



March 19, 2026

Attn: Seth Alm, Water Quality Standards, Assessment, & Monitoring Branch Supervisor
Nevada Division of Environmental Protection
Bureau of Water Quality Planning
901 South Stewart Avenue, Suite 4001
Carson City, Nevada 89701
salm@ndep.nv.gov

RE: R146-24 – Colorado River Salinity Public Comment Period

Mr. Alm:

The Clark County Water Reclamation District (District) is submitting this comment letter in response to the Nevada Division of Environmental Protection (NDEP) Notice of Public Comment Period for regulatory petition R146-24, which proposes to amend Nevada’s Water Pollution Control Regulations for Water Quality Standards (WQS) found in chapter 445A of the Nevada Administrative Code (NAC).

In summary, the District supports the Colorado River Basin Salinity Control Forum (CRBSCF), its 2023 Triennial Review (2023 Review), and NDEP’s intent to incorporate the 2023 Review’s recommendation to not change the numeric salinity criteria for the Colorado River (River) below Hoover Dam and further downstream. Therefore, we are questioning the proposed changes to NAC445A.2152 – Colorado Region: Lake Mead. Both the R146-24 Fact Sheet and the 03/10/2026 Public Workshop presentation state, “No changes to the existing Colorado River salinity standards, including beneficial uses or criteria, are proposed.” However, the proposed regulation is changing the Total Dissolved Solids (or Salinity) Municipal Beneficial Use Standard, in mg/L, from S.V. <1000 to Flow Weighted A-Ave. concentration $\leq 723^h$. Footnote h states, “As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow.

We believe this action may be a misapplication of the numeric salinity criteria presented in the 2023 Review, which states:

“The Forum recommends no change in the numeric salinity criteria at the three stations located on the lower main stem of the Colorado River. The numeric criteria at these stations will remain:

<u>Station</u>	<u>Salinity in mg/L¹</u>
Below Hoover Dam	723
Below Parker Dam	747
At Imperial Dam	879

¹ Flow-weighted average annual salinity concentration which is defined as the total annual salt load divided by the total annual streamflow.”

As noted above, the numeric salinity criteria of 723 mg/L applies to the Colorado River below Hoover Dam. However, R146-24 proposes to apply the standard to Lake Mead above Hoover Dam. R146-24 would appropriately remove the Colorado River Standards from the Virgin River, Muddy River, Meadow Valley Wash, Beaver Dam Wash, and Bowman Reservoir. The application of the 723 mg/L standard to Lake Mead seems contrary to those changes. It is also contrary to the 2023 review, which specifies that the water quality standard applies “Below Hoover Dam.”

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R146-24 – Colorado River Salinity

March 19, 2026, p. 2

We believe that the discrepancy can be resolved with the addition of a sentence in the proposed footnote h. The following paragraph shows NDEP's proposed language and our suggested addition in italics:

As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow. *Compliance with this standard shall be determined immediately downstream of Hoover Dam.*

Without this added language, NDEP's proposal could cause problems. The District, in partnership with the other Las Vegas Valley Dischargers, is required by Permit to conduct frequent ambient water quality monitoring at four sampling sites within Las Vegas Bay of Boulder Basin and five sampling sites in the main Boulder Basin. Eight of these sites are considered to be in Lake Mead for WQS purposes. At each of those sites, samples are collected and analyzed for Total Dissolved Solids, (TDS), and many more constituents, from the epilimnion, metalimnion, and hypolimnion. The data indicate that the average TDS in the epilimnion and metalimnion at one of the sites in the Las Vegas Bay exceeded 723 mg/L for calendar year 2025. Even though this average is not flow weighted, we are concerned those digressions could be designated an impairment.

Furthermore, we do not understand how "the Flow-weighted average annual salinity concentration, which is defined as the total annual salt load divided by the total annual streamflow," would be calculated for Lake Mead at any point above Hoover Dam. With many inputs to the Lake, calculating the total annual salt load to the Lake is not straightforward and will either be inaccurate (if an average is used) or time consuming (if Southern Nevada Water Authority's 3D model is used). In addition, there is no realistic way to measure the total annual "streamflow" at any single point within Lake Mead. The standard was undoubtedly set "Below Hoover Dam" because the dam provides a good measure of streamflow.

The District welcomes the opportunity to further discuss this matter with NDEP. Please direct any questions or comments to the undersigned or Armand "AJ" Rodrigues at arodrigues@cleanwaterteam.com.

Sincerely,

Daniel C. Fischer
Chief Water Reclamation Operation Officer

ecc: Jason Kuchnicki, Bureau Chief, NDEP BWQP, kuchnicki@ndep.nv.gov
Andrew Dixon, Bureau Chief, NDEP BWPC, andrew.dixon@ndep.nv.gov
Andrew Burns, Water Resources Division Manager, SNWA, andrew.burns@snwa.com
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John Solvie, Water Quality Protection & Compliance Manager, Clark County, jsolvie@cleanwaterteam.com
John Tennert, Ph.D., Environmental Mitigation Manager, CCRFCD, jtennert@regionalflood.org
David Stoff, Esq., Chief Legal & Administrative Officer, CCWRD, dstoff@cleanwaterteam.com
Armand Rodrigues, CEM, Comp. and Reg. Affairs Manager, CCWRD, arodrigues@cleanwaterteam.com



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April 1, 2026

Daniel Fischer
Chief Water Reclamation Operation Officer
Clark County Water Reclamation District
5857 East Flamingo Road Las Vegas, NV 89122
(702) 668-8888

RE: CCWRD's Comments on R146-24 – Colorado River Salinity Standards

Dear Mr. Fischer,

Thank you for your March 19, 2026 comment letter regarding the Nevada Division of Environmental Protection's (NDEP) proposed revisions to the Colorado River salinity standards under R146-24. We appreciate CCWRD's engagement in this rulemaking process and your continued support for the Colorado River Basin Salinity Control Forum (Forum) and its [2023 Review, Water Quality Standards for Salinity, Colorado River System](#) (2023 Review). We also appreciate CCWRD's long-standing participation in water quality monitoring efforts in Las Vegas Bay and Boulder Basin.

