California Ecological Restoration Projects Inventory

Questions / Additions / Problems with this page? E-mail: memadison@ucdavis.edu

Clark Canyon Erosion Control

The installation of channel sediment retention structures, fence exclosures prohibiting livestock entry in addition to elimination of stream channel degradation.

To stop the downcutting (degradation) of the active stream channel, cause sediment deposition of the stream channel to occur in the upper reach to increase the water retention capacity and to stop streambank erosion/collapse.

Contact Name:	Terry Russi
Contact Type:	Primary Data
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Contact Name:	Joy Fatooh
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Role	Entity
Landowner	Private Landowner(s)
Cooperator Funder Landowner	State of California
Cooperator Landowner	Bureau of Land Management - Bishop

Funders: Initial $25,000 from California Energy Resource Fund (no longer exists).

Survey Date:	7/11/95
Size of Project:	4 Acres
County:	Mono
Time Frame:	Start Date: 1/1/84 - End Date: 1/1/87
Additional Locational Information:	Location: Northern Border: China Camp drainage. Southern Border: Big Alkali Flat. Watershed/Creek: Clark Canyon Creek and Walker River.
Publicly Available Reports:	Available Reports: 1993 Memo.

Habitat	Targeted/Existing
Riparian Forest and Woodlands	E
Stream or River Channel (In-Stream Restoration)	E
Chaparrals	E
Pinyon and Juniper Woodlands	E

Has the Project Goal been Attained:	Partially
Do Performance Standards Exist:	Yes
Performance Standards for the Project:	Channel aggradation, streambank stabilization, moderate improvement in water retention capacity.
Have the Performance Standards been Attained:	Partially
Is there Monitoring Done:	
Monitoring Schedule:	
Project Problems:	Unauthorized livestock use, poor design of initial sediment retention dams.

Treatment and Application:	Installation of channel sediment retention structures, fence exclosures prohibiting livestock entry.
Was Fertilizer Used:	
Was Site Irrigated:	
Irrigation Method:	
Additional Comments:	

Data

Ecological/ Biological Data

Invertebrates

Remote Imagery

Vegetation

Water Quality

Water/Sediment Load

Water/pH

Additional Data Information

Target Taxonomic Group: Fish

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From: Linda Vance <lkvance@ucdavis.edu>
To: Kim Gorman <Gormk@rb6s.swrcb.ca.gov>
Date: Fri, Sep 21, 2001 4:18 PM
Subject: Re: Field QA/QC

Hi Kim--

It's taken me forever to get back to you. Sorry.

I submit a field blank, a duplicate of one sample, and a travel blank to the lab every time I submit a batch. With the Bridgeport sampling, I also submitted duplicates of *every* sample to a second lab for NO3, because I have noticed that the method the
DANR lab uses for sampling NO3 isn't very precise. You have that data as part if the overall data report--the second column for NO3 comes from the Land, Air and Water Resources Lab at UC Davis, while the first NO3 column comes from the DANR lab.. I
do not submit spikes. However, both labs do random replicates and spikes, as well as lab blanks.

I have dozens of lab reports for Bridgeport, and am not very inclined to go through each one of them to get you all the lab and field QA/QC data, since I am on no one's clock but my own now. However, if you want to randomly select a couple of dates
(including the USGS overlap samples), I will provide you with those.

Please let me know if this meets your needs. I don't mean to be uncooperative; I am merely trying to guard my time.

Linda

Kim Gorman wrote:

> Hi Linda,
> Judith Unsicker is the Region 6 Basin Plan Coordinator, and will be updating the 303(d) list perhaps sometime in September.
> She may consider some of your data from the upper watershed of Bridgeport Valley, however if she were to do so, your Lab and Field QA/QC would need to be verified.
> In an earlier email, you had mentioned that the lab QA/QC had already been sent to Tom Suk, but we have yet to receive the latter.
> Field QA/QC info should include results from any duplicates, method blanks, travel blanks, and or spikes which may have been submitted to your lab on a random basis?
>
> Also, Paul Honeywell from USGS had mentioned a split sample that the two of you had taken from Bridgeport. Do you happen to have the lab results for this sample? That would be very helpful in establishing consistency of results between the two labs.
>
> We truly appreciate your help,
> Kim

--
Linda K. Vance
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University of California
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From: Judith Unsicker
To: kiwdafish@hotmail.com
Date: 8/17/00 2:11PM
Subject: Bodie Creek information

Hello- your question as to whether the Lahontan Regional Water Quality Control Board has any information on Bodie Creek was forwarded to me via Jill Wilson and Tom Suk of our staff. I'm on the Board's planning staff and in charge of our water quality assessment database that is used for reporting to EPA.

We put Bodie Creek on the federal Clean Water Act Section 303(d) list of impaired water bodies based on information from a U.S. Bureau of Land Management report about high ambient mercury concentrations, and on high metals in fish tissue sampled under the State Water Resources Control Board's Toxic Substances Monitoring Program (TSMP). (We were listing water bodies based on very limited data at that time.)

The USBLM's draft EIS for the *Bishop Resource Management Plan and Environmental Document* (dated September 1990- actually for the Bishop Resource Area) states (page 129) that
"Mercury levels in Bodie Creek exceeded the standard for coldwater aquatic life and human consumption. The level of arsenic in Bodie Creek also exceeded human consumption standards." Concentration data, and the station location were not given. You may be able to get them from BLM's Bishop office.

TSMP sampling has been done since 1978; the Department of Fish and Game samples 10-15 sites per Regional Board per year
and analyzes tissues for a standard suite of metals and/or a group of organic chemicals including pesticides and PCBs. Each year's results are compared with historical data, and concentrations above the 85th or 95th percentile levels of historic concentrations statewide are considered "elevated". Results are reported separately for fish filet tissue (to reflect human consumption risks) and liver tissue. These indices compare data from many different species of fish (there are separate indices for freshwater and marine fish). Since sample numbers for specific water bodies are small, results are not necessarily statistically representative. DFG tries to sample larger, older fish so that they reflect ambient and not hatchery conditions for planted fish.

We have had trout sampled for metals in a number of Lahontan Region streams with inactive mines in their watersheds, and have had "elevated" results in almost all cases. For the "Bodie Creek/Flying M Club" station, Lahontan cutthroat trout filet tissue had elevated cadmium, chromium, lead, nickel, and silver (at or above the 85th percentile) and liver tissue had silver above the 95th percentile. (We have also had "elevated metals" results for trout sampled in Lundy, Virginia, and Dog Creeks and the East Walker River below Bridgeport Reservoir.). The liver tissue silver, which is the only concentration I can find at short notice, was
3.10 ppm, wet weight, which I think is one of the highest concentrations of silver observed in any of our samples. (For comparison, Brown trout sampled from Convict Lake at the same time (1992) had a liver concentration of 0.93 ppm silver which was still above the 95th percentile.)

If you want more of the actual TSMP data for Bodie Creek, I suggest that you contact Del Rasmussen at the State Water Resources Control Board for a complete printout for the creek; his phone number is (916) 657-0916.

Call or email me if you have further questions. I usually work from 7:00 a.m. to 3:30 p.m. with a short lunch around 11:00.

Judith Unsicker
Environmental Specialist IV (Specialist)
Lahontan Regional Water Quality Control Board

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CC: Suk, Thomas; Wilson, Jill

Newspaper Clipping Ending 1/24/01

Weather halts Walker River cleanup

By Mary Thompson
RENO GAZETTE-JOURNAL

Cleanup of an oil spill drifting down the East Walker River near Bridgeport, Calif., and into Nevada will be halted until the spring, officials said.

Cold temperatures will halt the effort by workers who have spent several weeks scraping, sponging and vacuuming sticky crude oil from the riverbed since an oil-bearing tanker truck overturned on California 182, killing the driver.

Two people will do maintenance work to make sure the spill doesn't get any worse while crews wait for better weather, said Dana Michaels, spokeswoman for the California Department of Fish and Game, the lead agency in the cleanup.

The accident happened Dec. 30 when a semi-truck overturned on California 182, killing the 23-year-old driver and dumping about 3,600 gallons of topped crude oil into the river seven miles upstream from the Nevada border.

California Highway Patrol Sgt. Sean Patton said the driver, who was making a run from Bridgeport to Yerington, was speeding on the curvy mountain road.

Intensive efforts to contain the mess didn't stop the oil from creeping seven miles downstream in California until it reached Nevada's Lyon County, where ranchers rely on the barely trickling river as a water source for livestock.

A. Kurowski/Reno Gazette-Journal

Although the oil has drifted two miles across the Nevada state line, cleanup efforts will continue to be directed by California officials. The Nevada Division of Environmental Protection will monitor the work.

"If we were dissatisfied, we would certainly make it known, and I'm sure there would be a response," said Joe Livak, Environmental Protection's enforcement supervisor. "We're keeping an eye on it."

Livak said the independent cleanup crews hired by the trucking company have been doing a good job. "Tallies show that they've recovered some 1,440 gallons of oil from the river. About 2,168 still need cleaning up. So far, the spill has killed two beavers, three birds, including two dippers, and 19 fish, mostly trout.

Incident Commander Kim McCleneghan reported seeing other oiled birds, including a merganser and a great blue heron, but he has been unable to capture them.

Michaels said they expect the birds will die, either from preening and ingesting oil or from hypothermia.

"Birds rely on their feathers for insulation and they lose that insulation when they get oil on them," she said.


A. Sady/Reno Gazette-Journal file

DIRTY WORK: Cleanup crews work to collect the spilled thick fuel oil.

Excerpts from reports in
Aurora Canyon Multiple general
File at Regional Board's
South Lake Tahoe office

Rec'd 2/17/98
CA5141190566

DRAFT FINAL

SITE INSPECTION REPORT

AURORA CANYON MILLSITE

BAKERSFIELD DISTRICT, CALIFORNIA

January 19, 1996

CONTRACT NUMBER
1422-N651-C4-3049

Prepared by
Brown & Root Environmental
910 Clopper Road
Gaithersburg, Maryland 20878

Approved by:

Frank Morris, P.G.
BRE Project Manager

Wesley LaParl
BRE Task Manager

1.0 INTRODUCTION

In accordance with the guidance of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the U.S. Department of the Interior, Bureau of Land Management (BLM) authorized C.C. Johnson & Malhotra, P.C. (CCJM), in association with Brown & Root Environmental (BRE), to conduct a Site Inspection (SI) of the Aurora Canyon Millsite, CERCLIS No. CA5141190566, located in Mono County, California. A Preliminary Assessment (PA), conducted in 1991 by CCJM, included sample collection and analysis. Analytical results indicated elevated levels of arsenic and mercury in surface soils. A release of hazardous substances to surface water and groundwater was suspected, resulting in recommendations for further investigative work. The purpose of this SI was to collect information sufficient to assess the threat posed to human health and the environment. The investigation included a review of previous information, a site reconnaissance (June 1995), and sampling and analysis of environmental media (August 1995) to test the hypotheses derived from the PA. The investigation was conducted in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Performing Site Inspections under CERCLA, Interim Final*.

2.0 SITE DESCRIPTION

2.1 Location

The Aurora Canyon Millsite is located in Mono County, California, approximately 1.5 miles northeast of the town of Bridgeport (Attachment A). The Bodie Hills are immediately to the east. The site location is SW1/4 of the NE1/4 of Section 27, Township 5N, Range 25E of the Mountain Diablo Meridian. Approximate geographic coordinates are 38°16'01" North Latitude and 119°12'08" West Longitude (USGS, 1989). Access to the site is by dirt road off Aurora Canyon Road. The site is not fenced, and pedestrian and vehicular access is unrestricted. The nearest residences are in a Native American Indian community about 0.5 mile west of the site (BRE, 1995a).

2.2 Site Description

The Aurora Canyon Millsite is an inactive mercury retort situated over an approximately 5-acre parcel of land. Existing features include a concrete foundation with remnants of a retort furnace and ore chute, an empty trailer, a steel water tank, a production well adjacent to the road in a depression, and a scrap metal pile. There are several dirt roads traversing the site. Much of the ground surface is

covered with waste rock (reddish gravel). A small impoundment (12' x 12' x 2'), reportedly used to hold waste water from the mill operation, is located adjacent to the west side of the concrete foundation. Elevations at the site range between 6,600 and 6,640 feet above mean sea level (MSL). Municipal sewage disposal ponds are located about 0.25 mile west of the site (BRE, 1995a; USGS, 1989). Native vegetation consists of sagebrush, rabbitbrush, bitterbrush, pinyon-juniper and mixed grasses (BLM, 1981). Site features are shown on the figure in Attachment B. Site photographs are shown in Attachment C.

2.3 Previous Investigations

An inspection of the Aurora Canyon Millsite performed by BLM on May 30, 1985 indicated no recent surface disturbance. A second BLM inspection on March 21, 1990 indicated that no activity had taken place since the 1985 inspection. As part of a PA conducted at the site by CCJM in 1991, soil, sediment, and groundwater samples were collected and analyzed for Target Analyte List (TAL) inorganics. Several soil samples were also analyzed for Target Compound List (TCL) organics. No organic compounds were detected. Mercury was present in several soil samples at concentrations exceeding background concentrations and EPA residential soil screening levels (SSLs). Arsenic and lead were also present in surface soils at concentrations exceeding background values. Mercury was detected in a groundwater sample collected from the onsite water production well. However, the well was later determined to be poorly constructed and unsuitable for water quality monitoring due to the likelihood of cross-contamination from surface water runoff (CCJM, 1991: BRE, 1995a).

2.4 Operational History and Waste Characteristics

The Aurora Canyon Millsite was built by the American Mining and Chemical Company during the mid-1960s and was operated as a mercury retort. No mining was conducted onsite. The ore may have been brought to the mill from several sources (e.g., Potato Peak, located to the southeast). Cinnabar (mercury sulfide) is the primary commercial ore containing mercury. Mercury is extracted from the ore by volatilization, and the vapor is condensed to a liquid in cooling tubes and drained to a collecting tank. It is then bottled for market in steel flasks. Reportedly as many as eight flasks of mercury (76 pounds per flask) were produced per day. Waste rock was deposited to the ground surface during operational periods. Some waste rock was hauled offsite and used by local residents for driveways (BRE, 1995f). In 1968 a furnace located onsite was moved to Nevada by the American Mining and Chemical Company (Mineral Information Service, 1969). It is not known if any further milling

operations continued at the Aurora Canyon Millsite. A review of aerial photographs confirms the site was undeveloped in 1956, abandoned in 1977, and unchanged in 1993 (BRE, 1995a).

Both the PA and SI revealed that surface soils at the site contain elevated levels of arsenic and mercury compared to background levels. Barium, chromium, thallium, and selenium are also present in soils at elevated levels. Concentrations of arsenic ranged from 15.9 mg/kg to 146 mg/kg. Mercury concentrations ranged from 1.5 mg/kg to 42.6 mg/kg. The area of observed contamination is estimated to be about 180,000 square feet based on a perimeter polygon with surface soil concentrations exceeding 3X background.

To determine whether or not a mine waste is hazardous, the California Department of Health Services has adopted criteria for the Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC). The maximum allowable total and soluble concentrations are found in California Code of Regulations, Title 22. Concentrations of arsenic in site soils were all below the TTLC standard of 500 mg/kg while mercury was present in two surface soil samples at concentrations greater than the TTLC of 20 mg/kg. Based on the results of a waste extraction test conducted as part of the PA, soluble levels of arsenic and mercury were present in soils, but the levels were below the STLCs (CCJM, 1991). A representative sample of the waste rock was shipped to the University of Colorado, Denver, Department of Geologic Sciences for X-ray diffraction. Results indicated the mineralogical composition to be a quartz-illite-hematite.

3.0 LABORATORY ANALYSIS AND DATA VALIDATION

Laboratory analysis for the SI samples was performed by Laucks Testing Laboratories of Seattle, WA. Samples were analyzed for TAL inorganics and cyanide according to the EPA's 3/90 Statement of Work for inorganic fractions. Inorganic data validation was performed by CCJM. All analytical results met the contract required detection limits (CRDLs) listed in the table in Attachment G. A detection limit of 0.05 µg/L (lower than the CRDL of 0.2 µg/L) was achieved for mercury aqueous analysis. All holding times were met. The antimony matrix spike and matrix spike duplicate recoveries were biased low in soils and sediments, and it is likely sample results were similarly biased.

Quality control samples consisted of a rinsate sample and three field duplicates. The rinsate sample (ACM-SI-RB01) consisted of a deionized water rinse from a decontaminated stainless steel bowl. The sample was analyzed for TCL inorganics and cyanide. The majority of inorganics were not detected in the rinsate sample (Table 2, Attachment F). Duplicate samples included sediment sample

exceeding the EPA residential SSL of 23 mg/kg (EPA, 1994). Subsurface soil samples were not collected, and the vertical magnitude and extent of contaminated soil is unknown.

4.5 Conclusions

Arsenic and mercury were detected in surface soil samples at concentrations significantly exceeding background values and EPA residential SSLs. However, naturally occurring levels of arsenic in soils are greater than the generic soil screening level. Maximum concentrations of arsenic and mercury were detected in surface soil samples northwest of the concrete foundation. Access to the site is unrestricted. The nearest residences are located slightly over 0.5 mile to the west of the site. There is no indication of a release of hazardous substances to the air pathway.

5.0 SURFACE WATER

5.1 Hydrology

No distinct drainage exists between the site and Aurora Canyon Creek. However, during periods of heavy rainfall and spring snow melt, surface runoff (overland flow component) from the site flows south for approximately 300 feet and enters Aurora Canyon Creek. During the June 1995 site visit, the creek was flowing at an estimated rate of 1 to 5 cubic feet per second (cfs) continuously to the East Walker River. During the August 1995 sampling event the creek was not flowing beyond the nearest wetlands downstream of the site (BRE, 1995a). The waste source is located outside of the 100 year floodplain of the creek (FEMA, 1985). Aurora Canyon Creek normally flows for approximately 1.3 miles from the probable point of entry (PPE) and enters the East Walker River. The East Walker River, which has an estimated flow rate of 100 cfs, flows for about 0.5 mile and enters to the Bridgeport Reservoir, a man-made irrigation reservoir with a maximum depth of about 42 feet (Attachment D). The Bridgeport Reservoir (4.3 miles long) then discharges to the East Walker River at the dam. The river flows north for 8.9 miles (USGS, 1989). The average discharge at the dam measured over a 67 year period is 145 cfs (USGS, 1990).

5.2 Targets

There are no surface water intakes used for drinking water purposes within 15 miles downstream from the site. Surface water in the valley south and west of the site is used for stock watering (BRE, 1995c). The East Walker River and Bridgeport Reservoir are used for recreational fishing and

irrigation. According to the California Department of Fish and Game (CADFG), the Bridgeport Reservoir is stocked annually with trout. In 1994 the reservoir was stocked with 9.4 tons of rainbow and brown trout. Trout from the reservoir are sometimes released downstream to the East Walker River (BRE, 1995d).

There are at least two wetlands within 15 miles downstream from the site. The nearest, a palustrine emergent wetland (approximately 40 acres, with a 0.5-mile frontage), is 0.25 mile downstream of the site. There are approximately 1.6 miles of wetland frontage farther downstream along the East Walker River and along the southern shore of the Bridgeport Reservoir (DOI, 1988). There are no other known sensitive environments in or adjacent to the surface water pathway (CADFG, 1995). No fish were observed in Aurora Canyon Creek or Clark Canyon Creek during an August 1995 visual inspection from Clark Canyon to the PPE at the site (BRE, 1995a).

5.3 Sample Locations

Five surface water and seven sediment samples were collected during the August sampling event and analyzed for TAL inorganics. Sampling locations are shown on the figure in Attachment D. Sampling locations and rationales are provided in the table in Attachment E. Surface water and sediment samples from Aurora Canyon Creek include background sample ACM-SI-SW/SD01 and downstream samples ACM-SI-SW/SD02 and duplicate ACM-SI-SW/SD02D. Two sediment samples ACM-SI-SD03 and ACM-SI-SD04 were from the wetland along Aurora Canyon Creek. Because there was limited or no flow in this segment of the creek during the August 1995 sampling, proposed surface water samples ACM-SI-SW03 and ACM-SI-SW04 could not be collected. Sediment samples ACM-SI-SD07, SD07D, SD08 and SD09 were collected in December 1995 by BLM personnel from Aurora Canyon Creek downstream of the PPE, and analyzed for mercury only. ACM-SI-SD07 and duplicate sample ACM-SI-SD07D were collected from the same location as ACM-SI-SD02. ACM-SI-SD08 and ACM-SI-SD09 were collected at 25 foot increments downstream from this point.

Two surface water and sediment samples were also collected from the East Walker River upstream of the Bridgeport Reservoir. These include background sample ACM-SI-SW/SD05, and sample ACM-SI-SW/SD06, which were collected upstream and downstream, respectively, of the confluence with Aurora Canyon Creek.

5.4 Analytical Results

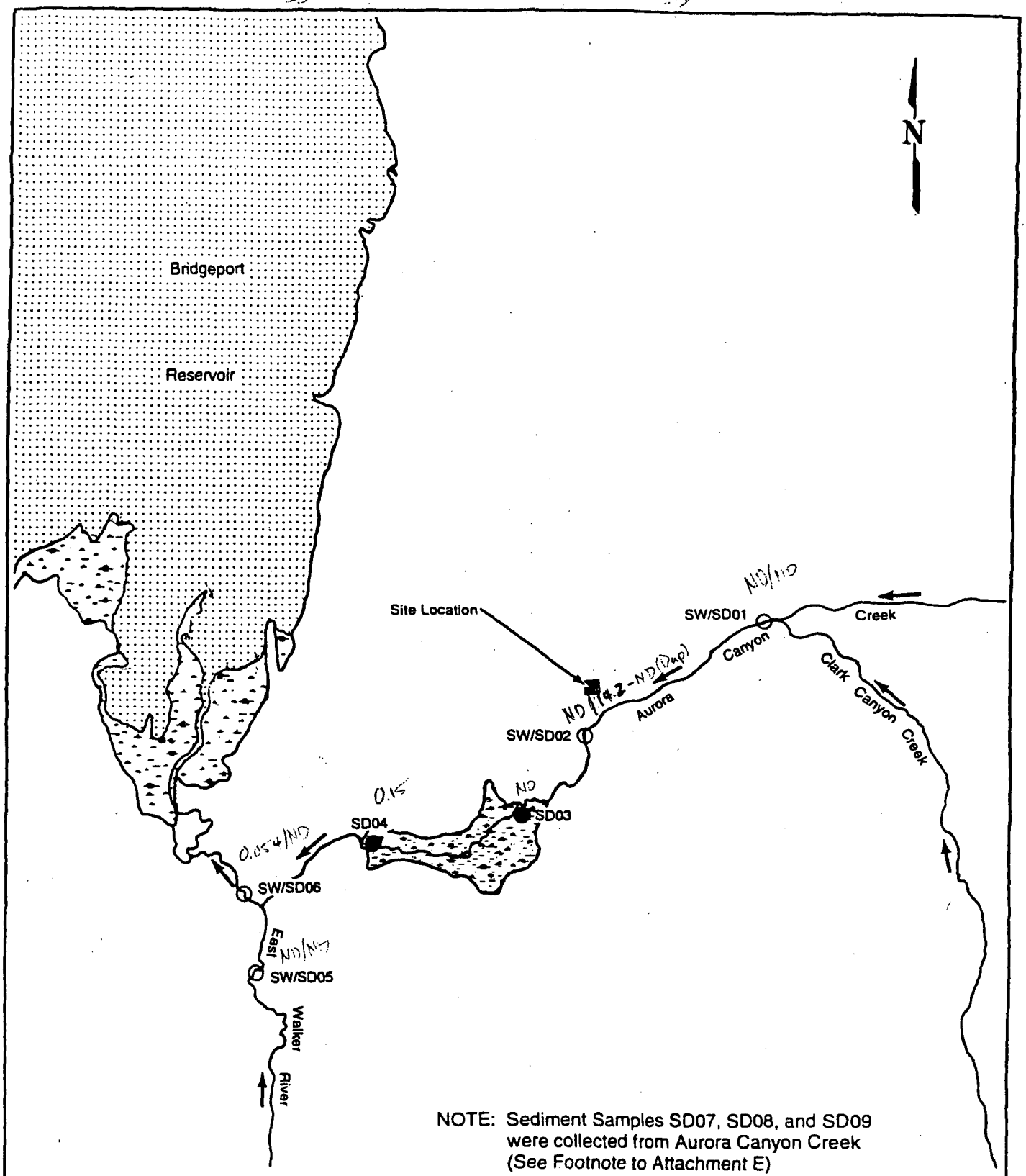
Surface water and sediment analytical results are provided in Attachment F (Table 2 and Table 3, respectively). Concentrations of arsenic, barium, calcium, iron, magnesium, manganese, potassium, and sodium in downstream surface water samples were elevated compared to background values. Arsenic, which was not detected in the background surface water (ACM-SI-SW01), was detected in ACM-SI-SW02 and duplicate sample ACM-SI-SW02D at concentrations of 5.8 µg/L and 5.1 µg/L, respectively. These values exceed the Federal Ambient Water Quality Criterion (AWQC) of 0.0175 µg/L for the protection of human health for consumption of fish. Although concentrations of arsenic in site soils meet the criteria for observed contamination, concentrations found in surface water may represent natural conditions. Surface water samples taken in 1986 and 1987 from Aurora Canyon Creek upstream of the site contained arsenic at 6.0 µg/L and 9.0 µg/L (BLM, 1990). Arsenic was not detected in surface water samples farther downstream in the East Walker River, but it may be present at concentrations below the detection limit due to dilution.

Calcium, sodium, magnesium, and potassium were elevated in downstream sediments compared to background concentrations. Elevated levels of calcium, sodium, magnesium, and potassium in downstream surface water and sediment samples may be due to the presence of alkali flats downstream from the site. These constituents were not elevated in site soil samples and are not attributable to the site.

Mercury was detected in sediment sample ACM-SI-SD02 (collected downstream of PPE during the August 1995 sampling) at a concentration of 14.2 mg/kg. Mercury was not present in the associated duplicate ACM-SI-SD02D. To determine if mercury was present in the sediments of the creek, four additional samples were collected in December, 1995. The results of the additional sediment samples indicated mercury was present at concentrations ranging from 0.16 to 0.29 mg/kg, slightly exceeding the CRDL of 0.1 mg/kg.

5.5 Conclusions

Arsenic was detected in two surface water samples at concentrations exceeding the Federal AWQC of 0.0175 µg/L. Concentrations of arsenic in surface water may represent natural conditions. No other inorganic constituents were present at concentrations exceeding Federal AWQC. Other inorganics detected in surface waters and sediments at elevated concentrations may be attributable to alkali soils downstream from the site.



ATTACHMENT D

Surface Water & Sediment Sample Location Map

AURORA CANYON MILLSITE
BRIDGEPORT, CALIFORNIA

Attachment E
Sample Locations and Rationales
Aurora Canyon Millsite, Bridgeport CA

MATRIX	SAMPLE NO.	LOCATION AND RATIONALE
Soil	SS01/02	Native soils about 300 feet north of site. Grab samples collected away from known or suspected site activities to determine background metals concentrations in surficial soil.
	SS03	Northwest of concrete foundation. Grab sample collected to determine concentrations of metals.
	SS04	West of trailer. Grab sample collected to determine concentrations of metals in soils along west side of site.
	SS05	Immediately northwest of concrete foundation. Grab sample collected where field screening results indicated elevated levels of mercury in soils.
	SS06	East side of site. Grab sample collected along access road near limits of reddish soils.
	SS07	East side of site. Grab sample collected along northern access road near limits of reddish soils.
	SS08	On upper terrace. Grab sample collected to determine metals concentrations in soils along northern portion of site.
Surface Water/ Sediment	SW/SD01	Upstream of site in Aurora Canyon Creek after confluence of Clark Canyon Creek. To determine water quality in Aurora Canyon Creek upstream of site.
	SW/SD02	Aurora Canyon Creek 300 feet from site entrance road. To determine the presence/absence of contaminants in surface water and sediment immediately downstream of site.
	SD03	2000 feet downstream of SW/SD02 in Aurora Canyon Creek. To determine the presence/absence of contaminants in sediments downstream of site in wetlands.
	SD04	In Aurora Canyon Creek prior to confluence with East Walker River. To determine presence/absence of contaminants in wetlands.
	SW/SD05	In East Walker River upstream of confluence with Aurora Canyon Creek. To determine water quality in East Walker River before mixing with Aurora Canyon Creek.
	SW/SD06	In East Walker River about 100 feet downstream of confluence with Aurora Canyon Creek. To determine presence/absence of contaminants in East Walker River downstream of site.
	SW/SD02D	Duplicate of SW/SD02. To test reliability of sampling procedures and results.
Rinsate blank	RB01	Rinsate blank collected from stainless steel bowl used for soil sample collection.

Note: Sediment sample ACM-SI-SD07 was collected from the same location as ACM-SI-SD02. Sediment samples ACM-SI-SD08 and ACM-SI-SD09 were collected 25 feet and 50 feet downstream of ACM-SI-SD07, respectively. These samples were analyzed for mercury only.

Attachment F
Table 1

SUMMARY OF INORGANIC ANALYTICAL RESULTS FOR SURFACE SOIL SAMPLES
AURORA CANYON MILLSITE, SITE INSPECTION
BRIDGEPORT, CA

SAMPLE ID	SS01		SS02		SS03			SS04			SS05			SS06			SS07			SS08			EPA Soil Screening Levels*
	08600-01		08600-02		08600-03			08600-04			08600-05			08600-06			08600-07			08600-08			
TAL METAL SOILS (mg/kg)	Result	Qual	Result	Qual	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL	
Aluminum	9180		13200		24000		NA	29100		NA	12100		NA	18400		NA	19000		NA	21600		NA	NA
Antimony	3.2	J-S	2.6	J-SI	6	J-SI	NA	6	J-SI	NA	3.1	J-S	NA	2.2	UJ-SI	NA	3.7	J-SI	NA	2.9	J-SI	NA	31
Arsenic	2.9		2.1	J-I	146		NA	50		NA	15.9		NA	20.3		NA	37.7		NA	53.3		NA	0.4
Barium	100		149		706		NA	678		NA	159		NA	258		NA	408		NA	548		NA	5,500
Beryllium	0.4		0.49		0.38		NA	0.56		NA	0.44		NA	0.56		NA	0.32		NA	0.44		NA	0.1
Cadmium	0.78		0.9	J-I	0.79	J-I	NA	0.51	J-I	NA	0.67		NA	0.81	J-I	NA	0.32	U	NA	0.37	J-I	NA	39
Calcium	2460		2370		1930		NA	2260		NA	2180		NA	2730		NA	1260		NA	1760		NA	NA
Chromium	6.5		3.4		27.2		NA	20.7		NA	8		NA	11.9		NA	15.8		NA	14.9		NA	NA
Cobalt	6.8		12.7		5.2	J-I	NA	5.7		NA	6.5		NA	9		NA	4.3		NA	5.8		NA	NA
Copper	13.2		10.9		16.8		NA	13.7		NA	12.9		NA	15.8		NA	10.3		NA	12		NA	NA
Iron	12300		19000		28600		NA	20600		NA	16400		NA	20600		NA	16400		NA	18000		NA	NA
Lead	12.4		7.6		32		NA	20.1		NA	9		NA	19.7		NA	23.4		NA	16.9		NA	400
Magnesium	1700		2230		1620		NA	1730		NA	1890		NA	2580		NA	1130		NA	1850		NA	NA
Manganese	404		621		200		NA	202		NA	319		NA	602		NA	212		NA	218		NA	NA
Mercury	0.55		0.23		35.4		NA	1.5		NA	42.6		NA	2.6		NA	1.8		NA	5.7		NA	23
Nickel	8.5		7.7		8.8	J-I	NA	8.3		NA	7.3		NA	10.7		NA	4.8	J-I	NA	8.8		NA	1,600
Potassium	1700		1800		2250		NA	2350		NA	1880		NA	2170		NA	1690		NA	2330		NA	NA
Selenium	0.86	UJ-K	0.18	UJ-I	29.8		1.9	0.95	UJ-B	NA	6.1		0.56	0.17	UJ-KI	NA	0.97	U	NA	0.83	UJ-B	NA	390
Silver	0.38	U	0.35	UJ-I	0.38	UJ-I	NA	0.35	UJ-I	NA	0.35	U	NA	0.34	UJ-I	NA	0.32	UJ-I	NA	0.34	UJ-I	NA	390
Sodium	191	J-I	320	J-I	284	J-I	NA	248	J-I	NA	192	J-I	NA	278	J-I	NA	228	J-I	NA	216	J-I	NA	NA
Thallium	0.22	J-I	0.24	J-I	1.2	J-I	NA	0.68		NA	0.37	J-I	NA	0.56	J-I	NA	0.83		NA	0.74	J-I	NA	NA
Vanadium	29.8		56.4		58		NA	56		NA	37		NA	54		NA	45		NA	43.6		NA	550
Zinc	40.5	J-I	49.2	J-I	34.9	J-I	NA	39.3	J-I	NA	82.3	J-I	NA	39.5	J-I	NA	20.3	J-I	NA	31.5	J-I	NA	23,000
Cyanide	0.05	UJ-K	0.04	UJ-K	0.04	UJ-K	NA	0.05	UJ-K	NA	0.05	UJ-K	NA	0.05	UJ-K		0.05	UJ-K	NA	0.06	UJ-K	NA	1,600
	Background		Background		NW of Foundation			Near Trailer			NW of Foundation			Access Rd.			NE corner			Upper terrace			

* U.S. Environmental Protection Agency. 1994. Soil Screening Guidance (Residential Soil Ingestion Figures). Office of Emergency and Remedial Response, Hazardous Site Control Division, Washingto

J = Estimated value
S = Qualified due to matrix spike recoveries outside control limits
U = Undetected
I = Qualified due to interference problems (ICP serial dilution or ICS, or poor analytical spike recovery / RSD / CV by graphite furnace).
K = Qualified due to negative blank value problems
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NA = Not Available / Not Applicable

Attachment F
Table 2

SUMMARY OF INORGANIC ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES
AURORA CANYON MILLSITE, SITE INSPECTION
BRIDGEPORT, CA

SAMPLE ID	SW01		SW02			SW02D			SW05			SW06			R801		AWQC PHH*
LABORATORY ID	08598-05		08598-03			08598-04			08598-02			08598-01			08598-06		
TAL METAL WATERS (ug/l)	Result	Qual	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	
Aluminum	84.6	J-K	206		NA	244		NA	203		NA	278		NA	129	J-K	NA
Antimony	14.4	U	15	UJ-B	NA	14.4	U	NA	14.4	U	NA	14.4	U	NA	14.4	U	46,000
Arsenic	1.1	U	5.8		1	5.1		1	1.1	U	NA	1.1	U	NA	1.1	U	0.0175
Barium	3.3	U	66.7		3	64.7		3	23.9		NA	29.3		NA	3.3	U	NA
Beryllium	0.22	U	0.22	U	NA	0.22	U	NA	0.22	U	NA	0.22	U	NA	0.22	U	0.0641
Cadmium	2.2	U	2.2	U	NA	2.2	U	NA	2.2	U	NA	2.2	U	NA	2.2	U	NA
Calcium	33.6		24300		NA	25700		NA	14500		NA	17300		NA	44.9		NA
Chromium	5.6	U	5.6	U	NA	5.6	U	NA	5.6	U	NA	5.6	U	NA	5.6	U	3,433,000
Cobalt	3.3	U	3.3	U	NA	3.3	U	NA	3.3	U	NA	3.8		NA	3.3	U	NA
Copper	2.2	U	2.2	U	NA	2.2	U	NA	2.2		NA	2.2	U	NA	2.2	U	NA
Iron	29.6		157		NA	184		NA	512		NA	638		NA	13.6		NA
Lead	1.1	U	1.1	U	NA	1.1	U	NA	1.1	U	NA	1.1	U	NA	1.1	U	NA
Magnesium	33.1	UJ-B	7960		NA	8000		NA	2350		NA	8210		NA	32	UJ-B	NA
Manganese	1.8		7.1		NA	7.8		NA	33.7		NA	42.7		NA	1.1	U	100
Mercury	0.05	U	0.05	U	NA	0.05	U	NA	0.05	U	NA	0.054		NA	0.05	U	0.146
Nickel	4.4	U	4.4	U	NA	4.4	U	NA	4.4	U	NA	4.4	U	NA	4.4	U	100
Potassium	259	U	7250		NA	7180		NA	1300		NA	3470		NA	259	U	NA
Selenium	1.1	U	1.1	U	NA	1.1	U	NA	1.1	U	NA	1.1	U	NA	1.1	U	NA
Silver	2.2	U	2.2	U	NA	2.2	U	NA	2.2	U	NA	2.2	U	NA	2.2	U	NA
Sodium	1130	J-D	21000	J-D	NA	20400	J-D	NA	5790	J-D	NA	52400	J-D	NA	493	J-D	NA
Thallium	1.1	U	1.1	U	NA	1.1	U	NA	1.1	U	NA	1.1	U	NA	1.1	U	48
Vanadium	2.2	U	10.2		NA	10.8		NA	2.2	U	NA	3.6		NA	2.2	U	NA
Zinc	14.8	UJ-B	11.2	UJ-B	NA	14.6	UJ-B	NA	11.3	UJ-B	NA	15.4	UJ-B	NA	12.9	UJ-B	NA
Cyanide	1	U	1	UJ-Q	NA	1	U	NA	1	U	NA	1	U	NA	1	UJ-Q	NA
	Background		Aurora Canyon Cr			Duplicate of SW02			E. Walker River			E. Walker River			Rinsate Blank		

* Ambient Water Quality 45FR79318 - Quality Criteria for Water 1992; Protection of Human Health for Consumption of Fish

J = Estimated value
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U = Undetected
I = Qualified due to interference problems (ICP serial dilution or ICS, or poor analytical spike recovery / RSD / CV by graphite furnace).
K = Qualified due to negative blank value problems
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B = Qualified due to blank contamination problems
D = Qualified due to duplicate control limits being exceeded
Q = Qualified for other reasons - refer to the text of the report
NA = Not available / Not Applicable

Attachment F
Table 3

SUMMARY OF INORGANIC ANALYTICAL RESULTS FOR SEDIMENT SAMPLES
AURORA CANYON MILLSITE, SITE INSPECTION
BRIDGEPORT, CA

SAMPLE ID	SD01		SD02			SD02D			SD03			SD04			SD05			SD06		
LABORATORY ID	08600-16		08600-13			08600-14			08600-09			08600-10			08600-12			08600-11		
TAL METAL SOILS (mg/kg)	Result	Qual	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL	Result	Qual	SQL
Aluminum	11200		14000		NA	16900		NA	10300		NA	20500		NA	11800		NA	4810		NA
Antimony	3.8	J-S	6.8	UJ-S	NA	6.3	UJ-S	NA	3.8	UJ-S	NA	3.6	UJ-S	NA	4.4	UJ-S	NA	3.1	UJ-S	NA
Arsenic	3.2		5.9		NA	5.8		NA	7.9		NA	5.8		NA	5.5		NA	3.3		NA
Barium	138		169		NA	202		NA	168		NA	239		NA	120		NA	49.4		NA
Beryllium	0.47		0.53		NA	0.73		NA	0.44		NA	0.81		NA	0.47		NA	0.12		NA
Cadmium	0.61		1.1	U	NA	0.97	U	NA	0.67		NA	1.2		NA	0.77		NA	0.48	U	NA
Calcium	3360		4230		NA	5180		NA	3760		NA	5840		NA	3330		NA	1220		NA
Chromium	6.5		7.1		NA	10.6		NA	7.4		NA	11.7		NA	6.3		NA	2.4		NA
Cobalt	9.8		11		NA	13.1		NA	8.8		NA	16.7		NA	8.4		NA	3.5		NA
Copper	10.8		13.8		NA	19.2		NA	10.7		NA	21.2		NA	10.6		NA	2.8		NA
Iron	14700		17200		NA	20100		NA	18500		NA	22600		NA	13300		NA	5800		NA
Lead	4.8		10.3		NA	11.1		NA	9.2		NA	10.7		NA	9.5		NA	3.2		NA
Magnesium	2380		3110		NA	3810		NA	3550		NA	4500		NA	2590		NA	1140		NA
Manganese	558		494		NA	619		NA	271		NA	878		NA	315		NA	76.3		NA
Mercury	0.12	U	14.2		2	0.22	U	NA	0.12	U	NA	0.15		0.1	0.17	U	NA	0.11	U	NA
Nickel	10		11.8		NA	14		NA	8.8		NA	15.3		NA	7.4		NA	2.5		NA
Potassium	1500		2240		NA	2730		NA	2170		NA	3210		NA	1860		NA	746		NA
Selenium	0.23	UJ-I	0.93	UJ-BI	NA	0.87	UJ-BI	NA	0.26	UJ-KI	NA	0.37	UJ-BI	NA	0.45	UJ-BI	NA	0.25	UJ-B	NA
Silver	0.49	U	1.1	U	NA	0.97	U	NA	0.68	U	NA	0.54	U	NA	0.67	U	NA	0.48	U	NA
Sodium	474	J-I	715	J-I	NA	883	J-I	NA	448	J-I	NA	810	J-I	NA	503	J-I	NA	308	J-I	NA
Thallium	0.23	UJ-KI	0.58	UJ-K	NA	0.46	UJ-KI	NA	0.52		NA	0.46		NA	0.34	UJ-K	NA	0.23	UJ-I	NA
Vanadium	38.2		45.7		NA	49.9		NA	42.5		NA	58.2		NA	26.5		NA	12.5		NA
Zinc	37.8	J-I	47.5	J-I	NA	54.9	J-I	NA	38	J-I	NA	59.3	J-I	NA	38.5	J-I	NA	15.9	J-I	NA
Cyanide	0.06	UJ-K	0.13	UJ-K	NA	0.14	UJ-K	NA	0.07	UJ-K	NA	0.14	J-K	NA	0.09	UJ-K	NA	0.07	UJ-K	NA
	Background		Aurora Canyon Cr			Duplicate of SD02			Aurora Canyon Cr			Aurora Canyon Cr			E. Walker River			E. Walker River		

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MESSAGES

4/2/99

Diana,

I am sending these reports for Aurora Canyon at the request of Philip Armstrong.

BC

Barbara Chertowsky
Armstrong Data Services (*ads*)
Superfund Records Center, SFD-7-C
Phone: 415-536-2009

REVIEW OF AURORA CANYON MILL SITE

Summary of data found in file is attached. Primary constituents of concern are arsenic and mercury .

Soil

The average site-wide arsenic concentration detected in soil samples is one order of magnitude higher than the average site background concentration. The average site-wide mercury concentration is two orders of magnitude higher than the average site background concentration.

Surface Water

Relatively low concentrations of arsenic and mercury were detected in surface waters (Aurora Canyon Creek and East Walker River). Two of four samples were above the detection limit (1.1 ppb) for arsenic (max. 5.8 ppb) and one of four samples was above the detection limit (0.05 ppb) for mercury (max. 0.054 ppb). These values do not appear to be in significant conflict with potential water quality goals.

Ground Water

One ground water sample was collected in 1991 from an on-site production well, which was formerly used at the site. The well is reported to be 3 feet in diameter (steel cased), 8 feet deep, with the depth to water at approximately 4 feet BGS. A well completion report is not available; therefore, it is not know whether the well is constructed and sealed properly. Arsenic and mercury were detected in the sample at concentrations of 10.7 and 5.5 ppb, respectively. It is unknown whether the samples reflect total or dissolved concentrations. The MCLs for arsenic and mercury are 50 and 2 ppb, respectively.

Sediment

Seven samples were collected from sediment in Aurora Canyon Creek and the East Walker River. One of the seven samples was collected upstream from the site and is considered representative of background conditions. Arsenic concentrations (3.3 to 7.9 ppm) were consistent with the background concentration (3.2 ppm). Concentrations of mercury in five of the six samples (<0.11 to 0.15 ppm) were consistent with the background concentration (<0.12 ppm). Mercury was detected in one sample at 14.2 ppm; however, the result was a duplicate analysis associated with a non-detect sample result.

Conclusions and Recommendations

The data indicate that soils have been impacted by arsenic and mercury. However, the contaminant concentrations are not above hazardous waste threshold levels and do not appear to present a significant human health threat based on the current use of the site. Arsenic and mercury concentrations appear to be slightly above background levels in surface water and sediment, but are generally within applicable water quality standards. Mercury was detected in ground water at a concentration more than two times the MCL, but no further ground water characterization work has been conducted.

Follow-up sampling should be conducted for surface water and sediment to resolve inconsistent data where appropriate. These areas include the location where duplicate sediment sampling results were inconsistent and where mercury was detected in surface water. The production well should be properly destroyed and a screening level ground water investigation should be conducted to evaluate whether ground water has been impacted. A ground water grab sampling effort using direct push equipment may be sufficient to characterize conditions at the site.

AURORA CANYON MILLSITE

DATE	MATRIX	LOCATION	ARSENIC	MERCURY	UNITS
		SOIL			
2/91	Ssoil	H2O Tank	30.20	62.90	ppm
2/91	Ssoil	Mill	41.50	10.40	ppm
2/91	Ssoil	NW Slabs	22.50	77.20	ppm
2/91	Ssoil	Trailer	55.20	79.50	ppm
8/95	Ssoil	East Soils	20.30	2.50	ppm
8/95	Ssoil	East Soils	37.70	1.80	ppm
8/95	Ssoil	North Soils	53.30	5.70	ppm
8/95	Ssoil	NW Slabs	146.00	35.40	ppm
8/95	Ssoil	NW Slabs	15.90	42.60	ppm
8/95	Ssoil	Trailer	50.00	1.50	ppm
2/91	Ssed	Drainage	6.00	4.80	ppm
2/91	Ssed	Drainage	2.90	0.12	ppm
2/91	Ssed	NW Slabs	31.30	175.00	ppm
3/99	Solid	Unknown	NA	53.00	ppm
3/99	Solid	Unknown	NA	19.00	ppm
	Soil	**Average**	**39.45**	**38.09**	**ppm**
2/91	Ssoil	Background	2.30	0.36	ppm
2/91	Ssed	Background	4.00	0.19	ppm
8/95	Ssoil	Background	2.80	0.55	ppm
8/95	Ssoil	Background	2.10	0.23	ppm
	Soil	**Average**	**2.80**	**0.33**	**ppm**
	Soil	**EPA SL**	**0.40**	**23.00**	**ppm**
	Soil	**Typical Median**	**11.00**	**0.10**	**ppm**
		SURFACE WATER			
8/95	SW	AC Creek	5.80	<0.05	ppb
8/95	SW	AC Creek (Dup)	5.10	<0.05	ppb
8/95	SW	EW River	<1.1	<0.05	ppb
8/95	SW	EW River	<1.1	0.054	ppb
	SW	**Average***	**3.00**	**0.03**	**ppb**
8/95	**SW**	**Background**	**<1.1**	**<0.05**	**ppb**
	SW	**MCL**	**50.00**	**2.00**	**ppb**
	SW	**Prop 65**	**5.00**		**ppb**
	SW	**AWQC**	**190.00**	**0.012 - 2.1**	**ppb**
		GROUND WATER			
2/91	GW	Well	10.70	5.50	ppb
	SW	**MCL**	**50.00**	**2.00**	**ppb**
	SW	**Prop 65**	**5.00**		**ppb**
		RIVER/CREEK SEDIMENT			
8/95	Creeksed	AC Creek	5.90	14.20	ppm
8/95	Creeksed	AC Creek (Dup)	5.80	<0.22	ppm
8/95	Creeksed	AC Creek	7.90	<0.12	ppm
8/95	Creeksed	AC Creek	5.80	0.15	ppm
8/95	Creeksed	EW River	5.50	<0.17	ppm
8/95	Creeksed	EW River	3.30	<0.11	ppm
	Sediment	**Average***	**5.70**	**2.44**	**ppm**
8/95	Creeksed	Background	3.20	<0.12	ppm

* Used 1/2 DL for non-detects

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
CALIFORNIA DISTRICT, CARNELIAN BAY

PO BOX 1360, CARNELIAN BAY, CA 96140
(916) 546-0187 FAX (916) 546 8532
http://water.wr.usgs.gov

July 14, 2000

NOTES:
1) DATA VALUES WITH AN "E" NOTATION ARE "ESTIMATED VALUES"
2) BACTERIA RESULTS WITH A "K" NOTATION WHERE "NON-IDEAL COUNT" (IDEAL COUNT HAS 20-60 CFU ON A PLATE).

