APPENDIX F
RESPONSE TO COMMENTS

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Comment Set A:
Sent via email on Tuesday, June 15, 2010 at 11:44 am.

SWQB's usual process during TMDL development is to solicit comments and suggestions from bureau staff and EPA and incorporate these comments into the draft TMDL before it is released for public comment. SWQB had been in communication with EPA Region 6 throughout the drafting of this TMDL, however we did not receive official written comments from EPA before the opening of the public comment period so EPA's comments are included here for reference.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

MEMORANDUM

Subject: Comments on the Draft Cimarron River Watershed Total Maximum Daily Load

From: Linda K. Adams, Environmental Scientist
TMDL Section (6WQ-PT)

Thru: Curry Jones, Chief
TMDL Section (6WQ-PT)

Thank you for the opportunity to review the Draft Cimarron River Watershed Total Maximum Daily Load for Arsenic, Bacteria, Temperature, and Nutrients. EPA offers the following comments on the draft TMDLs.

Nutrient TMDL for Cieneguilla Creek and Cimarron River

1. Section 5.4.1, Page 59, Paragraph 3, This paragraph cites an article by Jeyanayagam (2005), which indicates that the limit of technology (LOT) for total phosphorus and total nitrogen removal is generally considered 0.1 mg/L and 3 mg/L, respectively. Currently, there are two EPA studies which suggest that a lower limit of technology for phosphorus removal. The EPA publications entitled, "Advance Wastewater Treatment to Achieve Low Concentration of Phosphorus" (2007), and "Office of Wastewater – Municipal Nutrient Removal Technology" show that the limit of technology for total phosphorus was less than 0.01 mg/L. EPA suggest that this section be updated to consider more recent studies on nutrient removal. These documents can be found at the following web addresses: http://www.epa.gov/owm/mtb/mnrt-volume1.pdf , and http://yosemite.epa.gov/r10/water.nsf/Water+Quality+Standards/AWT-Phosphorus/$FILE/AWT+Report.pdf).

SWQB Response: The limits of technology (LOT) for nutrient removal vary depending on the process or combination of processes used. Most of the research on LOT levels is from larger facilities (> 10 mgd capacity); data from smaller facilities (< 1 mgd capacity) are relatively limited. In addition, higher unit costs are generally associated with smaller facilities compared to larger facilities because of the economies of scale. Taking these factors into account, SWQB recommended a phased strategy to reduce nutrient loading, incorporating the lowest limits that were still feasible for these municipalities to implement.

In order to achieve the target effluent limits outlined in the NPDES permit, treatment processes need to be consistent and reliable. Advanced treatment technologies are available to reliably attain an annual average of 0.1 mg/L for TP and 3 mg/L for TN (EPA 2008). Other technologies may achieve lower nutrient concentrations; however they tend to be less reliable because they are more variable. As more municipalities are required to meet stringent nutrient load limits to protect receiving waterbodies, upgrading existing facilities with appropriate and sustainable technologies is an important challenge. SWQB is trying to provide municipalities with feasible yet creative solutions to meet these challenges while taking into consideration compliance schedules and individual site requirements.

Municipal Nutrient Removal Technologies Reference Document (Volume 1 – Technical Report). United States Environmental Protection Agency – Office of Wastewater Management, Municipal Support Division. Washington, DC. EPA 832-R-08-006. September 2008.

2. Section 5.4.1, Page 59, Paragraph 4. The phased approach, as written, only involves the Village of Angel Fire. Why is the phased approach not applicable to the City of Springer? The TMDL should provide a clear rationale of why the phased approach is not appropriate for Springer.

SWQB Response: The City of Springer should have been included in the phased approach. Corrections were made to Section 5.4.1 and a phased waste load allocation was assigned to the City of Springer (Tables 5.9 and 5.10).

