

TECHNICAL SUPPORT DOCUMENT

**EPA Action on the
New Mexico Water Quality Standards for
Interstate and Intrastate Surface Waters
20.6.4 NMAC**

2013 Triennial Revisions

U.S. EPA REGION 6
WATER QUALITY PROTECTION DIVISION
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I. Introduction

Background

As described in § 303(c) of the Clean Water Act (CWA) and in the Water Quality Standards Regulation at 40 CFR Part 131.20, States and authorized Tribes have primary responsibility to develop and adopt water quality standards to protect their waters. State and Tribal water quality standards consist of three primary components: designated uses, criteria to support those uses, and an antidegradation policy. In addition, CWA § 303(c)(1) and 40 CFR 131.20 require States to hold public hearings at least once every three years to review and, as appropriate, modify and adopt standards. Under 40 CFR 131.21, EPA reviews new and revised surface water quality standards that have been adopted by States and authorized Tribes. Authority to approve or disapprove new and/or revised standards submitted to EPA for review has been delegated to the Water Quality Protection Division Director in Region 6. Tribal or State water quality standards are not effective under the CWA until approved by the Environmental Protection Agency (EPA)¹.

The purpose of this Technical Support Document (TSD) is to provide the basis for the Environmental Protection Agency's (EPA) action on the New Mexico Standards for Interstate and Intrastate Waters (20.6.4 NMAC).

Chronology of Events

The Surface Water Quality Bureau (SWQB) of the New Mexico Environment Department (NMED) announced a scoping phase and the intent to review New Mexico's water quality standards. The scoping phase ran from April 3rd to May 15th, 2013.

The review included an extensive public participation process, including public notices for the comments and public meetings on its initial discussion draft as well as informal meetings with stakeholder groups. These included a public meeting in Farmington, New Mexico on December 17, 2013 to present and discuss the draft Use Attainability Analysis (UAA) related to the Animas River, and another in Silver City, New Mexico on July 10, 2014, where the Mimbres UAA was discussed. The comment period for the Public Discussion Draft was conducted April 1 – May 30, 2014, and included a 30-day extension which was granted on April 28, 2014. Throughout 2015 the SWQB met with watershed/river conservation groups, municipalities, water districts, industrial/trade groups, private entities and citizens to resolve issues related to SWQB's proposed amendments. The SWQB also received formal comments from a variety of contributors including the U.S. Environmental Protection Agency (EPA). The SWQB revised its initial discussion draft to reflect comments received from both the public and EPA during the public participation process.

¹ Alaska rule" [Federal Register: April 27, 2000 (Volume 65, Number 82)]

NMED had previously petitioned the Water Quality Control Commission (Commission) in its July 8, 2014 regular public meeting to conduct the triennial review of New Mexico's Water Quality Standards, 20.6.4. NMAC. The SWQB requested that the Commission set the hearing date for its March 10, 2015, meeting. The Commission's hearing was initially postponed and rescheduled and was held October 13, 2015 through October 16, 2015. The water quality standards amendments were approved by the Commission on January 10, 2017; published in the NM Register on January 31, 2017; and became effective for state purposes on March 2, 2017. The Commission submitted these amendments to EPA on March 14, 2017.

Summary of Proposed Revisions

The SWQB proposed the following for consideration by the Commission:

- Segment-specific standards for aquatic life protection in the Mimbres and San Juan River basins;
- A new temporary standards provision in 20.6.4.10 NMAC;
- Updates to the piscicide provision in 20.6.4.16 NMAC for applications under EPA permit program and for public input or hearing requests when applications are not covered under an EPA permit;
- Primary contact uses and criteria updates for nine segments based on CWA requirements and the most recent EPA recommendations;
- Listing of ephemeral waters under Section 20.6.4.97 NMAC pursuant to Subsection C of Section 20.6.4.15 NMAC;
- Adoption of EPA recommended criteria for *E. coli* and *enterococci* as indicators of fecal contamination;
- Revisions to applicability of hardness-based aluminum criteria, and
- Clarifications of criteria applicability, updates to methods and corrections of grammatical errors.

Provisions that EPA is approving are discussed in **Section II** of this TSD. Those provisions that EPA is taking no action on at this time are identified and discussed separately in **Section III**.

II. New or Revised Provisions the EPA is Approving

EPA Review of New/Revised Provisions

The EPA is approving the new or revised provisions in New Mexico's Water Quality Standards 20.6.4 NMAC described in this section unless noted otherwise. The new and revised standards will apply throughout the State of New Mexico, excluding areas of Indian country as defined in 18 U.S.C. § 1151.

Some of the modified provisions in 20.6.4. NMAC are presented in an underline/strikeout format to provide context to the reader. What follows modified provision is EPA's discussion of the new/revised provision, which may include an explanation of how EPA

interprets the particular provision on its own or in the context of a specific applicable federal regulation(s).

The EPA has determined that a number of the following revisions to New Mexico's WQS at 20.6.4 NMAC do not substantively modify New Mexico's WQS. The EPA considers such non-substantive changes to existing WQS to constitute new or revised WQS that EPA has the authority and duty to approve or disapprove under CWA 303(c)(3). While such revisions do not substantively change the meaning or intent of the existing WQS, EPA believes that it is reasonable to treat such non-substantive changes in this manner to ensure public transparency on what provisions are effective for purposes of the CWA. The EPA's action on non-substantive changes to previously approved WQS do not constitute an action on the underlying previously approved WQS. Any challenge to EPA's prior approval of the underlying WQS would be subject to any applicable statute of limitations and prior judicial decisions. In today's action, EPA is acting on both the non-substantive and substantive revisions to New Mexico's WQS adopted by the Commission on January 10, 2017, which are identified in the subsections below, pursuant to § 303(c) of the CWA.

New Mexico 2010 Triennial Review Amendments

20.6.4.7. Definitions

The Commission has made the following changes to 20.6.4.7 NMAC. In most instances, a change to a current definition is considered to be a non-substantive revision and will not be discussed in detail unless relevant to understanding, interpretation or applying other provisions. Structural changes (e.g., renumbering of subparagraphs, etc. are considered non-substantive changes and are not discussed here. These amendments are approved.

A. Terms beginning with numerals or the letter "A," and abbreviations for units.

(3) **Abbreviations** used to indicate units are defined as follows:

(a) **"cfu/100 mL"** means colony-forming units per 100 milliliters.

The results for *E. coli* may be reported as either cfu (colony forming units) or the most probable number (MPN), depending on the analytical method used.

(g) "MPN" means most probable number per 100 milliliters.

(j) "pH" means the measure of the acidity or alkalinity and is expressed in standard units (su).

EPA Discussion: The Commission has amended the definition for "cfu" to clarify that results based on alternate enumeration methods for the detection of enterococci and *E. coli* in ambient waters, and in wastewater and sludge are consistent with EPA recommendations (68 FR 43272, July 21, 2003 and 72 FR 14220, March 26, 2007). The state's intent is to include the alternate enumeration in the definition here to clarify that the approved method may be used in reporting results for the 52 classified segments with

segment-specific E. coli criteria expressed as cfu/100 mL, without adding the language to each segment in the water quality standards (WQS).

The Commission also adopted the language in Subsections 20.6.4.900 D. and 20.6.4.900 E. NMAC that acknowledges the use of alternate enumeration methods for E. coli bacteria including most probable number (MPN) for the detection of enterococci and E. coli in ambient waters and in wastewater and sludge. The abbreviation and units for most probable number (as MPN) here are intended to support the revision to Subsections 20.6.4.900 D. and 20.6.4.900 E. NMAC.

In addition, a definition for pH and the unit of measure for pH, standard units (su) has also been included in the abbreviations. pH is referred to throughout the state's water quality standards but previously had not been defined or its unit of measure indicated.

C. Terms beginning with the letter "C".

(4) **"Closed basin" is a basin where topography prevents the surface outflow of water and water escapes by evapotranspiration or percolation.**

EPA Discussion:

The Commission added a definition of "closed basin" to describe surface waters in closed basins within 20.6.4.801-806 NMAC. The term "closed basin" is based on a classification scheme used by the United States Geological Survey (USGS).

D. Terms beginning with the letter "I".

(6) **"Irrigation storage"** means storage of water to supply the needs of beneficial plants.

EPA Discussion:

Most reservoirs classified in the New Mexico WQS standards include the designated use 'irrigation storage' as described in Subsection C of 20.6.4.900 NMAC. Although waters with the irrigation and irrigation storage designated uses have identical criteria assigned as described in Subsections C and J, of 20.6.4.900 NMAC, irrigation storage has not previously been defined in this subsection. By defining irrigation storage, the Commission make it clear that the irrigation and irrigation storage uses are essentially the same and that the referenced criteria apply to both designated uses.

20.6.4.10. Review of Standards; Need for Additional Studies

F. Temporary Standards.

(1) Any person may petition the commission to adopt a temporary standard applicable to all or part of a surface water of the state as provided for in this

section and applicable Subsections in 40 CFR Part 131.14. The commission may adopt a proposed temporary standard if the petitioner demonstrates that:

(a) attainment of the associated designated use may not be feasible in the short term due to one or more of the factors listed in 40 CFR 131.10(g), or due to the implementation of actions necessary to facilitate restoration such as through dam removal or other significant wetland or water body reconfiguration activities as demonstrated by the petition and supporting work plan requirements in Paragraphs (4) and (5) below;

(b) the proposed temporary standard represents the highest degree of protection feasible in the short term, limits the further degradation of water quality to the minimum necessary to achieve the original standard by the expiration date of the temporary standard, and adoption will not cause the further impairment or loss of an existing use;

(c) for point sources, existing or proposed discharge control technologies will comply with applicable technology-based limitations and feasible technological controls and other management alternatives, such as a pollution prevention program; and

(d) for restoration activities, nonpoint source or other control technologies shall limit downstream impacts, and if applicable, existing or proposed discharge control technologies shall be in place consistent with Subparagraph (c).

(2) A temporary standard shall apply to specific designated use(s), pollutant(s), permittee(s), and to specific water body segment(s). The adoption of a temporary standard does not exempt dischargers from complying with all other applicable water quality standards or control technologies.

(3) Designated use attainment as reported in the CWA Section 305(b)/303(d) Integrated Report shall be based on the original standard and not on a temporary standard.

(4) A petition for a temporary standard shall:

(a) identify the currently applicable standard(s), the proposed temporary standard for the specific pollutant(s), the permittee(s), and the specific surface water body segment(s) of the state to which the temporary standard would apply;

(b) include the basis for any factor(s) specific to the applicability of the temporary standard (for example critical flow under Subsection B of 20.6.4.11 NMAC);

(c) demonstrate that the proposed temporary standard meets the requirements in this Subsection;

(d) present a work plan with timetable of proposed actions for achieving compliance with the original standard in accordance with Paragraph (5);

(e) include any other information necessary to support the petition.

(5) As a condition of a petition for a temporary standard, in addition to meeting the requirements in this Subsection, the petitioner shall prepare a work plan in accordance with Paragraph (4) and submit the work plan to the department for review and comment. The work plan shall identify the factor(s) listed in 40 CFR 131.10(g) or Subparagraph 20.6.4.10.F(1)(a) NMAC affecting attainment of the standard that will be analyzed and the timeline for proposed actions to be taken to achieve the uses attainable over the term of the temporary standard, including baseline water quality, and any investigations, projects, facility modifications, monitoring, or other measures necessary

to achieve compliance with the original standard. The work plan shall include provisions for review of progress in accordance with Paragraph (8), public notice and consultation with appropriate state, tribal, local and federal agencies.

(6) The commission may condition the approval of a temporary standard by requiring additional monitoring, relevant analyses, the completion of specified projects, submittal of information, or any other actions.

(7) Temporary standards may be implemented only after a public hearing before the commission, commission approval and adoption pursuant to this Subsection for all state purposes, and EPA Clean Water Act Section 303 (c) approval for any federal action.

(8) All temporary standards are subject to a required review during each succeeding review of water quality standards conducted in accordance with Subsection A of 20.6.4.10 NMAC. The petitioner shall provide a written report to the commission documenting the progress of proposed actions, pursuant to a reporting schedule stipulated in the approved temporary standard. The purpose of the review is to determine progress consistent with the original conditions of the petition for the duration of the temporary standard. If the petitioner cannot demonstrate that sufficient progress has been made the commission may revoke approval of the temporary standard or provide additional conditions to the approval of the temporary standard.

(9) The commission may consider a petition to extend a temporary standard. The effective period of a temporary standard shall be extended only if demonstrated to the commission that the factors precluding attainment of the underlying standard still apply, that the petitioner is meeting the conditions required for approval of the temporary standard, and that reasonable progress towards meeting the underlying standard is being achieved.

(10) A temporary standard shall expire no later than the date specified in the approval of the temporary standard. Upon expiration of a temporary standard, the original standard becomes applicable.

(11) Temporary standards shall be identified in 20.6.4.97 – 899 NMAC as appropriate for the surface water affected.

(12) “Temporary standard” means “a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the temporary standard.”

EPA Discussion:

The Commission has previously adopted a number of tools to revise designated uses and criteria when appropriate. In developing this provision, the SWQB also recognized that there are instances when water quality standards are not currently attainable, but downgrading the designated or developing site specific criteria are not appropriate. To address these instances, the SWQB considers a temporary standard to be the appropriate legal mechanism for establishing less stringent water quality based effluent limits in NPDES permits while efforts are made to make incremental improvements in water quality leading to eventual attainment of the underlying designated use. The SWQB developed these temporary standards in line with 40 CFR § 131.14 that establishes an explicit regulatory framework for the adoption of WQS variances that states and

authorized tribes can use to implement adaptive management approaches to improve water quality.

Although the SWQB initially considered the development of a general variance authorizing provision, a unique aspect of state law complicated that effort. The New Mexico Water Quality Act, NMSA 1978, § 74-6-1, et. seq., and its implementing regulations, define a ‘variance’ as an individual discharge permit-specific exclusion from regulation. See generally NMSA 1978 § 74-6-4 (h). This provision of state law means that the use of the term ‘variance’ as described in 40 CFR § 131.14 would likely result in confusion with the meaning as defined in the NMSA² and as a result, the term could not be used in the state’s WQS. This prompted the SWQB to develop a temporary water quality standard provision that would function much the same way as a WQS variance would, resulting in the provision under review today.

EPA defines a variance as a time-limited designated use and water quality criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the WQS variance. Given that EPA guidance refers to temporary or interim water quality criteria as a ‘WQS variance’ the Region considers the use of the term ‘temporary standard’ in the context it is being used in this provision to be appropriate, thus avoiding the conflict with the NMSA and enabling the SWQB to fashion a provision that is intended to meet federal requirements. For the purposes of EPA’s review of 20.6.4.10 F. NMAC, the terms “temporary standard” and “WQS variance” are equivalent.

Although states and authorized tribes are not required to adopt a variance provision into their water quality standards, in those instances where a state has adopted such a provision and the provision is new or revised, EPA considers the provision itself to be a WQS pursuant to 40 CFR § 131.14. Although EPA is approving this variance procedure, the Commission is still required to submit each individual WQS variance to EPA for review and action before it is effective for purposes of the CWA because the individual variances themselves are new or revised WQS. Accordingly, each variance submitted for EPA’s review must include the Attorney General’s certification and be consistent with the CWA and EPA’s implementing regulations, including 40 CFR 131.14 and all applicable public participation requirements. Thus, EPA’s review of the Commission’s variance procedures at 20.6.4.10 NMAC need not evaluate each hypothetical variance the state could issue under this regulation and consider whether such a variance would be consistent with the CWA and EPA’s implementing regulation. EPA’s approval of Commission’s general authorizing procedures for variances is not an automatic approval of any future variance the Commission wishes to grant nor does it bind EPA to reviewing the subsequent variance on any basis other than the CWA and EPA’s regulation.

² Cite New Mexico statutes using the chapter, article, and section of the official 1978 compilation of the *New Mexico Statutes Annotated* (NMSA 1978).