Thomas J. Suk, Environmental Specialist
California Regional Water Quality Control Board, Lahontan Region
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

SUBJECT: PROGRESS REPORT FOR SWRCB CONTRACT # 9-128-160-0 (WATER QUALITY MONITORING IN THE WATERSHED OF BRIDGEPORT RESERVOIR)

Dear Mr. Suk:

Following is a progress report for the above-referenced contract.

Task 1 (Project Management/Administration): Ongoing

Task 2 (Monthly Water Quality Monitoring): Samples were collected April 11-13, May 9-12 and June 5-8.Samples were shipped to the laboratory for analyses. Most of the results are back and have been partially reviewed. The preliminary data is attached.

Task 3 (Diurnal Water Quality Monitoring): Diurnal sampling was conducted on June 7. preliminary results are attached.

Task 4 (Storm Event Sampling): This task is pending.

Task 5 (Water Quality Sampling for Iron): Samples were collected on May 9-12. Preliminary results are attached.

Task 6 (Public Outreach and Technical Assistance): On March 24, 2000, USGS staff (G.Rockwell, P.Honeywelll, and Chris Farrar) met with UC Cooperative Extension agent Linda Vance to discuss coordination of monitoring efforts in the Bridgeport Valley by all interested stakeholders, including discussions regarding local efforts to apply for a Clean Water Act Section 205(j) planning grant to facilitate local agency and stakeholder monitoring. On about April 17 P Honeywell and G Rockwell met with Linda Vance to discuss EWI sampling techniques and provide sampling equipment for Linda's additional work in the Bridgeport Valley.

DISTRICT CODE 32 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00

10290500 - ROBINSON C A TWIN LKS OUTLET NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
12...	1145	7.0	605	38	--	60	9.6	8.2	<.002	<.10	E.08
MAY											
10...	0940	8.0	595	144	.40	58	8.9	8.0	<.002	E.10	E.10
JUN											
08...	1030	12.5	583	214	.40	56	8.2	7.8	.002	<.10	E.07

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
12...	<.005	E.004	<.001	--	--	--	--	--	--	--
MAY										
10...	<.005	<.008	<.001	23	7.9	.84	2.0	.2	15	.72
JUN										
08...	.007	<.008	<.001	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
12...	--	--	--	--	--	--	--	<1	<1	--
MAY										
10...	E.24	4.8	.14	5.6	30	<10	<2.2	<1	<1	38
JUN										
08...	--	--	--	--	--	--	--	--	--	--

DISTRICT CODE 06 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00
10291200 - ROBINSON C A BRIDGEPORT RES NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
11...	1540	16.0	605	5.0	--	103	9.1	8.2	<.002	.11	.13
MAY											
09...	1520	17.0	600	36	.50	88	7.6	8.0	.004	.28	.35
JUN											
07...	0910	11.5	600	123	1.5	69	8.3	7.1	.004	.14	.20
07...	1445	19.0	599	123	2.0	68	7.4	7.7	.002	.14	.26
07...	1945	16.5	599	123	1.9	68	6.7	7.2	.016	.16	.23

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
11...	<.005	.014	.006	--	--	--	--	--	--	--
MAY										
09...	<.005	.018	.002	36	11	2.2	3.6	.3	17	1.2
JUN										
07...	.010	.021	<.001	--	--	--	--	--	--	--
07...	.010	.027	<.001	--	--	--	--	--	--	--
07...	.010	.025	<.001	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
11...	--	--	--	--	--	--	--	K2	K8	--
MAY										
09...	.35	3.5	.16	12	340	58	7.2	K16	88	68
JUN										
07...	--	--	--	--	--	--	--	K250	130	--
07...	--	--	--	--	--	--	--	280	110	--
07...	--	--	--	--	--	--	--	--	--	--

DISTRICT CODE 32 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00
10293000 - E WALKER R NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
12...	1840	13.0	605	136	--	216	8.3	8.3	.036	.38	.46
MAY											
10...	1450	14.0	595	154	2.8	214	8.1	8.5	.029	.41	.93
JUN											
07...	1145	17.0	600	208	1.6	193	7.7	8.3	.072	.48	.51

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
12...	.005	.031	.004	--	--	--	--	--	--	--
MAY										
10...	.017	.038	.014	64	19	4.3	19	1	38	3.5
JUN										
07...	.028	.073	.036	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
12...	--	--	--	--	--	--	--	<1	K2	--
MAY										
10...	3.7	16	.30	15	260	47	9.0	K2	K3	151
JUN										
07...	--	--	--	--	--	--	--	<1	--	--

DISTRICT CODE 06 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00
10292100 - BUCKEYE C A BRIDGEPORT RES NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
11...	1430	15.0	605	6.0	--	135	8.7	7.5	.007	.18	.28
MAY											
09...	1420	13.0	600	56	1.7	62	8.4	7.9	.010	.20	.26
JUN											
07...	0800	7.0	600	118	1.9	45	9.3	7.0	.004	.11	.20
07...	1340	15.0	598	112	3.3	47	8.2	7.6	.002	.12	.22
07...	1830	15.5	598	91	2.1	49	7.7	7.2	.017	.12	.20

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
11...	<.005	.048	.022	--	--	--	--	--	--	--
MAY										
09...	<.005	.029	.007	22	6.2	1.5	4.1	.4	28	1.1
JUN										
07...	.031	.045	.005	--	--	--	--	--	--	--
07...	.012	.045	.005	--	--	--	--	--	--	--
07...	.013	.030	.006	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
11...	--	--	--	--	--	--	--	K2	K4	--
MAY										
09...	.49	2.6	.10	9.9	560	57	14	K13	23	50
JUN										
07...	--	--	--	--	--	--	--	>200	300	--
07...	--	--	--	--	--	--	--	>300	160	--
07...	--	--	--	--	--	--	--	190	120	--

DISTRICT CODE 32 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00
10292000 - SWAUGER C NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
13...	1020	5.5	600	20	--	118	9.1	8.3	.003	.28	.44
MAY											
11...	0850	1.0	600	13	2.2	120	10.9	8.3	.004	.11	.19
JUN											
06...	0845	7.5	598	5.2	1.9	153	9.6	8.0	<.002	E.10	.17

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
13...	.037	.107	.045	--	--	--	--	--	--	--
MAY										
11...	.052	.044	.038	42	11	3.7	8.7	.6	30	2.1
JUN										
06...	.083	.059	.035	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
13...	--	--	--	--	--	--	--	K6	55	--
MAY										
11...	1.6	3.5	.13	28	370	64	17	K2	K8	99
JUN										
06...	--	--	--	--	--	--	--	59	91	--

DISTRICT CODE 06 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00
10291800 - BUCKEYE C A HWY 395 NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
13...	1050	6.5	600	12	--	76	8.9	7.7	.004	.26	.52
MAY											
11...	0940	3.0	600	46	.50	59	10.0	7.8	.010	.13	.17
JUN											
06...	0945	7.0	603	150	2.2	36	9.4	6.9	.002	E.10	.17

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
13...	<.005	.116	.010	--	--	--	--	--	--	--
MAY										
11...	<.005	.011	.002	22	6.5	1.4	2.7	.2	20	.91
JUN										
06...	.013	.032	<.001	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
13...	--	--	--	--	--	--	--	K15	86	--
MAY										
11...	E.25	2.4	<.10	9.9	350	61	19	73	38	50
JUN										
06...	--	--	--	--	--	--	--	K180	120	--

DISTRICT CODE 32 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00
10291500 - BUCKEYE C NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
12...	1310	--	--	65	--	--	--	--	<.002	E.10	.13
MAY											
10...	1100	4.5	595	137	.60	40	9.7	7.8	<.002	E.10	.11
JUN											
08...	1135	4.5	587	213	.80	29	10.0	7.7	<.002	E.10	E.10

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
12...	<.005	.014	.002	--	--	--	--	--	--	--
MAY										
10...	.005	.010	.002	16	4.8	.91	1.6	.2	17	.71
JUN										
08...	.022	.018	<.001	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
12...	--	--	--	--	--	--	--	K2	K2	--
MAY										
10...	E.20	1.6	<.10	7.7	310	32	3.2	K2	K1	31
JUN										
08...	--	--	--	--	--	--	--	--	--	--

DISTRICT CODE 06 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00

10291100 - ROBINSON C A HWY 395 NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
13...	1130	8.0	600	11	--	77	8.8	7.6	.005	.30	.36
MAY											
11...	1040	6.0	600	39	.50	60	9.4	7.6	<.002	E.10	.16
JUN											
06...	1140	14.5	602	124	.80	64	8.3	7.3	.003	.12	.20

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
13...	.007	.023	.004	--	--	--	--	--	--	--
MAY										
11...	<.005	.012	<.001	23	7.3	1.2	2.4	.2	18	.85
JUN										
06...	.008	.016	<.001	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
13...	--	--	--	--	--	--	--	K7	130	--
MAY										
11...	E.28	3.9	.11	8.8	320	23	4.8	K7	61	47
JUN										
06...	--	--	--	--	--	--	--	K200	140	--

DISTRICT CODE 06 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00
10290200 - E WALKER R A BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
12...	1725	13.0	605	34	--	197	9.4	8.2	<.002	.42	.52
MAY											
10...	1620	14.5	595	71	.50	166	8.5	8.5	.012	.62	.60
JUN											
07...	0825	13.5	600	143	2.1	135	8.2	7.8	.005	.49	.47
07...	1522	19.0	600	143	1.8	126	7.5	7.7	.007	.49	.52
07...	2005	19.5	597	152	2.5	121	5.7	7.4	.011	.54	.50

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
12...	<.005	.051	.023	--	--	--	--	--	--	--
MAY										
10...	<.005	.042	.019	61	18	3.8	10	.6	26	2.7
JUN										
07...	.008	.041	.006	--	--	--	--	--	--	--
07...	.009	.041	.007	--	--	--	--	--	--	--
07...	.010	.046	.008	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
12...	--	--	--	--	--	--	--	K3	34	--
MAY										
10...	1.0	11	.19	22	400	120	45	82	200	137
JUN										
07...	--	--	--	--	--	--	--	K360	300	--
07...	--	--	--	--	--	--	--	K270	250	--
07...	--	--	--	--	--	--	--	270	280	--

DISTRICT CODE 32 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00
10289500 - GREEN C NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
JUN 06...	1530	12.0	593	125	.40	41	8.3	7.1	.004	<.10	E.09

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
JUN 06...	.011	E.004	<.001	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
JUN 06...	--	--	--	--	--	--	--	K2	29	--

DISTRICT CODE 32 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 7-14-00

10289000 - VIRGINIA C NR BRIDGEPORT CA

WATER-QUALITY DATA, CALENDAR YEAR JANUARY 2000 TO DECEMBER 2000

DATE	TIME	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	DISCHARGE, INST. CUBIC FEET PER SECOND	TURBIDITY (NTU)	SPECIFIC CONDUCTANCE (US/CM)	OXYGEN, DISSOLVED (MG/L)	PH WATER WHOLE FIELD (STANDARD UNITS)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR											
12...	1515	11.0	605	20	--	103	8.6	8.3	.004	.17	.27
MAY											
10...	1240	10.0	595	23	.90	87	8.6	8.0	.004	.17	.38
JUN											
05...	1625	18.0	597	30	3.2	75	7.2	7.9	<.002	E.10	.25

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)
APR										
12...	.007	.033	.013	--	--	--	--	--	--	--
MAY										
10...	.010	.025	.014	31	9.9	1.6	5.1	.4	25	1.6
JUN										
05...	.015	.045	.006	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
APR										
12...	--	--	--	--	--	--	--	K2	K7	--
MAY										
10...	.99	8.2	<.10	17	580	130	16	K1	25	70
JUN										
05...	--	--	--	--	--	--	--	K11	110	--

Field conditions at the time of the samples:

April *Flow slightly above the base flow.
*Sunny and cool for the first 2 days, rained most of the last night with showers during the last day.
*Rain affected the values for samples at Swauger Cr., Buckeye Cr. at 395, and Robinson Cr. at 395.
*A few horses in the valley but no cows we could see.
*No apparent irrigation except most of Buckeye Cr was being diverted on the Ascuaga Ranch.

May *Flow still low.
*Some irrigation, approximately half of Buckeye Cr being diverted on the Ascuaga Ranch.
*Some snow flurries on last day.
*A few cows have been moved in.

June *At least half the herd has been moved in.
*Most fields are flooded with irrigation water.
*Walked the entire western shoreline looking for un-sampled irrigation return.
*Higher flow due to snow melt.
*Added Green Creek to sample sites.
*Swallow have returned at 395 sites.
*Approximately half of Buckeye Cr is being diverted on the Ascuaga Ranch for irrigation. Most of this water returns directly to the reservoir in many small channels North and East of the diversion.
*Buckeye Cr. at Res., Robinson Cr. at Res., E Walker at Bridgeport, and E Walker near Bridgeport were sampled 3 times on June 7. We ran out of bacteria sample plates so fecal coliform and fecal strep. were dropped for Robinson Cr at the Res. for the last round and Robinson Cr. below Twin Lakes and Buckeye Cr. near Bridgeport the next day. About mid day it became obvious we were going to run out of time so E Walker near Bridgeport was only sampled once. The flow did not change at this site all day.

Very little change in flow was observed at these sites. There was a strong snowmelt diurnal at the upper sites. Apparently a combination of the irrigation diversions and channel storage in the broad flat valley attenuates the diurnal.

The dissolved oxygen values dropped off dramatically for the last round of samples. These were taken near dark.

Sincerely,

Gerald Rockwell

CALIFORNIA DEPARTMENT OF FISH AND GAME

FAX

TRANSFER COVER SHEET

TO: Kim Gorman

RE: Bridgeport Res

FROM: Jack D. Linn

COMMENTS: This the TSM data for E. Walker and tributary stream to Bridgeport Res

Water Pollution Control Laboratory
2005 Nimbus Rd.
Rancho Cordova CA 95670

Voice: (916) 358-2858
FAX: (916) 985-4301

Page ___ of ___

Toxic Substances Monitoring Program

East Walker River -- Bridgeport Reservoir

STATION NUMBER	STATION NAME	SPECIES CODE	TISSUE	DATE	AS	CD	CR	CU	PB	HG	NI	SE	AG	ZN
630.10.07	East Walker R/Bridgeport	BN	L	11/06/80	-0.10	0.03	-0.02	78.00	0.20	-888.00	-0.10	-888.00	0.70	28.00
630.10.07	East Walker R/Bridgeport	BN	F	11/06/80	-888.00	-888.00	-888.00	-888.00	-888.00	0.09	-888.00	-888.00	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	BN	L	10/27/83	-0.10	0.02	-0.02	110.00	-0.10	-888.00	-0.10	-888.00	0.87	22.00
630.10.07	East Walker R/Bridgeport	BN	F	10/27/83	-888.00	-888.00	-888.00	-888.00	-888.00	0.32	-888.00	-888.00	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	BN	L	10/27/83	-0.10	0.06	-0.02	130.00	-0.10	-888.00	-0.10	-888.00	1.10	25.00
).10.07	East Walker R/Bridgeport	BN	F	10/27/83	-888.00	-888.00	-888.00	-888.00	-888.00	0.15	-888.00	-888.00	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	BN	F	10/16/84	-888.00	-888.00	-888.00	-888.00	-888.00	0.10	-888.00	-888.00	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	BN	L	10/16/84	-0.10	0.02	-0.04	143.00	-0.10	-888.00	-0.10	3.80	0.68	23.00
630.10.07	East Walker R/Bridgeport	BN	F	10/30/85	-888.00	-888.00	-888.00	-888.00	-888.00	0.22	-888.00	-888.00	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	BN	L	10/30/85	-0.10	0.04	-0.02	50.00	-0.10	-888.00	-0.10	2.10	0.59	17.00
630.10.07	East Walker R/Bridgeport	WF	L	10/30/85	-0.10	0.01	-0.02	1.40	-0.10	-888.00	-0.10	1.20	-0.02	15.00
630.10.07	East Walker R/Bridgeport	WF	F	10/30/85	-888.00	-888.00	-888.00	-888.00	-888.00	0.04	-888.00	-888.00	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	BN	L	10/23/86	-0.05	0.01	-0.02	68.00	-0.10	-888.00	-0.10	-888.00	0.35	21.00
630.10.07	East Walker R/Bridgeport	BN	F	10/23/86	-888.00	-888.00	-888.00	-888.00	-888.00	0.20	-888.00	0.16	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	BN	L	10/28/87	-0.05	0.02	-0.02	183.00	-0.10	-888.00	-0.10	-888.00	0.57	41.00
630.10.07	East Walker R/Bridgeport	BN	F	10/28/87	-888.00	-888.00	-888.00	-888.00	-888.00	0.05	-888.00	0.18	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	SKR	F	10/28/87	-888.00	-888.00	-888.00	-888.00	-888.00	0.31	-888.00	0.14	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	BN	F	10/18/88	-888.00	-888.00	-888.00	-888.00	-888.00	0.12	-888.00	0.14	-888.00	-888.00
630.10.07	East Walker R/Bridgeport	BN	L	10/18/88	-0.05	0.02	-0.02	230.00	-0.10	-888.00	-0.10	-888.00	0.36	21.00
630.40.12	Twin Lakes	BN	F	10/19/88	-888.00	-888.00	-888.00	-888.00	-888.00	0.14	-888.00	0.46	-888.00	-888.00
630.40.12	Twin Lakes	BN	L	10/19/88	-0.05	0.02	-0.02	11.00	-0.10	-888.00	-0.10	-888.00	0.38	12.00
630.10.07	East Walker R/Bridgeport	BN	F	11/08/89	-888.00	-888.00	-888.00	-888.00	-888.00	0.04	-888.00	0.22	-888.00	-888.00
).10.07	East Walker R/Bridgeport	BN	L	11/08/89	0.12	0.01	0.02	35.00	-0.10	-888.00	-0.10	-888.00	0.11	27.00
630.30.13	Robinson Creek	BN	F	08/24/92	-888.00	-888.00	-888.00	-888.00	-888.00	0.02	-888.00	0.61	-888.00	-888.00
630.30.13	Robinson Creek	BN	L	08/24/92	0.06	0.06	-0.02	61.00	-0.10	-888.00	-0.10	-888.00	0.49	29.00
630.30.10	Virginia Cr/Dog Town	BN	F	08/24/92	-888.00	-888.00	-888.00	-888.00	-888.00	0.17	-888.00	0.38	-888.00	-888.00
630.30.10	Virginia Cr/Dog Town	BN	L	08/24/92	-0.05	0.04	-0.02	99.00	-0.10	-888.00	-0.10	-888.00	1.50	27.00
630.20.90	Bodie Cr/Flying M Club	LCT	F	08/25/92	-0.05	-0.01	-0.02	0.12	-0.10	0.39	-0.10	0.23	-0.02	4.80
630.20.90	Bodie Cr/Flying M Club	LCT	L	08/25/92	0.05	0.06	-0.02	47.00	-0.10	0.85	-0.10	2.10	3.10	21.00

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. -888.00 = Not Analyzed.

Toxic Substances Monitoring Program

Station Number	Station Name	Species Code	Common Name	Date	Sample Number	Age (Yr.)	Weight* (g)	Size* (mm)	Percent Water F**	Percent Water W**	Percent Water L**	Percent Lipid F**	Percent Lipid W**
630.10.07	East Walker R/Bridgeport	BN	Brown Trout	11/06/80	6	1.5	168.0	231.0	81.6		-888.0	0.52	
630.10.07	East Walker R/Bridgeport	BN	Brown Trout	10/27/83	5	4-5	868.0	418.0	79.4		78.9	1.01	
630.10.07	East Walker R/Bridgeport	BN	Brown Trout	10/27/83	5	2-3	407.9	323.0	78.4		79.9	1.28	
630.10.07	East Walker R/Bridgeport	BN	Brown Trout	10/16/84	5	3-4	589.9	361.0	76.7		80.0	2.41	
630.10.07	East Walker R/Bridgeport	BN	Brown Trout	10/30/85	6	3-5	687.2	400.0	78.1		81.5		
.10.07	East Walker R/Bridgeport	MF	Mountain Whitefish	10/30/85	11	2-3	240.4	270.0	75.1		81.0		
630.10.07	East Walker R/Bridgeport	BN	Brown Trout	10/23/86	6	4	992.1	418.0	74.6		80.5		
630.10.07	East Walker R/Bridgeport	BN	Brown Trout	10/28/87	7	3	233.4	271.0	76.8		-888.0		
630.10.07	East Walker R/Bridgeport	SKR	Sucker	10/28/87	9	4-5	354.0	298.0	77.6			2.28	
630.10.07	East Walker R/Bridgeport	BN	Brown Trout	10/18/88	6	3	357.3	302.0	77.4		81.0	2.62	
630.40.12	Twin Lakes	BN	Brown Trout	10/19/88	1	4	1598.2	474.0	70.4		80.0		
630.10.07	East Walker R/Bridgeport	BN	Brown Trout	11/08/89	6	3-4	313.1	298.0	78.9		81.1		
630.30.13	Robinson Creek	BN	Brown Trout	08/24/92	8	1	58.9	163.0	76.5		80.5		
630.30.10	Virginia Cr/Dog Town	BN	Brown Trout	08/24/92	10	1-2	41.8	150.0	77.1		77.9		
630.20.90	Bodie Cr/Flying M Club	LCT	Lahontan Cutthroat Trout	08/25/92	4	2-3	303.8	288.0	77.2		81.0		

* Weight and Size are either individual or mean values as indicated by sample number. Size = the fork length of fish, total length of other organisms.

** F = Filet. L = Liver. W = Whole Body.

NA = Not Analyzed. Missing data indicate data not applicable to the sample or the analysis.

Toxic Substances Monitoring Program

Station Number	Species Code	Sample Date	ALDRN_W	CCDAN_W	TCDAN_W	OCDAN_W	CNONA_W	TNONA_W	ACDEN_W	GCDEN_W	CLPYR_W	DICOF_W	DBP_W	DACTH_W	DIAZN_W	DIELD_W
630.10.07	BN	11/06/80	-5.	-5.	-5.	-5.	-888.	-5.	-888.	-888.	-10.	-100.	-888.	-5.	-50.	-5.
630.10.07	BN	10/27/83	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-10.	-100.	-888.	-5.	-50.	-5.
630.10.07	BN	10/27/83	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-10.	-100.	-888.	-5.	-50.	-5.
630.10.07	BN	10/16/84	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-10.	-100.	-888.	-5.	-50.	-5.
630.10.07	SKR	10/28/87	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-10.	-100.	-888.	-5.	-50.	-5.
630.10.07	BN	10/18/88	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-5.	-10.	-100.	-888.	-5.	-50.	-5.

Toxic Substances Monitoring Program

Station Number	ENDO1_W	ENDO2_W	ENDOS_W	ENDRN_W	ethio_w	HCHA_W	HCHB_W	HCHG_W	HCHD_W	DDDOP_W	DDDPP_W	DDEOP_W	DDEPP_W	DDMSPP_W	DDMUPP_W	DDTOP_W	DDTPP_W
630.10.07	-5.	-888.	-888.	-15.	-20.	-2.	-20.	-2.	-2.	-10.	-10.	-10.	-5.	-30.	-15.	-10.	-10.
630.10.07	-5.	-888.	-888.	-15.	-20.	-2.	-10.	-2.	-2.	-10.	-10.	-10.	16.	-30.	-15.	-10.	-10.
630.10.07	-5.	-888.	-888.	-15.	-20.	-2.	-10.	-2.	-2.	-10.	-10.	-10.	5.9	-30.	-15.	-10.	-10.
630.10.07	-5.	-888.	-888.	-15.	-20.	-2.	-10.	-2.	-5.	-10.	-10.	-10.	-5.	-30.	-15.	-10.	-10.
630.10.07	-5.	-888.	-888.	-15.	-20.	-2.	-10.	-2.	-5.	-10.	-10.	-10.	6.4	-30.	-15.	-10.	-10.
630.10.07	-5.	-70.	-85.	-15.	-20.	-2.	-10.	-2.	-5.	-10.	-10.	-10.	7.7	-30.	-15.	-10.	-10.

Toxic Substances Monitoring Program

Station Number	HEP_W	HEPOX_W	HCB_W	MTHOX_W	oxadi_w	EPARA_W	MPARA_W	PCB48_W	PCB54_W	PCB60_W	TOXAP_W	PCP_W	TCP_W
630.10.07	-5.	-5.	-2.	-30.	-888.	-10.	-10.	-50.	-50.	-50.	-100.	-888.	-888.
630.10.07	-5.	-5.	-2.	-30.	-888.	-10.	-10.	-50.	-50.	-50.	-100.	-888.	-888.
630.10.07	-5.	-5.	-2.	-30.	-888.	-10.	-10.	-50.	-50.	-50.	-100.	-888.	-888.
630.10.07	-5.	-5.	-2.	-15.	-888.	-10.	-10.	-50.	-50.	-50.	-100.	-888.	-888.
630.10.07	-5.	-5.	-2.	-15.	-888.	-10.	-10.	-50.	-50.	-50.	-100.	-888.	-888.
630.10.07	-5.	-5.	-2.	-15.	-888.	-10.	-10.	-50.	-50.	-50.	-100.	-888.	-888.

From: "Paul D Honeywell" <phoneywe@usgs.gov>
To: "Kim Gorman" <Gormk@rb6s.swrcb.ca.gov>
Date: 11/9/01 3:03PM
Subject: Re: Bridgeport data

Kim,
I do not know why the E is there, but I should have it fixed next week. Any of the values outside the 20-60 count range should have the "K". There are a few other fecal coli. values that need fixing. I will be in touch next week. Our recently upgraded database still has some things to be figured out.

Paul Honeywell
Hydrological Technician
530-546-0187
phoneywe@usgs.gov
Carnelian Bay, Ca FO

"Kim Gorman" <Gormk@rb6s.swrcb.ca.gov>
11/09/01 02:19 PM

To: <phoneywe@usgs.gov>
cc:
Subject: Re: Bridgeport data

Hey Paul,
I'm hoping I have the data formatted correctly, but I was wondering why Fecal Coliform has an E instead of a K.
Did I just mess up my spacing, or is that correct.
Thanks for your time.
Kim

BARNEY LAKE (ROBINSON CK)

different lab

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	??????? NO3 mg/L
Barney Lake Inlet	5/19/00	48	9.2	7.3	0.9	<0.05	0.01	0.11	
Barney Lake Outlet	5/19/00	46.7	9.1	7.6	1.1	<0.05	0.007	0.08	0.215
Barney Lake Inlet	5/30/00	84	8.9	8.1	0.8	<0.05	<0.007	0.09	0.059
Barney Lake Outlet	5/30/00	63	9.1	8.1	1.1	<0.05	<0.007	0.09	0.156
Barney Lake Inlet	6/15/00	86	9.3	7.6	0.2	<0.05	<0.007	<0.05	<0.010
Barney Lake Outlet	6/15/00	78	8.9	7.7	0.2	<0.05	<0.007	<0.05	0.046
Barney Lake Inlet	7/10/00	32	8.8	6.9	0.1	<0.05	0.03	<0.05	<0.010
Barney Lake Outlet	7/10/00	27.1	7.8	6.4	0.2	<0.05	<0.007	<0.05	0.02
Barney Lake Inlet	8/18/00	4	9.1	6.4	0.2	<0.05	0.02	<0.05	<0.010
Barney Lake Outlet	8/18/00	8.4	10.5	6.8	0.2	<0.05	<0.007	<0.05	0.019
Barney Lake Inlet	9/15/00	3.5	7.3	7.1	0.3	<0.05	0.008	<0.05	<0.010
Barney Lake Outlet	9/15/00	3.1	7.4	7.2	0.3	<0.05	0.016	<0.05	0.125
									<0.010

BUCKEYE CK: BIG MEADOWS TO USGS GAUGE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Buckeye above Big Meadows	5/19/00	80	9.3	7.9	0.7	<0.05	0.008	<0.05	<0.010
Buckeye below Big Meadows	5/19/00	83.2	9.3	7.5	0.6	<0.05	<0.007	<0.05	0.075
Buckeye above FS CG	5/19/00	102.9	9.2	7.5	0.8	<0.05	<0.007	<0.05	0.042
Buckeye below FS CG	5/19/00	132.8	9.8	7.7	0.5	<0.05	<0.007	<0.05	<0.010
Buckeye above Big Meadows	5/30/00	132	9.2	8.1	0.8	<0.05	<0.007	0.09	0.126
Buckeye below Big Meadows	5/30/00	127.5	8.9	8.1	0.6	<0.05	<0.007	0.08	<0.010
Buckeye above FS CG	5/30/00	151.2	9.4	7.3	0.9	<0.05	<0.007	<0.05	<0.010
Buckeye below FS CG	5/30/00	168	9.7	8.1	0.6	<0.05	<0.007	0.09	<0.010
Buckeye above Big Meadows	6/15/00	160.2	9.2	7.9	0.3	<0.05	<0.007	<0.05	0.052

Buckeye below Big Meadows	6/15/00	166	9.1	7.3	0.4	<0.05	<0.007	0.16	0.086
Buckeye above FS CG	6/15/00	172	9.1	7.4	0.2	<0.05	<0.007	<0.05	0.05
Buckeye below FS CG	6/15/00	196	9.3	7.7	0.2	<0.05	<0.007	<0.05	0.05
Buckeye above Big Meadows	7/10/00	55.7	8.3	6.6	0.2	<0.05	0.008	<0.05	0.047
Buckeye below Big Meadows	7/10/00	56.8	8.2	6.3	0.2	<0.05	<0.007	<0.05	0.031
Buckeye above FS CG	7/10/00	58.8	8.4	7	0.1	<0.05	0.056	<0.05	0.032
Buckeye below FS CG	7/10/00	80.3	8.5	7.2	0.1	<0.05	<0.007	<0.05	<0.010
Buckeye above Big Meadows	8/18/00	12.1	10.6	6.6	0.3	<0.05	<0.007	0.08	<0.010
Buckeye below Big Meadows	8/18/00	12	12.8	6.1	0.2	<0.05	<0.007	0.08	0.019
Buckeye above FS CG	8/18/00	20	8.5	6.9	0.2	<0.05	0.03	0.06	0.032
Buckeye below FS CG	8/18/00	31	8.5	7	0.2	<0.05	<0.007	0.08	0.053
Buckeye above Big Meadows	9/15/00	10.2	8.3	7.6	0.2	<0.05	0.011	0.05	<0.010
Buckeye below Big Meadows	9/15/00	10.2	8.3	7.5	0.2	<0.05	<0.007	<0.05	0.042
Buckeye above FS CG	9/15/00	10.5	7.9	7.1	0.1	<0.05	0.008	<0.05	0.028
Buckeye below FS CG	9/15/00	11.3	7.9	7.5	0.2	<0.05	0.009	<0.05	<0.010

BUCKEYE CK: USGS GAUGE TO WRID FENCELINE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Buckeye below FS CG	5/19/00	132.8	9.8	7.7	0.5	<0.05	<0.007	<0.05	<0.010
Buckeye (N) at 395	5/19/00	60	9.4	7.6	0.4	<0.05	0.01	<0.05	<0.010
Buckeye @ WRID	5/19/00	62.2	9.4	7.5	0.4	<0.05	0.01	<0.05	<0.010
Buckeye below FS CG	5/30/00	168	9.7	8.1	0.6	<0.05	<0.007	0.09	<0.010
Buckeye (N) at 395	5/30/00	142.6	9.5	8.4	0.4	<0.05	<0.007	0.11	0.361
Buckeye @ WRID	5/30/00	144	9.3	8.1	0.4	<0.05	<0.007	0.09	0.174
Buckeye below FS CG	6/15/00	196	9.3	7.7	0.2	<0.05	<0.007	<0.05	0.05
Buckeye (N) at 395	6/15/00	112.6	9	7.6	0.2	<0.05	<0.007	0.06	0.093
Buckeye @ WRID	6/15/00	102.5	8.8	7.7	0.4	<0.05	<0.007	0.05	<0.010

Buckeye below FS CG	7/25/00	62.1	10.1	7.8	0.2	<0.05	<0.007	<0.05	0.053
Buckeye at 395	7/25/00	12.1	7.1	7.8	0.4	>0.05	<0.007	<0.05	0.12
Buckeye at WRID fence	7/25/00	4.1	7.7	7.9	0.5	0.2	<0.007	<0.05	0.16
Buckeye below FS CG	8/18/00	31	8.5	7	0.2	<0.05	<0.007	0.08	0.053
Buckeye (N) at 395	8/18/00	7.5	7.2	7.8	0.3	<0.05	<0.007	0.09	0.039
Buckeye @ WRID	8/18/00	3	7.1	7.3	0.4	<0.05	<0.007	0.12	0.037
Buckeye below FS CG	9/15/00	11.3	7.9	7.5	0.2	<0.05	0.009	<0.05	<0.010
Buckeye (N) at 395	9/15/00	3.1	7.7	7.9	0.1	<0.05	<0.007	<0.05	0.049
Buckeye @ WRID	9/15/00	5.9	7.8	7.8	0.2	<0.05	0.09	<0.05	0.041

EAGLE CK: HEADWATERS TO BUCKEYE CREEK

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Eagle Ck US	5/30/00	4.1	8.9	7.4	0.6	<0.05	<0.007	0.08	<0.010
Eagle Ck DS	5/30/00	16.8	9.6	7.8	0.4	<0.05	<0.007	0.08	0.039
Eagle Ck US	6/15/00	8.8	9.5	6.4	0.2	<0.05	<0.007	0.09	0.096
Eagle Ck DS	6/15/00	22.6	10.1	7.1	0.2	<0.05	<0.007	0.11	0.046
Eagle Ck US	7/10/00	9.8	9.7	7.1	0.2	<0.05	<0.007	<0.05	<0.010
Eagle Ck DS	7/10/00	22	9.8	7.3	0.2	<0.05	<0.007	<0.05	<0.010
Eagle Ck US	8/18/00	4	7.7	6.1	0.2	0.06	<0.007	0.06	0.08
Eagle Ck DS	8/18/00	11	7.7	6	0.3	<0.05	0.03	<0.05	0.04
Eagle Ck US	9/15/00	2.9	7.6	7.2	0.3	<0.05	0.009	<0.05	0.032
Eagle Ck DS	9/15/00	8.8	7.9	7.1	0.2	<0.05	0.011	<0.05	0.035

HIGH LAKES, JULY-AUGUST

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Blue Lake Outlet	7/10/00	7.2	9.1	7.2	0.1	<0.05	0.02	<0.05	0.028
Blue Lake Outlet	8/18/00	6.9	8.4	6.7	0.2	<0.05	0.02	<0.05	0.018
Bonnie Lake Outlet	7/10/00	6.2	12.2	6.5	0.2	<0.05	0.016	<0.05	0.013
Bonnie Lake Outlet	8/18/00	<1	11.4	6.1	0.4	<0.05	0.016	0.06	0.013
Chain o Lakes	7/10/00	n/a	6.8	6.7	0.2	<0.05	0.028	<0.05	0.055
Chain o Lakes	8/18/00	n/a	9.1	6.4	0.3	<0.05	0.02	0.07	0.019
Cooney Lake Outlet	7/10/00	6	10.9	6.8	0.5	<0.05	<0.007	0.12	<0.010
Cooney Lake Outlet	8/18/00	4	8.2	6.7	0.2	<0.05	<0.007	0.09	0.04
Crown Lake Inlet	7/10/00	12	12.5	6.6	0.6	0.07	0.01	0.1	0.131
Crown Lake Outlet	7/10/00	16.5	10.5	6.7	0.2	<0.05	0.064	<0.05	0.085
Crown Lake Inlet	8/18/00	2.1	8.6	5.9	0.2	<0.05	<0.007	0.07	0.046
Crown Lake Outlet	8/18/00	3.1	7.1	6.1	0.2	<0.05	0.02	0.08	0.019
East Lake	7/10/00	12	11.2	7	0.2	<0.05	<0.007	<0.05	0.025
East Lake	8/18/00	7.5	11.7	6.4	0.3	<0.05	<0.007	0.08	0.024
Fremont Lake Trail	7/10/00	n/a	9.3	7	0.4	<0.05	0.071	0.1	0.043
Fremont Lake Trail	8/18/00	n/a	11	6.2	0.2	<0.05	0.02	<0.05	0.048
Fremont Lake Tule	7/10/00	n/a	9.4	6.5	0.2	<0.05	0.014	<0.05	0.053
Fremont Lake Tule	8/18/00	n/a	11.2	7.1	0.3	<0.05	0.014	0.07	0.04
Frog Lake Outlet	7/10/00	5.3	55.2	6.9	0.1	<0.05	0	<0.05	0.032
Frog Lake Outlet	8/18/00	3	10.1	6.8	0.3	<0.05	<0.007	0.08	0.009
Gilman Lake Outlet	7/10/00	11.5	11.8	7	0.2	<0.05	0.014	<0.05	0.08
Gilman Lake Outlet	8/18/00	6	12.4	6.5	0.3	<0.05	0.014	0.09	0.036
Harriet Lake	7/10/00	8	11	7	0.2	<0.05	0.038	<0.05	0.031
Harriet Lake	8/18/00	6	9.6	6.7	0.3	<0.05	0.02	0.08	0.019
Helen Lake Outlet	7/10/00	4.9	11.4	6.5	0.3	<0.05	0.015	<0.05	0.076
Helen Lake Outlet	8/18/00	1.8	11.8	6.1	0.2	<0.05	0.015	<0.05	0.058
Hoover (Lower) Lake Outlet	7/10/00	12	11.2	6.9	0.2	0.09	<0.007	<0.05	0.148
Hoover (Lower) Lake Outlet	8/18/00	9	11.4	6.6	0.2	<0.05	<0.007	<0.05	0.018
Long Lake (Upper)	7/10/00	n/a	7.9	6.8	0.2	<0.05	0.076	<0.05	0.032

Long Lake (Upper)	8/18/00	n/a	9.8	6	0.3	<0.05	0.02	0.08	0.032
Peeler at Rancheria	7/10/00	1	12.1	6.9	0.2	<0.05	<0.007	<0.05	0.013
Peeler at Rancheria	8/18/00	<1	9.4	6.4	0.2	<0.05	<0.007	<0.05	0.013
Peeler at Robinson Outlet	7/10/00	6	10.6	6.4	0.2	<0.05	0.03	<0.05	0.041
Peeler at Robinson Outlet	8/18/00	1.8	9.5	5.6	0.2	<0.05	0.02	0.07	0.018
Robinson Lake Lower Outlet	7/10/00	8.2	11.2	6.7	0.3	<0.05	0.013	<0.05	0.071
Robinson Lake Lower Outlet	8/18/00	4	7.4	5.7	0.3	<0.05	0.01	0.09	0.048
Robinson Lake Upper Outlet	7/10/00	3	11	6.5	0.1	<0.05	0.009	<0.05	0.025
Robinson Lake Upper Outlet	8/18/00	2	9.1	5.3	0.3	<0.05	0.02	<0.05	<0.010
Roosevelt Lake outlet	7/10/00	8	10.2	7.6	0.1	<0.05	<0.007	<0.05	<0.010
Roosevelt Lake outlet	8/18/00	n/a	10.4	6.7	0.2	<0.05	<0.007	0.09	<0.010
Ruth Lake Outlet	7/10/00	2.2	11.2	6.7	0.2	<0.05	0.01	<0.05	0.015
Ruth Lake Outlet	8/18/00	n/a	10.5	5.9	0.3	<0.05	0.01	<0.05	<0.010
Snow Lake Outlet	7/10/00	2	12.8	6.7	0.3	<0.05	0.01	<0.05	0.023
Snow Lake Outlet	8/18/00	1	8.5	5.3	0.3	<0.05	<0.02	0.07	0.023
Stella Lake Outlet	7/10/00	2.5	11.3	6.4	0.2	<0.05	0.015	<0.05	0.034
Stella Lake Outlet	8/18/00	n/a	9	6.4	0.2	<0.05	0.015	<0.05	0.034
Summit Lake Outlet	7/10/00	4.1	11.4	6.8	0.4	<0.05	<0.007	0.1	0.054
Summit Lake Outlet	8/18/00	2.2	11.7	6.4	0.3	<0.05	<0.007	0.09	0.05
Tower Lake Outlet	7/10/00	6.6	12.8	6.5	0.2	0.08	0.01	<0.05	0.15
Tower Lake Outlet	8/18/00	3.6	9.8	6.7	0.2	<0.05	0.01	0.08	0.04
Trumbull Lake Outlet	7/10/00	1.4	8.1	6.7	1	<0.05	<0.007	0.84	0.023
Trumbull Lake Outlet	8/18/00	0.5	8.7	6.7	0.2	<0.05	<0.007	0.08	0.023
Virginia Lake Upper Outlet	7/10/00	8.1	9.1	7.2	0.2	<0.05	<0.007	<0.05	0.033
Virginia Lake Upper Outlet	8/18/00	4.5	7.7	6.9	0.3	<0.05	<0.007	0.07	0.02

E. WALKER ABOVE & BELOW RESERVOIR

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
East Walker above Reservoi	5/19/00	68	9.1	8.4	1.1	<0.05	0.01	<0.05	<0.010
East Walker below Reservoi	5/19/00	165	9.2	8.7	0.5	0.05	0.03	0.05	0.03

East Walker above Reservoi	5/30/00	144.2	9.2	7.9	1.3	<0.05	<0.007	0.1	0.099
East Walker below Reservoi	5/30/00	187.5	8.9	7.9	0.6	<0.05	<0.007	0.08	<0.010
East Walker above Reservoi	6/15/00	146.2	8.9	7.9	0.2	<0.05	<0.007	0.06	0.032
East Walker below Reservoi	6/15/00	225	8.7	8.1	0.4	<0.05	<0.007	<0.05	0.03
East walker above Reservoir	7/25/00	32.5	8.6	7.8	0.2	<0.05	<0.007	<0.05	<0.010
East Walker below Reservoi	7/25/00	252	6.7	7.4	0.6	0.61	<0.007	0.13	0.028
East Walker above Reservoi	8/18/00	21	9.1	7.9	0.2	<0.05	0.02	0.08	<0.010
East Walker below Reservoi	8/18/00	198	7.1	7.8	0.2	<0.05	0.61	0.12	0.171
East Walker above Reservoi	9/15/00	14.8	8.1	7.6	0.2	<0.05	0.012	<0.05	<0.010
East Walker below Reservoi	9/15/00	214	7.5	8.1	0.1	<0.05	0.06	<0.05	0.044

GREEN CK: LAKE INLET TO USGS GAUGE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Green Lake Inlet	5/19/00	6	10.1	7.4	0.4	<0.05	0.008	<0.05	<0.010
Green Lake Outlet	5/19/00	27	10.2	7.3	0.4	<0.05	0.051	<0.05	0.174
Green above FS Campgroun	5/19/00	89.6	9.8	7.4	0.8	<0.05	0.023	<0.05	0.144
Green below FS Campgroun	5/19/00	89.8	9.8	7.5	0.8	<0.05	0.008	<0.05	0.074
Green at guage	5/19/00	115.2	9.6	7.9	0.5	<0.05	0.007	<0.05	0.033
Green Lake Inlet	5/30/00	12.8	9	6.6	0.5	<0.05	<0.007	0.09	<0.010
Green Lake Outlet	5/30/00	84.7	10.3	7.2	0.5	<0.05	<0.007	0.09	<0.010
Green above FS Campgroun	5/30/00	115.6	10.1	7	0.5	<0.05	<0.007	0.1	0.162
Green below FS Campgroun	5/30/00	115.2	10.2	7.1	0.9	<0.05	<0.007	<0.05	0.066
Green at guage	5/30/00	134.4	10.3	7	0.8	<0.05	<0.007	0.09	0.037
Green Lake Inlet	6/15/00	15.2	9.7	7.6	0.1	<0.05	<0.007	0.07	0.049
Green Lake Outlet	6/15/00	78.8	9.9	7.6	0.1	<0.05	<0.007	0.1	0.077
Green above FS Campgroun	6/15/00	130.1	9.9	7.4	0.2	<0.05	<0.007	0.18	0.104
Green below FS Campgroun	6/15/00	128.2	10.1	7.4	0.2	<0.05	<0.007	0.15	0.09
Green at guage	6/15/00	138.5	9.6	7.2	0.3	<0.05	<0.007	<0.05	0.021
Green Lake Inlet	7/10/00	5.1	8.8	7	0.3	0.09	<0.007	<0.05	0.144
Green Lake Outlet	7/10/00	22.7	7.8	6.9	0.3	0.08	0.021	<0.05	0.142
Green above FS Campgroun	7/10/00	39.8	8.8	6.9	0.2	<0.05	0.01	<0.05	0.092

Green below FS Campgroun	7/10/00	40.2	8.7	7.4	0.3	<0.05	<0.007	<0.05	0.081
Green at guage	7/10/00	44.5	8.5	7.5	0.3	<0.05	<0.007	<0.05	0.07
Green below FS campgrounc	7/25/00	38.3	10.2	7.6	0.2	<0.05	<0.007	<0.05	0.078
Green at gauge	7/25/00	36.8	10.1	7.6	0.2	<0.05	<0.007	<0.05	0.033
Green Lake Inlet	8/18/00	3.1	7.6	6.3	0.2	<0.05	<0.007	0.06	<0.010
Green Lake Outlet	8/18/00	12.5	8.7	6.4	0.2	<0.05	<0.007	<0.05	<0.010
Green above FS Campgroun	8/18/00	20	11.9	6.5	0.2	<0.05	<0.007	0.09	<0.010
Green below FS Campgroun	8/18/00	20	11.8	6.7	0.2	<0.05	<0.007	0.07	<0.010
Green at guage	8/18/00	21	9.2	6.9	0.3	<0.05	<0.007	0.08	<0.010
Green Lake Inlet	9/15/00	2.8	8.9	7.3	0.2	<0.05	0.008	<0.05	<0.010
Green Lake Outlet	9/15/00	8.1	8.1	7.2	0.2	<0.05	0.019	<0.05	0.16
Green above FS Campgroun	9/15/00	8.8	7.8	7.1	0.3	<0.05	0.015	<0.05	0.011
Green below FS Campgroun	9/15/00	8.9	7.8	7.4	0.2	<0.05	0.007	<0.05	0.074
Green at gauge	9/15/00	9.1	7.7	7.8	0.1	<0.05	<0.007	0.05	<0.010

HORSE CK & ROBINSON AT TWIN LAKES INLET

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Horse Creek at Twin Lakes	5/19/00	22.9	9.2	7.5	0.9	<0.05	<0.007	0.08	0.368
Robinson above Twin Lakes	5/19/00	70	9.1	7.5	1.2	<0.05	<0.007	<0.05	0.063
Horse Creek at Twin Lakes	5/30/00	44.8	11.1	7.1	1	0.08	<0.007	0.09	0.485
Robinson above Twin Lakes	5/30/00	118.8	10.2	7.2	1.4	<0.05	<0.007	0.08	0.111
Horse Creek at Twin Lakes	6/15/00	45.1	10.1	7.3	0.1	0.07	<0.007	0.12	0.366
Robinson above Twin Lakes	6/15/00	138.2	9.8	7.7	0.3	<0.05	<0.007	<0.05	0.072
Horse Creek at Twin Lakes	7/10/00	20.1	8.9	7.2	0.1	<0.05	<0.007	<0.05	0.2
Robinson above Twin Lakes	7/10/00	39.7	8.8	7.6	0.1	0.1	0.008	<0.05	0.261
Horse Creek at Twin Lakes	7/25/00	18.5	9.2	7	0.2	<0.05	<0.007	<0.05	0.096
Robinson above Twin Lakes	7/25/00	57.6	8.1	7.5	0.2	<0.05	<0.007	<0.05	0.075
Horse Creek at Twin Lakes	8/18/00	11	10.8	6.2	0.3	<0.05	<0.007	0.08	<0.010
Robinson above Twin Lakes	8/18/00	12	10.9	6.7	0.2	<0.05	<0.007	0.08	<0.010
Horse Creek at Twin Lakes	9/15/00	12.6	8.9	7.8	0.3	<0.05	0.011	0.1	0.032

