(184)

State of California
Regional Water Quality Control Board
Lahontan Region

STAFF REPORT
ON
*UPPER WALKER RIVER WATER QUALITY STUDY, 1999**

Date: February 21, 2001

Prepared by: Jason Churchill, Environmental Specialist III

Reviewed by: Alan Miller, Chief, Carson Walker Watersheds Unit
Tom Suk, Environmental Specialist IV

*Study conducted by Linda Vance (University of California, Davis, Dept. of Agronomy and Range Science) on behalf of the North Mono County Resource Conservation District.

File:
TMDLs, Bridgeport Reservoir

BACKGROUND AND INTRODUCTION TO STUDY

The *Upper Walker River Water Quality Study, 1999* was completed in March, 2000. The study was conducted by Linda Vance (University of California, Davis, Dept. of Agronomy and Range Science) on behalf of the North Mono County Resource Conservation District. The Study Report states, "The present study was initiated in response to concerns that land use within the upper watershed, particularly in Bridgeport Valley, was contributing to nutrient loading of the [Bridgeport] reservoir." The stated goals (see p. 5 of the study) were "to measure differences in nutrient concentrations between sampling sites upstream and downstream of grazed pastures...and to determine at what points nutrient inputs might be occurring..." The nutrients monitored included total kjeldahl nitrogen (TKN), ammonia-nitrogen, nitrate-nitrogen, and total phosphorus (TP). In addition to these nutrients, turbidity, electrical conductivity, pH, total suspended solids (TSS), and dissolved oxygen (DO) were also measured.

The cited study primarily investigated waters tributary to the East Walker River. Although some sampling was conducted sporadically at a few stations on the West Walker River, the study focuses primarily on the East Walker River area. Specifically, an effort was made to detect differences between upstream and downstream monitoring stations on three streams within the Bridgeport Valley, namely: Buckeye Creek, Robinson Creek, and the East Walker River.

The upstream station for the East Walker River is actually located on Green Creek near its confluence with Summers Creek. The downstream station for the East Walker River was located near the town of Bridgeport. OR E.WALKER R.

The upstream monitoring stations for Buckeye and Robinson Creeks are located above the Bridgeport Valley. The downstream stations for these two tributaries are located just upstream of State Highway 395. Some additional monitoring for these two tributaries was also conducted at stations further downstream, closer to their respective inlets to Bridgeport Reservoir. However, the study did not use these downstream stations in its statistical analyses of upstream-versus-downstream spatial trends. (Regional Board staff reviewed the data and concluded that values provided by the Study Report for the downstream stations were roughly equivalent to those provided for the respective stations further upstream near the highway.)

The *Water Quality Control Plan for the Lahontan Region* (Basin Plan) contains two different sets of water quality objectives (WQOs) for waters of the East Walker Hydrologic Unit: one set for "East Walker River at Bridgeport," and another more restrictive set for "Robinson Creek and all other tributaries above Bridgeport Valley" (see Attachment 1). The Study author apparently applied the more restrictive objectives to *all* monitoring stations on Buckeye and Robinson Creeks, including downstream monitoring stations that are located on the floor of Bridgeport Valley, above Bridgeport Reservoir. This interpretation of the Basin Plan may be incorrect for the following reasons.

The Basin Plan designates WQOs for the East Walker River as "East Walker River at Bridgeport." By application of the State antidegradation policy (State Water Resources Control Board Resolution No. 68-16), and the tributary rule (whereby, in the absence of specific standards for an upstream area, established downstream standards are applied), these same WQOs should be extended through the Bridgeport Reservoir upstream to other tributaries (Robinson and Buckeye Creeks) within the valley floor. The more restrictive WQOs designated — AT THE DAM

for "Robinson Creek and other tributaries above the Bridgeport Valley" need apply only to sections above the valley floor. > WHICH IS AT WHAT DESIGNATED ELEVATION?

BASIN PLAN OBJECTIVES TOTAL N TOTAL P TDS

The Basin Plan objectives that apply specifically to the East and West Walker River watersheds include values for total nitrogen (essentially a measure of TKN + nitrate-nitrogen + nitrite-nitrogen), for total dissolved solids (TDS), and for total phosphorus (TP). WQOs for these parameters are expressed both as annual averages, and as 90th percentile values. The Study Report compares monitoring data with the annual average values. 90th percentile values are not computed, perhaps because of the limited number of samples collected during the study.

