Summary Minutes of the
STATE ENVIRONMENTAL COMMISSION (SEC)

Meeting of December 5, 2017 9:00 AM

Nevada Legislative Building, Room 4100, 4th Floor
401 South Carson Street
Carson City, NV

Members Present:
E. Jim Gans, Chairman
Tom Porta, Vice Chairman
Mark Turner
Cary Richardson
Kathryn Landreth
Jason King
Rich Perry
Kacey KC

Members Absent:
Jim Barbee
Tony Wasley

SEC Staff Present:
Dawn Buoncristiani, SEC/DAG
Valerie King, Executive Secretary
Shanon Pascual, Recording Secretary

BEGIN SUMMARY MINUTES

1) Call to order, Roll Call, Establish Quorum: (Discussion) The meeting was called to order at 9:05 am by Chairman Jim Gans. Ms. King confirmed the hearing was properly noticed and that a quorum was present.

2) Public Comments: (Discussion) Chairman Gans called for public comment. There was none.

3) Approval of the minutes for the September 13, 2017 SEC meetings: (Action Item) Chairman Gans requested comments from the Commission regarding the September meeting minutes. Minor typos were noted.

Commissioner Landreth moved to approve the minutes with the mentioned typos corrected, and Vice Chairman Porta seconded. The minutes were unanimously approved.

Introduction of the following two regulations was provided by Mr. Paul Comba, Bureau Chief for Water Quality Planning.

4) Permanent Regulation - R102-16 Bureau of Water Quality Planning: (For Possible Action) Mr. John Heggeness, Supervisor of the Standards Monitoring Branch in the Bureau of Water Quality Planning, presented the regulatory petition to the Commission. Mr. Heggeness explained the

proposed revisions for updated recreational water quality criteria. Ambient Water Quality Criteria — defined by the presence of *Escherichia coli* (*E. coli*) for freshwater and *Enterococci* for marine and freshwater — were recommended to protect human health in waters designated for primary contact recreational use. The Clean Water Act requires Environmental Protection Agency (EPA) to periodically update ambient water quality criteria. EPA last issued ambient water quality criteria for bacteria in 1996. The Nevada Division of Environmental Protection (NDEP) is proposing to adopt the updated ambient water quality criteria for bacteria (EPA, 2012) in Regulatory Petition R102-16.

NDEP proposes to adopt the above *E. coli* criteria for protecting human health in water bodies designated for primary contact recreation use. This action aligns with the most current numeric criteria recommended and published by the EPA for *E. coli* bacteria to protect waters for primary contact recreational use. The proposed revisions include:

- Changing the existing reference period from annual geometric mean (AGM) to geometric mean (GM) for all waters that have an existing AGM to protect waters for primary contact recreational use;
- Changing the unit of measurement from most probable number (MPN) per 100 mL to colony-forming –units (CFU) per 100 mL;
- Replacing existing *E. coli* S.V. criterion with the recommended 2012 Single Value (SV) of 410 CFU/100 mL, which has been determined to be protective of all levels of contact recreation use;
- Adding a footnote that explains frequency and duration limits of the GM and SV criteria; and
- Adding a definition of CFU.

EPA's water quality standards regulations (40 CFR 131.11(a) (1)) require states to adopt protective criteria that are based on established scientific rationale. Nevada's existing *E. coli* bacteria standards for the protection of waters for primary contact recreational use are based on EPA criteria published in 1986. EPA published updated *E. coli* bacteria criteria in 2012. The 2012 criteria reflect significant research and new scientific developments since the prior criteria issued in 1986. Adoption of EPA's 2012 criteria ensures the most appropriate protection for recreational users of Nevada's surface waters. (Attachment 1)

Mr. Heggeness asked for questions from the Commission.

Chairman Gans and Commissioner Perry both asked about the difference in cost between the two programs. Commissioner Perry was particularly concerned with how permits would be impacted and the effect of substantial changes or impacts on the process. Mr. Heggeness explained that the cost of the existing method at the lab for testing is $15.00 and that the new method costs $60.00. The permits in question would be the area of primary contact recreation use. Mr. Comba explained that this change primarily impacts the Waste Water Discharge permits issued through NDEP. The number of permits would not change; what changes is the analytical method.

Chairman Gans pointed out that there is not much change in the methods. Mr. Heggeness explained that EPA accepts both methods; however, he suggested that utilizing both methods to expand the database is valuable to the programs.

Commissioner Landreth asked Mr. Heggeness his opinion regarding the advantage of CFU over MPN. Mr. Heggeness responded that the data is comparable in each test; however, Mr. Heggeness indicated that the EPA feels that CFU is more reliable than the statically method already used. The data shows that they are comparable in each test, and it is suggested that both can be used. Commissioner Landreth inquired about the difference in the frequency of testing between AGM and GM. Mr. Heggeness explained the requirements of both.

Several Commissioners expressed concerns about the variance between two different results if both tests were used. They wondered whether there was an issue with having multiple ways to determine the levels. Mr. Heggeness answered these questions, explaining that there is not much difference between the two tests. Commissioner Wasley wanted to know if there was a process or a procedure that would be put into place should there be a grey area of difference. Mr. Heggeness stated that they had not yet addressed that possibility, but would continue to work with staff to create a concrete process.

Commissioners asked for clarification on permit testing. In response, Jennifer Carr, Deputy Administrator of NEDP, explained that the compliance point for any discharger in the program or any other program is what is written in the permit. In other words, if MPN is in the permit, MPN would be the compliance point regardless of any variance in the two different methods. If they choose to do both methods where one test failed and the other passed, the driver would be the one written in the permit. She continued, describing how the permits are renewed every 5 years. If the evidence is pertinent to the change, then the renewal time would be the time to change the MPN testing protocol on the permits.

Motion: Commissioner King moved to adopt Regulatory Petition R102-16. Commissioner Perry seconded the motion. All voted in favor of adoption of the regulation.

5) Permanent Regulation – R109-16 Bureau of Water Quality Planning: (For Possible Action)
Mr. John Heggeness, the Group Supervisor for the Standards Monitoring Branch with Water Quality Planning, presented the regulatory petition to the Commission. (Attachment 2) Mr. Heggeness explained that NDEP wants to amend Nevada Administration Code (NAC) 445A.070 – 445A.2234 — Standards for Water Quality — by making changes to numeric criteria and formatting for clarity and consistency throughout the water quality standards (WQS) tables.

Several nitrogen species are currently combined into one row in some of the WQS tables. For clarification, each species (total nitrogen, nitrate, and nitrite) will be placed in a separate row. No changes to the numeric criteria are proposed at this time for any of the nitrogen species.

Water quality criteria for toxic materials applicable to all named waters are contained in NAC 445A.1236. For clarification, a footnote specifying this NAC reference is being added to the WQS table for each named water.

Other revisions to the NAC tables include the following:

1. Changing “mg/l” to “mg/L”
2. Changing “total Phosphates” to “Total Phosphorus” and “Ortho Phosphate” to “Orthophosphate”
3. Changing “Suspended Solids” to “Total Suspended Solids”
4. Updating the reference to the “Colorado River Salinity Standards” to 2014
5. Changing “Alkalinity as CO_3” to “Alkalinity as $CaCO_3$”
   Making other formatting changes for clarity and consistency of parameter names and units throughout all the WQS tables

Commissioner KC asked if it was possible to reapprove the general plan every three years instead of the current adoption plan. Mr. Heggeness suggested that wording be changed to reflect Commissioner KC’s request.

Mr. Heggeness walked through a handout (Attachment 2) with a table and the proposed changes. Additional revisions include:

1. Changing NAC 445A.1446 to read “where State Highway 789 crosses the Humboldt River.” This change is necessary because the Humboldt River at State Highway 789 extends from

the Battle Mountain Gage downstream to where State Highway 789 crosses the Humboldt River. The next segment of the Humboldt River the Humboldt River at State Highway 789**,** currently extends from the Comus Gage to Imlay. The total distance from Comus Gage downstream to where State Highway 789 crosses the Humboldt River is approximately 6 miles; therefore, the two reaches overlap by 6 miles. The proposed changes effect NAC 445A.1444 and 1446.

2. Revising language regarding the Humboldt River at State Highway 789. The limits of the table apply to the body of water known as the "Humboldt River from the Battle Mountain Gage to where State Highway 789 crosses the Humboldt River." This segment of the Humboldt River is located in Humboldt and Lander Counties.

3. Revising language concerning the Humboldt River at Imlay. The limits of this table apply to the body of water known as the "Humboldt River from the Comus Gage where State Highway 789 crosses the Humboldt *River* to Imlay." This segment of the Humboldt River is located in Humboldt and Pershing Counties.

Chairman Gans asked the Committee for comments or questions from the Las Vegas Office on either regulation. There were none. Chairman Gans then asked for questions from the Commission or public. There were none.

Motion: Commissioner Perry moved to adopt Regulatory Petition R109-16 with the NDEP-requested revisions (Attachment 3). Commissioner Turner seconded the motion. It passed unanimously.