Robinson above Twin Lakes	9/15/00	10.7	8.4	7.6	0.2	<0.05	0.013	<0.05	0.048

ROBINSON CK: USGS GAUGE TO WRID FENCE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Robinson at gauge	5/19/00	125.2	9	8.1	0.5	<0.05	0.007	<0.05	<0.010
Robinson @ Doc & Al	5/19/00	130.1	8.9	8.2	0.4	<0.05	0.007	<0.05	<0.010
Robinson (N) at 395	5/19/00	42.7	8.9	7.7	0.4	<0.05	0.007	<0.05	<0.010
Robinson @ WRID fence	5/19/00	40	9.1	8.2	0.9	<0.05	<0.007	<0.05	<0.010
Robinson at gauge	5/30/00	115	10	7.5	0.6	<0.05	<0.007	<0.05	0.078
Robinson @ Doc & Al	5/30/00	120	9.8	7.4	0.4	<0.05	<0.007	<0.05	0.192
Robinson (N) at 395	5/30/00	76	9.5	7.4	0.4	<0.05	<0.007	<0.05	0.262
Robinson @ WRID fence	5/30/00	120	9.3	7.8	0.9	<0.05	<0.007	0.08	0.257
Robinson at gauge	6/15/00	178	9.6	7.9	0.4	<0.05	<0.007	<0.05	<0.010
Robinson @ Doc & Al	6/15/00	176.8	9.6	7.7	0.2	<0.05	<0.007	<0.05	0.033
Robinson (N) at 395	6/15/00	89.3	8.7	7.7	0.1	<0.05	<0.007	0.13	<0.010
Robinson @ WRID fence	6/15/00	83.1	9.1	7.6	0.3	<0.05	<0.007	0.14	0.028
Robinson at gauge	7/10/00	98.6	8.4	7.4	0.2	<0.05	0.01	<0.05	0.034
Robinson @ Doc & Al	7/10/00	87.5	8.4	7.4	0.1	<0.05	<0.007	<0.05	0.068
Robinson at gauge	7/25/00	85.2	7.3	6.9	0.2	<0.05	<0.007	<0.05	0.026
Robinson at Doc & Al	7/25/00	78.2	7.9	7	0.2	<0.05	<0.007	<0.05	0.059
Robinson at 395	7/25/00	6.8	7.1	7.2	0.2	<0.05	<0.007	<0.05	0.032
Robinson at WRID Fence	7/25/00	9.1	6.4	7.8	0.2	<0.05	<0.007	<0.05	<0.010
Robinson at gauge	8/18/00	65	9.2	6.6	0.4	<0.05	<0.007	0.07	<0.010
Robinson @ Doc & Al	8/18/00	64.1	9.3	6.3	0.3	<0.05	<0.007	0.07	<0.010
Robinson (N) at 395	8/18/00	10.5	8.9	6.4	0.2	<0.05	<0.007	<0.05	<0.010
Robinson @ WRID fence	8/18/00	8.7	8.1	7.7	0.2	<0.05	<0.007	0.08	<0.010
Robinson at gauge	9/15/00	21.6	8.5	7.9	0.2	<0.05	<0.007	<0.05	0.044
Robinson @ Doc & Al	9/15/00	19.8	8.4	7.5	0.2	<0.05	<0.007	<0.05	0.041
Robinson (N) at 395	9/15/00	8.3	8.2	7.6	0.2	<0.05	<0.007	<0.05	0.088
Robinson @ WRID fence	9/15/00	4.1	8.1	7.8	0.2	<0.05	<0.007	<0.05	<0.010

SAUGER CR: HWY 395 CAMPGROUND TO ASCAUGUA LINE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Sauger @ Campground	5/19/00	21.3	8.9	8.3	0.6	<0.05	<0.007	0.06	0.05
Sauger below FS Compound	5/19/00	20.2	8.9	8.2	0.6	<0.05	<0.007	0.1	0.05
Sauger @ Campground	5/30/00	26.7	8.7	8	0.6	<0.05	<0.007	0.12	0.04
Sauger below FS Compound	5/30/00	26.4	8.7	8.4	0.6	<0.05	<0.007	0.12	0.04
Sauger @ Campground	6/15/00	5.3	8.1	7.6	0.3	0.06	<0.007	0.08	0.05
Sauger below FS Compound	6/15/00	5.1	8.1	7.6	0.3	0.06	<0.007	0.09	0.06
Sauger @ Campground	7/25/00	2.7	9	7.8	0.6	0.18	<0.007	0.1	0.13
Sauger below FS Compound	7/25/00	2.7	8.9	7.9	0.3	<0.05	<0.007	0.06	<0.010
Sauger @ Campground	8/18/00	4.2	7.1	6.8	0.5	0.18	0.1	0.07	0.16
Sauger below FS Compound	8/18/00	4.2	7	6.6	0.4	0.07	0.09	0.08	0.128
Sauger @ Campground	9/15/00	5.2	8.4	7.6	0.4	0.11	0.021	<0.05	0.112
Sauger below FS Compound	9/15/00	5.2	8.4	7.7	0.2	0.12	0.028	0.08	0.125

ROBINSON CK: ABOVE TWIN LAKES TO DOC & AL'S

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Horse Creek at Twin Lakes	5/19/00	22.9	9.2	7.5	0.9	<0.05	<0.007	0.08	0.368
Robinson above Twin Lakes	5/19/00	70	9.1	7.5	1.2	<0.05	<0.007	<0.05	0.063
Robinson at gauge	5/19/00	125.2	9	8.1	0.5	<0.05	0.007	<0.05	<0.010
Robinson @ Doc & Al	5/19/00	130.1	8.9	8.2	0.4	<0.05	0.007	<0.05	<0.010
Horse Creek at Twin Lakes	5/30/00	44.8	11.1	7.1	1	0.08	<0.007	0.09	0.485
Robinson above Twin Lakes	5/30/00	118.8	10.2	7.2	1.4	<0.05	<0.007	0.08	0.111
Robinson at gauge	5/30/00	115	10	7.5	0.6	<0.05	<0.007	<0.05	0.078

Robinson @ Doc & Al	5/30/00	120	9.8	7.4	0.4	<0.05	<0.007	<0.05	0.192
Horse Creek at Twin Lakes	6/15/00	45.1	10.1	7.3	0.1	0.07	<0.007	0.12	0.366
Robinson above Twin Lakes	6/15/00	138.2	9.8	7.7	0.3	<0.05	<0.007	<0.05	0.072
Robinson at gauge	6/15/00	178	9.6	7.9	0.4	<0.05	<0.007	<0.05	<0.010
Robinson @ Doc & Al	6/15/00	176.8	9.6	7.7	0.2	<0.05	<0.007	<0.05	0.033
Horse Creek at Twin Lakes	7/10/00	20.1	8.9	7.2	0.1	<0.05	<0.007	<0.05	0.2
Robinson above Twin Lakes	7/10/00	39.7	8.8	7.6	0.1	0.1	0.008	<0.05	0.261
Robinson at gauge	7/10/00	98.6	8.4	7.4	0.2	<0.05	0.01	<0.05	0.034
Robinson @ Doc & Al	7/10/00	87.5	8.4	7.4	0.1	<0.05	<0.007	<0.05	0.068
Horse Creek at Twin Lakes	7/25/00	18.5	9.2	7	0.2	<0.05	<0.007	<0.05	0.096
Robinson above Twin Lakes	7/25/00	57.6	8.1	7.5	0.2	<0.05	<0.007	<0.05	0.075
Robinson at gauge	7/25/00	85.2	7.3	6.9	0.2	<0.05	<0.007	<0.05	0.026
Robinson at Doc & Al	7/25/00	78.2	7.9	7	0.2	<0.05	<0.007	<0.05	0.059
Horse Creek at Twin Lakes	8/18/00	11	10.8	6.2	0.3	<0.05	<0.007	0.08	<0.010
Robinson above Twin Lakes	8/18/00	12	10.9	6.7	0.2	<0.05	<0.007	0.08	<0.010
Robinson at gauge	8/18/00	65	9.2	6.6	0.4	<0.05	<0.007	0.07	<0.010
Robinson @ Doc & Al	8/18/00	64.1	9.3	6.3	0.3	<0.05	<0.007	0.07	<0.010
Horse Creek at Twin Lakes	9/15/00	12.6	8.9	7.8	0.3	<0.05	0.011	0.1	0.032
Robinson above Twin Lakes	9/15/00	10.7	8.4	7.6	0.2	<0.05	0.013	<0.05	0.048
Robinson at gauge	9/15/00	21.6	8.5	7.9	0.2	<0.05	<0.007	<0.05	0.044
Robinson @ Doc & Al	9/15/00	19.8	8.4	7.5	0.2	<0.05	<0.007	<0.05	0.041

BARNEY LAKE (ROBINSON CK)

different lab

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	??????? NO3 mg/L
Barney Lake Inlet	5/19/00	48	9.2	7.3	0.9	<0.05	0.01	0.11	0.215
Barney Lake Outlet	5/19/00	46.7	9.1	7.6	1.1	<0.05	0.007	0.08	0.059
Barney Lake Inlet	5/30/00	84	8.9	8.1	0.8	<0.05	<0.007	0.09	0.156
Barney Lake Outlet	5/30/00	63	9.1	8.1	1.1	<0.05	<0.007	0.09	<0.010
Barney Lake Inlet	6/15/00	86	9.3	7.6	0.2	<0.05	<0.007	<0.05	0.046
Barney Lake Outlet	6/15/00	78	8.9	7.7	0.2	<0.05	<0.007	<0.05	<0.010
Barney Lake Inlet	7/10/00	32	8.8	6.9	0.1	<0.05	0.03	<0.05	0.02
Barney Lake Outlet	7/10/00	27.1	7.8	6.4	0.2	<0.05	<0.007	<0.05	<0.010
Barney Lake Inlet	8/18/00	4	9.1	6.4	0.2	<0.05	0.02	<0.05	0.019
Barney Lake Outlet	8/18/00	8.4	10.5	6.8	0.2	<0.05	<0.007	<0.05	<0.010
Barney Lake Inlet	9/15/00	3.5	7.3	7.1	0.3	<0.05	0.008	<0.05	0.125
Barney Lake Outlet	9/15/00	3.1	7.4	7.2	0.3	<0.05	0.016	<0.05	<0.010

BUCKEYE CK: BIG MEADOWS TO USGS GAUGE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Buckeye above Big Meadows	5/19/00	80	9.3	7.9	0.7	<0.05	0.008	<0.05	<0.010
Buckeye below Big Meadows	5/19/00	83.2	9.3	7.5	0.6	<0.05	<0.007	<0.05	0.075
Buckeye above FS CG	5/19/00	102.9	9.2	7.5	0.8	<0.05	<0.007	<0.05	0.042
Buckeye below FS CG	5/19/00	132.8	9.8	7.7	0.5	<0.05	<0.007	<0.05	<0.010
Buckeye above Big Meadows	5/30/00	132	9.2	8.1	0.8	<0.05	<0.007	0.09	0.126
Buckeye below Big Meadows	5/30/00	127.5	8.9	8.1	0.6	<0.05	<0.007	0.08	<0.010
Buckeye above FS CG	5/30/00	151.2	9.4	7.3	0.9	<0.05	<0.007	<0.05	<0.010
Buckeye below FS CG	5/30/00	168	9.7	8.1	0.6	<0.05	<0.007	0.09	<0.010
Buckeye above Big Meadows	6/15/00	160.2	9.2	7.9	0.3	<0.05	<0.007	<0.05	0.052

Buckeye below Big Meadows	6/15/00	166	9.1	7.3	0.4	<0.05	<0.007	0.16	0.086
Buckeye above FS CG	6/15/00	172	9.1	7.4	0.2	<0.05	<0.007	<0.05	0.05
Buckeye below FS CG	6/15/00	196	9.3	7.7	0.2	<0.05	<0.007	<0.05	0.05
Buckeye above Big Meadows	7/10/00	55.7	8.3	6.6	0.2	<0.05	0.008	<0.05	0.047
Buckeye below Big Meadows	7/10/00	56.8	8.2	6.3	0.2	<0.05	<0.007	<0.05	0.031
Buckeye above FS CG	7/10/00	58.8	8.4	7	0.1	<0.05	0.056	<0.05	0.032
Buckeye below FS CG	7/10/00	80.3	8.5	7.2	0.1	<0.05	<0.007	<0.05	<0.010
Buckeye above Big Meadows	8/18/00	12.1	10.6	6.6	0.3	<0.05	<0.007	0.08	<0.010
Buckeye below Big Meadows	8/18/00	12	12.8	6.1	0.2	<0.05	<0.007	0.08	0.019
Buckeye above FS CG	8/18/00	20	8.5	6.9	0.2	<0.05	0.03	0.06	0.032
Buckeye below FS CG	8/18/00	31	8.5	7	0.2	<0.05	<0.007	0.08	0.053
Buckeye above Big Meadows	9/15/00	10.2	8.3	7.6	0.2	<0.05	0.011	0.05	<0.010
Buckeye below Big Meadows	9/15/00	10.2	8.3	7.5	0.2	<0.05	<0.007	<0.05	0.042
Buckeye above FS CG	9/15/00	10.5	7.9	7.1	0.1	<0.05	0.008	<0.05	0.028
Buckeye below FS CG	9/15/00	11.3	7.9	7.5	0.2	<0.05	0.009	<0.05	<0.010

BUCKEYE CK: USGS GAUGE TO WRID FENCELINE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Buckeye below FS CG	5/19/00	132.8	9.8	7.7	0.5	<0.05	<0.007	<0.05	<0.010
Buckeye (N) at 395	5/19/00	60	9.4	7.6	0.4	<0.05	0.01	<0.05	<0.010
Buckeye @ WRID	5/19/00	62.2	9.4	7.5	0.4	<0.05	0.01	<0.05	<0.010
Buckeye below FS CG	5/30/00	168	9.7	8.1	0.6	<0.05	<0.007	0.09	<0.010
Buckeye (N) at 395	5/30/00	142.6	9.5	8.4	0.4	<0.05	<0.007	0.11	0.361
Buckeye @ WRID	5/30/00	144	9.3	8.1	0.4	<0.05	<0.007	0.09	0.174
Buckeye below FS CG	6/15/00	196	9.3	7.7	0.2	<0.05	<0.007	<0.05	0.05
Buckeye (N) at 395	6/15/00	112.6	9	7.6	0.2	<0.05	<0.007	0.06	0.093
Buckeye @ WRID	6/15/00	102.5	8.8	7.7	0.4	<0.05	<0.007	0.05	<0.010

Buckeye below FS CG	7/25/00	62.1	10.1	7.8	0.2	<0.05	<0.007	<0.05	0.053
Buckeye at 395	7/25/00	12.1	7.1	7.8	0.4	>0.05	<0.007	<0.05	0.12
Buckeye at WRID fence	7/25/00	4.1	7.7	7.9	0.5	0.2	<0.007	<0.05	0.16
Buckeye below FS CG	8/18/00	31	8.5	7	0.2	<0.05	<0.007	0.08	0.053
Buckeye (N) at 395	8/18/00	7.5	7.2	7.8	0.3	<0.05	<0.007	0.09	0.039
Buckeye @ WRID	8/18/00	3	7.1	7.3	0.4	<0.05	<0.007	0.12	0.037
Buckeye below FS CG	9/15/00	11.3	7.9	7.5	0.2	<0.05	0.009	<0.05	<0.010
Buckeye (N) at 395	9/15/00	3.1	7.7	7.9	0.1	<0.05	<0.007	<0.05	0.049
Buckeye @ WRID	9/15/00	5.9	7.8	7.8	0.2	<0.05	0.09	<0.05	0.041

EAGLE CK: HEADWATERS TO BUCKEYE CREEK

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Eagle Ck US	5/30/00	4.1	8.9	7.4	0.6	<0.05	<0.007	0.08	<0.010
Eagle Ck DS	5/30/00	16.8	9.6	7.8	0.4	<0.05	<0.007	0.08	0.039
Eagle Ck US	6/15/00	8.8	9.5	6.4	0.2	<0.05	<0.007	0.09	0.096
Eagle Ck DS	6/15/00	22.6	10.1	7.1	0.2	<0.05	<0.007	0.11	0.046
Eagle Ck US	7/10/00	9.8	9.7	7.1	0.2	<0.05	<0.007	<0.05	<0.010
Eagle Ck DS	7/10/00	22	9.8	7.3	0.2	<0.05	<0.007	<0.05	<0.010
Eagle Ck US	8/18/00	4	7.7	6.1	0.2	0.06	<0.007	0.06	0.08
Eagle Ck DS	8/18/00	11	7.7	6	0.3	<0.05	0.03	<0.05	0.04
Eagle Ck US	9/15/00	2.9	7.6	7.2	0.3	<0.05	0.009	<0.05	0.032
Eagle Ck DS	9/15/00	8.8	7.9	7.1	0.2	<0.05	0.011	<0.05	0.035

HIGH LAKES, JULY-AUGUST

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Blue Lake Outlet	7/10/00	7.2	9.1	7.2	0.1	<0.05	0.02	<0.05	0.028
Blue Lake Outlet	8/18/00	6.9	8.4	6.7	0.2	<0.05	0.02	<0.05	0.018
Bonnie Lake Outlet	7/10/00	6.2	12.2	6.5	0.2	<0.05	0.016	<0.05	0.013
Bonnie Lake Outlet	8/18/00	<1	11.4	6.1	0.4	<0.05	0.016	0.06	0.013
Chain o Lakes	7/10/00	n/a	6.8	6.7	0.2	<0.05	0.028	<0.05	0.055
Chain o Lakes	8/18/00	n/a	9.1	6.4	0.3	<0.05	0.02	0.07	0.019
Cooney Lake Outlet	7/10/00	6	10.9	6.8	0.5	<0.05	<0.007	0.12	<0.010
Cooney Lake Outlet	8/18/00	4	8.2	6.7	0.2	<0.05	<0.007	0.09	0.04
Crown Lake Inlet	7/10/00	12	12.5	6.6	0.6	0.07	0.01	0.1	0.131
Crown Lake Outlet	7/10/00	16.5	10.5	6.7	0.2	<0.05	0.064	<0.05	0.085
Crown Lake Inlet	8/18/00	2.1	8.6	5.9	0.2	<0.05	<0.007	0.07	0.046
Crown Lake Outlet	8/18/00	3.1	7.1	6.1	0.2	<0.05	0.02	0.08	0.019
East Lake	7/10/00	12	11.2	7	0.2	<0.05	<0.007	<0.05	0.025
East Lake	8/18/00	7.5	11.7	6.4	0.3	<0.05	<0.007	0.08	0.024
Fremont Lake Trail	7/10/00	n/a	9.3	7	0.4	<0.05	0.071	0.1	0.043
Fremont Lake Trail	8/18/00	n/a	11	6.2	0.2	<0.05	0.02	<0.05	0.048
Fremont Lake Tule	7/10/00	n/a	9.4	6.5	0.2	<0.05	0.014	<0.05	0.053
Fremont Lake Tule	8/18/00	n/a	11.2	7.1	0.3	<0.05	0.014	0.07	0.04
Frog Lake Outlet	7/10/00	5.3	55.2	6.9	0.1	<0.05	0	<0.05	0.032
Frog Lake Outlet	8/18/00	3	10.1	6.8	0.3	<0.05	<0.007	0.08	0.009
Gilman Lake Outlet	7/10/00	11.5	11.8	7	0.2	<0.05	0.014	<0.05	0.08
Gilman Lake Outlet	8/18/00	6	12.4	6.5	0.3	<0.05	0.014	0.09	0.036
Harriet Lake	7/10/00	8	11	7	0.2	<0.05	0.038	<0.05	0.031
Harriet Lake	8/18/00	6	9.6	6.7	0.3	<0.05	0.02	0.08	0.019
Helen Lake Outlet	7/10/00	4.9	11.4	6.5	0.3	<0.05	0.015	<0.05	0.076
Helen Lake Outlet	8/18/00	1.8	11.8	6.1	0.2	<0.05	0.015	<0.05	0.058
Hoover (Lower) Lake Outlet	7/10/00	12	11.2	6.9	0.2	0.09	<0.007	<0.05	0.148
Hoover (Lower) Lake Outlet	8/18/00	9	11.4	6.6	0.2	<0.05	<0.007	<0.05	0.018
Long Lake (Upper)	7/10/00	n/a	7.9	6.8	0.2	<0.05	0.076	<0.05	0.032

Long Lake (Upper)	8/18/00	n/a	9.8	6	0.3	<0.05	0.02	0.08	0.032
Peeler at Rancheria	7/10/00	1	12.1	6.9	0.2	<0.05	<0.007	<0.05	0.013
Peeler at Rancheria	8/18/00	<1	9.4	6.4	0.2	<0.05	<0.007	<0.05	0.013
Peeler at Robinson Outlet	7/10/00	6	10.6	6.4	0.2	<0.05	0.03	<0.05	0.041
Peeler at Robinson Outlet	8/18/00	1.8	9.5	5.6	0.2	<0.05	0.02	0.07	0.018
Robinson Lake Lower Outlet	7/10/00	8.2	11.2	6.7	0.3	<0.05	0.013	<0.05	0.071
Robinson Lake Lower Outlet	8/18/00	4	7.4	5.7	0.3	<0.05	0.01	0.09	0.048
Robinson Lake Upper Outlet	7/10/00	3	11	6.5	0.1	<0.05	0.009	<0.05	0.025
Robinson Lake Upper Outlet	8/18/00	2	9.1	5.3	0.3	<0.05	0.02	<0.05	<0.010
Roosevelt Lake outlet	7/10/00	8	10.2	7.6	0.1	<0.05	<0.007	<0.05	<0.010
Roosevelt Lake outlet	8/18/00	n/a	10.4	6.7	0.2	<0.05	<0.007	0.09	<0.010
Ruth Lake Outlet	7/10/00	2.2	11.2	6.7	0.2	<0.05	0.01	<0.05	0.015
Ruth Lake Outlet	8/18/00	n/a	10.5	5.9	0.3	<0.05	0.01	<0.05	<0.010
Snow Lake Outlet	7/10/00	2	12.8	6.7	0.3	<0.05	0.01	<0.05	0.023
Snow Lake Outlet	8/18/00	1	8.5	5.3	0.3	<0.05	<0.02	0.07	0.023
Stella Lake Outlet	7/10/00	2.5	11.3	6.4	0.2	<0.05	0.015	<0.05	0.034
Stella Lake Outlet	8/18/00	n/a	9	6.4	0.2	<0.05	0.015	<0.05	0.034
Summit Lake Outlet	7/10/00	4.1	11.4	6.8	0.4	<0.05	<0.007	0.1	0.054
Summit Lake Outlet	8/18/00	2.2	11.7	6.4	0.3	<0.05	<0.007	0.09	0.05
Tower Lake Outlet	7/10/00	6.6	12.8	6.5	0.2	0.08	0.01	<0.05	0.15
Tower Lake Outlet	8/18/00	3.6	9.8	6.7	0.2	<0.05	0.01	0.08	0.04
Trumbull Lake Outlet	7/10/00	1.4	8.1	6.7	1	<0.05	<0.007	0.84	0.023
Trumbull Lake Outlet	8/18/00	0.5	8.7	6.7	0.2	<0.05	<0.007	0.08	0.023
Virginia Lake Upper Outlet	7/10/00	8.1	9.1	7.2	0.2	<0.05	<0.007	<0.05	0.033
Virginia Lake Upper Outlet	8/18/00	4.5	7.7	6.9	0.3	<0.05	<0.007	0.07	0.02

E. WALKER ABOVE & BELOW RESERVOIR

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
East Walker above Reservoi	5/19/00	68	9.1	8.4	1.1	<0.05	0.01	<0.05	<0.010
East Walker below Reservoi	5/19/00	165	9.2	8.7	0.5	0.05	0.03	0.05	0.03

East Walker above Reservoi	5/30/00	144.2	9.2	7.9	1.3	<0.05	<0.007	0.1	0.099
East Walker below Reservoi	5/30/00	187.5	8.9	7.9	0.6	<0.05	<0.007	0.08	<0.010
East Walker above Reservoi	6/15/00	146.2	8.9	7.9	0.2	<0.05	<0.007	0.06	0.032
East Walker below Reservoi	6/15/00	225	8.7	8.1	0.4	<0.05	<0.007	<0.05	0.03
East walker above Reservoir	7/25/00	32.5	8.6	7.8	0.2	<0.05	<0.007	<0.05	<0.010
East Walker below Reservoi	7/25/00	252	6.7	7.4	0.6	0.61	<0.007	0.13	0.028
East Walker above Reservoi	8/18/00	21	9.1	7.9	0.2	<0.05	0.02	0.08	<0.010
East Walker below Reservoi	8/18/00	198	7.1	7.8	0.2	<0.05	0.61	0.12	0.171
East Walker above Reservoi	9/15/00	14.8	8.1	7.6	0.2	<0.05	0.012	<0.05	<0.010
East Walker below Reservoi	9/15/00	214	7.5	8.1	0.1	<0.05	0.06	<0.05	0.044

GREEN CK: LAKE INLET TO USGS GAUGE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Green Lake Inlet	5/19/00	6	10.1	7.4	0.4	<0.05	0.008	<0.05	<0.010
Green Lake Outlet	5/19/00	27	10.2	7.3	0.4	<0.05	0.051	<0.05	0.174
Green above FS Campgroun	5/19/00	89.6	9.8	7.4	0.8	<0.05	0.023	<0.05	0.144
Green below FS Campgroun	5/19/00	89.8	9.8	7.5	0.8	<0.05	0.008	<0.05	0.074
Green at guage	5/19/00	115.2	9.6	7.9	0.5	<0.05	0.007	<0.05	0.033
Green Lake Inlet	5/30/00	12.8	9	6.6	0.5	<0.05	<0.007	0.09	<0.010
Green Lake Outlet	5/30/00	84.7	10.3	7.2	0.5	<0.05	<0.007	0.09	<0.010
Green above FS Campgroun	5/30/00	115.6	10.1	7	0.5	<0.05	<0.007	0.1	0.162
Green below FS Campgroun	5/30/00	115.2	10.2	7.1	0.9	<0.05	<0.007	<0.05	0.066
Green at guage	5/30/00	134.4	10.3	7	0.8	<0.05	<0.007	0.09	0.037
Green Lake Inlet	6/15/00	15.2	9.7	7.6	0.1	<0.05	<0.007	0.07	0.049
Green Lake Outlet	6/15/00	78.8	9.9	7.6	0.1	<0.05	<0.007	0.1	0.077
Green above FS Campgroun	6/15/00	130.1	9.9	7.4	0.2	<0.05	<0.007	0.18	0.104
Green below FS Campgroun	6/15/00	128.2	10.1	7.4	0.2	<0.05	<0.007	0.15	0.09
Green at guage	6/15/00	138.5	9.6	7.2	0.3	<0.05	<0.007	<0.05	0.021
Green Lake Inlet	7/10/00	5.1	8.8	7	0.3	0.09	<0.007	<0.05	0.144
Green Lake Outlet	7/10/00	22.7	7.8	6.9	0.3	0.08	0.021	<0.05	0.142
Green above FS Campgroun	7/10/00	39.8	8.8	6.9	0.2	<0.05	0.01	<0.05	0.092

Green below FS Campgroun	7/10/00	40.2	8.7	7.4	0.3	<0.05	<0.007	<0.05	0.081
Green at guage	7/10/00	44.5	8.5	7.5	0.3	<0.05	<0.007	<0.05	0.07
Green below FS campgroun	7/25/00	38.3	10.2	7.6	0.2	<0.05	<0.007	<0.05	0.078
Green at gauge	7/25/00	36.8	10.1	7.6	0.2	<0.05	<0.007	<0.05	0.033
Green Lake Inlet	8/18/00	3.1	7.6	6.3	0.2	<0.05	<0.007	0.06	<0.010
Green Lake Outlet	8/18/00	12.5	8.7	6.4	0.2	<0.05	<0.007	<0.05	<0.010
Green above FS Campgroun	8/18/00	20	11.9	6.5	0.2	<0.05	<0.007	0.09	<0.010
Green below FS Campgroun	8/18/00	20	11.8	6.7	0.2	<0.05	<0.007	0.07	<0.010
Green at guage	8/18/00	21	9.2	6.9	0.3	<0.05	<0.007	0.08	<0.010
Green Lake Inlet	9/15/00	2.8	8.9	7.3	0.2	<0.05	0.008	<0.05	<0.010
Green Lake Outlet	9/15/00	8.1	8.1	7.2	0.2	<0.05	0.019	<0.05	0.16
Green above FS Campgroun	9/15/00	8.8	7.8	7.1	0.3	<0.05	0.015	<0.05	0.011
Green below FS Campgroun	9/15/00	8.9	7.8	7.4	0.2	<0.05	0.007	<0.05	0.074
Green at gauge	9/15/00	9.1	7.7	7.8	0.1	<0.05	<0.007	0.05	<0.010

HORSE CK & ROBINSON AT TWIN LAKES INLET

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Horse Creek at Twin Lakes	5/19/00	22.9	9.2	7.5	0.9	<0.05	<0.007	0.08	0.368
Robinson above Twin Lakes	5/19/00	70	9.1	7.5	1.2	<0.05	<0.007	<0.05	0.063
Horse Creek at Twin Lakes	5/30/00	44.8	11.1	7.1	1	0.08	<0.007	0.09	0.485
Robinson above Twin Lakes	5/30/00	118.8	10.2	7.2	1.4	<0.05	<0.007	0.08	0.111
Horse Creek at Twin Lakes	6/15/00	45.1	10.1	7.3	0.1	0.07	<0.007	0.12	0.366
Robinson above Twin Lakes	6/15/00	138.2	9.8	7.7	0.3	<0.05	<0.007	<0.05	0.072
Horse Creek at Twin Lakes	7/10/00	20.1	8.9	7.2	0.1	<0.05	<0.007	<0.05	0.2
Robinson above Twin Lakes	7/10/00	39.7	8.8	7.6	0.1	0.1	0.008	<0.05	0.261
Horse Creek at Twin Lakes	7/25/00	18.5	9.2	7	0.2	<0.05	<0.007	<0.05	0.096
Robinson above Twin Lakes	7/25/00	57.6	8.1	7.5	0.2	<0.05	<0.007	<0.05	0.075
Horse Creek at Twin Lakes	8/18/00	11	10.8	6.2	0.3	<0.05	<0.007	0.08	<0.010
Robinson above Twin Lakes	8/18/00	12	10.9	6.7	0.2	<0.05	<0.007	0.08	<0.010
Horse Creek at Twin Lakes	9/15/00	12.6	8.9	7.8	0.3	<0.05	0.011	0.1	0.032

Robinson above Twin Lakes	9/15/00	10.7	8.4	7.6	0.2	<0.05	0.013	<0.05	0.048

ROBINSON CK: USGS GAUGE TO WRID FENCE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Robinson at gauge	5/19/00	125.2	9	8.1	0.5	<0.05	0.007	<0.05	<0.010
Robinson @ Doc & Al	5/19/00	130.1	8.9	8.2	0.4	<0.05	0.007	<0.05	<0.010
Robinson (N) at 395	5/19/00	42.7	8.9	7.7	0.4	<0.05	0.007	<0.05	<0.010
Robinson @ WRID fence	5/19/00	40	9.1	8.2	0.9	<0.05	<0.007	<0.05	<0.010
Robinson at gauge	5/30/00	115	10	7.5	0.6	<0.05	<0.007	<0.05	0.078
Robinson @ Doc & Al	5/30/00	120	9.8	7.4	0.4	<0.05	<0.007	<0.05	0.192
Robinson (N) at 395	5/30/00	76	9.5	7.4	0.4	<0.05	<0.007	<0.05	0.262
Robinson @ WRID fence	5/30/00	120	9.3	7.8	0.9	<0.05	<0.007	0.08	0.257
Robinson at gauge	6/15/00	178	9.6	7.9	0.4	<0.05	<0.007	<0.05	<0.010
Robinson @ Doc & Al	6/15/00	176.8	9.6	7.7	0.2	<0.05	<0.007	<0.05	0.033
Robinson (N) at 395	6/15/00	89.3	8.7	7.7	0.1	<0.05	<0.007	0.13	<0.010
Robinson @ WRID fence	6/15/00	83.1	9.1	7.6	0.3	<0.05	<0.007	0.14	0.028
Robinson at gauge	7/10/00	98.6	8.4	7.4	0.2	<0.05	0.01	<0.05	0.034
Robinson @ Doc & Al	7/10/00	87.5	8.4	7.4	0.1	<0.05	<0.007	<0.05	0.068
Robinson at gauge	7/25/00	85.2	7.3	6.9	0.2	<0.05	<0.007	<0.05	0.026
Robinson at Doc & Al	7/25/00	78.2	7.9	7	0.2	<0.05	<0.007	<0.05	0.059
Robinson at 395	7/25/00	6.8	7.1	7.2	0.2	<0.05	<0.007	<0.05	0.032
Robinson at WRID Fence	7/25/00	9.1	6.4	7.8	0.2	<0.05	<0.007	<0.05	<0.010
Robinson at gauge	8/18/00	65	9.2	6.6	0.4	<0.05	<0.007	0.07	<0.010
Robinson @ Doc & Al	8/18/00	64.1	9.3	6.3	0.3	<0.05	<0.007	0.07	<0.010
Robinson (N) at 395	8/18/00	10.5	8.9	6.4	0.2	<0.05	<0.007	<0.05	<0.010
Robinson @ WRID fence	8/18/00	8.7	8.1	7.7	0.2	<0.05	<0.007	0.08	<0.010
Robinson at gauge	9/15/00	21.6	8.5	7.9	0.2	<0.05	<0.007	<0.05	0.044
Robinson @ Doc & Al	9/15/00	19.8	8.4	7.5	0.2	<0.05	<0.007	<0.05	0.041
Robinson (N) at 395	9/15/00	8.3	8.2	7.6	0.2	<0.05	<0.007	<0.05	0.088
Robinson @ WRID fence	9/15/00	4.1	8.1	7.8	0.2	<0.05	<0.007	<0.05	<0.010

SAUGER CR: HWY 395 CAMPGROUND TO ASCAUGUA LINE

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Sauger @ Campground	5/19/00	21.3	8.9	8.3	0.6	<0.05	<0.007	0.06	0.05
Sauger below FS Compound	5/19/00	20.2	8.9	8.2	0.6	<0.05	<0.007	0.1	0.05
Sauger @ Campground	5/30/00	26.7	8.7	8	0.6	<0.05	<0.007	0.12	0.04
Sauger below FS Compound	5/30/00	26.4	8.7	8.4	0.6	<0.05	<0.007	0.12	0.04
Sauger @ Campground	6/15/00	5.3	8.1	7.6	0.3	0.06	<0.007	0.08	0.05
Sauger below FS Compound	6/15/00	5.1	8.1	7.6	0.3	0.06	<0.007	0.09	0.06
Sauger @ Campground	7/25/00	2.7	9	7.8	0.6	0.18	<0.007	0.1	0.13
Sauger below FS Compound	7/25/00	2.7	8.9	7.9	0.3	<0.05	<0.007	0.06	<0.010
Sauger @ Campground	8/18/00	4.2	7.1	6.8	0.5	0.18	0.1	0.07	0.16
Sauger below FS Compound	8/18/00	4.2	7	6.6	0.4	0.07	0.09	0.08	0.128
Sauger @ Campground	9/15/00	5.2	8.4	7.6	0.4	0.11	0.021	<0.05	0.112
Sauger below FS Compound	9/15/00	5.2	8.4	7.7	0.2	0.12	0.028	0.08	0.125

ROBINSON CK: ABOVE TWIN LAKES TO DOC & AL'S

Site	Date	Discharge cfs(inst)	D.O. mg/L	pH	TKN mg/L	NO3-N mg/L	NH4-N mg/L	P mg/L	NO3 mg/L
Horse Creek at Twin Lakes	5/19/00	22.9	9.2	7.5	0.9	<0.05	<0.007	0.08	0.368
Robinson above Twin Lakes	5/19/00	70	9.1	7.5	1.2	<0.05	<0.007	<0.05	0.063
Robinson at gauge	5/19/00	125.2	9	8.1	0.5	<0.05	0.007	<0.05	<0.010
Robinson @ Doc & Al	5/19/00	130.1	8.9	8.2	0.4	<0.05	0.007	<0.05	<0.010
Horse Creek at Twin Lakes	5/30/00	44.8	11.1	7.1	1	0.08	<0.007	0.09	0.485
Robinson above Twin Lakes	5/30/00	118.8	10.2	7.2	1.4	<0.05	<0.007	0.08	0.111
Robinson at gauge	5/30/00	115	10	7.5	0.6	<0.05	<0.007	<0.05	0.078

Robinson @ Doc & Al	5/30/00	120	9.8	7.4	0.4	<0.05	<0.007	<0.05	0.192
Horse Creek at Twin Lakes	6/15/00	45.1	10.1	7.3	0.1	0.07	<0.007	0.12	0.366
Robinson above Twin Lakes	6/15/00	138.2	9.8	7.7	0.3	<0.05	<0.007	<0.05	0.072
Robinson at gauge	6/15/00	178	9.6	7.9	0.4	<0.05	<0.007	<0.05	<0.010
Robinson @ Doc & Al	6/15/00	176.8	9.6	7.7	0.2	<0.05	<0.007	<0.05	0.033
Horse Creek at Twin Lakes	7/10/00	20.1	8.9	7.2	0.1	<0.05	<0.007	<0.05	0.2
Robinson above Twin Lakes	7/10/00	39.7	8.8	7.6	0.1	0.1	0.008	<0.05	0.261
Robinson at gauge	7/10/00	98.6	8.4	7.4	0.2	<0.05	0.01	<0.05	0.034
Robinson @ Doc & Al	7/10/00	87.5	8.4	7.4	0.1	<0.05	<0.007	<0.05	0.068
Horse Creek at Twin Lakes	7/25/00	18.5	9.2	7	0.2	<0.05	<0.007	<0.05	0.096
Robinson above Twin Lakes	7/25/00	57.6	8.1	7.5	0.2	<0.05	<0.007	<0.05	0.075
Robinson at gauge	7/25/00	85.2	7.3	6.9	0.2	<0.05	<0.007	<0.05	0.026
Robinson at Doc & Al	7/25/00	78.2	7.9	7	0.2	<0.05	<0.007	<0.05	0.059
Horse Creek at Twin Lakes	8/18/00	11	10.8	6.2	0.3	<0.05	<0.007	0.08	<0.010
Robinson above Twin Lakes	8/18/00	12	10.9	6.7	0.2	<0.05	<0.007	0.08	<0.010
Robinson at gauge	8/18/00	65	9.2	6.6	0.4	<0.05	<0.007	0.07	<0.010
Robinson @ Doc & Al	8/18/00	64.1	9.3	6.3	0.3	<0.05	<0.007	0.07	<0.010
Horse Creek at Twin Lakes	9/15/00	12.6	8.9	7.8	0.3	<0.05	0.011	0.1	0.032
Robinson above Twin Lakes	9/15/00	10.7	8.4	7.6	0.2	<0.05	0.013	<0.05	0.048
Robinson at gauge	9/15/00	21.6	8.5	7.9	0.2	<0.05	<0.007	<0.05	0.044
Robinson @ Doc & Al	9/15/00	19.8	8.4	7.5	0.2	<0.05	<0.007	<0.05	0.041

From: Linda Vance <lkvance@ucdavis.edu>
To: Kim Gorman <Gormk@rb6s.swrcb.ca.gov>
Date: 4/30/01 9:41AM
Subject: Re: sample stations

My sites track the USGS sites. Buckeye below FS is at the USGS gauge DS of the bridge. Buckeye and Robinson at WRID fence are equal to USGS Buckeye and Robinson near Reservoir (or perhaps a bit upstream, maybe 100 meters). The lakes you can't find are feeders of the WEST Walker. They are accessed from 108 near Leavitt meadows. I think that either the USGS Tower Peak Quad or adjacent ones should show them, since Helen, Ruth, Stella, Etc (The Sister Lakes) are just over the ridge from it. Chain O Lakes, Fremont, etc all a bit south.

..Linda--

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TABLE 1: Sampling results by site

BARNEY LAKE (ROBINSON CK)

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/19/2000	Barney Lake Inlet	48	38.9	9.2	8	0.45	7.3	4	0.9	<0.05	0.01
5/19/2000	Barney Lake Outlet	46.7	43.1	9.1	8	1.91	7.6	6.2	1.1	<0.05	0.007
5/30/2000	Barney Lake Inlet	84	35.2	8.9	22	1.06	8.1	5.4	0.8	<0.05	<0.007
5/30/2000	Barney Lake Outlet	63	36.8	9.1	20	1.48	8.1	6.9	1.1	<0.05	<0.007
6/15/2000	Barney Lake Inlet	86	41.2	9.3	24	1.68	7.6	36.6	0.2	<0.05	<0.007
6/15/2000	Barney Lake Outlet	78	47.3	8.9	19	1.1	7.7	34.2	0.2	<0.05	<0.007
7/10/2000	Barney Lake Inlet	32	49.3	8.8	8	0.48	6.9	5.2	0.1	<0.05	0.03
7/10/2000	Barney Lake Outlet	27.1	54.7	7.8	4	0.74	6.4	5.4	0.2	<0.05	<0.007
8/18/2000	Barney Lake Inlet	4	56.3	9.1	7	0.13	6.4	2.8	0.2	<0.05	0.02
8/18/2000	Barney Lake Outlet	8.4	61.5	10.5	8	0.29	6.8	1.8	0.2	<0.05	<0.007
9/15/2000	Barney Lake Inlet	3.5	51.6	7.3	12	0.66	7.1	4	0.3	<0.05	0.008
9/15/2000	Barney Lake Outlet	3.1	63.8	7.4	12	1.62	7.2	6.2	0.3	<0.05	0.016

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/19/2000	Barney Lake Inlet	0.215	0.11	<0.02	7.33	1.34	0.87	0.13	0.54	0.5	1.21
5/19/2000	Barney Lake Outlet	0.059	0.08	0.05	6.08	0.4	0.74	0.19	0.28	0.25	1.07
5/30/2000	Barney Lake Inlet	0.156	0.09	0.08	5.03	0.29	0.49	0.15	0.23	0.38	0.5
5/30/2000	Barney Lake Outlet	<0.010	0.09	<0.02	5.64	0.27	0.57	0.17	0.23	0.35	0.57
6/15/2000	Barney Lake Inlet	0.046	<0.05	<0.02	10.18	1.28	1.62	0.8	0.31	2.58	0.75
6/15/2000	Barney Lake Outlet	<0.010	<0.05	<0.02	12.84	1.39	2	0.71	0.33	3.13	0.78
7/10/2000	Barney Lake Inlet	0.02	<0.05	<0.02	5.04	0.27	0.43	0.1	0.28	0.05	0.32
7/10/2000	Barney Lake Outlet	<0.010	<0.05	0.05	4.6	0.26	0.61	0.12	0.14	0.07	0.28
8/18/2000	Barney Lake Inlet	0.019	<0.05	<0.02	11.2	3.88	0.34	0.16	0.45	0.02	0.44
8/18/2000	Barney Lake Outlet	<0.010	<0.05	0.05	6.91	1.22	0.76	0.11	0.29	0.03	0.31
9/15/2000	Barney Lake Inlet	0.125	<0.05	0.03	9.13	1.34	0.87	0.13	0.54	0.5	1.21
9/15/2000	Barney Lake Outlet	<0.010	<0.05	0.02	3.98	0.4	0.74	0.19	0.28	0.25	1.07

BUCKEYE CK: BIG MEADOWS TO USGS GAUGE

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/19/2000	Buckeye above Big Meadows	80	50.1	9.3	26	8.32	7.9	11.1	0.7	<0.05	0.008
5/19/2000	Buckeye below Big Meadows	83.2	51.5	9.3	34	1.8	7.5	17.3	0.6	<0.05	<0.007
5/19/2000	Buckeye above FS Campground	102.9	52.2	9.2	58	4.78	7.5	23.8	0.8	<0.05	<0.007
5/19/2000	Buckeye below FS Campground	132.8	51.7	9.8	52	4.01	7.7	17.4	0.5	<0.05	<0.007
5/30/2000	Buckeye above Big Meadows	132	41.1	9.2	10	0.44	8.1	18.9	0.8	<0.05	<0.007
5/30/2000	Buckeye below Big Meadows	127.5	41.3	8.9	30	2.71	8.1	20.4	0.6	<0.05	<0.007
5/30/2000	Buckeye above FS Campground	151.2	42.8	9.4	34	1.8	7.3	26.9	0.9	<0.05	<0.007
5/30/2000	Buckeye below FS Campground	168	41.7	9.7	30	3.41	8.1	29.6	0.6	<0.05	<0.007
6/15/2000	Buckeye above Big Meadows	160.2	47.4	9.2	76	1.68	7.9	13.5	0.3	<0.05	<0.007
6/15/2000	Buckeye below Big Meadows	166	48.4	9.1	18	2.96	7.3	10.7	0.4	<0.05	<0.007
6/15/2000	Buckeye above FS Campground	172	48.9	9.1	14	1.07	7.4	23	0.2	<0.05	<0.007
6/15/2000	Buckeye below FS Campground	196	50.2	9.3	16	1.16	7.7	24	0.2	<0.05	<0.007
7/10/2000	Buckeye above Big Meadows	55.7	55	8.3	4	0.68	6.6	9.4	0.2	<0.05	0.008
7/10/2000	Buckeye below Big Meadows	56.8	59	8.2	16	0.56	6.3	36.1	0.2	<0.05	<0.007
7/10/2000	Buckeye above FS Campground	58.8	61	8.4	14	1.32	7	39.3	0.1	<0.05	0.056
7/10/2000	Buckeye below FS Campground	80.3	60	8.5	4	0.95	7.2	39.9	0.1	<0.05	<0.007
8/18/2000	Buckeye above Big Meadows	12.1	48.2	10.6	7	0.22	6.6	16.4	0.3	<0.05	<0.007
8/18/2000	Buckeye below Big Meadows	12	51.8	12.8	7	0.18	6.1	21.1	0.2	<0.05	<0.007
8/18/2000	Buckeye above FS Campground	20	59.5	8.5	8	0.33	6.9	65.8	0.2	<0.05	0.03
8/18/2000	Buckeye below FS Campground	31	60.6	8.5	8	0.31	7	42.6	0.2	<0.05	<0.007
9/15/2000	Buckeye above Big Meadows	10.2	53.8	8.3	24	8.12	7.6	11.1	0.2	<0.05	0.011
9/15/2000	Buckeye below Big Meadows	10.2	58.8	8.3	33	3.1	7.5	17.3	0.2	<0.05	<0.007
9/15/2000	Buckeye above FS Campground	10.5	55.9	7.9	63	5.6	7.1	23.8	0.1	<0.05	0.008
9/15/2000	Buckeye below FS Campground	11.3	56.1	7.9	44	0.57	7.5	81.1	0.2	<0.05	0.009

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/19/2000	Buckeye above Big Meadows	<0.010	<0.05	<0.02	6.44	0.63	1.01	0.34	0.31	0.76	1.66
5/19/2000	Buckeye below Big Meadows	0.075	<0.05	<0.02	7.74	0.65	0.87	0.34	0.17	0.86	1.83

