

NEVADA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

NEVADA ENVIRONMENTAL COMMISSION

HEARING ARCHIVE

FOR THE HEARING OF October 22, 1996

HELD AT: Zephyr Cove, Nevada

TYPE OF HEARING:

YES	REGULATORY
	APPEAL
	FIELD TRIP
	ENFORCEMENT
	VARIANCE

RECORDS CONTAINED IN THIS FILE INCLUDE:

YES	AGENDA
YES	PUBLIC NOTICE
YES	MINUTES OF THE HEARING
	LISTING OF EXHIBITS

AGENDA

NEVADA STATE ENVIRONMENTAL COMMISSION PUBLIC HEARING

The Nevada State Environmental Commission will conduct a hearing commencing **10:00 a.m., on Tuesday, October 22, 1996**, at the Douglas County Library, located at 233 Warrior Way, **Zephyr Cove**, Nevada. (The library is located next to the George Whittell High school off U.S. 50 Highway).

This agenda has been posted at the Grant Sawyer State Office Building and Clark County Public Library in Las Vegas; the Washoe County Library in Reno; Douglas County Library in Zephyr Cove, and the Nevada State Library and Division of Environmental Protection Office in Carson City. The Public Notice for this hearing was published on September 20, September 25, and October 3, 1996, in the Las Vegas Review Journal and Reno Gazette Journal Newspapers.

The following items will be discussed and acted upon but may be taken in different order to accommodate the interest and time of the persons attending.

I. Approval of minutes from the September 10, 1996. * ACTION

II. Regulatory Petitions * ACTION

- A. Petition 96013 (R-086-96)** is proposed to permanently amend NAC 445A.1917 by establishing specific water quality standards for various tributaries in the Lake Tahoe Basin. It is proposed to add standards to Maintain Higher Quality Water for total phosphorus, total nitrogen, total suspended solids and pH for Edgewood Creek, Eagle Rock Creek, Glenbrook Creek, and Logan House Creek.

III. Settlement Agreements on Air Quality Violations * ACTION

- A. Silver State Minerals: Notice of Alleged Violation # 1205 & # 1206
- B. Mt. Hamilton Mining Company: Notice of Alleged Violation # 1204

IV. Discussion Items

- A. Status of Division of Environmental Protection's Programs and Policies
- B. Future Meetings of the Environmental Commission
- C. General Commission or Public Comment

V. Workshop on the Setting of Water Quality Standards

The Bureau of Water Quality Planning will conduct an informational presentation on how water quality standards were developed and established in Nevada. The review will include a discussion on setting of temperature, pH and other pollutants or water quality factors as they relate to Nevada's streams and rivers.

Members of the public who are disabled and require special accommodations or assistance at the meeting are requested to notify the Executive Secretary in writing, Nevada State Environmental Commission, 333 West Nye Lane, Room 128, Carson City, Nevada, 89710, facsimile (702) 687-5856, or by calling (702) 687-4670 no later than **5:00 p.m. October 16, 1996**.

NEVADA STATE ENVIRONMENTAL COMMISSION NOTICE OF PUBLIC HEARING

The Nevada State Environmental Commission will hold a public hearing beginning **10:00 a.m. on Tuesday, October 22, 1996**, at the Douglas County Library located at 233 Warrior Way, **Zephyr Cove**, Nevada. (The library is located next to the George Whittell High school off U.S. 50 Highway).

The purpose of the hearing is to receive comments from all interested persons regarding the adoption, amendment, or repeal of regulations. If no person directly affected by the proposed action appears to request time to make an oral presentation, the State Environmental Commission may proceed immediately to act upon any written submission.

- Petition 96013 (R-086-96)** is proposed to permanently amend NAC 445A.1917 by establishing specific water quality standards for various tributaries in the Lake Tahoe Basin. It is proposed to add standards to Maintain Higher Quality Water for total phosphorus, total nitrogen, total suspended solids and pH for Edgewood Creek, Eagle Rock Creek, Glenbrook Creek, and Logan House Creek.

The proposed regulations are not expected to have any anticipated immediate or long term economic impact on the regulated community. The proposed revisions do not require additional pollution controls beyond what is already required; therefore, there is no adverse economic effect on businesses. There is no estimated adverse economic impact on the public, either adverse or beneficial, nor immediate or long-term. Protecting existing higher quality of waters of tributaries to Lake Tahoe will likely have a positive effect on tourism and the general public in the long term. There is no additional cost to the agency for enforcement. There are no other state or government agency regulations which the proposed amendments duplicate. This regulation does not impose a new fee or increase an existing fee.

Note: After completion of the regulatory business, the Environmental Commission will conduct a general workshop on how water quality standards are developed.

Pursuant to NRS 233B.0603(c) the provisions of NRS 233B.064 (2) is hereby provided:

"Upon adoption of any regulation, the agency, if requested to do so by an interested person, either prior to adoption or within 30 days thereafter, shall issue a concise statement of the principal reasons for and against its adoption, and incorporation therein its reason for overruling the consideration urged against its adoption".

Persons wishing to comment upon the proposed regulation changes may appear at the scheduled public hearing or may address their comments, data, views or arguments, in written form, to the Environmental Commission, 333 West Nye Lane, Carson City, Nevada. Written submissions must be received at least 5 days before the scheduled public hearing.

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A copy of the regulations to be adopted or amended will be on file at the State Library, 100 Stewart Street and the Division of Environmental Protection, 333 West Nye Lane - Room 128, in Carson City; and at the Division of Environmental Protection, 555 E. Washington - Suite 4300 for inspection by members of the public during business hours. In addition, copies of the regulations and public notice have been deposited at major library branches in each county in Nevada. Listed below are the locations where the public notice and regulations will be available for inspection and copying:

Carson City Library, 900 North Roop Street, Carson City;
Churchill County Library, 553 South Maine Street, Fallon;
Las Vegas Library, 833 Las Vegas Blvd. North, Las Vegas;
Douglas County Library, 1625 Library Lane, Minden;
Elko County Library, 720 Court Street, Elko;
Goldfield Public Library, Fourth & Crook Streets, Goldfield;
Eureka Branch Library, 10190 Monroe Street, Eureka;
Humboldt County Library, 85 East 5th Street, Winnemucca;
Battle Mountain Branch Library, 625 Broad Street, Battle Mountain;
Lincoln County Library, 93 Main Street, Pioche;
Lyon County Library, 20 Nevin Way, Yerington;
Mineral County Library, First & A Street, Hawthorne;
Tonopah Public Library, 171 Central Street, Tonopah;
Pershing County Library, 1125 Central Avenue, Lovelock;
Storey County Library, 95 South R Street, Virginia City;
Washoe County Library, 301 South Center Street, Reno;
White Pine County Library, 950 Campton Street, Ely.

Additional copies of the regulations to be adopted or amended will be available at the Division of Environmental Protection for inspection and copying by the members of the public during business hours. Copies will also be mailed to members of the public upon request. A reasonable fee may be charged for copies if it is deemed necessary.

Members of the public who are disabled and require special accommodations or assistance at the meeting are requested to notify the Executive Secretary in writing, Nevada State Environmental Commission, 333 West Nye Lane, Room 128, Carson City, Nevada, 89701, facsimile (702) 687-5856, or by calling (702) 687-4670 Extension 3118, no later than 5:00 p.m. on **October 17, 1996**.

This public notice has been posted at the following locations:
Clark County Public Library and Grant Sawyer Office Building in Las Vegas;
Washoe County Library in Reno;
Douglas County Library in Zephyr Cove; and
Division of Environmental Protection and State Library in Carson City.