The State of Nevada has water quality standards for the East Walker River, at the state line. The Nevada standards for total nitrogen, TP and TDS are summarized in Attachment 2. The Nevada annual average standards for these three parameters are less restrictive than those contained in the Basin Plan (see Attachment 1) for the East Walker River Hydrologic Unit. The Nevada standards for single samples cannot be directly compared with Basin Plan WQOs, since the Basin Plan expresses objectives on a different frequency basis (annual averages and 90th percentile values). However, the Nevada single-sample standards (established for total nitrogen and TDS but not for TP) are set higher than the corresponding Basin Plan 90th percentile values.

NV WQ STDS LESS RESTRICTIVE

The Study Report notes (p. 8) that laboratory detection limits specified for TKN, NH_4-N, NO_3-N and Total P were all 0.05 mg/L. It indicates that more sensitive analytical methods, with lower detection limits, are available for some or all of these parameters. Due to budget limitations for the study, the less costly (but lower sensitivity) analytical methods were used in order that a greater number of samples could be taken. Because so many samples had levels of NH_4-N, NO_3-N, and TP that were below study detection limits, it is not possible to establish spatial trends within the watershed for these three constituents, or to compare the results with WQOs for TP (which are set at 0.06 mg/L for the East Walker River, and 0.02 mg/L for "tributaries above the valley"). The Study Report recognizes the limitations imposed by the 0.05 mg/L detection limits, and emphasizes that the value of this study is in providing a preliminary baseline or ambient level of information for these constituents, and helping to direct future monitoring efforts. It recommends (p. 12) that future efforts incorporate methods with higher sensitivity (lower detection limits), since "N:P ratios need to be known to assess ways to control algal and plant blooms in reservoirs." The Study Report also notes (p. 6) that "anything above [the 0.01 mg/L total phosphorus] level can promote some level of plant or algal growth if nitrogen is also available."

FINDINGS

Following is a summary of the Study Report's findings, along with Regional Board staff comments:

TKN > STDS. NO STAT. DIFF BET. UP/DOWN

1) According to the Study Report, TKN regularly exceeded (annual average) WQOs for total nitrogen within the East Walker River drainage, but no statistically significant differences were found (the Study Report does not specify the confidence level) between upstream and downstream sampling sites. The Study Report concludes that this suggests "that land use within the Valley is not adding TKN to the aquatic system" (p. 3) and that this "suggests that there may be sources of nitrogen well upstream of grazed areas"(p. 11). The Study Report speculates that one source of elevated nitrogen in the system may be Twin Lakes (p. 11). However, the limited sampling program summarized in the Study Report indicates that the West Walker River (which is not fed by Twin Lakes) has similarly-high levels of TKN,

which also tend to exceed water quality objectives. The Study Report concludes: "Whether these levels are 'background' levels or anthropogenically-caused [i.e., human-caused] deserves further study."

A simple equivalence of upstream versus downstream TKN concentrations cannot by itself support a conclusion that there are no TKN inputs to Bridgeport Reservoir from the land uses in the study area. Concentration data must be coupled with flow data to properly establish whether there is any net loading of TKN between upstream and downstream monitoring stations. The Study Report provides no flow data or nutrient load calculations. Furthermore, the Study Report does not appear to consider the nutrient removal potential of wetlands located in the Valley floor. In the absence of nutrient inputs from land uses, these wetlands might effect a net decrease of nutrients from plant uptake or denitrification as water passes through the Valley.

Also, the Study Report conclusion (p. 9) that no significant differences in TKN levels were evident between upstream and downstream sites is questionable. This conclusion was based on pairwise comparisons evidently made using standard "t-tests." To verify the comparisons, Regional Board staff performed t-tests (using the method described in Miller, et al., p. 248). The staff analysis (see Attachment 3) found that although the upstream versus downstream difference was not significant for either Buckeye Creek, Robinson Creek, or the East Walker River at the 95% confidence level, the difference was significant for the East Walker River (but not the other two streams) at the 90% confidence level.

In addition, there is no indication that any samples were collected during runoff events, when overland flow would be expected to transport sediment, TKN and other nutrients to surface waters.