Motion to Amend Agenda Item 4: Chairman Gans recognized a mistake on the first Regulatory Petition. It had been adopted without including the requested revisions. Chairman Gans took the meeting back to agenda item 4 to amend Regulatory Petition R102-16. Commissioner Perry made a motion to amend Regulatory Petition R102-16 to include the NDEP-proposed revisions (Attachment 4). Commissioner Turner seconded the motion. It passed unanimously.

6) Administrator's Briefing to the Commission: (Discussion) Mr. Greg Lovato, Administrator of NDEP, updated the Commission on recent management changes. Val King has been promoted to chief of the Bureau of Administrative Services. Misti Gower, who has served as an assistant to the SEC since 2012, has been promoted to a Management Analyst position in the Bureau of Air Pollution Control. Shanon Pascual and Stephanie Simpson will continue assisting Val King and the SEC.

Mr. Lovato then addressed the introduction of another recycling bill — SB 315 — in the past legislative session, which originally sought to mandate a 35% waste diversion rate. Ultimately the bill did not pass. However, Lovato noted that NDEP has seen continued interest by the legislature over the years. To address this interest, the plan is to keep the SEC updated on the recycling program activities and progress. Mr. Lovato briefly covered two areas: 1) the Nevada statewide recycling rate and 2) NDEP internal projects and projects with other state agencies.

State recycling rate calculations for 2016 increased from 21% in 2015 to 23% to 2016. This was the first year that data was received from Lyon County. NDEP is hopeful that Nevada will exceed the existing 25% recycling goal in SFY17.

Since this summer, responsibility for emptying the Bryan Building recycling bins is now part of the existing custodial contract. NDEP plans to work with other agencies to have state building custodial contracts include recycling provisions. NDEP is also working with other state agencies to enhance recycling efforts. NDEP staff met with the Department of Corrections/High Desert State Prison to start a pilot recycling program focusing on diversion of cardboard from landfilling, which could also result in substantial cost savings to the state.

Mr. Lovato went on to update the Commission on the Nevada Priorities at Nevada National Security Site (NNSS). NDEP wants enhanced management of low-level radioactive waste disposal at the Nevada National Security Site (formerly known as the Nevada Test Site) operated by the US Department of Energy (DOE). Importantly, this recommendation is completely separate from the Yucca Mountain Project, which is related to high level commercial waste and is tracked by the Agency for Nuclear Projects out of the Governor's office. The NNSS receives approximately 1 million cubic feet of low-level Department of Energy related waste per year from 26 generator sites in 14 states across the country. The waste is both legacy waste from Cold War nuclear weapons production and testing, and waste that is generated from ongoing nuclear stockpile management activities. According to the DOE, approximately 5% of the total waste generated across the DOE complex comes to the NNSS. Approximately 90% is disposed at the original generator site and 5% is disposed of at a commercial low-level radioactivity waste facilities. Although Nevada does not have legal authority to regulate disposal of DOE low-level radioactive waste, under an Agreement in Principle with DOE, NDEP provides oversight of low-level waste disposal activities at the NNSS. NDEP performs this oversight through participation on a technical Waste Acceptance Review Panel for all waste profiles; review of facility Waste Acceptance Criteria; and DOE generator site evaluations.

Mr. Lovato continued: Although all NNSS low-level waste disposal activities meet existing environmental, human exposure, and safety requirements, NDEP wants to exhaust any alternatives to disposal of low-level waste at the NNSS where possible. To that end, NDEP is engaging with stakeholders — including local governments, tribes, and the DOE — to enhance management of low-level waste in 4 key areas that will help to minimize the amount of waste coming to NV. The four different areas are as follows: increased predictability and certainty in waste forecasting, improved clarification of how low level waste is defined and classified, enhanced waste verification, and continued incident planning and information outreach related to transportation of low-level waste.

1. Because much of the low-level waste was generated during the Cold War (a period before current practices for waste management were in place) a complete inventory of the waste is not available. Generation of waste from these sites can be difficult to predict as it is driven by changing federal budget appropriations, regulatory agreements with other states and EPA, and technical complexity. Nonetheless, Nevada and local communities near the NNSS are interested in as much transparency about waste that may be coming to NV. NDEP is requesting that DOE provide more detail about the steps they go through to determine whether the waste can be disposed of on-site or at other commercial locations. NDEP is also requesting DOE to explore options for reducing ongoing generation of waste. Recently, NDEP has had good initial discussions with DOE on this matter. They are planned to continue.

2. The low-level radioactive waste managed by DOE is not defined and classified in a manner that is transparent to interested stakeholders and the public. This is a result of statutory and regulatory definitions of low-level waste. Existing statutes and regulations define low-level waste by what it is not which does not account for the broad range of characteristics and inherent hazard associated with different types of low-level waste. Low-level waste is defined as material that is *not* high-level waste or other categories of radioactive waste such as transuranic waste defined by origin, rather than level of radioactivity. At the request of Nevada, DOE sponsored a workshop conducted by the National Academy of Sciences (NAS) in October 2016 on low-level waste classification. While the NAS was not tasked with making any recommendations for low-level waste classification, much of the discussion echoed Nevada's concerns about low-level waste classification and is reflected in the proceedings from the workshop. Nevada will be requesting DOE to enlist support

from NAS or another independent and qualified 3rd party to make recommendations for improving low-level waste classification.

3. As stated before, much of low-level waste was generated in the past. Because handling of the waste can be complicated, most of what DOE knows about the waste is based on knowledge of Cold War era processes that originally generated the waste. While generator knowledge can be critical, Nevada would like to see increased use of independent, analytical testing where possible so that waste characteristics can be verified. Independent verification could also include increased use of real time radiography (or x-ray) technology at the NNSS for waste streams, and increased random monitoring of dosage rates on the outside of waste hauling trucks to ensure they are meeting Department of Transportation (DOT) and other standards. DOE hired Desert Research Institute (DRI) to conduct a study in 2003 to verify that levels outside trucks were meeting standards, and Nevada would like to see that study updated and enhanced. NDEP is requesting DOE, along with other local stakeholders, to revisit these issues.

4. At Nevada and local community request, DOE has organized several tabletop, desktop, and on-site NNSS exercises associated with transportation accidents. It has also conducted workshops on low level waste transportation. NDEP would like to see these exercises continue so that local first responder resources are informed and prepared to respond to any incidents that may occur during transportation of low-level waste.

After explaining low-level waste, Mr. Lovato discussed an update on the Anaconda Site. On July 31, 2017 NDEP formally requested that US EPA defer management of the site to pursue a state led, private funding solution for the Anaconda Copper Mine Site in Lyon County. NDEP has negotiated a set of draft agreements with Atlantic Richfield Company (ARC), a BP affiliated company. The agreements provide for an overall plan whereby ARC would take on the federal government financial responsibility for the orphan share of the site cleanup as if the Site were listed on the EPA National Priorities List of Superfund sites. That orphan share is the result of activities by the now bankrupt mining company Arimetco. Arimetco operated a copper mine at the Site in the 1990s and abandoned the site in 2000. Arimetco left behind between an estimated $30 to 40 million liability in mine closure and reclamation costs. NDEP has long believed that it can more effectively manage the cleanup than EPA because the office is located closer to the Site and has demonstrated experience in mine reclamation in Nevada. Given trends in the federal budget as a whole (the EPA Superfund budget in particular), NDEP also believes that a state lead management program provides more certainty for actual cleanup at the site. NDEP anticipates a decision to defer the site will be reached by EPA within the next month.

Finally, Mr. Lovato updated the Commission on lead testing in schools. About a year ago, Jennifer Carr (Deputy Administrator) briefed the Commission on a grant NDEP received from the US EPA to offer a voluntary testing program for the possible presence of lead in elementary school (and Pre-K) drinking water systems across the State. Although compliance with the Lead and Copper Rule (LCR) is high for Nevada's Public Water Systems, there is no specific law requiring testing of drinking water in schools. Water suppliers generally have not included schools in their sampling plans because the LCR requires sampling of single family dwellings.

The goals of the project are as follows:

1. To increase community confidence in the school environment and public water supply
2. To reduce children's potential lead exposure from ingestion of drinking water while at school
3. To raise awareness of potential water quality issues in Nevada schools with respect to lead

4. To create local partnerships between school districts and the water systems that serve them
5. To initiate corrective action if a problem is found

The NDEP funded a contract with the Nevada State Public Health Lab for analysis of two initial samples per school for approximately 408 elementary and Pre-K facilities. Samples target one representative water fountain and a primary culinary water supply location. To date, sampling is complete in Carson City and nearing completion in Washoe County. Furthermore, sampling has begun in Clark, Nye, Lyon, and Douglas counties. Coordination will begin in Churchill, Mineral, and Storey counties this month. Following initial testing, NDEP has been pleased to discover that *all* water fountains have tested below action levels. The few problems found to date involve old kitchen faucets or (in the case of Washoe County) old sinks in some nurse's offices. The grant also provides funding for the purchase of replacement faucets and fixtures should problems be found. This particular component of the grant promises to aid school districts that are more financially challenged.

Chairman Gans asked for questions or comments from the Commission. Mr. Lovato responded to questions from the Commissioners.

