Water Quality of the Lake Siskiyou Area and a Reach of Upper Sacramento River below Box Canyon Dam, California

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WATER QUALITY OF THE LAKE SISKIYOU AREA AND A REACH OF
UPPER SACRAMENTO RIVER BELOW BOX CANYON DAM, CALIFORNIA

MAY 1970 THROUGH SEPTEMBER 1971

By Alex E. Dong and Robert L. Tobin

U.S. GEOLOGICAL SURVEY, Water Resources Division

Water-Resources Investigations 15-73

Prepared in cooperation with
the Siskiyou County Flood Control
and Water Conservation District



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UNITED STATES DEPARTMENT OF THE INTERIOR

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INTRODUCTION

WATER QUALITY OF THE LAKE SISKIYOU AREA AND A REACH OF

UPPER SACRAMENTO RIVER BELOW BOX CANYON DAM, CALIFORNIA

MAY 1970 THROUGH SEPTEMBER 1971

Box Canyon Dam. The

Eucht of the sewage-disposal ponds.

By Alex E. Dong and Robert L. Tobin

ABSTRACT

Periodic field and laboratory measurements of water quality in samples from streams tributary to Lake Siskiyou, from the lake itself, and from selected downstream sites near three sewage-disposal ponds indicate that water in most of the inflows, in the lake, and in the downstream reach of the Sacramento River contain low concentrations of nitrogen and phosphorus.

Water samples from Wagon Creek and Cold Creek contain higher concentrations of nitrogen and phosphorus and have higher counts of total and fecal coliform bacteria than the water in samples from the other tributary streams. Analyses of samples from above and below the fish hatchery on Big Spring Creek (tributary to Cold Creek) indicate that the water downstream from the hatchery is higher in coliform bacteria counts, lower in dissolved oxygen, and higher in nitrogen and phosphorus concentrations.

Periodic water samples from one site in the lake indicate that thermal and dissolvedoxygen stratification occur in Lake Siskiyou during the summer.

In the Sacramento River below Lake Siskiyou, samples collected at sites downstream from the sewage effluent exhibit higher average concentrations of total phosphorus than samples from the upstream site. Concentrations of other constituents and coliform bacteria counts are similar in samples from sites upstream and downstream from the sewage effluent.

llected ar 22 sites (table 1). Exceptions were residual chlorine which a measured only at sites 15, 16, 17, 18, and 19, which are in the vicinity the sewage disposal ponds near the city of Mount Shasta. Samples for BOD re collected only at sites 16 and 17, and the birthy was measured regularly

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INTRODUCTION

Lake Siskiyou was formed in 1969 after completion of Box Canyon Dam on the Sacramento River near the town of Mount Shasta, Calif. The dam was constructed to provide a reservoir for recreation, fish and wildlife enhancement, and incidental flood control. The Siskiyou County Flood Control and Water Conservation District was formed to construct and operate the dam and reservoir, and is also responsible for the operation of three sewage-disposal ponds adjacent to the Sacramento River below Box Canyon Dam. The California Regional Water Quality Control Board--Central Valley Region, established water-quality standards and waste-discharge requirements for the Sacramento River in the area below the effluent of the sewage-disposal ponds. Subsequently, the Siskiyou County Flood Control and Water Conservation District requested that the U.S. Geological Survey prepare and execute a water-quality data-collection program.

Purpose and Scope

This report presents the data obtained by the U.S. Geological Survey, in cooperation with the Siskiyou County Flood Control and Water Conservation District. The purpose of the study was to obtain water-quality information in Lake Siskiyou, its tributaries, and the reach of the Sacramento River below the lake at sites upstream and downstream from the effluent of the three sewage-disposal ponds near the city of Mount Shasta. The scope of the work included periodic field and laboratory water-quality determinations at selected sites (table 1 and fig. 1). Field determinations included discharge, air and water temperatures, DO (dissolved oxygen), residual chlorine, specific conductance, pH, and total and fecal coliform bacteria counts. Laboratory chemical analyses included total Kjeldahl nitrogen (organic nitrogen plus ammonia), nitrate nitrogen, total phosphorus and BOD (biochemical oxygen demand). The same parameters were measured 36 miles downstream from Lake Siskiyou at a site on the Sacramento River at Delta, which is outside Siskiyou County. Data collection at this site was done under a cooperative agreement with the California Regional Water Quality Control Board--Central Valley Region.