		NO3	P	PO4	Ca	MG	Na	K	Cl	SO4	Si
5/19/2000	Buckeye above FS Campground	0.042	<0.05	<0.02	8.99	0.94	1.17	0.5	0.24	1.27	2.27
5/19/2000	Buckeye below FS Campground	<0.010	<0.05	<0.02	4.52	1.12	1.36	0.61	0.26	1.52	7.2
5/30/2000	Buckeye above Big Meadows	0.126	0.09	0.02	7.9	0.61	0.95	0.44	0.32	1.12	2.04
5/30/2000	Buckeye below Big Meadows	<0.010	0.08	0.02	8.03	0.7	0.91	0.36	0.28	1.23	1.98
5/30/2000	Buckeye above FS Campground	<0.010	<0.05	<0.02	9.39	0.96	1.15	0.48	0.23	1.58	2.55
5/30/2000	Buckeye below FS Campground	<0.010	0.09	0.02	8.93	0.98	1.21	0.48	0.27	1.67	2.88
6/15/2000	Buckeye above Big Meadows	0.052	<0.05	<0.02	7.08	0.56	0.68	0.19	0.26	0.88	1.88
6/15/2000	Buckeye below Big Meadows	0.086	0.16	0.04	6.73	0.6	0.54	0.25	0.25	0.83	2.05
6/15/2000	Buckeye above FS Campground	0.05	<0.05	<0.02	8.39	0.86	0.91	0.36	0.27	1.37	2.25
6/15/2000	Buckeye below FS Campground	0.05	<0.05	<0.02	8.64	0.81	1.02	0.44	0.27	1.32	2.55
7/10/2000	Buckeye above Big Meadows	0.047	<0.05	<0.02	6.38	0.48	0.6	0.24	0.14	0.07	2.15
7/10/2000	Buckeye below Big Meadows	0.031	<0.05	<0.02	8.76	0.79	1.07	0.52	0.57	0.05	2.82
7/10/2000	Buckeye above FS Campground	0.032	<0.05	<0.02	10.88	1.16	1.27	0.71	0.5	0.13	3.49
7/10/2000	Buckeye below FS Campground	<0.010	<0.05	<0.02	12.48	1.49	1.69	0.77	0.14	0.09	3.85
8/18/2000	Buckeye above Big Meadows	<0.010	0.08	<0.02	7.33	0.49	1.53	0.23	0.21	0.02	2.11
8/18/2000	Buckeye below Big Meadows	0.019	0.08	<0.02	11.61	1.62	1.77	0.93	0.22	0.02	4.2
8/18/2000	Buckeye above FS Campground	0.032	0.06	0.03	11.22	1.43	1.66	0.87	0.22	0.03	4.22
8/18/2000	Buckeye below FS Campground	0.053	0.08	<0.02	11.98	1.62	1.91	0.9	0.25	0.04	4.81
9/15/2000	Buckeye above Big Meadows	<0.010	0.05	<0.02	5.26	0.63	1.01	0.34	0.31	0.76	1.66
9/15/2000	Buckeye below Big Meadows	0.042	<0.05	<0.02	10.23	0.65	0.87	0.34	0.17	0.86	1.83
9/15/2000	Buckeye above FS Campground	0.028	<0.05	<0.02	12.09	0.94	1.17	0.5	0.24	1.27	2.27
9/15/2000	Buckeye below FS Campground	<0.010	<0.05	<0.02	5.94	1.35	2.5	0.3	0.56	1.11	9.8

BUCKEYE CK: USGS GAUGE TO WRID FENCELINE

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/19/2000	Buckeye below FS Campground	132.8	51.7	9.8	52	4.01	7.7	17.4	0.5	<0.05	<0.007
5/19/2000	Buckeye (N) at 395	60	57.2	9.4	36	3.28	7.6	25.6	0.4	<0.05	0.01
5/19/2000	Buckeye @ WRID	62.2	56.2	9.4	44	5.09	7.5	51.5	0.4	<0.05	0.01
5/30/2000	Buckeye below FS Campground	168	41.7	9.7	30	3.41	8.1	29.6	0.6	<0.05	<0.007
5/30/2000	Buckeye (N) at 395	142.6	44.8	9.5	2	1.35	8.4	48	0.4	<0.05	<0.007
5/30/2000	Buckeye @ WRID	144	43.2	9.3	24	1.64	8.1	44.7	0.4	<0.05	<0.007

6/15/2000	Buckeye below FS Campground	196	50.2	9.3	16	1.16	7.7	24	0.2	<0.05	<0.007
6/15/2000	Buckeye (N) at 395	112.6	53.3	9	16	1.1	7.6	32	0.2	<0.05	<0.007
6/15/2000	Buckeye @ WRID	102.5	53.1	8.8	20	3.45	7.7	20.9	0.4	<0.05	<0.007
7/25/2000	Buckeye below FS Campground	62.1	61.7	10.1	14	1.23	7.8	42.6	0.2	<0.05	<0.007
7/25/2000	Buckeye at 395	12.1	74.5	7.1	23	3.43	7.8	122.6	0.4	>0.05	<0.007
7/25/2000	Buckeye at WRID fence	4.1	79.2	7.7	34	4.68	7.9	141.1	0.5	0.2	<0.007
8/18/2000	Buckeye below FS Campground	31	60.6	8.5	8	0.31	7	42.6	0.2	<0.05	<0.007
8/18/2000	Buckeye (N) at 395	7.5	63.5	7.2	10	1.32	7.8	51.9	0.3	<0.05	<0.007
8/18/2000	Buckeye @ WRID	3	68.2	7.1	14	1.64	7.3	71.1	0.4	<0.05	<0.007
9/15/2000	Buckeye below FS Campground	11.3	56.1	7.9	44	0.57	7.5	81.1	0.2	<0.05	0.009
9/15/2000	Buckeye (N) at 395	3.1	55.1	7.7	40	1.18	7.9	189.4	0.1	<0.05	<0.007
9/15/2000	Buckeye @ WRID	5.9	53.6	7.8	36	3.1	7.8	171.1	0.2	<0.05	0.09

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/19/2000	Buckeye below FS Campground	<0.010	<0.05	<0.02	4.52	1.12	1.36	0.61	0.26	1.52	7.2
5/19/2000	Buckeye (N) at 395	<0.010	<0.05	<0.02	6.02	1.49	2.04	0.76	0.27	1.92	9.2
5/19/2000	Buckeye @ WRID	<0.010	<0.05	<0.02	6.4	1.68	3.49	1	0.35	2.07	9.6
5/30/2000	Buckeye below FS Campground	<0.010	0.09	0.02	8.93	0.98	1.21	0.48	0.27	1.67	2.88
5/30/2000	Buckeye (N) at 395	0.361	0.11	0.03	9.55	3.05	2.41	0.34	1.23	2.22	3.54
5/30/2000	Buckeye @ WRID	0.174	0.09	0.02	10.6	2.32	2.26	0.54	0.7	2.22	3.51
6/15/2000	Buckeye below FS Campground	0.05	<0.05	<0.02	8.64	0.81	1.02	0.44	0.27	1.32	2.55
6/15/2000	Buckeye (N) at 395	0.093	0.06	0.02	9.37	1.5	1.85	0.83	0.32	2.38	2.83
6/15/2000	Buckeye @ WRID	<0.010	0.05	<0.02	8.28	0.74	2.76	0.26	0.25	0.83	3.02
7/25/2000	Buckeye below FS Campground	0.053	<0.05	<0.02	12.02	1.53	1.77	0.9	0.5	0.12	4.82
7/25/2000	Buckeye at 395	0.12	<0.05	<0.02	13.2	2.23	16.22	1.93	1.03	0.41	11.55
7/25/2000	Buckeye at WRID fence	0.16	<0.05	<0.02	16.35	2.71	20.82	2.39	1.21	0.45	11.64
8/18/2000	Buckeye below FS Campground	0.053	0.08	<0.02	11.98	1.62	1.91	0.9	0.25	0.04	4.81
8/18/2000	Buckeye (N) at 395	0.039	0.09	0.06	13.33	2.18	12.87	1.98	0.41	0.05	6.77
8/18/2000	Buckeye @ WRID	0.037	0.12	0.08	16.35	2.71	18.73	2.19	0.44	0.16	10.56
9/15/2000	Buckeye below FS Campground	<0.010	<0.05	<0.02	5.94	1.35	2.5	0.3	0.56	1.11	9.8
9/15/2000	Buckeye (N) at 395	0.049	<0.05	<0.02	13.95	3.36	5.14	1.96	0.23	4.82	16.1
9/15/2000	Buckeye @ WRID	0.041	<0.05	0.08	6.9	0.89	1.3	0.4	1	3.4	4.7

TRIB TO BUCKEYE

EAGLE CK: HEADWATERS TO BUCKEYE CREEK

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/30/2000	Eagle Ck US	4.1	34.1	8.9	16	1.03	7.4	24.7	0.6	<0.05	<0.007
5/30/2000	Eagle Ck DS	16.8	44.5	9.6	22	1.22	7.8	41.6	0.4	<0.05	<0.007
6/15/2000	Eagle Ck US	8.8	39.2	9.5	18	2.25	6.4	21.4	0.2	<0.05	<0.007
6/15/2000	Eagle Ck DS	22.6	44.2	10.1	16	2	7.1	23.6	0.2	<0.05	<0.007
7/10/2000	Eagle Ck US	9.8	51.5	9.7	2	0.58	7.1	23.7	0.2	<0.05	<0.007
7/10/2000	Eagle Ck DS	22	55.6	9.8	8	0.95	7.3	43.8	0.2	<0.05	<0.007
8/18/2000	Eagle Ck US	4	56.1	7.7	7	0.26	6.1	24.8	0.2	0.06	<0.007
8/18/2000	Eagle Ck DS	11	53.6	7.7	7	0.16	6	44.9	0.3	<0.05	0.03
9/15/2000	Eagle Ck US	2.9	44.1	7.6	24	2.33	7.2	22.7	0.3	<0.05	0.009
9/15/2000	Eagle Ck DS	8.8	47.7	7.9	22	1.67	7.1	43.8	0.2	<0.05	0.011

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/30/2000	Eagle Ck US	<0.010	0.08	0.02	8.66	1.51	1.03	0.75	0.28	0.97	3.02
5/30/2000	Eagle Ck DS	0.039	0.08	0.02	11.18	1.67	2.16	0.96	0.41	2.65	5.1
6/15/2000	Eagle Ck US	0.096	0.09	0.03	7.95	1.24	1.03	0.48	0.29	0.97	3.42
6/15/2000	Eagle Ck DS	0.046	0.11	0.02	8.18	0.83	1	0.47	0.31	1.53	4.7
7/10/2000	Eagle Ck US	<0.010	<0.05	<0.02	8.37	1.25	1.13	0.43	0.07	0.06	4.17
7/10/2000	Eagle Ck DS	<0.010	<0.05	<0.02	11.45	1.25	1.76	0.8	0.28	0.09	4.06
8/18/2000	Eagle Ck US	0.08	0.06	0.02	9.23	1.35	1.22	0.49	0.33	0.04	4.09
8/18/2000	Eagle Ck DS	0.04	<0.05	0	12.13	1.46	1.55	0.83	0.26	0.03	4.02

9/15/2000	Eagle Ck US	0.032	<0.05	0.03	16.64	3.07	3.86	1.86	0.01	5.65	10.3
9/15/2000	Eagle Ck DS	0.035	<0.05	0.03	11.76	2.28	2.83	1.65	0.68	2.47	6.52

HIGH LAKES, JULY-AUGUST

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
7/10/2000	Blue Lake Outlet	7.2	55.2	9.1	4	0.55	7.2	54.7	0.1	<0.05	0.02
8/18/2000	Blue Lake Outlet	6.9	56.3	8.4	12	0.16	6.7	19.6	0.2	<0.05	0.02
7/10/2000	Bonnie Lake Outlet	6.2	58.6	12.2	6	0.63	6.5	4.4	0.2	<0.05	0.016
8/18/2000	Bonnie Lake Outlet	<1	62.1	11.4	16	0.2	6.1	0.4	0.4	<0.05	0.016
7/10/2000	Chain o Lakes	n/a	67.1	6.8	14	1.99	6.7	18.7	0.2	<0.05	0.028
8/18/2000	Chain o Lakes	n/a	66	9.1	15	0.22	6.4	9.5	0.3	<0.05	0.02
7/10/2000	Cooney Lake Outlet	6	56.9	10.9	6	0.55	6.8	64.7	0.5	<0.05	<0.007
8/18/2000	Cooney Lake Outlet	4	57.4	8.2	16	0.29	6.7	54.1	0.2	<0.05	<0.007
7/10/2000	Crown Lake Inlet	12	49.6	12.5	4	0.57	6.6	4.7	0.6	0.07	0.01
7/10/2000	Crown Lake Outlet	16.5	52	10.5	6	0.94	6.7	5.4	0.2	<0.05	0.064
8/18/2000	Crown Lake Inlet	2.1	54	8.6	7	0.13	5.9	1.3	0.2	<0.05	<0.007
8/18/2000	Crown Lake Outlet	3.1	59.9	7.1	5	0.09	6.1	3.9	0.2	<0.05	0.02
7/10/2000	East Lake	12	55.9	11.2	8	0.92	7	42.9	0.2	<0.05	<0.007
8/18/2000	East Lake	7.5	56.5	11.7	8	0.47	6.4	31.5	0.3	<0.05	<0.007
7/10/2000	Fremont Lake Trail	n/a	69.2	9.3	6	2.05	7	20.2	0.4	<0.05	0.071
8/18/2000	Fremont Lake Trail	n/a	67	11	7	0.35	6.2	15.3	0.2	<0.05	0.02
7/10/2000	Fremont Lake Tule	n/a	69.1	9.4	14	1.89	6.5	20	0.2	<0.05	0.014
8/18/2000	Fremont Lake Tule	n/a	67.1	11.2	9	0.34	7.1	16.9	0.3	<0.05	0.014

7/10/2000	Frog Lake Outlet		5.3	11.5	55.2	14	0.85	6.9	71.2	0.1	<0.05	0
8/18/2000	Frog Lake Outlet		3	53.8	10.1	9	0.33	6.8	47.5	0.3	<0.05	<0.007
7/10/2000	Gilman Lake Outlet		11.5	57	11.8	6	0.55	7	42.2	0.2	<0.05	0.014
8/18/2000	Gilman Lake Outlet		6	59	12.4	9	0.45	6.5	6.8	0.3	<0.05	0.014
7/10/2000	Harriet Lake		8	58.6	11	8	2.25	7	5.7	0.2	<0.05	0.038
8/18/2000	Harriet Lake		6	12.6	9.6	9	0.39	6.7	0.6	0.3	<0.05	0.02
7/10/2000	Helen Lake Outlet		4.9	58.8	11.4	4	0.99	6.5	5.9	0.3	<0.05	0.015
8/18/2000	Helen Lake Outlet		1.8	58.6	11.8	8	0.12	6.1	3.1	0.2	<0.05	0.015
7/10/2000	Hoover (Lower) Lake Outlet		12	52.9	11.2	4	0.83	6.9	42.8	0.2	0.09	<0.007
8/18/2000	Hoover (Lower) Lake Outlet		9	54.3	11.4	7	0.08	6.6	22.2	0.2	<0.05	<0.007
7/10/2000	Long Lake (Upper)	n/a		70.3	7.9	8	0.94	6.8	11.3	0.2	<0.05	0.076
8/18/2000	Long Lake (Upper)	n/a		66.4	9.8	10	0.56	6	5.3	0.3	<0.05	0.02
7/10/2000	Peeler at Rancheria		1	55.8	12.1	16	0.62	6.9	4.9	0.2	<0.05	<0.007
8/18/2000	Peeler at Rancheria	<1		59	9.4	7	0.09	6.4	3.3	0.2	<0.05	<0.007
7/10/2000	Peeler at Robinson Outlet		6	56.5	10.6	4	0.64	6.4	1.5	0.2	<0.05	0.03
8/18/2000	Peeler at Robinson Outlet		1.8	59.1	9.5	8	0.26	5.6	2	0.2	<0.05	0.02
7/10/2000	Robinson Lake Lower Outlet		8.2	56	11.2	12	0.7	6.7	5.9	0.3	<0.05	0.013
8/18/2000	Robinson Lake Lower Outlet		4	58.6	7.4	9	0.43	5.7	1.5	0.3	<0.05	0.01
7/10/2000	Robinson Lake Upper Outlet		3	57	11	6	0.9	6.5	0.6	0.1	<0.05	0.009
8/18/2000	Robinson Lake Upper Outlet		2	57.7	9.1	16	0.24	5.3	3.1	0.3	<0.05	0.02
7/10/2000	Roosevelt Lake outlet		8	66	10.2	14	1.6	7.6	55	0.1	<0.05	<0.007
8/18/2000	Roosevelt Lake outlet	n/a		69.6	10.4	10	0.42	6.7	161.2	0.2	<0.05	<0.007
7/10/2000	Ruth Lake Outlet		2.2	59.8	11.2	14	2.98	6.7	5	0.2	<0.05	0.01
8/18/2000	Ruth Lake Outlet	n/a		61	10.5	7	0.23	5.9	2	0.3	<0.05	0.01
7/10/2000	Snow Lake Outlet		2	52	12.8	16	0.84	6.7	3.5	0.3	<0.05	0.01
8/18/2000	Snow Lake Outlet		1	61.7	8.5	10	0.39	5.3	2.5	0.3	<0.05	<0.02
7/10/2000	Stella Lake Outlet		2.5	62.8	11.3	6	1.61	6.4	4.6	0.2	<0.05	0.015
8/18/2000	Stella Lake Outlet	n/a		60.2	9	6	0.19	6.4	4.1	0.2	<0.05	0.015
7/10/2000	Summit Lake Outlet		4.1	57.1	11.4	8	1.03	6.8	47.4	0.4	<0.05	<0.007
8/18/2000	Summit Lake Outlet		2.2	56.1	11.7	10	0.58	6.4	11.6	0.3	<0.05	<0.007
7/10/2000	Tower Lake Outlet		6.6	52.5	12.8	12	0.62	6.5	6.1	0.2	0.08	0.01
8/18/2000	Tower Lake Outlet		3.6	58.5	9.8	16	0.25	6.7	5.1	0.2	<0.05	0.01
7/10/2000	Trumbull Lake Outlet		1.4	60.5	8.1	16	1.06	6.7	36.5	1	<0.05	<0.007
8/18/2000	Trumbull Lake Outlet		0.5	55.9	8.7	12	2.81	6.7	15.2	0.2	<0.05	<0.007
7/10/2000	Virginia Lake Upper Outlet		8.1	57	9.1	8	0.85	7.2	51.2	0.2	<0.05	<0.007

8/18/2000	Virginia Lake Upper Outlet	4.5	58.3	7.7	19	0.81	6.9	41.4	0.3	<0.05	<0.007

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
7/10/2000	Blue Lake Outlet	0.028	<0.05	<0.02	15.73	0.32	0.8	0.29	0.14	0.05	2.42
8/18/2000	Blue Lake Outlet	0.018	<0.05	<0.02	15.91	0.43	0.79	0.31	0.44	0.04	2.34
7/10/2000	Bonnie Lake Outlet	0.013	<0.05	<0.02	4.87	0.39	0.23	0.1	0.21	0.06	0.27
8/18/2000	Bonnie Lake Outlet	0.013	0.06	0.03	4.21	0.54	0.33	0.14	0.54	0.02	0.29
7/10/2000	Chain o Lakes	0.055	<0.05	<0.02	7.45	0.86	0.44	0.46	0.5	0.19	0.77
8/18/2000	Chain o Lakes	0.019	0.07	0.06	6.98	0.79	0.42	0.51	0.59	0.03	0.68
7/10/2000	Cooney Lake Outlet	<0.010	0.12	0.05	18.35	0.3	0.94	0.3	0.21	0.05	2.61
8/18/2000	Cooney Lake Outlet	0.04	0.09	0.1	17.22	0.38	1.12	0.41	0.62	0.02	3.12
7/10/2000	Crown Lake Inlet	0.131	0.1	0.03	4.21	0.28	0.42	0.11	0.14	0.05	0.11
7/10/2000	Crown Lake Outlet	0.085	<0.05	<0.02	5.89	0.48	0.4	0.22	0.21	0.09	0.78
8/18/2000	Crown Lake Inlet	0.046	0.07	0.02	5.22	0.32	0.41	0.12	0.31	0.02	0.13
8/18/2000	Crown Lake Outlet	0.019	0.08	0.03	6.23	0.52	0.52	0.24	0.2	0.01	0.71
7/10/2000	East Lake	0.025	<0.05	<0.02	12.77	0.32	1.05	0.48	0.28	0.09	2.76
8/18/2000	East Lake	0.024	0.08	0.04	11.9	0.44	1.65	0.67	0.29	0.06	2.88
7/10/2000	Fremont Lake Trail	0.043	0.1	0.04	7.78	0.89	0.67	0.61	0.21	0.2	0.17
8/18/2000	Fremont Lake Trail	0.048	<0.05	0.03	7.92	0.91	0.71	0.66	0.23	0.02	0.29
7/10/2000	Fremont Lake Tule	0.053	<0.05	<0.02	7.38	1	0.84	0.63	0.5	0.18	0.17

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8/18/2000	Fremont Lake Tule	0.04	0.07	0.04	7.91	1	0.83	0.63	0.25	0.03	0.21
7/10/2000	Frog Lake Outlet	0.032	<0.05	<0.02	18.38	0.31	0.99	0.31	0.5	0.08	2.56
8/18/2000	Frog Lake Outlet	0.009	0.08	0.05	19.89	0.45	1.23	0.55	0.43	0.02	2.51
7/10/2000	Gilman Lake Outlet	0.08	<0.05	<0.02	12.96	0.31	0.95	0.32	0.21	0.05	1.95
8/18/2000	Gilman Lake Outlet	0.036	0.09	0.05	13.22	0.42	0.99	0.43	0.32	0.01	2.01
7/10/2000	Harriet Lake	0.031	<0.05	<0.02	6.15	0.39	0.27	0.14	0.28	0.22	0.39
8/18/2000	Harriet Lake	0.019	0.08	0.07	7.95	0.58	1.07	0.76	0.78	0.02	3.09
7/10/2000	Helen Lake Outlet	0.076	<0.05	<0.02	4.24	0.4	0.21	0.12	0.14	0.1	0.62
8/18/2000	Helen Lake Outlet	0.058	<0.05	<0.02	2.14	0.23	1.49	0.38	0.66	0.6	2.28
7/10/2000	Hoover (Lower) Lake Outlet	0.148	<0.05	<0.02	12.94	0.33	0.95	0.32	0.14	0.08	1.68
8/18/2000	Hoover (Lower) Lake Outlet	0.018	<0.05	<0.02	11.76	0.15	0.65	0.12	0.14	0.27	1.08
7/10/2000	Long Lake (Upper)	0.032	<0.05	<0.02	6.17	0.5	0.35	0.27	0.28	0.09	0.35
8/18/2000	Long Lake (Upper)	0.032	0.08	0.06	8.66	0.92	0.95	0.67	0.12	0.19	3.35
7/10/2000	Peeler at Rancheria	0.013	<0.05	<0.02	4.66	0.26	0.35	0.13	0.57	0.06	0.37
8/18/2000	Peeler at Rancheria	0.013	<0.05	<0.02	7.76	1.03	2.15	1.03	0.97	1.56	3.87
7/10/2000	Peeler at Robinson Outlet	0.041	<0.05	<0.02	4.12	0.28	0.26	0.1	0.14	0.06	0.14
8/18/2000	Peeler at Robinson Outlet	0.018	0.07	0.06	9.58	1.68	1.96	1	0.26	3.06	5.34
7/10/2000	Robinson Lake Lower Outlet	0.071	<0.05	<0.02	4.59	0.3	0.58	0.13	0.43	0.07	0.89
8/18/2000	Robinson Lake Lower Outlet	0.048	0.09	0.06	12.52	2.17	3.68	1.33	0.7	2.97	7.79
7/10/2000	Robinson Lake Upper Outlet	0.025	<0.05	<0.02	4.34	0.29	0.46	0.12	0.21	0.09	0.77
8/18/2000	Robinson Lake Upper Outlet	<0.010	<0.05	<0.02	5.23	0.22	0.15	0.12	0.45	0.03	0.67
7/10/2000	Roosevelt Lake outlet	<0.010	<0.05	<0.02	31.22	3.62	7.23	1.31	0.5	0.15	5.67
8/18/2000	Roosevelt Lake outlet	<0.010	0.09	0.07	33.41	4.12	8.22	1.49	0.38	0.03	6.12
7/10/2000	Ruth Lake Outlet	0.015	<0.05	<0.02	4.97	0.33	0.22	0.13	0.5	0.29	0.48
8/18/2000	Ruth Lake Outlet	<0.010	<0.05	<0.02	5.12	0.43	0.13	0.12	0.23	0.02	0.44
7/10/2000	Snow Lake Outlet	0.023	<0.05	<0.02	4.29	0.26	0.23	0.08	0.57	0.08	0.76
8/18/2000	Snow Lake Outlet	0.023	0.07	0.06	4.46	0.39	0.23	0.09	0.33	0.03	0.56
7/10/2000	Stella Lake Outlet	0.034	<0.05	<0.02	4.46	0.4	0.2	0.11	0.21	0.15	0.38
8/18/2000	Stella Lake Outlet	0.034	<0.05	<0.02	4.45	0.36	0.21	0.02	0.23	0.03	0.44
7/10/2000	Summit Lake Outlet	0.054	0.1	0.03	13.21	0.36	1.11	0.34	0.28	0.1	1.3
8/18/2000	Summit Lake Outlet	0.05	0.09	0.03	12.22	0.41	1.03	0.35	0.38	0.03	1.27
7/10/2000	Tower Lake Outlet	0.15	<0.05	<0.02	5.05	0.42	0.28	0.17	0.43	0.06	0.64
8/18/2000	Tower Lake Outlet	0.04	0.08	<0.02	5.09	0.43	0.37	0.32	0.34	0.03	1.11
7/10/2000	Trumbull Lake Outlet	0.023	0.84	0.1	9.89	0.58	1.51	0.49	0.57	0.1	2.46
8/18/2000	Trumbull Lake Outlet	0.023	0.08	0.12	9.12	0.43	1.23	0.45	0.41	0.18	2.15

7/10/2000	Virginia Lake Upper Outlet	0.033	<0.05	<0.02	15.37	0.32	0.76	0.42	0.28	0.08	2.29
8/18/2000	Virginia Lake Upper Outlet	0.02	0.07	<0.02	17.38	0.45	0.98	0.54	0.78	0.09	2.34

E. WALKER ABOVE & BELOW RESERVOIR

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/19/2000	East Walker above Reservoir	68	61.8	9.1	30	3.88	8.4	98.8	1.1	<0.05	0.01
5/19/2000	East Walker below Reservoir	165	60.3	9.2	55	4.82	8.7	134.9	0.5	0.05	0.03
5/30/2000	East Walker above Reservoir	144.2	52.1	9.2	22	1.69	7.9	109.8	1.3	<0.05	<0.007
5/30/2000	East Walker below Reservoir	187.5	50.5	8.9	90	5.18	7.9	163.1	0.6	<0.05	<0.007
6/15/2000	East Walker above Reservoir	146.2	53.8	8.9	26	4.19	7.9	101.9	0.2	<0.05	<0.007
6/15/2000	East Walker below Reservoir	225	53.4	8.7	88	5.02	8.1	144	0.4	<0.05	<0.007
7/25/2000	East walker above Reservoir	32.5	70	8.6	16	1.69	7.8	125.7	0.2	<0.05	<0.007
7/25/2000	East Walker below Reservoir	252	69.6	6.7	16	2.39	7.4	130.2	0.6	0.61	<0.007
8/18/2000	East Walker above Reservoir	21	68.3	9.1	14	3.51	7.9	28.9	0.2	<0.05	0.02
8/18/2000	East Walker below Reservoir	198	65.9	7.1	8	0.38	7.8	124.7	0.2	<0.05	0.61
9/15/2000	East Walker above Reservoir	14.8	62.2	8.1	56	5.31	7.6	190.9	0.2	<0.05	0.012
9/15/2000	East Walker below Reservoir	214	59.4	7.5	56	7.55	8.1	139.7	0.1	<0.05	0.06

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/19/2000	East Walker above Reservoir	<0.010	<0.05	<0.02	21.08	3.2	9.07	2.93	0.89	10.63	19.66
5/19/2000	East Walker below Reservoir	0.03	0.05	0.35	18.22	4.66	16.1	3.38	2.88	16.2	14.9
5/30/2000	East Walker above Reservoir	0.099	0.1	0.03	19.96	4.07	5.17	1.5	1.04	7.67	7.12
5/30/2000	East Walker below Reservoir	<0.010	0.08	0.02	30.31	7.5	21.83	3.7	3.63	18.45	7.38
6/15/2000	East Walker above Reservoir	0.032	0.06	0.03	20.9	3.07	4.23	1.73	0.53	6.44	7.99
6/15/2000	East Walker below Reservoir	0.03	<0.05	0.06	21.22	5.55	21.33	4.5	1.98	3.8	15.2

		NO3	P	PO4							
7/25/2000	East walker above Reservoir	<0.010	<0.05	0.04	27.52	3.85	6.56	2.08	0.57	0.16	11.54
7/25/2000	East Walker below Reservoir	0.028	0.13	0.05	22.26	3.69	10.16	2.2	0.57	0.23	7.71
8/18/2000	East Walker above Reservoir	<0.010	0.08	0.05	17.8	3.88	10.21	1.69	1.45	7.3	22.1
8/18/2000	East Walker below Reservoir	0.171	0.12	0.1	18.4	3.91	12.35	2.61	1.87	7.4	13.1
9/15/2000	East Walker above Reservoir	<0.010	<0.05	<0.02	22.88	3.39	9.87	2.03	1.39	10.13	22.36
9/15/2000	East Walker below Reservoir	0.044	<0.05	0.09	18.22	4.66	16.1	3.38	2.88	16.2	14.9

GREEN CK: LAKE INLET TO USGS GAUGE

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/19/2000	Green Lake Inlet	6	48.1	10.1	18	0.79	7.4	8.7	0.4	<0.05	0.008
5/19/2000	Green Lake Outlet	27	40.3	10.2	20	1.93	7.3	23.9	0.4	<0.05	0.051
5/19/2000	Green above FS Campground	89.6	44.3	9.8	22	2.01	7.4	33.3	0.8	<0.05	0.023
5/19/2000	Green below FS Campground	89.8	44.6	9.8	18	0.65	7.5	24.3	0.8	<0.05	0.008
5/19/2000	Green at guage	115.2	46.7	9.6	22	1.38	7.9	30.6	0.5	<0.05	0.007
5/30/2000	Green Lake Inlet	12.8	36.3	9	16	0.49	6.6	23.6	0.5	<0.05	<0.007
5/30/2000	Green Lake Outlet	84.7	39	10.3	18	0.69	7.2	31.8	0.5	<0.05	<0.007
5/30/2000	Green above FS Campground	115.6	41.5	10.1	20	0.9	7	35.2	0.5	<0.05	<0.007
5/30/2000	Green below FS Campground	115.2	41.6	10.2	18	1	7.1	32.1	0.9	<0.05	<0.007
5/30/2000	Green at guage	134.4	43.2	10.3	18	1.59	7	35.4	0.8	<0.05	<0.007
6/15/2000	Green Lake Inlet	15.2	49.2	9.7	20	1.81	7.6	17.3	0.1	<0.05	<0.007
6/15/2000	Green Lake Outlet	78.8	50.1	9.9	16	1.1	7.6	22.2	0.1	<0.05	<0.007
6/15/2000	Green above FS Campground	130.1	53.1	9.9	18	1.08	7.4	26.1	0.2	<0.05	<0.007
6/15/2000	Green below FS Campground	128.2	53.7	10.1	20	1.22	7.4	28.2	0.2	<0.05	<0.007
6/15/2000	Green at guage	138.5	55.2	9.6	22	0.91	7.2	32.7	0.3	<0.05	<0.007
7/10/2000	Green Lake Inlet	5.1	55.1	8.8	10	0.36	7	31.6	0.3	0.09	<0.007
7/10/2000	Green Lake Outlet	22.7	58.6	7.8	8	0.6	6.9	36.5	0.3	0.08	0.021
7/10/2000	Green above FS Campground	39.8	57.1	8.8	16	0.7	6.9	40.5	0.2	<0.05	0.01
7/10/2000	Green below FS Campground	40.2	57.6	8.7	14	2.62	7.4	52.4	0.3	<0.05	<0.007
7/10/2000	Green at guage	44.5	59.3	8.5	13	2.2	7.5	54.1	0.3	<0.05	<0.007

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7/25/2000	Green below FS campground	38.3	59.7	10.2	14	0.84	7.6	38.6	0.2	<0.05	<0.007
7/25/2000	Green at gauge	36.8	61.5	10.1	12	0.74	7.6	21.1	0.2	<0.05	<0.007
8/18/2000	Green Lake Inlet	3.1	58.2	7.6	9	0.4	6.3	18.1	0.2	<0.05	<0.007
8/18/2000	Green Lake Outlet	12.5	60.6	8.7	5	0.1	6.4	17.5	0.2	<0.05	<0.007
8/18/2000	Green above FS Campground	20	59.4	11.9	7	0.21	6.5	31.5	0.2	<0.05	<0.007
8/18/2000	Green below FS Campground	20	59.8	11.8	12	1.11	6.7	35.9	0.2	<0.05	<0.007
8/18/2000	Green at guage	21	62.1	9.2	23	8.22	6.9	28.6	0.3	<0.05	<0.007
9/15/2000	Green Lake Inlet	2.8	51.8	8.9	12	1.2	7.3	8.7	0.2	<0.05	0.008
9/15/2000	Green Lake Outlet	8.1	56.2	8.1	8	0.93	7.2	23.9	0.2	<0.05	0.019
9/15/2000	Green above FS Campground	8.8	53.1	7.8	14	2.05	7.1	33.3	0.3	<0.05	0.015
9/15/2000	Green below FS Campground	8.9	53.5	7.8	18	2.65	7.4	24.3	0.2	<0.05	0.007
9/15/2000	Green at gauge	9.1	55.7	7.7	56	1.16	7.8	106.8	0.1	<0.05	<0.007

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/19/2000	Green Lake Inlet	<0.010	<0.05	<0.02	7.97	0.42	1.25	0.46	0.23	3.76	3
5/19/2000	Green Lake Outlet	0.174	<0.05	<0.02	11.35	0.5	1.49	0.89	0.54	11.23	1.97
5/19/2000	Green above FS Campground	0.144	<0.05	<0.02	10.76	0.41	1.26	0.63	0.34	8.92	2.26
5/19/2000	Green below FS Campground	0.074	<0.05	<0.02	10.81	0.4	1.23	0.48	0.26	8.58	2.34
5/19/2000	Green at guage	0.033	<0.05	<0.02	10.89	0.46	1.37	0.52	0.25	7.93	2.31
5/30/2000	Green Lake Inlet	<0.010	0.09	0.02	8.32	0.4	1.34	0.49	0.28	4.5	3.53
5/30/2000	Green Lake Outlet	<0.010	0.09	0.02	9.97	0.4	1.01	0.34	0.23	8.49	1.98
5/30/2000	Green above FS Campground	0.162	0.1	0.02	10.76	0.46	1.29	0.74	0.49	7.66	2.38
5/30/2000	Green below FS Campground	0.066	<0.05	<0.02	10.44	0.38	1.04	0.41	0.27	8.27	2.27
5/30/2000	Green at guage	0.037	0.09	0.02	10.86	0.45	1.18	0.44	0.26	8.43	2.21
6/15/2000	Green Lake Inlet	0.049	0.07	0.03	7.96	0.35	0.62	0.17	0.26	4.04	1.54
6/15/2000	Green Lake Outlet	0.077	0.1	0.04	8.44	0.27	0.86	0.15	0.24	6.61	2.02
6/15/2000	Green above FS Campground	0.104	0.18	0.05	10.06	0.37	0.91	0.34	0.3	8.39	2.12
6/15/2000	Green below FS Campground	0.09	0.15	0.04	9.92	0.35	0.92	0.35	0.23	8.07	2.19
6/15/2000	Green at guage	0.021	<0.05	<0.02	10.53	0.4	0.93	0.34	0.27	8.52	2.3
7/10/2000	Green Lake Inlet	0.144	<0.05	<0.02	9.21	0.55	1.66	0.65	0.35	0.03	5.25
7/10/2000	Green Lake Outlet	0.142	<0.05	<0.02	9.93	0.4	1.12	0.47	0.28	0.06	1.6
7/10/2000	Green above FS Campground	0.092	<0.05	<0.02	11.85	0.37	1.11	0.43	0.57	0.07	2.37
7/10/2000	Green below FS Campground	0.081	<0.05	<0.02	14.5	0.43	1.17	0.44	0.5	0.25	2.21
7/10/2000	Green at guage	0.07	<0.05	<0.02	12.8	0.45	1.12	0.43	0.53	0.22	2.45

NO3 S PO4

7/25/2000	Green below FS campground	0.078	<0.05	<0.02	12.41	0.45	1.19	0.46	0.5	0.08	2.82
7/25/2000	Green at gauge	0.033	<0.05	<0.02	13.55	0.57	1.47	0.6	0.43	0.07	2.64
8/18/2000	Green Lake Inlet	<0.010	0.06	0.02	7.91	0.45	1.56	0.62	0.28	0.03	4.17
8/18/2000	Green Lake Outlet	<0.010	<0.05	0.02	8.99	0.36	1.1	0.45	0.22	0.02	2.21
8/18/2000	Green above FS Campground	<0.010	0.09	0.05	10.65	0.41	1.13	0.43	0.27	0.02	2.45
8/18/2000	Green below FS Campground	<0.010	0.07	0.03	11.49	0.54	1.28	0.51	0.39	0.72	3.1
8/18/2000	Green at guage	<0.010	0.08	0.03	12.22	0.57	1.36	0.55	0.76	0.61	3.22
9/15/2000	Green Lake Inlet	<0.010	<0.05	<0.02	11.07	1.19	3.05	1.36	0.63	5.26	6.5
9/15/2000	Green Lake Outlet	0.16	<0.05	<0.02	16.81	1.9	3.19	1.79	0.14	14.23	7.17
9/15/2000	Green above FS Campground	0.011	<0.05	<0.02	18.69	2.28	4.36	1.83	0.16	11.82	9.16
9/15/2000	Green below FS Campground	0.074	<0.05	<0.02	19.11	2.96	14.23	4.18	0.26	8.58	2.34
9/15/2000	Green at gauge	<0.010	0.05	0.02	7.23	0.51	1.2	0.8	0.3	11.9	5.1

HORSE CK & ROBINSON AT TWIN LAKES INLET

TRIBS TO ROBINSON

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/19/2000	Horse Creek at Twin Lakes	22.9	41.2	9.2	18	1.12	7.5	18.5	0.9	<0.05	<0.007
5/19/2000	Robinson above Twin Lakes	70	45.6	9.1	18	0.88	7.5	11.3	1.2	<0.05	<0.007
5/30/2000	Horse Creek at Twin Lakes	44.8	39.3	11.1	20	1.26	7.1	32.3	1	0.08	<0.007
5/30/2000	Robinson above Twin Lakes	118.8	42.3	10.2	20	0.08	7.2	17.5	1.4	<0.05	<0.007
6/15/2000	Horse Creek at Twin Lakes	45.1	42.9	10.1	16	1.32	7.3	31.5	0.1	0.07	<0.007
6/15/2000	Robinson above Twin Lakes	138.2	49.7	9.8	18	1.1	7.7	18.4	0.3	<0.05	<0.007
7/10/2000	Horse Creek at Twin Lakes	20.1	58.1	8.9	6	2.13	7.2	28	0.1	<0.05	<0.007
7/10/2000	Robinson above Twin Lakes	39.7	62.2	8.8	18	1.26	7.6	28.2	0.1	0.1	0.008
7/25/2000	Horse Creek at Twin Lakes	18.5	54.5	9.2	16	1.21	7	23.6	0.2	<0.05	<0.007
7/25/2000	Robinson above Twin Lakes	57.6	68.9	8.1	16	1.01	7.5	25.2	0.2	<0.05	<0.007
8/18/2000	Horse Creek at Twin Lakes	11	58.8	10.8	8	0.42	6.2	8.1	0.3	<0.05	<0.007
8/18/2000	Robinson above Twin Lakes	12	61.1	10.9	9	0.88	6.7	12.5	0.2	<0.05	<0.007
9/15/2000	Horse Creek at Twin Lakes	12.6	49.5	8.9	17	1.02	7.8	18.5	0.3	<0.05	0.011
9/15/2000	Robinson above Twin Lakes	10.7	50.5	8.4	15	0.92	7.6	11.3	0.2	<0.05	0.013

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/19/2000	Horse Creek at Twin Lakes	0.368	0.08	0.02	11.26	0.4	0.84	0.31	0.26	2.07	1.85
5/19/2000	Robinson above Twin Lakes	0.063	<0.05	<0.02	8.61	0.53	1	0.28	0.17	0.89	2.42
5/30/2000	Horse Creek at Twin Lakes	0.485	0.09	0.03	12.5	0.48	0.75	0.32	0.27	2.54	1.81
5/30/2000	Robinson above Twin Lakes	0.111	0.08	0.02	8.22	0.6	0.94	0.26	0.27	0.8	2.06
6/15/2000	Horse Creek at Twin Lakes	0.366	0.12	0.04	10.57	0.33	0.47	0.25	0.16	2.02	1.46
6/15/2000	Robinson above Twin Lakes	0.072	<0.05	<0.02	7.56	0.48	0.8	0.2	0.28	1.01	2.12
7/10/2000	Horse Creek at Twin Lakes	0.2	<0.05	<0.02	10.98	0.36	0.57	0.28	0.21	0.2	1.08
7/10/2000	Robinson above Twin Lakes	0.261	<0.05	<0.02	10.9	0.31	0.58	0.28	0.64	0.12	1.52
7/25/2000	Horse Creek at Twin Lakes	0.096	<0.05	<0.02	11.11	0.24	0.52	0.28	0.57	0.12	1.4
7/25/2000	Robinson above Twin Lakes	0.075	<0.05	<0.02	9.8	0.58	1.23	0.32	0.57	0.1	3.54
8/18/2000	Horse Creek at Twin Lakes	<0.010	0.08	0.04	10.12	0.33	0.65	0.31	0.33	0.05	1.28
8/18/2000	Robinson above Twin Lakes	<0.010	0.08	0.04	10.19	0.56	1.66	0.43	0.37	0.09	3.12
9/15/2000	Horse Creek at Twin Lakes	0.032	0.1	0.05	13.06	0.59	1.64	0.12	0.76	1.57	4.55
9/15/2000	Robinson above Twin Lakes	0.048	<0.05	<0.02	6.51	0.1	4.7	0.22	0.63	0.81	0.58

ROBINSON CK: USGS GAUGE TO WRID FENCE

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC mV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/19/2000	Robinson at gauge	125.2	46.4	9	18	0.63	8.1	28	0.5	<0.05	0.007
5/19/2000	Robinson @ Doc & Al	130.1	47.8	8.9	18	1.3	8.2	35.6	0.4	<0.05	0.007
5/19/2000	Robinson (N) at 395	42.7	49.9	8.9	24	2.88	7.7	36.7	0.4	<0.05	0.007
5/19/2000	Robinson @ WRID fence	40	51.2	9.1	24	2.84	8.2	34.9	0.9	<0.05	<0.007
5/30/2000	Robinson at gauge	115	44.8	10	18	1.21	7.5	49.9	0.6	<0.05	<0.007
5/30/2000	Robinson @ Doc & Al	120	45.2	9.8	20	0.73	7.4	57.1	0.4	<0.05	<0.007
5/30/2000	Robinson (N) at 395	76	48.6	9.5	20	0.7	7.4	51.9	0.4	<0.05	<0.007
5/30/2000	Robinson @ WRID fence	120	49.9	9.3	32	4.62	7.8	110.9	0.9	<0.05	<0.007
6/15/2000	Robinson at gauge	178	52.4	9.6	14	1.26	7.9	46.1	0.4	<0.05	<0.007
6/15/2000	Robinson @ Doc & Al	176.8	52.6	9.6	18	1.31	7.7	34.2	0.2	<0.05	<0.007
6/15/2000	Robinson (N) at 395	89.3	54.8	8.7	24	1.75	7.7	50.2	0.1	<0.05	<0.007
6/15/2000	Robinson @ WRID fence	83.1	55.9	9.1	14	0.78	7.6	54.9	0.3	<0.05	<0.007

TKN NO_3 NH_4

7/10/2000	Robinson at gauge	98.6	63.5	8.4	12	1.05	7.4	42.5	0.2	<0.05	0.01
7/10/2000	Robinson @ Doc & Al	87.5	65.2	8.4	4	1.66	7.4	46.8	0.1	<0.05	<0.007
7/25/2000	Robinson at gauge	85.2	68.9	7.3	6	1.26	6.9	16.4	0.2	<0.05	<0.007
7/25/2000	Robinson at Doc & Al	78.2	70.9	7.9	18	1.18	7	31.9	0.2	<0.05	<0.007
7/25/2000	Robinson at 395	6.8	73.8	7.1	18	1.12	7.2	65.7	0.2	<0.05	<0.007
7/25/2000	Robinson at WRID Fence	9.1	79.2	6.4	20	1.1	7.8	95	0.2	<0.05	<0.007
8/18/2000	Robinson at gauge	65	63.1	9.2	8	0.3	6.6	24.5	0.4	<0.05	<0.007
8/18/2000	Robinson @ Doc & Al	64.1	64.2	9.3	7	0.18	6.3	36.8	0.3	<0.05	<0.007
8/18/2000	Robinson (N) at 395	10.5	66.2	8.9	8	0.55	6.4	47.5	0.2	<0.05	<0.007
8/18/2000	Robinson @ WRID fence	8.7	66.8	8.1	4	0.2	7.7	38.1	0.2	<0.05	<0.007
9/15/2000	Robinson at gauge	21.6	52.5	8.5	16	0.76	7.9	28	0.2	<0.05	<0.007
9/15/2000	Robinson @ Doc & Al	19.8	53.4	8.4	52	0.68	7.5	58.3	0.2	<0.05	<0.007
9/15/2000	Robinson (N) at 395	8.3	56.8	8.2	48	1.13	7.6	89.2	0.2	<0.05	<0.007
9/15/2000	Robinson @ WRID fence	4.1	56.1	8.1	52	1.48	7.8	113.5	0.2	<0.05	<0.007

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/19/2000	Robinson at gauge	<0.010	<0.05	<0.02	8.8	0.97	2	0.69	0.37	4.87	5.12
5/19/2000	Robinson @ Doc & Al	<0.010	<0.05	<0.02	14.63	1.12	2.05	0.69	0.34	4.95	2.34
5/19/2000	Robinson (N) at 395	<0.010	<0.05	<0.02	7.15	1.57	2.16	0.85	0.31	3.34	8.22
5/19/2000	Robinson @ WRID fence	<0.010	<0.05	<0.02	10.3	2.07	2.99	1.05	0.44	3.66	12.72
5/30/2000	Robinson at gauge	0.078	<0.05	<0.02	13.13	1.17	1.85	0.46	0.38	4	2.51
5/30/2000	Robinson @ Doc & Al	0.192	<0.05	<0.02	13.79	2.1	2.68	0.62	0.78	5.03	2.84
5/30/2000	Robinson (N) at 395	0.262	<0.05	<0.02	12.79	2.21	2.3	0.5	0.83	3.42	3.44
5/30/2000	Robinson @ WRID fence	0.257	0.08	0.02	17.99	4.41	6.61	1.93	1.33	9.25	1.33
6/15/2000	Robinson at gauge	<0.010	<0.05	<0.02	12.22	0.92	1.76	0.48	0.32	3.97	2.39
6/15/2000	Robinson @ Doc & Al	0.033	<0.05	<0.02	11.64	0.68	0.93	0.26	0.27	2.27	2.53
6/15/2000	Robinson (N) at 395	<0.010	0.13	0.04	13.35	1.29	1.83	0.65	0.32	3.19	3.18
6/15/2000	Robinson @ WRID fence	0.028	0.14	0.02	5.26	0.29	0.47	0.09	0.24	0.19	0.8
7/10/2000	Robinson at gauge	0.034	<0.05	<0.02	13.32	0.74	1.63	0.48	0.43	0.1	2.67
7/10/2000	Robinson @ Doc & Al	0.068	<0.05	<0.02	13.35	0.84	1.67	0.53	0.14	0.16	2.24
7/25/2000	Robinson at gauge	0.026	<0.05	<0.02	9.75	0.53	0.65	0.22	0.21	0.12	2.68
7/25/2000	Robinson at Doc & Al	0.059	<0.05	<0.02	13.06	0.76	1.51	0.51	0.64	0.11	2.94
7/25/2000	Robinson at 395	0.032	<0.05	<0.02	17.12	2.81	3.85	1.41	0.66	0.11	5.49