STATE ENVIRONMENTAL COMMISSION
Meeting of October 22, 1996
Douglas County Library Conference Room - Zephyr Cove, Nevada
Adopted Minutes

MEMBERS PRESENT:

William Molini, Vice Chairman
Mark Doppe
Russell Fields
Marla Griswold
Michael Turnipseed
Roy Trenoweth
Fred Gifford
Joseph Tangredi
Robert Jones

MEMBERS ABSENT:

Melvin Close, Chairman
Joseph Tangredi
Paul Iverson

Staff Present:

Robert Auer (for Jean Mischel) Deputy Attorney General
David Cowperthwaite - Executive Secretary
LuElla Rogers - Recording Secretary

Temporary Chairman Fields called the meeting to order at 10:00 a.m. and read the public notice as defined in the agenda for October 22, 1996.

Executive Secretary David Cowperthwaite introduced Deputy Attorney General Robert Auer sitting in for Jean Mischel. The Commission welcomed Mr. Auer.

Commissioner Fields moved to **Agenda Item I: Approval of minutes from the September 10, 1996.**

Commissioner Turnipseed requested a correction on page 25 - line 4 to reflect the addition of "the Division of Environmental Protection" as part of Allen Biaggi's promotion title.

Commissioner Griswold moved for approval of the minutes as corrected.

Commissioner Jones seconded the motion.

The motion was approved.

Executive Secretary David Cowperthwaite requested the meeting proceed to Agenda Item III so the presenter, Mr. Del Porto could leave to attend a scheduled conference.

Acting Chairman Fields moved to **Agenda Item III. Settlement Agreements on Air Quality Violations**

A. Silver State Minerals: Notice of Alleged Violation # 1205 & # 1206

Don Del Porto, Supervisor of the Permitting Branch, Bureau of Air Quality, reported Silver State Materials Corporation operates an aggregate crushing operation located in Lincoln County, 8 miles north of the Clark County line. An inspection on July 25, 1996, documented that the Diester Screen was operating without a water spray bar as required by air quality permit AP1499-0652. In addition an Eagle Impact Crusher was also observed without a water spray bar and without an air quality permit. NOAV #1205 was issued for violation of NAC 445B.287 "Operating permits and permits to construct: General requirements; restriction on transfer." NOAV #1206 was issued for violation of NAC 445B.227 "Prohibited conduct: Operation of source without required equipment." Both NOAV's were issued on August 8, 1996. In addition, Stop Order #96-02 was issued in accordance with NAC

445B.277. The Stop Order remained in effect until August 14, 1996, when the Bureau of Air Quality received the necessary permit applications. During an enforcement conference of August 22, 1996, Silver State representatives reported the violations occurred due to oversight and Silver State took immediate steps to apply for permits and installation of water sprays. Silver State has agreed to take corrective action by installing the required air pollution controls, pay administrative fines of \$750.00 for NOAV #1205 and \$500.00 for NOAV #1206. The Division agreed these actions were sufficient to bring the source back into compliance. Silver State was originally permitted in March of 1996, they have no previous air quality violations and at present are deemed to be in compliance with all applicable air quality regulations.

Commissioner Fields asked for comments from the public.

There were no comments and Silver State Minerals was not represented.

Commissioner Turnipseed made a motion to accept the settlement.

Commissioner Gifford seconded the motion.

The motion carried.

B. Mt. Hamilton Mining Company: Notice of Alleged Violation # 1204

Mr. Del Porto reported Mt. Hamilton Mining Company operates a precious metals mining operation located 45 miles west of Ely in White Pine County. An inspection on July 16, 1996, documented there were three unpermitted generators in operation. NOAV #1204 was issued on July 26, 1996, for violation of NAC 445B.287 "Operating permits and permits to construct: General requirements; restriction on transfer. In addition, Stop Order #96-01 was issued in accordance with NAC 445B.277. The Stop Order did not take effect because the Bureau of Air Quality received the necessary permit applications in a timely manner. During an enforcement conference of August 13, 1996, Mt. Hamilton Mining Company representatives stated their original projection for generators was low, the size of the generators had to be increased and the Company failed to obtain the proper air quality permits after re-sizing the generators. Mt. Hamilton Mining agreed to take corrective action by:

- 1) Submitting application for the three generators by October 4, 1996. and
- 2) Pay an administrative fine of \$4,800.00.

The Division agreed these actions were sufficient to bring the source back into compliance.

In February, 1995 NOAV # 1162 was issued as a warning for a name transfer they failed to submit. Presently, Mt. Hamilton Mining is in compliance with all applicable air quality regulations.

Vice Chairman Molini arrived and assumed Chairmanship of the meeting.

Commissioner Gifford asked how long Mt. Hamilton had operated with the un-permitted generators.

Mr. Del Porto explained that was hard to determine, they could not give a date, but the Bureau felt the generators were in operation for at least 1 year.

Vice Chairman Molini requested comments from the public.

There were no comments and Mt. Hamilton Mining was not represented.

Commissioner Turnipseed made a motion the settlement agreement be accepted.

Commissioner Gifford seconded the motion.

The motion carried.

Vice Chairman Molini moved to Agenda Item **II. Regulatory Petitions**

A. Petition 96013 (R-086-96) is proposed to permanently amend NAC 445A.1917 by establishing specific water quality standards for various tributaries in the Lake Tahoe Basin. It is proposed to add standards to Maintain Higher Quality Water for total phosphorus, total nitrogen, total suspended solids and pH for Edgewood Creek, Eagle Rock Creek, Glenbrook Creek, and Logan House Creek.

Wendell McCurry, Chief of the Bureau of Water Quality Planning, introduced Evan Chambers with the Bureau of Water Quality Planning.

Mr. Chambers explained this proposal adds antidegradation standards to Glenbrook Creek, Logan House Creek, Eagle Rock Creek and Edgewood Creek. Mr. Chambers displayed a slide that revealed the Lake Tahoe monitoring locations of the Tahoe Research Group (TRG), U.S. Geological Survey (USGS) and the Nevada Division of Environmental Protection (NDEP). Mr. Chambers reported 27 of the 64 major watersheds in the Lake Tahoe Basin are in Nevada. In October, 1995, the SEC adopted antidegradation standards for First Creek, Second Creek, Third Creek, Wood Creek and Incline Creek located in the Incline Village area. The watersheds in this proposal are located in the south and eastern portion of the Lake Tahoe.

Mr. Chambers explained Edgewood Creek watershed is divided into 3 reaches; Edgewood Creek at Stateline, Edgewood Creek at Palisades Drive and Eagle Rock Creek. Logan House Creek and Glenbrook Creek are single reaches.

Mr. Chambers reported data used in this survey was collected by the USGS. USGS sample once a month from September through February - one sample per visit; in March they sample once every two - three weeks, depending on runoff condition - one sample per visit. In April, May and June they sample once every week, one to three samples per day during substantial run-off peaks encompassing diurnal variation in stream flow - before, during rise, near peak, and during recession of an event. In July and August they sample once every three weeks, one sample per visit and they have a wild card, any storm event producing substantial run-off or increase of flow sediment load, one sample per event, diurnal rise, near peak and during recession. This sampling skews the data as the majority of their samples are taken during high run-off and loading events. This is a good method for determining annual loading but it is a poor method for establishing antidegradation standards which are based on concentrations and not on mass loadings. Therefore, we came up with a new method for determining antidegradation standards to remove this skewing of data.

Mr. Chambers explained when USGS take samples they obtain an instantaneous discharge with the corresponding concentration. Using that information I calculated an instantaneous load of that particular sampling event. These values were log transformed into a flow and a load value. Basically, all this log transformation does is put the data in a straight line so we can use the constants from the regression analysis. A lineal regression was performed with the flow versus the loading with the flow being the independent variable and the loading being the dependent variable. From these regression analyses we were able to obtain constants which were used in an equation developed by the TRG termed "Daily Loading to the Lake" for a particular stream, calculated at daily loading for each day of the sampling period for 1 year. There are two values, Annual Average RMHQ's or antidegradation standards and Single Value antidegradation standards. For annual average antidegradation standards a regression analysis was done for each year of the period of record. The constants from that regression analysis were then used for the daily flows of that year to determine a daily load for each day of the year. The daily loads were then summed and divided by the annual flow to get an annual average concentration. This was done for each year that we had records. The 95th percentile value was chosen as the RMHQ and in all cases the 95th percentile was the highest value because we have less than 20 years of data.