2) According to the Study Report, estimates of TDS (based on electrical conductivity rather than direct analysis or measurement) indicated that "levels of total dissolved solids were above WQOs in about half the samples." For the following reasons, Regional Board staff believes that the objectives for TDS may not have been properly applied in the Study Report:

a. The wrong WQO appears to have been applied to stations on the East Walker River. The appropriate objective would be the WQO for "East Walker River at Bridgeport." However, the more restrictive objective (for "Robinson Creek and all other tributaries above Bridgeport Valley") was apparently applied to all monitoring stations, including those on the East Walker River.

b. As previously noted (see Background and Introduction, above), Regional Board staff interprets the Basin Plan to apply the less-restrictive objective (for "East Walker River at Bridgeport") to portions of tributaries located in the Valley floor. The Study author applied the more-restrictive objective for "Robinson Creek and all other tributaries above Bridgeport Valley" to downstream monitoring stations on Buckeye and Robinson Creeks that are located in the Valley.

Regional Board staff finds that if the WQOs for TDS are properly applied, the data do not indicate that the objectives for TDS are generally exceeded in the watershed, contrary to the findings of the Study Report.

The Study Report does find that TDS values increase between upstream and downstream monitoring sites on two out of three reaches evaluated within the Bridgeport Valley (Buckeye Creek and East Walker River, but not Robinson Creek). It does not address possible sources of TDS, or whether there might be any connection between TDS levels and land use practices in the Bridgeport Valley.

NEED to DETERMINE

The researcher used the formula TDS = EC x 0.55 (where EC is electrical conductivity in µS/cm) to estimate TDS in units of mg/L. Ideally, as the Study Report notes, the actual correlation between TDS and EC should be determined for the specific water body in question. However, according to *Standard Methods for the Examination of Water and Wastewater* (18th Ed., 1992, on p. 1-13) the ratio of TDS to EC will normally fall in the range of 0.55 to 0.70. While the approximation used in the Study Report appears to be reasonable, a more conservative approach would be to use the factor of 0.70, rather than 0.55.

Using the larger factor would make the estimated TDS values about 30% greater. (For example, if the measured EC value is 175 µS/cm, the estimated TDS value would be 96 mg/L using the 0.55 conversion factor, but would be 123 mg/L using the 0.7 factor.) If the larger factor is used, the data provided by the Study Report indicate that TDS values may exceed WQOs for the Summers Creek, Swauger Creek, and most upstream Robinson Creek stations (but not other stations). Future sampling efforts should include direct measures of TDS, in order to calculate the most appropriate conversion factor, and to determine whether any violations of the WQOs for TDS are occurring.

USGS DOING THIS?

3) Although there were isolated instances of detectable TP (an outlier as high as 0.31 mg/L was reported in one case), TP and NH_4-N were both generally below detection limits (0.05 mg/L). As the Study Report points out, this does not necessarily mean that levels of these constituents are inconsequential (see Background and Introduction). Regional Board staff notes that the data for TP do not appear to correlate strongly with turbidity, possibly indicating that much of the phosphorus may be dissolved and therefore bioavailable, rather than particulate in form.

THIS MORE ALGAE (FOR THOSE THAT NEED TP.)

WHICH ALGAE NEED TP?

Due to the high number of values that were below detection limits, it was not possible to identify statistically any spatial trends (i.e., upstream versus downstream trends) for either TP or NH_4-N. Within the East Walker River, the reported TP concentrations do not appear to exceed the 0.06 mg/L annual average WQO. However, because the detection method is not sufficiently sensitive, it is impossible to determine whether the WQO is met for other monitoring sites (i.e., those above the Valley floor) where the more restrictive 0.02 mg/L objective may apply.

monitoring BUT Reg. for Enforcement, NOT for DETERMINING SOURCES

4) There is an apparent discrepancy concerning the identification of two important monitoring stations used for the study. Station 15 was an important site, since it was used as the Robinson Creek downstream reference point for upstream versus downstream comparisons. This station was identified in the study as "Robinson (N) @ 395," apparently referring to it as a northerly branch of Robinson Creek. However, a USGS topo map used by Regional Board staff (Mt. Jackson quadrangle, 1:24,000 scale, 1989) clearly identifies this section as a part of Buckeye rather than Robinson Creek. Furthermore, Station 3 (which was used in the study as the downstream reference site for Buckeye Creek) does not appear to be located on the main course of Buckeye Creek according to the same USGS map--in fact, the map shows no water in that specific location. Station 3 could possibly be located on an agricultural diversion ditch or canal that does not appear on the USGS map.