NO3 P PO4

7/25/2000	Robinson at WRID Fence	<0.010	<0.05	<0.02	18.27	2.9	4.75	1.63	0.71	0.11	7.92
8/18/2000	Robinson at gauge	<0.010	0.07	0.04	7.2	0.61	1.72	0.44	0.21	0.9	5.91
8/18/2000	Robinson @ Doc & Al	<0.010	0.07	0.03	13.06	0.76	1.51	0.51	0.25	0.02	2.94
8/18/2000	Robinson (N) at 395	<0.010	<0.05	0.03	9.67	1.1	2.27	0.91	0.33	0.05	2.68
8/18/2000	Robinson @ WRID fence	<0.010	0.08	0.06	15.33	3.1	4.87	1.73	0.56	0.16	9.89
9/15/2000	Robinson at gauge	0.044	<0.05	<0.02	7.62	0.79	1.7	0.49	0.37	3.57	4.52
9/15/2000	Robinson @ Doc & Al	0.041	<0.05	<0.02	17.12	1.54	2.65	1.09	0.06	5.05	5.34
9/15/2000	Robinson (N) at 395	0.088	<0.05	<0.02	9.66	1.62	2.5	1.4	0.5	4.2	10.9
9/15/2000	Robinson @ WRID fence	<0.010	<0.05	<0.02	13.6	3.26	5.4	2.3	0.9	5.1	13.9

SAUGER CR: HWY 395 CAMPGROUND TO ASCAUGUA LINE

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC mV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/19/2000	Sauger @ Campground	21.3	45.7	8.9	34	3.23	8.3	55.5	0.6	<0.05	<0.007
5/19/2000	Sauger below FS Compound	20.2	45.7	8.9	54	4.15	8.2	93.8	0.6	<0.05	<0.007
5/30/2000	Sauger @ Campground	26.7	46.1	8.7	20	0.86	8	88	0.6	<0.05	<0.007
5/30/2000	Sauger below FS Compound	26.4	47.1	8.7	32	2.33	8.4	116.8	0.6	<0.05	<0.007
6/15/2000	Sauger @ Campground	5.3	50.3	8.1	33	2.88	7.6	135.4	0.3	0.06	<0.007
6/15/2000	Sauger below FS Compound	5.1	50.7	8.1	36	2.92	7.6	136.2	0.3	0.06	<0.007
7/25/2000	Sauger @ Campground	2.7	72.1	9	14	1.59	7.8	128.9	0.6	0.18	<0.007
7/25/2000	Sauger below FS Compound	2.7	70.7	8.9	18	1.68	7.9	101.2	0.3	<0.05	<0.007
8/18/2000	Sauger @ Campground	4.2	68	7.1	26	10.25	6.8	89.9	0.5	0.18	0.1
8/18/2000	Sauger below FS Compound	4.2	68.3	7	27	10.59	6.6	88.6	0.4	0.07	0.09
9/15/2000	Sauger @ Campground	5.2	56.2	8.4	39	0.43	7.6	159.2	0.4	0.11	0.021
9/15/2000	Sauger below FS Compound	5.2	56.3	8.4	36	0.48	7.7	166.2	0.2	0.12	0.028

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/19/2000	Sauger @ Campground	0.05	0.06	0.05	10.1	3.55	9.06	2.68	1.38	4.2	24.72
5/19/2000	Sauger below FS Compound	0.05	0.1	0.09	17.69	4.67	9.48	3.51	1.38	4.41	14.76
5/30/2000	Sauger @ Campground	0.04	0.12	<0.02	12.94	4.06	6.22	1.9	1.3	4.4	8.56
5/30/2000	Sauger below FS Compound	0.04	0.12	<0.02	16.8	4.82	9.53	2.58	1.29	4.16	11.68

		NO3	P	PO4							
6/15/2000	Sauger @ Campground	0.05	0.08	0.09	17.22	4.87	9.98	2.1	1.42	5.24	12.36
6/15/2000	Sauger below FS Compound	0.06	0.09	0.09	18.28	4.45	9.88	2.2	1.34	5.07	11.93
7/25/2000	Sauger @ Campground	0.13	0.1	0.03	19.11	4.96	13	2.85	0.5	0.15	17.99
7/25/2000	Sauger below FS Compound	<0.010	0.06	<0.02	17.87	4.52	11.56	2.67	0.64	0.16	16.31
8/18/2000	Sauger @ Campground	0.16	0.07	0.09	12.35	4.12	9.88	2.23	0.78	0.19	28.2
8/18/2000	Sauger below FS Compound	0.128	0.08	0.1	15.21	4.23	9.76	2.76	0.83	0.02	29.1
9/15/2000	Sauger @ Campground	0.112	<0.05	0.02	10.2	3.33	9.8	2.6	0.9	5.5	27.9
9/15/2000	Sauger below FS Compound	0.125	0.08	0.05	10.6	3.89	10.5	2.6	1	5.8	28.6

ROBINSON CK: ABOVE TWIN LAKES TO DOC & AL'S

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
5/19/2000	Horse Creek at Twin Lakes	22.9	41.2	9.2	18	1.12	7.5	18.5	0.9	<0.05	<0.007
5/19/2000	Robinson above Twin Lakes	70	45.6	9.1	18	0.88	7.5	11.3	1.2	<0.05	<0.007
5/19/2000	Robinson at gauge	125.2	46.4	9	18	0.63	8.1	28	0.5	<0.05	0.007
5/19/2000	Robinson @ Doc & Al	130.1	47.8	8.9	18	1.3	8.2	35.6	0.4	<0.05	0.007
5/30/2000	Horse Creek at Twin Lakes	44.8	39.3	11.1	20	1.26	7.1	32.3	1	0.08	<0.007
5/30/2000	Robinson above Twin Lakes	118.8	42.3	10.2	20	0.08	7.2	17.5	1.4	<0.05	<0.007
5/30/2000	Robinson at gauge	115	44.8	10	18	1.21	7.5	49.9	0.6	<0.05	<0.007
5/30/2000	Robinson @ Doc & Al	120	45.2	9.8	20	0.73	7.4	57.1	0.4	<0.05	<0.007
6/15/2000	Horse Creek at Twin Lakes	45.1	42.9	10.1	16	1.32	7.3	31.5	0.1	0.07	<0.007
6/15/2000	Robinson above Twin Lakes	138.2	49.7	9.8	18	1.1	7.7	18.4	0.3	<0.05	<0.007
6/15/2000	Robinson at gauge	178	52.4	9.6	14	1.26	7.9	46.1	0.4	<0.05	<0.007
6/15/2000	Robinson @ Doc & Al	176.8	52.6	9.6	18	1.31	7.7	34.2	0.2	<0.05	<0.007
7/10/2000	Horse Creek at Twin Lakes	20.1	58.1	8.9	6	2.13	7.2	28	0.1	<0.05	<0.007
7/10/2000	Robinson above Twin Lakes	39.7	62.2	8.8	18	1.26	7.6	28.2	0.1	0.1	0.008
7/10/2000	Robinson at gauge	98.6	63.5	8.4	12	1.05	7.4	42.5	0.2	<0.05	0.01
7/10/2000	Robinson @ Doc & Al	87.5	65.2	8.4	4	1.66	7.4	46.8	0.1	<0.05	<0.007
7/25/2000	Horse Creek at Twin Lakes	18.5	54.5	9.2	16	1.21	7	23.6	0.2	<0.05	<0.007

7/25/2000	Robinson above Twin Lakes	57.6	68.9	8.1	16	1.01	7.5	25.2	0.2	<0.05	<0.007
7/25/2000	Robinson at gauge	85.2	68.9	7.3	6	1.26	6.9	16.4	0.2	<0.05	<0.007
7/25/2000	Robinson at Doc & Al	78.2	70.9	7.9	18	1.18	7	31.9	0.2	<0.05	<0.007
8/18/2000	Horse Creek at Twin Lakes	11	58.8	10.8	8	0.42	6.2	8.1	0.3	<0.05	<0.007
8/18/2000	Robinson above Twin Lakes	12	61.1	10.9	9	0.88	6.7	12.5	0.2	<0.05	<0.007
8/18/2000	Robinson at gauge	65	63.1	9.2	8	0.3	6.6	24.5	0.4	<0.05	<0.007
8/18/2000	Robinson @ Doc & Al	64.1	64.2	9.3	7	0.18	6.3	36.8	0.3	<0.05	<0.007
9/15/2000	Horse Creek at Twin Lakes	12.6	49.5	8.9	17	1.02	7.8	18.5	0.3	<0.05	0.011
9/15/2000	Robinson above Twin Lakes	10.7	50.5	8.4	15	0.92	7.6	11.3	0.2	<0.05	0.013
9/15/2000	Robinson at gauge	21.6	52.5	8.5	16	0.76	7.9	28	0.2	<0.05	<0.007
9/15/2000	Robinson @ Doc & Al	19.8	53.4	8.4	52	0.68	7.5	58.3	0.2	<0.05	<0.007

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
5/19/2000	Horse Creek at Twin Lakes	0.368	0.08	0.02	11.26	0.4	0.84	0.31	0.26	2.07	1.85
5/19/2000	Robinson above Twin Lakes	0.063	<0.05	<0.02	8.61	0.53	1	0.28	0.17	0.89	2.42
5/19/2000	Robinson at gauge	<0.010	<0.05	<0.02	8.8	0.97	2	0.69	0.37	4.87	5.12
5/19/2000	Robinson @ Doc & Al	<0.010	<0.05	<0.02	14.63	1.12	2.05	0.69	0.34	4.95	2.34
5/30/2000	Horse Creek at Twin Lakes	0.485	0.09	0.03	12.5	0.48	0.75	0.32	0.27	2.54	1.81
5/30/2000	Robinson above Twin Lakes	0.111	0.08	0.02	8.22	0.6	0.94	0.26	0.27	0.8	2.06
5/30/2000	Robinson at gauge	0.078	<0.05	<0.02	13.13	1.17	1.85	0.46	0.38	.4	2.51
5/30/2000	Robinson @ Doc & Al	0.192	<0.05	<0.02	13.79	2.1	2.68	0.62	0.78	5.03	2.84
6/15/2000	Horse Creek at Twin Lakes	0.366	0.12	0.04	10.57	0.33	0.47	0.25	0.16	2.02	1.46
6/15/2000	Robinson above Twin Lakes	0.072	<0.05	<0.02	7.56	0.48	0.8	0.2	0.28	1.01	2.12
6/15/2000	Robinson at gauge	<0.010	<0.05	<0.02	12.22	0.92	1.76	0.48	0.32	3.97	2.39
6/15/2000	Robinson @ Doc & Al	0.033	<0.05	<0.02	11.64	0.68	0.93	0.26	0.27	2.27	2.53
7/10/2000	Horse Creek at Twin Lakes	0.2	<0.05	<0.02	10.98	0.36	0.57	0.28	0.21	0.2	1.08
7/10/2000	Robinson above Twin Lakes	0.261	<0.05	<0.02	10.9	0.31	0.58	0.28	0.64	0.12	1.52
7/10/2000	Robinson at gauge	0.034	<0.05	<0.02	13.32	0.74	1.63	0.48	0.43	0.1	2.67
7/10/2000	Robinson @ Doc & Al	0.068	<0.05	<0.02	13.35	0.84	1.67	0.53	0.14	0.16	2.24
7/25/2000	Horse Creek at Twin Lakes	0.096	<0.05	<0.02	11.11	0.24	0.52	0.28	0.57	0.12	1.4
7/25/2000	Robinson above Twin Lakes	0.075	<0.05	<0.02	9.8	0.58	1.23	0.32	0.57	0.1	3.54
7/25/2000	Robinson at gauge	0.026	<0.05	<0.02	9.75	0.53	0.65	0.22	0.21	0.12	2.68
7/25/2000	Robinson at Doc & Al	0.059	<0.05	<0.02	13.06	0.76	1.51	0.51	0.64	0.11	2.94

8/18/2000	Horse Creek at Twin Lakes	<0.010		0.08	0.04	10.12	0.33	0.65	0.31	0.33	0.05	1.28
8/18/2000	Robinson above Twin Lakes	<0.010		0.08	0.04	10.19	0.56	1.66	0.43	0.37	0.09	3.12
8/18/2000	Robinson at gauge	<0.010		0.07	0.04	7.2	0.61	1.72	0.44	0.21	0.9	5.91
8/18/2000	Robinson @ Doc & Al	<0.010		0.07	0.03	13.06	0.76	1.51	0.51	0.25	0.02	2.94
9/15/2000	Horse Creek at Twin Lakes	0.032		0.1	0.05	13.06	0.59	1.64	0.12	0.76	1.57	4.55
9/15/2000	Robinson above Twin Lakes	0.048	<0.05		<0.02	6.51	0.1	4.7	0.22	0.63	0.81	0.58
9/15/2000	Robinson at gauge	0.044	<0.05		<0.02	7.62	0.79	1.7	0.49	0.37	3.57	4.52
9/15/2000	Robinson @ Doc & Al	0.041	<0.05		<0.02	17.12	1.54	2.65	1.09	0.06	5.05	5.34

Judith, 8/30/01

This is Linda Vance's 2000 data for Bridgeport. I set the data up to go from upstream to downstream as best as possible. At times sample locations from the upper watershed are listed below those of the BP Valley, only because they enter the main tributary as such (i.e.: Sauger Creek enters Buckeye below 395).

The Values shown are a spreadsheet that I compiled in order to run some graphs, so they are not original raw data. Total N was calculated on an excel spreadsheet by adding TKN + NO2/NO3. For Total P, if a ND was present I substituted .025 (half the detection limit), just so I'd have at least something to work with on my graphs.

As mentioned there are many ND with P since the detection limit was .05mg/L. Regardless of this, with most of the tribs in late May and early April, P seems to be flushed from the upper watershed, (perhaps spring melt). A second flushing takes place in mid August as well. I was thinking that it might be attributed to either, a recycling of detritus after a late summer die back, or perhaps atmospheric deposition. There is also a potential that parent rock may be involved. On the Geo map, above Green and Virginia Creek drainages there is an area of meta-sedimentary rock, and may very well have a P component.

With regards to N, it's quite common to see violations in the upper watershed, however it is not uncommon to see concentrations come back into compliance before they enter the lower Bridgeport Valley (see circled numbers). This makes good sense; I have hiked around the upper watershed quite a bit and there is good riparian cover in many cases, that is if you don't count Annette's Mono Village, which I think is one of the worst problems out there.

As far as Linda Vance goes, I emailed her about potentially using her data for Basin Plan Criteria and that we would need a copy of her QA/QC in both the field and the lab. She said that she was swamped and would try to get back to us in September.

If you have any questions or need me to explain any of the data, please let me know.
Kim

Note – Linda Vance is a consultant for the North Mono County RCD and the author of the March 2000 RCD report. Later data were not organized in a report format.

TOTAL N BRIDGEPORT VALLEY .5/.8

TOTAL P UPPER WATERSHED .02/.03

TOTAL P Bridgeport Valley .06/.1

VIOLATIONS

Green Creek

Linda Vance data 2000

		Total N	Total P	
5/19/2000	Green Lake Inlet	0.013	0.025	
	Green Lake Outlet	0.225	0.025	
	Green above FS Campground	0.167	0.025	
	Green below FS Campground	0.082	0.025	
	Green at guage	0.04	0.025	
	East Walker above Bridgeport	0.015	0.025	
	East Walker below Bridgeport	0.06	0.05	

< .05

		Total N	Total P	
5/30/2000	Green Lake Inlet	0.0085	0.09	
	Green Lake Outlet	0.0085	0.09	
	Green above FS Campground	0.1655	0.1	
	Green below FS Campground	0.0695	0.025	
	Green at guage	0.0405	0.09	
	East Walker above Bridgeport	0.1025	0.1	
	East Walker below Bridgeport	0.0085	0.08	

< .05

		Total N	Total P	
6/15/2000	Green Lake Inlet	0.0525	0.07	
	Green Lake Outlet	0.0805	0.1	
	Green above FS Campground	0.1075	0.18	
	Green below FS Campground	0.0935	0.15	
	Green at guage	0.0245	0.025	
	East Walker above Bridgeport	0.0355	0.06	
	East Walker below Bridgeport	0.0335	0.025	

< .05

< .05

		Total N	Total P	
7/10/2000				
	Summit Lake Outlet	0.0575	0.1	
	Hoover (Lower) Lake Outlet	0.1515	0.025	
	Gilman Lake Outlet	0.094	0.025	
	East Lake	0.0285	0.025	
	Green Lake Inlet	0.1475	0.025	
	Green Lake Outlet	0.163	0.025	
	Green above FS Campground	0.102	0.025	
	Green below FS Campground	0.0845	0.025	
	Green at guage	0.0735	0.025	

< .05

		Total N	Total P	
8/18/2000				
	Summit Lake Outlet	0.0535	0.09	
	Hoover (Lower) Lake Outlet	0.0215	0.025	
	Gilman Lake Outlet	0.05	0.09	
	East Lake	0.0275	0.08	
	Green Lake Inlet	0.0085	0.06	
	Green Lake Outlet	0.0085	0.025	
	Green above FS Campground	0.0085	0.09	
	Green below FS Campground	0.0085	0.07	
	Green at guage	0.0085	0.08	
	East Walker above Reservoir	0.025	0.08	
	East Walker below Reservoir	0.781	0.12	

< .05

< .05

		Total N	Total P	
9/15/2000	Green Lake Inlet	0.013	0.025	

< .05

Green Lake Outlet	0.179	0.025
Green above FS Campground	0.026	0.025
Green below FS Campground	0.081	0.025
Green at gauge	0.0085	0.05
East Walker above Bridgeport	0.017	0.025
East Walker below Bridgeport	0.104	0.025

East Walker River	Total N	Total P
5/19 above BPR	0.015	0.025
5/19 below BPR	0.06	0.05
5/30 above BPR	0.1025	0.1
5/30 below BPR	0.0085	0.08
6/15 above BPR	0.0355	0.06
6/15 below BPR	0.0335	0.025
7/25 above BPR	0.0085	0.025
7/25 below BPR	0.0315	0.13
8/18 above BPR	0.025	0.08
8/18 below BPR	0.781	0.12
9/15 above BPR	0.017	0.025
9/15 below BPR	0.104	0.025

LINDA VANCE 2000
ROBINSON CREEK

5/19/2001	Total N	Total P	
Barney Lake Inlet	0.225	0.11	
Barney Lake Outlet	0.066	0.08	
Robinson above Twin Lakes	0.0665	0.025	< .05
Horse Creek at Twin Lakes	0.3715	0.08	
Robinson at gauge	0.012	0.025	
Robinson @ Doc & Al	0.012	0.025	< .05
Robinson (N) at 395	0.012	0.025	
Robinson @ WRID fence	0.0085	0.025	

30-May	Total N	Total P	
Barney Lake Inlet	0.1595	0.09	
Barney Lake Outlet	0.0085	0.09	
Robinson above Twin Lakes	0.1145	0.08	
Horse Creek at Twin Lakes	0.4885	0.09	
Robinson at gauge	0.0815	0.025	
Robinson @ Doc & Al	0.1955	0.025	< .05
Robinson (N) at 395	0.2655	0.025	
Robinson @ WRID fence	0.2605	0.08	

15-Jun	Total N	Total P	
Barney Lake Inlet	0.0495	0.025	
Barney Lake Outlet	0.0085	0.025	< .05
Robinson above Twin Lakes	0.0755	0.025	
Horse Creek at Twin Lakes	0.3695	0.12	
Robinson at gauge	0.0085	0.025	
Robinson @ Doc & Al	0.0365	0.025	< .05
Robinson (N) at 395	0.0085	0.13	
Robinson @ WRID fence	0.0315	0.14	

7/10/2000	Total N	Total P	
Peeler at Rancheria	0.0165	0.025	
Peeler at Robinson Outlet	0.071	0.025	< .05
Snow Lake Outlet	0.033	0.025	
Crown Lake Inlet	0.141	0.1	
Crown Lake Outlet	0.149	0.025	
Robinson Lake Upper Outlet	0.034	0.025	
Robinson Lake Lower Outlet	0.084	0.025	
Barney Lake Inlet	0.05	0.025	
Barney Lake Outlet	0.0085	0.025	
Robinson above Twin Lakes	0.269	0.025	< .05
Horse Creek at Twin Lakes	0.2035	0.025	
Robinson at gauge	0.044	0.025	
Robinson @ Doc & Al	0.0715	0.025	

8/18/2000	Total N	Total P	
Peeler at Rancheria	0.0165	0.025	< .05
Peeler at Robinson Outlet	0.038	0.07	

Snow Lake Outlet	0.033	0.07
Crown Lake Inlet	0.0495	0.07
Crown Lake Outlet	0.039	0.08
Robinson Lake Upper Outlet	0.025	0.025
Robinson Lake Lower Outlet	0.058	0.09
Barney Lake Inlet	0.039	0.025
Barney Lake Outlet	0.0085	0.025
Robinson above Twin Lakes	0.0085	0.08
Horse Creek at Twin Lakes	0.0085	0.08
Robinson at gauge	0.0085	0.07
Robinson @ Doc & Al	0.0085	0.07
Robinson (N) at 395	0.0085	0.025
Robinson @ WRID fence	0.0085	0.08

9/15/2000

	Total N	Total P
Barney Lake Inlet	0.133	0.025
Barney Lake Outlet	0.021	0.025
Robinson above Twin Lakes	0.061	0.025
Horse Creek at Twin Lakes	0.043	0.1
Robinson at gauge	0.0475	0.025
Robinson @ Doc & Al	0.0445	0.025
Robinson (N) at 395	0.0915	0.025
Robinson @ WRID fence	0.0085	0.025

LINDA VANCE DATA 2000 BPR

VIOLATIONS

Buckeye Creek

5/19/2000		Total N	Total P	
	Buckeye above Big Meadows	0.013	0.025	
	Buckeye below Big Meadows	0.0785	0.025	
	Buckeye above FS Campground	0.0455	0.025	< .05
	Buckeye below FS Campground	0.0085	0.025	
	Buckeye (N) at 395	0.015	0.025	
upper watershed (UW)	Sauger @ Campground	0.0535	0.06	
	Sauger below FS Compound	0.0535	0.1	
	Buckeye @ WRID	0.015	0.025	< .05

5/30/2000		Total N	Total P	
	Buckeye above Big Meadows	0.1295	0.09	
	Buckeye below Big Meadows	0.0085	0.08	
	Eagle Ck US	0.0085	0.08	
	Eagle Ck DS	0.0425	0.08	
	Buckeye above FS Campground	0.0085	0.025	< .05
	Buckeye below FS Campground	0.0085	0.09	
	Buckeye (N) at 395	0.3645	0.11	
UW	Sauger @ Campground	0.0435	0.12	
	Sauger below FS Compound	0.0435	0.12	
	Buckeye @ WRID	0.1775	0.09	

6/15/2000		Total N	Total P	
	Buckeye above Big Meadows	0.0555	0.025	< .05
	Buckeye below Big Meadows	0.0895	0.16	
	Eagle Ck US	0.0995	0.09	
	Eagle Ck DS	0.0495	0.11	
	Buckeye above FS Campground	0.0535	0.025	< .05
	Buckeye below FS Campground	0.0535	0.025	
	Buckeye (N) at 395	0.0965	0.06	
UW	Sauger @ Campground	0.0535	0.08	
	Sauger below FS Compound	0.0635	0.09	
	Buckeye @ WRID	0.0085	0.05	

7/10/2000		Total N	Total P	
	Buckeye above Big Meadows	0.055	0.025	
	Buckeye below Big Meadows	0.0345	0.025	
	Eagle Ck US	0.0085	0.025	< .05
	Eagle Ck DS	0.0085	0.025	
	Buckeye above FS Campground	0.088	0.025	
	Buckeye below FS Campground	0.0085	0.025	

7/25/2000		Total N	Total P	
	Buckeye below FS Campground	0.0565	0.025	< .05
	Buckeye at 395	0.1235	0.025	
UW	Sauger @ Campground	0.1335	0.1	
	Sauger below FS Compound	0.0085	0.06	
	Buckeye at WRID fence	0.1635	0.025	< .05

8/18/2000		Total N	Total P

	Buckeye above Big Meadows	0.0085	0.08
	Buckeye below Big Meadows	0.0225	0.08
	Eagle Ck US	0.0835	0.06
	Eagle Ck DS	0.07	0.025 — L.OS
	Buckeye above FS Campground	0.062	0.06
	Buckeye below FS Campground	0.0565	0.08
	Buckeye (N) at 395	0.0425	0.09
UW <	Sauger @ Campground	0.26	0.07
	Sauger below FS Compound	0.218	0.08
	Buckeye @ WRID	0.0405	0.12

9/15/2000

		Total N	Total P
	Buckeye above Big Meadows	0.016	0.05
	Buckeye below Big Meadows	0.0455	0.025
	Eagle Ck US	0.041	0.025
	Eagle Ck DS	0.046	0.025
	Buckeye above FS Campground	0.036	0.025 — L.OS
	Buckeye below FS Campground	0.014	0.025
	Buckeye (N) at 395	0.0525	0.025
UW <	Sauger @ Campground	0.133	0.025
	Sauger below FS Compound	0.153	0.08
	Buckeye @ WRID	0.131	0.025 — L.OS

Upper Virginia Creek

VIOLATIONS

7/10/2000	Total N	Total P	
Frog Lake Outlet	0.032	0.025	– <.05
Cooney Lake Outlet	0.0085	0.12	
Blue Lake Outlet	0.048	0.025	3 <.05
Virginia Lake Upper Outlet	0.0365	0.025	
Trumbull Lake Outlet	0.0265	0.84	

8/18/2000	Total N	Total P	
Frog Lake Outlet	0.0125	0.08	
Cooney Lake Outlet	0.0435	0.09	
Blue Lake Outlet	0.038	0.025	– <.05
Virginia Lake Upper Outlet	0.0235	0.07	
Trumbull Lake Outlet	0.0265	0.08	

Judith -

W/ this data set, Virginia Creek gage was not sampled, so I don't have the ability to tell if Nutrients are in violation before entering the lower BP Valley, and the E. Walker.

Linda Vance
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Dept. of Agronomy and Range Science
University of California, Davis

Report on the Upper Walker River Water Quality Study, 1999

Prepared for:
North Mono County Resource Conservation District

March 2000

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EXECUTIVE SUMMARY

In the Spring of 1999, the North Mono County Resource Conservation District contracted with Linda Vance of the UC Davis Department of Agronomy and Range Science to conduct a preliminary water quality study in the upper East Walker and West Walker watersheds. The study focused on nutrient levels in streams and rivers flowing through Bridgeport Valley into Bridgeport Reservoir. A less intense sampling effort was conducted in the West Walker River to establish baselines for future monitoring.

The study revealed that levels of Total Kjedahl Nitrogen (TKN) in Robinson and Buckeye Creeks regularly exceeded objectives set by the Lahontan Regional Water Quality Control Board. Levels of Total Kjedahl Nitrogen (TKN) in the East Walker River did not exceed objectives as frequently, but this was due to the objectives for the East Walker being set at a higher threshhold.

The study further found that although TKN levels measured at downstream locations exceed objectives, these levels were statistically indistinguishable from TKN levels at upstream locations. An Analysis of Variance on data collected from upstream and downstream sites on the East Walker River, Robinson Creek and Buckeye Creek on 12 sampling dates between April and October revealed no differences between any of the sites, suggesting that land use within the Valley is not adding TKN to the aquatic system. Howver, the study also found highly significant TKN differences between sampling dates. Because nutrient concentrations fluctuate with stream discharge, this latter result is not unusual.

Levels of Phosphorus and Nitrate showed no clear patterns. Both were frequently below the detectable level. Electroconductivity(EC) observations indicated levels of total dissolved solids above water quality objectives in approximately half the samples, and increases were noted along an upstream-downstream gradient. Oxygen concentrations remained high throughout the sampling season, although this was to be expected in shallow, flowing waters. pH levels fluctuated somewhat with flow, but were well within normal parameters. Total suspended solids (TDS) and turbidity also fluctuated with flow.

Since this study covered a single season during a good water year, and did not extend into the winter, it should not be taken as definitive. Moreover, it does not indicate why TKN levels are elevated at upstream locations. It also does not address water quality within Bridgeport Reservoir, although limited sampling downstream of the reservoir, as well as a heavy aquatic plant bloom, suggests that water quality degrades significantly over the summer. The recommendation from this study is that monitoring continue for at least another year, with particular attention being extended to the headwaters and the reservoir.

INTRODUCTION

This report summarizes findings from a 1999 surface water quality investigation conducted by Linda Vance of the Department of Agronomy & Range Science at the University of California, Davis. The study was initiated and funded by the North Mono County Resource Conservation District in response to concerns about water quality in the district, and particularly in Bridgeport Reservoir and the East Walker River, both significant fisheries in the Eastern Sierra. The study involved surface water sampling of upstream and downstream locations on three major streams on a weekly basis during the snowmelt season, and on a monthly basis from June through October. Additional sampling was conducted on feeder streams and at selected midpoints on the major streams during the season so that sources of nutrients (if any) could be more easily identified. Surface water in the West Walker River watershed was sampled on six occasions in spring, midsummer, and fall. Water samples were analyzed for Total Kjeldahl Nitrogen, Nitrate, Total Phosphorus, Dissolved Oxygen, pH, Turbidty, and Total Suspended Solids.

BACKGROUND

The East Walker and West Walker Rivers, which originate in California's Sierra Nevada Mountains, are a critical water source for wildlife, fish, and human uses in both California and Nevada, where the Walker River ends in the terminal Walker Lake. In California, these rivers provide irrigation waters for alfalfa, garlic, carrots and cattle pasture. Bridgeport Reservoir, which stores water from the East Walker, and Topaz reservoir, which stores water from the West Walker, are popular tourist attractions because of their fisheries. The East Walker River below Bridgeport Reservoir is considered to be a trophy fishery, and is managed as such by the California Department of Fish and Game.

The headwaters of the East and West Walker are fed primarily by snowmelt runoff. Precipitation varies from 25 to 65 inches a year, with most falling as snow. Except during unusual rain-on-snow events, as occurred in January of 1997, discharge in the rivers and streams usually peaks in late May/early June, while base flows prevail during the August-April period. Figure 1 shows the flow record for Buckeye and Robinson Creeks from 1995 through the end of 1999.

For many years, Bridgeport Reservoir, unlike Topaz Reservoir, has exhibited eutrophic status, indicating high nutrient concentrations. In some years, this results in a large algal bloom in mid-summer, primarily dominated by *Apanizomenon flos-aquae* species. These blooms are transported downstream by winds and by current, and as they sink and decompose, microbial processes consume available dissolved oxygen in the water. In years of especially high algal bloom, this can lead to dissolved oxygen levels low enough to harm or kill fish. It appears, however, that algal blooms may sometimes be supplanted by submerged macrophytes. In the summer of 1999, a *Polygonum L.* species was dominant in

the reservoir, especially in the rich sediments near the shores. *Polygonum spp.* also contribute significantly to the reservoir's nutrient load, both through their decay and because they are highly attractive to waterfowl in early fall.

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 reservoir. Although water sampling in the reservoir and upstream has been limited in both frequency and scope in the past, many of the reported samples have indicated nitrogen and phosphorus levels in excess of limits established under the *Water Quality Control Plan for the Lahontan Region* (see Table 1 for the limits for the East Walker and West Walker rivers). Because large numbers of cattle are present in Bridgeport Valley during the summer months, it appeared possible that erosion and manure deposition might be contributing to nitrogen and phosphorus levels downstream. the present study was designed to measure differences in nutrient concentrations between sampling sites upstream and downstream of grazed pastures. A secondary goal was to draw sufficient samples from feeder streams and from midstream locations to determine at what points nutrient inputs might be occuring, if indeed downstream nutrient levels proved higher than upstream levels.

WATER QUALITY COMPONENTS INCLUDED IN THE STUDY

Total Kjeldahl Nitrogen (TKN)

TKN is a measure of both organic and inorganic forms (including ammonia) of nitrogen. Because organic nitrogen is not available to plants until it is decomposed into inorganic forms, measures of nitrogen alone are not useful in water quality analysis. TKN is the measure of nitrogen most often used in water quality testing.

Ammonia (NH_3 and NH_4+)

Ammonia, which includes dissolved ammonia (NH3) and ammonium ion (NH4+) is the most reduced inorganic form of nitrogen in water, and promotes aquatic plant growth. It is reported in mg/L. Although ammonium is often found in fish culture environments, and in high-temperature, high-pH reservoirs during algal blooms, it is generally low in running waters. Because of the presence of cattle in Bridgeport Valley, and the possibility of urine being excreted into the waters, ammonia sampling was included in the early season. It was discontinued in July because analysis rarely found detectable levels, and because ammonia is a component of total Kjeldahl nitrogen (TKN), which was also being sampled.

Nitrate (NO_3-)

Nitrate, reported in mg/L, is the most stable form of nitrogen in water, as well as being the primary form of nitrogen used by plants for growth. When sufficient levels of phosphorus are present, high nitrate levels can stimulate excessive plant or algal growth. Nitrates are commonly found in animal wastes and in sewage.

Total phosphorus (P)

Total phosphorus measures both inorganic and organic forms of phosphorus. Phosphorus can be present in dissolved or particulate form. Except where there are anthropogenic sources like sewage or waste disposal, or high inputs of animal wastes from domestic or wild animals, phosphorus is usually a "limiting nutrient" in running water. This means that no matter how much nitrogen is added to a system, it will not support abundant plant life. However, since phosphorus binds to soil and silt particles, it will often accumulate in reservoir sediments. It is reported in mg/L. The minimum detectable level for the analysis used in this study was 0.05 mg/L. This does not mean that total P below that level is inconsequential, only that it could not be measured with the analyzing equipment used. In general, only levels of 0.01 mg/L or less can be considered limiting; anything above that level can promote some level of plant or algal growth if nitrogen is also available.

Turbidity

Turbidity measures the passage of light through water in Nephelometric Turbidity Units (NTU). It is a useful benchmark for measuring sediments, and for inferring the source of phosphorus, which tends to bind to soil particles. Pure distilled water has an NTU of 0. Water with suspended particulates (clay, silt, organic materials, microorganisms) can have an NTU of 50 or greater. Because particulates provide surfaces for bacterial growth, and because high turbidity levels reduce light penetration and therefore impair photosynthesis, high turbidity levels are considered to be detrimental to aquatic ecosystems.

Electroconductivity (EC)

Electroconductivity measures the ability of water to conduct an electric current, which in turn is determined by the content of ions --dissolved metals and other materials-- in the water. It is reported as microsiemens per centimeter (µS/cm), and generally ranges from 50-500 µS/cm in inland streams. Electroconductivity can be used to measure total dissolved salts (TDS). Although a specific correlation should be developed for each stream, a general rule of thumb is that TDS in parts per million = EC in µS/cm *0.55, so that an EC reading of 500 µS/cm would translate to a TDS level of 275 ppm. Although very high concentrations of TDS can be lethal to fish, the levels commonly found in running waters pose little danger.

pH

pH measures the concentration of hydrogen ions in water. Most natural fresh waters have a pH between 4.0 and 10.0. A pH level below 7.0 is considered acidic, and a pH above 7 is considered basic. Each full unit represents a ten-fold increase or decrease, i.e. water with a pH of 6.5 is ten times more acidic than water with a pH of 6.4. Most inland lakes and streams in California have a pH greater than 7.0. In reservoirs and other water bodies where aquatic plants are present, pH tends to increase in summer months as a result of photosynthesis. At high pH levels, the solubilization of ammonia, heavy metals, and salt is greater.

Total suspended solids (TSS)

Like turbidity, this is a measure of particulates within the water column. It is determined by filtering a water sample into a preweighed filter, drying the filter, and reweighing it. The difference between the two values is reported in mg (dry weight)/L (of water filtered). Even when suspended particulates do not greatly influence light penetration in the upper water column, they can have deleterious effects to gilled organisms like fish and aquatic insects when they settle to the bottom, and can also smother fish eggs in spawning beds. In general, TSS values will be higher during initial periods of high flow, since sediments and particulates are picked up from the streambed and from surface runoff and carried along in the water column

Dissolved Oxygen (DO)

This is simply a measure of the amount of oxygen dissolved in water. Concentration of DO in surface waters is typically less than 10 mg/L, but in fast moving, shallow waters it can be much higher because there is a constant exchange between the water and the air. DO concentrations fluctuate on a daily and seasonal basis due to temperature, flow rates and photosynthesis by plants. In general, cold flowing waters will hold more dissolved oxygen than their warmer or more sluggish counterparts. Maximum DO saturation is 15 mg/L at 32°F, and is sometimes achieved early in the season. DO is critical for most fish and aquatic organisms. Cold water fish like trout require high DO levels for feeding, swimming, and reproduction, as well as for basic physiological functioning. DO levels below 5 mg/L are considered to be instantaneously lethal to fish, as are 30 day averages below 8 mg/L. DO also affects nutrient solubility and availability, and thus controls the "productivity" (production of plants, algae, macroinvertebrates, fish etc) of aquatic systems.

METHODS

Site selection

Twenty-one sites were selected in Bridgeport Valley to be sampled during the course of the season (See Map 2 and Table 1). An additional site was sampled in the upper part of Aurora Canyon for a single sample in April. Five sites were selected on the West Walker. (See Table 1 for locations). Among the 21 sites in Bridgeport Valley, seven were sampled on each sampling date: Site 2 (Buckeye US); Site 3 (Buckeye DS); Site 14 (Robinson US), Site 15 (Robinson DS); Site 5 (E. Walker US[1]), Site 11 (E. Walker DS), and Site 19 (Summers). All of these were sampled prior to the beginning of snowmelt runoff (April 16), and at weekly intervals until the second peak of runoff declined. Sampling was suspended between June 5 and June 18 because an unusually cold period interrupted runoff (See Figure 2). The remaining sites in the Valley were selected for a less frequent sampling regime that was primarily intended to provide supplemental information about

[1] E. Walker US is in fact Green Creek. The East Walker itself is a small, low-flow channel originating as groundwater in the Valley below the Hunewill Hills. Green Creek, which joins the East Walker River near Site 6, is the major source of water in the upper portions of the river, and so was designated as the upstream site for comparison purposes.

changes occurring because of land use practices. Table 2 gives a full listing of site locations and reasons for sampling.

Sample collection and analysis

500 mL samples were collected in nalgene bottles, placed under refrigeration, and transported to the Division of Agriculture and Natural Resources Analytical Laboratory at the University of California at Davis for processing. Chemical analysis was performed using the latest methods adopted by the American Pollution Control Association, with detectable levels for TKN, NH_4^+, NO_3^- and total P at 0.05 or greater (this was necessary due to budget limitations so that the greatest number of sites could be sampled). Subsamples were drawn off to analyze for electroconductivity, pH, turbidity and total suspended solids, using standard laboratory methods. Dissolved oxygen was measured in the field at the time of collection using a YSI 55 handheld dissolved oxygen meter. Chain-of-custody procedures were followed in collecting, preserving, shipment and delivery of samples for chemical analysis. Quality assurance procedures were followed at all stages, and included random resampling, coded samples, and duplicate samples.

STATISTICAL ANALYSIS

Pairwise comparisons and Analyses of Variance (ANOVA) were performed on the TKN, Turbidity, Conductivity, TSS, pH and O_2 data for upstream and downstream sites on the East Walker, Robinson Creek and Buckeye Creek to determine if differences existed between the creeks, between sampling sites on the creeks, and between sampling dates. Because Nitrate, Ammonia and Phosphorus were not present at detectable levels in most samples, statistical analysis was not possible. The remaining data was analyzed using only descriptive statistics, since one season did not provide enough data from most sites to give the analysis any real statistical power.

RESULTS

Table 1 gives the existing Water Quality Objectives established by the Lahontan Regional Water Quality Control Board for the West and East Walker Hydrologic Units. Table 2 lists results from water testing organized by site, and Table 3 lists results organized by date. Individual components from the testing are discussed separately below.

Total Kjeldahl Nitrogen (TKN)

TKN levels for all sampling sites through the entire sampling season was 0.58 mg/L, higher than water quality objectives for any of the creeks permit. Table 2, Averages by Site, lists averages for individual sampling locations. In general, very early and late season values

are highest, while lowest values prevail during periods of peak flow. Figures 3, 4 and 5, which plot TKN against flow, show this pattern clearly[2].

Nonetheless, pairwise comparisons indicated there is no significant difference in TKN levels between upstream and downstream sites on the same streams (Buckeye P=0.817, Robinson P=0.554, E. Walker P=0.421) The Analysis of Variance performed on all 6 sampling sites showed no site-based differences between seasonal averages for any of the sites, i.e. average TKN for Robinson US was not significantly different from average TKN for Robinson DS, Buckeye US, Buckeye DS, East Walker US or East Walker DS, and so on. The P-value on the ANOVA was 0.998 at a 95% confidence level. This means, in effect, that there is a 99.8% probability that any differences among the 6 sites are due purely to chance or sampling "noise" and do note reflect any genuine differences.

However, an ANOVA based on sampling date showed highly significant differences (P=2.4 E-21). This means, in effect, that there is almost no possibility that these values would be observed except if there were distinct and real differences between values observed on different dates.

Ammonia (NH_4+)

As noted earlier, the detection level for NH_4+ was 0.05 mg/L. In 154 samples, NH_4+ was only detected above this level 12 times (8%). No patterns were apparent by site or by date, and sampling for ammonia was discontinued after July 16.

Nitrate (NO_3-)

The detection level for NO_3- was also 0.05 mg/L. This level was exceeded in 23% of the samples, or 49 of 211. There appeared to be a broad seasonal pattern: 31% of the samples taken April 16 had detectable nitrate levels, as did 47%, 66% and 25% of the samples taken August 14, September 11 and October 16, suggesting a correlation with flow. Highest values occurred downstream of Bridgeport Reservoir in September and October. There also appears to be some differences between upstream and downstream samples on Buckeye and the East Walker, but there are not enough samples above the detectable level for statistical analysis.

Total phosphorus (P)

Total P was found above the above 0.05 mg/L detectable level in 9% of the samples (20 of 211). 10 of the 20 samples came from Swauger and Aurora Creeks, both of which are very low-flow streams. Aurora, in particular, is ephemeral, and most of Swauger is diverted for agriculture. However, the sampling period may not have encompassed peak flows on

[2] Flows for the East Walker US (Green), Virginia and Summers were estimated by developing a regression relationship against Buckeye Creek from 1955-1975 data. The regression for E.Walker US was especially strong, R^2= 0.93

Swauger and Aurora. Aurora runs out of the Bodie Hills, and Swauger out of the Sweetwaters, so snowm will occur earlier than in the creeks coming out of the Sierras.

Turbidity

Turbidity values throughout the sampling season were generally low, ranging from a seasonal average of 2.4 NTU at Buckeye US to 8.1 NTU at Virginia @ Strosnider and at Aurora. The value at Virginia may be attributable to a return flow influence high in tannins and/or iron, which comes in just above the sampling site. Paired t-tests between upstream and downstream sampling sites on Buckeye, Robinson and the East Walker show no significant differences, and an ANOVA for all six sampling locations shows no differences between any of the sampling sites (P=0.711). However, an ANOVA for all six locations shows highly significant differences by date (P=0.00). This is not an unusual observation; turbidity usually increases dramatically during snowmelt, as sediments are entrained by fast-moving waters.

Electroconductivity (EC)

When translated to Total Dissolved Salts (TDS) by the formula "TDS in parts per million = EC in µS/cm *0.55", 105 of the 211 samples exceed water quality objectives. Some creeks, notably Aurora and Virgina, have notably high levels, as does the East Walker below the reservoir. Pairwise comparisons between upstream and downstream sites on Buckeye and the East Walker show significant differences (P=0.009 and P-0.001 respectively), although sites on Robinson do not (P=0.72). This is not easily explained, since soil types and land use along Buckeye and Robinson are virtually identical. ANOVAS show significant differences by sites and dates (P= 0.01 and P= 0.006 respectively).

PH

PH values within the sites sampled were well within recommended values. Pairwise comparisons between upstream and downstream sites on Buckeye, Robinson and the East Walker show no significant differences, nor does an ANOVA for the six sites together (P=0.98). However, the ANOVA does show significant differences by date (P=0.001). Since pH would be expected to be lower during peaks of snowmelt, this is not an unusual finding.

Total suspended solids (TSS)

Although there are presently no published objectives for TSS, the values observed during this study are generally low, indicating a low rate of erosion, especially in the East Walker. Values appear higher in the West Walker, especially at high flows, which may reflect continuing sedimentation attributable to the 1997 floods. Neither and ANOVA on the six sites nor pairwise comparisons among upstream and downstream locations on Buckeye, Robinson and the East Walker indicate any significant differences, although an ANOVA on

sampling dates is significant. As would be expected, this is correlated with flows, as can be seen in Figures 6, 7 and 8.

Dissolved Oxygen (DO)

Dissolved oxygen values in the watershed are generally high, approaching saturation in early season sampling. Since DO is closely linked to water temperatures, and since water temperatures increase during the day from upstream to downstream sites, and over the course of the season, we would expect differences both between upstream and downstream sites on the same stream, and between streams with different flow regimes. This expectation was met in these samples: the ANOVA on the six sites showed significant differences both by date (P=0.001) and by site (P=0.02).

DISCUSSION AND RECOMMENDATIONS

The seasonal patterns observed during this study are in line with expectations based on studies by other researchers in other watersheds. On the rising arm of the hydrograph, nutrient concentrations should initially be high, as nutrients are leached out of the soil, then fall due to dilution, flushing, and plant uptake, and finally increase as water levels drop in late summer. Similarly, suspended solids and turbidity should show an increase with high flows, then decline with decreasing discharge.

What is perhaps surprising in this set of observations is the lack of observable differences in TKN levels between upstream and downstream sampling sites on the same streams, and the high overall levels. As noted above, the majority of the samples exceed water quality objectives for total nitrogen. However, this is equally true for upstream and downstream sites. This suggests that there may be sources of nitrogen well upstream of grazed areas. In this regard, it is notable that a 1988-89 study of groundwater at Twin Lakes (enhanced lakes that feed Robinson Creek) found TKN levels in wells to average between 0.30 and 0.40 mg/L, not dramatically lower than the 0.50-0.60 mg/L levels observed in surface waters. Whether these levels are "background" levels or anthropogenically caused deserves further study.

While there is some indication that nitrates may be at higher levels in downstream sites, they are not as high as would be expected in a grazed system. This is probably attributable both to plant uptake and to anoxic conditions in the flood-irrigated portions of Bridgeport Valley. Because herbivory by the cattle minimizes competition between plants, and because water is readily available, there is a long and abundant period of plant growth to use the nutrients which might otherwise flow through the system. It should also be recognized that ranchers within the Valley use good grazing practices and manage irrigation water effectively, thus further reducing influences of cattle on water quality. The same management practices may also explain the relatively low levels of total suspended solids and phosphorus, both of which would be expected to be higher if active erosion were

occuring.