Mr. Chambers explained single value antidegradation standards were developed similarly. Instead of using

regression analyses for each year a single regression analysis was done for the entire period of record. The constants obtained from this regression analysis were then used to calculate daily loads for the entire period of record. The 95th percentile value of this period of record was then established as the single value RMHQ. The collected data was then compared to the 95th percentile value to determine percent violations of the RMHQ. The single value on annual average RMHQ's were calculated for total nitrogen, total phosphorus and total suspended solids using the method outlined.

Mr. Chambers explained for pH, data was ranked from highest to lowest. The 5th and 95th percentile values were chosen as RMHQ's for the lower and upper limits, respectively. This was done because pH is not a loading parameter. For all reaches, the 5th percentile with a lower end standard was greater than neutral pH which is 7.0. No evidence was presented to demonstrate a requirement to amend neutral pH water to the 5th percentile value for these streams. We presented these numbers to the Lake Tahoe Interagency Monitoring Program (LTIMP). They suggested that the pH lower limit standard be established at 7, or neutral pH, instead of the values obtained from the 5th percentile.

Vice Chairman Molini asked why that was suggested.

Mr. Chambers replied, if you have a pH value of 7.5 as your standard and someone is discharging neutral pH water (pure water) they would need to add something to the water to raise it to the pH of 7.5. The aim is to keep the water pure.

Commissioner Turnipseed noted pH data is available from 1988 to 1994 and asked if data is expanded through the drought into the high flow years of 1995 and 1996.

Mr. Chambers explained he had data for 1995 which was 200% of normal. Data for 1993 was for a normal year but most of the records were from years of drought.

Commissioner Turnipseed noted even though you only had 8 years of data you expand the flows to a wider range, going from the 95th percentile to the 5th percentile in the ranges of flow regime of the stream. Does that give you greater confidence on your RMHQ's?

Mr. Chambers said it did. We ran across every flow regime possible and we encompassed every possible flow from no-flow, in certain creeks, to a flow that exceeded the 7Q10 value which is an extreme flow cutoff we use.

Commissioner Gifford asked if anybody else in the world uses this technique?

Mr. Chambers explained TRG developed the equation and TRPA uses it. They calculate monthly an annual average concentration using this same method.

Commissioner Gifford noted Mr. Chambers alluded to the USGS sampling techniques as being a bit biased because they tend to sample higher flows, etc. In terms of just looking at their sampling schedule, for example April, May and June - those are periods at the end of the snow-melt run-off hydrography and in general those are usually bank-full kinds of stages, common events which would be like a 2 year event and would not be an unreasonable event like a 15, 20, or 25 year event. Could you enlighten me on why you think USGS data is biased?

Mr. Chambers explained, if we just strictly rank the data and then took the 95th percentile we would be at a very high concentration. The USGS samples 12, 15, sometimes 20 times a year but the majority, 60% - 75% of their samples are taken during high run-off events. High run-off events may only happen 30 days out of 365. They are concentrating 3/4 of their samples during 1/12 of the actual year so they have built in a bias to their data. It is like knowing the results you are going to get, a violation. They don't take samples during low flow events.

Commissioner Gifford asked, if you were expecting a violation, wouldn't it be reasonable to expect it during a high flow event rather than a run-of-the-mill flow even in the middle of the summer which might, at the extreme, even be a dry channel?

Mr. Chambers explained that is what the annual average takes out. You get a total load to the lake and then you get a total volume of water to the lake and if you spread that out over the year then yes, you have to have a one time event that may exceed, but for the majority of the year you are not in exceedence.

Commissioner Jones asked why USGS does their survey in that fashion -

Mr. Chambers explained they are trying to get an idea of how much loading is actually going to the lake. They want to know the maximum.

Commissioner Jones stated your methodology for total loading into the lake is better, in the sense of showing what the total load in a given year is. Why does USGS use methodology showing violations more frequently because of high flow.

Mr. Chambers explained USGS is tracking the mass of constituents, the mass of the parameter of total phosphorus going into the lake and then giving a total number. The RMHQ's are concentrations.

Commissioner Gifford asked how do you enforce something like this? Let's say the pH limits are in violation and you have a stream channel that is integrating everything on the water shed - geology, soils and vegetation. How do you pinpoint who caused the problem because the stream channel is the great integrator on the watershed and you have all the users saying "prove it was me". Once you have established your standards how do you go back and do anything about a violation?

Mr. McCurry explained supposedly there are no point sources in the Lake Tahoe Basin other than storm water runoff so we would be looking at everything in the watershed that could be causing the violation to determine if it is just a natural occurrence or a man-made disturbance. We have seen places in the Basin where there was no development but because of the soil conditions and the watershed you wound up with exceedence's of what is desired for the stream. If any remodeling or new construction takes place it has to have Best Management Practices in place.

Commissioner Gifford asked, in terms of the tolerance limits that you give, because you indicate so many plus or minus violations that might have occurred with a certain set of standards, would that be considered a norm and you would not get alarmed until violations have been exceeded by 10%?

Mr. McCurry explained we would not be excited if it was a small percent violation. In evaluating the data that is gathered after these numbers are set, then we have to evaluate it using the same method that was used to establish the numbers.

Commissioner Gifford noted, based on USGS data you are going to expect some violations because of their sampling intensity and because their season of sampling is different than NDEP's. I understand there would be some leeway given because of the statements that were made based on the data that you had. Going back and looking at the total spread of data over this 8 year period there normally would be some violations expected. How would you fit that in with your normal sampling scheme, which I think was alluded to as once every other month?

Mr. McCurry replied, definitely leeway would have to be given. We would have to evaluate the data the same way that was used to prepare the standards in the first place. It is a different concept. Mr. Chambers met with the group to review how the proposal was being devised to make sure that we all were interpreting the formulas and methodology the same way.

Commissioner Doppe asked, is it necessary to do that because otherwise you would have no history that you could use? The 8 years of historical data can't be applied any other way because USGS did it and that is somehow what you have to interpret?

Mr. McCurry replied you are right. If we used our normal procedure that would generate large values. I think there would be a huge outcry if we proposed to set those kinds of numbers.

Commissioner Doppe stated it would be worthwhile to start a process of switching over to your traditional way of sampling and measurement instead of having to perpetuate a method that requires a translation step. Would that be a cost issue?

Mr. McCurry replied it would cost in terms of the sampling we can do. Over the years the majority of our sampling has been in the Incline area since that was the biggest problem area with all the development and the streams involved in that area. We could revise our monitoring so we shift one to the other but we are going to be strapped for monitoring and analysis funds in the future.

Commissioner Turnipseed stated USGS has a different focus because they look at total loading and you look for violations of water quality standards.

Mr. McCurry agreed. We are looking at concentrations and they are looking at load and their sampling fits TRPA's needs. We are trying to normalize that to fit our needs.

Lew Dodgion, Administrator, Division of Environmental Protection, explained it costs less to normalize the data than to set up a new sampling schedule with the resources we have available.

Commissioner Doppe asked at equal reliability?

Mr. McCurry replied yes.

Commissioner Jones asked if it would be possible, the first few times you find a violation using the new methodology devised, to go back and re-examine the methodology to make sure that there is not some sort of error in that process? I would feel more comfortable that if we are going to adopt something that is a change in a method that the first few times we find violations we examine it closely to make sure that it is not in the formula itself.

Mr. McCurry agreed. Since this is new we are going to have to go back with the researchers to see that it is bearing out.

Vice Chairman Molini asked the Bureau to review the proposed RMHQ's.

Evan Chambers reviewed pH:

We ranked the data 95th and 5th percentile. The 5th was exceeding 7 so we consulted with the ultimate players, USGS and TRPA, and they believe 7 would be an adequate number.

Vice Chairman Molini noted the proposed RMHQ on Glenbrook Creek is 7.0 - 8.2.

