



March 13, 2023
Jeremy Neustifter, Administrator
Water Quality Control Commission
Transmission via Email

Subject: Consultation concerning WQCC Rulemaking Regarding Nutrients in lakes

Dear Mr. Neustifter:

This letter responds to your August 23, 2022 request for consultation on material injury to water rights, which was made pursuant to section 25-8-104(2)(d), C.R.S. and the 2017 Memorandum of Understanding between the Water Quality Control Commission (“WQCC”), the State Engineer’s office (“SEO”), and the Colorado Water Conservation Board (“CWCB”) (“[MOU](#)”). The request for consultation is regarding the WQCC’s rulemaking for nitrogen and phosphorus (“nutrients”) standard changes for lakes and reservoirs.

Concerns raised by parties to the hearing focus on activities within the purview of the SEO, and therefore, this letter focuses on those activities without touching on any specific activities of the CWCB.

Summary of Proposed Nutrient Standards

The proposed changes to the total nitrogen and total phosphorus table value standards for lakes and reservoirs for aquatic life and recreation uses are shown in Table 3 below (Water Quality Control Division (“WQCD”) Rebuttal Statement February 2023). These standards represent growing season (July through September) average concentrations with an allowable exceedance frequency of once in five years, and apply to lakes greater than 25 acres in size and with a residence time of at least 14 days.



Table 3. Summary of Colorado’s current chlorophyll <i>a</i>, total nitrogen, and total phosphorus standards (µg/L) for lakes and reservoirs and the division’s proposed standards (µg/L).			
Parameter	Aquatic Life and/or Recreation (chronic)		Direct Use Water Supply (DUWS) (chronic)
	Class 1 or Class 2 Cold Water and/or Recreation E, U, or P	Class 1 or Class 2 Warm Water and/or Recreation E, U, or P	
Current Interim Standards			
Chlorophyll <i>a</i>	8	20	5
Total Nitrogen	426	910	–
Total Phosphorus	25	83	–
Proposed Revised Standards			
Chlorophyll <i>a</i>	8	20	5
Total Nitrogen	380	670	–
Total Phosphorus	21	47	–

Definitions of classifications paraphrased from WQCC Regulation 31 (2021): Class E - Existing Primary Contact Use, Class U - Undetermined Use, Class P - Potential Primary Contact Use; Class 1 - capable of sustaining biota or could sustain biota but for correctable water quality conditions; Class 2 - not capable of sustaining biota due to either physical or water quality impairment

WQCD’s prehearing statement (2022) includes the following description, “In lakes, the primary problem caused by nutrient enrichment is excessive abundance of algae. Large growths of algae are called algal blooms. Some algal blooms are harmful to humans because they produce elevated toxins and bacterial growth that can make people sick if they come into contact with polluted water, consume tainted fish or shellfish, or drink contaminated water. Algal blooms can severely reduce or eliminate oxygen in the water, leading to illnesses in fish and other aquatic life and the death of large numbers of fish. Other water quality problems from an overabundance of algae include elevated pH, reduced water clarity, complaints about taste and odor in drinking water, and increased risk of disinfection by-products in drinking water.” (page 17). Our understanding is that nitrogen and phosphorus are precursors to algae, and it is certain algae that are harmful to uses of water for aquatic life and recreation.

We understand that the proposed standards would eventually be implemented by the WQCD through the issuance of discharge permits for locations upstream of lakes and reservoirs and in Clean Water Act 401 Certifications. This implementation should increase the quality of substitute supplies in exchanges and plans for augmentation in some cases, either because the substitute supplies are permitted discharges with lower nutrient levels or because the overall quality of water in streams is improved due to changes in permitted discharges.

Summary of State Engineer/CWCB/WQCC Consultation

Pursuant to the MOU, in the event that a person asserts that a decision, rule, or policy by the WQCC has the potential to cause material injury to water rights, the WQCC will initiate consultation with the SEO and CWCB. The purpose of the consultation is to obtain, prior to the date the WQCC is to take action on the decision, rule, or policy, written responses from the SEO and the CWCB as to whether they believe the decision, rule, or policy “may or would result in a diminution of the available water supply that a water rights holder would otherwise enjoy at the time and place and in the amount of demand for beneficial use when operating in accordance with the holder’s vested water right.” MOU, p. 3.