7) Public Comment: (Discussion) Chairman Gans asked for public comments. There were no public comments.

The council from the AG's office, Ms. Dawn Buoncristiani, then announced her retirement in the next week. She explained that she has enjoyed representing the Commission. Mr. Buoncristiani also announced that the new council from the AG's office will be Ms. Henna Rasul.

Chairman Gans asked when the next SEC meeting is scheduled. Ms. King responded that the next meeting is on February 7, 2018.

8) Adjournment: (Discussion) Meeting was adjourned at 10:46.

The audio recording of this meeting is available at
http://nvleg.granicus.com/MediaPlayer.php?publish_id=59e84084-dade-11e7-a872-00505691de41

ATTACHMENTS

ATTACHMENT 1: Presentation Handout – Revision to NV Water Quality Standards Petition R109-16

ATTACHMENT 2: Presentation Handout – Revision to NV Water Quality Standards Petition R102-16

ATTACHMENT 3: PROPOSED REVISION OF LCB FILE NO. R109-16

ATTACHMENT 4: PROPOSED REVISION OF LCB FILE NO. R102-16

ATTACHMENT 1:

Revisions to Nevada Water Quality Standards
Petition R109-16

Nevada Division of Environmental Protection

Bureau of Water Quality Planning

Revisions to Nevada Water Quality Standards

December, 2017

Paul Comba, Bureau Chief, Water Quality Planning

John Heggeness, Water Quality Standards Branch

Petition R109-16

Proposed Revisions to NAC 445A.11704 through 445A.2234 for Consistency

Public Workshops on R109-16 were held on:

- Las Vegas – September 21, 2017
- Carson City – September 25, 2017
- Elko – September 28, 2017

Summary of Proposed Changes

Changes are proposed for the following topics and terminology.

- "Natural conditions" or "no adverse effects" for alkalinity, color and turbidity. Numeric criteria based on the most recent EPA recommended criteria are proposed for alkalinity (single value (S.V.) ≥ 20 mg/L), color (S.V. ≤ 75 PCU), and turbidity (≤ 10 NTU).

- Total dissolved solids (TDS). "S.V. ≤500 mg/l or the 95th percentile (whichever is less)". References to the 95th percentile value will be removed.

- Nitrogen species. The nitrogen species are currently combined into one row in some of the water quality standards (WQS) tables. Each species (total nitrogen, nitrate, and nitrite) will be placed in separate rows.

- Toxics. Water quality criteria for toxic materials, which are applicable to all named waters, are contained in NAC 445A.1236 rather than being repeated in each WQS table. For clarification, a footnote is being added to each WQS table to specify this NAC reference.

- Most-restrictive beneficial use. The numeric criteria shown in the "Water Quality to Protect Beneficial Uses" column in the WQS tables are designed to protect the most restrictive use, which is

indicated in the “Beneficial Uses” columns by an asterisk (*). The current WQS tables indicate secondary uses with an “X.” However, the use of the “X” is confusing and inconsistent, so the “Xs” are being removed from these tables to promote greater consistency and readability.

Other minor revisions. Other revisions being made to improve clarity, correctness and consistency within the WQS tables include the following:

- Changing "mg/l" to "mg/L"
- Changing "Ortho Phosphate" to "Orthophosphate"
- Changing "Total Phosphates" to "Total Phosphorus"
- Changing "Suspended Solids" to "Total Suspended Solids"
- Updating the date of the "Colorado River Salinity Standards" to 2014
- Changing "Alkalinity (as CO_3)" to "Alkalinity (as $CaCO_3$)"
- Making other minor formatting changes to parameter names and units throughout all the WQS tables in NAC 445A

Specific Changes to NAC 445A.11704 to 2214

The proposed updates to the NAC are shown below with ~~deletions in red and strikeout~~ and ***additions in blue***. For a complete citation of the changes, see LCB File No. R109-16

- Definitions

  Updates are being made to the definitions section, starting at NAC 445A.070. These definitions will add to the terminology used in the water quality sections of the NAC (445A.070 through 2234).

  The definitions to be added are shown below.

  NAC 445A.????? "BOD" defined. (NRS 445A.425, 445A.520) "BOD" means biochemical oxygen demand. It is a measure of the amount of oxygen that bacteria will consume while decomposing organic matter under aerobic conditions.

  NAC445A.????? "Log mean" defined. (NRS 445A.425,

445A.520) A logarithmic or "log mean" is calculated by converting each data point into its log, then calculating the mean of these values, then taking the anti-log of this log transformed mean.

NAC445A.????? Mean defined. (NRS 445A.425, 445A.520) The average of a group of numbers or data points.

NAC445A.????? Median defined. (NRS 445A.425, 445A.520) **The median is the 50th percentile (50%) of a set of numbers.**

NAC445A.11741 "MF" defined. (NRS 445A.425, 445A.520) "MF" means membrane filter, a measure for bacteria.

~~***NAC 445A.????? "MPN" defined. (NRS 445A.425, 445A.520) "MPN" means most probable number and is a statistical testing method used to estimate the number of colony forming units (of bacteria) in a sample of water.***~~

NAC445A.????? "MPN" defined. "MPN/100 mL" means the most probable number determined using a statistical testing method to estimate the number of bacteria or other organisms present in 100 milliliters of water.

NAC 445A.????? "µg/L" defined. (NRS 445A.425, 445A.520) "µg/L" is a unit of concentration describing the mass of a substance, in micrograms, present in one liter of the water.

NAC 445A.11744 "~~No./100ml~~ *No./100mL*" defined. (NRS 445A.425, 445A.520) "~~No./100ml~~ *No./100mL*" means the number of organisms present in 100 milliliters of the water.

(Added to NAC by Environmental Comm'n, eff. 6-29-84)—(Substituted in revision for NAC 445A.135)

NAC 445A.????? ">" defined. (NRS 445A.425, 445A.520) ">" means greater than.

NAC 445A.????? "<" defined. (NRS 445A.425, 445A.520) "<" means less than.

Update Reference to Colorado River Salinity Standards

NDEP is updating the reference to the Colorado River Salinity Standards in NAC 445A.1233 from the "2011 Review" to the "2017 Review - Water Quality Standards for Salinity, Colorado River System."

445A.1233 Cooperation regarding Colorado River; salinity standards (NRS 445A.425, 445A.520)

1. The State of Nevada will cooperate with the other Colorado River Basin states and the Federal Government to support and carry out the conclusions and recommendations adopted April 27, 1972, by the Reconvened 7th Session of the Conference in the Matter of Pollution of the Interstate Waters of the Colorado River and its Tributaries.

2. Pursuant to the **[**"2011**]** ***"2017*** Review - Water Quality Standards for Salinity, Colorado River System," **[**as**]** ~~***and any subsequent version***~~ adopted by the Colorado River Basin Salinity Control Forum, the flow weighted annual average concentrations for the calendar year for total dissolved solids in mg/l at the three lower main stem stations of the Colorado River are as follows:

Station	Salinity in mg/l
Below Hoover Dam	723
Below Parker Dam	747
At Imperial Dam	879

~~***3. Each new version of the water quality standards for salinity adopted by the Colorado River Basin Salinity Control Forum shall be deemed approved by the Commission for the purposes of this section unless the Commission disapproves the revision within 60 days after the date of publication.***~~

1. The State of Nevada will cooperate with the other Colorado River Basin states and the Federal Government to support and carry out the conclusions and recommendations adopted April 27, 1972, by the Reconvened 7th Session of the Conference in the Matter of Pollution of the Interstate Waters of the Colorado River and its Tributaries.

2. Pursuant to the ~~[“2011] “2014~~ ***2017*** Review - Water Quality Standards for Salinity, Colorado River System,” ~~[as] and any subsequent version~~ ***as*** adopted by the Colorado River Basin Salinity Control Forum, the flow-weighted annual average concentrations for the calendar year for total dissolved solids in mg/L at the three lower main-stem stations of the Colorado River are as follows:

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~~3. Each new version of the water quality standards for salinity adopted by the Colorado River Basin Salinity Control Forum shall be deemed approved by the Commission for the purposes of this section unless the Commission disapproves the revision within 60 days after the date of publication.~~

Changes to Beneficial Use Tables.

Below are examples showing the changes proposed for NAC 445A tables 1252 through 2214:

NAC 445A Table 1886 shows the following changes:

- WATER QUALITY ~~**STANDARDS FOR**~~ ***CRITERIA TO PROTECT*** BENEFICIAL USES
- ~~**mg/l**~~ to be italicized, and written with a capital "L" (***mg/L***)
- **Total** ~~**Phosphates**~~ changed to "***Total Phosphorus***"
- Nitrogen species separated into individual rows
- "Suspended Solids" changed to "***Total*** Suspended Solids"
- For Turbidity, delete footnote referencing "natural conditions" and replace with ***S.V. ≤ 10*** (NTU) for cold water fisheries and ***≤ 50*** (NTU) for warm water fisheries
- The Beneficial Use Matrix revised to show only the primary or most-restrictive use. (Remove "Xs" from the table; show only * indicating the most-restrictive beneficial use).