Mr. Chambers explained if the water sample of that creek falls between 7.0 and 8.2 pH it is in compliance, not in violation.

Vice Chairman Molini asked in all cases is the beneficial use standard a wider range?

Mr. Chambers explained these are antidegradation standards and they will always be tighter or more restrictive than the beneficial use. If I remember correctly, in every reach except Edgewood Creek at Stateline the violations were on the upper end of the pH value.

Commissioner Jones asked what the reason was for changing Third Creek up-side limit from changed 8.4 to 8.2.

Mr. Chambers reported that is a typographical error. That should have stayed at 8.4.

Commissioner Turnipseed noted the upper limit in the streams south of Glenbrook Creek are a little more on the basic side than the streams in the Incline area and asked if that was because of the geology.

Mr. Chambers explained that could be caused by a number of factors but geology is probably a good source.

Mr. Chambers reviewed Total Phosphorus:

We had 7 years of data, 234 samples, for Glenbrook Creek and the 95th percentile value was 0.062. The 95th percentile for the annual average was .085. The existing beneficial use adopted in October, 1995 was .05. The 95th percentile exceeded the beneficial use standards so we did not set an annual average RMHQ. We decided to set a

single value number of 0.060 which would give us 18% violations.

Mr. Chambers explained these single value numbers are new for total phosphorus. We think by setting a single value number we can take one step forward at a time. If we can get all the single values under 0.060 the annual averages should fall.

Mr. Chambers pointed out we only had 3 years of data for Edgewood Creek at Stateline. An annual average, based on 3 years of data, at the 95th percentile did not seem very defensible. We decided to wait until we have more data before we set an annual average there.

Commissioner Gifford noted you previously indicated the 7 day low flow and high flow - 7Q10 - data were available and could be established only for Glenbrook Creek and Logan House Creek. I assume, just looking at this total phosphorus analysis summary, you must have had 7 years of flow data for Glenbrook Creek and Logan House Creek and less data for the others. Do you think you have a good definition of what those 7 day low flow or high flow values are to exclude those sampling numbers based on that short a record?

Mr. Chambers explained USGS has flow gauges on Glenbrook Creek and Logan House Creek and we have at least 20 years of flow data for Logan House Creek and Glenbrook Creek so we could establish a 7Q10. USGS only has flow data for 3 years for Edgewood Creek at Stateline. By definition there is not 10 years of data so you could not come up with one value, right or wrong. We have flow records on Glenbrook Creek from 1972 to 1975 and 1989 to 1994. These numbers are from the USGS statistics.

Commissioner Gifford stated 1972 - 1975 would be 3 years -

Mr. Chambers reported 1972 to 1974 and 1989 to 1995 because I was also including 1995 statistics. These are all water years so we have about 10 years data on that Glenbrook Creek but the 7Q10 exclusion was not done, we did not exclude any data from the regression analysis. The regression curve developed included those high flows with their associated high-loadings, even with Glenbrook Creek and Logan House Creek.

Commissioner Doppe asked, with regard to the single value analysis or single value standards, it looks like there is a fairly significant change in levels throughout the year. How do you apply a standard to a number that is dancing all over the board? It seems if you tried to make a standard that was seasonal would be more accurate. I am wondering what is the good of a standard that is picked from a point in time and try to apply it to a number that stands alone on a page.

Mr. Chambers explained phosphorus, for example, is associated with time of year but it is mainly associated with flow. You are going to pick up a lot of materials in high flow and a lot of phosphorus is like particles so it is not dissolved. The highest value we ever got happened in August during a thunderstorm. USGS chase these storms and they happened to be there at the right time to catch a peak flow. I believe that was that 3.92 number on Edgewood Creek at Palisades Drive. So it is not a temporal thing, it is related to the flow in the channel and setting a seasonal isn't necessarily the right answer.

Commissioner Doppe replied, so seasonal is wrong but one way or another you are likely to take a measure of phosphorus out of a sample at one point that is a fraction of what it would be in a thunderstorm or a snow melt runoff. I am trying to figure out the use of a single point standard. With the exception of 30 days out of the year it would have no real meaning at all because you would be well underneath it anyway.

Mr. Chambers explained these 15% violations are 15% of the samples not 15% of the time. There is no beneficial use standard for single value, that is why this whole thing is to try to take a small step forward. If we can prevent these 3.92 from happening then our annual averages will get smaller.

Commissioner Doppe explained what I have to come to grips with is fundamentally that maximum single value limit that you are trying to establish really only applies at certain times of the year under certain circumstances and in this

case, during times of high runoff, so that is when you need to apply that. The rest of the year doesn't really apply because you are going to be under it anyway.

Mr. Chambers agreed, we will probably be under it.

Commissioner Gifford asked would it be proper to answer Mr. Doppe's question in the sense that the proposed standard represents your 95th percentile -

Mr. Chambers stated the single value, yes.

Commissioner Gifford continued, so anything outside of that would be one of these rare events, an anomaly, and just would not be included.

Mr. Chambers stated he did not believe so. I believe you can get these high values through circumstances - an example would be after a drought. You have accumulation in the channel of materials and you get a single flushing event. It might not be a very large event, such as the thunderstorm I mentioned. There are a number of scenarios that could happen that could cause these numbers during "normal flow" regimes.

Commissioner Jones asked, what is the advantage of demonstrating that there is a violation of this standard when it is normally naturally occurring, and what do we do about it? We are setting a standard that we know is going to be violated 15% of the time, mostly violated by natural occurrences, which we can't do anything about.

Mr. McCurry explained the 95th percentile is the number that was generated during the regression. The percent of violations is based on the data itself so we expect 5% will be outside of that range. The 15% violation is not really 15% if all of these numbers would have been calculated out.

Vice Chairman Molini stated he did not have a problem with the methodology but what is the bottom line? You are not dealing with point sources, these tend to be natural events. We have a standard and we monitor it. If the monitoring indicated excessive violation it would trigger you to do a more thorough evaluation of what is causing the violation. It is not the straight line relationship of a point source of a sewage treatment plant discharge where you have a standard and if they don't meet the standard you shut them down until they can meet it. In reality, what this does mean for us?

Mr. McCurry explained some of what shows up is natural and some of it is some type of an activity that is going on within the watershed, such as the activities of a ski resort. Under their plans for expansion they have to do extensive monitoring to show that their actions are not causing a violation of the standards.

Commissioner Turnipseed stated any single violation is not going to cause alarm. If sampling throughout a year showed consistent violations of low flow, high flow, or any other flow, you would begin to look at the source, whether it was parking lot run-off or whatever it is and then look for a remediation method. That is the whole purpose of water quality planning, not to find the source of any single event but if over time things changed, you begin to look for the source.

Mr. McCurry agreed.

Commissioner Gifford added, and to follow up, using Glenbrook Creek as an example for the single values as 18% percent violations proposed, could that be paraphrased by saying "once you exceed 18% of the samples collected over a one year period, pushes an alarm button".

Mr. McCurry agreed that is the way he would look at it because the RMHQ's are based on the regression. If you exceed 18% individual samples without going back and doing the regression calculation, that would trigger an alarm.

Vice Chairman Molini asked what is the subsequent action of an alarm? If all indications show it is the activity of the development of a ski area that is the cause of a violation, and if they are following Best Management Practices (BMP's) is there any remedy to the problem?

McCurry explained additional requirements would be placed on them in terms of restoration, BMP's to assure that they are not going to cause a degradation of the streams in the area.

Commissioner Jones stated I thought I understood when you started talking about looking at a yearly sampling, being able to tell if there was a degradation over a long period of time. Now we are back at a single occurrence where, for example, a ski area is doing something that shows up in these readings. Now we are talking about taking remedial action one time when we are really supposed to be looking at a year and I am confused on how we are bouncing back and forth between a single occurrence violation and seeing an average over the yearly degradation of the watershed.

