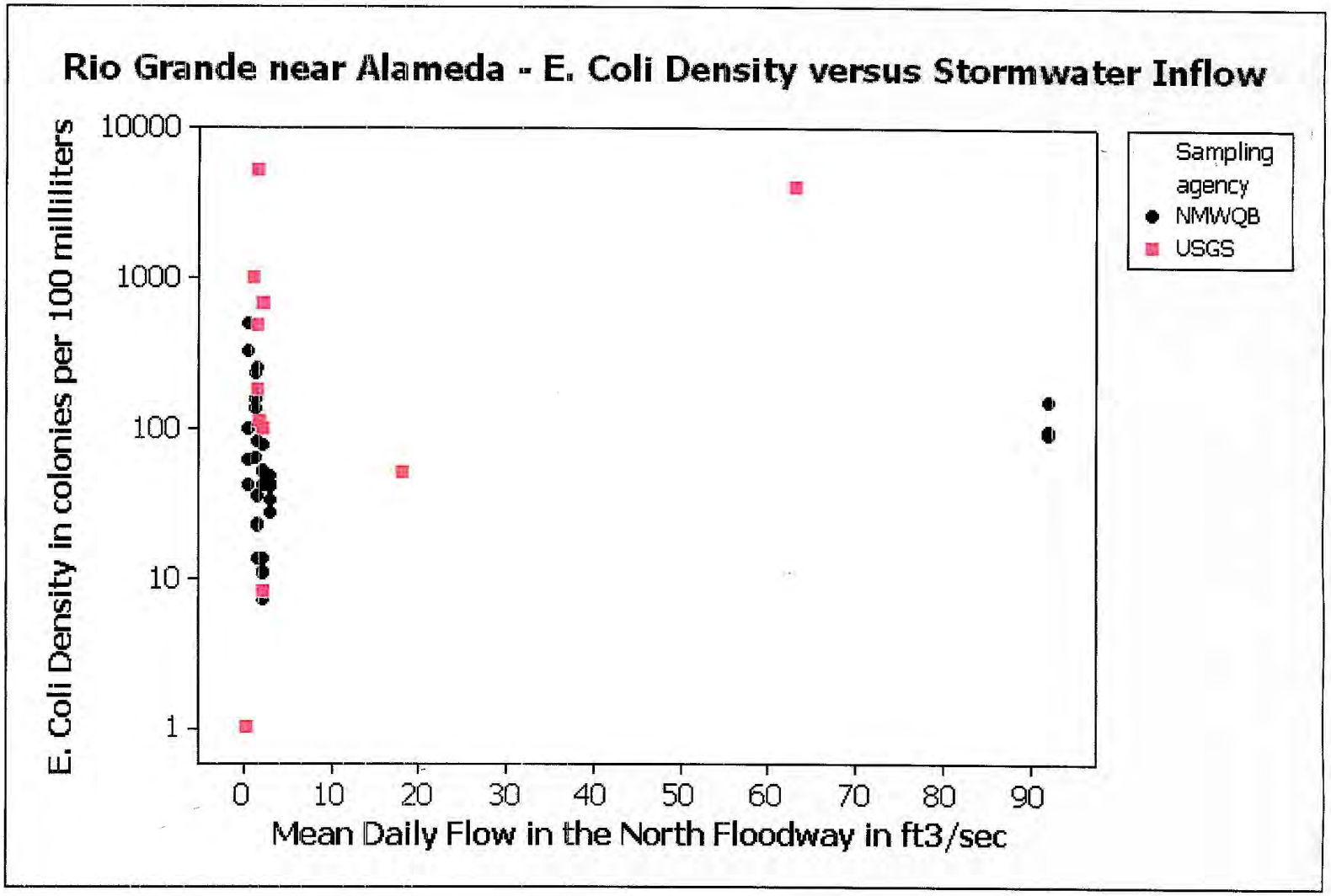

Rio Grande at San Felipe - Bacterial Densities
E Coli Densities in colonies per 100 milliliters
1000
100
10
1
1
10
100
1000
Fecal Coliform Density in colonies per 100 milliliters