Generally, samples for the analysis of all selected constituents were collected at 22 sites (table 1). Exceptions were residual chlorine which was measured only at sites 15, 16, 17, 18, and 19, which are in the vicinity of the sewage-disposal ponds near the city of Mount Shasta. Samples for BOD were collected only at sites 16 and 17, and turbidity was measured regularly only at site 19. Sites 5, 7, 8, 9, and 13 were sampled only during the initial phase of the study; the results of sample analyses for these five stations are in table 9.

Table 1.--Sampling sites for Lake Siskiyou and vicinity

Station number on map <u>1</u> /	USGS downstream number	Location 2/	Altitude (feet above mean sea level)	Drainage area (sq. mi.)	Station name
-1	11-3413.00	40N/5W-25E	3360	47.8	Sacramento River above Lake Siskiyou, near Mt Shasta
2	3413.05	40 N/5W-24M	3400	5.00	Deer Creek near Mt Shasta
3	3413.10	40N/4W-31H	3250	4.62	Scott Camp Creek at diversion dam, near Mt Shasta
4	3413.15	40N/4W-32L	3220	2.90	Castle Lake Creek at road crossing, near Mt Shasta
a5	3413.20	40N/4W-32L	3220	1 1 1 1 1 1	Spring near Castle Lake Creek Site, near Mt Shasta
6	3413.25	40N/4W-20R	3240	19.1	Wagon Creek near Mt Shasta
a7	3413.30	40N/4W-20R	3240	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Spring near Wagon Creek site, near Mt Shasta
a8	3413.35	40N/4W-16K	3520	.57	Cold Creek at Mt Shasta
a9	3413.40	40N/4W-8H	3590	(440 lb)	Big Springs Creek at Southern Pacific railroad, near Mt Shasta
10	3413.41	40N/4W-17J	3500	1 1 1	Big Springs Creek above fish hatchery, near Mt Shasta
11	3413.42	40N/4W-17R	3420	.67	Big Springs Creek below fish hatchery, near Mt Shasta
12	3413.44	40N/4W-28C	3220	(c)	Cold Creek above Lake Siskiyou, near Mt Shasta
a13	3413.45	40N/4W-29M	3180	1.00	Lake Siskiyou at boat ramp, near Mt Shasta
14	3413.60	40N/4W-29R	3180	127	Lake Siskiyou near Mt Shasta
15	3413.65	40N/4W-33C	2880	134	Sacramento River above sewage effluent, near Mt Shasta
16	3413.70	40N/4W-28Q	3270		Mt Shasta sewage pond effluent at weir, near Mt Shasta
17	3413.75	40N/4W-33C	2880	5 2 3	Mt Shasta sewage pond effluent at river, near Mt Shasta
18	3413.80	40N/4W-33G	2870	134	Sacramento River below sewage effluent, near Mt Shasta
19	3414.00	40N/4W-33R	2800	135	Sacramento River near Mt Shasta
20	3414.40	39N/4W-13L	2420	160	Sacramento River at Shasta Retreat, near Dunsmuir
21	3414.60	38N/4W-11Q	2060	185	Sacramento River at Soda Creek Road, near Dunsmuir
b 22	3420.00	36N/5W-35E	1075	425	Sacramento River at Delta

Figure 1.
Mount Diablo Base and Meridian.

Reconnaissance site -- sampled only during initial phase of study (see table 10).

The station on Sacramento River at Delta is 36 miles downstream from Box Canyon Dam and is not shown on figure 1.

Surface drainage area is difficult to define because of lack of relief.

Location and General Description

Lake Siskiyou is in northern California in Siskiyou County (fig. 1). The lake was formed by the construction of Box Canyon Dam, an earthfill dam on the Sacramento River near the city of Mount Shasta. The capacity of the lake is 26,000 acre-feet and the normal pool-surface area is 430 acres. Tributaries to the lake include Deer Creek, Scott Camp Creek, Castle Lake Creek, the Sacramento River, Cold Creek, and Wagon Creek. The Sacramento River, Deer, Scott Camp, and Castle Lake Creeks drain large areas of forested land, whereas Cold Creek drains mainly rural and agricultural areas. Wagon Creek drains both agricultural and forested lands.

The Sacramento River below Lake Siskiyou receives effluent from three sewage-oxidation ponds (fig. 1). Domestic sewage is held in these ponds before being chlorinated and discharged into the river. Southward, the river drains a combination of forest, rural, and agricultural lands.

METHODS

Field processing of samples immediately after collection included filter incubation for coliform bacteria. Turbidity and specific conductance were determined within 96 hours after collection, from water samples packed in ice at the time of collection. Five-day BOD analyses were also begun within 96 hours from water samples packed in ice since collection. Lake-water samples were collected using a Van Dorn PVC (polyvinyl chloride) sampler.