EPA Interpretation of 20.6.4.10 NMAC

At the time the SWQB's then draft provision was working its way through the state's public review and hearing process, EPA was revising the water quality standards regulation at 40 CFR 131. These revisions included a new section at 40 CFR 131.14 authorizing the use and specifying the requirements for WQS variances. Because 40 CFR 131.14 was not final when the SWQB drafted the state regulations providing for temporary standards, there are significant differences between the state and federal provisions. These differences will mean that Region 6 and SWQB water programs will need to work closely to ensure that temporary standards that are adopted by the Commission are consistent with federal regulations.

To facilitate this, EPA has reviewed the state's temporary standard provision in the context of the federal regulation. Although generally not inconsistent with the federal regulation at 40 CFR 131/14, there are elements of 20.6.4.10. NMAC for which the state should provide additional supporting information as detailed below:

20.6.4.10. F(1) NMAC

EPA equates "any person" to mean permittee(s) or discharger(s) subject to a temporary standard for an existing CWA Sec. 402 permit since EPA recognizes that states and authorized tribes often delegate much of the analytical and administrative work related to developing a WQS variance to permittees/dischargers. EPA also equates "any person" to mean any individual petitioning the Commission for a temporary standard establishing enforceable controls or limits that apply to CWA Sec. 404 permits for restoration/remediation. Regardless of the entity developing the temporary standard, the state is ultimately responsible for the content and for submitting the temporary standard to EPA for review and action under CWA Sec. 303(c). In effect, it doesn't matter who actually does the work of developing the variance as long as the state takes responsibility for its submission and reevaluations as may be required.

20.6.4.10. F(1)(b) NMAC

This subparagraph states that a proposed temporary standard represents the highest degree of protection feasible in the short term, limits the further degradation of water quality to the minimum necessary to achieve the original standard by the expiration date of the temporary standard, and ensures that adoption will not cause the further impairment or loss of an existing use.

The federal regulation at 40 CFR § 131.14(b)(1)(ii) requires the highest attainable condition of the water body or waterbody segment apply throughout the term of the WQS variance, but also specifically limits the lowering of the currently attained ambient water quality, unless a WQS variance is necessary for restoration activities. Given that 20.6.4.10. F(1)(b) NMAC does not differentiate between a variance that may be allowed for a direct discharge under a National Pollutant Discharge Elimination System (NPDES) permit or a restoration project, it could be interpreted as allowing degradation

inconsistent with the requirements in 40 CFR § 131.14(b)(1)(ii). However, based on further clarification provided by the SWQB, EPA interprets the provision as a whole to mean that the Commission's temporary standard provision is intended to not only describe the general mechanism for application, development, adoption and approval of variances that apply to a NPDES discharge but to also apply to restoration and/or remediation activities. Further, New Mexico's Antidegradation Policy (20.6.4.8 NMAC) and Implementation Procedure (Appendix A of WQMP/CPP) detail the level of protection afforded to waters of the state. At a minimum, existing instream water uses and the level of water quality necessary to protect those uses must be maintained and protected in all surface waters of the state at all times.

Thus EPA interprets this provision to mean that the Commission may adopt temporary standards for a NPDES discharge or for restoration activities under this provision so long as that variance does not allow the lowering of the currently attained ambient water quality throughout the term of the variance consistent with the state's antidegradation policy. The state's policy requires, at a minimum, existing uses (i.e., "currently attained ambient water quality") be maintained and protected regardless of whether it is for an NPDES permit or restoration activity. This approach is more protective than the federal provision at 40 CFR § 131.14 (b)(2)(i)(A)(2) which allows lowering of the currently attained ambient water quality, but appears intended to apply to temporary standard for restoration.

The Commission may also consider revising the provision language to clarify that a variance not result in any lowering of the currently attained ambient water quality, unless the variance is necessary for restoration activities; and that the requirements that apply throughout the term of the temporary standard represent the "highest degree of protection feasible," or equivalent to the highest attainable condition of the water body or water body segment as defined in 40 CFR §131.14(b)(1)(ii). As written, 20.6.4.10 F(1)(b) NMAC contemplates the possibility of the original standard being achieved by the expiration date of the temporary standard. If the original standard could be achieved over the course of a temporary standard, a compliance schedule would be a more appropriate mechanism for meeting the underlying designated use and criterion.

20.6.4.10. F(2) NMAC

EPA interprets subparagraph 20.6.4.10. F(2) to mean that a temporary standard may be applied to a specified water body, or portion of a water body, and to a specified criterion or pollutant. As such, a temporary standard would apply to a particular designated use and associated criterion for a specified period.

20.6.4.10. F(3) NMAC

The first sentence in this subparagraph could be interpreted as inconsistent with 40 CFR § 131.14(a)(2). However, EPA interprets the reference to "designated uses" to mean the underlying designated use and considers the language in this paragraph approvable.

20.6.4.10. F(4)(d) NMAC and 20.6.4.10. F(5) NMAC

Subparagraph 20.6.4.10. F(4)(d) NMAC describes the required elements of a petition for a temporary standard, specifically a work plan with timetable of proposed actions for achieving compliance with the original standard in accordance with paragraph (5).

20.6.4.10. F(5) NMAC itself specifies actions to be taken to achieve the uses attainable over the term of the temporary standard, including other measures necessary to achieve compliance with the original standard.

EPA's concern here is that both subparagraph 4 and paragraph 5 use the phrases "achieving compliance" or "achieve compliance" which could be confused as referring to a compliance schedule rather than a temporary standard. Because it has the potential to cause confusion, EPA recommends that the Commission clarify this language in subsequent revisions. In the interim, EPA will interpret these phrases to mean achieving the highest attainable use as the proponent makes progress toward the original standard (underlying designated use).

20.6.4.10 F(5) NMAC

This paragraph details that as a condition of a petition for a temporary standard, the petitioner must prepare a detailed work plan to ensure consistency with this subsection and specifically paragraph (4), along with other measures that are necessary to achieve the highest attainable condition throughout the term of the temporary standard.

Although this paragraph refers to consultation with appropriate state, tribal, local and federal agencies, there is no specific reference to EPA review of temporary standard work plans. 20.6.4.10. F(1) refers to the federal regulation at 40 CFR 131.14, which requires at (b)(2)(ii) that states submit to EPA "... documentation demonstrating that the term of the WQS variance is only as long as necessary to achieve the highest attainable condition. Such documentation must justify the term of the WQS variance by describing the pollutant control activities to achieve the highest attainable condition, including those activities identified through a Pollutant Minimization Program, which serve as milestones for the WQS variance." Thus, the workplan is an important piece of documentation the state should submit to EPA so that EPA can properly evaluate the WQS variance duration. Additionally, early EPA review of supporting work plans that may lead to proposed standards can potentially save the proponent, the state and EPA resources if problems can be identified and resolved before formal adoption and submission by the Commission and formal review by EPA.

20.6.4.10. F(8) NMAC

This paragraph specifies that all temporary standards are subject to a required review during each succeeding review of the state's water quality standards and that such reviews are to be conducted in accordance with 20.6.4.10. A. NMAC. The paragraph also requires the petitioner for a temporary standard to provide a written report to the

Commission documenting the progress of proposed actions, pursuant to a reporting schedule stipulated in the approved temporary standard. The stated purpose of the review is to determine progress consistent with the original conditions of the petition for the duration of the temporary standard. In those instances, where the petitioner cannot demonstrate that sufficient progress has been made, the paragraph states that the Commission may revoke approval of the temporary standard or provide additional conditions to the approval of the temporary standard.

The language in this paragraph raises three issues: (1) the timing of the required reviews; (2) the review of the reports documenting progress to be provided to the Commission; and (3) revocation of temporary standard based on performance.

Timing of the required review

Paragraph 20.6.4.10. F(8) NMAC specifies that all temporary standards are subject to a required review during each succeeding review of the state's water quality standards. These reviews are to be conducted in accordance with 20.6.4.10. A. NMAC. Paragraph 20.6.4.10. A. NMAC refers to Section 303(c)(1) of the CWA which requires states to hold public hearings at least once every three years for the purpose of reviewing water quality standards and proposing, as appropriate, necessary revisions to those WQS.

EPA guidance concerning timing of triennial reviews describes the 3-year triennial period as being measured from the date of the letter in which the State informs EPA that new or revised standards have been adopted and are being submitted for EPA review or, if no changes were made in the standards for those waters, from the date of the letter in which the State informs EPA that the standards were reviewed and no changes were made. Paragraph 20.6.4.10. F(8) NMAC refers to an undefined term of "succeeding review" in reference to the state's triennial reviews. However, the state's succeeding reviews typically exceeds the 3-year triennial period described in the CWA and EPA guidance. For example, the Commission last notified EPA that new/revised standards had been adopted on December 10, 2010. To meet the 3-year triennial period described in the CWA, the Commission should have held a hearing to consider potential revisions by December 2013, but did not hold its hearing on proposed amendments until October 2015. The Commission did not adopt revisions until January 2017 or submit them for EPA review until March 2017. Given the inherent variability in the actual duration of a state's triennial revision that often exceeds the defined 3-year triennial period described in the CWA and defined in EPA guidance, it is important that the meaning of the phrase "succeeding review" is clear to ensure that the timing of the required review is both clearly identified in the temporary standard and consistent with the definition outlined in the state's provision and is not inconsistent with the requirements in 40 CFR 131.14.

EPA recommends that this portion of the paragraph be revised and the term "succeeding review" be clarified or defined. Until this can occur, EPA will only consider temporary variances that have defined time frames for review as required by 20.6.4.10.F.(4)(e) NMAC. For those proposed variances with a term greater than five years, the variance

must specify that it will be reevaluated no less frequently than every five years after EPA approval and the results of such a reevaluation be submitted to EPA within 30 days of completion to ensure proposed variances are not inconsistent with 40 CFR 131.14(b)(1)(v).

Review of progress reports

Paragraph 20.6.4.10. F(8) NMAC also requires that the petitioner for a temporary standard provide a written report to the Commission documenting the progress of the proposed action, pursuant to a reporting schedule stipulated in the approved temporary standard. The stated purpose of the review is to determine progress consistent with the original conditions of the petition for the duration of the temporary standard. Although this paragraph requires that a report be provided to the Commission based on a specific schedule, it does not specify who will review the report, how public input on the evaluation of progress toward meeting the original conditions identified in the temporary standard will be taken into account, nor does it provide for EPA review.

The state's provision must not be inconsistent with the federal regulation which requires a WQS variance with a term greater than five years to specify a frequency to reevaluate the highest attainable condition using all existing and readily available information and to include a provision specifying how the State intends to obtain public input on the reevaluation. Such reevaluations must occur no less frequently than every five years after EPA approval of the WQS variance and the results of such reevaluation must be submitted to EPA within 30 days of completion of the reevaluation (see 40 CFR 131.14(b)(2)(v)). This means that 1) the state must submit the reevaluation to EPA within 30 days of when the reevaluation takes place, and 2) if it doesn't, the variance is "no longer the applicable water quality standard." EPA's position is that "no longer the applicable water quality standard" means that as long as the requirement is not fulfilled, the underlying designated use is the applicable standard, which means the NPDES permit is no longer deriving from and complying with water quality standards. "No longer the applicable water quality standard" does NOT mean the variance is terminated. Once the reevaluation requirements are fulfilled (the state conducts the reevaluation and submits the results to EPA), the variance again becomes the applicable standard. Practically speaking, this means the consequences for not meeting the reevaluation requirements is that the NPDES permit is no longer complying with WQS.

Revocation of approval of a temporary standard

This portion of this paragraph specifies that if the petitioner cannot demonstrate that sufficient progress has been made the Commission may revoke approval of the temporary standard or provide additional conditions to the approval of the temporary standard.

Although it is unclear whom at the state is responsible for the actual review to determine if a petitioner is not making sufficient progress, once that determination is made, this paragraph gives the Commission authority to revoke or provide additional conditions to that temporary standard. The Commission can only do so under state law. When a

temporary standard is adopted by the Commission, once approved by EPA pursuant to Sec. 303 of the CWA, that temporary standard is effective under the CWA and cannot be altered by the Commission. To revoke or revise the temporary standard, the state must submit the results of its review to EPA and demonstrate that the temporary standard should be revoked or modified. If EPA approves the revocation or additional conditions under Sec. 303 of the CWA, those conditions would become the temporary standard that would be effective for CWA purposes.

20.6.4.10.F(9) NMAC

This paragraph specifies that the Commission may consider a petition to extend a temporary standard. The effective period of a temporary standard may be extended only if it has been demonstrated to the Commission that the factors precluding attainment of the underlying standard still apply, that the petitioner is meeting the conditions required for approval of the temporary standard, and that reasonable progress towards meeting the underlying standard is being achieved.

As noted above, a WQS variance (temporary standard) is a water quality standard subject to EPA review and approval or disapproval. (40 CFR 131.14). When a temporary standard is adopted by the Commission and submitted to EPA for review and approved under Sec. 303 of the CWA, the temporary standard is effective for CWA purposes. Any action to extend the effective period of the temporary standard would constitute a revision to applicable WQS, and the revised variance must be submitted to EPA along with all of the necessary supporting documentation for a variance, including justification of the variance term. If EPA approves the revised variance under Sec. 303 of the CWA, it will then become applicable for CWA purposes.

20.6.4.12

Compliance with Water Quality Standards

H. It is a policy of the commission to allow a temporary standard approved and adopted pursuant to Subsection F of 20.6.4.10 NMAC to be included in the applicable Clean Water Act permit as enforceable limits and conditions. The temporary standard and schedule of actions may be included at the earliest practicable time, and shall specify milestone dates so as to measure progress towards meeting the original standard.

EPA Discussion:

By referring to a "Clean Water Act permit" this subparagraph specifies that a temporary standard that has been approved and adopted by the Commission pursuant to 20.6.4.10 F. NMAC must be included as enforceable limits and conditions in both CWA Section 402 and 404 permits at the earliest practicable time.

Although EPA has not granted New Mexico authorization to issue NPDES § 402 permits and only the US Army Corp of Engineers issues individual and general § 404 permits, states have the authority pursuant to CWA Section 401 to allow, disallow or condition federal licenses or permits. EPA interprets this paragraph as enabling the Commission to

specify enforceable limits and conditions with regard to CWA § 402 or 404 permits as they apply to temporary standards adopted pursuant to 20.6.4.10 NMAC (unless the activity is exempt from Section 404 regulation, e.g., certain farming and forestry activities) the state's CWA § 401 authority.

20.6.4.97 Ephemeral Waters

Ephemeral unclassified surface waters of the state as identified below and additional ephemeral waters as identified on the department's website pursuant to Subsection C of 20.6.4.15 NMAC.

A. Designated Uses: livestock watering, wildlife habitat, limited aquatic life and secondary contact.

B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses.

C. Waters:

(1) the following waters are designated in the Rio Grande basin:

(a) Cunningham gulch from Santa Fe county road 55 upstream 1.4 miles to a point upstream of the LAC Minerals mine, identified as Ortiz Mine on USGS topographic maps;

(b) an unnamed tributary from Arroyo Hondo upstream 0.4 miles to the Village of Oshara water reclamation facility outfall;

(c) an unnamed tributary from San Pedro creek upstream 0.8 miles to the PAA-KO community sewer outfall;

(d) Inditos draw from the crossing of an unnamed road along a power line one-quarter mile west of McKinley county road 19 upstream to New Mexico highway 509;

(e) an unnamed tributary from the diversion channel connecting Blue canyon and Socorro canyon upstream 0.6 miles to the New Mexico Firefighters Academy treatment facility outfall;

(f) an unnamed tributary from the AMAFCA Rio Grande south channel upstream of the crossing of New Mexico highway 47 upstream to I-25;

(g) the south fork of Cañon del Piojo from Canon del Piojo upstream 1.2 miles to an unnamed tributary;

(h) an unnamed tributary from the south fork of Cañon del Piojo upstream 1 mile to the Resurrection mine outfall;

(i) Arroyo del Puerto from San Mateo creek upstream 6.8 miles to the Ambrosia Lake mine entrance road;

(j) an unnamed tributary from San Mateo creek upstream 1.5 miles to the Roca Honda mine facility outfall in NPDES permit number;

(k) San Isidro arroyo from the Lee Ranch mine facility outfall upstream to Tinaja arroyo;

(l) Tinaja arroyo from San Isidro arroyo upstream to Mulatto canyon; and

(m) Mulatto canyon from Tinaja arroyo upstream to 1 mile northeast of the Cibola national forest boundary.