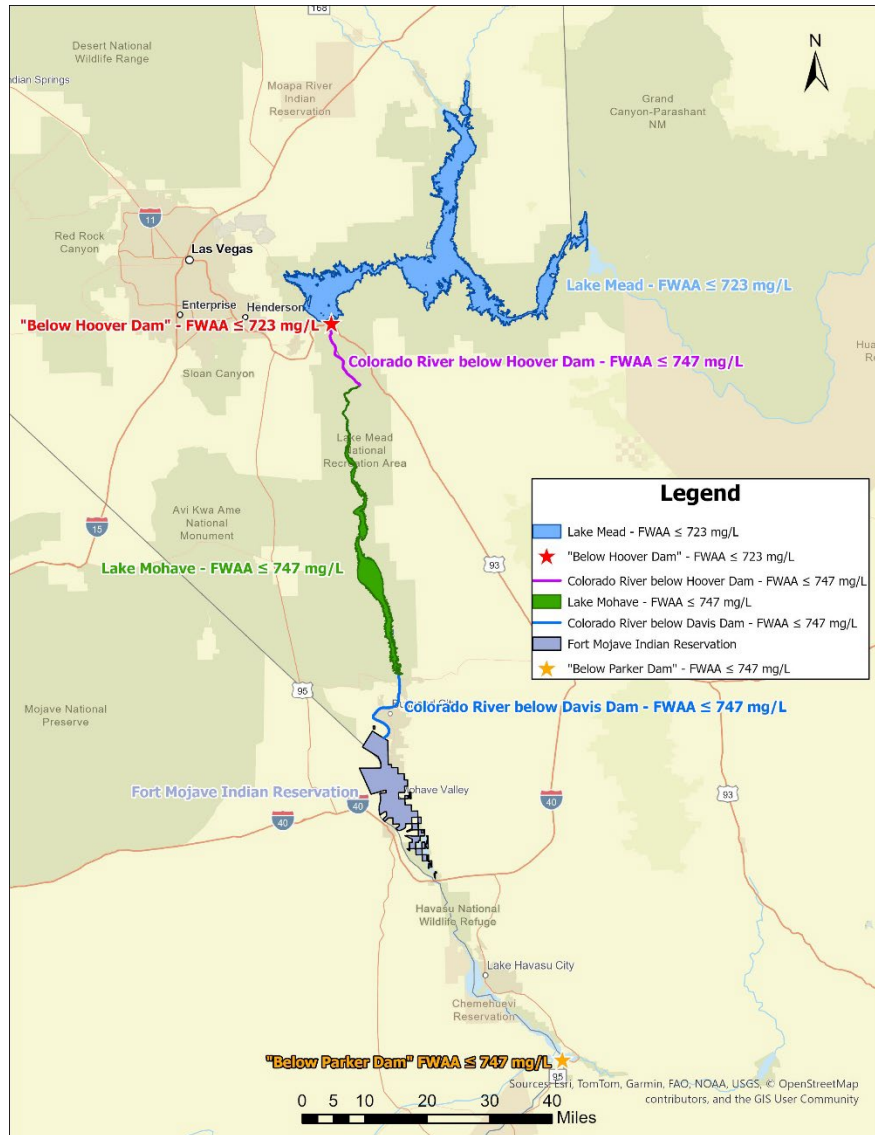
Retention of the Existing TDS ≤ 1000 mg/L Criterion in NAC 445A.2152

CCWRD expressed concern regarding the proposed change for [NAC 445A.2152](#) from the existing TDS ≤ 1000 mg/L single-value criterion to a Flow Weighted A-Avg. Salinity criterion ≤ 723 mg/L. In the final regulation, NDEP will retain the TDS ≤ 1000 mg/L S.V. criterion in [NAC 445A.2152](#). The Forum's ≤ 723 mg/L Flow Weighted A-Avg. salinity criterion will also be included in [NAC 445A.2152](#).

This approach maintains the existing Nevada water quality framework while clearly incorporating the Forum's salinity criterion for its Below Hoover Dam station.

Applicability of the "Below Hoover Dam" Salinity Criterion to Lake Mead

“Below Hoover Dam” is one of the three numeric criteria stations designated by the Forum for determining compliance with Colorado River salinity standards. Because Hoover Dam impounds the Colorado River to form Lake Mead, the lake lies immediately upstream of the “Below Hoover Dam” station. Under [NAC 445A.1239](#), control-point criteria apply to all surface waters in the watershed upstream from the control point unless superseded by an upstream control point.



Accordingly, the 723 mg/L salinity criterion previously described in [NAC 445A.1233](#) has always applied to Lake Mead under Nevada’s regulatory framework, although past [NAC 445A.2152](#) tables did not clearly reflect this relationship. This rationale is also supported by [40 CFR](#)

[131.10\(b\)](#) which requires that water quality be maintained upstream of each station selected by the Forum to ensure attainment of that station’s criterion. The criterion must also apply to the waterbody itself, not solely at the downstream station, to support development of appropriate effluent limits for permitted discharges.

R146-24 does not propose any substantive change to the salinity standard applicable to Lake Mead. Rather, this regulation adopts the Forum’s 2023 Review by reference and updates [NAC 445A.2152](#) to accurately reflect the Forum’s long-established salinity criteria. The 723 mg/L salinity criterion—and its applicability to Lake Mead—remains unchanged.

To reinforce alignment with the Forum’s framework and to avoid misinterpretation, the salinity criterion footnote in [NAC 445A.2152](#) will be amended to state:

*“As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow **as measured at the Below Hoover Dam station** [emphasis added].”*

Clarification Regarding CCWRD’s Statement on the 2023 Review

CCWRD’s comment noted that the 2023 Review specifies that the 723 mg/L criterion applies “Below Hoover Dam.” To avoid confusion, it is important to distinguish that:

- The 723 mg/L criterion applies to a discrete location, the Below Hoover Dam station selected by the Forum.
- It does not apply as the salinity criterion for the segment of the Colorado River downstream of the dam.

This critical distinction affects how this salinity criterion is interpreted and implemented within Nevada’s regulatory framework.

Use of Flow-Weighted Annual Average Salinity for Lake Mead

NDEP concurs with CCWRD’s comment that a flow-weighted annual average concentration cannot be directly calculated within a lentic waterbody such as Lake Mead. Lake Mead’s water quality must be maintained such that the salinity criterion is achieved at the Forum-designated location “Below Hoover Dam”. While the criterion applies to Lake Mead (per [NAC 445A.1239](#)), compliance is evaluated by the Forum at the “Below Hoover Dam” station, where total annual salt load and streamflow can be directly measured.

This approach is consistent with both [NAC 445A.1239](#) and the Forum's longstanding salinity compliance methodology. Section 1 of R146-24 adopts the Forum's 2023 Review by reference. NDEP does not intend to use complex three-dimensional lake models to calculate salinity loads or to assess compliance within Lake Mead. Compliance will continue to be determined by the Forum at the "Below Hoover Dam" station using its established monitoring and calculation methods.