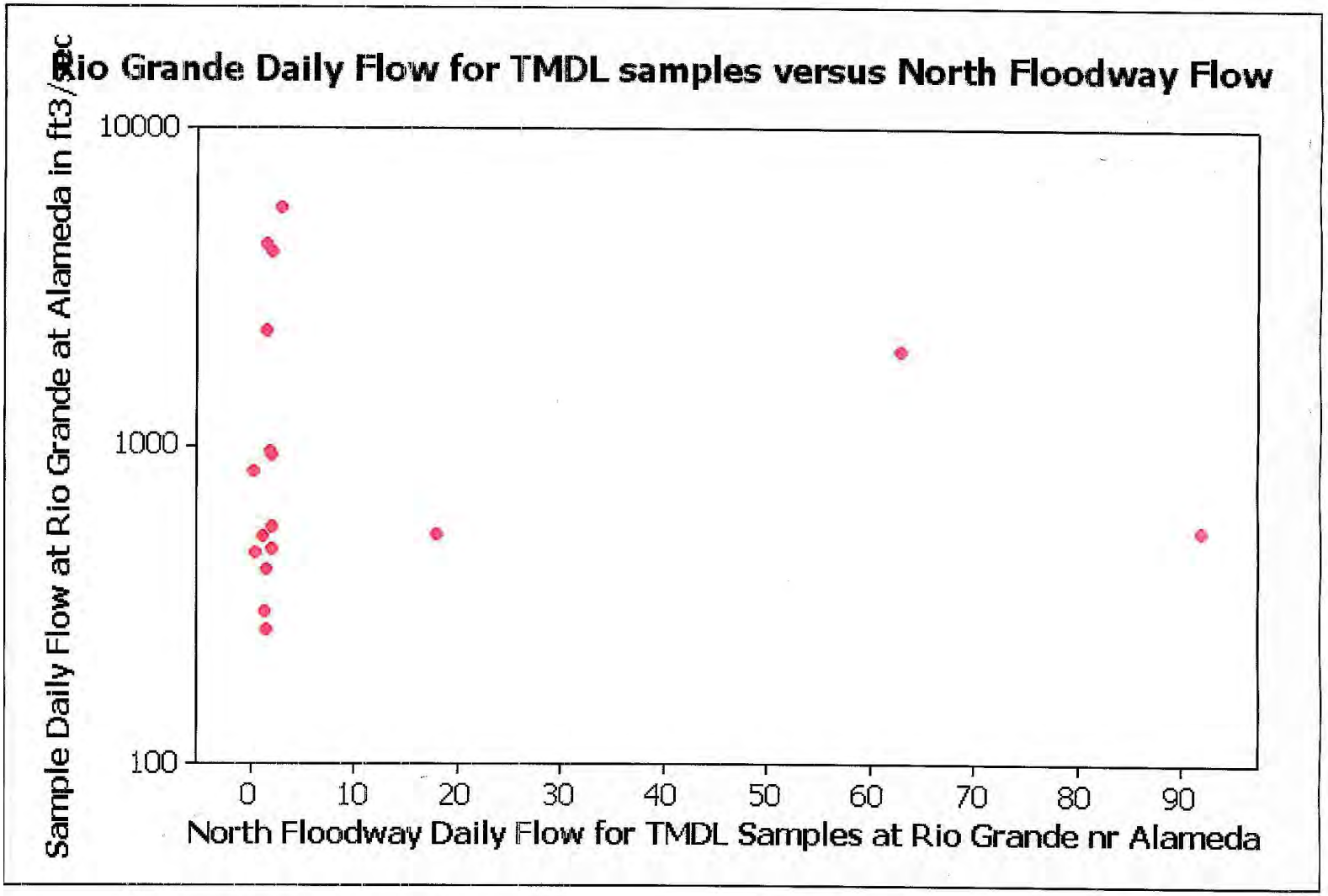

Rio Grande at San Felipe - Bacterial Densities
E Coli Densities in colonies per 100 milliliters
1000
100
10
1
1
10
100
1000
Fecal Coliform Density in colonies per 100 milliliters