3. Section 5.4.1, Page 60, Paragraph 1. The TMDL should include the programmatic reference to the phased approach. This reference and subsequent new guidance helps to support NMED's adaptive implementation approach for nutrients to implement the wasteload allocation for the Village of Angel Fire in step-wise manner. This new reference can be found at the following web address: http://www.epa.gov/owow/tmdl/tmdl_clarification_letter.html

SWQB Response: The following sentence was added to Section 5.4.1, Page 60, Paragraph 1: "Please refer to "Clarification Regarding "Phased" Total Maximum Daily Loads," an August 2, 2006 memorandum from the USEPA, for more information on this topic."

4. Section 5.4.1, Page 61, Table 5.9. Table 5.9, as currently presented, shows "Phased Wasteload Allocations". When you connect Section 5.4.1 (4th paragraph) with Table 5.9, it may not be clear to the permit writer what to implement. EPA recommends that Table 5.9 be split into two tables.

SWQB Response: As stated in the TMDL, "NMED believes that a TMDL should be written to targets that are protective of the stream and scientifically defensible however there should also be recognition of the limits of technology for nutrient removal. Even though the limits of technology (in this particular case) preclude the attainment of the target concentrations defined in this TMDL, advanced treatment would significantly reduce the load of TP and TN that is introduced into the stream."

Since nutrient cycling is dynamic and dose-response relationships are often location and season specific, it is difficult to pinpoint well-defined numeric thresholds for proper ecosystem functioning. Therefore, NMED is recommending that the Phase 1 effluent limits be based on best available technology/limits of technology. After implementation of this TMDL, NMED will reevaluate the condition of Cieneguilla Creek and the Cimarron River to determine if water quality has improved to the point that the designated use is attained. If substantial improvements are not observed and the use is not attained, the TMDL would move to a second phase with lower nutrient targets which may necessitate that the WWTPs enhance the treatment of the effluent by adding tertiary treatment or find other means of disposal.

Table 5.9 was adapted to include only the Phase 1 WLAs for the WWTPs. Phase 1 effluent limits are based on annual averages for the limits of technology. Because this is an iterative process, Table 5.10 was created to outline the target WLAs for each facility. Target effluent limits are based on either in-stream concentrations that are proven effective at maintaining water quality standards or in-stream concentrations based on ecoregion thresholds. Given current technology, the target effluent limits in Table 5.10 are unachievable.

Temperature TMDL

5. Section 6.4, Page 75-76, Wasteload Allocation Section, The TMDL identifies the Village of Angel Fire as a point source to Cieneguilla Creek. The TMDL provided a WLA of zero to the Village of Angel Fire. The TMDL should explain why a numeric WLA is not needed. In addition, the TMDL should explain what conditions are needed for the Village of Angel Fire to demonstrate compliance with NMED temperature criterion.

SWQB Response: In reference to the Temperature TMDL (Section 6.4.1), the following was changed to better explain SWQB's reasoning (presented in redline-strikeout to view changes more effectively):

6.4.1 Waste Load Allocation

With the exception of the Cieneguilla Creek (Eagle Nest Lake to headwaters), there are no point source contributions associated with these TMDLs.

The Angel Fire Wastewater Treatment Plant (WWTP) discharges directly into Cieneguilla Creek. There is some debate regarding whether or not effluent from WWTPs has an impact on temperature. The Angel Fire WWTP NPDES permit (NM0030503) does not have limitations or monitoring requirements for temperature. WWTP effluent has never been noted to be a significant source contributor of temperature impairment. ~~Data indicate that the Angel Fire WWTP is not contributing to elevated temperature in Cieneguilla Creek.~~ Figure 6.2 displays the temperature data collected in 2006. Site 05Cieneg19.3 is 1.6 miles upstream of the WWTP and 05Cieng006.3 is 6.7 miles downstream of the WWTP. During the eight discrete sampling events during 2006, the differences between the upstream and downstream sites ranged from 4.24°C (June 13) to 0.39°C (March 14) with the average difference between the sites being 2°C. ~~The data does not indicate that there is a significant difference between the sites above and below the WWTP, therefore, the WLA is zero.~~