Prior to April 1971, samples for laboratory chemical analysis were collected in polyethylene bottles, immediately packed in ice, and delivered to the Geological Survey chemical laboratory in Sacramento. Samples collected after April 1, 1971 were shipped to the Geological Survey laboratory in Salt Lake City, Utah, for chemical analysis. Nitrogen and phosphorus samples (250 ml) shipped to the Salt Lake laboratory were chilled and preserved by adding 1 milliliter of mercuric chloride solution (concentration 40 milligrams of mercury per liter). The addition of mercuric chloride as well as chilling help reduce biological activity in the samples. All samples for dissolved constituents were filtered through a 0.45-micrometer membrane filter immediately after collection.

¹ The use of named products in this report is for identification only and does not imply endorsement by the U.S. Geological Survey.

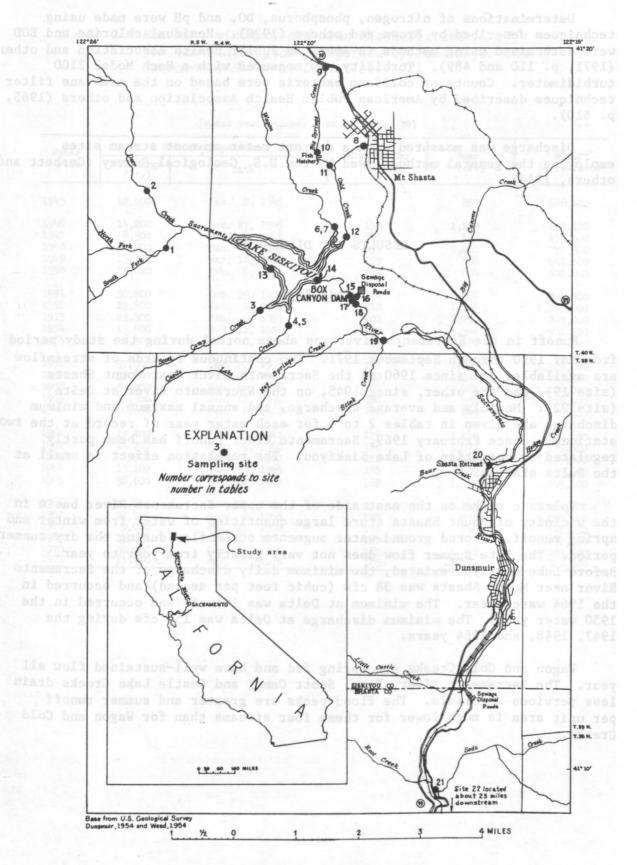


FIGURE 1.--Study area and sampling sites.

Determinations of nitrogen, phosphorus, DO, and pH were made using techniques described by Brown and others (1970). Residual chlorine and BOD were determined using methods in American Public Health Association and others (1971, p. 110 and 489). Turbidity was measured with a Hach Model 2100 turbidimeter. Counts of coliform bacteria were based on the membrane filter techniques described by American Public Health Association and others (1965, p. 610).

Discharge was measured with a current meter at most stream sites employing the general methods used by the U.S. Geological Survey (Corbett and others, 1943).

RESULTS AND DISCUSSION

Hydrology

Runoff in the Sacramento River was above normal during the study period from May 1970 through September 1971. Two continuous records of streamflow are available, one since 1960 on the Sacramento River near Mount Shasta (site 19), and the other, since 1945, on the Sacramento River at Delta (site 22). Monthly and average discharge, and annual maximum and minimum discharge are given in tables 2 to 5 for each water year of record at the two stations. Since February 1969, Sacramento River runoff has been partly regulated by operation of Lake Siskiyou. The regulation effect is small at the Delta station.

Volcanic rocks on the east side of the upper Sacramento River basin in the vicinity of Mount Shasta store large quantities of water from winter and spring runoff. Stored ground water augments streamflow during the dry summer period. The late summer flow does not vary greatly from year to year. Before Lake Siskiyou existed, the minimum daily discharge of the Sacramento River near Mount Shasta was 38 cfs (cubic feet per second) and occurred in the 1964 water year. The minimum at Delta was 146 cfs and occurred in the 1950 water year. The minimum discharge at Delta was 155 cfs during the 1947, 1948, and 1964 years.

Wagon and Cold Creeks are spring fed and have well-sustained flow all year. The Sacramento River, Deer, Scott Camp, and Castle Lake Creeks drain less pervious materials. The flood peaks are greater and summer runoff per unit area is much lower for these four streams than for Wagon and Cold Creeks.