Some parties to the rulemaking raised concern over potential injury to water rights based on situations where the State Engineer has water quality authority under a statute other than the Colorado Water Quality Control Act. The two sections of statute raised by parties are as follows:

- Section 37-80-120(3) provides the following: “Any substituted water shall be of a quality and continuity **to meet the requirements of use to which the senior appropriation has normally been put.**” (State Engineer’s statute.)
- Section 37-92-305(5), C.R.S., which is located in a section of statute listing “Standards with respect to rulings of the referee and decisions of the water judge”, provides: “In the case of plans for augmentation including exchange, the supplier may take an equivalent amount of water at his point of diversion or storage if such water is available without impairing the rights of others. Any substituted water shall be of a quality and quantity so as **to meet the requirements for which the water of the senior appropriator has normally been used**, and such substituted water shall be accepted by the senior appropriator in substitution for water derived by the exercise of his decreed rights.” (Water Judge’s statute.)

Under these statutes, the senior appropriator or appropriation may have particular quality and continuity requirements that can be considered when an exchange or other substitution of water is considered for approval by the State Engineer or the water court. The SEO’s processes for these statutes are further detailed in the State Engineer’s [Senate Bill 89-181 Rules](#).

For the reasons detailed below, the SEO and CWCB do not believe the adoption of the proposed nutrient standards for reservoirs or lakes, or the standards’ ultimate implementation by the WQCD, will cause the State Engineer to deny exchanges in the future that were previously approved according to the State Engineer’s Statute or deny the use of substitute supplies under water court decrees that otherwise would be approved under the current standards. Specifically, if after the standards’ implementation, the water quality of substitute supplies and lakes/reservoirs is the

same or better than in the past, and this quality has met the requirements of use of the senior appropriator in the past, the water will continue to meet the requirements of use in the future and we are not aware of a scenario where newly-adopted nutrient standards would cause the SEO to deny such operations in the future. Therefore, we do not believe the adoption of these standards would result in a diminution of the available water supply that a water rights holder would otherwise enjoy at the time and place and in the amount of demand for beneficial use when operating in accordance with the holder's vested water right.

Senate Bill 89-181 Rule 6 - Nondecreed Exchanges

The following parts of Rule 6 are relevant to nondecreed exchanges, which are approved administratively under the State Engineer's Statute (emphasis added):

Rule 6.2. Pursuant to C.R.S. 37-80-120(3), the State Engineer shall determine whether the substitute supply is of a quality to **meet the requirements of use to which the senior appropriation has normally been put.**

Rule 6.5.2. If appropriate water quality standards and/or classifications have been established by the Water Quality Control Commission, they shall be considered in determining water requirements of senior appropriators and the State Engineer shall consider the water quality standards for the use which is appropriate to the senior appropriator. For example, if the senior beneficial use is agricultural in nature, then the appropriate standards for agricultural use may be applied, **if such criteria have some factual correlation to the particular use of the senior appropriator.**

A mass balance analysis or mixing zone approach may be used to determine if the water quality standards are met for the senior appropriator's use.

Rule 6.5.4. If as a result of the evaluation and analysis of the quality of the proposed substitute supply pursuant to Rule 6, **the State Engineer finds the requirements of use of the senior appropriator have been met, but the quality of the substitute supply fails to meet water quality standards, the State Engineer shall approve the nondecreed exchange or substitute supply plan if other statutory requirements of C.R.S. 37-80-120 are met.**

The provisions of Rule 6 above describe the process the State Engineer would follow if the senior appropriator diverting into the reservoir requested that the SEO deny an exchange on a water quality basis. Staff is unaware of any request to deny an exchange pursuant to the State Engineer's Statute due to water quality of the substitute supply in

the last five years, and therefore our analysis of this process relies solely on the State Engineer's statute and the SB 89-181 Rules, rather than also considering past practice.

Senate Bill 89-181 Rule 7 - Decreed Exchanges and Plans for Augmentation

Rules 7.1 through 7.3 deal with the State Engineer's activities as a party to an active application in the water court, and are not relevant to existing decrees, unless a party to the case petitions the court to reconsider injury under the retained jurisdiction clause of the decree.

As to decrees existing prior the rules, Rule 7.4 states the following:

Rule 7.4 Existing decrees shall not be affected by enactment of this regulation except to the extent consistent with retained jurisdiction provisions in such decrees, or water quality obligations of the State Engineer's Office pursuant to such decrees. When construing the State Engineer's obligations pursuant to such a decree, the State Engineer shall consider all the determinations made by the court in entering the decree.

Analysis

Water quality considerations for decreed operations are generally guided by decree terms

Rule 7 confirms that a water court decree may include water quality determinations made by the court in entering the decree or may establish water quality obligations for the SEO. Some decrees do neither and all decrees must be considered on a case-by-case basis. Any such water quality obligations of the SEO depend on all the determinations made by the court in entering the decree.