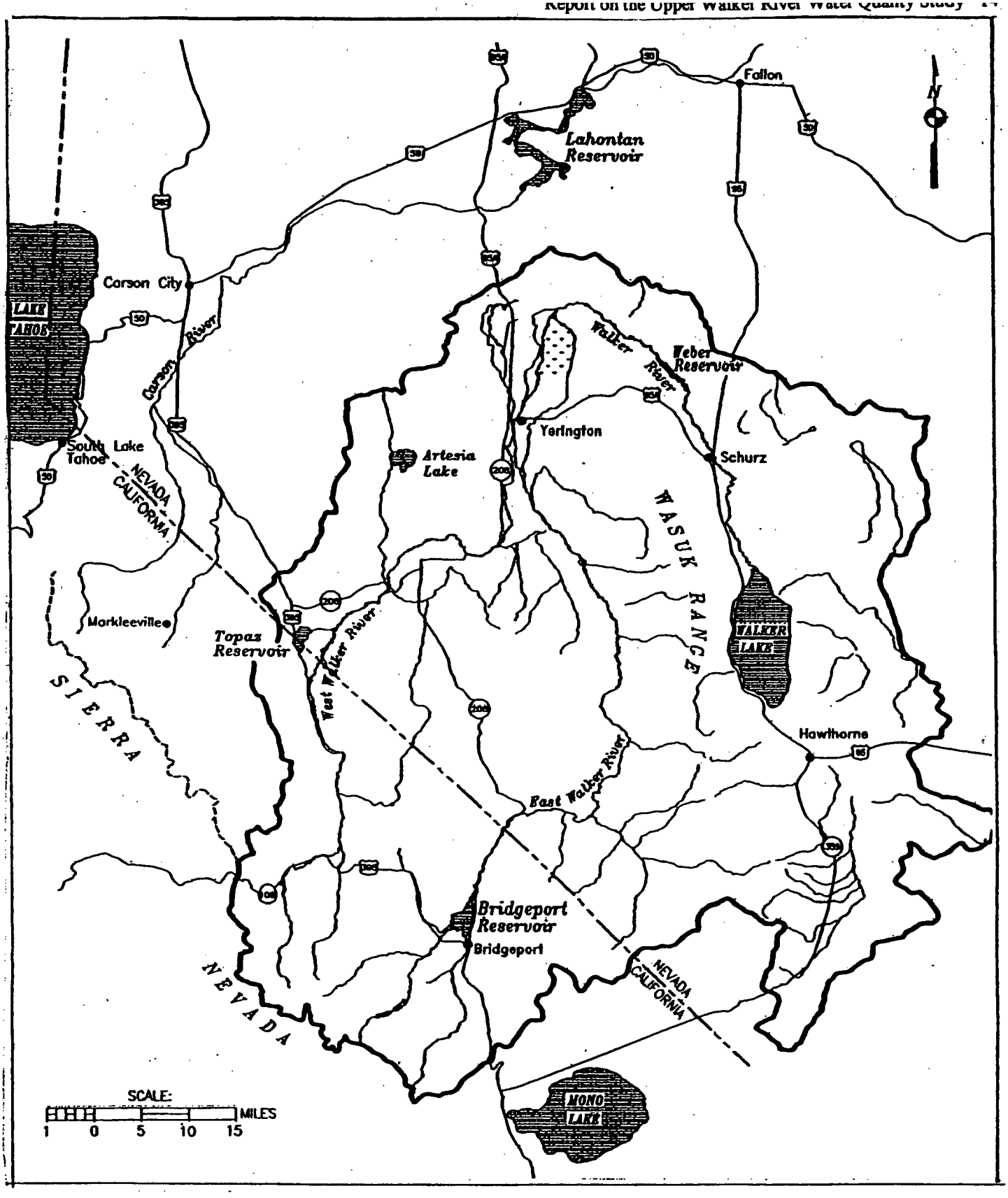
Nevertheless, a single season of sampling raises as many questions as it answers. As noted, the reason for the consistently high TKN levels is unexplained, and requires additional sampling in the upper watershed. Because the goal of this study was to carry out as broad a characterization of the watershed as possible, and because cost was a factor, tests for nitrates and phosphorus were performed with a detection level of 0.05 mg/L, making statistical analysis of those results impossible. Therefore it cannot be conclusively said that all nutrient levels do not show spatial patterns, or that land use within Bridgeport Valley does not influence downstream water quality. Nor does the present study indicate the source of the nutrients in the reservoir. The history of algal blooms in the reservoir, and the 1999 *Polygonum spp.* bloom, as well as the elevated nutrient levels in the East Walker downstream of the reservoir all indicate that there is, in fact, a nutrient problem in the reservoir. Until the source of the nutrients is identified it will be difficult to determine management options for reducing them, or to determine appropriate revisions to water quality objectives in the event that they are beyond the reach of management. Finally, the results reported in this study illustrate how dramatically flows influence water quality constituents. Given the significant differences we observe in water years in California, it is imprudent to generalize anything from a single sampling year.

Accordingly, an additional two –and perhaps three-- seasons of sampling are highly recommended, at least in the East Walker watershed, since TMDLs will have to be prepared in the near future. The sampling schedule followed in this initial study appears to be appropriate; although storm-event sampling is important in many systems, snowmelt accounts for most of the rises in the hydrograph in this system. However, snow sampling should also be considered to determine if any of the TKN comes from atmospheric deposition. At a minimum, sampling sites should be extended to include Robinson at the inlet and outlet of Twin Lakes, Eagle Creek at its headwaters and its confluence with Buckeye, Buckeye at Big Meadows, Virginia below Virginia Lakes, and Green at the trailhead leading to Green Lake. The current midpoints on Green and the East Walker can probably be eliminated. The WRID fenceline on Buckeye and Robinson, and a new site on the East Walker further downstream from the existing one should be maintained. It is also highly recommended that there be water sampling and sediment sampling in the reservoir itself. Development along the shoreline, inputs from waterfowl, releases from sediments and the influence of decaying vegetation cannot be disregarded as sources of the problem.

Finally, samples should be subjected to more sensitive analysis for nitrates and phosphorus than a 0.05 mg/L detection limit. Nitrates are the most readily available form of nitrogen for plant growth, and N:P ratios need to be known to assess ways to control algal and plant blooms in reservoirs. Clearly some shift has already occurred, if macrophytes have taken over from nitrogen-fixing algae. A more specific account of nitrate and phosphorus concentrations in the surface waters will also make it possible to model nutrient loading from the watershed as a whole.

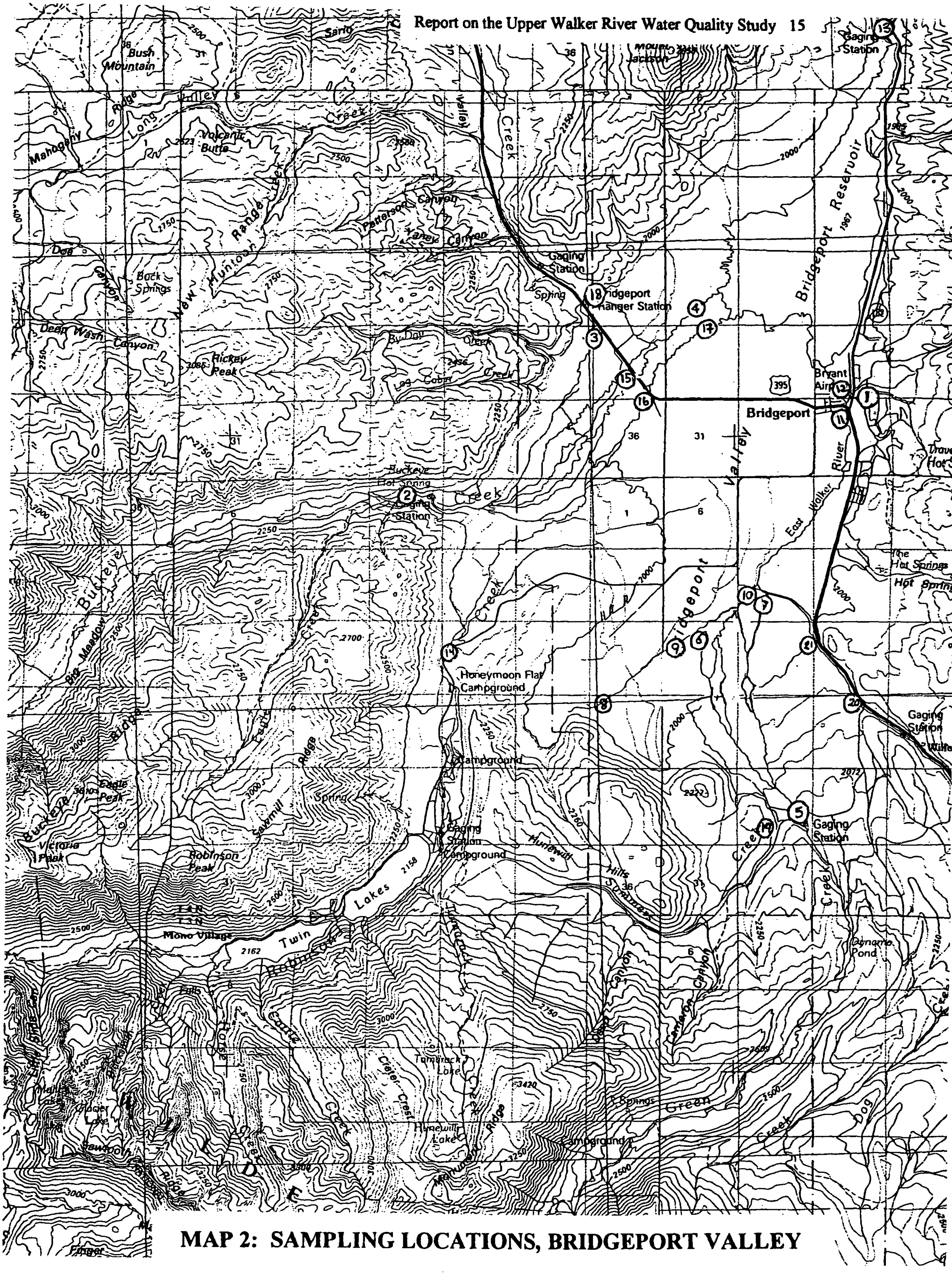
CONCLUSIONS

This study illustrated the extent of spatial and temporal variations in water quality components, and the importance of sampling both upstream and downstream sites across an entire water season. It further demonstrated that flow levels dramatically affect nutrient levels, suspended solids, turbidity, and pH, and suggested that there may be an increase in TDS downstream of flood irrigated pasture. However, it also showed that there are high levels of TKN in all the waters of the East and West Walker watersheds, regardless of land use. The results obtained provide a baseline and direction for further study and analysis.



Walker River Watershed

MAP 1



MAP 2: SAMPLING LOCATIONS, BRIDGEPORT VALLEY

Table 1: Map Key and Sampling Rationale

Name	Map #	Remarks
Aurora US	none	In Aurora Canyon, near headspring. Sampled 4/16 only.
Aurora DS	1	At confluence with E. Walker. Sampling discontinued after 5/29 because of insignificant flows
Buckeye US	2	At bridge crossing near stream guage. Sampled throughout season
Buckeye @ 395	3	US of highway bridge (4/16 sampled taken DS). Sampled throughout season. Used as Buckeye DS for comparisons
Buckeye DS (ASCUA))	none	Fenceline just SW of Walker River Irrigation District Boundary. Alternate to 5 when WRID sampling separately.
Buckeye DS (WRID)	4	Just NE of Walker River Irrigation District Boundary. Less than 200m from Ascuagua line.
Green (US)	5	At bridge crossing on Upper Summers Meadow Rd. Used as "E. Walker US" and sampled throughout season.
Green @ E. Walker	6	Near Dressler diversion in center of valley, just US of confluene with E. Walker
Green @ strosnider	7	US of crossing of Strosnider lane (Point Ranch). May be mostly return flow, but enters E. Walker
E. Walker below pond	8	Just DS of headwater spring below Hunewill Hills. Only sampled 2X because of low flows, poor access
E. Walker At Green	9	Just US of Dressler diversion and site 6
E. Walker @ strosnider	10	US of crossing of Strosnider lane (Point Ranch).
E. Walker US of bridge	11	Just US of Highway 395 bridge.
E. Walker DS of bridge	12	DS of Airport Bridge. Sampled to determine impacts (if any) from town and old sewage ponds.
E. Walker below res	13	Below Bridgeport reservoir.
Robinson US	14	At bridge crossing just US of Doc & Al's Resort. Sampled throughout season.
Robinson (N) @ 395	15	Upstream of highway bridge (4/16 sampled DS). Sampled throughout season. Used as Robinson DS for comparison.
Robison (S) @ 395	16	Upstream of highway bridge (4/16 sampled DS). Sampled early season only; flows diverted during irrigation.
Robinson DS(WRID)	17	Just NE of Walker River Irrigation District Boundary. Less than 200m from Ascuagua line.
Robinson DS(ASCUA)	none	Fenceline just SW of Walker River Irrigation District Boundary. Alternate to 17 when WRID sampling separately.
Swauger	18	Just DS of Forest Service Compound, at Ascuaga diversion
Summers (ds)	19	US of culvert on Fulstone access road off Upper Summers Meadow. Drains Summers Meadow.
Virginia @ 395	20	At bridge crossing at intersection of Green Ck Road and Highway 395.
Virginia @ strosnider	21	US of Point Ranch diversion. Contains return flow from irrigation.
Little Walker@108	none	At stream guaging station just downstream of Highway 108
W. Walker @395	none	At stream guaging station US of Highway 395 crossing
Walker in town	none	Under bridge at S. end of town of Walker
Mill Ck	none	US of highway 395 crossing
Walker @ Cunningham	none	Us of bridge on Cunningham Lane in Coleville/Topaz

Table 2. Water Quality Objectives for West and East Walker River Hydrologic Units, from Lahontan Regional Water Quality Control Board Plan.

Surface Waters	TDS mg/L	Total N	Total P
West Walker River at Coleville	60 75	0.20 0.40	0.01 0.02
East Walker River at Bridgeport	145 160	0.5 0.8	0.06 0.1
Robinson Ck and all other tributaries above Bridgeport Valley	45 70	0.05 0.10	0.02 0.03

The upper value in each set represents the annual average; the lower value is the 90th Percentile value (90% of sampled values in a given year should be below this value.

TABLE 3 . Results by site. Boxed values exceed water quality standards. Shaded values are above detectable levels, but do not exceed standards unless they are also boxed. Note that no specific standards exist for NO3-N or NH4-N.

Site name	DATE	TKN mg/L	NH4-N mg/L	NO3-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
Aurora DS	04/16/99	1.1	<0.05	<0.05	<0.05	5.3	250.0	8.0	44.8	10.2
Aurora DS	05/01/99	0.4	<0.05	0.07	0.29	1.5	548.0	9.2	29.2	10.9
Aurora DS	05/06/99	0.5	<0.05	<0.05	<0.05	18.5	288.4	7.7	58.0	10.6
Aurora DS	05/14/99	0.1	<0.05	<0.05	0.18	11.0	231.0	7.8	40.0	10.1
Aurora DS	05/21/99	0.2	<0.05	<0.05	0.20	11.7	292.0	7.8	37.9	10.4
Aurora DS	04/16/99	0.7	<0.05	0.10	<0.05	0.8	115.2	7.5	33.0	10.2
	Averages	**0.50**	**0.0**	**0.0**	**0.1**	**8.1**	**287.4**	**8.0**	**40.5**	**10.4**
	Stan. Dev	**0.33**				**6.2**	**130.5**	**0.6**	**9.3**	**0.3**
Buckeye US	04/16/99	0.5	<0.05	<0.05	<0.05	1.0	76.3	7.6	27.9	11.4
Buckeye US	05/01/99	0.6	<0.05	<0.05	<0.05	1.4	89.5	7.5	30.3	11.8
Buckeye US	05/06/99	1.0	<0.05	<0.05	<0.05	6.5	28.0	7.3	24.0	14.2
Buckeye US	05/14/99	0.2	<0.05	<0.05	<0.05	2.7	47.8	7.3	30.5	11.4
Buckeye US	05/21/99	0.2	<0.05	<0.05	<0.05	3.0	32.8	6.9	33.3	12.6
Buckeye US	05/29/99	0.3	<0.05	<0.05	<0.05	2.0	23.3	6.2	60.0	12.6
Buckeye US	06/06/99	0.3	<0.05	<0.05	<0.05	1.8	40.3	7.2	104.0	13.7
Buckeye US	06/18/99	0.2	<0.05	<0.05	<0.05	5.6	16.5	6.6	44.0	11.9
Buckeye US	07/16/99	0.4	0.10	<0.05	<0.05	2.8	41.5	7.2	28.0	11.0
Buckeye US	08/14/99	0.9	**	<0.05	<0.05	1.1	60.9	7.4	28.0	10.6
Buckeye US	09/11/99	0.7	**	<0.05	<0.05	0.6	81.1	7.5	44.0	10.2
Buckeye US	10/16/99	1.2	**	0.09	<0.05	0.7	87.0	7.4	18.0	10.8
	Averages	**0.54**	**n/a**	**n/a**	**n/a**	**2.4**	**52.1**	**7.2**	**39.3**	**11.9**
	Stan. Dev	**0.34**				**1.9**	**26.0**	**0.4**	**23.2**	**1.2**
Buckeye @ 395	04/16/99	1.0	0.54	0.16	<0.05	0.7	83.2	7.3	26.6	10.8
Buckeye @ 395	05/01/99	0.3	<0.05	<0.05	<0.05	1.6	93.1	7.5	29.3	11.4
Buckeye @ 395	05/06/99	0.7	<0.05	<0.05	<0.05	22.2	83.8	7.5	42.0	11.1
Buckeye @ 395	05/14/99	0.1	<0.05	<0.05	<0.05	3.4	67.4	7.4	31.2	9.7
Buckeye @ 395	05/21/99	0.2	<0.05	<0.05	<0.05	4.1	46.9	6.9	32.9	9.2
Buckeye @ 395	05/29/99	0.2	<0.05	<0.05	<0.05	2.0	27.5	6.9	42.0	12.7
Buckeye @ 395	06/06/99	0.4	<0.05	<0.05	<0.05	1.6	45.5	7.1	18.0	12.1
Buckeye @ 395	06/18/99	0.1	<0.05	<0.05	<0.05	6.2	28.3	6.6	32.0	10.9
Buckeye @ 395	07/16/99	0.3	<0.05	0.07	<0.05	3.6	105.3	7.0	26.0	10.8
Buckeye @ 395	08/14/99	1.1	**	0.13	<0.05	1.4	154.0	7.1	28.0	9.8
Buckeye @ 395	09/11/99	1.0	**	0.10	<0.05	1.2	189.4	7.9	40.0	9.9
Buckeye @ 395	10/16/99	1.0	**	0.10	<0.05	1.0	103.3	7.7	14.0	10.1
	Averages	**0.53**	**n/a**	**n/a**	**n/a**	**4.1**	**85.6**	**7.2**	**30.2**	**10.7**
	Stan. Dev	**0.40**				**5.9**	**48.9**	**0.4**	**8.7**	**1.0**
Buckeye DS (WRID)	05/29/99	0.2	<0.05	<0.05	<0.05	4.0	35.0	5.8	44.0	12.5
Buckeye DS (WRID)	06/05/99	0.3	<0.05	<0.05	<0.05	1.3	56.8	7.1	30.0	12.3
Buckeye DS (WRID)	06/18/99	0.2	<0.05	<0.05	0.12	13.9	30.9	6.7	40.0	11.2
Buckeye DS (WRID)	07/16/99	0.3	<0.05	<0.05	<0.05	2.9	56.9	7.1	18.0	10.8
Buckeye DS (ASCUA))	08/14/99	0.9	**	<0.05	<0.05	4.2	143.6	7.4	32.0	10.1
Buckeye DS (ASCUA))	09/11/99	1.1	**	0.18	<0.05	3.1	171.1	7.8	36.0	10.1
Buckeye DS (WRID)	09/11/99	1.0	**	0.08	<0.05	4.7	193.2	7.8	40.0	10.2
Buckeye DS (WRID)	10/16/99	1.1	**	<0.05	<0.05	2.1	117.2	7.9	22.0	10.2
	Averages*	**0.57**	**n/a**	**n/a**	**n/a**	**4.9**	**98.2**	**7.1**	**34.3**	**11.0**
	Stan. Dev	**0.42**				**4.0**	**64.0**	**0.7**	**9.1**	**1.0**

*** Averages for Buckeye DS include only the highest value for the two sampling sites on 9/11**

Site name	DATE	TKN mg/L	NH4-N mg/L	NO3-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
Green (US)	04/16/99	0.4	<0.05	<0.05	<0.05	0.7	66.1	7.4	27.6	10.7
Green (US)	05/01/99	0.6	<0.05	<0.05	<0.05	1.0	56.5	7.4	42.0	12.2
Green (US)	05/06/99	0.9	<0.05	<0.05	<0.05	16.2	76.0	7.5	42.0	13.7
Green (US)	05/14/99	0.1	<0.05	<0.05	<0.05	4.1	43.2	6.9	31.8	11.9
Green (US)	05/21/99	0.1	<0.05	<0.05	<0.05	1.6	37.3	6.7	32.2	11.8
Green (US)	05/29/99	0.3	<0.05	<0.05	<0.05	1.0	27.4	6.9	30.0	11.8
Green (US)	06/05/99	0.3	<0.05	<0.05	<0.05	0.9	35.9	6.8	18.0	12.2
Green (US)	06/18/99	0.1	<0.05	<0.05	<0.05	5.1	23.9	6.2	18.0	10.0
Green (US)	07/16/99	0.3	<0.05	<0.05	<0.05	8.3	105.7	7.3	40.0	10.3
Green (US)	08/14/99	1.1	**	<0.05	<0.05	0.8	49.3	6.8	30.0	11.6
Green (US)	09/11/99	1.2	**	<0.05	<0.05	1.2	106.8	7.8	56.0	10.6
Green (US)	10/16/99	0.8	**	<0.05	<0.05	1.2	67.1	7.7	14.0	10.6
	Averages	**0.52**	**n/a**	**n/a**	**n/a**	**3.5**	**57.9**	**7.1**	**31.8**	**11.5**
	Stan. Dev	**0.40**				**4.6**	**27.7**	**0.5**	**12.0**	**1.0**
Green @ E. Walker	05/21/1999	0.2	<0.05	<0.05	<0.05	2.3	51.9	6.6	30.8	10.9
Green @ E. Walker	05/29/99	0.3	<0.05	<0.05	<0.05	1.3	32.9	6.8	34.0	10.2
Green @ E. Walker	06/05/99	0.3	<0.05	<0.05	<0.05	1.2	45.1	7.0	24.0	12.1
Green @ E. Walker	06/18/99	0.1	<0.05	<0.05	<0.05	5.6	41.3	6.6	26.0	10.2
Green @ E. Walker	07/16/99	0.2	0.07	<0.05	<0.05	4.5	88.0	7.1	18.0	10.4
Green @ E. Walker	08/14/99	1.0	**	<0.05	<0.05	2.3	112.8	7.5	24.0	11.1
Green @ E. Walker	09/11/99	1.1	**	0.10	<0.05	1.5	84.7	7.8	56.0	10.7
Green @ E. Walker	10/16/99	1.4	**	<0.05	<0.05	1.1	78.0	7.7	10.0	10.7
	Averages	**0.58**	**n/a**	**n/a**	**n/a**	**2.5**	**66.8**	**7.1**	**27.9**	**10.8**
	Stan. Dev	**0.51**				**1.7**	**28.0**	**0.5**	**13.6**	**0.6**
Green @ strosnider	07/16/99	0.3	<0.05	0.05	0.06	10.1	94.4	7.6	28.0	10.5
Green @ strosnider	08/14/99	1.3	**	<0.05	<0.05	5.1	133.3	7.2	28.0	9.0
Green @ strosnider	09/11/99	1.1	**	<0.05	<0.05	2.9	142.5	7.8	56.0	10.6
Green @ strosnider	10/16/99	1.5	**	<0.05	<0.05	1.0	118.8	7.7	10.0	10.7
	Averages	**1.05**	**n/a**	**n/a**	**n/a**	**4.8**	**122.3**	**7.6**	**30.5**	**10.2**
	Stan. Dev	**0.53**				**3.9**	**21.0**	**0.3**	**19.0**	**0.8**
E. Walker below pond	04/16/99	0.9	<0.05	<0.05	0.15	2.7	193.1	7.8	28.0	9.8
E. Walker below pond	08/14/99	1.6	**	0.31	<0.05	159.0	141.8	7.3	170.0	8.9
	Averages	**1.25**	**n/a**	**n/a**	**n/a**	**80.9**	**167.5**	**7.6**	**99.0**	**9.4**
	Stan. Dev	**0.49**				**110.5**	**36.3**	**0.4**	**100.4**	**0.6**
E. Walker At Green	05/21/1999	0.1	<0.05	<0.05	<0.05	3.4	117.6	7.2	30.2	10.7
E. Walker At Green	05/29/99	0.2	<0.05	<0.05	<0.05	0.8	55.1	6.9	20.0	10.2
E. Walker At Green	06/05/99	0.3	<0.05	<0.05	<0.05	1.4	88.4	7.1	18.0	11.2
E. Walker At Green	06/18/99	0.2	0.05	<0.05	<0.05	5.9	145.0	6.7	22.0	9.9
E. Walker At Green	07/16/99	0.2	<0.05	0.07	<0.05	5.0	81.7	7.4	28.0	9.8
E. Walker At Green	08/14/99	1.1	**	<0.05	<0.05	1.8	118.3	7.5	26.0	10.2
E. Walker At Green	09/11/99	1.0	**	0.10	<0.05	3.1	173.2	7.9	32.0	19.8
	Averages	**0.44**	**n/a**	**n/a**	**n/a**	**3.1**	**111.3**	**7.2**	**25.2**	**11.7**
	Stan. Dev	**0.42**				**1.9**	**40.0**	**0.4**	**5.3**	**3.6**
E. Walker @ strosnider	04/16/99	0.8	<0.05	<0.05	<0.05	1.8	105.6	7.5	27.6	11.0
E. Walker @ strosnider	05/01/99	0.4	<0.05	<0.05	<0.05	1.9	106.4	7.4	29.5	11.4
E. Walker @ strosnider	05/14/99	0.1	<0.05	<0.05	<0.05	8.2	91.6	7.2	37.0	10.6
E. Walker @ strosnider	06/05/99	0.3	<0.05	<0.05	<0.05	1.4	71.1	7.1	26.0	11.5
E. Walker @ strosnider	06/18/99	0.2	<0.05	<0.05	<0.05	5.9	74.6	6.2	22.0	10.0
E. Walker @ strosnider	07/16/99	0.1	0.05	<0.05	<0.05	1.9	57.4	7.3	16.0	10.6
E. Walker @ strosnider	08/14/99	0.9	**	0.07	<0.05	3.4	113.2	6.9	36.0	10.1
E. Walker @ strosnider	10/16/99	1.2	**	<0.05	<0.05	2.2	113.6	7.6	22.0	10.5
	Averages	**0.50**	**n/a**	**n/a**	**n/a**	**3.3**	**91.7**	**7.2**	**27.0**	**10.7**
	Stan. Dev	**0.41**				**2.4**	**21.5**	**0.4**	**7.2**	**0.6**

Site name	DATE	TKN mg/L	NH4-N mg/L	NO3-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
E. Walker US of bridge	04/16/99	1.1	0.09	<0.05	<0.05	4.8	148.8	7.5	31.3	10.7
E. Walker US of bridge	05/01/99	0.6	<0.05	<0.05	0.05	1.7	213.0	7.5	30.6	11.4
E. Walker US of bridge	05/06/99	1.0	<0.05	<0.05	<0.05	15.2	78.8	7.4	30.0	10.7
E. Walker US of bridge	05/14/99	0.1	<0.05	<0.05	<0.05	8.0	134.3	7.4	35.4	12.4
E. Walker US of bridge	05/21/99	0.2	<0.05	<0.05	<0.05	4.8	126.7	6.9	34.6	11.3
E. Walker US of bridge	05/29/99	0.3	<0.05	0.13	<0.05	5.3	65.8	6.7	48.0	10.3
E. Walker US of bridge	06/05/99	0.3	0.08	<0.05	<0.05	1.1	100.5	7.2	26.0	11.5
E. Walker US of bridge	06/18/99	0.1	<0.05	<0.05	<0.05	13.1	95.0	6.7	40.0	9.8
E. Walker US of bridge	07/16/99	0.3	<0.05	<0.05	<0.05	5.7	46.8	6.9	24.0	10.7
E. Walker US of bridge	08/14/99	1.1	**	0.13	<0.05	1.4	154.0	7.1	28.0	9.8
E. Walker US of bridge	09/11/99	1.0	**	0.10	<0.05	1.2	189.4	7.9	40.0	9.9
E. Walker US of bridge	10/16/99	1.5	**	<0.05	<0.05	0.9	140.3	7.6	14.0	10.6
	Averages	**0.63**	**n/a**	**n/a**	**n/a**	**5.3**	**124.5**	**7.2**	**31.8**	**10.8**
	Stan. Dev	**0.48**				**4.8**	**49.4**	**0.4**	**8.8**	**0.8**

E. Walker DS of bridge	05/01/99	0.6	<0.05	<0.05	0.05	1.2	30.0	6.9	34.1	11.5
E. Walker DS of bridge	05/06/99	0.6	<0.05	<0.05	<0.05	13.0	51.2	7.5	42.0	10.7
E. Walker DS of bridge	05/14/99	0.2	<0.05	<0.05	<0.05	7.2	140.3	7.1	34.7	13.0
E. Walker DS of bridge	05/21/99	0.1	<0.05	<0.05	<0.05	2.7	138.2	6.9	33.1	11.3
E. Walker DS of bridge	06/05/99	0.4	<0.05	<0.05	<0.05	1.5	101.6	7.1	40.0	11.6
E. Walker DS of bridge	06/18/99	0.2	<0.05	<0.05	<0.05	9.6	92.3	6.5	30.0	9.8
E. Walker DS of bridge	07/16/99	0.3	<0.05	<0.05	<0.05	7.0	73.1	7.2	26.0	10.7
E. Walker DS of bridge	09/11/99	1.3	**	0.07	<0.05	5.3	190.9	7.6	56.0	9.9
E. Walker DS of bridge	10/16/99	1.0	**	<0.05	<0.05	1.3	143.5	7.6	22.0	10.7
	Averages	**0.52**	**n/a**	**n/a**	**n/a**	**5.4**	**106.8**	**7.2**	**35.3**	**11.0**
	Stan. Dev	**0.40**				**4.2**	**51.1**	**0.4**	**10.0**	**1.0**

E. Walker below res	04/16/99	1.1	<0.05	0.05	<0.05	1.9	162.0	7.7	41.0	10.5
E. Walker below res	05/01/99	0.4	<0.05	<0.05	<0.05	1.1	170.3	7.6	34.0	11.2
E. Walker below res	05/06/99	0.5	<0.05	<0.05	<0.05	6.1	134.9	7.5	26.0	10.5
E. Walker below res	05/14/99	0.1	<0.05	<0.05	<0.05	3.3	181.0	7.6	31.1	10.7
E. Walker below res	05/21/99	0.1	<0.05	<0.05	<0.05	2.6	174.5	7.6	33.0	11.1
E. Walker below res	05/29/99	0.2	<0.05	<0.05	<0.05	1.2	147.2	6.9	16.0	11.0
E. Walker below res	09/11/99	1.4	**	0.75	0.13	7.6	139.7	7.5	56.0	8.7
E. Walker below res	10/16/99	2.2	**	0.52	0.15	3.3	157.4	7.3	18.0	9.7
	Averages	**0.75**	**n/a**	**n/a**	**n/a**	**3.4**	**158.4**	**7.5**	**31.9**	**10.4**
	Stan. Dev	**0.75**				**2.3**	**16.7**	**0.3**	**12.8**	**0.8**

Robinson US	04/16/99	0.5	<0.05	<0.05	<0.05	0.8	66.5	7.5	26.7	10.8
Robinson US	05/01/99	0.3	<0.05	<0.05	<0.05	1.8	105.8	7.4	30.7	10.9
Robinson US	05/06/99	0.8	0.05	0.05	<0.05	13.6	87.6	7.5	34.0	13.2
Robinson US	05/14/99	0.1	<0.05	<0.05	<0.05	2.2	62.9	7.2	30.0	11.5
Robinson US	05/21/99	0.1	<0.05	<0.05	<0.05	1.5	58.4	7.1	32.1	11.6
Robinson US	05/29/99	0.4	<0.05	<0.05	<0.05	1.0	46.3	6.2	22.0	11.6
Robinson US	06/05/99	0.3	<0.05	0.06	<0.05	3.7	81.4	7.2	20.0	11.1
Robinson US	06/18/99	0.1	<0.05	<0.05	<0.05	5.8	51.4	6.8	20.0	10.7
Robinson US	07/16/99	0.3	<0.05	<0.05	<0.05	3.1	91.9	7.2	16.0	10.7
Robinson US	08/14/99	1.7	**	<0.05	<0.05	0.7	51.6	7.2	4.0	10.9
Robinson US	09/11/99	0.9	**	<0.05	<0.05	0.7	58.3	7.5	52.0	10.4
Robinson US	10/16/99	1.5	**	<0.05	<0.05	1.0	64.0	7.5	18.0	10.9
	Averages	**0.58**	**n/a**	**n/a**	**n/a**	**3.0**	**68.8**	**7.2**	**25.5**	**11.2**
	Stan. Dev	**0.54**				**3.7**	**18.6**	**0.4**	**11.9**	**0.7**

Site name	DATE	TKN mg/L	NH4-N mg/L	NO3-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
Robinson (N) @ 395	04/16/99	0.7	0.17	0.18	<0.05	1.2	107.7	7.4	28.1	10.9
Robinson (N) @ 395	05/01/99	0.4	<0.05	<0.05	<0.05	1.8	110.1	7.4	25.0	10.8
Robinson (N) @ 395	05/06/99	1.1	<0.05	<0.05	<0.05	16.8	52.0	7.5	32.0	11.2
Robinson (N) @ 395	05/14/99	0.1	<0.05	<0.05	<0.05	2.6	63.8	7.5	30.4	9.8
Robinson (N) @ 395	05/21/99	0.2	<0.05	<0.05	<0.05	2.5	49.2	7.0	29.3	9.9
Robinson (N) @ 395	05/29/99	0.2	<0.05	<0.05	<0.05	1.0	46.6	7.0	28.0	11.7
Robinson (N) @ 395	06/05/99	0.3	<0.05	<0.05	<0.05	2.1	54.7	6.9	20.0	11.7
Robinson (N) @ 395	06/18/99	0.2	<0.05	<0.05	<0.05	6.9	50.1	6.3	36.0	10.7
Robinson (N) @ 395	07/16/99	0.2	<0.05	<0.05	<0.05	6.3	90.3	7.0	38.0	10.4
Robinson (N) @ 395	08/14/99	1.1	**	0.07	<0.05	2.6	76.0	7.4	30.0	10.3
Robinson (N) @ 395	09/11/99	1.2	**	0.06	<0.05	1.1	89.2	7.6	48.0	10.2
Robinson (N) @ 395	10/16/99	1.0	**	<0.05	<0.05	0.7	64.0	7.4	18.0	11.1
	Averages	**0.56**	**n/a**	**n/a**	**n/a**	**3.8**	**71.1**	**7.2**	**30.2**	**10.7**
	Stan. Dev	**0.43**				**4.5**	**23.0**	**0.4**	**8.0**	**0.6**
Robinson (S) @ 395	04/16/99	0.7	0.11	0.06	<0.05	1.0	107.6	7.4	27.9	11.1
Robinson (S) @ 395	05/01/99	0.3	<0.05	<0.05	<0.05	1.9	106.7	7.4	29.5	10.9
	Averages	**0.50**	**n/a**	**n/a**	**n/a**	**1.5**	**107.2**	**7.4**	**28.7**	**11.0**
	Stan. Dev	**0.28**				**0.6**	**0.6**	**0.0**	**1.1**	**0.1**
Robinson DS(WRID)	05/29/99	0.2	<0.05	<0.05	<0.05	1.4	45.9	6.9	34.0	11.8
Robinson DS(WRID)	06/05/99	0.2	<0.05	<0.05	<0.05	1.1	56.3	6.9	20.0	11.2
Robinson DS(WRID)	06/18/99	0.1	<0.05	<0.05	<0.05	7.4	47.9	6.2	26.0	10.8
Robinson DS(WRID)	07/16/99	0.4	<0.05	<0.05	<0.05	5.1	58.0	7.2	22.0	10.6
Robinson DS(ASCUA)	08/14/99	1.4	**	<0.05	<0.05	4.7	89.4	7.9	34.0	10.6
Robinson DS(WRID)	09/11/99	1.0	**	0.17	<0.05	1.5	113.5	7.8	52.0	10.2
Robinson DS(ASCUA)	09/11/99	1.1	**	<0.05	<0.05	2.1	109.6	8.2	44.0	10.3
Robinson DS(WRID)	10/16/99	1.0	**	<0.05	<0.05	1.5	75.7	7.4	18.0	11.3
	Averages*	**0.63**	**n/a**	**n/a**	**n/a**	**3.3**	**74.4**	**7.3**	**33.1**	**10.8**
	Stan. Dev	**0.53**				**2.4**	**29.2**	**0.7**	**11.7**	**0.6**
Swauger	05/01/99	0.4	<0.05	<0.05	0.06	2.4	110.4	7.4	39.0	10.8
Swauger	05/06/99	0.4	<0.05	0.06	0.07	13.6	46.9	7.4	44.0	11.4
Swauger	05/21/99	0.1	<0.05	<0.05	0.06	7.3	121.9	6.8	36.5	10.7
Swauger	05/29/99	0.2	<0.05	<0.05	0.06	8.5	84.5	6.6	52.0	10.1
Swauger	06/05/99	0.3	<0.05	0.10	0.06	1.1	96.3	7.4	34.0	10.6
Swauger	06/18/99	0.2	<0.05	0.11	0.13	10.9	121.0	6.7	32.0	12.0
Swauger	08/14/99	1.1	**	<0.05	0.15	4.1	189.2	7.2	36.0	8.9
Swauger	09/11/99	0.9	**	0.11	<0.05	0.5	166.2	7.7	36.0	9.2
	Averages	**0.45**	**n/a**	**n/a**	**n/a**	**6.0**	**117.1**	**7.2**	**38.7**	**10.5**
	Stan. Dev	**0.36**				**4.8**	**44.9**	**0.4**	**6.5**	**1.0**
Summers (ds)	04/16/99	0.7	<0.05	<0.05	<0.05	2.0	87.3	7.6	27.8	11.2
Summers (ds)	05/01/99	1.3	<0.05	<0.05	<0.05	1.3	57.1	7.2	34.2	11.9
Summers (ds)	05/06/99	0.6	<0.05	<0.05	<0.05	15.1	50.2	7.5	35.0	11.3
Summers (ds)	05/14/99	0.2	<0.05	<0.05	<0.05	3.3	86.5	7.8	31.1	11.3
Summers (ds)	05/21/99	0.1	<0.05	<0.05	<0.05	3.9	83.8	7.4	30.6	9.3
Summers (ds)	05/29/99	0.3	<0.05	<0.05	<0.05	6.3	68.1	6.5	28.0	10.6
Summers (ds)	06/05/99	0.3	<0.05	<0.05	0.06	1.4	83.6	7.1	26.0	10.9
Summers (ds)	06/18/99	0.2	<0.05	<0.05	<0.05	4.8	69.6	6.9	22.0	9.8
Summers (ds)	07/16/99	0.3	<0.05	<0.05	<0.05	5.1	59.0	7.5	25.0	10.2
Summers (ds)	08/14/99	1.2	**	0.12	<0.05	2.2	72.5	7.2	30.0	9.8
Summers (ds)	09/11/99	1.4	**	<0.05	<0.05	4.1	73.6	7.7	48.0	9.4
Summers (ds)	10/16/99	0.8	**	<0.05	<0.05	1.1	85.8	7.5	12.0	10.8
	Averages	**0.62**	**n/a**	**n/a**	**n/a**	**4.2**	**73.1**	**7.3**	**29.1**	**10.5**
	Stan. Dev	**0.46**				**3.8**	**12.7**	**0.4**	**8.5**	**0.8**

*** Averages for Robinson DS include only the highest value for the two sites sampled on 9/11**

Site name	DATE	TKN mg/L	NH4-N mg/L	NO3-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
Virginia @ 395	05/14/99	0.1	<0.05	<0.05	<0.05	3.3	90.0	7.4	31.1	10.5
Virginia @ 395	05/21/99	0.2	<0.05	<0.05	<0.05	4.4	78.9	7.2	34.3	10.8
Virginia @ 395	05/29/99	0.3	<0.05	<0.05	0.05	3.5	73.5	7.1	44.0	10.5
Virginia @ 395	06/05/99	0.2	<0.05	0.08	<0.05	0.8	93.7	7.5	24.0	11.1
Virginia @ 395	06/18/99	0.2	0.07	<0.05	<0.05	13.8	81.8	6.6	40.0	9.6
Virginia @ 395	07/16/99	0.2	<0.05	<0.05	<0.05	7.8	58.2	7.0	36.0	10.3
Virginia @ 395	08/14/99	1.2	**	0.13	<0.05	3.1	108.5	7.3	24.0	10.3
Virginia @ 395	09/11/99	1.5	**	0.06	<0.05	1.6	100.5	7.9	48.0	10.7
Virginia @ 395	10/16/99	1.0	**	0.07	<0.05	0.8	106.3	7.7	18.0	11.2
	Averages	**0.54**	**n/a**	**n/a**	**n/a**	**4.3**	**87.9**	**7.3**	**33.3**	**10.6**
	Stan. Dev	**0.53**				**4.1**	**16.5**	**0.4**	**10.0**	**0.5**
Virginia @ strosnider	04/16/99	0.7	<0.05	<0.05	<0.05	1.1	104.5	7.5	28.0	10.9
Virginia @ strosnider	05/01/99	0.3	<0.05	<0.05	<0.05	1.2	119.5	7.5	30.1	11.1
Virginia @ strosnider	05/06/99	1.4	0.05	0.15	<0.05	18.4	48.1	7.4	48.0	10.9
Virginia @ strosnider	05/21/99	0.2	<0.05	<0.05	0.05	2.9	124.7	7.2	31.8	9.8
Virginia @ strosnider	05/29/99	0.2	<0.05	<0.05	<0.05	16.4	58.0	6.2	60.0	10.6
Virginia @ strosnider	06/05/99	0.3	<0.05	<0.05	<0.05	0.9	78.2	7.1	24.0	10.9
Virginia @ strosnider	06/18/99	0.1	<0.05	<0.05	<0.05	24.8	62.2	6.5	106.0	9.5
Virginia @ strosnider	07/16/99	0.3	<0.05	<0.05	<0.05	8.6	99.7	7.7	32.0	10.5
Virginia @ strosnider	08/14/99	1.2	**	0.06	<0.05	1.6	191.2	7.5	18.0	9.9
Virginia @ strosnider	09/11/99	1.3	**	0.09	<0.05	2.1	155.5	7.5	44.0	10.8
Virginia @ strosnider	10/16/99	1.2	**	<0.05	<0.05	11.2	125.3	7.4	36.0	11.2
	Averages	**0.65**	**n/a**	**n/a**	**n/a**	**8.1**	**106.1**	**7.2**	**41.6**	**10.6**
	Stan. Dev	**0.52**				**8.5**	**43.6**	**0.5**	**24.4**	**0.6**
Little Walker@108	04/16/99	0.7	<0.05	<0.05	<0.05	0.9	170.6	7.9	32.0	11.5
Little Walker@108	05/01/99	0.4	<0.05	<0.05	<0.05	1.1	68.1	7.3	28.9	11.1
Little Walker@108	05/21/99	0.1	<0.05	<0.05	<0.05	12.5	46.1	7.2	40.9	11.2
Little Walker@108	05/29/99	0.3	<0.05	<0.05	<0.05	1.5	48.7	7.0	32.0	11.8
Little Walker@108	06/18/99	0.2	<0.05	0.09	<0.05		43.6	7.4	31.0	11.7
Little Walker@108	09/11/99	1.1	**	0.11	<0.05	0.4	58.2	7.5	34.0	11.1
	Averages	**0.47**	**n/a**	**n/a**	**n/a**	**3.3**	**72.6**	**7.4**	**33.1**	**11.4**
	Stan. Dev	**0.37**				**5.2**	**48.9**	**0.3**	**4.1**	**0.3**
W. Walker @395	04/16/99	1.1	<0.05	0.08	<0.05	4.1	115.8	7.6	23.0	11.4
W. Walker @395	05/21/99	0.2	<0.05	<0.05	<0.05	13.4	53.2	7.4	41.2	11.2
W. Walker @395	05/29/99	0.3	<0.05	<0.05	<0.05	4.3	25.2	7.0	58.0	11.4
W. Walker @395	06/18/99	0.2	<0.05	0.06	<0.05	4.5	31.3	7.2	47.0	11.5
W. Walker @395	09/11/99	1.1	**	0.22	<0.05	0.4	187.8	7.6	34.0	11.1
	Averages	**0.58**	**n/a**	**n/a**	**n/a**	**5.3**	**82.7**	**7.4**	**40.6**	**11.3**
	Stan. Dev	**0.48**				**4.8**	**68.8**	**0.3**	**13.2**	**0.2**
Walker in town	04/16/99	0.6	<0.05	<0.05	<0.05	1.4	101.4	7.6	30.0	11.2
Walker in town	05/01/99	0.5		<0.05	<0.05	1.3	89.8	7.4	30.2	11.3
Walker in town	05/21/99	0.2	<0.05	<0.05	<0.05	7.8	59.0	7.3	34.3	10.9
Walker in town	05/29/99	0.2	<0.05	<0.05	<0.05	3.5	31.5	6.9	80.0	11.6
Walker in town	06/18/99	0.3	<0.05	<0.05	<0.05	3.9	41.4	7.0	85.0	11.2
Walker in town	09/11/99	1.0	**	<0.05	<0.05	0.4	122.4	7.6	28.0	10.9
	Averages	**0.47**	**n/a**	**n/a**	**n/a**	**3.0**	**74.3**	**7.3**	**47.9**	**11.2**
	Stan. Dev	**0.31**				**2.7**	**35.9**	**0.3**	**26.9**	**0.3**

Site name	DATE	TKN mg/L	NH4-N mg/L	NO3-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
Mill Ck	04/16/99	1.0	<0.05	<0.05	<0.05	3.5	78.5	7.5	43.2	10.9
Mill Ck	05/01/99	0.6	<0.05	<0.05	<0.05	3.4	74.8	7.4	32.2	11.2
Mill Ck	05/21/99	0.2	<0.05	<0.05	<0.05	22.9	52.1	6.9	50.8	10.9
Mill Ck	05/29/99	0.2	<0.05	<0.05	<0.05	1.4	41.3	5.9	30.0	11.6
Mill Ck	06/18/99	0.4	<0.05	<0.05	<0.05	2.3	48.4	6.3	41.0	11.3
Mill Ck	09/11/99	1.2	**	<0.05	<0.05	3.1	85.1	7.5	44.0	10.2
	Averages	**0.60**	**n/a**	**n/a**	**n/a**	**6.1**	**63.4**	**6.9**	**40.2**	**11.0**
	Stan. Dev	**0.42**				**8.3**	**18.3**	**0.7**	**7.8**	**0.5**
Walker @ Cunningham	05/01/99	0.8	<0.05	0.09	<0.05	0.7	55.2	7.5	28.6	11.8
Walker @ Cunningham	05/21/99	0.1	<0.05	<0.05	<0.05	9.6	67.2	7.5	35.9	10.8
Walker @ Cunningham	05/29/99	0.2	<0.05	<0.05	<0.05	8.6	33.9	7.0	36.0	12.1
Walker @ Cunningham	06/18/99	0.1	<0.05	<0.05	<0.05	17.1	41.0	6.9	64.0	10.9
Walker @ Cunningham	09/11/99	1.1	**	0.13	<0.05	1.3	153.0	7.5	36.0	11.2
	Averages	0.53	n/a	n/a	n/a	6.8	62.5	6.6	37.7	10.3
	Stan. Dev	0.39				6.7	33.1	1.8	13.0	3.0

Table 4 . Results by date. Shaded values indicate readings above minimum detectable level. For identification of values above water quanlity standards, refer to Table 3, Results by site.