The data show that there is a change in temperature between the two monitoring sites. However, according to discharge records, the Angel Fire WWTP was not discharging to Cieneguilla Creek from February-November 2006, therefore the variation in temperature at the two monitoring locations is assumed to be from other sources. ~~Although no WLA is assigned to the Angel Fire WWTP, a monitoring requirement should be added to the NM0030503 NPDES permit to ensure that that the discharge meets the WQS of 20°C at the discharge point to Cieneguilla Creek.~~

Comment Set B:

From: Peter Fant [peter.fant@soudermiller.com]
Sent: Friday, June 18, 2010 4:10 PM
To: Lemon, Shelly, NMENV; Henderson, Heidi, NMENV
Subject: Comments for Town of Springer

Shelly and Heidi, thanks for holding the meeting to present the TMDL information for the Cimarron River Watershed.

While the Town of Springer may submit more comments before the July 7 deadline, there are a few we wanted to make sure got on the list as soon as possible.

1) The Town of Springer is located below the confluence of the Cimarron river, Rayado and Ponil Creeks. The Target Loading Capacity and Waste Load allocation were calculated utilizing a 4Q3 flow of 0.25 MGD. This flow, however, only accounts for the Cimarron River. The flows should also include the 4Q3 flows from Rayado and Ponil Creek which would put the total flow at 0.99 MGD. This change would likely change the allowable nutrient loading in the reach of the River that passes Springer.

<u>SWQB Response</u>: When available, USGS gages are used to estimate flow. USGS gage 07211000 (Cimarron River at Springer, NM) has a period of record from 1907 – 2004. This gage station is located downstream of the confluence of Rayado and Ponil Creeks, thus their flow has been included in this estimate. The 4Q3 flow for the Cimarron River (Canadian River to Cimarron, NM) was estimated using the gage data from Springer and DFLOW software, Version 3.1b (USEPA 2006). DFLOW 3.1b is a Windows-based tool developed to estimate user selected design stream flows for low flow analysis by utilizing algorithms based on Log Pearson Type III distribution.

2) At the meeting, you mentioned that we would be able to get access to the SWQB's 2006 water survey to evaluate the water quality data collected above and below the Town of Springer. This information should be on EPA's STORET web site, but it isn't. Can we please get a copy of the data? This will be critical in aiding the Town in determining the present impact of the lagoons on the River Water Quality.

<u>SWQB Response</u>: Yes, SWQB is always willing to provide the water quality data we have to stakeholders and the public. The data were sent on Friday, July 16, 2010.

We also checked EPA's STORET site and were able to download the water quality data from the Springer area collected in 2006. We understand EPA's interface can be difficult to use so please do not hesitate to contact SWQB if you cannot find the data you are looking for.

3) The Town appreciates EPA and SWQB's new approach mentioned at the meeting that would allow the Town to operate its existing disposal system until its permit expires in 2013 and then negotiate a timeline with EPA and/or SWQB to come in to compliance. For the record, however, it should be noted that modifications to the plant and disposal system to meet tighter plant discharge limits will likely cost between $500K and $1 million and

annual monitoring costs will cost $20K. The total costs will be inversely proportional to the allowable loading limits set on the Town (ie the lower the limits, the higher the cost). The Town's ability to come in to compliance will also be dependent on its ability to find grant funds to cover these costs.

SWQB Response: As explained in Section 8.0 (Implementation of TMDLs), several sources of funding exist to address impairments discussed in the TMDL document, the two main sources being the Clean Water Act (CWA) Section 319(h) and NMED's Construction Program Bureau. For nonpoint source pollution, monies are available through the CWA §319(h) for on-the-ground projects aimed at improving surface water quality and associated habitat, such as implementing best management practices that reduce runoff and/or capture stormflow. NMED's Construction Programs Bureau (CPB) can also provide matching funds for appropriate CWA §319(h) projects using state revolving fund monies. For point source pollution, CPB also assists communities in need of funding for WWTP upgrades. SWQB will work with CPB and the Town of Springer to help provide the necessary resources to implement this TMDL and meet water quality standards.