NAC 445A.1886 Walker Region: Walker River, West Fork at the state line. (NRS 445A.425, 445A.520) The limits of this table apply to the body of water known as the West Fork of the Walker River at the California-Nevada state line. This segment of the West Fork of the Walker River is located in Douglas County.

STANDARDS OF WATER QUALITY
Walker River, West Fork at the state line

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY ~~STANDARDS FOR~~ *CRITERIA TO PROTECT* BENEFICIAL USES	Beneficial Use*s*[a]										
			Livestock	Irrigation	Aquatic	Contact	Nonconta	Municipal	Industrial	Wildlife	Aesthetic	Enhance	Marsh
Beneficial Uses			X	X	X	X	X	X	X	X			
Aquatic Life Species of Concern			Mountain whitefish, rainbow trout and brown trout.										
Temperature - °C ΔT^b - °C	S.V. Jul-Oct ≤ 22 ΔT = 0	S.V. Nov-Apr ≤ 13 S.V. May-Jun ≤ 17 S.V. Jul-Oct ≤ 23 ΔT ≤ 2			*	~~X~~							
pH - SU		S.V. 6.5 - 9.0 ΔpH ± 0.5	~~X~~	~~X~~	*	~~*~~		~~X~~	~~X~~	~~X~~			
Dissolved Oxygen - ~~mg/l~~ *mg/L*		S.V. Nov-May ≥ 6.0 S.V. Jun-Oct ≥ 5.0	~~X~~		*	~~X~~	~~X~~	~~X~~		~~X~~			
Total *Phosphorus* ~~Phosphates~~ (as P) - ~~mg/l~~ *mg/L*		A-Avg. ≤ 0.1			*	*	~~X~~	~~X~~					
~~Nitrogen Species (as N) - mg/l~~	~~Total Nitrogen A-Avg. ≤ 0.6 S.V. ≤ 0.9~~	~~Nitrate S.V. ≤ 10 Nitrite ≤ 0.06 S.V.~~	~~X~~		~~*~~	~~X~~	~~X~~	~~*~~		~~X~~			
Total Nitrogen (as N) - mg/L	*A-Avg. ≤ 0.6 S.V. ≤ 0.9*				*	*							

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY ~~STANDARDS FOR~~ *CRITERIA TO PROTECT* BENEFICIAL USES	Beneficial Use*s*[a]										
			Livestock	Irrigation	Aquatic	Contact	Nonconta	Municipal	Industrial	Wildlife	Aesthetic	Enhance	Marsh
Nitrate (as N) - mg/L		***S.V. ≤ 10***						*					
Nitrite (as N) - mg/L		***S.V. ≤ 0.06***			*								
Total Ammonia (as N) - ~~mg/l~~ ***mg/L***		[c]			*								
Total Suspended Solids - ~~mg/l~~ ***mg/L***	A-Avg. ≤ 60	S.V. ≤ 80			*								
Turbidity - NTU		~~d~~ ***S.V. ≤ 10***			*			~~X~~					
Color - PCU	S.V. ≤ 26	S.V. ≤ 75			~~X~~			*					
Total Dissolved Solids - ~~mg/l~~ ***mg/L***	A-Avg. ≤ 165 S.V. ≤ 220	A-Avg. ≤ 500	~~X~~	~~X~~				*					
Chloride - ~~mg/l~~ ***mg/L***	A-Avg. ≤ 15 S.V. ≤ 20	S.V. ≤ 250	~~X~~	~~X~~				*		~~X~~			
Sulfate - ~~mg/l~~ ***mg/L***	S.V. ≤ 25	S.V. ≤ 250						*					
Sodium - SAR		A-Avg. ≤ 8		*				~~X~~					
Alkalinity (as $CaCO_3$) - ~~mg/l~~ ***mg/L***		~~< 25% change from natural conditions~~ ***S.V. ≥ 20***			*					~~X~~			
E. Coli - No./100 ~~ml~~ ***mL***		A.G.M. ≤ 126 S.V. ≤ 410				*	~~X~~						
Toxic Materials		***[d]***											

* = The most restrictive beneficial use.

X = Beneficial use.

[a] Refer to NAC 445A.122 and 445A.1882 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ~~ambient~~ water quality criteria for ammonia are specified in NAC 445A.118

~~[d] Increase in turbidity must not be more than 10 NTU above natural conditions.~~

[d] The water quality criteria for Toxic Materials are specified in NAC 445A.1236.

NAC 445A Table 1956 shows the following changes:

- Color – delete footnote referencing natural conditions and replace with ***SV ≤ 75*** (PCU) for the protection of Aquatic Life.
- Toxic Materials – Add Footnote d, as follows:

  [d] **The water quality criteria for Toxic Materials are specified in NAC 445A.1236.**
- Alkalinity change from ~~**"< 25% change from natural conditions"**~~ to ***S.V. ≥ 20*** (mg/L)

NAC 445A.1956 Central Region: Chiatovich Creek. (NRS 445A.425, 445A.520) The limits of this table apply to the body of water known as Chiatovich Creek above the highway maintenance station. Chiatovich Creek is located in Esmeralda County.

STANDARDS OF WATER QUALITY
Chiatovich Creek

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY ~~STANDARDS FOR~~ ***CRITERIA TO PROTECT*** BENEFICIAL USES	Beneficial Use***s***[a]									
			Livestock	Irrigation	Aquatic	Contact	Noncont	Municipa	Industria	Wildlife	Aesthetic	Enhance	Marsh
Beneficial Uses			X	X	X	X	X	X	X	X			
Aquatic Life Species of Concern													
Temperature - °C ΔT[b] - °C	ΔT = 0	S.V. Nov-Apr ≤ 13 S.V. May-Jun ≤ 17 S.V. Jul-Oct ≤ 2 ΔT			*	~~X~~							
pH - SU		S.V. 6.5 - 9.0 ΔpH ± 0.5	~~X~~	~~X~~	~~X~~*	*		~~X~~	~~X~~	*			
Dissolved Oxygen - ~~mg/l~~ ***mg/L***		S.V. Nov-May ≥ 6.0 S.V. Jun-Oct ≥ 5.0	~~X~~		*	~~X~~	~~X~~	~~X~~		~~X~~			

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY ~~STANDARDS FOR~~ *CRITERIA TO PROTECT* BENEFICIAL USES	Beneficial Use*s*[a]										
			Livestock	Irrigation	Aquatic	Contact	Noncont	Municipa	Industria	Wildlife	Aesthetic	Enhance	Marsh
Total *Phosphorus* ~~Phosphates~~ (as P) - ~~mg/l~~ *mg/L*	A-Avg. ≤ 0.04 S.V. ≤ 0.06	A-Avg. ≤ 0.1			*	*	~~X~~	~~X~~					
~~Nitrogen Species (as N) - mg/l~~	~~Total Nitrogen A-Avg. ≤ 0.6 S.V. ≤ 0.8~~	~~Nitrate S.V. ≤ 10 Nitrite S.V. ≤ 0.06~~	~~X~~		~~*~~	~~X~~	~~X~~	~~*~~		~~X~~			
Total Nitrogen (as N) - mg/L	***A-Avg. ≤ 0.6 S.V. ≤ 0.8***				*****	*****							
Nitrate (as N) - mg/L		***S.V. ≤ 10***						*****					
Nitrite (as N) - mg/L		***S.V. ≤ 0.06***			*****								
Total Ammonia (as N) - ~~mg/l~~ *mg/L*		[c]			*								
Total Suspended Solids - ~~mg/l~~ *mg/L*		S.V. ≤ 25			*								
Turbidity - NTU		S.V. ≤ 10			*			~~X~~					
Color - PCU		~~[d]~~ ***S.V. ≤ 75***			~~*~~			~~X~~*					
Total Dissolved Solids - ~~mg/l~~ *mg/L*	A-Avg. ≤ 50 S.V. ≤ 60	A-Avg. ≤ 500	~~X~~	~~X~~				*					
Chloride - ~~mg/l~~ *mg/L*	A-Avg. ≤ 2 S.V. ≤ 3	S.V. ≤ 250	~~X~~	~~X~~				*		~~X~~			
Sulfate - ~~mg/l~~ *mg/L*	A-Avg. ≤ 4 S.V. ≤ 5	S.V. ≤ 250						*					
Sodium - SAR	A-Avg. ≤ 1	A-Avg. ≤ 8		*				~~X~~					
Alkalinity (as $CaCO_3$) - ~~mg/l~~ *mg/L*		~~< 25% change from natural conditions~~ ***S.V. ≥ 20***			*					~~X~~			
E. Coli - No./100 ~~ml~~ *mL*		A.G.M. ≤ 126 S.V. ≤ 410				*	~~X~~						
Fecal Coliform - No./100 ~~ml~~ *mL*	A.G.M. ≤ 100 S.V. ≤ 200	S.V. ≤ 1,000	~~X~~	*			~~X~~	~~X~~		~~X~~			
Toxic Materials		~~[d]~~											

* = The most restrictive beneficial use.

X = Beneficial use.