SAMPLE SITE MESSUPS

LIMITATIONS OF STUDY AND RECOMMENDATIONS FOR FUTURE STUDY

As noted above, the study might have been more informative if more sensitive analytical methods had been used for certain parameters. The Study Report also recognizes that since sampling took place during a single season during a good water year, further monitoring over several seasons would be advisable to better define water quality trends. The report recommends additional monitoring to determine the reason for consistently high levels of TKN in the upper watershed, and recommends that water and sediment sampling be conducted in the Bridgeport Reservoir itself.

LAB QUALITY ASSURANCE AND METHODS

Regional Board staff has contacted the laboratory that performed the chemical analyses for the study (Division of Agriculture and Natural Resources Analytical Laboratory, UC Davis), regarding the laboratory's methods and Quality Assurance/Quality Control (QA/QC) program. The laboratory provided Regional Board staff with a list of analytical methods used, with literature references for each method. The methodologies used for the Study Report were derived from *Standard Methods for the Examination of Water and Wastewater*, or other standard references. Laboratory staff also stated that duplicates and analytical standards are included in every analytical run, but the lab does not typically verify recovery by use of sample "spikes" (i.e., addition of known amounts of the analyte to a sample, to verify lab performance and detect any matrix interference). The laboratory is not certified by the California Department of Health Services (DHS), nor does it appear to be certified by any other laboratory certifying agency. The Study Report does not provide sufficient information to verify the QA/QC results.

QA/QC questionable

SUMMARY AND CONCLUSIONS

The *Upper Walker River Water Quality Study* is a welcome effort to identify potential sources of nutrients contributing to water quality problems in the Bridgeport Reservoir. The study's utility is limited due to: (1) high detection limits and questionable QA/QC procedures, (2) lack of water flow data for calculating nutrient loads, and (3) small numbers of samples, all collected during a single season when surface runoff was not occurring. Despite these limitations, it provides useful baseline information to help focus future study efforts.

Compare RB6 findings to USGS data!

References

Miller, I. R., Freund, J. E., and Johnson, R. 1990. *Probability and Statistics for Engineers*, 4th ed. Prentice Hall, Englewood Cliffs, New Jersey.

Attachments

Attachment 1: Water Quality Objectives for West & East Walker River Hydrologic Units

Attachment 2: State of Nevada water quality standards for total nitrogen, TP, and TDS for the East Walker River at Stateline

Attachment 3: Staff analysis of TKN data for three streams in the East Walker River watershed, and table of t-values

Attachment 1

Water Quality Objectives for the West & East Walker River Hydrologic Units

From: *Water Quality Control Plan for the Lahontan Region* (1994)

Table 3-15
WATER QUALITY OBJECTIVES FOR CERTAIN WATER BODIES
WEST & EAST WALKER RIVER HYDROLOGIC UNITS

See Fig. 3-8	Surface Waters	Objective (mg/L except as noted)[1,2]						
		TDS	Cl	SO_4	% Na	B	Total N	Total P
1	Topaz Lake	90 105	4 7	-	25 30	0.10 0.20	0.10 0.30	0.05 0.10
2	West Walker River at Coleville	60 75	3.0 5.0	-	25 30	0.10 0.20	0.20 0.40	0.01 0.02
3	East Walker River at Bridgeport	145 160	4.0 8.0	-	30 35	0.12 0.25	0.50 0.80	0.06 0.10
4&5	Robinson Creek & all other tributaries above Bridgeport Valley	45 70	2.0 4.0	-	-	-	0.05 0.10	0.02 0.03

[1] Annual Average value/90th Percentile Value

[2] Objectives are as mg/L and are defined as follows:

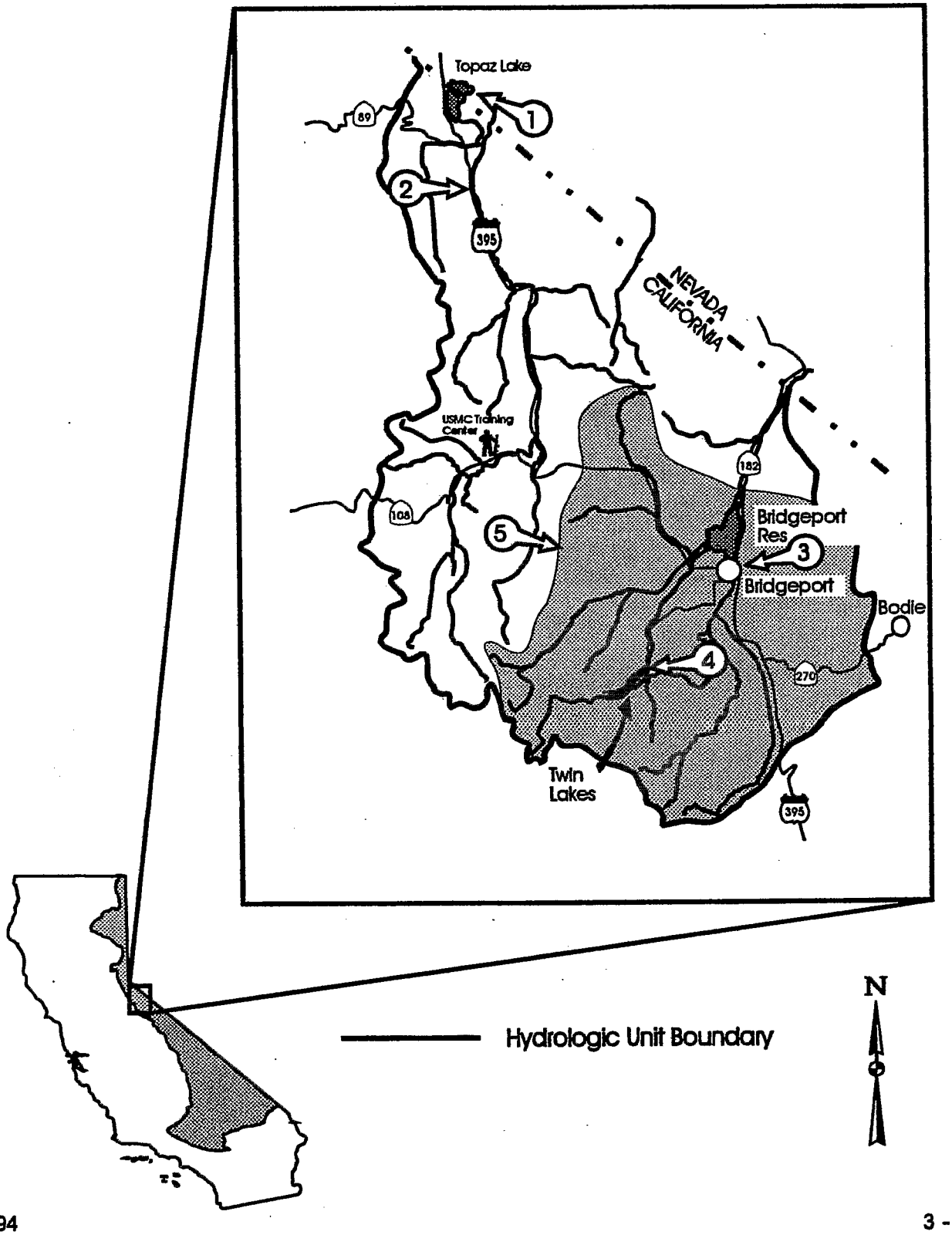
B	Boron
Cl	Chloride
N	Nitrogen, Total
P	Phosphorus, Total
% Na	Sodium, Percent

$$\frac{(Na \times 100)}{Na+Ca+Mg+K} = \%Na$$

(Na, Ca, Mg, K expressed as milliequivalents per liter or meq/L concentrations)

SO_4	Sulfate
TDS	Total Dissolved Solids (Total Filterable Residue)

Figure 3-8
WATER QUALITY OBJECTIVES FOR CERTAIN WATER BODIES
WALKER RIVER HYDROLOGIC UNITS



Attachment 2

State of Nevada water quality standards for total nitrogen, TP, and TDS for the East Walker River at Stateline

(information provided by Adele Basham, Nevada Division of Environmental Protection, personal communication)

all values are given in units of mg/l

	total nitrogen	total phosphorus (TP)	total dissolved solids (TDS)
annual average	≤ 0.8	≤ 0.1	≤ 175
single value	≤ 1.4	--	≤ 210