Thank you again for this opportunity to provide our input. If you need any additional information regarding any of the items presented above (such as a cost breakdown for the estimates), please don't hesitate to call or email.

Peter Fant.

Peter Fant
Souder Miller & Associates
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Comment Set C:

From: JAMES P MORGAN [heydoc@q.com]
Sent: Friday, July 02, 2010 11:12 AM
To: Lemon, Shelly, NMENV
Subject: Cimarron River Watershed TMDL Meeting Public Comments

Ms. Lemon,

I would offer a few comments with regard to the information presented by your office at Cimarron on June 17, 2010 relating to pollution monitoring and remedian proposals for the Cimarron River and its tributaries.

1. Drainage vs. stream assesment

I feel that the study should have been done with extensive data on the reservoirs as well as with information on the streams. An integrated drainage assesment would have been more meaningful.

2. Dewatered lower Cimarron

As happens at this time of year, late June/early July, the Cimarron River at Springer has stopped flowing, a few stagnant pools remain, which will dry leaving a dry riverbed for the rest of the summer. The reason for this situation is, of course, that upstream permitees are allowed to divert all of the water from the stream during this period of time.

Under these conditions TMDLs are meaningless, as are the requirements of the Clean Water Act.

3. Nonpoint pollution sources

Truly, without addressing the issue of nonpoint pollution, the stream water quality will never meet the standards set forth.

I do thank you and others in your department for the fine presentation as well as for the important work that you do.

Regards,

James P. Morgan

P.O. Box 897
Springer, NM 87747

575-483-2890

<u>SWQB Response</u>: Thank you for your written comments.

A study was done on Eagle Nest Lake in 2005. You can access the water quality survey report at: http://www.nmenv.state.nm.us/swqb/Surveys/LakeWaterQualityAssessments2005.pdf
The major findings of that report indicate low levels of dissolved oxygen and elevated levels of arsenic in Eagle Nest Lake. Mercury in fish tissue continues to be a concern although no further fish tissue data were collected during the 2005 survey. Results from the lake survey were taken into consideration when planning and evaluating the greater Cimarron Watershed survey. Currently, the SWQB does not write TMDLs for lakes, but this process is likely to begin in 2012.

SWQB agrees that nonpoint source pollution is a major cause of concern and has a significant impact on water quality. There is an active watershed group in the Cimarron Watershed that works with SWQB to develop watershed-based plans designed to improve water quality. This collaboration of stakeholders also devises and implements on-the-ground projects aimed at reducing nonpoint source pollution and improving water quality. Here is the contact information:

Cimarron Watershed Alliance, Inc.	*Chris Cudia*
P.O. Box 626	*Surface Water Quality Bureau*
Cimarron, NM 87714	*Watershed Protection Section*
	Las Vegas, NM
(505) 376-2270 (voice)	
(866) 676-2270 (toll free)	*(505) 454-2810*

Comments regarding water rights and water credits need to be directed to Office of the State Engineer (OSE) and the Interstate Stream Commission (ISC). The OSE and the ISC are separate but companion agencies charged with administering the state's water resources. The agencies have jurisdiction over the supervision, measurement, appropriation and distribution of essentially all surface and ground water in New Mexico, including streams and rivers that cross state boundaries. For the purpose of assessing designated use attainment in ambient surface waters, water quality standards apply at all times under all flow conditions.

Comment Set D:

From: Alan C. Huerta [mailto:Ach121052@aol.com]
Sent: Tuesday, July 06, 2010 7:51 AM
To: Carlson, Don, NMENV
Subject: Comment process TMDL Draft

Date June 30, 2010
Re comments regarding the new TMDL draft.

TMDL Staff,

Thank you for your presentation at the CWA offices. You do great work and you are sincere in your efforts. We all appreciate the work you do at SWQB.