Concerns Regarding Single-Point Exceedances within Lake Mead

CCWRD expresses concern that isolated TDS values in Lake Mead (e.g., within Las Vegas Bay) may exceed 723 mg/L and lead to potential 303(d) impairment listings. To clarify:

- The 723 mg/L criterion is a flow-weighted annual average, not an instantaneous or spatially uniform ambient concentration requirement.
- Compliance is determined by the Forum at the "Below Hoover Dam" station, not at locations within Lake Mead.
- R146-24 does not alter Nevada's assessment protocols or impairment methodology. As detailed in the *Methodology for the Assessment of Surface Water Quality in Nevada* associated with each Water Quality Integrated Report, all available surface water quality information for each assessment unit are compared with the associated water quality standards to evaluate whether criteria to protect those uses have been met. NDEP applies a statistically based binomial method, rather than a raw-score exceedance approach, when assessing single-value criteria and determining impairment status. This method accounts for data variability and sample size and ensures that impairment decisions are made with an appropriate level of confidence. Because Nevada's assessment methodology requires sufficient data (generally a minimum of eight discrete samples within the assessment cycle) and evaluates exceedances using the binomial test, isolated elevated TDS measurements within Lake Mead will not result in the lake being listed as impaired. Only when the weight of evidence indicates that the applicable criterion is not being met—based on the prescribed statistical methodology—would an impairment determination be made.
- Depending on the location, the Las Vegas Bay site referenced may be within Inner Las Vegas Bay (NAC 445A.2154 - NV13-CL-04_00) which is a distinct assessment unit from Lake Mead (NAC 445A.2152 - NV13-CL-03_00). Inner Las Vegas Bay has a Single Value Total Dissolved criterion of ≤ 3000 mg/L and is not directly subject to the Forum's salinity criteria.

We appreciate CCWRD's comprehensive technical review and your continued collaboration in maintaining robust water quality protection in the Colorado River system. Your comments will

help ensure that Nevada's regulations remain scientifically sound, clearly implemented, and aligned with the Forum's salinity control program.

Please feel free to contact me if you would like to discuss the revisions further or provide additional technical input.

Sincerely,

Seth Alm

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**COLORADO RIVER COMMISSION
OF NEVADA**

March 23, 2026

Attn: Seth Alm

Department of Conservation and Natural Resources
Division of Environmental Protection, Bureau of Water Quality Planning
901 South Stewart Avenue, Suite 4001
Carson City, Nevada 89701
salm@ndep.nv.gov

RE: R146-24 – Colorado River Salinity Public Comment Period

Dear Mr. Alm:

The Colorado River Commission of Nevada (CRCN) submits this comment letter in response to the Nevada Department of Environmental Protection's (NDEP) notice of public comment period for regulatory petition R146-24, which proposes amendments to Nevada's Water Pollution Control Regulations for Water Quality Standards (WQS) in Chapter 445A of the Nevada Administrative Code (NAC).

The CRCN supports the Colorado River Basin Salinity Control Forum (Forum), its 2023 Triennial Review (2023 Review), and NDEP's stated intent to incorporate the 2023 Review's recommendation to leave unchanged the numeric salinity criteria for the Colorado River below Hoover Dam and at downstream control points. For that reason, CRCN is concerned by the proposed revisions to NAC 445A.2152, Colorado Region: Lake Mead.

Both the R146-24 Fact Sheet and the March 10, 2026, public workshop presentation state: "No changes to the existing Colorado River salinity standards, including beneficial uses or criteria, are proposed." However, the proposed regulation would revise the Total Dissolved Solids (TDS), or salinity, municipal beneficial use standard from "S.V. <1000" to "Flow Weighted A-Ave. concentration \leq 723h." Footnote h states: "As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow."

The CRCN is concerned that this proposed revision may misapply the numeric salinity criteria set forth in the 2023 Review, which provides:

“The Forum recommends no change in the numeric salinity criteria at the three stations located on the lower main stem of the Colorado River. The numeric criteria at these stations will remain:

Below Hoover Dam – 723 mg/L

Below Parker Dam – 747 mg/L

At Imperial Dam – 879 mg/L

Flow-weighted average annual salinity concentration, which is defined as the total annual salt load divided by the total annual streamflow.”

As stated in the 2023 Review, the 723 mg/L criterion applies below Hoover Dam. R146-24, however, appears to apply that criterion to Lake Mead, which is upstream of Hoover Dam. While R146-24 appropriately removes Colorado River salinity standards from the Virgin River, Muddy River, Meadow Valley Wash, Beaver Dam Wash, and Bowman Reservoir, applying the 723 mg/L criterion to Lake Mead appears inconsistent with the 2023 Review’s explicit designation of the compliance location as “Below Hoover Dam.”

This issue could be resolved by clarifying in NAC 445A.2152 that compliance with the flow-weighted annual average criterion is determined immediately downstream of Hoover Dam. That approach would be consistent with prior regulatory intent and would avoid misapplication of the standard within Lake Mead. At present, the TDS entry in NAC 445A.2152 includes the phrase “measured below Hoover Dam.” That language should remain in the table to prevent the criterion from being interpreted as applying throughout Lake Mead.

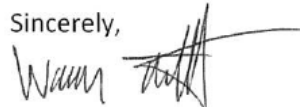
Similarly, the water quality tables for “Colorado River below Davis Dam” and “Lake Mohave” should clarify that the applicable flow-weighted annual average criterion is measured below Parker Dam. These numeric criteria were intended to apply only at the three specific lower Colorado River stations identified by the Forum, not at upstream water bodies.

The CRCN also notes a conflict between how Nevada’s regulations and the Forum use the concepts of “control points” and “stations.” NAC 445A.1239 provides that “control points are locations where water quality criteria are specified” and that such criteria “apply to all surface waters of Nevada in the watershed upstream from the control point or to the next upstream control point.” By contrast, the Forum established numeric salinity criteria at three specific stations, and compliance is not evaluated upstream of those stations. Under the current proposal, the “Below Hoover Dam” criterion would be applied upstream to Lake Mead, and the “Below Parker Dam” criterion could likewise be applied upstream to Lake Mohave. That result does not appear to reflect the Forum’s intent.

To remain consistent with the 2023 Review and the Forum's established salinity control framework, the CRCN recommends retaining the location-specific compliance language in NAC 445A.1233, NAC 445A.2152 and related provisions clarifying that the salinity criteria apply only at the designated downstream measurement locations rather than to all upstream waters.

The CRCN welcomes the opportunity to further discuss this matter with NDEP. Please direct any questions or comments to Warren Turkett at wturkett@crc.nv.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Warren Turkett", with a long horizontal line extending to the right.