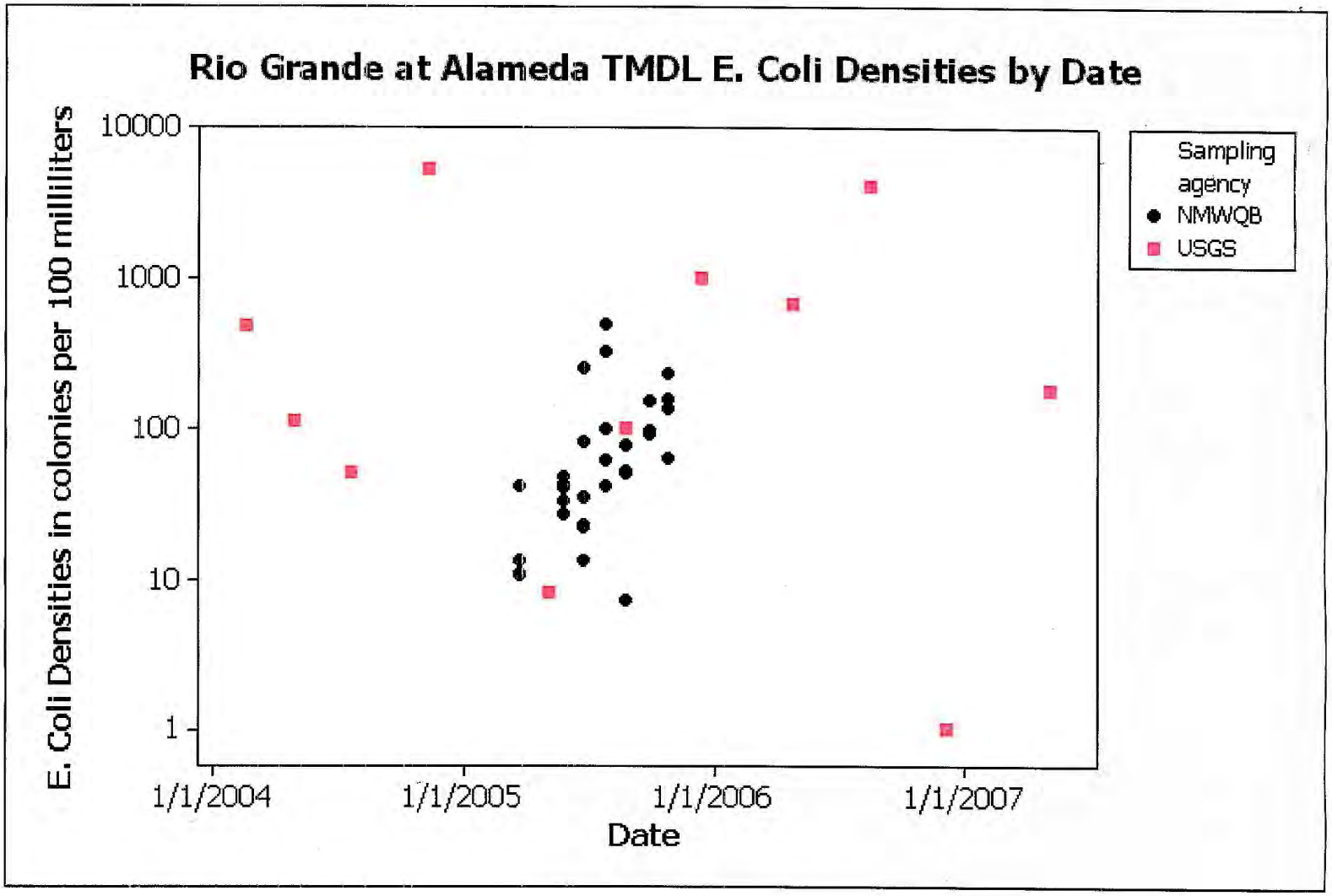

Rio Grande near Alameda - Bacterial Densities
E. Coli Densities in colonies per 100 milliliters
10000
1000
100
10
1
1
10
100
1000
10000
Fecal Coliform Densities in colonies per 100 milliliters