(2) the following waters are designated in the Pecos river basin:

(a) an unnamed tributary from Hart canyon upstream 1 mile to South Union road;

(b) Aqua Chiquita from Rio Peñasco to upstream of McEwan canyon; and

(c) Grindstone canyon upstream of Grindstone Reservoir.

(3) the following waters are designated in the **Canadian river basin**:

(a) Bracket canyon upstream of the Vermejo river;

(b) an unnamed tributary from Bracket canyon upstream 2 miles to the Ancho mine; and unnamed west tributary near the Ancho mine outfall.

(4) in the **San Juan river basin** an unnamed tributary of Kim-me-ni-oli wash upstream of the mine outfall.

(5) the following waters are designated in the **Little Colorado river basin**:

(a) Defiance draw from County Road 1 to upstream of West Defiance Road; and

(b) an unnamed tributary of Defiance draw from McKinley County Road 1 upstream to New Mexico Highway 264.

(6) the following waters are designated in the **closed basins**:

(a) in the Tularosa river closed basin San Andres canyon downstream of South San Andres canyon; and

(b) in the Mimbres river closed basin:

(i) San Vicente arroyo from the Mimbres River upstream to Maude's canyon;

[20.6.4.97 NMAC - N, 05-23-05; A, 12-01-10; A, XX-XX-XX]

~~[NOTE: Effective 12-01-10, no waters are yet approved for listing in Subsection C of this section.]~~

EPA Discussion:

In an effort to ensure that all unclassified nonperennial waters in New Mexico are protected consistent with CWA requirements, EPA worked closely with the SWQB in its efforts to establish and revise 20.6.4.97-99 and 20.6.4.15 NMAC in the state's 2005 and 2010 triennial revisions as part of a performance-based approach (See 65 FR 24647, 24648 (April 27, 2000)).

The 2010 amendments to 20.6.4.15 C. NMAC allow the SWQB to carry out UAAs supported by its Hydrology Protocol (HP) in an effort to determine appropriate designated uses for waters or reaches within classified segments based on hydrologic characteristics. If such a UAA(s) is approved by the Commission, it is made available on the SWQB's website for 30-day public review and comment period. After addressing comments, the provision provides for the submission of the UAA to EPA for technical approval. If granted technical approval, the specified waters identified on the SWQB's website are then subject to 20.6.4.97 NMAC and can then be used in state water quality management planning decisions. The provision requires that the SWQB periodically petition the Commission to include these waters under subsection C of 20.6.4.97 NMAC. Consistent with this process, the Commission has incorporated a number of waters in subsection C of 20.6.4.97 and submitted the revised water quality standards to EPA for formal review and final approval action under Section 303(c) of the CWA.

In addition, the Commission has removed the term “unclassified” as it applied to those waters which have been characterized as ephemeral based on UAAs supported by the SWQB’s HP. Further, the term “surface” to be consistent with the term “surface water(s) of the state” defined in Subsection S of 20.6.4.7 NMAC.

**Waters adopted under 20.6.4.97 NMAC:
Subsection C(1); (2)(a); (C)(3); (C)(4), and (C)(5)**

The SWQB developed a UAA supported by its HP to determine if what beneficial uses are supported in 18 streams in the Rio Grande basin, Pecos River basin, Canadian River basin and Little Colorado River basin. These waters are associated with 13 NPDES permitted discharges. Table 1 describes the individual waters and the locations of the recorded permitted discharges and the associated facility affected by the state’s amendments. They are as follows:

Table 1.

Watercourse	Upstream Lat/Long	Downstream Lat/Long	Total length (Miles)	Facility
Bracket Canyon	36.778/-104.885	36.767/-104.843	2.75	Chevron Mining Inc. Ancho Mine #NM0030180
Tributary to Bracket Canyon	36.778/-104.885	36.766/-104.858	2.00	Chevron Mining Inc Ancho Mine #NM0030180
Gachupin Canyon	36.793/-104.907	36.783/-104.863	2.85	Chevron Mining Inc Ancho Mine #NM0030180
Unnamed Arroyo	35.029/-106.639	35.03/-106.644	0.35	Delta Person Generating Station #NM0030376
Unnamed Arroyo	35.059/-106.919	34.063/-106.914	0.57	Firefighters Academy #NM0029726
Cunningham Gulch	35.334/-106.1401	35.342/-106.1198	1.41	LAC Minerals, Inc. #NM0028711
Mulatto Canyon Arroyo	35.485/-107.68	35.537/-107.574	8.05	Lee Ranch Coal Co Lee Ranch Mine #NM0029581
Inditos Draw	35.649/-107.833	35.641/-107.788	3.12	Lee Ranch Coal Co. El Segundo Mine #NM0030986

Unnamed Tributary to Kim-me-ni-oli Wash	35.652/-107.839	35.674/-107.923	5.12	Lee Ranch Coal Co. El Segundo Mine #NM0030986
Defiance Draw	35.581/-108.96	35.583/-108.919	2.70	Chevron Mining Inc McKinley Mine #NM0029386
Unnamed Tributary to Defiance Draw	35.625/-108.954	35.601/-108.919	3.14	Chevron Mining Inc McKinley Mine #NM0029386
Canon del Piojo	35.274/-107.2	35.288/-107.192	1.20	Resurrection Mining #NM0028169
Unnamed Tributary to Canon del Piojo	35.265/-107.199	35.287/-107.2	1.00	Resurrection Mining #NM0028169
Unnamed Tributary to Arroyo Hondo	35.601/-106	35.61/-106.006	0.37	Oshara Village Water Reclamation Facility #NM0030813
Unnamed Tributary to San Pedro Creek	35.206/-106.32	35.209/-106.308	0.83	Paa-Ko Communities Sewer Association #NM0029724
Arroyo del Puerto	35.411/-107.83	735.339/-107.795	6.80	Rio Algom Mining LLC Ambrosia Lake #NM0020532
Unnamed Tributary to San Mateo Creek	35.361/-107.682	35.344/-107.677	1.45	Strathmore Roca Honda #NM0031020
Unnamed Arroyo	32.826/-104.24	32.836/-104.25	0.95	S.W. Public Services Co. #NM0029131

The supporting UAA was submitted to EPA Region 6 for technical review on October 11, 2012 pursuant to 20.4.6.15 C. NMAC. Based on its review of this supporting UAA, EPA determined that CWA 101(a)(2) uses are not currently attainable in these waters due to natural conditions, and that the appropriate water quality standards designation for these streams is under Section 20.6.4.97 NMAC. EPA Region 6 provided technical approval through its letter and supporting TSD on January 30, 2013.

The Region's January 30, 2013 technical approval did not constitute a final action under § 303(c) of the CWA, but was an interim action utilizing previously approved performance-based provisions (See 65 FR 24647, 24648 ((April 27, 2000))). The EPA considers the submission of the amendments detailed above at 20.4.6.97 NMAC, subsections C(1); C(2)(a); C(3); C(4) and C(5) as part of the current amendments to constitute the state's submission under § 303(c) of the CWA. In today's action, EPA is approving the use designations described above for these waters for the reasons detailed in the Region's technical approval and TSD.

Any time a state adopts and EPA approves uses not specified in § 101(a)(2) of the Act, federal regulations at 40 CFR 131.20 require states to periodically re-examine those waters to determine if any new information has become available. That requirement is particularly important in intermittent and ephemeral waters with a regulated discharge since the presence of water can significantly influence the instream and riparian habitat and attract wildlife depending on the consistency and volume of flow, independent of the quality of that effluent. A permittee is not obligated to continue to discharge, even where instream and riparian habitat has been augmented. However, so long as that discharge exists, the permittee is obligated to ensure that the community that develops as a result of the discharge is protected consistent with federal requirements.

Subsection C(2)(b) and (c); and C(6) (a) and (b)(i)

The SWQB developed a UAA supported by its HP to determine if designated uses are supported in four unclassified stream segments in the Pecos River basin, Tularosa River closed basin and the Mimbres River closed basin. These waters are as follows:

Pecos River Basin

Aqua Chiquita from Rio Penasco to McEwan Canyon

Grindstone Canyon from Grindstone Reservoir to headwaters

Tularosa Closed Basin

San Andres Canyon

Mimbres Closed Basin

San Vicente Arroyo from Mimbres River to Maudes Canyon

The SWQB submitted its supporting assessment to EPA Region 6 for technical review pursuant to 20.6.4.15 C. NMAC on October 18, 2013. Following a technical review of the supporting UAA, EPA Region 6 provided technical approval on December 19, 2013 through its letter and supporting TSD that were provided to the SWQB.

The Region's technical approval did not constitute a final action under Sec. 303(c) of the Clean Water Act (CWA), but is an interim action utilizing previously approved performance-based provisions (See 65 FR 24647, 24648 ((April 27, 2000)). EPA considers the submission of the amendments to 20.6.4.97 NMAC, subsections C(2)(b) and (c); and C(6)(a) and C(6)(b)(i) to constitute the state's submission and under Sec. 303(c) of the CWA. In today's action, EPA is approving the use designations described above for these waters for the reasons detailed in EPA's prior technical approval and supporting TSD.

20.6.4.98 Intermittent Waters

All non-perennial **unclassified surface** waters of the state, except those ephemeral waters included under 20.6.4.97 NMAC **or classified in 20.6.4.100 thru 899.**

A. **Designated Uses:** livestock watering, wildlife habitat, marginal warmwater aquatic life and primary contact.

B. **Criteria:** the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses, except that the following site-specific criteria apply: the monthly geometric mean of E. coli bacteria 206 cfu/100 mL or less, single sample 940 cfu/100 mL or less.

20.6.4.99 Perennial Waters

All perennial unclassified surface waters of the state except those classified in 20.6.4.100 thru 899.

A. **Designated Uses:** warmwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. **Criteria:** the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses, except that the following site-specific criteria apply: the monthly geometric mean of E. coli bacteria 206 cfu/100 mL or less, single sample 940 cfu/100 mL or less.

EPA Discussion:

In its 2005 Triennial and interim revisions, the Commission clarified the presumption that CWA Sec. 101(a)(2) uses apply to all surface waters of the state. The revised language here clarifies that that presumption applies to all intermittent or perennial waters of the state that are not specifically included in 20.6.4.97 NMAC or described in Sections 20.6.4.101-899 NMAC.

The Commission removed the term “unclassified” in Sections 20.6.4.98 and 20.6.4.99 NMAC and added the term “surface” to be consistent with the phrase “surface water(s) of the state” as defined in 20.6.4.7 NMAC. The Commission has also included the phrase “or/those classified in 20.6.4.100 thru 899.”

20.6.4.101 – 806. Rivers and Closed Basins

EPA Discussion:

A number of the modifications to the following specific classified segment descriptions may only include non-substantive clarifying language but may also include substantive use and criteria modifications. Each modified segments has been addressed individually.

20.6.4.101 – 132 Rio Grande Basin

20.6.4.101 Rio Grande Basin

The main stem of the Rio Grande from the international boundary with Mexico upstream to one mile below downstream of Percha dam.

A. **Designated Uses:** irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. **Criteria:**

(1) The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: temperature 34°C (93.2°F) or less.

(2) At mean monthly flows above 350 cfs, the monthly average concentration for: TDS 2,000 mg/L or less, sulfate 500 mg/L or less and chloride 400 mg/L or less.

C. **Remarks:** sustained flow in the Rio Grande below Caballo reservoir is dependent on release from Caballo reservoir during the irrigation season; at other times of the year, there may be little or no flow.

EPA Discussion: The word 'below' has been replaced with the hydrologic term 'downstream of' in the segment description.

20.6.4.102 Rio Grande Basin

The main stem of the Rio Grande from one mile ~~below~~ downstream of Percha dam upstream to Caballo dam.

A. **Designated Uses:** irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life, primary contact and warmwater aquatic life.

B. **Criteria:** the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

C. **Remarks:** flow in this reach of the Rio Grande main stem is dependent upon release from Elephant Butte dam.

[20.6.4.103 NMAC - Rp 20 NMAC 6.1.2103, 10-12-00; A, 05-23-05; A, 12-01-10:A, XX-XX-XX]

EPA Discussion:

The word 'below' has been replaced with the hydrologic term 'downstream of' in the segment description.

20.6.4.103 Rio Grande Basin

The main stem of the Rio Grande from the headwaters of Caballo reservoir upstream to Elephant Butte dam and perennial reaches of tributaries to the Rio Grande in Sierra and Socorro counties, excluding waters on tribal lands.

A. **Designated Uses:** irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life, ~~secondary~~ primary contact and warmwater aquatic life.

B. **Criteria:** the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

C. **Remarks:** flow in this reach of the Rio Grande main stem is dependent upon release from Elephant Butte dam.

[20.6.4.103 NMAC - Rp 20 NMAC 6.1.2103, 10-12-00; A, 05-23-05; A, 12-01-10:A, XX-XX-XX]

EPA Discussion:

Federal regulations at 40 CFR 131.20(a) require states to re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act every 3 years to determine if any new information has become

available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the state is obligated to revise its standards. Consistent with these requirements, the SWQB has carried out surveys of segment 20.6.4.103 - Rio Grande, which extends from the headwaters of the Caballo Reservoir to Elephant Butte Dam during 2011-2012 and determined that primary contact is an existing use in this segment. The Commission adopted the primary contact use and the applicable criteria consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012).

20.6.4.110 Rio Grande Basin

The main stem of the Rio Grande from Angostura diversion works upstream to Cochiti dam, excluding the reaches on San Felipe, ~~Santo Domingo~~Kewa and Cochiti pueblos.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, primary contact, coldwater aquatic life and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: pH within the range of 6.6 to 9.0 and temperature 25°C (77°F) or less.

[20.6.4.110 NMAC - Rp 20 NMAC 6.1.2108, 10-12-00; A, 05-23-05; A, 12-01-10;~~A, XX-XX- XX~~]

EPA Discussion:

The Commission modified this segment description to acknowledge that the Pueblo formerly known as Santa Domingo officially changed its name to Kewa Pueblo.

20.6.4.116 Rio Grande Basin

The Rio Chama from its mouth on the Rio Grande upstream to Abiquiu reservoir, perennial reaches of the Rio Tusas, perennial reaches of the Rio Ojo Caliente, perennial reaches of Abiquiu creek and perennial reaches of El Rito creek ~~below downstream of~~ the town of El Rito.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, coldwater aquatic life, warmwater aquatic life and ~~secondary~~ primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: temperature 31°C (87.8°F) or less.

[20.6.4.116 NMAC - Rp 20 NMAC 6.1.2113, 10-12-00; A, 05-23-05; A, 12-01-10;~~A, XX-XX- XX~~]

EPA Discussion:

As discussed above in 20.6.4.103 NMAC, the SWQB has reviewed this segment consistent with federal regulations at 40 CFR 131.20(a). Evidence suggests that the primary contact use is attainable. The Ohkay Owingeh surface water quality standards downstream for Rio Ojo Caliente are assigned the primary contact recreation use, and the Rio Grande at the confluence is also designated as primary contact recreation. The

SWQB recommended and the Commission has revised the primary contact use for this segment consistent with federal regulations at 40CFR 131.10(b).

Consistent with CWQ Section 101(a) goals, the secondary contact is revised to the primary contact use and the applicable criteria are consistent with the latest EPA recommendations. (77 FR71191, November 29, 2012. The Commission has also replaced the word “below” with the hydrologic term “downstream of” in the segment description for 20.6.4.116 NMAC.

20.6.4.124 RIO GRANDE BASIN - Perennial reaches of Sulphur creek from ~~[its headwaters to]~~ its confluence with Redondo creek upstream to its headwaters.