Attachment 3

Staff analysis of TKN data for three streams in the East Walker River watershed, and table of t-values

Paired-t-test analysis (performed by Regional board staff) of TKN data for three streams in the East Walker River watershed

	Buckeye Creek			E. Walker River			Robinson Creek		
	TKN (mg/L)			TKN (mg/L)			TKN (mg/L)		
(date)	UP	DOWN	diff.	UP	DOWN	diff.	UP	DOWN	diff.
4/16/99	0.5	1.0	0.5	0.4	1.1	0.7	0.5	0.70	0.2
5/1/99	0.6	0.3	-0.3	0.6	0.6	0.0	0.3	0.4	0.1
5/6/99	1.0	0.7	-0.3	0.9	1	0.1	0.8	1.1	0.3
5/14/99	0.2	0.1	-0.1	0.1	0.1	0.0	0.1	0.1	0.0
5/21/99	0.2	0.2	0.0	0.1	0.2	0.1	0.1	0.2	0.1
5/29/99	0.3	0.2	-0.1	0.3	0.3	0.0	0.4	0.2	-0.2
6/6/99	0.3	0.4	0.1	0.3	0.3	0.0	0.3	0.3	0.0
6/18/99	0.2	0.1	-0.1	0.1	0.1	0.0	0.1	0.2	0.1
7/16/99	0.4	0.3	-0.1	0.3	0.3	0.0	0.3	0.2	-0.1
8/14/99	0.9	1.1	0.2	1.1	1.1	0.0	1.7	1.1	-0.6
9/11/99	0.7	1.0	0.3	1.2	1.0	-0.2	0.9	1.2	0.3
10/16/99	1.2	1.0	-0.2	0.8	1.5	0.7	1.5	1.0	-0.5
avg. of difference			-0.008			0.117			-0.025
std. dev. of difference			0.243			0.282			0.286
t-value			0.115			1.48			0.36

degrees of freedom = 12 - 1 = 11

Null hypothesis: $\mu = 0$ (where μ is the mean of the population of differences sampled)

Alternative hypothesis: $\mu > 0$

$$t = \frac{\bar{x} - \mu_0}{s/\sqrt{n}}$$

Where x and s are the mean and the standard deviation of the differences, and n is the number of degrees of freedom.

Reject null hypothesis if t-value is:

greater than 1.80 (for 95% confidence level)
greater than 1.36 (for 90% confidence level)

Table 4 Values of t_α*

ν	$\alpha = 0.10$	$\alpha = 0.05$	$\alpha = 0.025$	$\alpha = 0.01$	$\alpha = 0.005$	ν
1	3.078	6.314	12.706	31.821	63.657	1
2	1.886	2.920	4.303	6.965	9.925	2
3	1.638	2.353	3.182	4.541	5.841	3
4	1.533	2.132	2.776	3.747	4.604	4
5	1.476	2.015	2.571	3.365	4.032	5
6	1.440	1.943	2.447	3.143	3.707	6
7	1.415	1.895	2.365	2.998	3.499	7
8	1.397	1.860	2.306	2.896	3.355	8
9	1.383	1.833	2.262	2.821	3.250	9
10	1.372	1.812	2.228	2.764	3.169	10
11	1.363	1.796	2.201	2.718	3.106	11
12	1.356	1.782	2.179	2.681	3.055	12
13	1.350	1.771	2.160	2.650	3.012	13
14	1.345	1.761	2.145	2.624	2.977	14
15	1.341	1.753	2.131	2.602	2.947	15
16	1.337	1.746	2.120	2.583	2.921	16
17	1.333	1.740	2.110	2.567	2.898	17
18	1.330	1.734	2.101	2.552	2.878	18
19	1.328	1.729	2.093	2.539	2.861	19
20	1.325	1.725	2.086	2.528	2.845	20
21	1.323	1.721	2.080	2.518	2.831	21
22	1.321	1.717	2.074	2.508	2.819	22
23	1.319	1.714	2.069	2.500	2.807	23
24	1.318	1.711	2.064	2.492	2.797	24
25	1.316	1.708	2.060	2.485	2.787	25
26	1.315	1.706	2.056	2.479	2.779	26
27	1.314	1.703	2.052	2.473	2.771	27
28	1.313	1.701	2.048	2.467	2.763	28
29	1.311	1.699	2.045	2.462	2.756	29
inf.	1.282	1.645	1.960	2.326	2.576	inf.