Site name	DATE	TKN mg/L	NH4-N mg/L	NO3-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
Aurora DS	04/16/99	1.1	<0.05	<0.05	<0.05	5.30	250.0	8	45	10.2
Aurora US	04/16/99	0.7	<0.05	0.19	<0.05	0.80	115.2	7.5	33	10.2
Buckeye US	04/16/99	0.5	<0.05	<0.05	<0.05	1.00	76.3	7.6	28	11.4
Buckeye @ 395	04/16/99	1.0	0.52	0.18	<0.05	0.70	83.2	7.3	27	10.8
Green (US)	04/16/99	0.4	<0.05	<0.05	<0.05	0.70	66.1	7.4	28	10.7
E. Walker below pond	04/16/99	0.9	<0.05	<0.05	0.19	2.7	193.1	7.8	28	9.8
E. Walker @ strosnider	04/16/99	0.8	<0.05	<0.05	<0.05	1.8	105.6	7.5	28	11
E. Walker US of bridge	04/16/99	1.1	0.06	<0.05	<0.05	4.8	148.8	7.5	31	10.7
E. Walker below res	04/16/99	1.1	<0.05	0.05	<0.05	1.9	162	7.7	41	10.5
Robinson US	04/16/99	0.5	<0.05	<0.05	<0.05	0.8	66.5	7.5	27	10.8
Robinson (N) @ 395	04/16/99	0.7	0.17	0.19	<0.05	1.2	107.7	7.4	28	10.9
Robinson (S) @ 395	04/16/99	0.7	0.11	<0.05	<0.05	1	107.6	7.4	28	11.1
Summers (ds)	04/16/99	0.7	<0.05	<0.05	<0.05	2	87.3	7.6	28	11.2
Virginia @ strosnider	04/16/99	0.7	<0.05	<0.05	<0.05	1.1	104.5	7.5	28	10.9
Little Walker@108	04/16/99	0.7	<0.05	<0.05	<0.05	0.9	170.6	7.9	32	11.5
W. Walker @395	04/16/99	1.1	<0.05	0.06	<0.05	4.1	115.8	7.6	23	11.4
Walker in town	04/16/99	0.6	<0.05	<0.05	<0.05	1.4	101.4	7.6	30	11.2
Mill Ck	04/16/99	1.0	<0.05	<0.05	<0.05	3.5	78.5	7.5	43	10.9
Walker @ Cunningham	04/16/99	0.8	<0.05	<0.05	<0.05	2.2	109.9	7.5	28	11.4
	Average	0.79	n/a	n/a	n/a	2.0	118.4	7.6	30.7	10.9
	Stan. dev	0.22				1.4	46.1	0.2	5.8	0.4
Aurora DS	05/01/99	0.4	<0.05	0.07	0.29	1.50	548.0	9.2	29	10.9
Buckeye US	05/01/99	0.6	<0.05	<0.05	<0.05	1.40	89.5	7.5	30	11.8
Buckeye @ 395	05/01/99	0.3	<0.05	<0.05	<0.05	1.60	93.1	7.5	29	11.4
Green (US)	05/01/99	0.6	<0.05	<0.05	<0.05	1.00	56.5	7.4	42	12.2
E. Walker @ strosnider	05/01/99	0.4	<0.05	<0.05	<0.05	1.9	106.4	7.4	30	11.4
E. Walker US of bridge	05/01/99	0.6	<0.05	<0.05	0.05	1.7	213	7.5	31	11.4
E. Walker DS of bridge	05/01/99	0.6	<0.05	<0.05	0.05	1.2	30	6.9	34	11.5
E. Walker below res	05/01/99	0.4	<0.05	<0.05	<0.05	1.1	170.3	7.6	34	11.2
Robinson US	05/01/99	0.3	<0.05	<0.05	<0.05	1.8	105.8	7.4	31	10.9
Robinson (N) @ 395	05/01/99	0.4	<0.05	<0.05	<0.05	1.8	110.1	7.4	25	10.8
Robinson (S) @ 395	05/01/99	0.3	<0.05	<0.05	<0.05	1.9	106.7	7.4	30	10.9
Swauger	05/01/99	0.4	<0.05	<0.05	0.06	2.4	110.4	7.4	39	10.8
Summers (ds)	05/01/99	1.3	<0.05	<0.05	<0.05	1.3	57.1	7.2	34	11.9
Virginia @ strosnider	05/01/99	0.3	<0.05	<0.05	<0.05	1.2	119.5	7.5	30	11.1
Little Walker@108	05/01/99	0.4	<0.05	<0.05	<0.05	1.1	68.1	7.3	29	11.1
Walker in town	05/01/99	0.5	<0.05	<0.05	<0.05	1.3	89.8	7.4	30	11.3
Mill Ck	05/01/99	0.6	<0.05	<0.05	<0.05	3.4	74.8	7.4	32	11.2
Walker @ Cunningham	05/01/99	0.8	<0.05	0.06	<0.05	0.7	55.2	7.5	29	11.8
	Average	0.51	n/a	n/a	n/a	1.6	122.5	7.5	31.5	11.3
	Stan. dev	0.24				0.6	111.2	0.4	3.9	0.4
Aurora DS	05/06/99	0.5	<0.05	<0.05	<0.05	18.50	288.4	7.7	58	10.6
Buckeye US	05/06/99	1.0	<0.05	<0.05	<0.05	6.50	28.0	7.3	24	14.2
Buckeye @ 395	05/06/99	0.7	<0.05	<0.05	<0.05	22.20	83.8	7.5	42	11.1
Green (US)	05/06/99	0.9	<0.05	<0.05	<0.05	16.20	76	7.5	42	13.7
E. Walker US of bridge	05/06/99	1.0	<0.05	<0.05	<0.05	15.2	78.8	7.4	30	10.7
E. Walker DS of bridge	05/06/99	0.6	<0.05	<0.05	<0.05	13.0	51.2	7.5	42	10.7
E. Walker below res	05/06/99	0.5	<0.05	<0.05	<0.05	6.1	134.9	7.5	26	10.5
Robinson US	05/06/99	0.8	0.05	0.06	<0.05	13.6	87.6	7.5	34	13.2
Robinson (N) @ 395	05/06/99	1.1	<0.05	<0.05	<0.05	16.8	52	7.5	32	11.2
Swauger	05/06/99	0.4	<0.05	0.06	0.07	13.6	46.9	7.4	44	11.4
Summers (ds)	05/06/99	0.6	<0.05	<0.05	<0.05	15.1	50.2	7.5	35	11.3
Virginia @ strosnider	05/06/99	1.4	0.05	0.06	<0.05	18.4	48.1	7.4	48	10.9
	Average	0.79	n/a	n/a	n/a	14.6	85.5	7.5	38.1	11.6
	Stan. dev	0.30				4.6	69.7	0.1	9.8	1.3

Site name	DATE	TKN mg/L	NH4-N mg/L	NOS-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
Aurora DS	05/14/99	0.1	<0.05	<0.05	0.15	11.00	231	7.8	40	10.1
Buckeye US	05/14/99	0.2	<0.05	<0.05	<0.05	2.70	47.8	7.3	31	11.4
Buckeye @ 395	05/14/99	0.1	<0.05	<0.05	<0.05	3.40	67.4	7.4	31	9.7
Green (US)	05/14/99	0.1	<0.05	<0.05	<0.05	4.10	43.2	6.9	32	11.9
E. Walker @ strosnider	05/14/99	0.1	<0.05	<0.05	<0.05	8.2	91.6	7.2	37	10.6
E. Walker US of bridge	05/14/99	0.1	<0.05	<0.05	<0.05	8	134.3	7.4	35	12.4
E. Walker DS of bridge	05/14/99	0.2	<0.05	<0.05	<0.05	7.2	140.3	7.1	35	13
E. Walker below res	05/14/99	0.1	<0.05	<0.05	<0.05	3.3	181	7.6	31	10.7
Robinson US	05/14/99	0.1	<0.05	<0.05	<0.05	2.2	62.9	7.2	30	11.5
Robinson (N) @ 395	05/14/99	0.1	<0.05	<0.05	<0.05	2.6	63.8	7.5	30	9.8
Summers (ds)	05/14/99	0.2	<0.05	<0.05	<0.05	3.3	86.5	7.8	31	11.3
Virginia @ 395	05/14/99	0.1	<0.05	<0.05	<0.05	3.3	90	7.4	31	10.5
	Average	0.13	n/a	n/a	n/a	4.9	103.3	7.4	32.9	11.1
	Stan. dev	0.05				2.9	57.6	0.3	3.2	1.0
Aurora DS	05/21/99	0.2	<0.05	<0.05	0.29	11.70	292	7.8	38	10.4
Buckeye US	05/21/99	0.2	<0.05	<0.05	<0.05	3.00	32.8	6.9	33	12.6
Buckeye @ 395	05/21/99	0.2	<0.05	<0.05	<0.05	4.10	46.9	6.9	33	9.2
Green (US)	05/21/99	0.1	<0.05	<0.05	<0.05	1.60	37.3	6.7	32	11.8
Green @ E. Walker	########	0.2	<0.05	<0.05	<0.05	2.3	51.9	6.6	31	10.9
E. Walker At Green	########	0.1	<0.05	<0.05	<0.05	3.4	117.6	7.2	30	10.7
E. Walker US of bridge	05/21/99	0.2	<0.05	<0.05	<0.05	4.8	126.7	6.9	35	11.3
E. Walker DS of bridge	05/21/99	0.1	<0.05	<0.05	<0.05	2.7	138.2	6.9	33	11.3
E. Walker below res	05/21/99	0.1	<0.05	<0.05	<0.05	2.6	174.5	7.6	33	11.1
Robinson US	05/21/99	0.1	<0.05	<0.05	<0.05	1.5	58.4	7.1	32	11.6
Robinson (N) @ 395	05/21/99	0.2	<0.05	<0.05	<0.05	2.5	49.2	7	29	9.9
Swauger	05/21/99	0.1	<0.05	<0.05	0.06	7.3	121.9	6.8	37	10.7
Summers (ds)	05/21/99	0.1	<0.05	<0.05	<0.05	3.9	83.8	7.4	31	9.3
Virginia @ 395	05/21/99	0.2	<0.05	<0.05	<0.05	4.4	78.9	7.2	34	10.8
Virginia @ strosnider	05/21/99	0.2	<0.05	<0.05	0.07	2.9	124.7	7.2	32	9.8
Little Walker@108	05/21/99	0.1	<0.05	<0.05	<0.05	12.5	46.1	7.2	41	11.2
W. Walker @395	05/21/99	0.2	<0.05	<0.05	<0.05	13.4	53.2	7.4	41	11.2
Walker in town	05/21/99	0.2	<0.05	<0.05	<0.05	7.8	59	7.3	34	10.9
Mill Ck	05/21/99	0.2	<0.05	<0.05	<0.05	22.9	52.1	6.9	51	10.9
Walker @ Cunningham	05/21/99	0.1	<0.05	<0.05	<0.05	9.6	67.2	7.5	36	10.8
	Average	0.16	n/a	n/a	n/a	6.2	90.6	7.1	34.8	10.8
	Stan. dev	0.05				5.4	62.0	0.3	5.0	0.8
Buckeye US	05/29/99	0.3	<0.05	<0.05	<0.05	2.00	23.3	6.2	60	12.6
Buckeye @ 395	05/29/99	0.2	<0.05	<0.05	<0.05	2.00	27.5	6.9	42	12.7
Buckeye DS (WRID)	05/29/99	0.2	<0.05	<0.05	<0.05	4.00	35.0	5.8	44	12.5
Green (US)	05/29/99	0.3	<0.05	<0.05	<0.05	1.00	27.4	6.9	30	11.8
Green @ E. Walker	05/29/99	0.3	<0.05	<0.05	<0.05	1.3	32.9	6.8	34	10.2
E. Walker At Green	05/29/99	0.2	<0.05	<0.05	<0.05	0.8	55.1	6.9	20	10.2
E. Walker US of bridge	05/29/99	0.3	<0.05	0.13	<0.05	5.3	65.8	6.7	48	10.3
E. Walker below res	05/29/99	0.2	<0.05	<0.05	<0.05	1.2	147.2	6.9	16	11.0
Robinson US	05/29/99	0.4	<0.05	<0.05	<0.05	1.0	46.3	6.2	22	11.6
Robinson (N) @ 395	05/29/99	0.2	<0.05	<0.05	<0.05	1.0	46.6	7.0	28	11.7
Robinson DS(WRID)	05/29/99	0.2	<0.05	<0.05	<0.05	1.4	45.9	6.9	34	11.8
Swauger	05/29/99	0.2	<0.05	<0.05	0.06	8.5	84.5	6.6	52	10.1
Summers (ds)	05/29/99	0.3	<0.05	<0.05	<0.05	6.3	68.1	6.5	28	10.6
Virginia @ 395	05/29/99	0.3	<0.05	<0.05	0.05	3.5	73.5	7.1	44	10.5
Virginia @ strosnider	05/29/99	0.2	<0.05	<0.05	<0.05	16.4	58.0	6.2	60	10.6
Little Walker@108	05/29/99	0.3	<0.05	<0.05	<0.05	1.5	48.7	7.0	32	11.8
W. Walker @395	05/29/99	0.3	<0.05	<0.05	<0.05	4.3	25.2	7.0	58	11.4
Walker in town	05/29/99	0.2	<0.05	<0.05	<0.05	3.5	31.5	6.9	80	11.6
Mill Ck	05/29/99	0.2	<0.05	<0.05	<0.05	1.4	41.3	5.9	30	11.6
Walker @ Cunningham	05/29/99	0.2	<0.05	<0.05	<0.05	8.6	33.9	7.0	36	12.1
	Average	0.25	n/a	n/a	n/a	3.8	50.9	6.7	39.9	11.3
	Stan. dev	0.06				3.9	28.5	0.4	16.1	0.8

Site name	DATE	TKN mg/L	NH4-N mg/L	NO3-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
Buckeye DS (WRID)	06/05/99	0.3	<0.05	<0.05	<0.05	1.30	56.8	7.1	30	12.3
Green (US)	06/05/99	0.3	<0.05	<0.05	<0.05	0.90	35.9	6.8	18	12.2
Green @ E. Walker	06/05/99	0.3	<0.05	<0.05	<0.05	1.2	45.1	7.0	24	12.1
E. Walker At Green	06/05/99	0.3	<0.05	<0.05	<0.05	1.4	88.4	7.1	18	11.2
E. Walker @ strosnider	06/05/99	0.3	<0.05	<0.05	<0.05	1.4	71.1	7.1	26	11.5
E. Walker US of bridge	06/05/99	0.3	[illegible]	<0.05	<0.05	1.1	100.5	7.2	26	11.5
E. Walker DS of bridge	06/05/99	0.4	<0.05	<0.05	<0.05	1.5	101.6	7.1	40	11.6
Robinson US	06/05/99	0.3	<0.05	[illegible]	<0.05	3.7	81.4	7.2	20	11.1
Robinson (N) @ 395	06/05/99	0.3	<0.05	<0.05	<0.05	2.1	54.7	6.9	20	11.7
Robinson DS(WRID)	06/05/99	0.2	<0.05	<0.05	<0.05	1.1	56.3	6.9	20	11.2
Swauger	06/05/99	0.3	<0.05	[illegible]	[illegible]	1.1	96.3	7.4	34	10.6
Summers (ds)	06/05/99	0.3	<0.05	<0.05	[illegible]	1.4	83.6	7.1	26	10.9
Virginia @ 395	06/05/99	0.2	<0.05	[illegible]	<0.05	0.8	93.7	7.5	24	11.1
Virginia @ strosnider	06/05/99	0.3	<0.05	<0.05	<0.05	0.9	78.2	7.1	24	10.9
Buckeye US	06/05/99	0.3	<0.05	<0.05	<0.05	1.80	40.3	7.2	104	13.7
Buckeye @ 395	06/05/99	0.4	<0.05	<0.05	<0.05	1.60	45.5	7.1	18	12.1
	Average	0.30	n/a	n/a	n/a	1.5	70.6	7.1	29.5	11.6
	Stan. dev	0.05				0.7	22.7	0.2	20.8	0.8

Buckeye US	06/18/99	0.2	<0.05	<0.05	<0.05	5.60	16.49	6.6	44	11.9
Buckeye @ 395	06/18/99	0.1	<0.05	<0.05	<0.05	6.20	28.3	6.6	32	10.9
Buckeye DS (WRID)	06/18/99	0.2	<0.05	<0.05	[illegible]	13.90	30.9	6.7	40	11.2
Green (US)	06/18/99	0.1	<0.05	<0.05	<0.05	5.10	23.9	6.2	18	10
Green @ E. Walker	06/18/99	0.1	<0.05	<0.05	<0.05	5.6	41.3	6.6	26	10.2
E. Walker At Green	06/18/99	0.2	[illegible]	<0.05	<0.05	5.9	145.0	6.7	22	9.9
E. Walker @ strosnider	06/18/99	0.2	<0.05	<0.05	<0.05	5.9	74.6	6.2	22	10
E. Walker US of bridge	06/18/99	0.1	<0.05	<0.05	<0.05	13.1	95.0	6.7	40	9.8
E. Walker DS of bridge	06/18/99	0.2	<0.05	<0.05	<0.05	9.6	92.3	6.5	30	9.8
Robinson US	06/18/99	0.1	<0.05	<0.05	<0.05	5.8	51.4	6.8	20	10.7
Robinson (N) @ 395	06/18/99	0.2	<0.05	<0.05	<0.05	6.9	50.1	6.3	36	10.7
Robinson DS(WRID)	06/18/99	0.1	<0.05	<0.05	<0.05	7.4	47.9	6.2	26	10.8
Swauger	06/18/99	0.2	<0.05	[illegible]	[illegible]	10.9	121.0	6.7	32	12
Summers (ds)	06/18/99	0.2	<0.05	<0.05	<0.05	4.8	69.6	6.9	22	9.8
Virginia @ 395	06/18/99	0.2	[illegible]	<0.05	<0.05	13.8	81.8	6.6	40	9.6
Virginia @ strosnider	06/18/99	0.1	<0.05	<0.05	<0.05	24.8	62.2	6.5	106	9.5
Little Walker@108	06/18/99	0.2	<0.05	[illegible]	<0.05		43.6	7.4	31	11.7
W. Walker @395	06/18/99	0.2	<0.05	[illegible]	<0.05	4.5	31.3	7.2	47	11.5
Walker in town	06/18/99	0.3	<0.05	<0.05	<0.05	3.9	41.4	7	85	11.2
Mill Ck	06/18/99	0.4	<0.05	<0.05	<0.05	2.3	48.4	6.3	41	11.3
Walker @ Cunningham	06/18/99	0.1	<0.05	<0.05	<0.05	17.1	41.0	6.9	64	10.9
	Average	0.18	n/a	n/a	n/a	8.7	58.9	6.6	39.2	10.6
	Stan. dev	0.08				5.6	32.9	0.3	21.9	0.8

Buckeye US	07/16/99	0.4	[illegible]	<0.05	<0.05	2.80	41.5	7.2	28	11.0
Buckeye @ 395	07/16/99	0.3	<0.05	[illegible]	<0.05	3.60	105.3	7.0	26	10.8
Buckeye DS (WRID)	07/16/99	0.3	<0.05	<0.05	<0.05	2.90	56.9	7.1	18	10.8
Green (US)	07/16/99	0.3	<0.05	<0.05	<0.05	8.30	105.7	7.3	40	10.3
Green @ E. Walker	07/16/99	0.2	[illegible]	<0.05	<0.05	4.5	88.0	7.1	18	10.4
Green @ strosnider	07/16/99	0.3	<0.05	[illegible]	[illegible]	10.1	94.4	7.6	28	10.5
E. Walker At Green	07/16/00	0.2	<0.05	[illegible]	<0.05	5.0	81.7	7.4	28	9.8
E. Walker @ strosnider	07/16/99	0.1	[illegible]	<0.05	<0.05	1.9	57.4	7.3	16	10.6
E. Walker US of bridge	07/16/99	0.3	<0.05	<0.05	<0.05	5.7	46.8	6.9	24	10.7
E. Walker DS of bridge	07/16/99	0.3	<0.05	<0.05	<0.05	7.0	73.1	7.2	26	10.7
Robinson US	07/16/99	0.3	<0.05	<0.05	<0.05	3.1	91.9	7.2	16	10.7
Robinson (N) @ 395	07/16/99	0.2	<0.05	<0.05	<0.05	6.3	90.3	7.0	38	10.4
Robinson DS(WRID)	07/16/99	0.4	<0.05	<0.05	<0.05	5.1	58.0	7.2	22	10.6
Summers (ds)	07/16/99	0.3	<0.05	<0.05	<0.05	5.1	59.0	7.5	25	10.2
Virginia @ 395	07/16/99	0.2	<0.05	<0.05	<0.05	7.8	58.2	7.0	36	10.3
Virginia @ strosnider	07/16/99	0.3	<0.05	<0.05	<0.05	8.6	99.7	7.7	32	10.5
	Average	0.28	n/a	n/a	n/a	5.5	75.5	7.2	26.3	10.5
	Stan. dev	0.08				2.4	21.5	0.2	7.5	0.3

Site name	DATE	TKN mg/L	NH4-N mg/L	NO3-N mg/L	P mg/L	Turbidity	EC	pH	TSS mg/L	O2 mg/L
Buckeye US	08/14/99	0.9	**	<0.05	<0.05	1.08	60.9	7.4	28	10.6
Buckeye @ 395	08/14/99	1.1	**	0.12	<0.05	1.39	154	7.1	28	9.8
Buckeye DS (ASCUA))	08/14/99	0.9	**	<0.05	<0.05	4.22	143.6	7.4	32	10.1
Green (US)	08/14/99	1.1	**	<0.05	<0.05	0.84	49.3	6.8	30	11.6
Green @ E. Walker	08/14/99	1.0	**	<0.05	<0.05	2.25	112.8	7.5	24	11.1
Green @ strosnider	08/14/99	1.3	**	<0.05	<0.05	5.14	133.3	7.2	28	9
E. Walker below pond	08/14/99	1.6	**	0.31	<0.05	159	141.8	7.3	170	8.9
E. Walker At Green	08/14/99	1.1	**	<0.05	<0.05	1.75	118.3	7.5	26	10.2
E. Walker @ strosnider	08/14/99	0.9	**	0.07	<0.05	3.35	113.2	6.9	36	10.1
E. Walker US of bridge	08/14/99	1.1	**	0.12	<0.05	1.39	154	7.1	28	9.8
Robinson US	08/14/99	1.7	**	<0.05	<0.05	0.71	51.6	7.2	4	10.9
Robinson (N) @ 395	08/14/99	1.1	**	0.07	<0.05	2.58	76	7.4	30	10.3
Robinson DS(ASCUA)	08/14/99	1.4	**	<0.05	<0.05	4.73	89.4	7.9	34	10.6
Swauger	08/14/99	1.1	**	<0.05	0.15	4.05	189.2	7.2	36	8.9
Summers (ds)	08/14/99	1.2	**	0.12	<0.05	2.17	72.5	7.2	30	9.8
Virginia @ 395	08/14/99	1.2	**	0.13	<0.05	3.11	108.5	7.3	24	10.3
Virginia @ strosnider	08/14/99	1.2	**	0.06	<0.05	1.58	191.2	7.5	18	9.9
	Average	1.17	n/a	n/a	n/a	11.73	115.27	7.29	35.65	10.11
	Stan. dev	0.23				37.98	44.39	0.25	35.42	0.74

Buckeye US	09/11/99	0.7	**	<0.05	<0.05	0.57	81.1	7.5	44	10.2
Buckeye @ 395	09/11/99	1.0	**	0.10	<0.05	1.18	189.4	7.9	40	9.9
Buckeye DS (ASCUA))	09/11/99	1.1	**	0.18	<0.05	3.10	171.1	7.8	36	10.1
Buckeye DS (WRID)	09/11/99	1.0	**	0.06	<0.05	4.73	193.2	7.8	40	10.2
Green (US)	09/11/99	1.2	**	<0.05	<0.05	1.16	106.8	7.8	56	10.6
Green @ E. Walker	09/11/99	1.1	**	0.15	<0.05	1.47	84.7	7.8	56	10.7
Green @ strosnider	09/11/99	1.1	**	<0.05	<0.05	2.94	142.5	7.8	56	10.6
E. Walker At Green	09/11/99	1.0	**	0.16	<0.05	3.13	173.2	7.9	32	19.8
E. Walker US of bridge	09/11/99	1.0	**	0.10	<0.05	1.18	189.4	7.9	40	9.9
E. Walker DS of bridge	09/11/99	1.3	**	0.07	<0.05	5.31	190.9	7.6	56	9.9
E. Walker below res	09/11/99	1.4	**	0.79	0.13	7.55	139.7	7.5	56	8.7
Robinson US	09/11/99	0.9	**	<0.05	<0.05	0.68	58.3	7.5	52	10.4
Robinson (N) @ 395	09/11/99	1.2	**	0.08	<0.05	1.13	89.2	7.6	48	10.2
Robinson DS(WRID)	09/11/99	1.0	**	0.17	<0.05	1.48	113.5	7.8	52	10.2
Robinson DS(ASCUA)	09/11/99	1.1	**	<0.05	<0.05	2.14	109.6	8.2	44	10.3
Swauger	09/11/99	0.9	**	0.11	<0.05	0.48	166.2	7.7	36	9.2
Summers (ds)	09/11/99	1.4	**	<0.05	<0.05	4.07	73.6	7.7	48	9.4
Virginia @ 395	09/11/99	1.5	**	0.08	<0.05	1.61	100.5	7.9	48	10.7
Virginia @ strosnider	09/11/99	1.3	**	0.09	<0.05	2.08	155.5	7.5	44	10.8
Little Walker@108	09/11/99	1.1	**	0.11	<0.05	0.4	58.2	7.5	34	11.1
W. Walker @395	09/11/99	1.1	**	0.22	<0.05	0.4	187.8	7.6	34	11.1
Walker in town	09/11/99	1.0	**	<0.05	<0.05	0.35	122.4	7.6	28	10.9
Mill Ck	09/11/99	1.2	**	<0.05	<0.05	3.07	85.1	7.5	44	10.2
Walker @ Cunningham	09/11/99	1.1	**	0.13	<0.05	1.34	153	7.5	36	11.2
	Average	1.11	n/a	n/a	n/a	2.1	130.6	7.7	44.2	10.7
	Stan. dev	0.18				1.8	45.8	0.2	8.7	2.0

Buckeye US	10/16/99	1.2	**	0.09	<0.05	0.67	87	7.4	18	10.8
Buckeye @ 395	10/16/99	1.0	**	0.10	<0.05	1.04	103.3	7.7	14	10.1
Buckeye DS (WRID)	10/16/99	1.1	**	<0.05	<0.05	2.08	117.2	7.9	22	10.2
Green (US)	10/16/99	0.8	**	<0.05	<0.05	1.15	67.1	7.7	14	10.6
Green @ E. Walker	10/16/99	1.4	**	<0.05	<0.05	1.1	78	7.7	10	10.7
Green @ strosnider	10/16/99	1.5	**	<0.05	<0.05	1.04	118.8	7.7	10	10.7
E. Walker @ strosnider	10/16/99	1.2	**	<0.05	<0.05	2.22	113.6	7.6	22	10.5
E. Walker US of bridge	10/16/99	1.5	**	<0.05	<0.05	0.88	140.3	7.6	14	10.6
E. Walker DS of bridge	10/16/99	1.0	**	<0.05	<0.05	1.32	143.5	7.6	22	10.7
E. Walker below res	10/16/99	2.2	**	0.52	0.15	3.25	157.4	7.3	18	9.7
Robinson US	10/16/99	1.5	**	<0.05	<0.05	1.01	64	7.5	18	10.9
Robinson (N) @ 395	10/16/99	1.0	**	<0.05	<0.05	0.74	64	7.4	18	11.1
Robinson DS(WRID)	10/16/99	1.0	**	<0.05	<0.05	1.48	75.7	7.4	18	11.3
Summers (ds)	10/16/99	0.8	**	<0.05	<0.05	1.12	85.8	7.5	12	10.8
Virginia @ 395	10/16/99	1.0	**	0.07	<0.05	0.77	106.3	7.7	18	11.2
Virginia @ strosnider	10/16/99	1.2	**	<0.05	<0.05	11.2	125.3	7.4	36	11.2
	Average	1.21	n/a	n/a	n/a	1.9	103.0	7.6	17.8	10.7
	Stan. dev	0.35				2.6	29.8	0.2	6.2	0.4

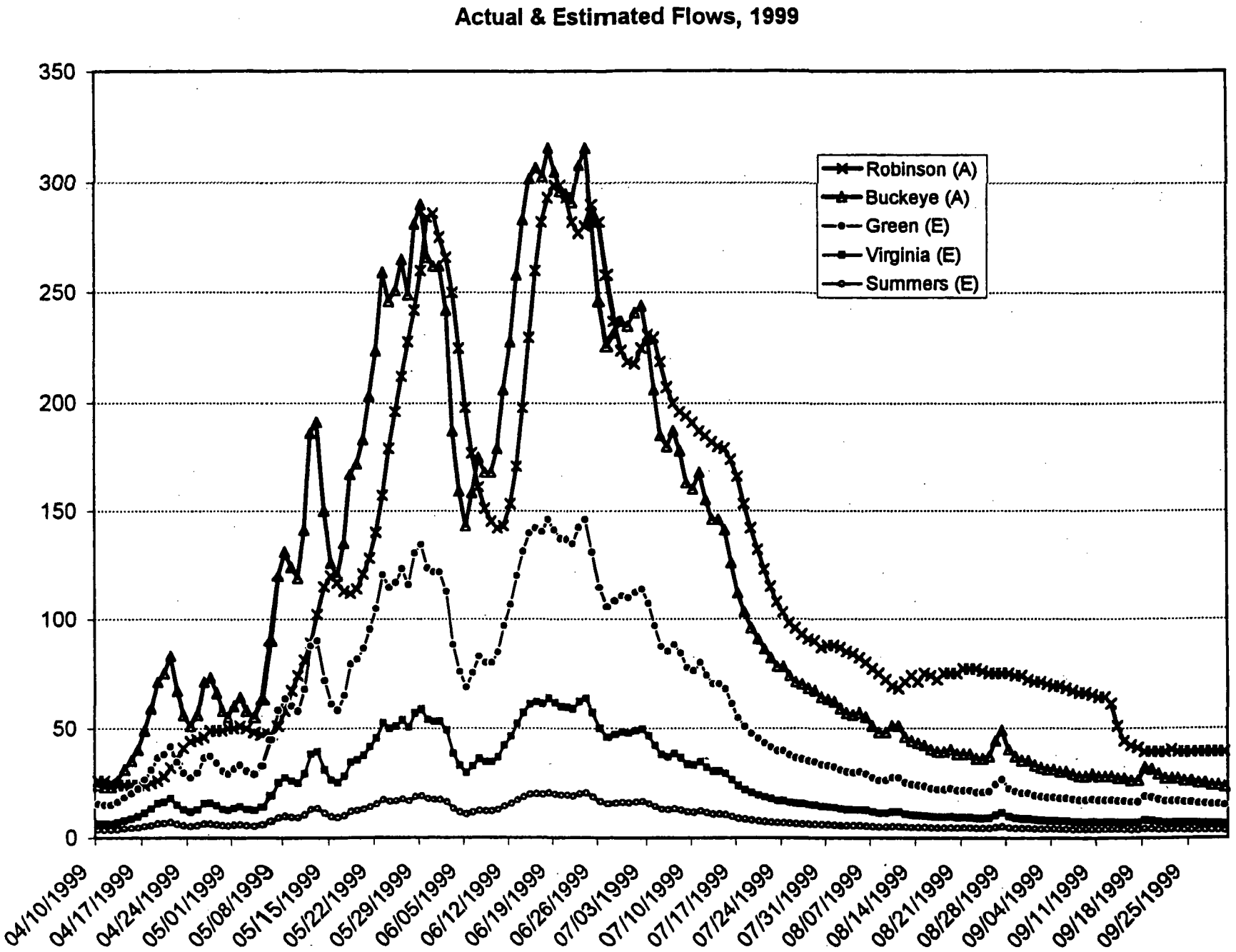


FIGURE 1: Actual and Estimated Flows, 1999

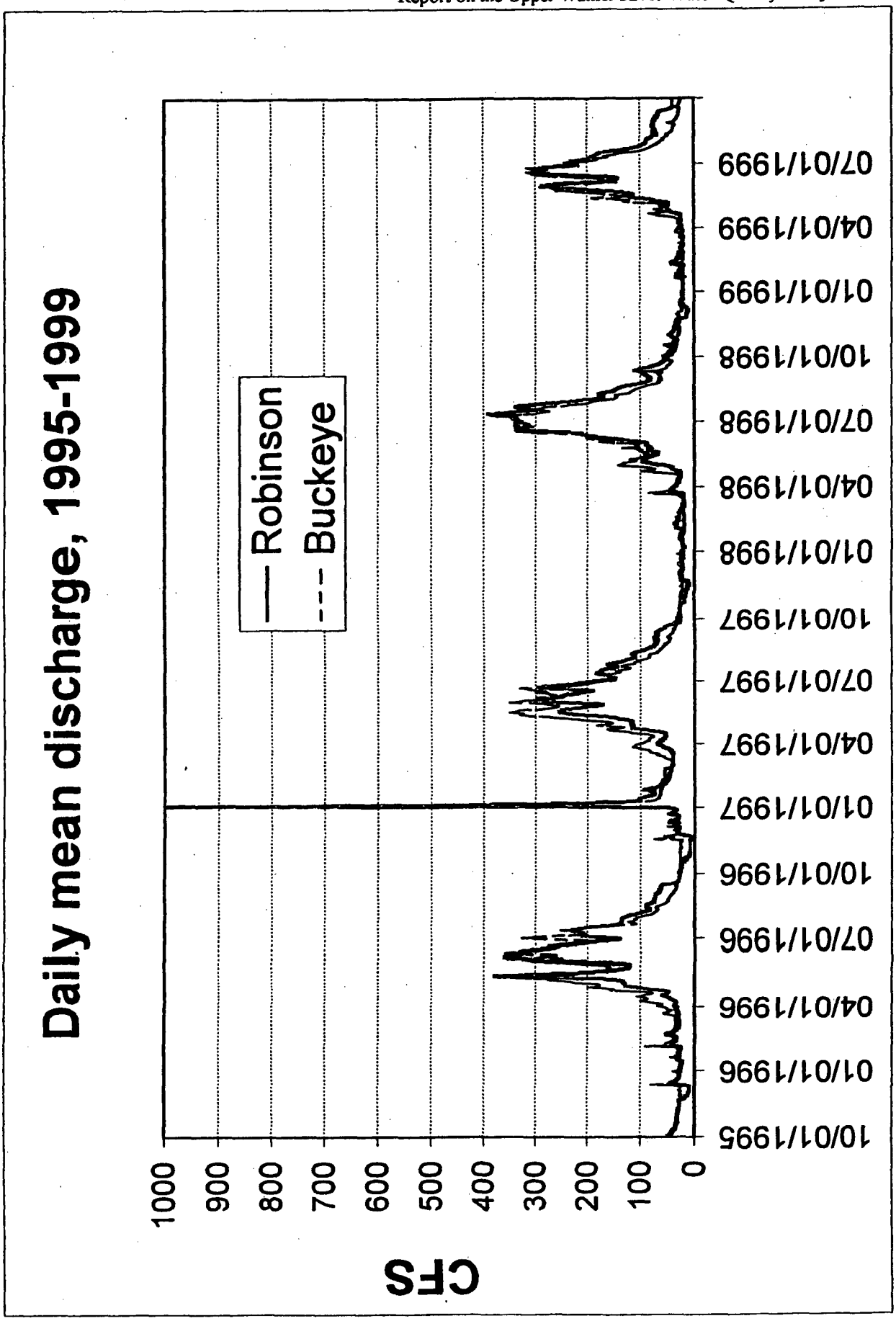
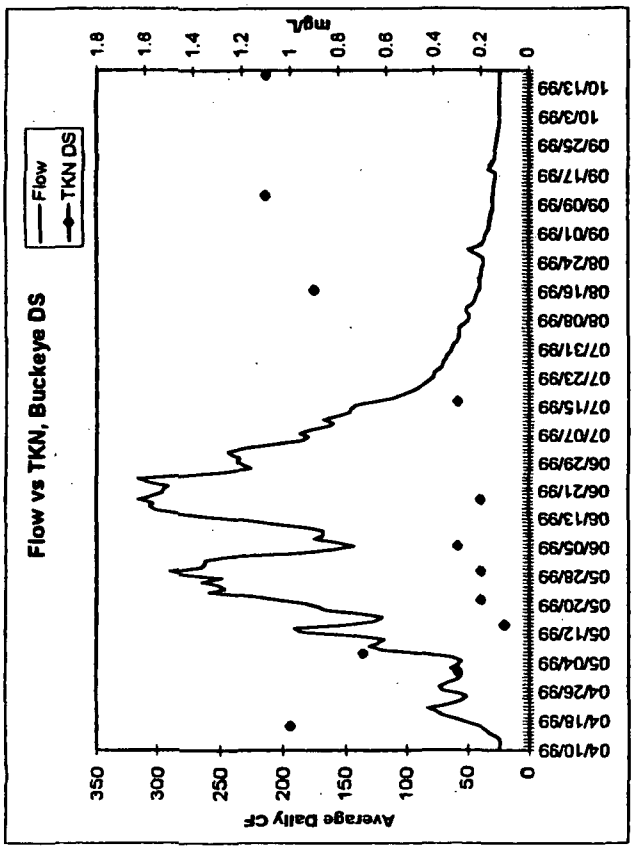
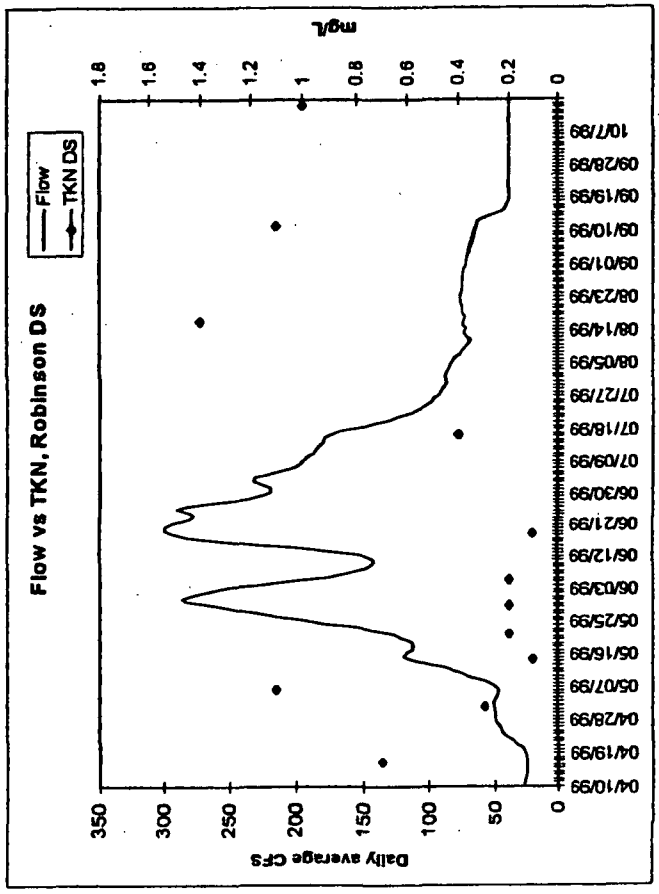
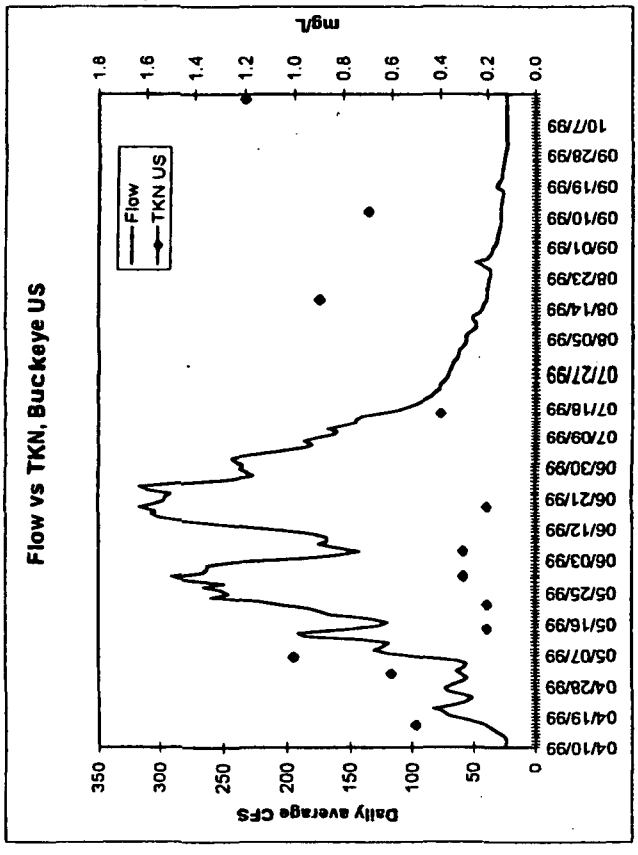
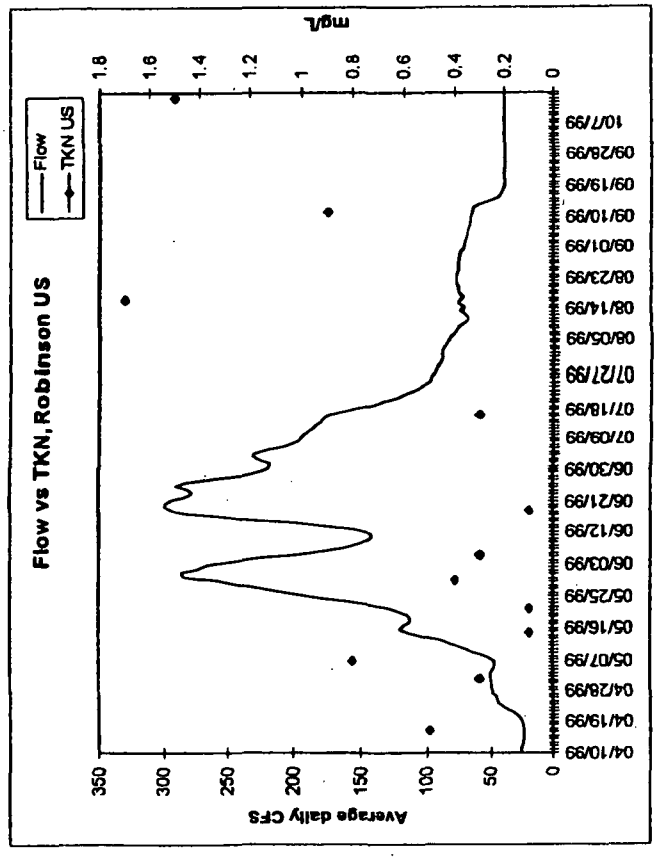