[a] Refer to NAC 445A.122 and 445A.1952 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ~~ambient~~ water quality criteria for ammonia are specified in ~~NAC 445A.118~~ ***NAC 445A.1234***.

~~[d] Increase in color must not be more than 10 PCU above natural conditions.~~

[d] The water quality criteria for Toxic Materials are specified in NAC 445A.1236.

NAC 445A Table 1398 shows the following changes:

- The WQS for TDS reads "≤ 500 or the 95th percentile (whichever is less)." NDEP is proposing to remove ~~or the 95th percentile (whichever is less)~~ so the TDS Standard will read ≤ 500.

NAC 445A.1398 Snake Region: Wild Horse Reservoir. (NRS 445A.425, 445A.520) The limits of this table apply to the entire body of water known as Wild Horse Reservoir. Wild Horse Reservoir is located in Elko County.

STANDARDS OF WATER QUALITY
Wild Horse Reservoir

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY ~~STANDARDS FOR~~ *CRITERIA TO PROTECT* BENEFICIAL USES	Beneficial Use*s*[a]									
			Livestock	Irrigation	Aquatic	Contact	Noncont	Municipa	Industria	Wildlife	Aesthetic	Enhance	Marsh
Beneficial Uses			X	X	X	X	X	X	X	X			
Aquatic Life Species of Concern			Trout.										
Temperature - °C ΔT[b] - °C		S.V. ≤ 20 ΔT = 0			*	~~X~~							
pH - SU		S.V. 6.5 - 9.0	~~X~~	~~X~~	*	~~*~~		~~X~~	~~X~~	~~*~~			
Dissolved Oxygen - ~~mg/l~~ *mg/L*		S.V. ≥ 6.0	~~X~~		*	~~X~~	~~X~~	~~X~~		~~X~~			
Total Phosphorus (as P) - ~~mg/l~~ *mg/L*		S.V. ≤ 0.10			*	*	~~X~~	~~X~~					
Total Ammonia (as N) - ~~mg/l~~ *mg/L*		[c]			*			~~X~~					
Total Dissolved Solids - ~~mg/l~~ *mg/L*		S.V. ≤ 500 ~~or the 95th percentile (whichever is less).~~	~~X~~	~~X~~				*					
E. Coli - No./100 ~~ml~~ *mL*		A.G.M. ≤ 126 S.V. ≤ 410				*	~~X~~						

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY ~~STANDARDS FOR~~ *CRITERIA TO PROTECT* BENEFICIAL USES	Beneficial Use*s*[a]									
			Livestock	Irrigation	Aquatic	Contact	Noncont	Municipa	Industria	Wildlife	Aesthetic	Enhance	Marsh
Fecal Coliform -No./100 ~~ml~~ *mL*		S.V. ≤ 1,000	~~X~~	*			~~X~~	~~X~~		~~X~~			
Toxic Materials		*[d]*											

* = The most restrictive beneficial use.

X = Beneficial use.

[a] Refer to NAC 445A.122 and 445A.1332 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

[c] The ~~ambient~~ water quality criteria for ammonia are specified in ~~NAC 445A.118~~ *NAC 445A.1234*.

[d] The water quality criteria for Toxic Materials are specified in NAC 445A.1236.

(Added to NAC by Environmental Comm'n by R160-06, eff. 8-26-2008; A by R131-12, 12-20-2012)

Additional Revisions

Currently, two reaches on the Humboldt River overlap.

- NAC 445A.1444 "**Humboldt River at State Highway 789"** extends from the Battle Mountain Gage downstream to where State Highway 789 crosses the Humboldt River.
- The next segment of the Humboldt River (NAC 445A.1446), "**Humboldt River at State Highway 789,"** currently extends from the Comus Gage to Imlay. From the Comus Gage downstream to where State Highway 789 crosses the Humboldt River is approximately 6 miles, therefore the two reaches overlap by 6 miles. NDEP is proposing to change the reach for NAC 445A1446 to read "where State Highway 789 crosses the Humboldt River." The proposed changes to NAC 445A.1444 and 1446 are shown below.

NAC 445A.1444 Humboldt Region: Humboldt River at State Highway 789. (NRS 445A.425, 445A.520) The limits of this table apply to the body of water known as the "Humboldt River from the Battle Mountain Gage to where State Highway 789 crosses the Humboldt River. This segment of the Humboldt River is located in Humboldt and Lander Counties.

NAC 445A.1446 Humboldt Region: Humboldt River at Imlay. (NRS 445A.425, 445A.520) The limits of this table apply to the body of water known as the Humboldt River from ~~**the Comus Gage**~~ ***where State Highway 789 crosses the Humboldt River*** to Imlay. This segment of the Humboldt River is located in Humboldt and Pershing Counties.

Humboldt River TDS for Rogers Dam

The Total Dissolved Solids (TDS) criterion for the Humboldt River from its origin to Imlay is an annual average (A-Avg) of 500 mg/L to protect for the use Municipal and Domestic Supply. The next reach downstream is the Humboldt River at Woolsey, where the TDS criterion is increased to 1000 mg/L. The next reach downstream is the Humboldt River at Rogers Dam where the criterion is ≤ 500 mg/L or the 95th percentile (whichever is less). The next two downstream reaches do not have the use Municipal and Domestic Supply; therefore, there is no TDS criterion for those reaches.

NDEP is proposing to increase the TDS criterion at the Rogers Dam reach to 1000 mg/L to be consistent with the upstream reach. See the table below.

HUMBOLDT RIVER - ROGERS DAM TDS

NAC 445A.1436	Humboldt River at Osino	A-Avg. 500 mg/L
NAC 445A.1438	Humboldt River at Palisade	A-Avg. 500 mg/L
NAC 445A.1442	Humboldt River at B.M.	A-Avg. 500 mg/L
NAC 445A.1444	Humboldt River at Comus	A-Avg. 500 mg/L
NAC 445A.1446	Humboldt River at Imlay	A-Avg. 500 mg/L
NAC 445A.1448	Humboldt River at Woolsey	A-Avg. 1000 mg/L
NAC 445A.1452	Humboldt River at Rogers Dam (Was a Class C Water)	~~S.V. 500 or 95th – Percentile~~ **A-Avg. 1000 mg/L**
NAC 445A.1454	Humboldt River at River at Humboldt Sink	No TDS Standard - does not have M&D
NAC 445A.1454	Humboldt Sink	No TDS Standard - does not have M&D

Other revisions include the following:

In the Toxics Table (NAC 445A.1236), **footnote (2)** delete ~~**Aquatic life standards apply to surface waters only;** h~~ so the footnote reads "Hardness is expressed as mg/L $CaCO_3$; and "e" refers to the base of the natural logarithm, whose value is 2.718."

On the Owyhee River, below Mill Creek, NAC 445A.1356, add exterior to the reach description to read "From its confluence with Mill Creek to the ***exterior*** border of the Duck Valley Indian Reservation."

Change Color in WQS table from No Adverse Effects to ***S.V. ≤ 75*** for NAC 445A.1436 – 1448**.** Also add ***S.V. ≤ 75*** to the WQS table and remove Footnote *"Increase in color must not be more than 10 PCU above natural conditions"* and to NAC 445A.1956 – 1962, 445A.2096, 445A.2146, 445A.2148, 445A.2162 and 445A.2178.

On WQS Table NAC 445A.1527, North Antelope Creek. Under the table heading, delete ~~**This Segment of**~~ to change the reach description to "The limits of this table apply to the body of water known as North Antelope Creek from its origin to its confluence with Antelope Creek. North Antelope Creek is located in Elko County."

In the Index table for the Central Region NAC 445A.1952. For Cave Creek (NAC 445A.2056), the reach description should read **[~~Its~~]** ***The*** entire length.

Topaz Lake - NAC 445A.1888. Revision to footnote [c] clarifies that the dissolved oxygen criterion applies only to the epilimnion when the lake is stratified.