Table 2.--Maximum, minimum, and mean discharge and runoff for each water year for period of record for the Sacramento River at Delta (site 22)

[Water year October 1 to September 30] Momentary maximum Water Minimum day Mean Runoff Discharge year (cfs) (cfs) (acre-feet) (cfs) 1945 Feb. 2, 1945 628,400 12,000 839,100 1946 14,200 Dec. 27, 1945 159 1,159 459,300 1947 8,300 Nov. 22, 1946 155 634 Jan. 7, 1948 Mar. 18, 1949 Feb. 6, 1950 1948 1,061 24,200 155 770,300 886 1949 13,300 159 641,600 1950 5,620 146 694 502,800 30,600 Oct. 29, 1950 174 1,284 929,500 Dec. 1, 1951 Jan. 9, 1953 Feb. 12, 1954 Dec. 6, 1954 1,500 19,600 210 1,089,000 1952 1,290 1953 23,300 202 933,900 13,900 11,400 1954 210 1,342 971,200 687 158 1955 497,600 1,685 1956 37,000 Dec. 22, 1955 176 1,223,000 Feb. 24, 1957 Feb. 24, 1958 Jan. 12, 1959 Feb. 8, 1960 1,040 753,300 1,767,000 1957 188 25,700 32,200 2,441 1958 279 678,900 1959 180 938 849 167 1960 16,300 616,300 Feb. 11, 1961 Feb. 9, 1962 1961 14,100 175 1,143 827,600 1962 178 1,071 775,300 14,200 1,418 1963 26,300 Oct. 12, 1962 218 603 1964 13,100 Jan. 20, 1964 155 437,600 1965 38,800 Dec. 22, 1964 162 1,243 899,600 1966 11,600 Nov. 18, 1965 864,900 172 1,195 1967 17,400 1,558 Dec. 5, 1966 188 1,128,000 9,080 1968 Feb. 21, 1968 178 541,700 1,453 1,358 1,271 1969 1,052,000 14,200 Feb. 11, 1969 182 1970 30,000 182 983,100 Dec. 21, 1969 Mar. 26, 920,100

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How. 17, 1959 49 235 159,50 How. 20, 1966 48 300 217,00

Table 3.--Monthly and annual mean discharge, in cubic feet per second, during period of record for the Sacramento River at Delta (site 22)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annua
1945	a150	a600	al,200	813	2,646	1,023	1,497	1,424	598	265	182	163	a 867
1946 1947 1948 1949	504 204 537 257 186	1,235 529 394 325 234	3,356 521 334 341 226	1,814 295 2,537 279 801	928 1,080 525 960 1,369	1,329 1,636 886 3,390 1,416	1,992 1,173 2,955 2,526 1,980	1,514 558 2,252 1,477 1,181	543 1,038 1,382 499 464	273 279 423 237 211	194 190 260 184 162	181 165 237 168 170	1,159 634 1,061 886 694
1951 1952 1953 1954 1955	1,837 260 220 268 256	1,584 949 271 1,163 824	2,580 2,553 1,093 752 1,332	1,423 1,250 4,261 2,046 554	2,730 2,828 1,332 3,468 677	1,319 2,200 1,806 2,331 709	1,447 3,351 2,152 3,314 1,271	1,476 2,690 1,931 1,567 1,556	459 1,035 1,348 557 472	260 457 503 306 247	201 268 289 284 173	185 232 241 248 177	1,284 1,500 1,290 1,342 687
1956 1957 1958 1959	186 282 1,371 271 218	432 288 894 283 215	4,310 261 1,637 297 242	4,234 430 2,296 2,897 652	2,743 2,979 9,557 2,166 2,274	1,907 2,247 3,623 1,632 2,308	2,222 1,664 4,117 1,693 1,454	2,285 2,741 3,442 1,003 1,453	1,004 704 1,701 431 777	383 313 592 236 287	260 219 354 196 197	233 514 302 231 176	1,685 1,040 2,441 938 849
1961 1962 1963 1964 1965	233 222 1,335 342 195	622 598 706 1,357 585	1,989 1,086 1,704 558 4,265	885 528 765 1,181 2,545	3,103 3,818 3,198 777 1,032	1,969 1,600 1,380 646 744	1,700 2,389 4,269 814 2,990	1,760 1,457 2,280 586 1,257	879 711 680 433 532	293 269 374 223 278	226 232 265 169 243	211 194 242 172 204	1,143 1,071 1,418 603 1,243
1966 1967 1968 1969 1970	200 196 262 252 246 280	1,920 1,767 270 355 273 1,487	790 2,548 442 1,042 2,490 2,138	1,779 1,636 803 2,533 6,310 2,458	1,665 1,955 2,678 2,742 2,073 1,525	2,911 2,518 1,554 2,076 1,828 2,056	2,650 2,433 1,132 3,434 948 1,819	1,389 3,202 858 2,962 967 1,913	460 1,477 426 1,071 481 789	258 461 223 341 247 343	188 290 212 229 188 229	189 240 188 506 200 215	1,195 1,558 746 1,453 1,358 1,271