I have been re-reading, looking at my notes and applying further study to the Draft TMDL presented at the CWA meeting, I am aware of staffing and budget constraints. I am also aware that given all the water ways in this state it is also difficult to cover everything. I do not think your work is finished though. Setting TMDL's for specific stretches of the Cimarron Watershed does not do justice to the watershed as a whole. TMDL listings should provide a system understanding of what each listed stream does to the Cimarron River and what Eagle Nest Lake does to the rest of the watershed. I would like to suggest that a river/creek is not the same as an impoundment of water; ie.; Eagle Nest Lake. An impoundment either has a spill-way or a gate/opening in the dam that lets water pass through. If the dam is considered a faucet, then is it not a Point Source that affects water quality below the dam every time water releases are called for? Is this a violation of the Clean Water Act? This body of water is a major part of the Cimarron Watershed system and one of the most affected by impairments. We need to go beyond what the specific symptoms of individual stretches of our watershed and understand what the effects of flow from Eagle Nest Dam are on the rest of the watershed. The Watershed is an organism and not just a collection of creeks, and river stretches. Releases are just quantities called for by the irrigators as adjudicated by Permit 71, and then put into motion by OSE staff. A list of TMDL's does not tell us what the real effect of releasing a flow of eutrophied water into the Cimarron River, it should recommend action strategies that can mitigate pollution and lead to protocols for impounded waters throughout the state.

What needs to be quantified are: 1. level of dissolved oxygen at various depths, 2. what is the extent of or lack of lake water turn-over during daily heating and cooling of surface water, and 3. can the water from different depths be mixed in the water tower to reduce impairment loads released down stream. If you cannot provide a modeling study can you strongly suggest that this be made possible through Section 319 grant funds? Can you suggest that more needs to be done to solve the conundrum of water quality, water rights adjudication, and inter-agency cooperation? It would be wise generate additional data at the dam, from both sides of the structure to better inform the TMDL draft process. The present TMDL Draft is definitely inadequate and needs revision stating that the Cimarron River has the same impairments that Eagle Nest Lake does below the dam. Releasing impaired water downstream does not get rid of the impairment. It just adds to the water of other non impaired tributaries, water and sediment that continue the legacy of impairment Eagle Nest Lake stores. The TMDL is inadequate in its present form. I would also like to suggest some solutions.

a. Produce data from within the lake that measures for impairments by depth.
b. Collect data that measures impairment levels by intake gate depth and amount of flow generated from that depth.
c. Model data to asses what the impacts are of the releasing water from various intake gate depths and that of mixing water from intake gates in the intake tower.
d. Collect data indicating what the cold/warm depth turnover effects are daily.
e. Compile data and offer conclusions that will codify actions in the TMDL report so organizations and concerned individuals push for cross-agency changes.
f. The TMDL Report must reflect and address the need for creating data, conducting modeling, and most importantly, defining the deficiencies of the report in a way that opens up new avenues for improving the quality and quantity on the Cimarron River.

These issues must be resolved before the TMDL report is finalized. Needless to say, our efforts, our money sources, the viability of our natural resources and the future of watershed management are at stake. Let us work for you, let us all work together.

Respectfully,

Alan C. Huerta
CWA Board member
Cimarron Conservation Camp President
Cimarroncita Ranch, Owner / General Manager;
Natural Resources and Facilities

SWQB Response: Thank you for your written comments.

A study was done on Eagle Nest Lake in 2005. You can access the water quality survey report at: http://www.nmenv.state.nm.us/swqb/Surveys/LakeWaterQualityAssessments2005.pdf
The major findings of that report indicate low levels of dissolved oxygen and elevated levels of arsenic in Eagle Nest Lake. Mercury in fish tissue continues to be a concern although no further fish tissue data were collected during the 2005 survey. Results from the lake survey were taken into consideration when planning and evaluating the greater Cimarron Watershed survey. Currently, the SWQB does not write TMDLs for lakes, but this process is likely to begin in 2012.