A. **Designated Uses:** limited aquatic life, wildlife habitat, livestock watering and ~~[secondary]~~ primary contact.

B. **Criteria:** the use-specific criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: pH within the range of 2.0 to 9.0, maximum temperature 30°C (86°F), and the chronic aquatic life criteria of Subsections I and J of 20.6.4.900 NMAC. [20.6.4.124 NMAC - N, 05-23-05; A, 12-01-10; A, XX-XX-XX]

EPA Discussion:

The Commission has modified the segment description for segment 20.6.4.124 NMAC to more accurately describe the reach in hydrologic terms from the downstream confluence upstream to its headwaters. In addition, as discussed above in 20.6.4.103 NMAC, based on SWQB findings, the Commission has revised this segment consistent with federal regulations at 40 CFR 131.20(a). As with previous segments, the SWQB determined that there was no basis to retain a secondary contact use and recommended this segment be revised to the primary contact recreation use and that the applicable criteria be consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012).

20.6.4.204 Pecos River Basin

The main stem of the Pecos river from the headwaters of Avalon reservoir upstream to Brantley dam.

A. **Designated Uses:** irrigation, livestock watering, wildlife habitat, ~~secondary~~-primary contact and warmwater aquatic life.

B. **Criteria:** the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

[20.6.4.204 NMAC - Rp 20 NMAC 6.1.2204, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

[NOTE: The segment covered by this section was divided effective 05-23-05. The standards for Avalon Reservoir are under 20.6.4.219 NMAC.]

EPA Discussion:

The SWQB conducted surveys on this segment during 2003 and 2013 and determined that this segment is readily accessible and the evidence suggests that the primary contact recreation is applicable. Based on the SWQB's recommendation, the Commission has modified the designated use for segment 20.6.4.204 NMAC consistent with federal regulations at 40 CFR 131.20(a). As with previous segments, the Commission adopted the primary contact use and the applicable criteria consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012).

20.6.4.205 Pecos River Basin**Brantley Reservoir.**

A. Designated Uses: irrigation storage, livestock watering, wildlife habitat, primary contact and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

[20.6.4.205 NMAC - Rp 20 NMAC 6.1.2205, 10-12-00; A, 05-23-05; A, 12-01-10]

20.6.4.206 Pecos River Basin

The main stem of the Pecos river from the headwaters of Brantley reservoir upstream to Salt creek (near Acme), perennial reaches of the Rio Peñasco downstream from state highway 24 near Dunken, perennial reaches of the Rio Hondo and its tributaries ~~below~~ downstream of Bonney canyon and perennial reaches of the Rio Felix.

A. Designated Uses: irrigation, livestock watering, wildlife habitat, ~~secondary-primary~~ contact and warmwater aquatic life.

B. Criteria:

(1) The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

(2) At all flows above 50 cfs: TDS 14,000 mg/L or less, sulfate 3,000 mg/L or less and chloride 6,000 mg/L or less.

[20.6.4.206 NMAC - Rp 20 NMAC 6.1.2206, 10-12-00; A, 05-23-05; A, 12-01-10; ~~A, 12-01-10; A, 12-01-10~~ XX-XX-XX]

EPA Discussion:

Similar to previous segments, consistent with 40 CFR 131.20, the SWQB conducted surveys during 2004 and 2013 and determined that the Rio Peñasco has sites noted for fishing and other recreational activities. The SWQB determined that evidence supported primary contact in the perennial tributaries to Brantley Reservoir. Consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012), the Commission designated the primary contact use and adopted criteria to protect the use. In addition, the Commission replaced the word 'below' with the hydrologic term 'downstream of' in the segment description.

20.6.4.207 Pecos River Basin

The main stem of the Pecos river from Salt creek (near Acme) upstream to Sumner dam.

A. Designated Uses: irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and ~~secondary~~ primary contact.

B. Criteria:

(1) The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

(2) At all flows above 50 cfs: TDS 8,000 mg/L or less, sulfate 2,500 mg/L or less and chloride 4,000 mg/L or less.

[20.6.4.207 NMAC - Rp 20 NMAC 6.1.2207, 10-12-00; A, 05-23-05; A, 12-01-10; ~~A, XX-XX-XX~~]

EPA Discussion:

As in previous segments, the SWQB reviewed the uses designated for 20.6.4.207 NMAC. Based on survey's conduction in 2005 and 2015, the SWQB determined that although physically remote, primary contact is occurring in these waters. Given that the primary contact use is existing, the Commission has adopted the SWQB recommendation for this use, consistent with CWA 101(a) goals. Criteria based on the latest EPA recommendations for recreational contact were adopted to support the use. (77 FR71191, November 29, 2012).

20.6.4.213 Pecos River Basin

McAllister Lake.

A. Designated Uses: coldwater aquatic life, ~~secondary~~ primary contact, livestock watering and wildlife habitat.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: temperature 25°C (77°F) or less.

[20.6.4.213 NMAC - Rp 20 NMAC 6.1.2211.3, 10-12-00; A, 05-23-05; A, 12-01-10; ~~A, XX-XX-XX~~]

EPA Discussion:

This segment contains McAllister Lake, which is a state park and national wildlife refuge. The SWQB reported that McAllister Lake is open for boating, fishing and camping activities in the spring, summer and fall. The SWQB determined that given the types of activities that occur in the lake, the primary contact use is attainable. Consistent with the latest EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact has been revised to the primary contact use with corresponding criteria.

20.6.4.219 Pecos River Basin

Avalon reservoir.

A. Designated Uses: irrigation storage, livestock watering, wildlife habitat, ~~secondary~~ primary contact and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.
[20.6.4.219 NMAC - N, 05-23-05; A, 12-01-10; ~~A, XX-XX-XX~~]

EPA Discussion:

The state had previously designated Avalon Reservoir for secondary contact. Consistent with federal regulations at 40 CFR 131.20, the SWQB has reviewed Avalon Reservoir and determined that there are a number of activities that involve a considerable risk of water ingestion. Given that a number of recreational activities are likely occur at Avalon reservoir, the SWQB recommended and the Commission adopt the primary contact consistent with EPA recommendations for recreational contact and CWA 101(a) goals and corresponding criteria (77 FR71191, November 29, 2012).

20.6.4.305 Canadian River Basin

The main stem of the Canadian river from the headwaters of Conchas reservoir upstream to the New Mexico-Colorado line, perennial reaches of the Conchas river, the Mora river downstream from the USGS gaging station near Shoemaker, the Vermejo river downstream from Rail canyon and perennial reaches of Raton, Chicorica (except Lake Maloya and Lake Alice) and Uña de Gato creeks.

A. Designated Uses: irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. Criteria:

(1) The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

(2) TDS 3,500 mg/L or less at flows above 10 cfs.

[20.6.4.305 NMAC - Rp 20 NMAC 6.1.2305, 10-12-00; A, 05-23-05; A, 12-01-10; ~~A, XX-XX-XX~~]

[NOTE: This segment was divided effective 12-01-10. The standards for ~~Lake Maloya~~ and Lake Alice ~~and Lake Maloya~~ are under 20.6.4.311 and 20.6.4.312 NMAC, ~~respectively.~~]

EPA Discussion: The amendments to this provision are limited to grammatical corrections/edits.

20.6.4.308 Canadian River Basin - Charette lakes.

A. Designated Uses: coldwater aquatic life, warmwater aquatic life, ~~secondary-primary~~ contact, livestock watering and wildlife habitat.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

[20.6.4.308 NMAC - Rp 20 NMAC 6.1.2305.5, 10-12-00; A, 05-23-05; A, 12-01-10; ~~A, XX-XX-XX~~]

EPA Discussion:

The state had previously designated Charette Lake for secondary contact. Consistent with federal regulations at 40 CFR 131.20, the SWQB has reviewed the recreational activities

that occur at Charette Lake and determined that the primary contact use is applicable. Consistent with EPA recommendations for recreational contact and CWA 101(a) goals (77 FR71191, November 29, 2012), the designated use for secondary contact for this regulatory segment has been modified to the primary contact use and supporting criteria.

20.6.4.317 Canadian River Basin

Springer lake.

A. Designated Uses: coolwater aquatic life, irrigation, primary contact, livestock watering, ~~and~~ wildlife habitat, ~~and public water supply~~.

B. Criteria: The use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses.

[20.6.4.317 NMAC - N, 07-10-12;~~A,XX-XX-XX~~]

EPA Discussion:

Springer Lake is designated as a public water supply for Colfax County (Water System Number NM3526604) and as such, this use is an existing use. Consistent with federal regulations at 40 CFR 131.10(a), the use has been added to the water body segment description.

20.6.4.403 San Juan River Basin

The Animas river from its confluence with the San Juan ~~river~~ upstream to Estes Arroyo.

A. Designated Uses: public water supply, industrial water supply, irrigation, livestock watering, wildlife habitat, ~~marginaleoldwater~~ ~~coolwater~~ aquatic life, ~~and~~ primary contact ~~andwarmwateraquatielife~~.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses[,], ~~except that the following segment-specific criteria applies: temperature 27° C (86.6°F) or less.~~

[20.6.4.403 NMAC - Rp 20 NMAC 6.1.2403, 10-12-00; A, 05-23-05; A, 12-01-10;~~A, XX-XX- XX~~]

20.6.4.404 San Juan River Basin

The Animas river from Estes Arroyo upstream to the ~~New Mexico-Colorado line~~ ~~Southern Ute Indian tribal boundary~~.

A. Designated Uses: ~~eoldwater~~ ~~coolwater~~ aquatic life, irrigation, livestock watering, wildlife habitat, public water supply, industrial water supply and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: phosphorus (unfiltered sample) 0.1 mg/L or less.

[20.6.4.404 NMAC - Rp 20 NMAC 6.1.2404, 10-12-00; A, 05-23-05; A, 12-01-10;~~A, XX-XX- XX~~]

EPA Discussion:

The SWQB initially developed a UAA for the upper and lower segments of the Animas River and made a public discussion draft UAA in November 2013. Following the public

comment period for the discussion draft, the SWQB requested that Region 6 review its revised public discussion draft UAA in April 2014. Region 6 provided informal comments to the SWQB later that month, followed by more formal comments on May 6, 2014. Based on those comments, the SWQB revised the document and provided a final draft UAA for the Region's technical review pursuant to 20.4.6.15 C. NMAC on July 2014. EPA Region 6 provided its technical approval on the final draft UAA on October 13, 2014.

The Region's technical approval did not constitute a final action under § 303(c) of the CWA, but is an interim action utilizing previously approved performance-based provisions (See 65 FR 24647, 24648 (April 27, 2000)). The EPA considers the submission of the amendments to 20.4.6.403 NMAC to constitute the state's submission and under § 303(c) of the CWA. In today's action, EPA is approving the use designations described above for segments of the Animas River for the reasons detailed in the Region's previous technical approval and supporting TSD.

20.6.4.502 Gila River Basin

The main stem of the Gila river from Redrock canyon upstream to the confluence of the West Fork Gila river and East Fork Gila river and perennial reaches of tributaries to the Gila river below downstream of Mogollon creek.

A. Designated Uses: industrial water supply, irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life, primary contact and warmwater aquatic life.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criterion applies: 28°C (82.4°F) or less.

[20.6.4.502 NMAC - Rp 20 NMAC 6.1.2502, 10-12-00; A, 05-23-05; A, 12-01-10]

EPA Discussion:

The word 'below' is replaced with the hydrologic term 'downstream of' in the segment description. No further discussion is required.

20.6.4.503 Gila River Basin

All perennial tributaries to the Gila river above upstream of, and including, Mogollon creek.

A. Designated Uses: domestic water supply, high quality coldwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance of 400 µS/cm or less for all perennial tributaries except West Fork Gila and perennial tributaries thereto, specific conductance of 300 µS/cm or less; ~~[main stem of the Gila river above Gila hot springs and 400 µS/cm or less for other reaches;]~~ 32.2°C (90°F) or less in the east fork of the Gila river and Sapillo creek below

down stream of Lake Roberts; the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

EPA Discussion:

The word 'above' and 'below' have been replaced with the hydrological terms 'upstream of' and 'downstream of' in the segment description and subparagraph B, respectively.

Segment 20.6.4.503 NMAC is currently designated as high quality coldwater aquatic life use (HQCW) with an associated segment-specific criterion of 300 $\mu\text{S}/\text{cm}$. This specific conductance criterion applies to "the main stem of the Gila river above Gila hot springs." A specific conductance criterion of 400 $\mu\text{S}/\text{cm}$ applies to all other reaches. However, in its review of this segment, the SWQB found that USGS maps indicate that the section of the Gila River referred to as the "main stem of the Gila River above the Gila Hot Springs" is actually the West Branch (or West Fork) Gila River. The main stem of the Gila River begins from the confluence of the West and East Forks of the Gila River, and extends downstream from the confluence.

Since specific conductance criteria are specific to HQCW use and are segment-specific depending on the natural background in the particular surface water. The SWQB had to determine if it was appropriate to continue to apply one specific conductance criterion to the West Fork Gila, or two different specific conductance criteria, one upstream and one downstream of the influence of the Gila Hot Springs. The SWQB relied on water quality data to determine if the lower specific conductance criterion currently associated with the West Fork of the Gila could meet. The SWQB determined that the 300 $\mu\text{S}/\text{cm}$ criterion should be applied to West Fork Gila and its tributaries, and that the more protective 400 $\mu\text{S}/\text{cm}$ criterion applies to all other reaches.

20.6.4.803 Closed Basins

Perennial reaches of the Mimbres river downstream of the confluence with ~~Willow Springs~~ Allie canyon and all perennial reaches of tributaries thereto.

A. **Designated Uses:** ~~coldwater~~ coolwater aquatic life with a segment-specific temperature of 30° C. irrigation, livestock watering, wildlife habitat and primary contact.

B. **Criteria:** the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

[20.6.4.803 NMAC - Rp 20 NMAC 6.1.2803, 10-12-00; A, 05-23-05; A, 12-01-10; A, XX-XX- XX]

20.6.4.804 Closed Basins

Perennial reaches of the Mimbres river upstream of the confluence with ~~Willow Springs~~ Allie canyon upstream to Cooney canyon, and all perennial reaches of East

Fork Mimbres (McKnight canyon) below the fish barrier, and all perennial tributaries thereto.

A. **Designated Uses:** irrigation, domestic water supply, **high-quality** coldwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. **Criteria:** the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 300 μ S/cm or less; the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less **and temperature of 30°C (86°F) or less.**

[20.6.4.804 NMAC - Rp 20 NMAC 6.1.2804, 10-12-00; A, 05-23-05; A, 12-01-10;**A, XX-XX- XX**]

20.6.4.807 Closed Basins

20.6.4.807 CLOSED BASINS - Perennial reaches of the Mimbres river upstream of Cooney Canyon and all perennial reaches thereto, including perennial reaches of East Fork Mimbres river (McKnight Canyon) upstream of the fish barrier.

A. **Designated Uses:** irrigation, domestic water supply, **high quality coldwater aquatic life.** Livestock watering, wildlife habitat and primary contact.

B. **Criteria:** the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 300 μ S/cm or less; the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.

[20.6.4.807 NMAC- A. **XX-XX-XXJ**]

EPA Discussion:

The SWQB initially developed a UAA for the Mimbres River in March 2014 based on the SWQB's Air-Water Temperature Correlation for New Mexico streams using corroborative survey data from prior years (NMED/SWQB, 2011). A discussion draft was posted for public comment on April 1, 2014 as part of the state's 2013 Triennial Review. Although this ended on April 30, 2014, an additional 30 days was requested on April 28, 2014 for review of the SWQB's Triennial Public Draft, which included the Mimbres UAA draft, extending the review to May 30, 2014.

The SWQB provided a final draft UAA for the Region's technical review pursuant to section 20.4.6.15 C. NMAC on July 21, 2014. The EPA provided informal comments to the SWQB on January 14, 2015 and continued discussions through informal communication. The EPA provided informal comments on January 14, 2015 and received an informal response from NMED staff on April, 13, 2015.