Warren Turkett
Assistant Director, Natural Resources
Colorado River Commission of Nevada



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April 1, 2026

Warren Turkett
Assistant Director, Natural Resources
Colorado River Commission of Nevada
100 N. City Parkway, Suite 1100, Las Vegas, NV 89106
(725) 246-0436

RE: CRCN's Comments on R146-24 – Colorado River Salinity Standards

Dear Mr. Turkett,

Thank you for your March 23, 2026, comment letter regarding the Nevada Division of Environmental Protection's (NDEP) proposed revisions to the Colorado River salinity standards under R146-24. We appreciate CRCN's engagement in this regulatory process and your continued support for the Colorado River Basin Salinity Control Forum (Forum) and its [2023 Review, Water Quality Standards for Salinity, Colorado River System](#) (2023 Review).

Applicability of the "Below Hoover Dam" Salinity Criterion to Lake Mead

"Below Hoover Dam" is one of the three numeric criteria stations designated by the Forum for determining compliance with Colorado River salinity standards. Because Hoover Dam impounds the Colorado River to form Lake Mead, the lake lies immediately upstream of the "Below Hoover Dam" station. Under [NAC 445A.1239](#), control-point criteria apply to all surface waters in the watershed upstream from the control point unless superseded by an upstream control point.

Accordingly, the 723 mg/L salinity criterion previously described in [NAC 445A.1233](#) has always applied to Lake Mead under Nevada's regulatory framework, although past [NAC 445A.2152](#) tables did not clearly reflect this relationship. This rationale is also supported by [40 CFR 131.10\(b\)](#) which requires that water quality be maintained upstream of each station selected by the Forum to ensure attainment of that station's criterion. The criterion must also apply to the waterbody itself, not solely at the downstream station, to support development of appropriate effluent limits for permitted discharges.

R146-24 does not propose any substantive change to the salinity standard applicable to Lake Mead. Rather, this regulation adopts the Forum’s 2023 Review by reference and updates [NAC 445A.2152](#) to accurately reflect the Forum’s long-established salinity criteria. The 723 mg/L salinity criterion—and its applicability to Lake Mead—remains unchanged.

To reinforce alignment with the Forum’s framework and to avoid misinterpretation, the salinity criterion footnote in [NAC 445A.2152](#) will be amended to state:

*“As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow **as measured at the Below Hoover Dam station** [emphasis added].”*

Clarifying Salinity Compliance for Downstream River Segments

The CRCN noted that the water quality tables for “Colorado River below Davis Dam” and “Lake Mohave” should clarify that the applicable flow-weighted annual average criterion is measured below Parker Dam.

To reinforce alignment with the Forum’s framework, to avoid misinterpretation, and to maintain consistency across all Colorado River segments, the salinity criteria footnotes in [NAC 445A.2146](#), [NAC 445A.2147](#), and [NAC 445A.2148](#) will be amended to state:

*“As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow **as measured at the Below Parker Dam station** [emphasis added].”*



Relationship Between NAC 445A.1239 and Forum Stations

The CRCN noted a perceived conflict between:

- The upstream-applicability framework in [NAC 445A.1239](#), and
- The Forum’s station-specific compliance approach, under which salinity criteria are evaluated only at the three designated lower Colorado River stations.

NDEP appreciates CRCN highlighting this distinction. Nevada’s control point provisions have been in place for decades and are part of the state’s broader water quality standards system, which differs structurally from the Forum’s compliance-station approach. Adoption of the Forum’s criteria by reference allows Nevada to remain fully consistent with the basin-wide program while maintaining its own regulatory architecture.

This rationale is also supported by [40 CFR 131.10\(b\)](#) which requires that water quality be maintained upstream of each station selected by the Forum to ensure attainment of that station’s criterion. The criterion must also apply to the waterbody itself, not solely at the downstream station, to support development of appropriate effluent limits for permitted discharges. NDEP will add the clarifying language discussed above that links the NAC tables to the Forum’s designated compliance locations—consistent with the CRCN’s recommendation. This will help prevent misinterpretation and harmonize both frameworks.

NDEP values CRCN’s thoughtful and detailed comments and appreciates the Commission’s ongoing commitment to protecting Colorado River water quality. Your input helps ensure that Nevada’s water quality standards are clearly implemented, scientifically sound, and aligned with the Forum’s salinity control program.

Please feel free to contact me if you would like to discuss the revisions further or provide additional technical input.

Sincerely,

Seth Alm

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Department of Conservation and Natural Resources
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Andrew Trelease, P.E.
General Manager/Chief
Engineer

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March 19, 2026

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RE: R146-24 Colorado River Salinity

Dear Mr. Alm:

Thank you for this opportunity to provide comments on R146-24, the Nevada Division of Environmental Protection's (NDEP) proposed revisions to salinity standards for the Colorado River. The Clark County Regional Flood Control District (District) supports NDEP's proposal with one exception: the proposed salinity standards for Lake Mead. NDEP may inadvertently be making important changes to those standards without meaning to. This letter proposes language that would avoid the issue.

The proposal adopts by reference the 2023 Review of the Colorado River Basin Salinity Control Forum, dated October 2023 (2023 Review). We support that adoption. Otherwise, the proposal appears intended to be limited to minor cleanup. The fact sheet emphasizes that "*No changes* to the existing Colorado River salinity standards...are proposed." But the proposal includes an important change. The 2023 Review specifies that the most upstream standard applies *below* Hoover Dam:

<u>Station</u>	<u>Salinity in mg/L¹</u>
Below Hoover Dam	723

But NDEP's proposed revisions applies that standard *above* Hoover Dam. The proposal is, therefore, inconsistent with the 2023 Review.

NDEP may believe that it is merely implementing the control point policy in NAC 445A.1239, which generally applies water quality criteria to surface waters from a control point to the next control point upstream, and that the "Below Hoover Dam" standard has always applied to Lake Mead. But that would be incorrect. To the best of our knowledge, NDEP has never asserted that the "Below Hoover Dam" salinity standard applies anywhere other than Below Hoover Dam.

The standard applies to "Below Hoover Dam", and only at that location, because compliance with the standard cannot be determined elsewhere in Lake Mead. Here is the proposed standard for Lake Mead:



Mr. Antonio Papazian, PLS, WRS

March 19, 2026

Page 2

Salinity

Flow weighted A-Avg. concentration $\leq 723^h$

^h As used for this parameter, flow-weighted annual average concentration means the total annual salt load divided by the total annual streamflow.