TMDLs are designed to be the first step towards watershed restoration, essentially identifying the pollutant of concern and opening up opportunities for funding. What types of restoration activities to implement are generally left up to the watershed group and local citizen groups with recommendations and guidance from the SWQB and other state and federal agencies, as appropriate. The SWQB agrees that impoundments can have a significant impact on water quality downstream, however it is the watershed-based plan (WBP) that identifies specific action strategies to mitigate pollution and improve water quality. WBPs, which are typically created by the active watershed group, are dynamic documents designed to characterize the watershed, finalize goals and identify solutions, define a timeline, implement various management strategies, and measure the progress of these strategies such that adjustments can be made if needed. The WBP is generally considered the second step towards TMDL implementation and watershed restoration. The types of activities you outline are appropriate considerations for the Cimarron Watershed WBP.

Comment Set E:

From: Mark Rivera [markr@afgov.org]
Sent: Wednesday, July 07, 2010 8:55 AM
To: Lemon, Shelly, NMENV
Subject: TMDL for Cimarron Watershed

Village of Angel Fire
P.O. Box 610
Angel Fire, New Mexico 87710
(575) 377-3232 FAX: (575) 377-3280

06 July 2010

Ms. Shelly Lemon
NMED SWQB
PO Box 5469, Santa Fe, NM,
87502-5469

Re: TMDL for Cimarron River Watershed

Dear Ms. Lemon,

We have reviewed the TMDL draft proposal for the Cimarron Watershed and the new rules regarding nitrates and phosphorus levels.

It appears that the Village of Angel Fire as a municipal point source is going to obligated to make up for non-point sources. The proposal is for Angel Fire to go from 10 ppm to 0.56 ppm for nitrates and the introduction of monitoring phosphorus at 0.06 ppm.

The Village of Angel Fire is very concerned about our ability to meet these proposed requirements without Federal and State financial aid to up grade our wastewater treatment facilities. It is not clear to us that the technology exists to achieve these levels. Thank you.

Sincerely,

Mark Rivera

Mark Rivera, AICP
Community Development Director
PO Box 610
Village of Angel Fire, NM

<u>SWQB Response</u>: Thank you for your written comments.

Based on SWQB's 2006 data, the Village of Angel Fire WWTP contributes approximately 0.89 lbs/day total phosphorus (TP) and 3.18 lbs/day total nitrogen (TN) to Cieneguilla Creek. These loading values were calculated by multiplying the average nutrient concentrations in the effluent by the average annual daily discharge in 2006. This equates to a point source contribution of approximately 74% of the measured TP load and 49% of the measured TN load (see Section 5.5 and Tables 5.13 and 5.14 for more information). Based on these results, the WWTP is a significant contributor to the overall nutrient load in Cieneguilla Creek. Furthermore, the WWTP was assigned 71% of the Total Phosphorus TMDL and 70% of the Total Nitrogen TMDL, therefore NMED does not agree that the Village is going to be obligated to make up for non-point sources – the WWTP is actually being allocated the majority of the TMDL.

As stated in the TMDL, "NMED believes that a TMDL should be written to targets that are protective of the stream and scientifically defensible however there should also be some recognition of the limits of technology for nutrient removal. Even though the limits of technology (in this particular case) preclude the attainment of the target concentrations defined in this TMDL, advanced treatment would significantly reduce the load of TP and TN that is introduced into the stream." Since nutrient cycling is dynamic and dose-response relationships are often location and season specific, it is difficult to pinpoint well-defined numeric thresholds for proper ecosystem functioning. Therefore, NMED is recommending that the Phase 1 effluent limits be based on annual averages for the limits of technology.

As explained in Section 8.0 (Implementation of TMDLs), several sources of funding exist to address impairments discussed in the TMDL document, the two main sources being the Clean Water Act (CWA) Section 319(h) and NMED's Construction Program Bureau. For nonpoint source pollution, monies are available through the CWA §319(h) for on-the-ground projects aimed at improving surface water quality and associated habitat, such as implementing best management practices that reduce runoff and/or capture stormflow. NMED's Construction Programs Bureau (CPB) can also provide matching funds for appropriate CWA §319(h) projects using state revolving fund monies. For point source pollution, CPB also assists communities in need of funding for WWTP upgrades. SWQB will work with CPB and the Village of Angel Fire to help provide the necessary resources to implement this TMDL and meet water quality standards.