STANDARDS OF WATER QUALITY

Topaz Lake

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY ~~STANDARDS FOR~~ ***CRITERIA TO PROTECT*** BENEFICIAL USES	Beneficial Uses[a]										
			Livestock	Irrigation	Aquatic	Contact	Nonconta	Municipal	Industrial	Wildlife	Aesthetic	Enhance	Marsh
Beneficial Uses			X	X	X	X	X	X	X	X			
Aquatic Life Species of Concern			Rainbow trout, cutthroat trout, brown trout, kokanee salmon and silver salmon.										
Temperature - °C ΔT^b - °C	$\Delta T = 0$	S.V. Nov-Apr ≤ 13 S.V. May-Jun ≤ 17 S.V. Jul-Oct ≤ 23 ΔT ≤ 2			*	~~X~~							
pH - SU		S.V. 6.5 - 9.0 $\Delta pH \pm 0.5$	~~X~~	~~X~~	*	~~*~~		~~X~~	~~X~~	~~X~~			
Dissolved Oxygen - ~~mg/l~~ ***mg/L***		S.V. Nov-May ≥ 6.0 S.V. Jun-Oct[~~d~~ c] ≥ 5.0	~~X~~		*	~~X~~	~~X~~	~~X~~		~~X~~			
Total ***Phosphorus*** ~~Phosphates~~ (as P) - ~~mg/l~~ ***mg/L***		A-Avg. ≤ 0.05 S.V. ≤ 0.10			*	*	~~X~~	~~X~~					
~~Nitrogen Species (as N) - mg/l~~	~~Total Nitrogen A-Avg. ≤ 0.6 S.V. ≤ 1.0~~	~~Nitrate S.V. ≤ 10 Nitrite ≤ 0.06 S.V.~~	~~X~~		~~*~~	~~X~~	~~X~~	~~*~~		~~X~~			
Total Nitrogen (as N) - mg/L	***A-Avg. ≤ 0.6 S.V. ≤ 1.0***				*****	*****							
Nitrate (as N) - mg/L		***S.V. ≤ 10***						*****					
Nitrite (as N) - mg/L		***S.V. ≤ 0.06***			*****								
Total Ammonia (as N) - ~~mg/l~~ ***mg/L***		~~c~~ ***d***			*								

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY ~~STANDARDS FOR~~ *CRITERIA TO PROTECT* BENEFICIAL USES	Beneficial Use*s*[a]										
			Livestock	Irrigation	Aquatic	Contact	Nonconta	Municipal	Industrial	Wildlife	Aesthetic	Enhance	Marsh
Total Suspended Solids - ~~mg/l~~ ***mg/L***	A-Avg. ≤ 6.0 S.V. ≤ 9.0	S.V. ≤ 25			*								
Turbidity - NTU	A-Avg. ≤ 3.0 S.V. ≤ 5.0	[e] ***S.V. ≤ 10***			*			~~X~~					
Color - PCU	S.V. ≤ 21	S.V. ≤ 75			~~X~~			*					
Total Dissolved Solids - ~~mg/l~~ ***mg/L***	A-Avg. ≤ 105 S.V. ≤ 120	A-Avg. ≤ 500	~~X~~	~~X~~				*					
Chloride - ~~mg/l~~ ***mg/L***	A-Avg. ≤ 7 S.V. ≤ 10	S.V. ≤ 250	~~X~~	~~X~~				*		~~X~~			
Sulfate - ~~mg/l~~ ***mg/L***	S.V. ≤ 25	S.V. ≤ 250						*					
Sodium - SAR		A-Avg. ≤ 8		*				~~X~~					
Alkalinity (as $CaCO_3$) - ~~mg/l~~ ***mg/L***		~~< 25% change from natural conditions~~ ***S.V. ≥ 20***			*					~~X~~			
E. Coli - No./100 ~~ml~~ ***mL*** ***Toxic Materials***		A.G.M. ≤ 126 S.V. ≤ 235 [e]				*	~~X~~						

X = Beneficial use.

[a] Refer to NAC 445A.122 and 445A.1882 for beneficial use terminology.

[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.

~~[d]~~ [c] ~~The dissolved oxygen standard from June to October applies only to the epilimnion~~. ***When lake is stratified, the dissolved oxygen criterion applies only to the epilimnion.***

~~[c]~~ [d] The ~~ambient~~ water quality criteria for ammonia are specified in ~~NAC 445A.118~~ ***NAC 445A.1234***.

~~[e] Increase in turbidity must not be more than 10 NTU above natural conditions.~~

[e] The water quality criteria for Toxic Materials are specified in NAC 445A.1236.

PROPOSED REVISION OF LCB FILE NO. R109-16

Revise section 7 of the regulation to read as follows:

Sec. 7. "MPN/100 mL" means the most probable number determined using a statistical testing method to estimate the number of bacteria or other organisms present in 100 milliliters of water.

Revise section 12 of the regulation as follows:

Sec. 12. NAC 445A.1233 is hereby amended to read as follows:

1. The State of Nevada will cooperate with the other Colorado River Basin states and the Federal Government to support and carry out the conclusions and recommendations adopted April 27, 1972, by the Reconvened 7th Session of the Conference in the Matter of Pollution of the Interstate Waters of the Colorado River and its Tributaries.

2. Pursuant to the ~~[~~"~~2011]~~ ~~"2014~~ ***2017*** Review - Water Quality Standards for Salinity, Colorado River System," ~~[as]~~ ~~*and any subsequent version*~~ ***as*** adopted by the Colorado River Basin Salinity Control Forum, the flow-weighted annual average concentrations for the calendar year for total dissolved solids in mg/l at the three lower main-stem stations of the Colorado River are as follows:

Station	Salinity in mg/l
Below Hoover Dam	723
Below Parker Dam	747
At Imperial Dam	879

~~3. Each new version of the water quality standards for salinity adopted by the *Colorado River Basin Salinity Control Forum shall be deemed approved by the Commission for the purposes of this section unless the Commission disapproves the revision within 60 days after the date of publication.*~~

Summary of Changes and NAC Sections Affected by these Changes

Below is a list of the changes that this petition makes to the Nevada Administrative Code (NAC). The notations in **green** are the NAC sections affected, the comments in ~~**red strike out**~~ are deletions, and the comments in ***blue*** are additions.

- Definitions - **NAC 445A.11704**
  - **BOD -** ***"BOD" or "biochemical oxygen demand" means a measure of the amount of oxygen that bacteria will consume while decomposing organic matter under aerobic conditions.***
  - **Log Mean –** "***Logarithmic mean" or "log mean" means a value calculated by:***
    1. Converting each data point into its logarithm;
    2. Calculating the mean of the values determined pursuant to subsection 1; and
    3. Using the antilog of the log-transformed mean calculated pursuant to subsection 2.
  - **Mean -** ***means the average of a group of numbers or data points.***
  - **Median -** ***The median is the 50th percentile (50%) of a set of numbers.***
  - **MF -** ***means the membrane filter used to measure bacteria.***
  - ~~**MPN –** ***means the most probable number determined using a statistical testing method to estimate the number of bacteria colony forming units in a sample of water.***~~
  - **µg/l -** ***unit of concentration describing the mass of a substance, in micrograms, present in one liter of the water.***

- Changes to Colorado Salinity - **NAC 1233**

  Update the Colorado Salinity Standards to the 2017 version.

- Toxics Table Reference to Hardness – **NAC 1236**

  Update Hardness footnotes in Table NAC 445A.1236

- In WQS Tables, revise terms, "Standard" to "Criteria" **– NAC 1256 – 2214**

Change the header in WQS tables as follows: Water Quality ~~**Standards for**~~ **Criteria to Protect** Beneficial Uses.

- Change ~~**mg/l**~~ to ***mg/L,*** ~~**ml**~~ ***to mL and*** ~~**µg/l**~~ to ***µg/L*** in tables **NAC 1256 – 2214**

- Add Toxics Reference as a footnote to all WQS tables referring to the Toxic Standards Table in NAC 445A.1236. This change affects the following tables: **NAC 1256 - 2214**

- Change tables to highlight only the primary or most-restrictive use. Remove secondary uses ("X") marked within the tables. This change affects the following tables: **NAC 1256 - 2214**

- TDS. Change "S.V. ≤ 500 **[**~~**or the 95th percentile (whichever is less)".]**~~ in the following tables: **1256 – 1268, 1288 – 1316, 1364 – 1418, 1452, 1456 – 1526, 1528 – 1578, 1704 – 1724, 1728 – 1758, 1764, 1826 – 1862, 1918 – 1934, 1964 – 2028, 2036 – 2068, 2098 – 2112, 2182 – 2202, 2206 – 2214.**

- Show nitrogen species separately. Instead of having all nitrogen species in one row, show each nitrogen species in a separate row. This change affects the following tables: – **1286, 1336 – 1362, 1414 – 1422, 1436 – 1448, 1527, 1626 – 1702, 1796 – 1824, 1886 – 1916, 1956 – 1962, 2096, 2146 – 2178.**

- Owyhee River, below Mill Creek - **NAC 445A.1356** – Restate as "From its confluence with Mill Creek to the ***exterior*** border of the Duck Valley Indian Reservation."

- Change "Suspended Solids" to "**Total** Suspended Solids." This change affects the following tables: NAC 445A.**1336 – 1362, 1414 – 1422, 1436 – 1448, 1527, 1682 – 1694, 1796 – 1824, 1886 – 1916, 1956 – 1962, 2096, 2146 – 2158, 2178.**

- Change "Alkalinity (as CO_3)" to "Alkalinity (as $CaCO_3$)," change alkalinity standard to "S.V. ≥ 20 mg/L" and remove reference to "< 25% change from natural conditions." This change affects the following tables: **1336 – 1362, 1682 – 1694, 1796 – 1822, 1886 – 1908, 1916, 1956 – 1962, 2096, 2146 – 2148, 2162 - 2178**

- Humboldt River at Imlay. Adjust reach description in **NAC 1446 -** -- ~~**the Comus Gage**~~**]** to ***where State Highway 789 crosses the Humboldt River***

- Color – Change from "No Adverse Effects" to "***S.V. ≤ 75.***" This change affects the following tables: **1436 – 1448, 1956 – 1962, 2096, 2146, 2148, and 2178**

- North Antelope Creek **NAC 1527** – Change as follows: ~~**This Segment of**~~ North Antelope Creek is located in Elko Count

- Change "Total Phosphates" to "Total Phosphorus" This change affects the following tables: **1628 – 1694, 1796 - 1818**

- Change "Ortho Phosphate" to "Orthophosphate (as P)" This change affects the following tables: **1682 – 1686**

- Diagonal Drain - **NAC 1792** - **[**~~**Its**~~**]** ***The*** entire length.