Vice Chairman Molini explained he did not intend it to be a single value. I was getting at how can you rectify it if you were having consistent violations above the 18% and you could track it to - in a way it is a point source even though it is not a direct point source.

Commissioner Jones concluded, so if you found a violation during a non-high flow period you would really have to start looking to find out what is going on.

Mr. McCurry agreed.

Mr. Chambers continued:

Total Nitrogen: There are no existing beneficial use standards. California has adopted total nitrogen and total phosphorus standards and we are just trying to get it uniform. We don't have anything to compare it against for beneficial use standard. The proposed RMHQ for annual average is 0.5 for Glenbrook Creek, low of 0.2 for Eagle Rock Creek. 0.6 at Edgewood Creek at Palisades and none for Edgewood Creek at Stateline because we only have 3 years of data on that Creek. The beneficial use standard for nitrate now is 10 mg/l so we are making a significant reduction, nitrate being a part of total nitrogen.

Mr. Chambers continued:

Total Suspended Solids: We are proposing an annual average for Eagle Rock Creek. We are proposing single value numbers for Glenbrook Creek, Logan House Creek, and Edgewood Creek at Stateline. The existing beneficial use standard is a single value number of 25 mg/l. There is no annual average beneficial use standard.

Commissioner Gifford asked if those were strictly grab samples.

Mr. Chambers explained USGS does a diurnal during raise, during rise, near peak and during recession for storm events. USGS also takes a sample up, down, and across the waters so it is an integrated sample and not just strictly putting the bucket in a certain spot.

Mr. Chambers continued:

Color. We are proposing the same standard for all five reaches that was adopted for the Incline Creek area of no increase greater than 10 (>10).

Commissioner Gifford requested clarification. I understood that this one isn't being measured.

Mr. Chambers explained it is not being measured.

Commissioner Gifford asked if you don't even have a baseline to work with how would you know if you ever had an increase >10 and therefore, why even have it?

Mr. McCurry explained it is no increase >10 above the existing conditions.

Commissioner Gifford replied, but my point is if you don't know what the existing conditions are how do you know if you have an increase of 1 or 10 or 100?

Mr. McCurry explained they would have to establish some background.

Mr. Dodgion explained if new construction was happening in the watershed you would have them establish the

background condition before construction was allowed, somewhat as you do with a point source before going through a point source permit.

Commissioner Gifford replied it would make sense to ask them to collect their own baseline data.

Commissioner Turnipseed asked, do the sources of phosphate in the environment come from the atmosphere or are they generally in the soils?

Mr. Chambers explained the data he looked at changes during flow conditions but the bulk of the material during high flows are contained on soil particles.

Commissioner Turnipseed asked if the phosphorus that attaches itself to the soil particles, and then is flushed out during rain or snow melt events, is caused by man or fall-out of the air?

Mr. McCurry stated some of it is atmospheric deposition. We did simulation on the roof of one of the casinos back when lead was still in gasoline. We sat up a sprinkler system and simulated rain events and measured what came off and there was high leads, nitrogen and phosphorus in that simulated rainfall.

Commissioner Turnipseed stated there were all kinds of sources for total nitrogen and some of it is just decaying organic matter.

Mr. McCurry agreed. Up here a lot of it is deposition at the stream.

Commissioner Jones asked are we going to have problems with reducing the nitrate numbers as far as we have? We are substantially reducing the tolerance levels for nitrogen.

Mr. Chambers explained the nitrate, 10 mg/l, is for the drinking water standards.

Commissioner Jones asked what is the practical application to the numbers you are now proposing?

Mr. Chambers explained just because the current number is so high, the data actually demonstrates that these numbers are reflective of what is there -

Commissioner Jones concluded, so we are not making something have to meet a criteria that is not there, we are simply adjusting to the reality of the field?

Mr. Chambers agreed.

Commissioner Turnipseed explained nitrogen and phosphorus are the source of algae growths.

Commissioner Jones asked if some of the problems are natural in occurrence what do we do when we get violations? If we set standards that we end up violating we will certainly feel frustrated in the inability to do anything about it.

Commissioner Turnipseed explained you will look to see if you can find a man-caused source versus a natural source.

Mr. McCurry explained this new concept is only being used right here in this area. We are doing monthly sampling throughout the state, measuring concentrations and looking at flow. A lot of our sampling locations has a flow gauge so we know what the flow is, then we find out what the concentration is. In this area their plan is to try to quantify what the loads are going to the lake so their monitoring system is geared to determining load.

Commissioner Fields stated I understand there are 27 streams on the Nevada side. By adding these 5 today we have about 15 listed so will we be talking about another 12 at a later date?

Mr. Chambers explained there are 27 watersheds -

Mr. McCurry displayed a slide and explained the area is purple have no monitoring data, the light blue area is where there are no streams involved, the green area is already set and the three orange areas will be covered with the adoption of this regulation today.

Vice Chairman Molini inquired about the type of monitoring California is doing.

Mr. McCurry displayed a slide and explained the red dots show where TRG and USGS are monitoring on the

California side of the lake. The majority of monitoring is being done on the Nevada side and several places are being monitored on the Upper Truckee and the Forest Service and Lahontan Water Quality are also monitoring on the California side.

Commissioner Jones asked if there is any consistency in the methodology and the data coming out of it.

Mr. Chambers replied the nice thing about the USGS and TRG data from these sites goes back to the very first step when they take the sample, give the concentration and take an instantaneous discharge so we know the volume of water that is moving through and we know the mass of constituents that is moving through. The Forest Service does not do that. Also, a lot of those streams are seasonal so you don't have a flow record for the entire year.

Commissioner Jones asked if they are working together to try to make this a consistent methodology for gathering and interpreting data?

Mr. McCurry explained all of that batch of stations are being interpolated the same way.

Carl Hastings from TRPA stated a group called LTIMP (Lake Tahoe Interagency Monitoring Program) includes USGS, TRG, the Forest Service, TRPA and Lahontan. We meet regularly to make sure that not only are we not duplicating our efforts but that we are doing things consistently, collecting information as well as discussing how we are spending our monitoring money. There is an effort to meet several times a year to go over these things. Eventually we want all groups to plug into a water clarity model so we can address all the watersheds.

Commissioner Jones asked if they had looked at this methodology.

Mr. Hastings reported he administers the water quality program so I rely on my hydrologist. I believe he has reviewed this methodology and I believe he feels pretty comfortable with it.

Commissioner Gifford asked, is the organic nitrogen something to worry about in terms of water quality and algae growth in the lake or is it the dominant inorganic ionic nitrogen species? The reason I ask that, if you include the total nitrogen and the organic part isn't really important it would seem like it would give an inflated value that might be too high.

Mr. Chambers explained, in the data analysis the data showed that a large portion of this is organic matter with leaves moving through and nitrogen bound particles. I was only looking at what was going on at the tributaries. I did not look at the nitrogen cycles of de-nitrogenation and nitrogenation. I did not look at what was going on in the lake.

Commissioner Gifford rephrased his question. Is nitrogen important in terms of water quality kind of consideration? What we are ultimately concerned about is the end point, the Lake. Are we talking about an inflated value with the nitrogen values as given because it includes organic nitrogen?

Mr. Chambers replied he did not believe so.

Commissioner Gifford asked, then you are saying that the organic nitrogen and the inorganic nitrogen are equally important -

Mr. Chambers interjected, I don't know that. I am just saying that I believe that the nitrate and the nitrite numbers - let me rephrase that - the high nitrogen values of 5, when they are over the decimal point, is when you have the organic material coming through. Those are causing the annual average of the 95th percentile to be raised up.

Mr. McCurry asked Commissioner Gifford, what you are getting at is it would be better if the number was total inorganic nitrogen?

Commissioner Gifford replied right. I don't know how much of a difference that might make but the words "a large portion" caught my eye which might improve greater than 50%. If that percentage is not particularly important then maybe the number that is given for nitrogen is too high.

Mr. Chris Mason, Division of Agriculture, explained he believed the nitrogen is all that becomes available in the

end. It does not matter whether it is organic or inorganic because there is enough bacteria that is going to convert it, one way or the other.