FIGURE 2: Daily mean discharges, 1995-1999

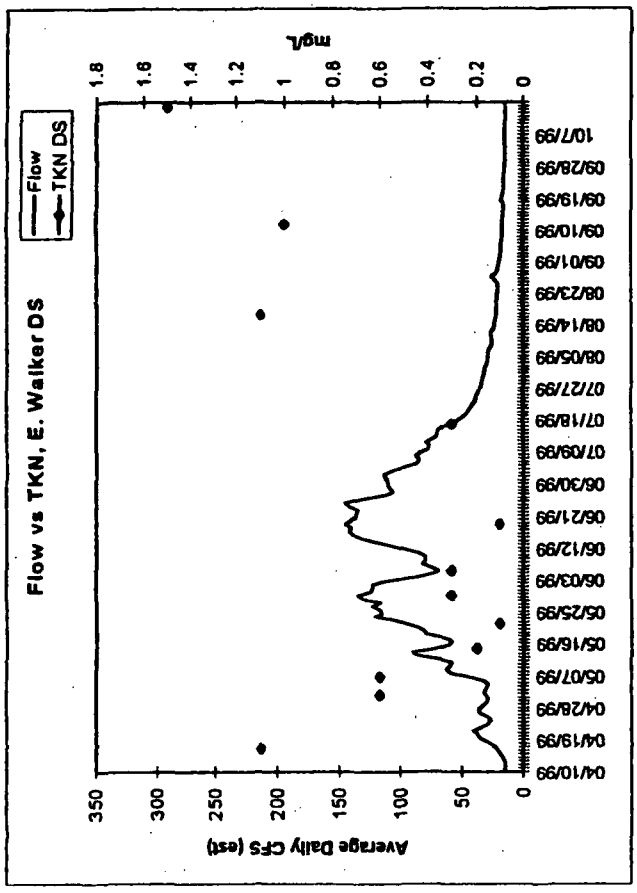


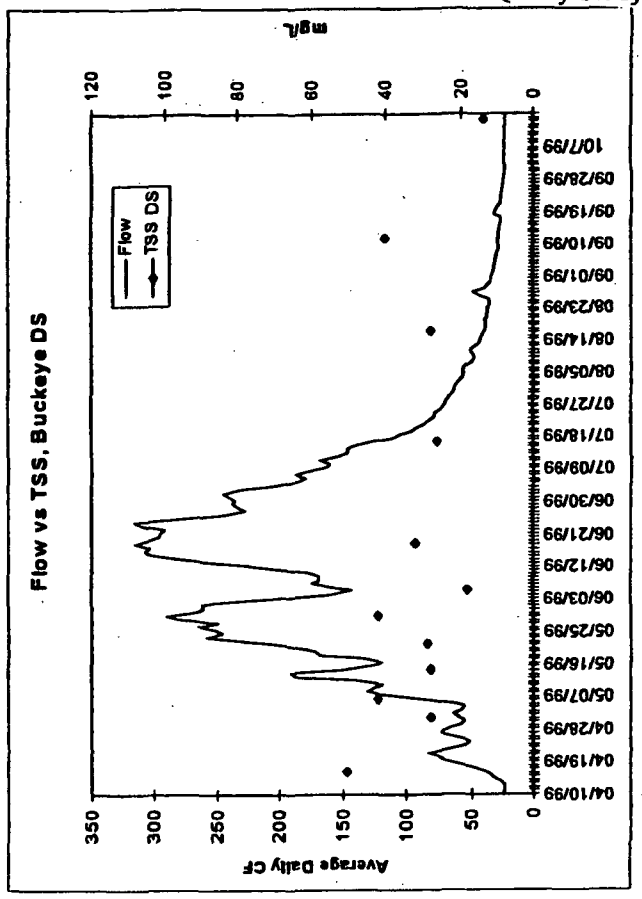


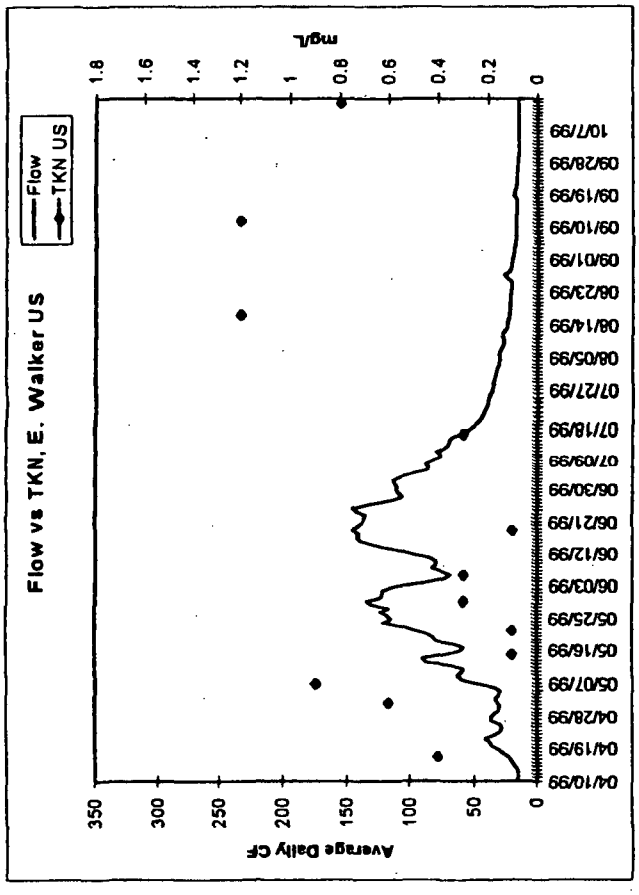




FIGURES 3 and 4: Flow vs TKN, Buckeye and Robinson







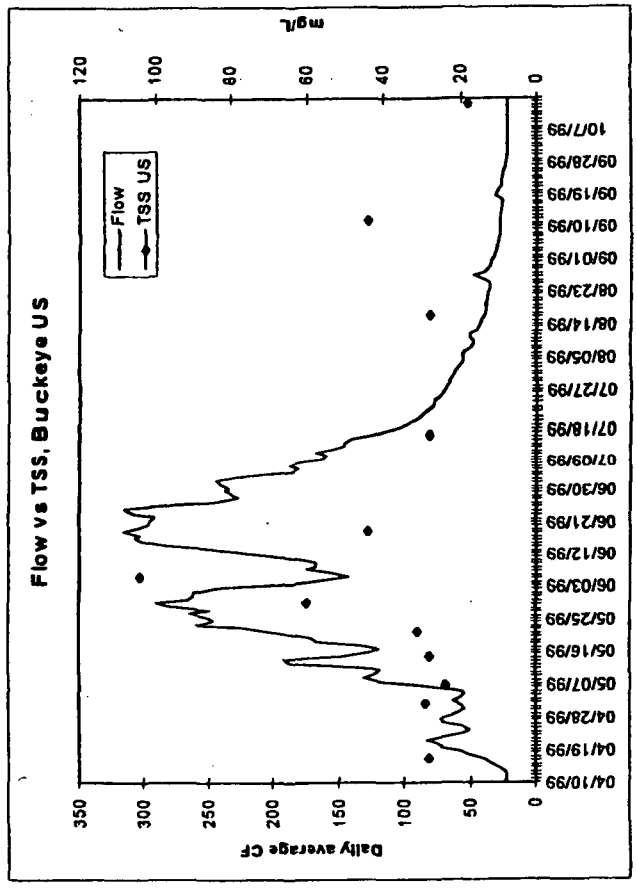
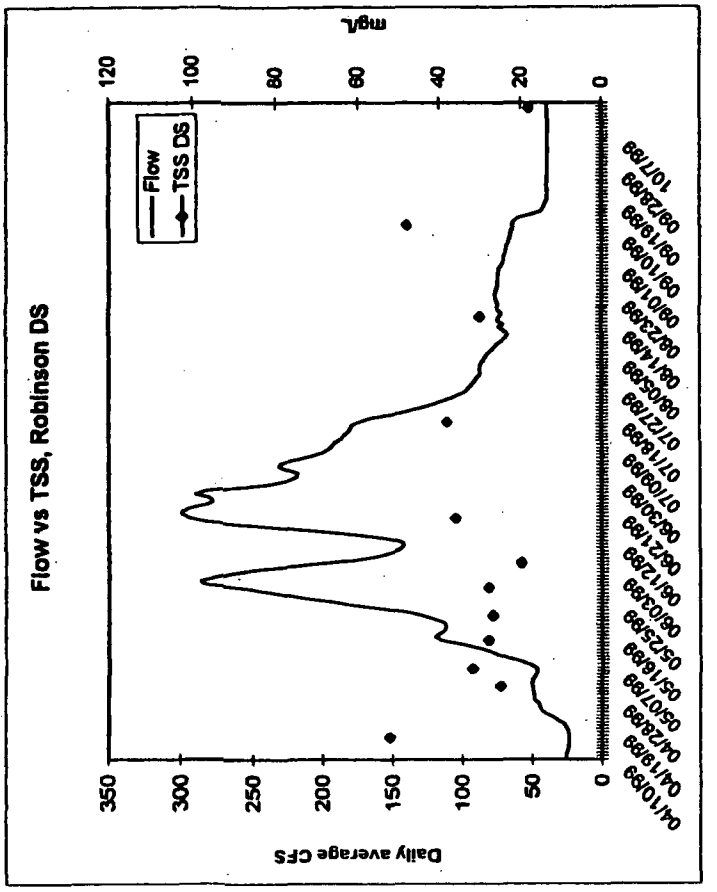
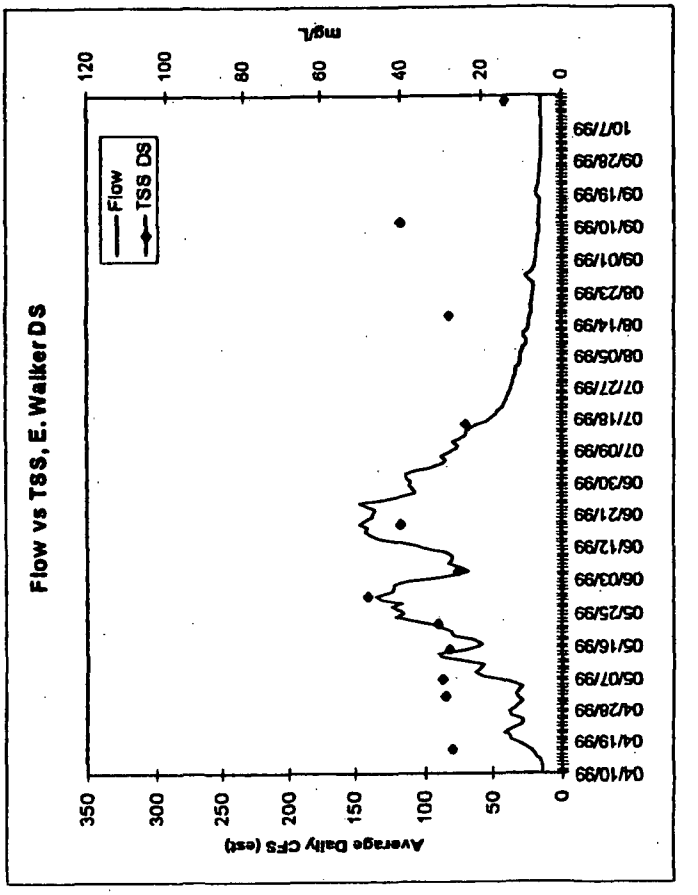
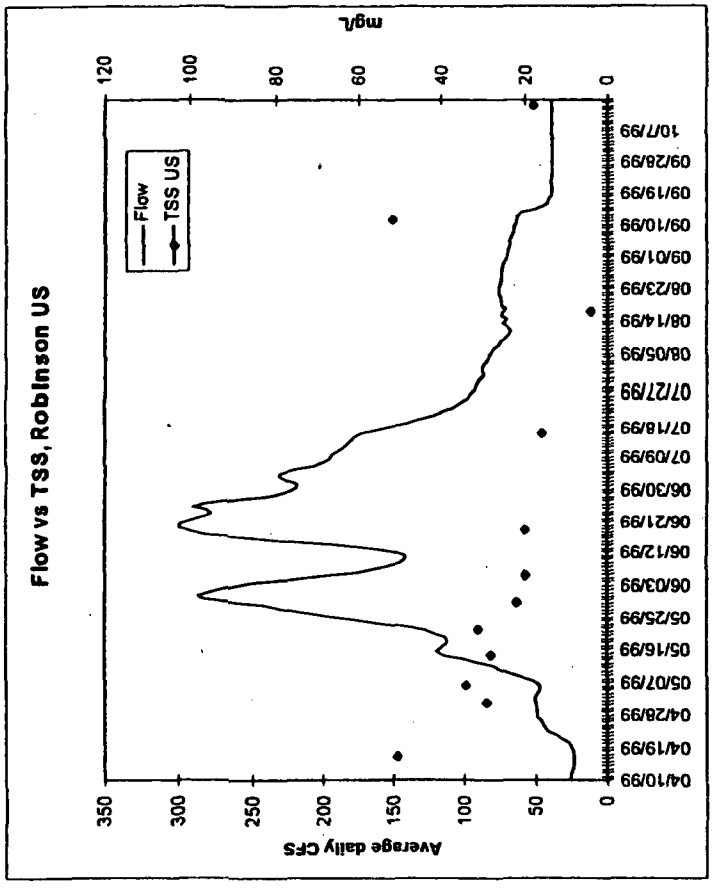
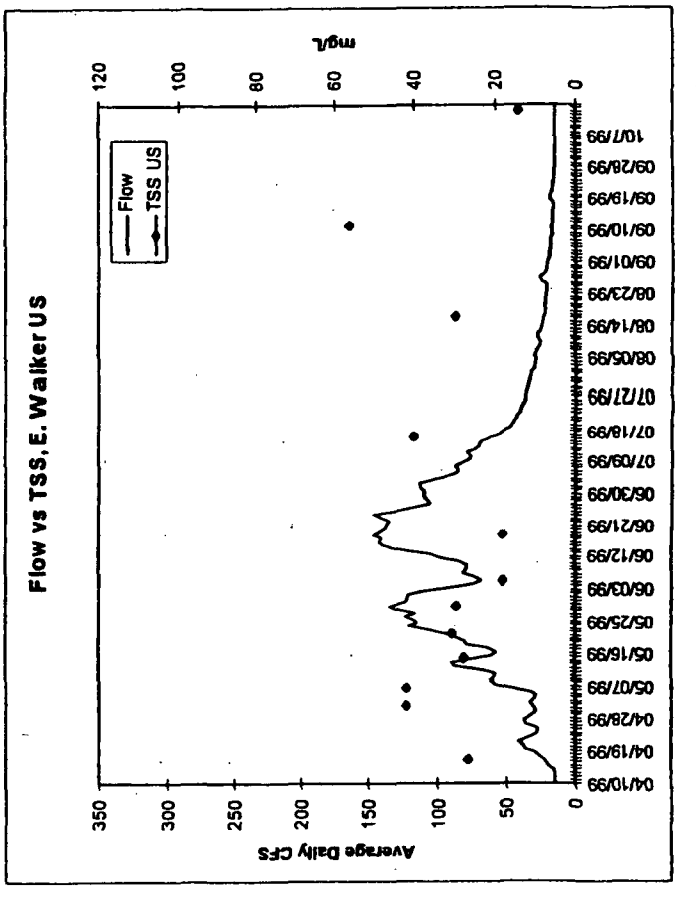


FIGURE 5: Flow vs TKN, E. Walker
FIGURE 6: Flow vs TSS, Buckeye









FIGURES 7 and 8: Flow vs TSS, Robinson and E. Walker

Oil spill on Walker River will hurt fish, aquatic life

PAUL WHITE

The East Fork of the Walker River has been the site of intense cleanup efforts after a fatal tanker truck accident Dec. 30 spilled about 3,600 gallons of fuel oil into the productive brown and rainbow trout stream.

Heath A. Curten of Bakersfield, Calif., was driving the truck when he apparently lost control on the winding highway and his vehicle crashed. Curten, 23, was partially ejected from the cab and killed.

Cleanup efforts started the next day and by mid-January, it was estimated that the cleanup crews being coordinated by the California Department of Fish and Game had recovered about one-third of the fuel spilled into the river.

A successful cleanup of that oil spill is essential to the long-term future of that productive trout fishery.

"They've had less than 20 dead fish," said Mike Sevon, a Nevada Division of Wildlife fisheries biologist. "Initial mortalities are not the problem, the long-term problems are what we are most concerned about."

The process of cleaning up the fuel oil involves placing booms with absorbent padding across the river.

The spill took place about three miles below Bridgeport (Calif.) Reservoir and is about eight miles from the Nevada state line.

Sevon said there are 22 booms in California along the river and three booms in Nevada located at various locations along the river.

Cold air and water temperatures are helping to reduce the spread of the spill by causing the oil to coagulate into clumps. But the cold also makes the job particularly hard on the workers.

"The specific gravity of the fuel oil allowed it to go down the river, basically floating on top of the water," Sevon said.

But fuel oil and river water full of trout and aquatic insects just don't mix.

"The concern is that any fuel oil that is remaining in the river system will have an impact on the primary productivity of the stream," he said.

Scott Sady/Reno Gazette-Journal file

DIRTY WORK: Cleanup crews work to collect the roughly 3,600 gallons of thick fuel oil that spilled into the Walker River north of Bridgeport when the truck carrying it overturned on a curve.

J. Kurowski/Reno Gazette-Journal

The aquatic insects that cling to the rocks are what feed the substantial trout populations in the river.

Fish and game biologists worry about the food chain and the ability of the trout to spawn in clean spawning beds this spring.

"This fuel oil will potentially affect the primary productivity, decrease the production of the insects that the fish live on and, over the long-term, decrease the value of the fishery that we have there," Sevon said.

The East Fork of the Walker River is an important river system.

As a fishery, it is highly valued by anglers in the area. The Nevada Division of Wildlife says its one of the most important river fisheries in the state of Nevada.

And while the spill has resulted in a devastating setback to the fabulous fisheries in the area, human cleanup crews will do their best to remove the oil.

But in the long run, it will be Mother Nature that eventually will scrub away all evidence of the spill and restore the area's aquatic life.

Paul G. White is the hunting and fishing writer for the Reno Gazette-Journal.

Comments? Send them to Paul White, c/o Reno Gazette-Journal, P.O. Box 22000, Reno, 89520. Or e-mail me at pwhite@rgj.com.

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER QUALITY PLANNING
GRAB/SURFACE WATER SAMPLES
PROVISIONAL RECORDS

STORET ID 310027

DATE	18-Mar-97	13-May-97	15-Jul-97	09-Sep-97	24-Nov-97	21-Jan-98	10-Mar-98	14-Jul-98	08-Sep-98	09-Nov-98
TIME	1300	1310	1320	1330	1325	1315	1325	1310	1400	1330
TEMP as C	16	18	18		7.5	5.5	10.8		18.4	6.7
DISS O2	8.6	7.4	10		10.3	10			8.3	9.6
CONDUCTIVITY UM/CM	310	292	265	258	401	318	340			365
pH LAB	8.2	8.3	8.4	8.1	8.2	8	7.9			8.2
pH FIELD	7.85	7.98	8.31	8.22	8.12	8.12	8.11		7.8	7.95
TURBID NTU	6.5	14	3	2.3	2.3	6.6	85			3.2
COLOR PL -CO	7	40	17	5	7	5	15			10
TDS PPM	213	194	190	171	264	204	215	183	206	233
TSS PPM	18	24	2	4	9	22	229	< 10	< 10	7
BICARB as HCO3	95	112	100	85	151	98	110			127
CO3 as CO3	5	2	7	0	0	0	0			0
ALKAL as CaCO3	86	96	94	70	124	80	90	91	95	104
ALKAL BICARB	78	92	82	70	124	80	90	91	95	104
ALKAL CARB	8	4	12	0	0	0	0	< 20	< 20	0
N TOTAL	0.88	0.8	0.68	0.27	0.32	0.75	0.67			0.59
NITRITE as N	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01
NITRATE MG/L	0.33	0.11	0.06	0.07	0.04	0.18	0.08			0.04
N,AMMON DISS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.06	0.14	< 0.1
NH3-NH3 UNIONZD	0.005	0.006	0.007		0.002	0.001	0.002		0.003	0.002
N-TOTAL KJELDAHL	0.54	0.68	0.61	0.19	0.27	0.56	0.6	0.45	0.4	0.54
P TOTAL	0.12	0.17	0.08	0.08	0.11	0.08	0.41	0.15	0.13	0.08
P DISS PO4	0.09	0.09	0.06	0.05	0.08	0.04	0.04	0.11	0.1	0.07
CHLORIDE DISS	2	1	1	1	2	2	2	1	2	1
SULFATE DISS	65	44	42	49	71	69	72	33.5	51.4	58
FECAL STREP	30	900	> 1000	890	170	130	< 10	430	270	70
E. COLI	42	> 2005	> 2005	591	20	< 10	< 10	254	64	10

USGS Flow Data cfs

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER QUALITY PLANNING
GRAB/SURFACE WATER SAMPLES
PROVISIONAL RECORDS

STORET ID 310028

DATE	18-Mar-97	13-May-97	15-Jul-97	09-Sep-97	24-Nov-97	21-Jan-98	14-Jul-98	08-Sep-98	09-Nov-98
TIME	1330	1450	1430	1435	1430	1405	1430	1505	1430
TEMP as C	9	16	21		5	1.5		23.5	7.9
DISS O2	9.4	8.1	7.1		9.6	10.6		7.8	9.1
CONDUCTIVITY UM/CM	135	144	107	131	161	212			151
pH LAB	8.3	8.1	8.1	8.9	8.4	8.2			8
pH FIELD		8.57	6.8	9.08	9.03	8.33		8.9	8.77
TURBID NTU	4.9	5.6	3.8	4	3.4	4.2			3.8
COLOR PL -CO	12	15	15	12	10	12			12
TDS PPM	76	81	70	73	88	122	71	84	89
TSS PPM	9	10	5	5	5	9	10	< 10	5
BICARB as HCO3	59	73	61	56	68	105			73
CO3 as CO3	5	0	0	7	7	0			0
ALKAL as CaCO3	56	60	50	58	68	86	50	85	60
ALKAL BICARB	48	60	50	46	56	86	50	85	60
ALKAL CARB	8	0	0	12	12	0	< 20	< 20	0
N TOTAL	0.46	0.63	0.65	0.46	0.76	0.89			1.19
NITRITE as N	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.02	0.03	0.02
NITRATE MG/L	0.01	0.02	0.04	0.04	0.23	0.16			0.15
N,AMMON DISS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.11	0.06	0.06	0.19
NH3-NH3 UNIONZD	0.003	0.004	0.005		0.003	0.002		0.017	0.003
N-TOTAL KJELDAHL	0.44	0.6	0.6	0.41	0.51	0.72	0.32	0.5	1.02
P TOTAL	0.04	0.07	0.04	0.04	0.06	0.08	0.04	0.05	0.08
P DISS PO4	0.02	0.02	0.02	0.02	0.02	0.05	< 0.06	< 0.06	0.04
CHLORIDE DISS	2	1	1	1	2	3	0.9	0.9	1
SULFATE DISS	9	8	6	6	8	14	6	5.7	6
FECAL STREP	< 10	< 10	30	20	10	< 10	50	10	10
E. COLI	< 10	< 10	< 10	< 10	< 10	< 10	10	< 10	< 10
USGS Flow Data cfs	246	508	324	273					

This printout includes data submitted by USGS in response to March 2001 303d solicitation process, and other data collected as part of the Bridgeport Reservoir TMDL study. It was redone in an easier-to-read format compared to earlier USGS submittals.

RDB file created by NWIS qwflatout program

STAID	SNAME	DATES	TIMES	CFS P00061	Residue P70300	Air MM/Hg P00025	DO P00300	%DO P00301	pH P00400	S.C P00095	Temp C P00010	N-NH4 P00608
10289000	VIRGINIA C NR BRIDGEPORT CA	20010411	1535	17	2.1	589	8.6	94.2	8.1	118	8	0.008
10289000	VIRGINIA C NR BRIDGEPORT CA	20010510	1620	29	7.7	596	6.5	85.3	7.9	86	16.5	0.002
10289000	VIRGINIA C NR BRIDGEPORT CA	20010606	1530	12	1.9	599	6.6	91.1	8.3	83	19	0.008
10289500	GREEN C NR BRIDGEPORT CA	20010410	1830	19	0.7	588	9.4	88.2	7.8	65	2	0.004
10289500	GREEN C NR BRIDGEPORT CA	20010510	1515	89	5.3	593	7.1	80.1	7.8	38	9.5	< 0.002
10289500	GREEN C NR BRIDGEPORT CA	20010606	1445	47	0.7	596	6.5	79.2	7.8	36	13	0.006
10290200	E WALKER R A BRIDGEPORT CA	20010410	1510	52	5	597	8.6	95.9	8.3	361	9.5	0.012
10290200	E WALKER R A BRIDGEPORT CA	20010509	1740	36	9.1	602	6.7	92.5	8.4	156	19.5	0.003
10290200	E WALKER R A BRIDGEPORT CA	20010605	925	69	6.5	599	7.3	84.7	7.6	144	11	0.007
10290500	ROBINSON C A TWIN LKS OUTLET NR BRIDGEPORT CA	20010410	1150	31	0.5	583	8.8	88.8	7.8	59	4.5	0.006
10290500	ROBINSON C A TWIN LKS OUTLET NR BRIDGEPORT CA	20010511	1040	131	3.7	590	8.2	97.5	7.7	60	11.5	< 0.002
10290500	ROBINSON C A TWIN LKS OUTLET NR BRIDGEPORT CA	20010607	920	120	1.1	592	7.3	91.3	7.5	53	14	0.004
10291100	ROBINSON C A HWY 395 NR BRIDGEPORT CA	20010412	1240	1.4	1.1	599	8.6	96.1	7.3	85	9.5	0.012
10291100	ROBINSON C A HWY 395 NR BRIDGEPORT CA	20010509	1255	16	5	602	6.6	86.3	7.3	57	16.5	< 0.002
10291100	ROBINSON C A HWY 395 NR BRIDGEPORT CA	20010605	1345	30	1.7	599	7.2	94.7	7.3	57	17	0.006
10291200	ROBINSON C A BRIDGEPORT RES NR BRIDGEPORT CA	20010411	1200	5.3	1.2	595	8.9	96.2	7.7	126	8	0.008
10291200	ROBINSON C A BRIDGEPORT RES NR BRIDGEPORT CA	20010510	1120	22	4.9	604	7.5	89.6	7.5	76	12.5	0.002
10291200	ROBINSON C A BRIDGEPORT RES NR BRIDGEPORT CA	20010606	1110	24	1.5	604	8.1	99.3	7.8	65	14	0.008
10291500	BUCKEYE CNR BRIDGEPORT CA	20010410	1020	23	0.7	585	9.6	85.5	7.9	79	0	0.011
10291500	BUCKEYE CNR BRIDGEPORT CA	20010511	930	164	4.4	593	9.7	94.8	7.4	28	4	0.002
10291500	BUCKEYE CNR BRIDGEPORT CA	20010607	1015	105	0.9	596	8.9	94.2	7.3	36	7	0.005
10291800	BUCKEYE C A HWY 395 NR BRIDGEPORT CA	20010412	1145	7.9	1	600	9.2	92.9	7.6	98	5.5	0.004
10291800	BUCKEYE C A HWY 395 NR BRIDGEPORT CA	20010509	1150	120	12	602	7.6	84.8	7.3	35	9.5	< 0.002
10291800	BUCKEYE C A HWY 395 NR BRIDGEPORT CA	20010605	1250	54	2.3	599	7.6	94.3	7.3	45	14	0.004
10292000	SWAUGER CNR BRIDGEPORT CA	20010412	1045	11	5.2	596	9.4	88.3	7.8	130	2.5	0.006
10292000	SWAUGER CNR BRIDGEPORT CA	20010509	1350	5.5	10	598	6.7	91.4	8.2	156	18.5	0.013
10292000	SWAUGER CNR BRIDGEPORT CA	20010605	1150	3.8	3.9	595	7.7	98.3	8.3	176	15	0.007
10292100	BUCKEYE CA BRIDGEPORT RES NR BRIDGEPORT CA	20010411	1100	13	1.4	595	9.1	92.7	7.7	140	5.5	0.006
10292100	BUCKEYE CA BRIDGEPORT RES NR BRIDGEPORT CA	20010510	1010	144	14	604	7.6	79.5	7.4	45	7	0.005
10292100	BUCKEYE CA BRIDGEPORT RES NR BRIDGEPORT CA	20010606	955	52		604	7.7	86	7.2	57	10	0.006
10293000	E WALKER R NR BRIDGEPORT CA	20010410	1410	75	1.6	597	8.1	87.8	8.1	228	8	0.009
10293000	E WALKER R NR BRIDGEPORT CA	20010509	1550	213	2.9	604	6.9	83.5	8.4	224	13.5	0.012
10293000	E WALKER R NR BRIDGEPORT CA	20010605	1550	138	3	602	7	92.6	8.1	168	17	0.045

NH4 & Org Diss P00623	NH4+Org Total P00625	NO2/NO3 Diss P00631	Ortho P P00671	Total P P00665	Fecal P31625	Strep P31673	Solids P80154	Disch SS P80155
0.21	0.2	0.008	0.013	0.032	E 1	5	9	0.42
0.19	0.28	0.009	0.01	0.044	E 4	28	14	1.1
E 0.08	0.13	0.014	0.017	0.037	E 7	64	7	0.23
< 0.1	0.1	0.03	< 0.007	0.004	< 1	64	2	0.1
E 0.06	0.14	0.006	< 0.007	0.012	E 2	8	8	1.9
0.1	0.09	0.007	< 0.007	0.009	E 2	5	2	0.25
0.32	0.49	0.006	0.024	0.055	E 8		9	1.3
0.42	0.48	< 0.005	0.018	0.054	63	59	9	0.87
0.35	0.37	< 0.005	E 0.005	0.034	170	240	5	0.94
< 0.1	E 0.08	< 0.005	< 0.007	0.005	< 1	1	1	0.08
E 0.06	E 0.06	< 0.005	< 0.007	0.004	< 1	1	2	0.71
0.11	E 0.08	< 0.005	< 0.007	0.006	< 47	1	1	0.32
E 0.09	0.1	0.023	< 0.007	0.008	< 1	6	3	0.01
0.23	0.29	< 0.005	E 0.006	0.034	47	140	7	0.29
E 0.07	0.14	< 0.005	< 0.007	0.018	E 630	69	8	0.64
0.12	0.16	0.006	E 0.005	0.016	E 1	6	4	0.06
0.29	0.35	< 0.005	< 0.007	0.037	50	120	9	0.53
0.11	0.14	< 0.005	< 0.007	0.015	54	62	2	0.13
< 0.1	0.1	0.017	< 0.007	0.009	< 1	1	5	0.32
E 0.06	0.19	0.017	E 0.005	0.055	E 2	3	46	20
< 0.1	E 0.04	0.014	< 0.007	0.012	47	14	8	2.3
E 0.05	0.09	0.005	< 0.007	0.01	E 1	1	2	0.04
0.16	0.41	0.005	E 0.005	0.115	E 15	58	77	25
< 0.1	0.12	< 0.005	< 0.007	0.018	50	44	9	1.3
0.11	0.27	0.082	0.035	0.082	E 1	16	20	0.57
0.29	0.51	0.102	0.067	0.117	E 3	73	16	0.24
0.1	0.17	0.086	0.057	0.085	E 130	330	6	0.06
E 0.09	0.16	< 0.005	0.009	0.024	E 1		3	0.11
0.17	0.36	0.008	0.012	0.089	< 120	120	127	49
0.16	0.21	0.007	0.021	0.057	E 1600	150	18	2.5
0.23	0.36	0.007	< 0.007	0.024	< 1	1	3	0.61
0.34	0.45	< 0.005	0.009	0.028	E 1	6	4	2.3
0.39	0.46	0.013	0.01	0.045	E 1	2	7	2.6

SNAME	DATES	Original Text Total P. (mg/l)	Text w/o 1st character* Total P. (mg/l)	Text w/o 1st character Total N (mg/l)	Mass P Load (g/d)	Mass P Load (lb/d)	Mass N Load (g/d)	Mass N Load (lb/d)
49S	8S	9S		9S				
VIRGINIA C NR BRIDGEPORT CA	20001010	0.051	0.051	0.24	648.9041	1.430596	3053.666	6.732217
VIRGINIA C NR BRIDGEPORT CA	20001113	0.036	0.036	0.214	836.822	1.844886	4974.442	10.96682
VIRGINIA C NR BRIDGEPORT CA	20001213	0.038	0.038	0.1925	1394.703	3.074811	7065.274	15.57634
VIRGINIA C NR BRIDGEPORT CA	20010110	0.03	0.03	0.146	616.6057	1.35939	3000.814	6.615698
VIRGINIA C NR BRIDGEPORT CA	20010215	0.039	0.039	0.237	1335.979	2.945345	8118.642	17.89863
VIRGINIA C NR BRIDGEPORT CA	20010312	0.032	0.032	0.177	939.5896	2.071451	5197.105	11.45772
GREEN C NR BRIDGEPORT CA	20001010	E.003	.003	0.1125	46.97948	0.103573	1761.731	3.883971
GREEN C NR BRIDGEPORT CA	20001113	0.004	0.004	0.105	70.46922	0.155359	1849.817	4.07817
GREEN C NR BRIDGEPORT CA	20001212	<.004	.004	0.112	51.87318	0.114361	1452.449	3.202119
GREEN C NR BRIDGEPORT CA	20010110	E.002	.002	0.115	29.85155	0.065812	1716.464	3.784175
GREEN C NR BRIDGEPORT CA	20010214	E.003	.003	0.138	73.40544	0.161832	3376.65	7.444278
GREEN C NR BRIDGEPORT CA	20010314	E.003	.003	0.065	52.85192	0.116519	1145.125	2.524581
E WALKER R A BRIDGEPORT CA	20001011	0.069	0.069	0.306	5064.975	11.16642	22462.06	49.52063
E WALKER R A BRIDGEPORT CA	20001113	0.016	0.016	0.135	1409.384	3.107177	11891.68	26.21681
E WALKER R A BRIDGEPORT CA	20001211	0.013	0.013	0.115	1017.889	2.244072	9004.401	19.85141
E WALKER R A BRIDGEPORT CA	20010111	0.048	0.048	0.311	4697.948	10.35726	30438.79	67.10639
E WALKER R A BRIDGEPORT CA	20010213	0.032	0.032	0.222	2427.273	5.351249	16839.21	37.12429
E WALKER R A BRIDGEPORT CA	20010312	0.088	0.088	0.5725	10550.81	23.26067	68640.2	151.3265
ROBINSON C A TWIN LKS OUTLET NR BRIDGEP	20001012	E.003	.003	0.1025	154.1514	0.339847	5266.84	11.61146
ROBINSON C A TWIN LKS OUTLET NR BRIDGEP	20001114	0.004	0.004	0.176	117.4487	0.258931	5167.743	11.39298
ROBINSON C A TWIN LKS OUTLET NR BRIDGEP	20001213	0.005	0.005	0.153	122.3424	0.26972	3743.677	8.253439
ROBINSON C A TWIN LKS OUTLET NR BRIDGEP	20010111	0.009	0.009	0.145	127.7255	0.281588	2057.799	4.536694
ROBINSON C A TWIN LKS OUTLET NR BRIDGEP	20010216	0.007	0.007	0.1025	222.6632	0.490891	3260.425	7.188044
ROBINSON C A TWIN LKS OUTLET NR BRIDGEP	20010314	0.004	0.004	0.0525	137.0235	0.302087	1798.433	3.964887
ROBINSON C A HWY 395 NR BRIDGEPORT CA	20001012	0.006	0.006	0.1025	74.87355	0.165069	1279.09	2.819925
ROBINSON C A HWY 395 NR BRIDGEPORT CA	20001114	E.002	.002	0.166	10.27676	0.022656	852.9712	1.880489

SNAME	DATES	Original Text Total P (mg/l)	Text w/o 1st character* Total P. (mg/l)	Text w/o 1st character* Total N (mg/l)		Mass P Load (g/d)	Mass P Load (lb/d)	Mass N Load g/d)	Mass Load (lb/d)
ROBINSON C A HWY 395 NR BRIDGEPORT CA	20001212	<.004	0.002	0.061		22.02163	0.04855	671.6598	1.480764
ROBINSON C A HWY 395 NR BRIDGEPORT CA	20010110	0.004	0.004	0.133		26.42596	0.05826	878.6631	1.937131
ROBINSON C A HWY 395 NR BRIDGEPORT CA	20010214	0.01	0.01	0.121		244.6848	0.53944	2960.686	6.52723
ROBINSON C A HWY 395 NR BRIDGEPORT CA	20010313	0.007	0.007	0.1725		256.919	0.566412	6331.219	13.95802
ROBINSON C A BRIDGEPORT RES NR BRIDGEP	20001011	0.014	0.014	0.1225		229.5143	0.505995	2008.25	4.427458
ROBINSON C A BRIDGEPORT RES NR BRIDGEP	20001115	0.009	0.009	0.129		92.49085	0.203908	1325.702	2.922688
ROBINSON C A BRIDGEPORT RES NR BRIDGEP	20001211	0.01	0.01	0.06		161.492	0.356031	968.9518	2.136184
ROBINSON C A BRIDGEPORT RES NR BRIDGEP	20010112	0.013	0.013	0.115		92.24617	0.203369	816.0238	1.799034
ROBINSON C A BRIDGEPORT RES NR BRIDGEP	20010215	0.013	0.013	0.115		111.3316	0.245445	984.8563	2.171248
ROBINSON C A BRIDGEPORT RES NR BRIDGEP	20010313	0.07	0.07	0.807		1610.026	3.549518	18561.3	40.92087
BUCKEYE C NR BRIDGEPORT CA	20001012	0.006	0.006	0.1025		278.9407	0.614962	4765.236	10.5056
BUCKEYE C NR BRIDGEPORT CA	20001114	0.007	0.007	0.109		376.8146	0.830738	5867.542	12.93578
BUCKEYE C NR BRIDGEPORT CA	20001213	0.004	0.004	0.056		156.5983	0.345242	2192.376	4.833387
BUCKEYE C NR BRIDGEPORT CA	20010111	0.007	0.007	0.083		205.5352	0.45313	2437.061	5.372827
BUCKEYE C NR BRIDGEPORT CA	20010216	0.008	0.008	0.155		274.047	0.604173	5309.66	11.70586
BUCKEYE C NR BRIDGEPORT CA	20010314	0.008	0.008	M		254.4722	0.561018	0	0
BUCKEYE C A HWY 395 NR BRIDGEPORT CA	20001012	0.013	0.013	0.1425		381.7083	0.841527	4184.11	9.224432
BUCKEYE C A HWY 395 NR BRIDGEPORT CA	20001114	0.008	0.008	0.175		166.3857	0.36682	3639.686	8.024177
BUCKEYE C A HWY 395 NR BRIDGEPORT CA	20001212	0.004	0.004	M		107.6613	0.237354	0	0
BUCKEYE C A HWY 395 NR BRIDGEPORT CA	20010110	0.008	0.008	0.108		86.12905	0.189883	1162.742	2.563421
BUCKEYE C A HWY 395 NR BRIDGEPORT CA	20010214	0.009	0.009	0.135		308.3028	0.679695	4624.543	10.19542
BUCKEYE C A HWY 395 NR BRIDGEPORT CA	20010313	0.01	0.01	M		244.6848	0.53944	0	0
SWAUGER C NR BRIDGEPORT CA	20001012	0.023	0.023	0.2325		315.154	0.694799	3185.796	7.023515
SWAUGER C NR BRIDGEPORT CA	20001114	0.051	0.051	0.251		549.0727	1.210504	2702.299	5.95758
SWAUGER C NR BRIDGEPORT CA	20001212	0.054	0.054	0.152		805.9917	1.776917	2268.717	5.001692
SWAUGER C NR BRIDGEPORT CA	20010109	0.047	0.047	0.224		690.0111	1.521222	3288.564	7.25008

SNAME	DATES	Original Text Total P. (mg/l)	Text w/o 1st character* Total P. (mg/l)	Text w/o 1st character* Total N (mg/l)	Mass P Load (g/d)	Mass P Load (lb/d)	Mass N Load (g/d)	Mass N Load (lb/d)
SWAUGER C NR BRIDGEPORT CA	20010214	0.049	0.049	0.196	791.3106	1.74455	3165.243	6.978202
SWAUGER C NR BRIDGEPORT CA	20010313	0.063	0.063	0.219	1125.305	2.480887	3911.776	8.624035
BUCKEYE C A BRIDGEPORT RES NR BRIDGEPO	20001011	0.038	0.038	0.2425	1859.604	4.099748	11867.21	26.16286
BUCKEYE C A BRIDGEPORT RES NR BRIDGEPO	20001115	0.051	0.051	0.178	3119.731	6.877866	10888.47	24.0051
BUCKEYE C A BRIDGEPORT RES NR BRIDGEPO	20001211	0.04	0.04	0.108	2642.596	5.825957	7135.009	15.73008
BUCKEYE C A BRIDGEPORT RES NR BRIDGEPO	20010112	0.024	0.024	0.127	998.314	2.200917	5282.745	11.64652
BUCKEYE C A BRIDGEPORT RES NR BRIDGEPO	20010112	0.04	0.04	0.162				
BUCKEYE C A BRIDGEPORT RES NR BRIDGEPO	20010215	0.023	0.023	0.143	1181.828	2.605497	7347.885	16.1994
BUCKEYE C A BRIDGEPORT RES NR BRIDGEPO	20010313	0.04	0.04	0.167	2838.344	6.257509	11850.08	26.1251
E WALKER R NR BRIDGEPORT CA	20001011	0.153	0.153	0.237	26205.74	57.77407	40593.21	89.49317
E WALKER R NR BRIDGEPORT CA	20001113	0.052	0.052	0.626	2417.486	5.329672	29102.81	64.16105
E WALKER R NR BRIDGEPORT CA	20001212	0.03	0.03	0.505	1908.541	4.207636	32127.11	70.82853
E WALKER R NR BRIDGEPORT CA	20010111	0.035	0.035	0.509	1284.595	2.832062	18681.68	41.18628
E WALKER R NR BRIDGEPORT CA	20010213	0.039	0.039	0.524	2099.396	4.628399	28207.26	62.1867
E WALKER R NR BRIDGEPORT CA	20010312	0.062	0.062	0.489	2427.273	5.351249	19144.14	42.20582

* "E" :stands for estimated. It is estimated because the number is less than the recording level of the lab.
"<" :below detection limit and is represented by a value of half (0.5) detection limit

Judith this is mainly what I have –

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
Virginia Crk near BP	4/12/00	0.271	0.007	0.278	0.033	0.013	8.64	8.26
Virginia Crk near BP	5/10/00	0.38	0.01	0.39	0.025	0.014	8.6	8
Virginia Crk near BP	6/5/00	0.25	0.015	0.265	0.045	0.006	7.2	7.9
Virginia Crk near BP	7/12/00	0.21	0.081	0.291	0.032	0.016	7.5	8.1
Virginia Crk near BP	8/9/00	0.1	0.005	0.105	0.004	0.001		
Virginia Crk near BP	9/13/00	0.12	0.005	0.125	0.032	0.004	7.6	7.9
Virginia Crk near BP	10/10/00	0.22	0.02	0.24	0.051	0.024	8.4	8
Virginia Crk near BP	11/13/00	0.2	0.014	0.214	0.036	0.018	10.9	7.8
Virginia Crk near BP	12/13/00	0.19	0.005	0.195	0.038	0.007	10.4	8

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
East Walker @ BP	4/12/00	0.524	0.005	0.529	0.051	0.023	9.44	8.21
East Walker @ BP	5/10/00	0.6	0.005	0.605	0.042	0.019	8.5	8.5
East Walker @ BP	6/7/00	0.52	0.009	0.529	0.041	0.007	7.5	7.7
East Walker @ BP	7/11/00	0.37	0.005	0.375	0.042	0.016	7.2	8.3
East Walker @ BP	8/8/00	0.52	0.005	0.525	0.042	0.016	9.1	8.4
East Walker @ BP	9/12/00	0.27	0.005	0.275	0.03	0.013	9.2	7.6
East Walker @ BP	10/11/00	0.19	0.116	0.306	0.069	0.033	9.1	7.6
East Walker @ BP	11/13/00	0.13	0.005	0.135	0.016	0.008	11.4	7.2
East Walker @ BP	12/11/00	0.11	0.005	0.115	0.013	0.004	10.4	8.4

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
Green Crk near BP	6/6/00	0.09	0.011	0.101	0.004	0.001	8.3	7.1
Green Crk near BP	7/12/00	0.1	0.006	0.106	0.004	0.001	8.3	7.4
Green Crk near BP	8/9/00	0.18	0.023	0.203	0.034	0.017		
Green Crk near BP	9/13/00	0.06	0.005	0.065	0.008	0.019	7.6	7.1
Green Crk near BP	10/10/00	0.11	0.005	0.115	0.003	0.007	8.4	7.4
Green Crk near BP	11/13/00	0.1	0.005	0.105	0.004	0.007	11	7.6
Green Crk near BP	12/12/00						10.6	7.9

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
Robinson Crk @ TL	4/12/00	0.081	0.005	0.086	0.004	0.001	9.56	8.24
Robinson Crk @ TL	5/10/00	0.1	0.005	0.105	0.008	0.001	8.9	8
Robinson Crk @ TL	6/8/00	0.07	0.007	0.077	0.008	0.001	8.2	7.8
Robinson Crk @ TL	7/13/00	0.14	0.005	0.145	0.005	0.001	7.6	7.8
Robinson Crk @ TL	8/10/00	0.06	0.005	0.065	0.005	0.001	7.1	7.4
Robinson Crk @ TL	9/14/00	0.08	0.037	0.117	0.008	0.088	7.4	7.7
Robinson Crk @ TL	10/12/00	0.1	0.005	0.105	0.003	0.007	8.3	7.4
Robinson Crk @ TL	11/14/00	0.17	0.006	0.176	0.004	0.007	8.7	7.6
Robinson Crk @ TL	12/13/00						8.6	8.3

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
Robinson Crk @ 395	4/13/00	0.356	0.007	0.363	0.023	0.004	8.82	7.58
Robinson Crk @ 395	5/11/00	0.16	0.005	0.165	0.012	0.001	9.4	7.6
Robinson Crk @ 395	6/6/00	0.2	0.008	0.028	0.016	0.001	8.3	7.3
Robinson Crk @ 395	7/12/00	0.22	0.009	0.229	0.018	0.003	8.1	7.3
Robinson Crk @ 395	8/10/00	0.21	0.005	0.215	0.016	0.003		
Robinson Crk @ 395	9/13/00	0.1	0.017	0.117	0.005	0.001	8	7.2
Robinson Crk @ 395	10/12/00	0.1	0.005	0.105	0.006	0.007	8.2	6.8
Robinson Crk @ 395	11/14/00	0.15	0.016	0.166	0.002	0.007	9.6	7.3
Robinson Crk @ 395	12/12/00						10.1	7.8

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
Robinson Crk @ BP	4/11/00	0.128	0.005	0.132	0.014	0.006	9.1	8.25
Robinson Crk @ BP	5/9/00	0.35	0.005	0.355	0.018	0.002	7.6	8
Robinson Crk @ BP	6/7/00	0.26	0.01	0.27	0.027	0.001	7.4	7.7
Robinson Crk @ BP	7/11/00	0.22	0.008	0.228	0.026	0.003	6.6	7.5
Robinson Crk @ BP	8/9/00	0.35	0.005	0.355	0.026	0.003	7.3	7.6
Robinson Crk @ BP	9/12/00	0.16	0.005	0.165	0.016	0.007	7.6	7.1
Robinson Crk @ BP	10/11/00	0.12	0.005	0.125	0.014	0.005	7.8	7.6
Robinson Crk @ BP	11/15/00	0.12	0.009	0.129	0.009	0.009	9.1	7.4
Robinson Crk @ BP	12/11/00	0.1	0.01	0.11	0.01	0.007	10.2	8.2

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
Buckeye Crk near BP	4/12/00	0.132	0.005	0.137	0.014	0.002		
Buckeye Crk near BP	5/10/00	0.11	0.005	0.115	0.01	0.002	9.7	7.8
Buckeye Crk near BP	6/8/00	0.1	0.022	0.122	0.018	0.001	10	7.7
Buckeye Crk near BP	7/13/00	0.1	0.01	0.11	0.012	0.004	9.4	8
Buckeye Crk near BP	8/8/00	0.06	0.021	0.081	0.009	0.003	8.3	7.8
Buckeye Crk near BP	9/14/00	0.1	0.005	0.105	0.01	0.012	8.3	7.9
Buckeye Crk near BP	10/12/00	0.1	0.005	0.105	0.006	0.007	9.3	7.6
Buckeye Crk near BP	11/14/00	0.1	0.009	0.109	0.007	0.007	10.5	7.8
Buckeye Crk near BP	12/13/00						8.5	8.1

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
Buckeye Crk @ 395	4/13/00	0.522	0.005	0.527	0.116	0.01	8.95	7.66
Buckeye Crk @ 395	5/11/00	0.17	0.005	0.175	0.011	0.002	10	7.8
Buckeye Crk @ 395	6/6/00	0.17	0.013	0.183	0.032	0.001	9.4	6.9
Buckeye Crk @ 395	7/12/00	0.19	0.005	0.195	0.029	0.006	8.8	7.5
Buckeye Crk @ 395	8/10/00	0.32	0.005	0.325	0.036	0.011		
Buckeye Crk @ 395	9/13/00	0.14	0.046	0.186	0.018	0.006	7.6	7.2
Buckeye Crk @ 395	10/12/00	0.14	0.005	0.145	0.013	0.007	9.7	6.8
Buckeye Crk @ 395	11/14/00	0.17	0.005	0.175	0.008	0.007	10.1	7.4

Buckeye Crk @ 395	12/12/00						10.4	7.9

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
Swauger Crk @	4/13/00	0.441	0.037	0.478	0.107	0.045	9.12	8.31
Swauger Crk @	5/11/00	0.19	0.052	0.242	0.044	0.038	10.9	8.3
Swauger Crk @	6/6/00	0.17	0.083	0.253	0.059	0.035	9.6	8
Swauger Crk @	7/12/00	0.29	0.18	0.47	0.09	0.056	9.1	8
Swauger Crk @	8/9/00	0.25	0.282	0.532	0.1	0.06	9.1	8
Swauger Crk @	9/13/00	0.25	0.148	0.398	0.091	0.045	8.5	7.3
Swauger Crk @	10/12/00	0.23	0.005	0.235	0.023	0.006	9.9	7.6
Swauger Crk @	11/14/00	0.11	0.141	0.251	0.051	0.038	10.1	7.7
Swauger Crk @	12/12/00	0.1	0.102	0.202	0.054	0.037	10.7	8.5

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
Buckeye Crk @ BP	4/11/00	0.28	0.005	0.285	0.048	0.022	8.67	7.51
Buckeye Crk @ BP	5/9/00	0.26	0.005	0.265	0.029	0.007	8.4	7.9
Buckeye Crk @ BP	6/7/00	0.22	0.012	0.232	0.045	0.005	8.2	7.6
Buckeye Crk @ BP	7/11/00	0.2	0.013	0.213	0.03	0.006	6.8	7.6
Buckeye Crk @ BP	8/8/00	0.58	0.005	0.585	0.1	0.044	7	7.5
Buckeye Crk @ BP	9/12/00	0.58	0.005	0.585	0.059	0.021	8.1	7.1
Buckeye Crk @ BP	10/11/00	0.24	0.005	0.245	0.038	0.013	7.6	8
Buckeye Crk @ BP	11/15/00	0.17	0.008	0.178	0.051	0.008	10.5	7.2
Buckeye Crk @ BP	12/11/00	0.1	0.008	0.108	0.04	0.007	10.3	7.9

SITE	Date	TKN mg/l	NO2/NO3-N mg/l	Total N mg/l	Total P mg/l	Ortho-P mg/l	DO mg/l	pH
East Walker near BP	4/12/00	0.463	0.005	0.468	0.031	0.004	8.34	8.31
East Walker near BP	5/10/00	0.93	0.017	0.947	0.038	0.014	8.1	8.5
East Walker near BP	6/7/00	0.51	0.028	0.538	0.073	0.036	7.7	8.3
East Walker near BP	7/11/00	0.99	0.019	0.109	0.14	0.082		8.3
East Walker near BP	8/8/00	1.3	0.02	1.32	0.18	0.127	6.2	8.8
East Walker near BP	9/12/00	0.99	0.036	1.026	0.145	0.089	6.7	8.3
East Walker near BP	10/11/00	0.23	0.007	0.237	0.153	0.006	7.1	7.1
East Walker near BP	11/13/00	0.23	0.006	0.236	0.052	0.005	10	7.9
East Walker near BP	12/12/00	0.49	0.015	0.505	0.03	0.01	9.4	9