- Turbidity - Revise as follows to eliminate phrase on "natural conditions." ***S.V. ≤ 10***[~~d~~] [d]~~**[Increase in turbidity must not be more han 10 NTU above natural conditions.]**~~ This change affects the following tables: ***1886 – 1904, 1916.*** A change to ***≤ 50*** will be added to the following tables: ***1906 – 1908, 2162 - 2176***

- Topaz Lake -– **NAC 1888 -** footnote [c] ***When the lake is stratified,*** the dissolved oxygen criterion applies only to the epilimnion ~~**The dissolved oxygen standard from June to October applies only to the epilimnion.**~~

- Cave Creek -– **NAC 1952** [~~Its~~] ***The*** entire length. **NAC 1952**

Color – footnote [e] deleted for the protection of Aquatic Life. The most-restrictive use would be protection of M & D, but M& D is not a designated use. This change affects the following tables: NAC 2162 – 2176

ATTACHMENT 2:

Revisions to Nevada Water Quality Standards
Petition R102-16

Nevada Division of Environmental Protection
Bureau of Water Quality Planning

Revisions to
Nevada Water Quality Standards

December, 2017

Paul Comba, Bureau Chief Water Quality Planning
John Heggeness, Water Quality Standards Branch

Petition R102-16

Proposed Revisions to Ambient Water Quality Criteria for Bacteria

Purpose

"Water quality criteria for bacteria are levels of indicator organisms not to be exceeded in order to protect human health from pathogen-caused illness as a result of contact recreation"

Clean Water Act

- The Clean Water Act requires EPA to periodically update all ambient water quality criteria
- EPA last updated the criteria for bacteria in 1986, to protect human health during water-contact recreation (e.g., swimming)
- Nevada's current criteria for water-contact recreation are based on EPA's 1986 criteria for E. coli

E. Coli Background

- In 2012, EPA released updated numbers for **recreational water quality criteria** (RWQC) for bacteria
- The updated RWQC are intended to protect human health in waters designated for contact recreation use
- NDEP is proposing to adopt EPA's updated criteria for bacteria, as presented in Regulatory Petition R102-16

Water Quality Standards

Standards consist of three components:

1. Criteria to protect beneficial use
    a. Generally use EPA recommendations
    b. Can develop regional or site-specific
2. Designated beneficial uses for each waterbody
3. Antidegradation provision, **Requirement to Maintain Higher Quality** (RMHQ), is *not* proposed in R102-16

Beneficial Uses - NAC 445A.122

a) Watering of livestock

b) Irrigation

c) Aquatic life (propagation of cold-water and warm-water fish and other aquatic life)

d) Recreation involving **primary contact** with the water (e.g., swimming)

e) Recreation with incidental (i.e., **secondary contact**) with the water (e.g., boating)

f) Municipal or Domestic supply

g) Industrial Supply

h) Propagation of wildlife

i) Waters of extraordinary ecological or aesthetic value (e.g., Lake Tahoe)

j) Enhancement of water quality

Primary Contact Recreation

"*Primary-contact recreation typically includes activities where immersion and ingestion are likely and there is a high degree of bodily contact with the water*."

Proposed Revisions to Bacteria Criteria

- EPA uses E. coli as the bacterial indicator of fecal contamination in freshwater
- NDEP proposes to update the numeric criteria for bacteria, from EPA 1986 to EPA 2012
- These criteria apply to all surface waters in Nevada that have **contact recreation** as a beneficial use

Revised RWQC for Bacteria

EPA's **2012 RWQC** is expressed in *CFU/100 mL*

- The **MPN** test is a method to statistically estimate the concentration of viable microorganisms in a sample by means of replicate culture tubes in a liquid medium with 10-fold dilutions, and using statistical probability tables.
- The **CFU method** uses bacterial and fungal colonies growingon a solid agar plate, which are then quantified by counting the number of colonies in a sample.
- EPA (2012) recommends the **CFU method**, which has been determined to have less uncertainty than MPN estimations. However, either method may be used if comparability is demonstrated (EPA 2014).

Proposed Revisions

Specific changes proposed in R102-16:

- Change units of measure from using "**most probable number**" (MPN) to "**colony-forming units**" (CFU) per 100 milliliters (mL)
- Use a **geometric mean** (GM) of 126 cfu/100 mL *instead of* an annual geometric mean (AGM)
- Use a "**statistical threshold value**" (STV) = 410 cfu/100 mL *instead of* a "single sample maximum" (SSM) value based on "use intensity"
- *E. Coli* Footnote: [d] The GM shall not be greater than 126 CFU/100 mL in any 30-day period. There shall not be greater than a ten percent exceedance of the S.V. 410 CFU/100 mL in any 30-day period.

Exposure Scenarios

EPA's 2012 RWQC are simplified with regard to recreational exposures when compared with EPA's 1986 criteria for bacteria.

EPA 1986 – Applied the concept of "use intensity"

		Single Sample Maximum Allowable Values (MPN/100 ml)			
Indicator	Geometric Mean Value	Designated Beach Area	Moderate Full Body Contact Recreation	Lightly Used Full Body Contact Recreation	Infrequent Used Full Body Contact Recreation
E. Coli	126	235	298	410	576

EPA 2012 – Assumes full-body water-contact, rather than estimating use intensity

Criteria Elements	**Estimated Illness Rate (NGI): 36 per 1,000 primary contact recreators**	
	Magnitude	
Indicator	GM (cfu/100 mL)[a]	STV (cfu/100 mL)[a]
E. coli – fresh water	126	410
Duration and Frequency: The GM for a waterbody should not be greater than the selected GM magnitude in any 30-day interval. No more than ten percent of the samples should exceed the selected STV magnitude in any given 30-day interval.		

Example of Changes to Standards Tables in NAC 445A.

NAC 445A.1336 Snake Region: Goose Creek. (NRS 445A.425, 445A.520) The limits of this table apply to the body of water known as Goose Creek within the State of Nevada. Goose Creek is located in Elko County.

STANDARDS OF WATER QUALITY
Goose Creek

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY STANDARDS FOR BENEFICIAL USES	Beneficial Use[a]										
			Livestock	Irrigation	Aquatic	Contact	Noncontact	Municipal	Industrial	Wildlife	Aesthetic	Enhance	Marsh
Beneficial Uses			X	X	X	X	X	X	X	X			
Aquatic Life Species of Concern													
Temperature - °C ΔT^b - °C	$\Delta T = 0$	S.V. May-Oct< 21 S.V. Nov-Apr< 13 $\Delta T < 1$			*	X							
pH – SU	$\Delta pH \pm 0.5$	S.V. 6.5 - 9.0			*	X		X					
Dissolved Oxygen - mg/l		S.V. $\geq$ 6.0	X		*	X	X	X		X			
Total Phosphorus (as P) - mg/l		S.V. $\leq$ 0.1			*	*	X	X					
Nitrogen Species (as N) - mg/l	Nitrate S.V. $\leq$ 1.0	Nitrate S.V. $\leq$ 10 Nitrite S.V. $\leq$ 0.06			*	X	X	*					
Total Ammonia (as N) - mg/l		[c]			*								
Suspended Solids - mg/l		S.V. $\leq$ 25			*			X					
Turbidity - NTU		S.V. $\leq$ 10			*			X					
Color – PCU		S.V. $\leq$ 75						*					
Total Dissolved Solids - mg/l	S.V. $\leq$ 185	S.V. $\leq$ 500	X	X				*					
Chloride - mg/l	S.V. $\leq$ 9.0	S.V. $\leq$ 250	X	X				*		X			
Sulfate - mg/l		S.V. $\leq$ 250						*					
Alkalinity (as CO_2) - mg/l		< 25% change from natural conditions			*					X			
E. coli - ~~No./100 ml~~ *cfu/100 mL*		~~A.~~G.M. $\leq$ 126 [d] S.V. $\leq$ 410				*	X						
Fecal Coliform - No./100 ml		S.V. $\leq$ 1,000	X	*			X	X		X			

* = The most restrictive beneficial use.
X = Beneficial use.
[a] Refer to NAC 445A.122 and 445A.1332 for beneficial use terminology.
[b] Maximum allowable increase in temperature above water temperature at the boundary of an approved mixing zone, but the increase must not cause a violation of the single value standard.
[c] The ambient water quality criteria for ammonia are specified in NAC 445A.118.
[d] *The geometric mean must not be exceeded in any 30-day period. The single value must not be exceeded by more than 10 percent in any 30-day period.*

Public Workshops on R102-16

- Las Vegas – September 21, 2017
- Carson City – September 25, 2017
- Elko – September 28, 2017

Comments Received from Public Workshop

NDEP received a comment on the Bacteria Petition from one of the Las Vegas dischargers.