* Abridged by permission of Macmillan Publishing Co., Inc., from *Statistical Methods for Research Workers*, 14th ed., by R. A. Fisher. Copyright © 1970 University of Adelaide.

From: Jason Churchill
To: "lkvance@ucdavis.edu".mime.Internet
Date: 1/16/01 10:37AM
Subject: Walker study--Lahontan staff report

Linda--

Thanks for your reply. Please don't feel compelled to provide comments by January 18--this was not intended to be a deadline for comments. We just wanted to know by that date whether you had received the staff report, and whether you *intend* to provide comments. Can you have comments to us by **February 8th**? This would give you three more weeks. Please let me know if you think you can do this.

To answer your question, the staff report is not expected to be the basis for any specific action at this time. It will be used to brief our Executive Officer and Assistant Executive Officer regarding the findings of your study, and then would be filed as a reference along with your study.

Let me know if you have any questions.

NOTE: NO COMMENTS WERE RECD FROM LINDA VANCE AS OF 2-21-01, SO I FINALIZED THE STAFF REPORT BY SUBSTITUTING A NEW COVER PAGE (DATED 2/21/01) AND SENT TO FILE.
- JASON CHURCHILL

Jason Churchill, Environmental Specialist III
State of California Regional Water Quality Control Bd.
Lahontan Region
(530) 542-5571
fax (530) 542-2271

>>> Linda Vance <lkvance@ucdavis.edu> 01/11/01 05:32PM >>>
Jason--

I am extremely busy right now. If I can respond by January 18, I will, but if I cannot, assume only that I did not have time, not that I had no comments.

I would appreciate knowing how important this is in the real world, i.e. are all the reports and responses destined for a file, or will they be the basis of some action?

Thanks, Linda

Linda K. Vance
Director, Biological Sciences Programs
University Extension
University of California
1333 Research Park Dr.
Davis, CA 95616-4852
Ph: (530) 754-6487 Fax: (530)-757-8634
Email: lkvance@ucdavis.edu

CC: Suk, Thomas

File: TMDLs, Bridgeport/Reservoir

From: Jason Churchill
To: lkvance@ucdavis.edu
Date: 1/11/01 4:03PM
Subject: Walker study--Lahontan staff report

Dear Linda--

On November 30, 2000, I mailed a copy of a draft report prepared by Lahontan Regional Water Quality Control Board staff, containing a review of your Upper Walker River Study.

Since we have not received any comments from you on the draft staff report, I wanted to check and make sure that you had received your copy. Please let me know whether you received this staff report, and whether you plan to provide us with any comments.

If we do not hear from you by January 18, we will assume that you do not have any comments, and the staff report will be finalized and placed in our files.

Please contact me at the phone number below if you have any questions.

Jason Churchill, Environmental Specialist III
State of California Regional Water Quality Control Bd.
Lahontan Region
(530) 542-5571
fax (530) 542-2271

CC: Suk, Thomas

file: TMDLs, Bridgeport Reservoir

a copy of staff report mailed 11-3-00

STATE OF CALIFORNIA

OFFICE MEMO
STD. 100 (REV. 10-91)

DATE 11-2-00

TO LINDA VANCE, DIRECTOR, BIOLOGICAL SCIENCES PROGRAM
UNIVERSITY EXTENSION
UNIV. OF CALIF.
DAVIS, CA 96150

ROOM/STA. NO.

FROM JASON CHURCHILL, ENV. SPECIALIST III
LAHONTAN REGIONAL WATER QUALITY CONTROL BD.

PHONE NUMBER (530) 542-5571 ATSS ☐

ROOM/STA. NO.

SUBJECT DRAFT STAFF REPORT ON UPPER WALKER RIVER STUDY

Please comment on this draft Regional Board Staff Report concerning your study. Please provide comments by December 20, 2000. The final Staff Report will be presented to our executive staff along with your study findings.

Because this is only a working draft, we ask that you not distribute it to others. I'd be happy to provide you with a copy of the final Staff Report.

We appreciate your efforts to contribute to a better understanding of water quality in the Walker River Watershed.

—Jason Churchill

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file: TMDLs, Bridgeport Reservoir