The “total annual streamflow” can be measured below Hoover Dam because the “total annual streamflow” of the Colorado River can be measured *at that location*, as can the “total annual salt load”. But the “total annual streamflow” cannot be measured elsewhere in the lake, because the lake is not a stream. Water in a stream reliably flows downstream. Water in Lake Mead can move in any compass direction, especially when the wind is blowing. For the same reason, the “total annual salt load” cannot be measured in Lake Mead.

If compliance with the standard cannot be measured in Lake Mead, why do we care about the proposed standard? The annual average TDS concentration may exceed 723 mg/l in places within Lake Mead. Although the annual average TDS is not the flow-weighted annual average salinity concentration, we are concerned that staff may not appreciate the difference between the two, which may lead to the improper 303(d) listing of Lake Mead as impaired for salinity and ultimately the preparation of a TMDL. There is no reason to make such a major and unnecessary change in the standards, especially when NDEP is saying that the proposal makes “No changes” to the standards.

The solution to this problem is to return the standard to its proper location below Hoover Dam. We request that the following sentence be added to footnote h:

Compliance with this standard shall be determined [immediately] downstream of Hoover Dam.

The word “immediately” is in brackets so that it can be included or excluded as NDEP prefers. It adds a word that is not completely consistent with the 2023 Review, but NDEP may feel that it provides some clarity. This added sentence should make clear that the salinity standard does not apply generally throughout Lake Mead, but only at the location specified in the 2023 Review.

Thank you very much for considering this request, and please feel free to contact me at jtennert@regionalflood.org or (702) 685-0000 should you have any questions or require additional information.

Sincerely,

John Tennert
John Tennert (Mar 19, 2026 08:55:29 PDT)

John Tennert, Ph.D.

Environmental Mitigation Manager



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April 1, 2026

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RE: RFCD's Comments on R146-24 – Colorado River Salinity Standards

Dear Mr. Tennert,

Thank you for your March 19, 2026, comment letter regarding the Nevada Division of Environmental Protection's (NDEP) proposed revisions to the Colorado River salinity standards under R146-24. We appreciate CCRFCD's engagement in this rulemaking process and your continued support for the Colorado River Basin Salinity Control Forum (Forum) and its [2023 Review, Water Quality Standards for Salinity, Colorado River System](#) (2023 Review).

Applicability of the "Below Hoover Dam" Salinity Criterion to Lake Mead

"Below Hoover Dam" is one of the three numeric criteria stations designated by the Forum for determining compliance with Colorado River salinity standards. Because Hoover Dam impounds the Colorado River to form Lake Mead, the lake lies immediately upstream of the "Below Hoover Dam" station. Under [NAC 445A.1239](#), control-point criteria apply to all surface waters in the watershed upstream from the control point unless superseded by an upstream control point.

Accordingly, the 723 mg/L salinity criterion previously described in [NAC 445A.1233](#) has always applied to Lake Mead under Nevada's regulatory framework, although past [NAC 445A.2152](#) tables did not clearly reflect this relationship. This rationale is also supported by [40 CFR 131.10\(b\)](#) which requires that water quality be maintained upstream of each station selected by the Forum to ensure attainment of that station's criterion. The criterion must also apply to the waterbody itself, not solely at the downstream station, to support development of appropriate effluent limits for permitted discharges.

R146-24 does not propose any substantive change to the salinity standard applicable to Lake Mead. Rather, this regulation adopts the Forum’s 2023 Review by reference and updates [NAC 445A.2152](#) to accurately reflect the Forum’s long-established salinity criteria. The 723 mg/L salinity criterion—and its applicability to Lake Mead—remains unchanged.

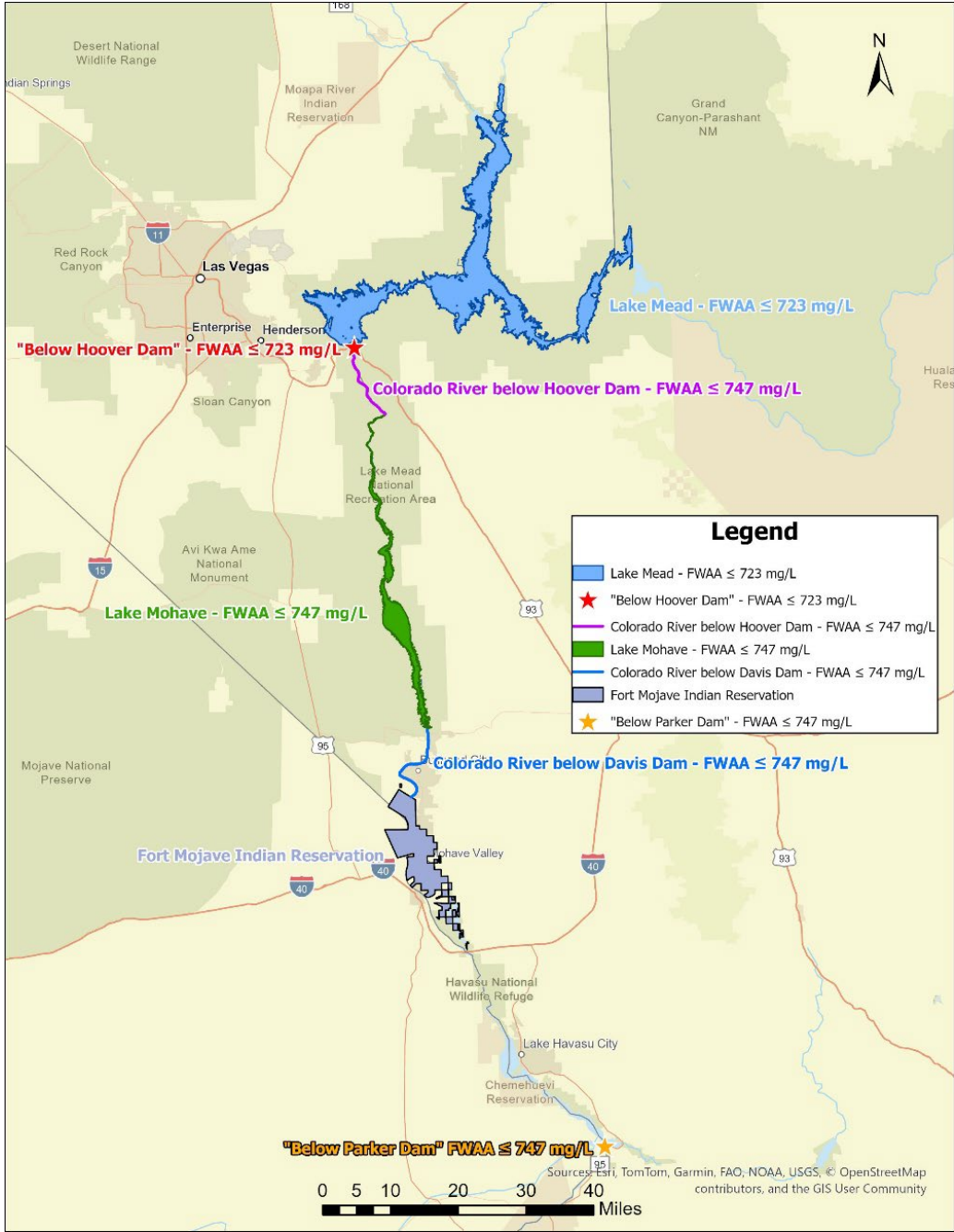
To reinforce alignment with the Forum’s framework, to avoid misinterpretation, and to maintain consistency across all Colorado River segments, the salinity criterion footnote in [NAC 445A.2152](#) will be amended to state:

*“As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow **as measured at the Below Hoover Dam station** [emphasis added].”*

Use of Flow-Weighted Annual Average Salinity for Lake Mead

NDEP concurs with CCRFCD’s comment that a flow-weighted annual average concentration cannot be directly calculated within a lentic waterbody such as Lake Mead. Lake Mead’s water quality must be maintained such that the salinity criterion is achieved at the Forum-designated location “Below Hoover Dam”. While the criterion applies to Lake Mead (per [NAC 445A.1239](#)), compliance is evaluated by the Forum at the “Below Hoover Dam” station, where total annual salt load and streamflow can be directly measured.

This approach is consistent with both [NAC 445A.1239](#) and the Forum’s longstanding salinity compliance methodology. Section 1 of R146-24 adopts the Forum’s 2023 Review by reference. Compliance will continue to be determined by the Forum at the “Below Hoover Dam” station using its established monitoring and calculation methods.



Desert National Wildlife Range

Indian Springs

Moapa River Indian Reservation

Grand Canyon-Parashant NM

Red Rock Canyon

Las Vegas

Enterprise Henderson

"Below Hoover Dam" - FWAA \leq 723 mg/L

Sloan Canyon

Lake Mead National Recreation Area

Avi Kwa Ame National Monument

Lake Mohave - FWAA \leq 747 mg/L

Mojave National Preserve

Fort Mojave Indian Reservation

Havasu Valley

Havasú National Wildlife Refuge

Lake Havasu City

Chemehuevi Reservation

"Below Parker Dam" FWAA \leq 747 mg/L

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We appreciate CCRC's thoughtful review and your continued collaboration in maintaining robust water quality protection in the Colorado River system. Your comments will help ensure that Nevada's regulations remain scientifically sound, clearly implemented, and aligned with the Forum's salinity control program.

Please feel free to contact me if you would like to discuss the revisions further or provide additional technical input.

Sincerely,

Seth Alm

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Department of Conservation and Natural Resources
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SOUTHERN NEVADA WATER AUTHORITY

SOUTHERN NEVADA WATER SYSTEM
River Mountains Water Treatment Facility
1299 Burkholder Boulevard • Henderson, NV 89015
MAILING ADDRESS: P.O. Box 99954 • Las Vegas, NV 89193-9954
(702) 856-3500 • snwa.com

March 18, 2026

Attn: Seth Alm
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Division of Environmental Protection, Bureau of Water Quality Planning
901 South Stewart Avenue, Suite 4001
Carson City, Nevada 89701
salm@ndep.nv.gov

RE: R146-24 – Colorado River Salinity Public Comment Period

Mr. Alm:

The Southern Nevada Water Authority (SNWA) is submitting this comment letter in response to the Nevada Division of Environmental Protection (NDEP) Notice of Public Comment Period for regulatory petition R146-24, which proposes to amend Nevada’s Water Pollution Control Regulations for Water Quality Standards (WQS) found in chapter 445A of the Nevada Administrative Code (NAC).

In summary, SNWA supports the Colorado River Basin Salinity Control Forum (CRBSCF), its 2023 Triennial Review (2023 Review), and NDEP’s intent to incorporate the 2023 Review’s recommendation to not change the numeric salinity criteria for the Colorado River (River) below Hoover Dam and further downstream. Therefore, we are questioning the proposed changes to NAC445A.2152 – Colorado Region: Lake Mead. Both the R146-24 Fact Sheet and the 03/10/2026 Public Workshop presentation state, “No changes to the existing Colorado River salinity standards, including beneficial uses or criteria, are proposed.” However, the proposed regulation is changing the Total Dissolved Solids (or Salinity) Municipal Beneficial Use Standard, in mg/L, from S.V. <1000 to Flow Weighted A-Ave. concentration $\leq 723^h$. Footnote h states, “As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow.

We believe this action may be a misapplication of the numeric salinity criteria presented in the 2023 Review, which states:

“The Forum recommends no change in the numeric salinity criteria at the three stations located on the lower main stem of the Colorado River. The numeric criteria at these stations will remain:

<u>Station</u>	<u>Salinity in mg/L¹</u>
Below Hoover Dam	723
Below Parker Dam	747
At Imperial Dam	879

¹ Flow-weighted average annual salinity concentration which is defined as the total annual salt load divided by the total annual streamflow.”

As noted above, the numeric salinity criteria of 723 mg/L applies to the Colorado River below Hoover Dam. However, R146-24 proposes to apply the standard to Lake Mead, which is upstream of Hoover Dam. R146-24 would appropriately remove the Colorado River Standards from the Virgin River, Muddy River, Meadow Valley Wash, Beaver Dam Wash, and Bowman Reservoir. The application of the 723 mg/L standard to Lake Mead seems contrary to those changes.

Furthermore, we do not understand how “the Flow-weighted average annual salinity concentration, which is defined as the total annual salt load divided by the total annual streamflow,” will be calculated for Lake Mead. With many inputs to the Lake, calculating the total annual salt load to the Lake is not straightforward and will either be inaccurate (if an average is used) or time consuming (if SNWA’s 3D model is used). Does NDEP intend to use the complex modeling used by SNWA for this calculation, or provide other guidance regarding calculating the total salt load?

SNWA, in partnership with stakeholders, stores and analyzes water quality data for Lakes Mead and Mohave. Preliminary data analysis indicates that the average TDS in the epilimnion and metalimnion at one of the sites in the Las Vegas Bay exceeded 723 mg/L for calendar year 2025. We understand that the intent of this regulation is to compare the standard to a one grand annual average for an entire; however, since the calculation appears questionable as discussed above, we are concerned those single digressions could be designated an impairment.