The supporting UAA was intended to consider the influences from varying ecological zones, ambient air temperature, and anthropogenic factors as determining factors affecting attainment of aquatic life uses in the Mimbres River. The data adequately demonstrated that the original upper segment, 20.6.4.804 NMAC should be broken into two separate segments consistent with the variation in ecological zones. The SWQB proposed that new segment, 20.6.4.807 NMAC include the upper reaches, extending

down to Cooney Canyon and McKnight Canyon on the East Fork of the Mimbres. The SWQB concluded that this new segment can support a HQCW aquatic life use. The data indicated remaining portion of the original segment 20.6.4.804 NMAC should extend from Cooney Canyon and McKnight Canyon on the East Fork down to Allie Canyon (the "Middle Mimbres"). The SWQB also showed that this segment can support the original HWCW aquatic life use. The lower segment, 20.6.4.803 NMAC now includes the perennial reaches below Allie Canyon. Given the naturally high ambient water temperature in the segment, the Coolwater aquatic life use can be attained with a segment-specific temperature criterion of 30°C.

Region 6 considered all the supporting information presented in the original discussion draft and additional information provided by the SWQB and determined that the UAA was technically approvable on May 4, 2015. This technical approval did not constitute a final action under § 303(c) of the Clean Water Act (CWA), but was an interim action utilizing previously approved performance-based provisions (See 65 FR 24647, 24648 ((April 27, 2000)). The EPA considers the current submission of the amendments to 20.4.6.803, 804 and 807 NMAC to constitute the state's submission and under § 303(c) of the CWA. The EPA is approving these coolwater aquatic life use designations and segment-specific criteria based on the prior technical approval and supporting TSD developed by EPA Region 6.

20.6.4.900 Applicable Criteria

20.6.4.900 Criteria Applicable to Existing, Designated or Attainable Uses Unless Otherwise Specified in 20.6.4.97 Through 20.6.4.899 NMAC.

A. Fish Culture and Water Supply: Fish culture, public water supply and Industrial water supply are designated uses in particular classified waters of the state where these uses are actually being realized. However, no numeric criteria apply uniquely to these uses. Water quality adequate for these uses is ensured by the general criteria and numeric criteria for bacterial quality, pH and temperature.

EPA Discussion: Correction of a minor typographical error requires inserting a space between the word "Culture" and the word "and." The modification is nonsubstantive and is approved.

D. Primary Contact: the monthly geometric mean of *E. coli* bacteria of 126 cfu/100 mL orMPN/100mL and single sample of 410 cfu/100 mL orMPN/100mL and pH within the range of 6.6 to 9.0 apply to this use. The results for *E. coli* maybe reported as either cfu (colony forming units) or the most probable number (MPN) as appropriate based on the method used.

E. Secondary Contact: the monthly geometric mean of *E. coli* bacteria of 548 cfu/100 mL orMPN/100mL and single sample of 2507 cfu/100 mL orMPN/100mL apply to this use. The results for *E. coli* maybereported as either cfu (colony forming units) or the most probable number (MPN) as appropriate based on the method used.

EPA Discussion:

In the 2012 Recreational Water Quality Criteria (RWQC), EPA recommended that states/tribes use *Escherichia coli* (*E. coli*) and enterococci as indicators of fecal contamination for fresh water and marine water, respectively. They can be enumerated using various analytical methods the defined substrate method, produces a most probable number (MPN) per volume. MPN analyses estimate the number of organisms in a sample using statistical probability tables, hence the term “most probable number.”

Given the RWQC described above, Region 6 recommended that the state’s update its WQS and TMDL guidance to refer to the use of both cfu and MPN. The use of more cost-effective and time efficient methods in which counts are expressed as MPN/100 ml was approved by EPA for testing ambient waters in 2003³ and for wastewater and sewage sludge in 2007⁴. The SWQB is currently using an approved EPA method for sampling and analyzing bacteria levels in ambient water and which reports results in MPN/100 ml. The currently recommended EPA recreational or bacteria criteria for *E. coli* are expressed as cfu/100 ml measured using EPA Method 1603 or any other equivalent method that measures culturable *E. coli*⁵ ⁶. Based on this recommendation, the Commission modified this provision to reflect the use of updated methods for monitoring, assessment and reporting.

In future amendments, EPA recommends that the SWQB propose updating its terminology to reflect that used in EPA guidance, i.e., statistical threshold value and geometric mean.

20.6.4.900 H. NMAC.

(3) **Marginal Coldwater:** dissolved oxygen 6.0 mg/L or more, 6T3 temperature 25°C (77°F), maximum temperature 29°C (84°F) and pH within the range from 6.6 to 9.0. Where a single segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature and no 6T3 temperature applies.

(4) **Coolwater:** dissolved oxygen 5.0 mg/L or more, maximum temperature 29°C (84°F) and pH within the range of 6.6 to 9.0.

(5) **Warmwater:** dissolved oxygen 5.0 mg/L or more, maximum temperature 32.2°C (90°F) and pH within the range of 6.6 to 9.0. Where a segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature.

(6) **Marginal Warmwater:** dissolved oxygen 5.0 mg/L or more, pH within the range of 6.6 to 9.0 and maximum temperature 32.2°C (90°F). Where a

³ U.S. Federal Register - 40 CFR Part 136 Vol. 68, No. 139; July 21, 2003.

⁴ U.S. Federal Register - 40 CFR Parts 136 and 503, Vol. 72, No. 157; March 26, 2007.

⁵ EPA, 2012:

<http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/upload/factsheet2012.pdf>

⁶ USEPA. 2002. Method 1603: *Escherichia coli* (*E. coli*) In Water By Membrane Filtration Using Modified membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC). U.S. Environmental Protection Agency, Office of Water, Washington D.C. EPA-821-R-02-023.

segment-specific temperature criterion is indicated in 20.6.4.101-899 NMAC, it is the maximum temperature.

EPA Discussion:

Dissolved oxygen criteria have been revised in subparagraphs (3), (5) and (6) of 20.6.4.900 H. NMAC to show decimal places consistent with dissolved oxygen criteria for the other aquatic life designated uses. These are nonsubstantive modifications.

20.6.4.900 I. (1)

I. Hardness-dependent acute and chronic aquatic life criteria for metals are calculated using the following equations. The criteria are expressed as a function of dissolved hardness (as mg CaCO₃/L). With the exception of aluminum, the equations are valid only for dissolved hardness concentrations of 0-400 mg/L. For dissolved hardness concentrations above 400 mg/L, the criteria for 400 mg/L apply. For aluminum the equations are valid only for dissolved hardness concentrations of 0-220 mg/L. For dissolved hardness concentrations above 220 mg/L, the aluminum criteria for 220 mg/L apply.

(1) Acute aquatic life criteria for metals. The equation to calculate acute criteria in µg/L is $\exp(m_A[\ln(\text{hardness})] + b_A)(CF)$. Except for aluminum, the criteria are based on analysis of dissolved metal. For aluminum, the criteria are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department. EPA has disapproved the hardness-based equation for total recoverable aluminum in waters where the pH is less than 6.5 in the receiving stream for federal purposes of the Clean Water Act. The equation parameters are as follows:

Metal	m_A	b_A	Conversion factor (CF)
Aluminum (Al)	1.3695	1.8308	
Cadmium (Cd)	0.8968	-3.5699	$1.136672 - [(\ln \text{hardness})(0.041838)]$
Chromium (Cr) III	0.8190	3.7256	0.316
Copper (Cu)	0.9422	-1.700	0.960
Lead (Pb)	1.273	-1.460	$1.46203 - [(\ln \text{hardness})(0.145712)]$
Manganese (Mn)	0.3331	6.4676	
Nickel (Ni)	0.8460	2.255	0.998
Silver (Ag)	1.72	-6.59	0.85
Zinc (Zn)	0.9094	0.9095	0.978

(2) Chronic aquatic life criteria for metals. The equation to calculate chronic criteria in µg/L is $\exp(m_C[\ln(\text{hardness})] + b_C)(CF)$. Except for aluminum, the criteria are based on analysis of dissolved metal. For aluminum, the criteria are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department. EPA has disapproved the hardness-based equation for total recoverable aluminum in waters where the pH is less than 6.5 in the receiving stream for federal purposes of the Clean Water Act. The equation parameters are as follows:

Metal	m _C	b _C	Conversion factor (CF)
Aluminum (Al)	1.3695	0.9161	
Cadmium (Cd)	0.7647	-4.2180	1.101672-[(ln hardness)(0.041838)]
Chromium (Cr) III	0.8190	0.6848	0.860
Copper (Cu)	0.8545	-1.702	0.960
Lead (Pb)	1.273	-4.705	1.46203-[(ln hardness)(0.145712)]
Manganese (Mn)	0.3331	5.8743	
Nickel (Ni)	0.8460	0.0584	0.997
Zinc (Zn)	0.9094	0.6235	0.986

EPA Discussion:

Based on an extensive review of the supporting documentation, in its April 30, 2012 action, EPA approved the application of the hardness-dependent equations for aluminum to those waters of the State at the circumneutral pH of 6.5 to 9.0 in Subsection 20.6.4.900 I. (1) and (2) NMAC. However, EPA disapproved the application of these equations in waters where the pH is below 6.5 because criteria based on these equations may not be protective of applicable designated uses below that pH range. In that action, EPA recommended that the State insert a footnote specifying that the hardness-based equations only apply at a pH of 6.5 to 9.0 to resolve the disapproval. On June 18, 2012, EPA amended its action to clarify that as the permitting authority, EPA will apply the previously approved 87 ug/L dissolved aluminum criterion in those waters where the pH is below 6.5.

The Commission has adopted two identical narratives amending Subsections 20.6.4.900 I. (1) and (2) NMAC. These narratives note EPA previously disapproved the application of the hardness-based equations for aluminum where the pH is less than 6.5 in the receiving stream. Although these narratives acknowledge the prior disapproval, they do not clarify that the acute and chronic hardness-based equations will only apply in waters with the circumneutral pH of 6.5 to 9.0 and do not specify that EPA recommended criterion of 87 µg/L for aluminum applies where the pH is less than 6.5 in the receiving stream for all CWA purposes. Although EPA is approving these narrative statements, **EPA's 2012 disapproval of the hardness-based equation for total recoverable aluminum in waters with pH less than 6.5 still stands. As noted in that prior action, as the permitting authority in New Mexico, EPA will apply the 87 µg/L chronic dissolved aluminum value in NPDES permits in these waters.**

Given that EPA's previous action means that the hardness-dependent acute and chronic equations apply in waters with pH of 6.5 to 9.0 and that the 87 µg/L criterion applies where the pH is less than 6.5 in waters in the receiving stream, it is essential that the SWQB structure its assessment methodology to include language that ensures waters are monitored and assessed for pH to ensure appropriate application of the 87 µg/L criterion for aluminum given the effect that pH has on bioavailability/toxicity. By identifying those waters that are naturally below circumneutral pH (below 6.5), the state

could then adopt site-specific criteria for aluminum to avoid inappropriate listings under CWA Sec. 303(d).

EPA is currently evaluating the latest science on aluminum toxicity to potentially incorporate into an update to its CWA Sec. 304(a) recommended aquatic life criteria for aluminum. EPA recommends that New Mexico track that effort, and consider whether any updates to the state's aluminum criteria are warranted as a result.

20.6.4.900 I. (3) NMAC

(3) Selected values of calculated acute and chronic criteria (µg/L).

Hardness as CaCO ₃ , dissolved (mg/L)		Al	Cd	Cr III	Cu	Pb	Mn	Ni	Ag	Zn
25	Acute	512	0.51	180	4	14	1,881	140	0.3	45
	Chronic	205	0.17	24	3	1	1,040	16		34
30	Acute	658	0.59	210	4	17	1,999	170	0.4	54
	Chronic	263	0.19	28	3	1	1,105	19		41
40	Acute	975	0.76	270	6	24	2,200	220	0.7	70
	Chronic	391	0.23	35	4	1	1,216	24		53
50	Acute	1,324	0.91	320	7	30	2,370	260	1.0	85
	Chronic	530	0.28	42	5	1	1,309	29		65
60	Acute	1,699	1.07	370	8	37	2,519	300	1.3	101
	Chronic	681	0.31	49	6	1	1,391	34		76
70	Acute	2,099	1.22	430	10	44	2,651	350	1.7	116
	Chronic	841	0.35	55	7	2	1,465	38		88
80	Acute	2,520	1.37	470	11	51	2,772	390	2.2	131
	Chronic	1,010	0.39	62	7	2	1,531	43		99
90	Acute	2,961	1.51	520	12	58	2,883	430	2.7	145
	Chronic	1,186	0.42	68	8	2	1,593	48		110
100	Acute	3,421	1.65	570	13	65	2,986	470	3.2	160
	Chronic	1,370	0.45	74	9	3	1,650	52		121
200	Acute	8,838	2.98	1,010	26	140	3,761	840	11	301
	Chronic	3,541	0.75	130	16	5	2,078	90		228
220	Acute	10,071	<u>3.23</u>	<u>1,087</u>	<u>28</u>	<u>151</u>	<u>3,882</u>	<u>912</u>	<u>13</u>	<u>328</u>
	Chronic	4,035	<u>0.80</u>	<u>141</u>	<u>18</u>	<u>6</u>	<u>2,145</u>	<u>101</u>		<u>248</u>
300	Acute	10,071	4.21	1,400	38	210	4,305	1190	21	435
	Chronic	4,035	1.00	180	23	8	2,379	130		329
400 and above	Acute	10,071	5.38	1,770	50	280	4,738	1510	35	564
	Chronic	4,035	1.22	230	29	11	2,618	170		428

EPA Discussion:

The table in 20.6.4.900 I. (3) has been revised, adding the subscript '3' to the chemical nomenclature for hardness, and to include the missing calculated values for metals at hardness of 220 mg/L CaCO₃. These are nonsubstantive amendments.

20.6.4.900 J. (1) and (2) NMAC

J. Use-Specific Numeric criteria.

- ~~(1) Notes applicable to the table of numeric criteria in Paragraph (2) of this subsection:~~
- ~~(a) Where the letter "a" is indicated in a cell, the criterion is hardness-based and can be referenced in Subsection I of 20.6.4.900 NMAC.~~
 - ~~(b) Where the letter "b" is indicated in a cell, the criterion can be referenced in Subsection C of 20.6.4.900 NMAC.~~
 - ~~(c) Criteria are in µg/L unless otherwise indicated.~~
 - ~~(d) Abbreviations are as follows: CAS - chemical abstracts service (see definition for "CAS number" in 20.6.4.7 NMAC); DWS - domestic water supply; Irr - irrigation; LW - livestock watering; WH - wildlife habitat; HH - human health - organism only; C - cancer-causing; P - persistent.~~
 - ~~(e) The criteria are based on an analysis of an unfiltered sample unless otherwise indicated. The acute and chronic aquatic life criteria for aluminum are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department. For aluminum, where the pH is 6.5 or less in the receiving water after mixing, the acute and chronic dissolved criteria in the table will apply.~~
 - ~~(f) The criteria listed under human health - organism only (HH - OO) are intended to protect human health when aquatic organisms are consumed from waters containing pollutants. These criteria do not protect the aquatic life itself; rather, they protect the health of humans who ingest fish or other aquatic organisms.~~
 - ~~(g) The dioxin criteria apply to the sum of the dioxin toxicity equivalents expressed as 2,3,7,8-TCDD dioxin.~~
 - ~~(h) The criteria for polychlorinated biphenyls (PCBs) apply to the sum of all congeners, to the sum of all homologs or to the sum of all aromatics.~~

(2) Table of Numeric Criteria: The following table sets forth the numeric criteria applicable to existing, designated and attainable uses. For metals, criteria represent the total sample fraction unless otherwise specified in the table. Additional criteria that are not compatible with this table are found in Subsections A through I, K and L of this section.

EPA Discussion:

The order of 20.6.4.900 J. (1) and (2) NMAC have been transposed so the table of numeric criteria precedes the explanatory notes.