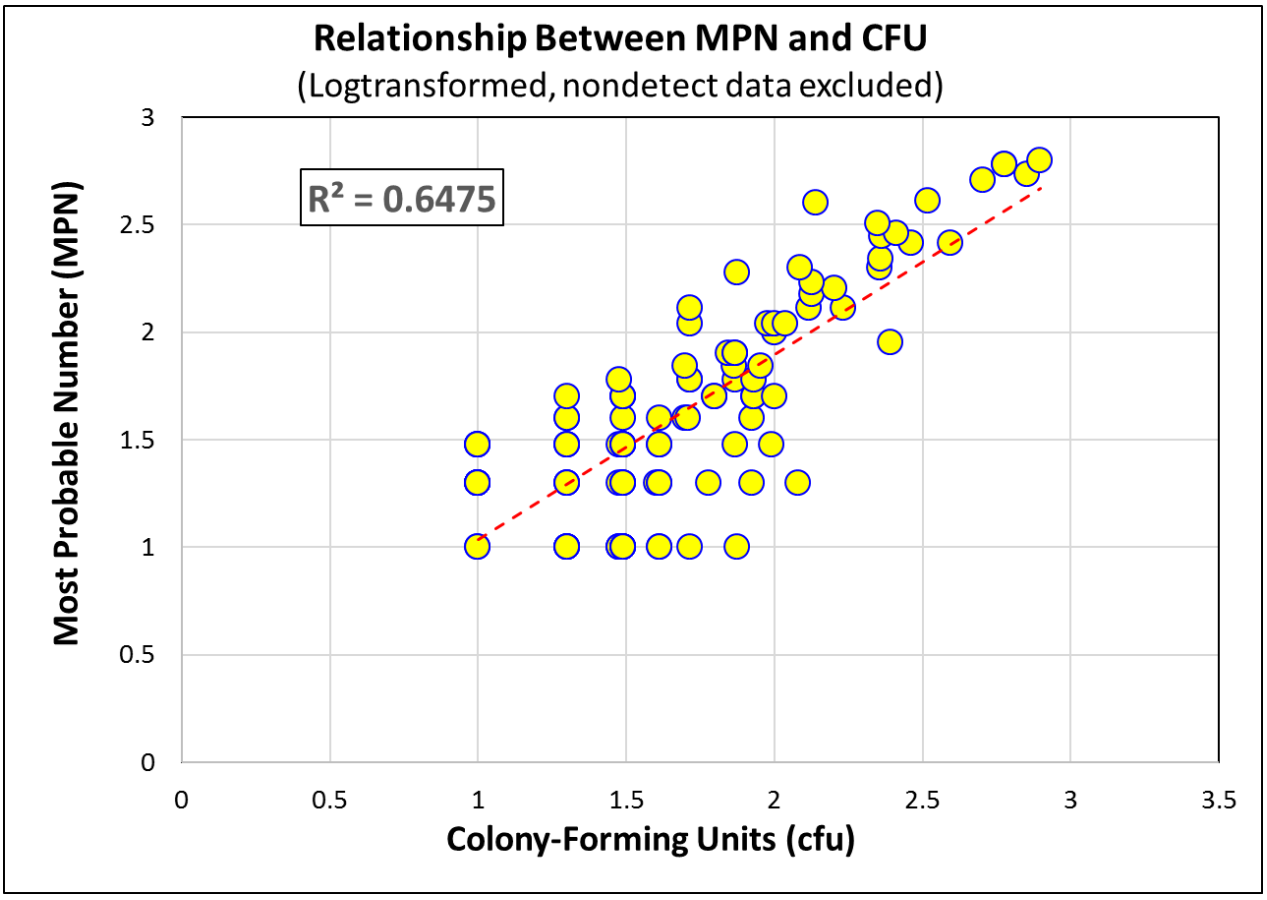
> "*EPA is directing this change, and its rationale is MF, which uses direct counting, is more accurate for measuring E. coli in contact recreational waters than MTF or Colilert ®, which are statistical. The results for MTF and Colilert® are reported in MPN/100 mL. Although I am not opposing Petition R102-16 at this point, I do not agree with that rationale.*
>
> *40 CFR Part 136, which lists approved methods for National Pollutant Discharge Elimination System (NPDES)/Clean Water Act (CWA) purposes, includes both MPN methods (MTF and Colilert®) and MF for the enumeration of E. Coli.*
>
> *In order for multiple methods to be listed for any parameter, EPA must consider them to be equivalent. 40 CFR Part 141 and the Revised Total Coliform Rule, which list approved methods for Safe Drinking Water Act purposes, include both MPN methods (MTF and Colilert®) and MF for the enumeration of total coliforms and E. coli. Again, in order for multiple methods to be listed for a parameter, EPA must consider them to be equivalent*."

NDEP Response to Workshop Comments

In response to the comments received on R102-16, NDEP has done the following:

- NDEP collected paired data on both analytical methods (CFU and MPN)
- NDEP performed statistical analysis of results from both methods (EPA-accepted methods for CFU and MPN tests). Results of statistical analysis (performed in accordance with EPA 2014) indicated sufficient comparability (i.e., R^2>0.60) between the test results obtained from the CFU and MPN methods.
- NDEP contacted EPA Region 9 about the two analytical methods
  - Region 9 expressed that they would accept either method, and
  - Other States accept either method.

Results of NDEP's comparability analysis of paired data, following the statistical procedure described in EPA 2014.



Changes Proposed to LCB File No. R102-16 in Response to Workshop Comments

Substitute the following for section 1 of the regulation, renumbering sections 2 to 285, inclusive, accordingly:

Section 1. Chapter 445A of NAC is hereby amended by adding thereto the provisions set forth as sections 2 and 3 of this regulation.

Sec. 2. "cfu/100 mL" means the number of colony-forming units of bacteria present in 100 milliliters of water.

Sec. 3. The number of E. coli bacteria present in a sample of water may be determined and reported:

1. By counting the colony-forming units in the sample; or

2. Through the use of a statistical testing method to determine the most probable number of bacteria in the sample.

Sec. 4. NAC 445A.11704 is hereby amended to read as follows:

445A.11704, as used in NAC 445A.11704 to 445A.2234, inclusive, ***and sections 2 and 3 of this regulation,*** unless the context otherwise requires, the terms and symbols defined in NAC 445A.11708 to 445A.1178, inclusive, ***and section 2 of this regulation*** have the meanings ascribed to them in those sections.

ATTACHMENT 3:

Proposed Revision of LCB File NO.
R109-16

PROPOSED REVISION OF LCB FILE NO. R109-16

Revise section 7 of the regulation to read as follows:

Sec. 7. ***"MPN/100 mL" means the most probable number determined using a statistical testing method to estimate the number of bacteria or other organisms present in 100 milliliters of water.***

Revise section 12 of the regulation as follows:

Sec. 12. NAC 445A.1233 is hereby amended to read as follows:

445A.1233 1. The State of Nevada will cooperate with the other Colorado River Basin states and the Federal Government to support and carry out the conclusions and recommendations adopted April 27, 1972, by the Reconvened 7th Session of the Conference in the Matter of Pollution of the Interstate Waters of the Colorado River and its Tributaries.

2. Pursuant to the ~~[~~"2011~~]~~ ***~~"2014~~ 2017*** Review - Water Quality Standards for Salinity, Colorado River System," ~~[~~as~~]~~ ***~~and any subsequent version~~ as*** adopted by the Colorado River Basin Salinity Control Forum, the flow weighted annual average concentrations for the calendar year for total dissolved solids in mg/l at the three lower main stem stations of the Colorado River are as follows:

Station	Salinity in mg/l
Below Hoover Dam	723
Below Parker Dam	747
At Imperial Dam	879

~~*3. Each new version of the water quality standards for salinity adopted by the Colorado River Basin Salinity Control Forum shall be deemed approved by the Commission for the purposes of this section unless the Commission disapproves the revision within 60 days after the date of publication.*~~

ATTACHMENT 4:

Proposed Revision of LCB File NO.
R102-16

PROPOSED REVISION OF LCB FILE NO. R102-16

Substitute the following for section 1 of the regulation, renumbering sections 2 to 285, inclusive, accordingly:

Section 1. Chapter 445A of NAC is hereby amended by adding thereto the provisions set forth as sections 2 and 3 of this regulation.

Sec. 2. ***"cfu/100 mL" means the number of colony-forming units of bacteria present in 100 milliliters of water.***

Sec. 3. ***The number of E. coli bacteria present in a sample of water may be determined and reported:***

1. By counting the colony-forming units in the sample; or

2. Through the use of a statistical testing method to determine the most probable number of bacteria in the sample.

Sec. 4. NAC 445A.11704 is hereby amended to read as follows:

445A.11704 As used in NAC 445A.11704 to 445A.2234, inclusive, ***and sections 2 and 3 of this regulation,*** unless the context otherwise requires, the terms and symbols defined in NAC 445A.11708 to 445A.1178, inclusive, ***and section 2 of this regulation*** have the meanings ascribed to them in those sections.