Rio Grande at Albuquerque - Bacterial Densities
E. Coli Densities in colonies per 100 milliliters
1000
100
10
1
1
10
100
1000
Fecal Coliform Densities in colonies per 100 milliliter


Rio Grande E. Coli Exceedences - 2004 - 2007
Percent Exceedences of 47 colonies per 100 milliliters
70
60
50
40
30
20
10
0
Central
10/17
Alameda
27/45
San Felipe
4/14
Otowi Bridge
63/96
1540
1550
1560
1570
1580
1590
1600
1610
1620
River Miles


Rio Grande near Alameda - E. Coli Density versus Stormwater Inflow
E. Coli Density in colonies per 100 milliliters
10000
1000
100
10
1
0
10
20
30
40
50
60
70
80
90
Mean Daily Flow in the North Floodway in ft3/sec
Sampling agency
NMWQB
USGS


Rio Grande Daily Flow for TMDL samples versus North Floodway Flow
Sample Daily Flow at Rio Grande at Alameda in ft3/sec
10000
1000
100
0
10
20
30
40
50
60
70
80
90
North Floodway Daily Flow for TMDL Samples at Rio Grande nr Alameda


Rio Grande at Alameda TMDL E. Coli Densities by Date
E. Coli Densities in colonies per 100 milliliters
10000
1000
100
10
1
1/1/2004
1/1/2005
1/1/2006
1/1/2007
Date
Sampling agency
NMWQB
USGS

Comment Set H:

PUEBLO OF SANTA ANA
OFFICE OF THE GOVERNOR

October 26, 2009

NOV 0 2 2009

Ms. Heidi Henderson
NMED SWQB
PO Box 5469
Santa Fe, NM 87502

Dear Ms. Henderson:

The Pueblo of Santa Ana (the Pueblo) recently reviewed the New Mexico Environment Department's (NMED) Public Comment Draft Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed and has developed the following technical questions to aid in clarification:

1. What was the technical basis for NMED to conduct monitoring below the Angostura Diversion? Is this monitoring site considered a reference point, and if so, what is the justification for this?
2. Is NMED considering additional monitoring stations above the Angostura Diversion with new wastewater treatment plants online to discharge to the Rio Grande? What is the process for adding sites upstream of the Angostura Diversion for future consideration in NMED's "Water Quality Monitoring of the Middle Rio Grande" report?
3. The current area of concern for *E. coli* in the Middle Rio Grande falls below the 550 bridge at the point of Bernalillo's Wastewater Treatment Plant discharge. It would be helpful to include approximate or recorded flow data within the document for NMED's monitoring sites (i.e. Table D.1) as it may assist with interpreting *E. coli* results.
4. What is the protocol for developing a TMDL in "shared waters" of dual jurisdiction; waters that, on one side of the channel are State lands and on the other side are Tribal or Pueblo lands?
5. The State of NM will undergo the triennial review of its water quality standards at the end of 2009. Considering the proposed designated use changes of secondary contact to primary contact and the inclusion of public water supply (segment 20.6.4.106), how will the TMDL for *E. coli* be revised and how does NMED propose to address this designated use change?
6. How and when will the provisional data collected on dissolved oxygen (DO) and other parameters in the Middle Rio Grande be incorporated into potential future TMDLs? Why was DO not included in the 2009 TMDL schedule as stated in the 2008-2010 State of New Mexico Integrated List?

If you have any questions regarding the Pueblo's comments, please contact Jennifer Wellman, Water Resources Division Manager, at (505)771-6754 or Genevieve McGeisey, Water Quality Scientist, at (505)771-6757. Thank you for your consideration of these issues.