Additionally, the Regulation proposes changing the name of the TDS parameter to “Salinity,” in NAC 445A where, and only where, the Colorado River salinity standards apply. We understand NDEP’s rationale for this change. However, in the technical sense, TDS and salinity are not synonyms. Practically speaking, TDS (or Filterable Residue as it is called in 40 CFR Part 136) is an operationally defined analyte used to evaluate salinity standards.

Page 8 of the 2023 Review states, “In this Review, the terms “salinity,” “TDS” and “concentration,” each in mg/L, are used interchangeably.” Page B-9 of the 2023 Review states, “Salinity” shall mean total dissolved solids as the sum of constituents.” Pages B-14 and B-22 of the 2023 Review state, “Analysis for salinity may be either as total dissolved solids (TDS) or be electrical conductivity where a satisfactory correlation with TDS has been established. The correlation should be based on a minimum of five different samples.”

Our recommendation is NDEP should add a definition for Salinity to NAC 445A which would include the acceptable methods for evaluation of the salinity standards.

Lastly, the proposed tables for the Colorado River below Davis Dam (NAC 44A.2146), the Colorado River: Lake Mojave (NAC 445A.2147), and Colorado River below Hoover Dam (NAC 445A.2148) make the applicable salinity standards the Flow weighted A-Avg. concentration ≤ 747 mg/L. Should this be ≤ 723 mg/L?

SNWA welcomes the opportunity to further discuss this matter with NDEP.

Sincerely,



Daniel Chan, P.E.
Director, Water Quality & Treatment
Southern Nevada Water Authority/Las Vegas Valley Water District
daniel.chan@lvvwd.com



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**

A division of the
Nevada Department of Conservation & Natural Resources

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April 1, 2026

Daniel Chan, P.E.
Director, Water Quality & Treatment
Southern Nevada Water Authority/Las Vegas Valley Water District
1299 Burkholder Boulevard, Henderson, NV 89193
(702) 856-3500

RE: SNWA's Comments on R146-24 – Colorado River Salinity Standards

Dear Mr. Chan,

Thank you for your March 18, 2026, comment letter regarding the Nevada Division of Environmental Protection's (NDEP) proposed revisions to the Colorado River salinity standards under R146-24. We appreciate SNWA's engagement in this rulemaking process and your continued support for the Colorado River Basin Salinity Control Forum (Forum) and its [2023 Review, Water Quality Standards for Salinity, Colorado River System](#) (2023 Review). We also appreciate SNWA's partnership in monitoring and evaluating water quality in Lake Mead and Lake Mohave.

Applicability of the "Below Hoover Dam" Salinity Criterion to Lake Mead

"Below Hoover Dam" is one of the three numeric criteria stations designated by the Forum for determining compliance with Colorado River salinity standards. Because Hoover Dam impounds the Colorado River to form Lake Mead, the lake lies immediately upstream of the "Below Hoover Dam" station. Under [NAC 445A.1239](#), control-point criteria apply to all surface waters in the watershed upstream from the control point unless superseded by an upstream control point.

Accordingly, the 723 mg/L salinity criterion previously described in [NAC 445A.1233](#) has always applied to Lake Mead under Nevada's regulatory framework, although past [NAC 445A.2152](#) tables did not clearly reflect this relationship. This rationale is also supported by [40 CFR 131.10\(b\)](#) which requires that water quality be maintained upstream of each station selected by the Forum to ensure attainment of that station's criterion. The criterion must also apply to the

waterbody itself, not solely at the downstream station, to support development of appropriate effluent limits for permitted discharges.

R146-24 does not propose any substantive change to the salinity standard applicable to Lake Mead. Rather, this regulation adopts the Forum’s 2023 Review by reference and updates [NAC 445A.2152](#) to accurately reflect the Forum’s long-established salinity criteria. The 723 mg/L salinity criterion—and its applicability to Lake Mead—remains unchanged.

To reinforce alignment with the Forum’s framework and to avoid misinterpretation, the salinity criterion footnote in [NAC 445A.2152](#) will be amended to state:

*“As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow **as measured at the Below Hoover Dam station** [emphasis added].”*

Use of Flow-Weighted Annual Average Salinity for Lake Mead

NDEP concurs with SNWA’s comment that a flow-weighted annual average concentration cannot be directly calculated within a lentic waterbody such as Lake Mead. Lake Mead’s water quality must be maintained such that the salinity criterion is achieved at the Forum-designated location “Below Hoover Dam”. While the criterion applies to Lake Mead (per [NAC 445A.1239](#)), compliance is evaluated by the Forum at the “Below Hoover Dam” station, where total annual salt load and streamflow can be directly measured.

This approach is consistent with both [NAC 445A.1239](#) and the Forum’s longstanding salinity compliance methodology. Section 1 of R146-24 adopts the Forum’s 2023 Review by reference. NDEP does not intend to use complex three-dimensional lake models to calculate salinity loads or to assess compliance within Lake Mead. Compliance will continue to be determined by the Forum at the “Below Hoover Dam” station using its established monitoring and calculation methods.

Concerns Regarding Single-Point Exceedances within Lake Mead

SNWA expresses concern that isolated TDS values in Lake Mead (e.g., within Las Vegas Bay) may exceed 723 mg/L and lead to potential 303(d) impairment listings. To clarify:

- The 723 mg/L criterion is a flow-weighted annual average, not an instantaneous or spatially uniform ambient concentration requirement.
- Compliance is determined by the Forum at the “Below Hoover Dam” station, not at locations within Lake Mead.

- R146-24 does not alter Nevada’s assessment protocols or impairment methodology. As detailed in the *Methodology for the Assessment of Surface Water Quality in Nevada* associated with each Water Quality Integrated Report, all available surface water quality information for each assessment unit are compared with the associated water quality standards to evaluate whether criteria to protect those uses have been met. NDEP applies a statistically based binomial method, rather than a raw-score exceedance approach, when assessing single-value criteria and determining impairment status. This method accounts for data variability and sample size and ensures that impairment decisions are made with an appropriate level of confidence. Because Nevada’s assessment methodology requires sufficient data (generally a minimum of eight discrete samples within the assessment cycle) and evaluates exceedances using the binomial test, isolated elevated TDS measurements within Lake Mead will not result in the lake being listed as impaired. Only when the weight of evidence indicates that the applicable criterion is not being met—based on the prescribed statistical methodology—would an impairment determination be made.
- Depending on the location, the Las Vegas Bay site referenced may be within Inner Las Vegas Bay (NAC 445A.2154 - NV13-CL-04_00) which is a distinct assessment unit from Lake Mead (NAC 445A.2152 - NV13-CL-03_00). Inner Las Vegas Bay has a Single Value Total Dissolved criterion of ≤ 3000 mg/L and is not directly subject to the Forum’s salinity criteria.