Commissioner Gifford noted he understood that, in terms of normal terrestrial settings but would it make a difference in an aquatic setting?

Mr. Mason stated he did not believe it would. In the long term it all becomes available. It may be a little slower because the Lake is cold but that is the only thing I could think of that would make any difference.

Vice Chairman Molini explained if they are both contributing to enrichment of the Lake and not a differential form, although the time may be different, then the standard is all right.

Commissioner Gifford agreed.

Vice Chairman Molini called for public comment.

There were no comments.

Commissioner Turnipseed requested that the typo (changing Third Creek at Lakeshore Drive single value constituent from 8.2 to 8.4) be corrected and made a motion that Petition 96013 be adopted, as presented, with that typo correction.

Commissioner Trenoweth seconded the motion.

The motion carried.

Vice Chairman Molini moved to Agenda Item IV. Discussion Items

A. Status of Division of Environmental Protection's Programs and Policies

Executive Secretary David Cowperthwaite explained this is a proforma item on the agenda for your general interest and he had nothing to report. Vice Chairman Molini asked if "Discussion Items" was broad enough to talk about potential upcoming legislative issues?

Lew Dodgion explained that was the intent of having this on the agenda, to make it broad enough to talk about anything the Commission wanted to discuss.

Mr. Dodgion reported the Division has only one Bill Draft Request (BDR) - to amend the Public Service Commission (PSC) statute on environmental review for public utilities. The Commission previously discussed it and decided the best thing would be to amend that to make the Division the party to the PSC action directly rather than the Commission. The Division receives LCB's publication Bureau that lists the BDR'S that have been requested. You get a title and you do not really know what it says but we have flagged those we think could have some impact on the Division and SEC . The Environmental Privilege Bill will be important. If a company elects to do an environmental audit they are granted certain privileges, one privilege might be immunity from penalties provided that they disclose what they find and enter into an enforceable agreement to mitigate whatever violations they find. An exception to that might be if their violations were required to be reported through a regulatory or permit requirement. Similar bills have been passed by other states.

Mr. Dodgion continued, a piece of legislation from Clark County could be described in one sentence: "Would enable the Environmental Commission to grant exceptions to ground water quality standards for certain conditions". I suspect that is going to deal with doing some sort of risk analysis for ground water cleanups but I don't know who requested it or what it is all about. That will have some impact on us.

Commissioner Jones asked Administrator Dodgion if NDEP was involved in the diesel truck spill last week.

Mr. Dodgion explained we were not involved on the site of the spill. I understand they got right on it, minimized the amount of diesel fuel that reached the lake, and did a good job of follow-up to mitigate the spill.

Commissioner Jones stated he understood the location is a problem curve and asked if NDEP had made any

overtures to the Nevada Department of Transportation (DOT) regarding the danger there. Do we interface with other departments to try to mitigate issues like that?

Mr. Dodgion agreed the curve is problematic but we have not talked to NDOT about doing something about that curve. We do deal with other agencies on those types of matters -

Commissioner Jones stated it might be worthwhile to write them a letter - anything could go into the Lake.

Mr. Dodgion agreed to look into that.

Vice Chairman Molini moved to Agenda Item IV:

B. Future Meetings of the Environmental Commission

Mr. Cowperthwaite forecast the next meeting would be held in late December or early January in Las Vegas.

C. General Commission or Public Comment

Vice Chairman Molini called for general comment from the public or Commission. No comments were received.

Vice Chairman Molini called for a 5 minute break.

Vice Chairman Molini moved to **Agenda Item V:**

Workshop on the Setting of Water Quality Standards

Adele Basham, Supervisor of Water Quality Standards Branch, stated the purpose of the workshop is to explain the requirements and technical basis for developing water quality standards and the goal is to increase your understanding of the process and to make your review of our rationale documents a little easier.

Ms. Basham explained the majority of the standards actions that we bring in front of the SEC are revisions to existing standards. Petition 96013, adopted today proposed new standards.

Mr. Basham explained she would explain the most general, the Federal requirements, give you a broad tour of Nevada's water quality standards, discuss the various types of standards we have, and then I will go into detail about the methodology and development of the rationale. Water quality standards serve as the central part of a water quality management program and are the basis for discharge permit limits but they are also used for evaluating a number of projects and activities.

Ms. Basham explained the Water Quality Standards Fact Sheet in the Commission packet summarizes the information she is going to discuss.

Ms. Basham stated the authority for setting water quality standards is both at the Federal and State level.

In 1948, after 1/2 century of debate on the Federal Government's responsibility for dealing with water pollution, the first comprehensive legislation for water pollution control was passed. The legislation, amended several times, is now known as the Clean Water Act.

The goals of the Clean Water Act are:

- To restore and maintain the chemical, physical, and biological integrity of the nation's waters, for protection and propagation for fish, shellfish, and wildlife;
- To provide recreation in and on water that is commonly known as fishable/swimmable water.

Section 303 of the Clean Water Act requires the state to establish water quality standards and currently it applies to states and tribes.

The goal of water quality standards is:

- To protect public health and welfare;
- Enhance the quality of water; and

- Meet the purposes of the Clean Water Act.

Water Quality Standards are not actually a set of numbers but consist of 3 parts:

- The designated beneficial use;
- The water quality to protect beneficial uses; and
- The antidegradation provision.

When we establish beneficial uses we take into consideration:

- The use and value of the water body - including public concerns,
- Existing uses;
- Historic uses;
- Desire of potential future uses; and
- Antidegradation requirements.

Federal law prohibits the State from removing an existing use.

Vice Chairman Molini asked, if federal law prohibits removing a use how would a use be removed? What if the water quality had become degraded to the point that the use could no longer support that use?

Ms. Basham explained Mr. Molini had left a word out. "Existing use" is the way the regulations are written and there is a process that you need to go through to prove that the economic social effects of losing that use are outweighing the loss of that use.

Commissioner Turnipseed stated that is happening. With the Safe Drinking Water Act some small community municipal users are having to get off surface water sources and get on ground water sources. They may not have a beneficial use designated but that is in fact, happening.

Ms. Lisa Kerschner, Attorney from the office of Parsons, Behle and Latimer in Salt Lake City stated oftentimes, as part of the state's triennial review of water quality standards, there is an issue in regard to a particular reach in a stream that is not meeting the designated use to be able to change that use to appropriately account for what is accurately occurring out there.

Mr. McCurry explained a few years ago we essentially did this on the Lower Humboldt where we changed the class, which was changing the use and we showed it really wasn't attainable.

Commissioner Jones asked Commissioner Turnipseed if these are the same beneficial uses that he uses in the Division of Water Resources in showing use of water rights in the State of Nevada or are there additional beneficial uses in your criteria?

Commissioner Turnipseed explained mining would be included in industrial, power plants would be included in industrial, those are the majority of them.

Commissioner Jones asked, do you use the same criteria for proving beneficial use?

Commissioner Turnipseed replied we use different criteria for proving beneficial use but the same categories.

Ms. Basham continued, the second part of the water quality standards is the criteria to protect the uses. This is generally the number part of the standard but it might also be narrative. State's may adopt national criteria and modify that criteria to reflect the site specific conditions, or use other scientifically defensible methods. We generally rely on national criteria but on occasion we will modify it. I will be referring to this criteria throughout the rest of my presentation as "Beneficial Use Standard" or "BUS".

The third part is the antidegradation. Nevada Statute requires that "surface waters whose quality is higher than applicable standards must be maintained in that higher quality" and it goes on to say that "no discharges of waste which would result in lowering the quality of these is allowed unless it has been demonstrated to the State Environmental Commission that lower quality is justifiable because of economic or social considerations".

We implement this antidegradation requirement through the establishment of RMHQ's. RMHQ's are always more restrictive than beneficial use standards, usually based on the 95th percentile of the data and there is an option for a flow adjusted analysis.