Sincerely,

Bruce Sanchez
Governor

02 DOVE ROAD • SANTA ANA PUEBLO • NM 87004
TEL: 505-867-3301 • FAX: 505-867-3395 •

<u>SWQB Response:</u> *Thank you for your comments. Although the comments were received after the end of the 45-day public comment period, SWQB chose to respond to the comments.*

1. *SWQB conducted water quality sampling at the Rio Grande below Angostura Diversion Works (30RGrand473.7) site during the 2005 water quality survey. This site was chosen because it is at the uppermost site of the Rio Grande (non-Pueblo Alameda Street Bridge to Angostura Diversion) Assessment Unit (AU) and is representative of the Rio Grande as it enters this AU. The site is considered a reference or background site for this study as it is located upstream of the municipalities in the Middle Rio Grande watershed.*

2. *For the purposes of the 2005 Middle Rio Grande survey, SWQB defined the Middle Rio Grande as the watershed from the Angostura Diversion to Elephant Butte Reservoir. SWQB has established Assessment Units upstream of the Angostura Diversion; the next two upstream are the Rio Grande (non-Pueblo Angostura Diversion to Cochiti Reservoir) and Rio Grande (Cochiti Reservoir to San Ildefonso bnd) Assessment Units. SWQB has three established stations in the Rio Grande (Cochiti Reservoir to San Ildefonso bnd) AU, but none in the Rio Grande (non-Pueblo Angostura Diversion to Cochiti Reservoir) AU due to the limited length of State waters along this reach of the Rio Grande.*

3. *Flow data has been added to Appendix D.*

4. *SWQB develops multi-jurisdictional TMDLs by using the most conservative water quality standard in the TMDL calculations. In this case, SWQB developed the TMDLs for the Rio Grande (Isleta Pueblo bnd to Alameda Street Bridge) and Rio Grande (non-Pueblo Alameda Street Bride to Angostura Diversion) by using the Pueblo of Isleta and Pueblo of Sandia standards, respectively. The regulations in 40 CFR §131.10(b) require the development of the TMDL using the tribal standards in order to be protective of the downstream standards. The regulations in 40 CFR §122.4(d) require allocations and effluent limits to be developed using the tribal standards in order to be protective of the downstream waters. A statement addressing this issue has been added to Section 2.3.*

5. *The NMED" Proposed Amendments to the Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC" proposes a change from secondary contact to primary contact as well as the addition of the public water supply designated use for Segments 20.6.4.105 and 20.6.4.106. NMED proposes to change secondary contact to primary contact so that the designated use is consistent with the assigned criteria; the monthly geometric mean and single sample criteria already reflect primary contact E.coli criteria recommendations, so only the term for the designated use is included in the proposed changes. According to the NMED Proposed Amendments document,*

   > *"…the Department does not propose criteria at this time to apply generally to the public water supply use. The reason is that public water systems are required to provide treatment to comply with the Drinking Water Regulations. As a result, the water provided by public water systems must be safe to drink regardless of the quality of the source water. Nonetheless, it may be prudent to establish ambient water quality criteria as a preventative approach that could reduce treatment*

costs. The Department intends to commence a stakeholder discussion after the triennial review to discuss the issue further."

SWQB will continue to monitor the Rio Grande and apply the Procedures for Assessing Use Attainment for the State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Water Quality Monitoring and Assessment Report (January 2008) to collected water quality data in order to assess the impairment status of the Rio Grande.

6. *The Rio Grande (Isleta Pueblo bnd to Alameda Street Bridge) and Rio Grande (non-Pueblo Alameda Street Bridge to Angostura Diversion) were listed as impaired for dissolved oxygen on the 2008-2010 State of New Mexico CWA §303(d)/§305(b) Integrated List. However, per the February 2009 Record of Decision, EPA delisted these two segments of the Rio Grande for dissolved oxygen. However, the dissolved oxygen listings for these two segments of the Rio Grande are included in the Draft 2010-2012 State of New Mexico CWA §303(d)/§305(b) Integrated List. A schedule set for the dissolved oxygen TMDLs for these Assessment Units will not be set until after the impairment has been approved by the WQCC and EPA. Likewise, a TMDL for the ambient toxicity listing for the Rio Grande (non-Pueblo Alameda Street Bride to Angostura Diversion) has not been scheduled.*

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