Terminology Change from TDS to Salinity

SNWA raises a valid point that salinity and TDS are not strictly synonymous. However, the Forum explicitly uses the term “numeric salinity criteria”.

Given that R146-24 adopts the 2023 Review by reference, the terminology used in the NAC must reflect the terminology used by the Forum. The Forum continues to be responsible for defining salinity, conducting triennial reviews of the water quality standards for salinity in the Colorado River system, and determining whether their salinity standards are being met.

Salinity Criterion Values in NAC 445A.2146, NAC 445A.2147, and NAC 445A.2148

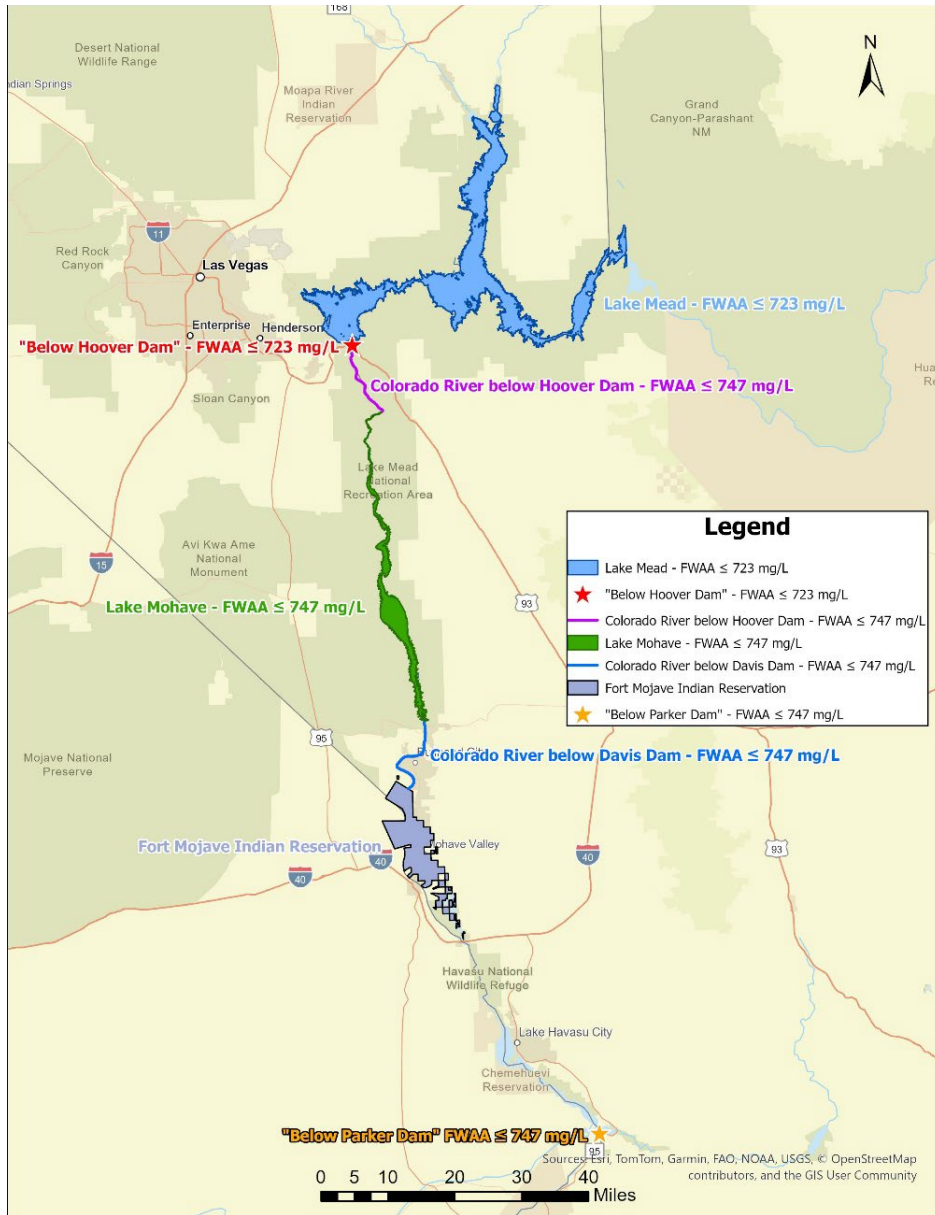
As the Forum has established, in general the salinity concentration of the water in the Colorado River increases from upstream to downstream. Therefore, it is logical that the numeric salinity criteria become progressively higher from upstream to downstream as proposed in R146-24.

[40 CFR 131.10\(b\)](#) requires that water quality be maintained upstream of each station selected by the Forum to ensure attainment of that station's criterion. The criterion must also apply to the waterbody itself, not solely at the downstream station, to support development of appropriate effluent limits for permitted discharges. Therefore:

- The Colorado River System upstream of the “Below Hoover Dam” station is assigned the 723 mg/L salinity criterion:
 - Lake Mead ([NAC 445A.2152](#))
- The Colorado River System downstream of the “Below Hoover Dam” station and upstream of the “Below Parker Dam” station are assigned the 747 mg/L salinity criterion:
 - Colorado River below Davis Dam ([NAC 445A.2146](#)) – Davis Dam to the California-Nevada state line, except for the length of the river within the exterior borders of the Fort Mojave Indian Reservation.
 - Lake Mohave ([NAC 445A.2147](#)) – Willow Beach to Davis Dam.
 - Colorado River below Hoover Dam ([NAC 445A.2148](#)) – Hoover Dam to Willow Beach.

The salinity criteria footnotes in [NAC 445A.2146](#), [NAC 445A.2147](#), and [NAC 445A.2148](#) will be amended to state:

*“As used for this parameter, flow weighted annual average concentration means the total annual salt load divided by the total annual streamflow **as measured at the Below Parker Dam station** [emphasis added].”*



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We appreciate SNWA's comprehensive technical review and your continued collaboration in maintaining robust water quality protection in the Colorado River system. Your comments will help ensure that Nevada's regulations remain scientifically sound, clearly implemented, and aligned with the Forum's salinity control program.

Please feel free to contact me if you would like to discuss the revisions further or provide additional technical input.

Sincerely,

Seth Alm

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