A decree for an exchange pursuant to the State Engineer's statute may determine that the proposed substituted water will be or shall be of a quality and quantity so as to meet the requirements of use to which the senior appropriation has normally been put because the noticed application for an appropriative right of exchange put interested persons on notice of a claim that a substitute supply is of sufficient quality. Decrees for appropriative rights of exchange may (1) include specific water quality obligations for the SEO, (2) may be silent regarding water quality, or (3) state that the proposed substituted water will be or shall be of a quality and quantity to meet the requirements for which the water of the senior appropriator has normally been used. As to the latter, it is the SEO's position that a decree with such a statement and no specific water quality obligations for the SEO indicates that the SEO has no water quality obligation when administering the exchange because the decree has either determined that the quality of the substitute supply is adequate or established a term and condition a senior appropriator could potentially seek to enforce in the future. Further, appropriative

rights of exchange cannot be subject to retained jurisdiction outside of a plan for augmentation.

Decrees for plans for augmentation typically resolve any water quality obligations for the SEO regarding substitute supplies because the noticed applications put interested persons on notice of claims that the substitute supplies are of sufficient quality. The statutory standard for a water judge to approve a plan for augmentation including exchange is that “[a]ny substituted water shall be of a quality and quantity so as to meet the requirements for which the water of the senior appropriator has normally been used, and such substituted water shall be accepted by the senior appropriator in substitution for water derived by the exercise of his decreed rights.” (Water Judge’s Statute). In actual practice, decrees for plans for augmentation may (1) include specific water quality obligations for the SEO, (2) may be silent regarding water quality, or (3) may state that the proposed substituted water will be or shall be of a quality and quantity to meet the requirements for which the water of the senior appropriator has normally been used. As to the latter, it is the SEO’s position that a decree with such a statement and no specific water quality obligations for the SEO indicates that the SEO has no water quality obligation because the decree has either determined that the quality of the substitute supply is adequate as required under section 37-92-305(5), C.R.S., or established a term and condition a senior appropriator could potentially seek to enforce in the future.

Such determinations in plans for augmentation are only open to reconsideration as to the question of injury during the period of the water court’s retained jurisdiction. The concept of retained jurisdiction is described in section 37-92-304(6), C.R.S. Decrees for changes of water right and plans for augmentation are subject to, “reconsideration by the water judge on the question of injury to the vested rights of others for such period after the entry of such decision as is necessary or desirable to preclude or remedy any such injury.” Depending on the retained jurisdiction terms of a decree, the State Engineer could be involved in water quality evaluations of substitute supplies as a result of a petition under retained jurisdiction.¹

One party to the hearing cited the following decree as an example of their concerns regarding decreed operations: Arapahoe County Water and Wastewater Authority (ACWWA), Division 1 case no. 09CW0283 (paragraphs 23 and 44), which approved ACWWA’s numerous conditional appropriative rights of exchange. The SEO notes that paragraph 38 of that decree contains the water court’s determination that ACWWA’s substitute supplies “shall be of a quality and continuity so as to meet the requirements for which the water of senior appropriators has normally been put, and such substituted supplies shall be accepted by senior appropriators in substitution for water derived by

¹ The Colorado Supreme Court found that “Retained jurisdiction should be invoked where the actual operation of an augmentation plan reveals that substituted water is unsuitable for a senior appropriator’s normal use of the water in comparison to the quality of the water it would otherwise receive at its point of diversion if the augmentation plan had not been instituted.” Plan for Augmentation of City and County of Denver (2002).

the exercise of their decreed water rights.” The decree does not include any water quality obligations of the State Engineer’s office under section 37-80-120, C.R.S. or any other specific obligation. Therefore, the SEO has no further water quality obligation because the decree has settled any question regarding the quality of substitute supply. However, considering paragraph 44 of ACWWA’s decree, any party to the case could invoke the court’s retained jurisdiction and seek to prove that operating the decreed exchanges would result in injury based on operational experience with the quality of the substitute supplies.² The SEO agrees that a party to the case with a downstream senior appropriation could try to convince the court that operating the decreed exchanges as part of the plan for augmentation would injure their water right because after the exchange they will not be able to meet the requirements of the senior appropriation’s use due to the water quality of the substitute supply. The State Engineer takes no position on whether this existing risk to ACWWA or its actual realization constitutes material injury to ACWWA’s water rights rather than the prevention of material injury to the senior appropriation. However, it is the SEO’s understanding that the adoption and implementation of the proposed nutrient standards would lessen the risk that the requirements of use of the senior appropriation for aquatic or recreation use will not be met. Thus, it appears the risk of a party invoking the water court’s retained jurisdiction may be diminished by the adoption and implementation of the nutrient standards.