Ms. Basham explained Nevada has several types of standards:

- Narrative standards;
- Class standards;
- Water body specific standards; and
- Toxic's.

The narrative standards are applicable to all waters and these are often called the "free from" because there are a whole list of narratives that water must be free from, such things as floating debris, oil, grease, and toxic materials. The class waters are generally the smaller water bodies that we have limited or no data at all on. There are 4 class designations, A through D. The classification scheme is based on the extent of human habitation, industrial development, the intensity of the agricultural development and the general disturbance of the watershed. Class A is the highest quality and Class D is the most disturbed watershed. Each of these classes has a list of beneficial uses designated and a list of criteria to protect those uses and followed by that is a list of all the waters, broken down by county, that fall into that class.

Ms. Basham explained, in 1987 Congress amended the Clean Water Act. At that time Congress thought that toxic pollutants was one of the more pressing water pollution problems. Currently, as the Clean Water Act is amended, states are required to adopt numeric standards for toxic's. On the most part, Nevada's are based on national criteria. EPA has a list of what they consider toxic's. That list covers metals, pesticides and various organic compounds. The toxic's table is contained in NAC 445A.144 and we periodically make updates to that. There are 4 beneficial use categories designated on that table:

- Municipal or domestic;
- aquatic life;
- Irrigation; and
- Watering of livestock.

There is one other part of the standards that is worth pointing out and that is what we call the Tributary Rule, quoted pretty much verbatim "if you have a point in a watershed and the standards up to the next control point are a class water and if there is nothing upstream then those standards apply all the way up the watershed". The same theory applies downstream. If you have no standards farther downstream those sets of standards apply all the way downstream.

Ms. Basham explained we have adequate data to establish RMHQ's for the water body specific standards. They are covered by our routine monitoring network and are the Carson, Truckee, Humboldt, Walker, Virgin, Muddy, Colorado, Lake Tahoe, and Snake River Basin.

Vice Chairman Molini asked, just the major drainage within the Snake River Basin?

Ms. Basham replied, Owyhee, Jarbidge, Bruneau, Shoshone, Salmon Falls and Big Goose and there are other tributaries going into those.

Ms. Basham continued, Federal Regulations require that we periodically review the water quality standards because the national criteria that we base the standards on can change. The process helps us to identify trends in water quality and it provides a realistic basis for treatment and control problems.

Ms. Basham explained how the State Environmental Commission (SEC) fits into the overall process. The Water Quality Bureau develops proposed water quality standards, we hold public workshops early on in the process so that

we can change our proposal based on public input. After we have interacted with the public we bring the proposal to the SEC. After the SEC adopts the proposed regulations they go to the Legislative Counsel Bureau (LCB) for codification and EPA approves or disapproves our water quality standards. If EPA determines they are not consistent with the requirements of the Clean Water Act they can federally promulgate standards for Nevada.

Ms. Basham explained the first 3 steps in establishing water quality standards are:

- To define the reaches of the water body;
- Designate the uses, and
- Set the criteria to protect the uses.

These 3 steps are applied both to class waters and designated waters. The purpose for dividing the water body into reaches is that generally the need for standards changes, oftentimes that is because the beneficial uses change, for example, the Upper Carson is a cold water fishery and the Lower Carson is a warm water fishery. Other reasons for dividing a water body into reaches include the differing land uses, the physical characteristics, and changes in the existing water quality.

The next step is the establishment of designation of beneficial uses. On some water bodies, when we go through that process we actually go a step farther with aquatic life by breaking it down into the actual species of fish that we are trying to protect. The Truckee, Carson and Walker Rivers are broken down further, into life stages.

Vice Chairman Molini asked if there is some broad authority that allows you to do that?

Ms. Basham explained the State has the authority to designate any sort of use they want to. For the action you took on Lake Tahoe about one year ago we designated a new use for Lake Tahoe of "outstanding ecological and aesthetic value". I have seen California's standards and they have lists of uses so the federal authority is pretty broad for the state to do what they want, in designating uses.

Mr. McCurry continued, we adopt the aquatic life and we just refine that down and define what criteria is necessary to protect that particular use.

Ms. Basham referred to the table attached to the fact sheet in the packet, a summary of all the standards. For the most part, we use national criteria so it was relatively easy to summarize the criteria numbers in this table and then provide a reference. The Gold Book is EPA's most recent criteria.

The beneficial use for temperature is aquatic life and we base the numbers on the Nevada Division of Wildlife (NDOW) recommendation so they are site specific determinations.

Each of the water body specific standards has this footnote, "Maximum allowable increase in temperature above water temperature and boundary of approved mixing zone but the increase must not cause violation of the single value standard" which is referring to the specific standards to protect the fish in that particular reach. The way this works is, if a discharger has applied for and has been approved for a mixing zone then the 2E applies at the downstream boundary of the mixing zone and that cannot be more than 2E higher than the water upstream from their discharge. The second part "but the increase must not cause violation of the single value standard" I put in italics because not all water bodies have those specific absolute numbers, the Humboldt River being one of them. This is the only temperature standard that applies.

Commissioner Turnipseed stated he always thought it was plus or minus 2E increases in temperature.

Mr. McCurry explained, at one point we did say "change in temperature". We have corrected that so it says "increase".

Commissioner Turnipseed noted most uses of water would increase the temperature and asked, are there hazards to beneficial uses if the temperature is decreased?

Ms. Basham replied our investigation on the Humboldt determined it depends on the aquatic life.

Commissioner Jones asked in what case would you decrease the temperature?

Commissioner Turnipseed explained if you are discharging ground water to surface water, as in the case of some of the mines. Most mines are mining in warm water environments but if the temperature of the Humboldt was 78E and the ambient ground water was 54E a discharge into the river would decrease the temperature.

Commissioner Jones asked if 2E would affect the aquatic life.

Vice Chairman Molini replied it might in some invertebrates but it would be doubtful because diurnal cycles will do that too.

Commissioner Jones asked what Delta T means.

Ms. Basham replied "change". Technically, Delta means change up or down but that verbiage is in the NAC's.

Commissioner Fields questioned using the Gold Book for the criteria. What about a case where the Gold Book value does not correspond well to the Nevada stated beneficial use - say the Gold Book standard for chlorides is a value but the beneficial use for a particular reach may dictate a different value for chloride, either higher or lower. What do we do then?

Ms. Basham explained we can develop a site specific standard and we do have the flexibility to vary from the Gold Book value. In general, we rely on the Gold Book because EPA has done the science and they will defend it for you. To do a site specific modification we have to do the science. We have done it, un-ionized ammonia for Las Vegas Bay was a site specific number.

Commissioner Fields asked, didn't we go more stringent in that case?

Ms. Basham replied we relaxed it - it was a little less stringent.

Commissioner Jones asked, is it best to maintain primacy in the State as opposed to letting EPA move in with the standards, because it gives you that flexibility.

Vice Chairman Molini asked, don't you have to justify that change to EPA?

Ms. Basham replied yes, you have to prove it and we generally don't have the resources to do that. Gold Book numbers in general are very protective because they are national numbers.

Commissioner Griswold stated, I know you have only been collecting data on E.Coli for a short period of time. What is the data you have been gathering telling us?

Ms. Basham replied she had not looked at a lot of the data - generally statewide we don't see a lot of fecal and I believe we are seeing similar results with E.Coli.

Mr. McCurry explained labs that do the analysis are wanting to get away from doing the fecal coliform because it costs more and is more time consuming so they have been running comparisons for about 2 years and the comparison show fairly close to the same numbers. They are saying it looks fairly close to the same numbers.

Commissioner Gifford noted organic nitrogen is not on the list. Does that mean that no one is particularly concerned about it?

Ms. Basham replied what it means is I have not seen any EPA criteria for total nitrogen or organic nitrogen.

Generally, statewide we do not have a beneficial use standard for total nitrogen, it is an antidegradation number. On the Truckee River I believe the total nitrogen is a beneficial use standard - that argument was made on the basis of fish of concern in the Truckee River -

Commissioner Gifford asked, is it expressed as total nitrogen?