Subparagraph 20.6.4.900 J. (1) NMAC now states that criteria for metals in this table are based on the total sample fraction unless otherwise specified (e.g., dissolved). Although

unclear, EPA interprets the term “total sample fraction” to mean an unfiltered water column sample that is the sum of the dissolved fraction and the particulate fraction of the metal in a sample. This is in contrast to the “dissolved” fraction which is defined as that which passes through a 0.45 µm filter (USGS Water Resources Glossaries, Water Resources Data – Definition of Terms at <http://water.usgs.gov/glossaries.html>).

Pollutant	CAS Number	DWS	Irr/Irr Storage	LW	WH	Aquatic Life			Type
						Acute	Chronic	HH-OO	
Aluminum, dissolved	7429-90-5		5,000			750e	87e		
Aluminum, total recoverable	7429-90-5					a,e	a,e		
Antimony, dissolved	7440-36-0	6						640	P
Arsenic, dissolved	7440-38-2	10	100	200		340	150	9.0	C,P
Asbestos	1332-21-4	7,000,000 fibers/L							
Barium, dissolved	7440-39-3	2,000							
Beryllium, dissolved	7440-41-7	4							
Boron, dissolved	7440-42-8		750	5,000					
Cadmium, dissolved	7440-43-9	5	10	50		a	a		
Chlorine residual	7782-50-5				11	19	11		
Chromium III, dissolved	16065-83-1					a	a		
Chromium VI, dissolved	18540-29-9					16	11		
Chromium, dissolved	7440-47-3	100	100	1,000					
Cobalt, dissolved	7440-48-4		50	1,000					
Copper, dissolved	7440-50-8	1300	200	500		a	a		
Cyanide, total recoverable	57-12-5	200			5.2	22.0	5.2	140	
Lead, dissolved	7439-92-1	15	5,000	100		a	a		
Manganese, dissolved	7439-96-5					a	a		
Mercury	7439-97-6	2		10	0.77				
Mercury, dissolved	7439-97-6					1.4	0.77		
Methylmercury	22967-92-6							0.3 mg/kg in fish tissue	P
Molybdenum, dissolved	7439-98-7		1,000						

Molybdenum, total recoverable	7439-98-7					7,920	1,895		
Nickel, dissolved	7440-02-0	700				a	a	4,600	P
Nitrate as N		10 mg/L							
Nitrite + Nitrate				132 mg/L					
Selenium, dissolved	7782-49-2	50	b	50				4,200	P
Selenium, total recoverable	7782-49-2				5.0	20.0	5.0		
Silver, dissolved	7440-22-4					a			
Thallium, dissolved	7440-28-0	2						0.47	P
Uranium, dissolved	7440-61-1	30							
Vanadium, dissolved	7440-62-2		100	100					
Zinc, dissolved	7440-66-6	10,500	2,000	25,000		a	a	26,000	P
Adjusted gross alpha		15 pCi/L		15 pCi/L					
Radium 226 + Radium 228		5 pCi/L		30.0 pCi/L					
Strontium 90		8 pCi/L							
Tritium		20,000 pCi/L		20,000 pCi/L					
Acenaphthene	83-32-9	2,100						990	
Acrolein	107-02-8	18						9	
Acrylonitrile	107-13-1	0.65						2.5	C
Aldrin	309-00-2	0.021				3.0		0.00050	C,P
Anthracene	120-12-7	10,500						40,000	
Benzene	71-43-2	5						510	C
Benzidine	92-87-5	0.0015						0.0020	C
Benzoanthracene	56-55-3	0.048						0.18	C
Benzoapyrene	50-32-8	0.2						0.18	C,P
Benzo(b)fluoranthene	205-99-2	0.048						0.18	C
Benzo(k)fluoranthene	207-08-9	0.048						0.18	C
alpha-BHC	319-84-6	0.056						0.049	C
beta-BHC	319-85-7	0.091						0.17	C
Gamma-BHC (Lindane)	58-89-9	0.20				0.95		1.8	
Bis(2-chloroethyl) ether	111-44-4	0.30						5.3	C
Bis(2-chloroisopropyl) ether	108-60-1	1,400						65,000	

Bis(2-ethylhexyl) phthalate	117-81-7	6						22	C
Bromoform	75-25-2	44						1,400	C
Butylbenzyl phthalate	85-68-7	7,000						1,900	
Carbon tetrachloride	56-23-5	5						16	C
Chlordane	57-74-9	2				2.4	0.0043	0.0081	C,P
Chlorobenzene	108-90-7	100						1,600	
Chlorodibromomethane	124-48-1	4.2						130	C
Chloroform	67-66-3	57						4,700	C
2-Chloronaphthalene	91-58-7	2,800						1,600	
2-Chlorophenol	95-57-8	175						150	
Chrysene	218-01-9	0.048						0.18	C
Diazinon	333-41-5					0.17	0.17		
4,4'-DDT and derivatives		1.0			0.001	1.1	0.001	0.0022	C,P
Dibenzo(a, h) anthracene	53-70-3	0.048						0.18	C
Dibutyl phthalate	84-74-2	3,500						4,500	
1,2-Dichlorobenzene	95-50-1	600						1,300	
1,3-Dichlorobenzene	541-73-1	469						960	
1,4-Dichlorobenzene	106-46-7	75						190	
3,3'-Dichlorobenzidine	91-94-1	0.78						0.28	C
Dichlorobromomethane	75-27-4	5.6						170	C
1,2-Dichloroethane	107-06-2	5						370	C
1,1-Dichloroethylene	75-35-4	7						7,100	C
2,4-Dichlorophenol	120-83-2	105						290	
1,2-Dichloropropane	78-87-5	5.0						150	C
1,3-Dichloropropene	542-75-6	3.5						210	C
Dieldrin	60-57-1	0.022				0.24	0.056	0.00054	C,P
Diethyl phthalate	84-66-2	28,000						44,000	
Dimethyl phthalate	131-11-3	350,000						1,100,000	
2,4-Dimethylphenol	105-67-9	700						850	
2,4-Dinitrophenol	51-28-5	70						5,300	
2,4-Dinitrotoluene	121-14-2	1.1						34	C
Dioxin		3.0E-05						5.1E-08	C,P
1,2-Diphenylhydrazine	122-66-7	0.44						2.0	C
alpha-Endosulfan	959-98-8	62				0.22	0.056	89	

beta-Endosulfan	33213-65-9	62				0.22	0.056	89	
Endosulfan sulfate	1031-07-8	62						89	
Endrin	72-20-8	2				0.086	0.036	0.060	
Endrin aldehyde	7421-93-4	10.5						0.30	
Ethylbenzene	100-41-4	700						2,100	
Fluoranthene	206-44-0	1,400						140	
Fluorene	86-73-7	1,400						5,300	
Heptachlor	76-44-8	0.40				0.52	0.0038	0.00079	C
Heptachlor epoxide	1024-57-3	0.20				0.52	0.0038	0.00039	C
Hexachlorobenzene	118-74-1	1						0.0029	C,P
Hexachlorobutadiene	87-68-3	4.5						180	C
Hexachlorocyclopentadiene	77-47-4	50						1,100	
Hexachloroethane	67-72-1	25						33	C
Ideno(1,2,3-cd)pyrene	193-39-5	0.048						0.18	C
Isophorone	78-59-1	368						9,600	C
Methyl bromide	74-83-9	49						1,500	
2-Methyl-4,6-dinitrophenol	534-52-1	14						280	
Methylene chloride	75-09-2	5						5,900	C
Nitrobenzene	98-95-3	18						690	
N-Nitrosodimethylamine	62-75-9	0.0069						30	C
N-Nitrosodi-n-propylamine	621-64-7	0.050						5.1	C
N-Nitrosodiphenylamine	86-30-6	71						60	C
Nonylphenol	84852-15-3					28	6.6		
Polychlorinated Byphenyls (PCBs)	1336-36-3	0.50			0.014	2	0.014	0.00064	C,P
Pentachlorophenol	87-86-5	1.0				19	15	30	C
Phenol	108-95-2	10,500						860,000	
Pyrene	129-00-0	1,050						4,000	
1,1,2,2-Tetrachloroethane	79-34-5	1.8						40	C
Tetrachloroethylene	127-18-4	5						33	C,P

(12) Notes applicable to the table of numeric criteria in Paragraph (21) of this subsection.

(a) Where the letter “a” is indicated in a cell, the criterion is hardness based and can be referenced in Subsection I of 20.6.4.900 NMAC.

(b) Where the letter “b” is indicated in a cell, the criterion can be referenced in Subsection C of 20.6.4.900 NMAC.

(c) Criteria are in µg/L unless otherwise indicated.

(d) Abbreviations are as follows: CAS - chemical abstracts service (see definition for “CAS number” in 20.6.4.7 NMAC); DWS - domestic water supply; Irr/Irr Storage irrigation or irrigation storage; LW - livestock watering; WH - wildlife habitat; HH-OO – human health-organism only; C - cancer-causing; P - persistent.

(e) The criteria are based on analysis of an unfiltered sample unless otherwise indicated. The acute and chronic aquatic life criteria for aluminum are based on analysis of total recoverable aluminum in a sample that is filtered to minimize mineral phases as specified by the department. For aluminum, where the pH is 6.5 or less in the receiving water after mixing, the acute and chronic dissolved criteria in the table will apply.

(f) The criteria listed under human health-organism only (HH-OO) are intended to protect human health when aquatic organisms are consumed from waters containing pollutants. These criteria do not protect the aquatic life itself; rather, they protect the health of humans who ingest fish or other aquatic organisms.

(g) The dioxin criteria apply to the sum of the dioxin toxicity equivalents expressed as 2,3,7,8-TCDD dioxin.

(h) The criteria for polychlorinated biphenyls (PCBs) applies to the sum of all congeners, to the sum of all homologs or to the sum of all aroclors.

EPA Discussion:

Consistent with the definitions in 20.6.4.7 I. (5) NMAC, the irrigation/irrigation storage designated use (e.g., Irr/Irr Storage) is added to the table column headings in 20.6.4.900 J. (2) NMAC. Also, a hyphen has been added to the Chemical Abstracts Service registry number (CAS number) for Bis(2-ethylhexyl) phthalate to correct a typographical error in the table as well. These are considered nonsubstantive changes.

K. Acute aquatic life criteria for total ammonia are dependent on pH and the presence or absence of salmonids. The criteria in mg/L as N based on analysis of unfiltered samples are as follows:

pH	<u>Where Salmonids Present</u>	<u>Where Salmonids Absent</u>
6.5 <u>and below</u>	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1

pH	Where Salmonids Present	Where Salmonids Absent
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.65	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0 and above	0.885	1.32

L. Chronic aquatic life criteria for total ammonia are dependent on pH, temperature and whether fish in early life stages are present or absent. The criteria are based on analysis of unfiltered samples and are calculated according to the equations in Paragraphs (1) and (2) of this subsection. For temperatures from below 0 to 14°C, the criteria for 0-14°C apply; for temperatures above 30°C, the criteria for 30°C apply. For pH values below 6.5, the criteria for 6.5 apply; for pH values above 9.0, the criteria for 9.0 apply.

(1) Chronic aquatic life criteria for total ammonia when fish early life stages are present.

(a) The equation to calculate chronic criteria in mg/L as N is:

$$((0.0577/(1 + 10^{7.688-pH})) + (2.487/(1 + 10^{pH-7.688}))) \times \text{MIN}(2.85, 1.45 \times 10^{0.028 \times (25-T)})$$

(b) Selected values of calculated chronic criteria in mg/L as N:

pH	Temperature (°C)										
	0 and below	14 and below	15	16	18	20	22	24	26	28	30 and above
6.5 and below	6.67	6.67	6.46	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	6.36	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	6.25	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	6.10	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.93	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.73	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.49	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	5.22	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.92	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.59	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	4.23	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.85	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.47	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	3.09	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.71	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.36	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	2.03	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.74	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.48	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.25	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	1.06	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.892	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.754	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.641	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.548	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0 and above	0.486	0.486	0.471	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

(2) Chronic aquatic life criteria for total ammonia when fish early life stages are absent.

(a) The equation to calculate chronic criteria in mg/L as N is:

$$((0.0577/(1 + 10^{7.688-pH})) + (2.487/(1 + 10^{pH-7.688}))) \times 1.45 \times 10^{0.028 \times (25-MAX(T,7))}$$

(b) Selected values of calculated chronic criteria in mg/L as N:

pH	Temperature (°C)									
	7 and below	7 and below	8	9	10	11	12	13	14	15 and above
6.5 and below	10.8	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46
6.6	10.7	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36
6.7	10.5	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25
6.8	10.2	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10
6.9	9.93	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93
7.0	9.60	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73
7.1	9.20	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49
7.2	8.75	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22
7.3	8.24	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92
7.4	7.69	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59
7.5	7.09	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23
7.6	6.46	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85
7.7	5.81	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47
7.8	5.17	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09
7.9	4.54	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71
8.0	3.95	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36
8.1	3.41	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03
8.2	2.91	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74
8.3	2.47	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48
8.4	2.09	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25
8.5	1.77	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06
8.6	1.49	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892
8.7	1.26	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754
8.8	1.07	1.07	1.01	0.944	0.855	0.829	0.778	0.729	0.684	0.641
8.9	0.917	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548
9.0 and above	0.790	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471

At 15° C and above, the criterion for fish early life stages absent is the same as the criterion for fish early life stages present (refer to [~~Subsection L of 20.6.4.900 NMAC~~]table in Paragraph (1) of this subsection).

EPA Discussion: The values in first column in the table in 20.6.4.900 L. (1)(b) and (2)(b) NMAC contained redundant calculated values that have been deleted. The additions in the 20.6.4.900 K. NMAC correspond to these changes. These amendments are nonsubstantive.

20.6.4.901 Publication References

EPA Discussion:

The reference in Subsection H of 20.6.4.901 H. NMAC updates the previous reference to the most recent version of the Review, Water Quality Standards for Salinity, Colorado River System. (The basin report is updated on a triennial basis).

III. New or Revised Provisions the EPA is Not Acting On

20.6.4.16 Planned Use of a Piscicide:

The use of a piscicide registered under the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA"), 7 U.S.C. Section 136 *et seq.*, and under the New Mexico Pesticide Control Act ("NMPCA"), Section 76-4-1 *et seq.* NMSA 1978 (1973) in a surface water of the state, shall not be a violation of Subsection F of 20.6.4.13 NMAC when such use is covered by a federal National Pollutant Discharge Elimination System (NPDES) permit or has been approved by the commission under procedures provided in this section. The use of a piscicide which is covered by a NPDES permit shall require no further review by the commission and the person whose application is covered by the NPDES permit shall meet the additional notification and monitoring requirements outlined in Subsection G of 20.6.4.16 NMAC. The commission may approve the reasonable use of a piscicide under this section if the proposed use is not covered by a NPDES permit to further a Clean Water Act objective to restore and maintain the physical or biological integrity of surface waters of the state, including restoration of native species.

A. Any person seeking commission approval of the use of a piscicide not covered by a NPDES permit shall file a written petition concurrently with the commission and the surface water bureau of the department. The petition shall contain, at a minimum, the following information:

- (1) petitioner's name and address;
- (2) identity of the piscicide and the period of time (not to exceed five years) or number of applications for which approval is requested;
- (3) documentation of registration under FIFRA and NMPCA and certification that the petitioner intends to use the piscicide according to the label directions, for its intended function;
- (4) target and potential non-target species in the treated waters and adjacent riparian area, including threatened or endangered species;
- (5) potential environmental consequences to the treated waters and the adjacent riparian area, and protocols for limiting such impacts;
- (6) surface water of the state proposed for treatment;
- (7) results of pre-treatment survey;
- (8) evaluation of available alternatives and justification for selecting piscicide use;
- (9) documentation of notice requesting public comment on the proposed use within a 30-day period, including information as described in Paragraphs (1), (2) and (6) of this Subsection, provided to:
 - (a) local political subdivisions;
 - (b) local water planning entities;
 - (c) local conservancy and irrigation districts; and
 - (d) local media outlets, except that the petitioner shall only be required to publish notice in a newspaper of circulation in the locality affected by the proposed use.
- (10) copies of public comments received in response to the publication of notice and the petitioner's responses to public comments received;

(11) post-treatment assessment monitoring protocol; and

(12) any other information required by the commission.