Situations where the State Engineer must consider the quality of substitute supplies

One concern raised by parties to the rulemaking involves a water user’s request to operate an exchange to be administratively approved per the State Engineer’s Statute. Under such an exchange, water is diverted out of priority upstream and replaced with a substitute supply of water downstream to protect downstream senior water rights. As relevant to the proposed nutrient standards for reservoirs, the downstream senior water right may be diverting from the stream to storage in a reservoir for a decreed in-reservoir aquatic or recreational use. The potential basis for denying the exchange is that the substitute supply delivered to the stream is of a significantly lesser quality than the quality of the water diverted from the stream by exchange such that, after the substitute supply mixes in the stream and the stream water is diverted into the reservoir, the quality of the water in the reservoir does not meet the requirements of use to which the senior appropriation has normally been put such that the senior appropriation cannot accomplish its purpose. Under this scenario, without the exchange, the water quality in the reservoir would meet or be closer to meeting the nutrient water quality standards. In such a case, the question arises as to whether the State Engineer would deny the exchange request due to a water quality concern with the substitute supply.

² The SEO did not extensively research this decree as part of this consultation, but it is worth noting that the 09CW0283 decree is not a plan for augmentation or a change of water right, the types of court actions described in statute as subject to the water court’s retained jurisdiction. However, the decree describes that “From the exchange-to points identified in this Decree the water can be utilized to replace out-of-priority depletions” and return flow obligations [from changes of water right] in other decrees, and it may be the use of the exchanges in the other decrees that may be subject to reconsideration under retained jurisdiction.

The State Engineer's statute and rules require the State Engineer to consider the historical water use of the senior appropriator, as indicated by "to meet the requirements of use to which the senior appropriation has normally been put." Therefore, DWR must consider the historical beneficial uses of the appropriator. As indicated under Rule 6.5.4., if the State Engineer finds the requirements of use of the senior appropriator have been met, but the quality of the substitute supply fails to meet water quality standards, the State Engineer shall approve the nondecreed exchange or substitute supply plan if other statutory requirements are met. This rule helps ensure that the proposed standards will not be implemented by the State Engineer in a manner that materially injures existing exchanges that would have been approved under the current nutrient water quality standards.

Further, because the proposed nutrient standards will improve the quality of some discharges, future substitute supplies will be more likely to meet the requirements of use of senior storage water rights for aquatic and recreational uses.

We understand that the WQCC's proposed and existing water quality standards are intended to protect aquatic and recreational uses in reservoirs and lakes but do not establish requirements for such uses to continue to occur. In other words, these uses can and do occur even when the standards are not met. Therefore, when the water quality of the streams, reservoirs, and lakes has not changed, but the quality of a lake or reservoir does not meet the newly-adopted standards after mixing with substitute supplies of water, the SEO cannot automatically conclude that requirements of use are not being met if the senior appropriation is capable of accomplishing its decreed purpose, especially if the water quality is the same or better than the water normally used in the past. In fact, if the water quality of a substitute supply of water was adequate for the senior appropriator's beneficial use in the past, that same water quality is likely to be adequate for the beneficial use in the future if not more so after any improvement in overall water quality in the stream through full implementation of the new nutrient standards.

It may be appropriate for the SEO to consider whether the beneficial use of the water in a reservoir or lake would be prevented or diminished if the water quality standards are not attained as a result of a substitute supply. Because the SEO understands that the WQCC nutrient standards are not requirements of use for in-reservoir aquatic and recreational uses and are not to be implemented by WQCC or WQCD at the reservoirs (they are implemented by WQCD at point discharges), the requirements of use of the senior appropriators is not impacted and, further, may be protected by the higher standards. Ultimately, the SEO would continue to consider the pre-existing requirements of use to which the senior appropriation has normally been put and continue to administer exchanges based on those requirements.

An example where the requirements of use of a senior are not met for a recreation use at a lake or reservoir is where a swim beach is closed due to public health concerns with

water quality. The senior appropriator seeking to divert to a reservoir with a swim beach could prove to the SEO that a requested exchange will result in a beach closure due to the quality of the substitute supply, which closure would not occur absent the exchange. Denying the exchange may be required to protect the senior appropriation under the prior appropriation system. Although we can identify a scenario where the State Engineer would deny an exchange due to the quality requirements of a reservoir, we cannot identify a scenario where this denial would be a result of WQCC's adoption or implementation of the proposed nutrient standards. In fact, it is the SEO's understanding that the adoption or implementation of the proposed nutrient standards will make it more likely that senior's requirements of use will be met in the future.

Conclusion

In general, we conclude that the proposed rules will not result in a diminution of the available water supply that a water rights holder would otherwise enjoy at the time and place and in the amount of demand for beneficial use when operating in accordance with the holder's vested water right.

Sincerely,



Kevin G. Rein, P.E.
State Engineer, DWR Director



Rebecca Mitchell
CWCB Director