Ms. Basham stated it is expressed as total nitrogen and state-wide the antidegradation numbers are expressed as total nitrogen rather than organic or inorganic.

Commissioner Gifford asked would it include organic?

Ms. Basham replied it would include inorganic and organic both. The argument that we have made in rivers, we are

not looking at Lake Tahoe as a receiving water, is that is protected because the transformation between the inorganic and organic forms can occur at it moves downstream and we don't know how much of what may be organic up here is going to be converted to inorganic downstream - that is the assumption that we have made. Mr. McCurry stated normally we set BUS standards on these nitrates, nitrites, and un-ionized ammonia. When we move over to the other column to set the RMHQ we are looking at total nitrogen to be protective of everything. Vice Chairman Molini asked how often the Gold Book is updated.

Ms. Basham explained the Gold Book was published in 1986. Prior to that the Red Book was published in 1976 - so we are thinking 1996 would be a good year for them to come out with the Silver Book. This has all the parameters in it. They do update individual parameters, ammonia was recently updated. They don't need to necessarily update the whole book - just pages.

Commissioner Turnipseed noted Congress failed to re-authorize the Clean Water Act so what is the status of the Clean Water Act, is it like a continuing resolution with the budgets, the old one is in effect until they pass a new one?

Mr. McCurry explained the old law stays in place.

Commissioner Turnipseed asked if they can modify the numbers with the old law in place, why do they need to re-authorize the Clean Water Act?

Mr. McCurry explained small parts of it really need to be changed but during re-authorization they are looking at significant changes throughout the Act. Only a few changes really need to be done.

Ms. Basham explained what I just finished was the first 3 steps in either modifying or establishing water quality standards:

- 1) Define reaches;
- 2) Designate uses;
- 3) Set the criteria to protect the uses.

If we have adequate data then we will go on to set RMHQ's. The first step in setting RMHQ's is:

- 1) Compile all the data - analyze the data and look for trends over time - trends over seasons, over locations - moving downstream, and trends related to flow. We will spend time looking at the data, analyzing it and trying to provide some of the reasons that we put in the rationale for the things we are seeing in the data.
- 2) Compare the data to the beneficial use standard or existing RMHQ, if we are doing a review of existing standards. We apply this criteria: If greater than 5% of the time the RMHQ or Beneficial Use Standard is exceeded, then RMHQ or revision to the existing RMHQ is not proposed. If it is less than 5% exceedance's we will propose an RMHQ.

With the exception of that complex methodology used for the Tahoe tributaries, we generally use the 95th percentile to base the RMHQ on which is a simple ranking of the data. This avoids arguments with the distribution of the data, whether it is normally distributed or not, and it seems to work well. We have been doing this since 1984.

Ms. Basham continued, I mentioned the flow adjusted analysis option. NAC recognizes that natural conditions may be outside the limits established by water quality standards and that the standards are not considered violated due to natural conditions so the relationship between flow and water quality needs to be considered when we are establishing standards. Excluding the data that is associated with extreme flow events is one way of doing this. We define extreme flow as the 7Q10 which is the predicted high or low flow for any 7 day period with an expected reoccurrence interval of 10 years. Usually, to apply this analysis to our data set we need to have adequate flow data and quality data consisting of about 12 water quality samples in continuous USGS gauge data for flow.

Commissioner Gifford asked what criteria did you use to determine that a 10 year frequency was extreme?

Ms. Basham explained we get the 7Q10 number from the USGS. If a flow condition is outside, if it is higher or lower than 7Q10, that is extreme.

Commissioner Gifford asked how did you decide that the 10 year return was extreme versus a 15, 20 or 25 year interval?

Ms. Basham replied, historically, that is the way it has been done since I have been with the Bureau. EPA recommends it too.

Commissioner Turnipseed stated the Truckee River dried up through downtown Reno in 1994. That was outside of the 7Q10 but it was obviously for more than 7 days, can you explain that to me?

Ms. Basham explained if they found enough water to collect a water quality sample when the Truckee was dry then that quality data would not be used in calculating the 95th percentile. Usually, when a river dries up there is not any water to get quality data. You bring up an interesting point because 7Q10 on some of our rivers is very extreme. The Humboldt is extreme every year so 7Q10 low flow on the Humboldt is zero. We don't have quality data if there is no water.

To conclude, Ms. Basham displayed an overhead of a typical page of site specific standards.

Commissioner Turnipseed noted the units on color are PCU and asked what that meant.

Mr. McCurry replied platinum cobalt units.

Vice Chairman Molini asked how color is measured, do you have a chart that you look at to match a color?

Mr. McCurry explained they use the colorimetric comparison and then it is calibrated by platinum cobalt units.

Jack Boyd from Boyd Ranch in Halleck, Nevada explained they use a device similar to a turbidity meter and it has the different color standards to compare it to.

Commissioner Fields asked, regarding the temperature standards, where did the Delta 2E not to increase come from?

Ms. Basham explained that is an EPA recommendation.

Mr. McCurry stated it was recommended at 0E, 1E, 2E, 3E so it varies based on the degree of protection you want to give the stream. The Truckee used to be at Delta 0E through Reno and dischargers had to measure upstream, then go 10 yards downstream to make sure that they are not causing a change in temperature.

Commissioner Fields asked, are we talking about the change from the water that is there now? For example, in a very low flow situation where you might have just a little bit of water it may be warmer than it would be on average. Is that the temperature that you measure against, what is there now?

Mr. McCurry replied yes, what is there now. You measure it upstream and downstream at the time of discharge.

Commissioner Fields recalled, when we had the hearing in Winnemucca last November we had a lot of discussion about different ranges for different reaches of the Humboldt. It shows how complex that temperature parameter is in a state where we get such wide variation in flow rates in some of these rivers - like from nothing to a lot.

Ms. Basham stated there is a wide variation in the ambient air temperature over a 24 hour period.

Commissioner Turnipseed asked, when you have a discharger like the North Truckee Drain does the temperature standard hold to them the same as any other discharger, are they in violation all or most of the time?

Mr. McCurry explained the North Truckee Drain is a drain, so it is not permitted. What is permitted is the discharge from the pit to that area. Like Reno/Sparks, they have a Delta T of 2E adopted by the Commission specifically for the Reno/Sparks treatment plant. They could increase 2E then 3800 to 4200 feet downstream is where that mixing zone applies.

Commissioner Turnipseed asked are storm water discharges permitted and if so do they violate this Delta T?

Mr. McCurry explained storm water dischargers are permitted, most of them under the general permit and they

normally have numeric limits.

Commissioner Gifford asked, does the mixing zone vary as a function of flow conditions? If you had high flow is the mixing zone adjusted for high flow versus a low flow condition or is it a constant?

Mr. McCurry explained it would be a constant mixing zone - normally it is site specific for the discharger.

Commissioner Gifford asked is it the same distance whether the stream is barely moving or whether it is experiencing high flow?

Mr. McCurry explained the problem with a lot of streams in Nevada, the flows are small so you can't have a mixing zone and also meet the requirement to have a zone of passage for fish life.

Mr. Dodgion asked, aren't most of those mixing zones calculated at the lower end of the flow regime?

Mr. McCurry replied, yes they are - like Reno/Sparks is 7Q10 for the mixing zone.

Commissioner Gifford asked for the figure you gave for the Truckee?

Mr. McCurry replied they are 3,800 or 4,200 feet.

Commissioner Griswold stated you mentioned you analyzed existing data. How old is your oldest data?

Ms. Basham explained we have data that goes back to 1966 for some locations.

Vice Chairman Molini asked for additional questions from the Commission or public.

No additional questions were received.

Vice Chairman Molini thanked Ms. Basham and Wendell McCurry for the informative workshop.

Commissioner Gifford made a motion the meeting adjourn.

Commissioner Jones seconded the motion.

The motion carried.

The meeting adjourned at 1:30 p.m..

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