B. Within thirty days of receipt of the petition, the department shall review the petition and file a recommendation with the commission to grant, grant with conditions or deny the petition. The recommendation shall include reasons, and a copy shall be sent to the petitioner by certified mail.

[C.] The commission shall review the petition and the department's recommendation and shall within 90 days of receipt of the department's recommendation hold a public hearing in the locality affected by the proposed use in accordance with Adjudicatory Procedures, 20.1.3 NMAC. In addition to the public notice requirements in Adjudicatory Procedures, 20.1.3 NMAC, the petitioner shall provide written notice to:

(1) local political subdivisions;

(2) local water planning entities;

(3) local conservancy and irrigation districts; and

(4) local media outlets, except that the petitioner shall only be required to publish notice in a newspaper of circulation in the locality affected by the proposed use.]

C. The commission shall review the petition, the public comments received under Paragraphs (9) and (10) of Subsection A of 20.6.4.16 NMAC, the petitioner's responses to public comments and the department's technical recommendations for the petition. A public hearing shall be held if the commission determines there is substantial public interest. The commission shall notify the petitioner and those commenting on the petition of the decision whether to hold a hearing and the reasons therefore in writing.

D. If the commission determines there is substantial public interest a public hearing shall be held within 90 days of receipt of the department's recommendation in the locality affected by the proposed use in accordance with Adjudicatory Procedures, 20.1.3 NMAC. Notice of the hearing shall be given in writing by the petitioner to individuals listed under Subsection A of 20.6.4.16 NMAC as well as to individuals who provided public comment under that Subsection at least 30 days prior to the hearing.

[D.]E. In a hearing provided for in this Section or, if no hearing is held, in a commission meeting, the registration of a piscicide under FIFRA and NMPCA shall provide a rebuttable presumption that the determinations of EPA Administrator in registering the piscicide, as outlined in 7 U.S.C. Section 136a(c)(5), are valid. For purposes of this Section the rebuttable presumptions regarding the piscicide include:

(1) Its composition is such as to warrant the proposed claims for it;

(2) Its labeling and other material submitted for registration comply with the requirements of FIFRA and NMPCA;

(3) It will perform its intended function without unreasonable adverse effects on the environment; and

(4) When used in accordance with all FIFRA label requirements it will not generally cause unreasonable adverse effects on the environment.

(5) "Unreasonable adverse effects on the environment" has the meaning provided in FIFRA, 7 U.S.C. Section 136(bb): "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide."

[E]F. After a public hearing, or commission meeting if no hearing is held, the commission may grant the petition in whole or in part, may grant the petition subject to conditions, or may deny the petition. In granting any petition in whole or part or subject to conditions, the commission shall require the petitioner to implement post-treatment assessment monitoring and provide notice to the public in the immediate and near downstream vicinity of the application prior to and during the application.

[F.]G. Any person whose application is covered by a NPDES permit shall provide written notice to local entities as described in Subsection A of 20.6.4.16 NMAC and implement post-treatment assessment monitoring within the application area as described in Subsection (F).

[20.6.4.16 NMAC - Rn, Paragraph (6) of Subsection F of 20.6.4.12 NMAC, 05-23-05; A, 05-23-05; A, XX-XX-XX]

EPA Discussion:

The Commission initially adopted a provision for piscicide application to address species management and restoration activities primarily being carried out by the New Mexico Department of Game and Fish (NMDGF) in its 2000 triennial revisions, EPA approved that provision in January, 2001.

The provision was revised to streamline processes during New Mexico's 2005 triennial revisions. In its 2006 action, EPA explained that the revised provision was not intended to and did not create a regulatory requirement, but established a voluntary process by which a proposed piscicide applicator may obtain "safe harbor" from direct enforcement of the State's toxics criteria. The application of piscicides in accordance with FIFRA requirements is not subject to the regulatory requirements of the CWA because properly used piscicides are not "pollutants" as defined at CWA § 502(6). EPA considered the provision to be a "State only" process and not a WQS requiring EPA approval under the CWA § 303(c). Although not obligated to take action on the revised provision, EPA considered the provision to be consistent with the CWA objective of restoring and maintaining the biological integrity of the nation's waters as the state works to remove non-native species that may adversely affect native and threatened and endangered species in the State.

In 2007, EPA received petitions for review of the 2006 Aquatic Pesticides rule from both environmental and industry groups challenging EPA's past operating approach in which pesticides legally registered under The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for application to or near aquatic environments are not subject to NPDES permit requirements. In 2009, the U.S. Sixth Circuit Court of Appeals held in *National Cotton Council, et al, v. EPA*, that the final rule was not a reasonable interpretation of the CWA and vacated the Aquatic Pesticides rule. The court held that CWA permits are required for all biological pesticide applications and chemical pesticide applications. In response to the court's 2009 decision in *National Cotton Council, et al, v. EPA*, the Agency finalized a rule in 2013 removing language from its NPDES regulations that exempted pesticide operators from needing a permit for discharging pesticides to waters of the U.S. In that rule, EPA issued its Pesticide General Permit (PGP) that would provide coverage for pesticide operators.

As a result of EPA's 2013 rule, some applicators like NMGF are required to have a CWA permit and may apply for coverage under EPA's NPDES PGP in addition to requirements that apply under the state's rules. To avoid duplication in meeting federal requirements resulting from the 2013 federal rule and state requirements, the Commission amended the provision to include an exemption for those entities covered under EPA's NPDES permit program. Along those lines, in those instances where an applicator does not have coverage under an EPA NPDES permit, the amendments require compliance with all aspects of the state's provisions.

Although this amended provision has been retained in the state's WQS the provision is not intended to and does not create a regulatory requirement. Consistent with its 2006 action, EPA has determined that the amended provision represents state implementation procedures for the use of a piscicide for restoration efforts, but is not a WQS subject to review under CWA Sec. 303(c).

20.6.4.808 and 809 Closed Basins and Water Effect Ratios (WER)

20.6.6.808 - Closed Basin

20.6.4.808 CLOSED BASINS - Perennial and intermittent watercourses within Smelter Tailing Soils Investigation Unit lands at the Chino Mines Company, excluding those ephemeral waters listed in section 809 and including but not limited to the mainstem of Lampbright draw, beginning at the confluence of Lampbright Draw with Rustler canyon, all tributaries that originate west of Lampbright draw to the intersection of Lampbright draw with U.S. 180, and all tributaries of Whitewater creek that originate east of Whitewater creek from the confluence of Whitewater creek with Bayard canyon downstream to the intersection of Whitewater creek with U.S. 180.

A. Designated Uses: marginal warmwater aquatic life, livestock watering, wildlife habitat and primary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: the acute and chronic aquatic life criteria for copper set forth in Subsection I of Section 900 shall be determined by multiplying that criteria by the Water Effect Ratio ("WER") adjustment expressed by the following equation:

$$WER = \frac{[10^{0.588 + (0.703 \times \log \text{DOC}) + (0.395 \times \log \text{Alkalinity})}] \times \left(\frac{100}{\text{Hardness}}\right)^{0.9422}}{19.31}$$

For purposes of this section, DOC is dissolved organic carbon, expressed in units of milligrams carbon per liter or mg C/L; alkalinity is expressed in units of mg/L as CaCO₃, and hardness is expressed in units of mg/L as CaCO₃. In waters that contain alkalinity concentrations greater than 250 mg/L, a value of 250 mg/L shall be used in the equation. In waters that contain DOC concentrations greater than 16 mg CIL, a value of 16 mg CIL shall be used in the equation. In waters that contain hardness

concentrations greater than 400 mg/L, a value of 400 mg/L shall be used in the equation. The alkalinity, hardness and DOC concentrations used to calculate the WER value are those measured in the subject water sample.

20.6.4.809 - Closed Basins

20.6.4.809 CLOSED BASINS - Ephemeral watercourses within Smelter Tailing Soils Investigation Unit lands at the Chino Mines Company, limited to Chino Mines property subwatershed drainage A and tributaries thereof, Chino Mines property subwatershed drainage B and tributaries thereof (excluding the northwest tributary containing Ash spring and the Chiricahua Leopard Frog critical habitat transect); Chino Mines property subwatershed drainage C and tributaries thereof (excluding reaches containing Bolton spring, the Chiricahua Leopard Frog critical habitat transect and all reaches in subwatershed C that are upstream of the Chiricahua Leopard Frog critical habitat); subwatershed drainage D and tributaries thereof (drainages D-1, D-2 and D-3, excluding the southeast tributary in drainage D1 that contains Brown spring) and subwatershed drainage E and all tributaries thereof (drainages E-1, E-2 and E-3).

A. Designated Uses: limited aquatic life, livestock watering, wildlife habitat and secondary contact.

B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: the acute aquatic life criteria for copper set forth in Subsection I of Section 900 shall be determined by multiplying that criteria by the Water Effect Ratio (“WER”) adjustment expressed by the following equation:

$$WER = \frac{[10^{0.588 + (0.703 \times \log \text{DOC}) + (0.395 \times \log \text{Alkalinity})}] \times \left(\frac{100}{\text{Hardness}}\right)^{0.9422}}{19.31}$$

For purposes of this section, DOC is dissolved organic carbon, expressed in units of milligrams carbon per liter or mg C/L; alkalinity is expressed in units of mg/L as CaCO₃, and hardness is expressed in units of mg/L as CaCO₃. In waters that contain alkalinity concentrations greater than 250 mg/L, a value of 250 mg/L shall be used in the equation. In waters that contain DOC concentrations greater than 16 mg C/L, a value of 16 mg C/L shall be used in the equation. In waters that contain hardness concentrations greater than 400 mg/L, a value of 400 mg/L shall be used in the equation. The alkalinity, hardness and DOC concentrations used to calculate the WER value are those measured in the subject water sample.

Designated Use Modifications:

Review of the initial and revised Chino Reports

The amendments described in 20.6.4.808-809 NMAC are based on a 3rd party proposal developed by Freeport-McMoRan/Chino Mines Company (“Chino Mines”) supported by

a report entitled “Application of the Hydrology Protocol to Smelter Tailings Soils Investigation Unit (STSIU) Drainages” (Chino report). The SWQB submitted the Chino report to EPA Region 6 for review and technical approval as a UAA pursuant to 20.6.4.15. C. and D. NMAC on June 26, 2013 to support designated use and associated criteria downgrades in five subwatersheds contained in the area that drains the STSIU. The EPA did not technically approve the proposed designated use attainment conclusions contained in the Chino report as detailed in its letter from Russell Nelson to Kristine Pintado dated June 26, 2014.

As discussed in the June 26, 2014 letter, EPA determined the Chino report relied on the procedures outlined in the SWQB’s Hydrology Protocol (HP), but did not fully assess the factors necessary to demonstrate that a use is unattainable under 40 CFR 131.10(g) or fully “assess the physical, chemical, biological, economic or other factors affecting the attainment of a use” as required by 20.6.4.15. B. The SWQB’s HP explains that it was specifically developed to generate information on the hydrology of a given stream or river to be used to provide technical support for a UAA (20.6.14. C. NMAC); but also states that “it cannot be used in place of the UAA.” The limited information provided in the HP-based Chino report was a significant concern given that the Chino Mines waters are spread across five subwatersheds in a large and complex active mine site.

Based on a thorough review of the initial Chino report, EPA determined that the report relied primarily on the SWQB’s HP assessment guidance while deviating from specific recommendations in the HP concerning assessment conditions. The limited temporal and spatial focus of the assessments to only the STSIU waters despite potential physical influences from a large and complex active mine site raised significant questions concerning the validity of the Chino report’s recommendations. The potential impacts on subsurface and surface waters from past and ongoing mining activities indicate that a comprehensive UAA was needed. The EPA also raised question concerning the prevailing climactic conditions during field assessments and whether those conditions were appropriate to determine whether the STSIU waters are or are not naturally ephemeral.

The Region’s decision to not technically approve the Chino report/UAA did not constitute a final action by EPA under § 303(c) of the CWA, but an interim action as described in the state’s standards at 20.6.4.15 C. NMAC. That section provides that if a UAA based on the SWQB’s HP demonstrates to the SWQB that 101(a)(2) uses are not attainable in an ephemeral water body, the SWQB may proceed by submitting the UAA to EPA for technical approval. If technical approval is granted, the water shall be subject to 20.6.4.97. NMAC.

Based on EPA’s concerns as relayed to the SWQB Chino Mines revised the report and the SWQB submitted the revised report to EPA for review in October 2014. The EPA found very little difference between the original and revised reports and determined that the same fundamental questions remained unanswered. Consequently, EPA again determined that it could not technically approve the report. Nevertheless, the SWQB recommended the Commission approve the 2014 revised Chino report/UAA and

proposed amendments to 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC. The Commission adopted the proposed amendments to 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC and submitted them to EPA for review pursuant to CWA § 303(c) and 40 CFR 131.20.

This action appears to be counter to the requirements of 20.6.4.15 C. NMAC, which provides that EPA technical approval is necessary before the state incorporates waters into 20.6.4.97. NMAC. EPA continues to have questions concerning the Chino Report/UAA submitted as support for the downgraded use designations for the STSIU waters at 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC. As a result, EPA is taking no action on the proposed amendments to 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC and 20.6.4.808 and 809 NMAC at this time. To assist the state, EPA provides the following comments and recommendations concerning the information necessary to support these designated use changes:

Hydrologic conditions

The Chino Mines are located at a transition from woodlands to Chihuahuan Desert Grasslands (Level IV Ecoregion). These desert grasslands are a semi-arid region that receives approximately 16 inches of precipitation a year. They are water-limited ecosystems but are defined by highly variable seasonal and interannual precipitation, high rates of potential evapotranspiration, and pulsed precipitation events that drive biotic activity until available water is depleted (Noy - Meir, 1973; Reynolds et al., 2004; Collins et al., 2008). These physical characteristics mean that it is possible for the STSIU waters to be naturally ephemeral. However, one of EPA's primary concerns has been the climactic conditions that existed at the time the STSIU waters were assessed, and whether an accurate hydrologic assessment was made under the prevailing severe to extremely dry conditions.

Both the timing and methods used during field assessments are critical to accurately determining the prevailing climactic conditions that existed. The SWQB's HP itself notes that spatial and temporal variations (temporal and spatial differences; flow persistence and volume) in stream attributes occur within and among stream systems. These changes can be related to seasonal precipitation and evapotranspiration patterns, as well as influenced by recent weather and interannual climate variability. In discussing drought conditions, the HP strongly recommends that field evaluations be conducted outside of drought conditions whenever possible. However, the field assessments for the Chino report were performed on June 12 - 15, 2011. The National Oceanographic and Atmospheric Administration (NOAA) National Climatic Data Center through the U.S. Drought Monitor (NDMC 2011) reported that the first five months of 2011 had been the driest start to any year on record for New Mexico and that the area was under exceptional drought conditions, the most severe on its scale.

The HP recommendations are limited to the use of the Standardized Precipitation Index (SPI) to assess drought conditions. The SPI is a 12-month precipitation probability index that can be tied to groundwater and reservoir storage. However, limitations of precipitation data, including the accuracy of measurements and number of gauging

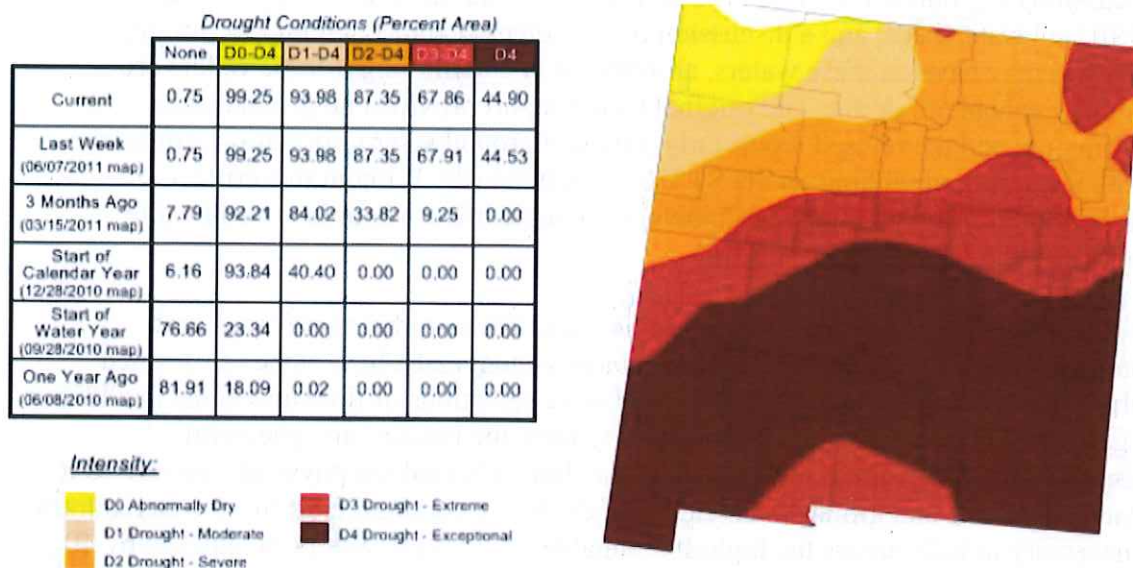
stations can affect the SPI's accuracy. Only a single USGS gauging station north of the mine is identified in the Report. The SPI lacks the ability to identify regions with a greater tendency for droughts because it does not consider temperature and evapotranspiration, both important characteristics of the grasslands Chino Mines lies in.

Given the concerns with the SPI, EPA looked at data from the Standardized Precipitation Evapotranspiration Index (SPEI), which is more sensitive to conditions in semi-arid to arid landscapes. The SPEI is an extension of the SPI and is designed to take into account both precipitation and evapotranspiration in determining drought. Unlike the SPI, the SPEI captures the impact of increased temperatures on water demand. Like the SPI, the SPEI can be calculated on a range of timescales from 1-48 months (NCAR 2015). The HP defines drought conditions as any time the SPI is less than -1.5, indicating severely to extremely dry conditions (NDMC 1995). If the 12-month SPI is -1.5 or less, indicating severe to extremely dry conditions, the HP strongly recommends that field evaluations be conducted at another time. Although the Chino report noted the 12-month SPI for the Chino Mines Site was -1.1, which indicates moderate drought, the 12-month SPEI, using the Global Drought Monitor database, indicates that during field sampling, the area around Chino Mines was at -1.68, in extreme drought conditions. This raises questions as to whether the Chino Mines field evaluations should have been carried out at an alternate time, or at least should have been supplemented with additional (non-drought) field evaluations.

The EPA also looked at the Palmer Drought Severity Index (PDSI) and Palmer Z Index Short-Term Drought Conditions index (Palmer 1965). The PDSI uses readily available temperature and precipitation data to estimate relative dryness. It is a standardized index that spans -10 (dry) to +10 (wet). It uses temperature data and a physical water balance model, which allows it to capture the basic effect of drought through changes in potential evapotranspiration. It has been reasonably successful at quantifying long-term drought. The Palmer Z Index responds to short-term conditions and is typically calculated for much shorter timescales, enabling it to identify rapidly developing drought conditions. It is useful for comparing current periods to other known drought periods. It can also be used to determine the end of a drought period, where it can be used to determine how much moisture is needed to reach the near normal category, as defined by Palmer.

Although there are temporal differences, the PDSI and Palmer Z are water balance indices based on moisture demand (evapotranspiration driven by temperature) and precipitation, which are especially relevant in semi-arid and drought-prone regions like that surrounding the Chino Mines. The PDSI indicated that the area was in extreme drought (-4.00 and below) for the time period May 2010 – 2011, encompassing the mid-June 2011 sampling period. In addition, the Palmer Z Index indicated that the area around Chino Mines was either in severe (-2.0 to -2.74) or possibly extreme drought (-2.75 and below) during the June 2011 sampling (NOAA 2011). As of mid-June 2011, 45 percent of New Mexico was in exceptional drought, the worst drought category possible. Exceptional drought is essentially a 25 to 50-year recurrence event as shown in **Figure 1** (NMDC 2011).

Figure 1



EPA is not bound by state guidance like the HP and its reliance on the SPI in its review of any UAA submitted in support of a designated use modification. Rather, EPA must ensure that state or tribal water quality standards are scientifically defensible and meet the requirements of federal regulations and the CWA. Although EPA has approved previous use downgrades based on the HP, those have been of relatively unimpacted waters where the assessment was carried out under typical climatic conditions. Given that other scientifically supportable indices indicate drought conditions during the sampling period, and the limitations of the SPI, EPA needs further information to confirm the representativeness of the conditions and therefore the data collected and reported in the Chino report.

Determining if waters are naturally ephemeral is difficult under normal circumstances. Under severe to extreme drought conditions, intermittent and perennial streams can appear ephemeral, making an accurate use determination difficult to impossible. The lack of water in a watercourse under severe to extreme drought conditions does not mean that the conditions described in 40 CFR 131.10(g)(2) exist.

Subsurface Flow

In its review of both the initial and revised Chino reports, EPA found that the Chino Mine and STSIU waters represent a complex site where the assessment included 24 sampling sites spread across five separate subwatersheds. The Chino report acknowledged that the STSIU waters are in an active mine site where impacts from historical releases during mining operations (tailings and air emissions) are being addressed under an Administrative Order on Consent (AOC) and in some areas, through reclamation. Under the AOC, pre-Feasibility Study (FS) Remedial Action Criteria (RAC) for surface waters are being applied in the STSIU. However, the Chino report did not provide any information on the effect mining activities or other anthropogenic impacts may have on

the hydrology of these waters. The Region considers supporting maps, a technical discussion on groundwater flow or lack thereof beneath the mine's outfalls and the STSIU subwatersheds, and a discussion of the potential and actual impact mining activities may have on these waters, all relevant in determining if these waters are naturally ephemeral or not. The original Chino report provided no groundwater information and the revised report only provided groundwater information around the Santa Rita pits and nothing on the STSIU subwatersheds. Without this critical information, it is difficult to determine what aquatic life use is or is not attainable consistent with 40 CFR 131.10(g)(2).

Acidic, metal-laden soils can impact the flora and fauna within these areas, and potentially affect the qualitative biological assessment that Chino Mines performed during field work. Given that the HP relies on observations of flora and fauna in addition to geomorphic and hydrological indicators to form the basis of an ephemeral classification, discussion on how mining may have affected the physical structure as it relates to surface and groundwater flow and the biotic community of these watercourses is necessary to fully assess the highest attainable use in these waters as required by 40 CFR 131.10(g).

The EPA found multiple reports that confirm the extent of the historic mining-related contamination adjacent to and in the STSIU subwatersheds. In the U.S. Fish and Wildlife Service Pre-Assessment Screen for the Chino Mine Site (USFWS 2003), the Service described the sources and time periods of hazardous substance releases at the site. There are several tailings impoundments adjacent to Whitewater Creek, a stream that is within the STSIU and adjacent to the subwatersheds being assessed (including 6 of the 12 field sampling locations). There have been several releases/overflows from these impoundments through the years, the largest event occurring in 1999 which resulted in 3.25 million gallons of tailings spilling into Whitewater Creek. Additionally, windblown tailings have been a source of contamination in the study area. Inactive and uncapped tailings impoundments serve as ongoing sources of hazardous substance releases through the formation of acidic, metal-laden ponds on the surfaces of impoundments and windblown emissions (USFWS 2003). Evidence of wind-blown emissions comes from surface soil samples collected downwind of the tailing ponds which had elevated copper concentrations (USFWS 2003).

The Chino report appears to be something of a 'snapshot' of instantaneous conditions focused solely on hydrology as it relates to the conditions described in 40 CFR 131.10(g)(2) rather than a comprehensive analysis of these waters. Basing a use determination on data derived primarily from the utilization of the SWQB's HP, rather than a comprehensive UAA at such a complex site, appears inconsistent with 20.6.4.15 B. NMAC, which states that "a UAA shall assess the physical, chemical, biological, economic or other factors affecting the attainment of the use," citing EPA guidance (USEPA 1983) and the HP. The HP specifically provides that information obtained using the methods described in the HP "can then be used to provide technical support for a Use Attainability Analysis (UAA)...however, it cannot be used in place of the UAA." Although the SWQB's HP has been used to support other use attainment determinations,

those assessments were typically individual streams or stream segments, some with minimal anthropogenic influence, or with only a single facility with infrequent or no discharge – in effect simple, uncomplicated sites that are not comparable to the Chino Mines site in terms of scale and complexity.

Highest Attainable Use

The federal regulation at 40 CFR 131.10(g) specifically requires that where a state adopts a new or revised water quality standard based on a required UAA, that the state adopt the highest attainable use, as defined in 40 CFR 131.3(m). The highest attainable use is defined as “the modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in section 101(a)(2) of the Act and attainable, based on the evaluation of the factor(s) in 40 CFR 131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability. Given this requirement, an assessment of all relevant factors that relate to the STSIU’s hydrologic classification is necessary in order to determine the highest attainable use for these waters. Further discussion specifically on the impacts of historical mining and other anthropogenic activities, as they relate to the ephemeral condition of STSIU waters and why 40 CFR 131.10(g)(2) precludes attainment of the use, is necessary to discern what aquatic life use constitute the highest attainable use for these waters.

In summary, EPA is taking no action on the downgraded designated uses for the Chino STSUI waters specified in 20.6.4.97. C. (6)(b)(ii)-(iv) NMAC. The decision to take no action at this time does not mean the use determinations for the Chino STSUI waters cannot be supported, but that additional information is needed to supplement the Chino report’s conclusions that marginal warmwater aquatic life use cannot be attained and that the limited aquatic use is the highest attainable use for these waters consistent with federal regulations at 40 CFR 131.10(g). The recommended information needed is as follows.

Information concerning drought conditions:

- Please provide data obtained during acceptable conditions or conduct a more thorough assessment of climactic conditions that existed during the original sampling period in the area and including the Chino STSIU waters using drought indices such as the SPEI and PDSI to determine if the sampling was carried out under appropriate conditions.
- Please provide information to clearly show that the STSIU waters were not under severe to exceptional drought conditions during sampling and that these waters are naturally ephemeral. As discussed above, severe drought conditions during field assessments can cause intermittent and perennial waters to appear ephemeral.

Information related to subsurface flow:

- The USFWS Pre-Assessment Screen spoke to the percentage of groundwater wells where analytes were detected in exceedance of the New Mexico's standards. The Chino report only provided groundwater flow contours and vectors in the area under and surrounding the Santa Rita Mine Pit, but not for the STSIU study area and subwatersheds. During the November 23, 2016 conference call, NMED said there is no groundwater flow beneath the STSIU subwatersheds. Please provide supporting information and analysis supporting a lack of subsurface flow in the area of the STSIU waters.
- Please provide a discussion of the impacts of past or current mining activities on subsurface flow if present and how these activities affect the determination of which waters are naturally ephemeral and preclude attainment of the use consistent with 40 CFR 131.10(g)(2).

Information related to the highest attainable use:

- Please provide an assessment of how the surface or subsurface hydrology in and around the STSIU waters have or have not been altered by mining and other anthropogenic activities and how this may have potentially impacted the highest attainable use for these waters.

Under the CWA, revisions to state WQS are not effective for CWA purposes until approved by EPA. Because EPA is taking no action on the designated uses for the STSIU waters currently identified in 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC, the amended designated uses are not effective for CWA purposes. The previously applicable CWA § 101(a)(2) uses continue to apply to Chino STSIU waters for all CWA programs.

Water Effects Ratios (WER):

As discussed above, EPA has not technically approved the Chino report/UAA and is taking no action on the downgraded designated uses for the Chino STSIU waters specified in 20.6.4.97. C. (6)(b)(ii)-(iv). Because the CWA tasks EPA with reviewing a state's water quality criteria based on whether the criteria are sufficient to protect the applicable designated uses, it is difficult for EPA to make a determination regarding appropriate criteria without knowing which uses apply. Because EPA is taking no action on the amended designated uses for the Chino STSIU waters specified in 20.6.4.97. C. (6)(b)(ii)-(iv), it is premature for EPA to determine whether the submitted criteria protect the designated uses for those waters. If amended designated uses are approved for the STSIU waters, EPA will be able to evaluate the state's water quality criteria to support those uses, including the site-specific aquatic life criteria for copper and the WERs used to determine those criteria. However, as part of its determination of whether state-adopted criteria protect the designated use, EPA must evaluate whether the criteria were derived using a sound scientific rationale. The copper Biotic Ligand Model (BLM) has been the EPA's national recommended freshwater aquatic life criteria for copper since 2007. The copper BLM currently reflects the best available science on copper bioavailability and toxicity for use in developing protective copper criteria.

Although EPA recommends the copper BLM as the best available science for developing copper criteria, states have significant flexibility in developing and adopting criteria to reflect site-specific conditions as described in 40 CFR 131.11(b)(1) and EPA's Water Quality Standards Handbook. That flexibility is also reflected in 20.6.4.10. D(4) NMAC, which identifies EPA-issued guidance for site-specific criteria development methodologies, including the streamlined water-effect ratio (WER) procedure for discharges of copper and the BLM model for copper.

The WER equations New Mexico has adopted applicable to waters within the Chino STSIU were not derived according to EPA's WER guidance. Although they are multipliers to the otherwise-applicable criteria like other WERs, these criteria were derived using a completely novel method not related to EPA's WER procedure. Being novel, these equations are more complex to evaluate for scientific defensibility and protectiveness.

Although EPA guidance recommends that states considering the development of site-specific criteria involve EPA at the start of the project, the SWQB did not engage EPA in the development of the site-specific criteria for the Chino STSIU waters adopted by the Commission and included in new regulatory segments 20.6.4.808 and 809 NMAC.

Because the approach for deriving these site-specific criteria is novel and EPA was not involved in their development, the state may expect EPA will need additional time to closely scrutinize the results before taking action on the standards. The EPA's current policy is that WERS submitted by states for development of site-specific criteria should be compared with the BLM to ensure protectiveness using the recommended criteria guidance. The EPA recommends that states provide a comparison between the WER and BLM. Such a comparison may involve the collection of new data, although this depends on the dataset collected and whether data for BLM relevant parameters were collected.

Conclusion

The EPA has determined it does not have adequate information to fully assess the downgraded use designations for the Chino STSIU waters at 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC. It is thus premature for EPA to evaluate the criteria to support those uses adopted by the Commission and included in new regulatory segments 20.6.4.808 and 809 NMAC. Consequently, EPA is taking no action at this time on the amendments to 20.6.4.97..C. (6)(b)(ii)-(vi) NMAC or 20.6.4.808 and 809 NMAC– Closed Basins and Water Effects Ratios (WER). EPA's decision to take no action on these amendments does not mean the use determinations for the Chino STSIU waters cannot be supported or that the criteria adopted to support those uses, if approved, would not be appropriate. Instead, EPA has determined that additional information is needed to supplement the Chino report's conclusions. In addition, EPA recommends the state provide a comparison between the WER and the BLM to facilitate EPA's review of the site-specific aquatic life criteria for copper.

As noted above, under the CWA, revisions to state WQS are not effective for CWA purposes until approved by EPA. Because EPA is taking no action on the amendments to 20.6.4.97. C. (6)(b)(ii)-(vi) NMAC or 20.6.4.808 and 809 NMAC– Closed Basins and Water Effects Ratios (WER), the amended designated uses and associated criteria for the Chino STSIU waters are not effective for CWA purposes. The previously applicable CWA § 101(a)(2) uses and associated criteria continue to apply to Chino STSIU waters for all CWA programs.

V. References

ARCADIS for Freeport MacMoRan Chino Mines Company (2014). Application of Hydrology Protocol to STSIU Drainages.

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