a. Not previously published; estimated on basis of records for Trinity River at Lewiston and Antelope Creek near Red Bluff.

Table 4.--Maximum, minimum, and mean discharge and runoff for each water year for period of record for the Sacramento River near Mount Shasta (site 19)

Water	Mome	ntary maximum	Minimum day	Mean	Runoff
year	Discharge (cfs)	Date	(cfs)	(cfs)	(acre-feet)
1960	2,680	Feb. 8, 1960	43	176	127,700
1961			42	257	185,800
1962	1,200	Apr. 14, 15, 1962	40	222	160,900
1963	9,490	Oct. 12, 1962	47	307	222,300
1964	2,220	Nov. 14, 1964	38 46	154	112,100
1965	12,200	Dec. 22, 1964	46	291	210,400
1966	2,480	Nov. 17, 1965	45	235	169,900
1967	2,720	Nov. 20, 1966	48	300	217,000
1968	1,140	Feb. 23, 1968	46	173	125,700
1969	1,490	June 3, 1969	26	293	211,800
1970	4,070	Jan. 23, 1970	34	247	178,900
1971	1,330	Mar. 26, 1971	37	278	201,200

Table 5.--Monthly and annual mean discharge, in cubic feet per second, during period of record for the Sacramento River near Mount Shasta (site 19)

Water	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annua
1960	63.4	65.3	74.5	109	282	409	352	402	208	55.3	46.8	49.1	176
1900	03.4	0).5	(4.)	109	202	409	372	402	200	22.5	40.0	49.1	110
1961	62.7	111	267	178	539	273	475	666	364	70.9	49.7	50.8	257
1962	63.0	99.6	145	119	331	199	793	529	241	64.8	52.3	49.4	222
1963	321	224	425	168	752	229	619	643	167	75.2	50.7	48.8	307
1964	96.0	264	156	179	167	182	294	231	146	57.4	40.2	46.8	154
1965	55.4	120	938	399	244	210	684	450	181	85.9	60.4	51.5	291
1966	54.4	336	156	192	174	418	725	480	132	58.7	46.9	48.3	235
1967	50.8	283	382	236	291	367	316	913	532	115	59.1	50.6	300
1968	70.4	76.2	95.5	167	394	303	319	346	152	62.7	54.4	48.8	173
1969	63.1	88.7	128	240	298	313	707	832	399	74.4	42.4	338	293
1970	77.1	44.1	262	891	428	298	223	398	188	67.3	41.0	51.0	247
1971	91.4	231	299	359	334	336	445	733	308	98.5	50.9	52.1	278

Water Quality

Results of physical, chemical, and microbiological analyses for the dates and time of the study are tabulated in table 12. The mean, 95-percent probability confidence interval of the mean, and range for specific conductance values, dissolved oxygen, nitrate nitrogen, total Kjeldahl nitrogen and total phosphorus are shown in figures 2, 3, and 4. A vertical profile of temperature, dissolved oxygen, and oxygen concentration at saturation in Lake Siskiyou is shown in figure 5. The results given in the figures are valid only for the times and dates (table 12) when the samples Were collected. All the samples were collected during daylight hours and many of them during periods of low flow. Because of these limitations, the results cannot be extrapolated to describe diurnal conditions nor conditions that might occur during other flows. Concentrations of total phosphorus in samples collected May 19, 1970, were not used in the calculations shown in figure 4 because of excessively high values which were believed to be a result of sampling or analytical error. Nitrite concentrations were assumed to be insignificant and the nitrate values shown include any nitrite that might have been present in the water.

Comparison of specific conductance values (fig. 2) shows the highest values and fluctuations in samples from the Sacramento River above Lake Siskiyou and Deer Creek (sites 1 and 2). The specific conductance at sites 1 and 2 may be influenced by mineralized springs upstream (Berkstresser, 1968, p. 28, 44, and 45).

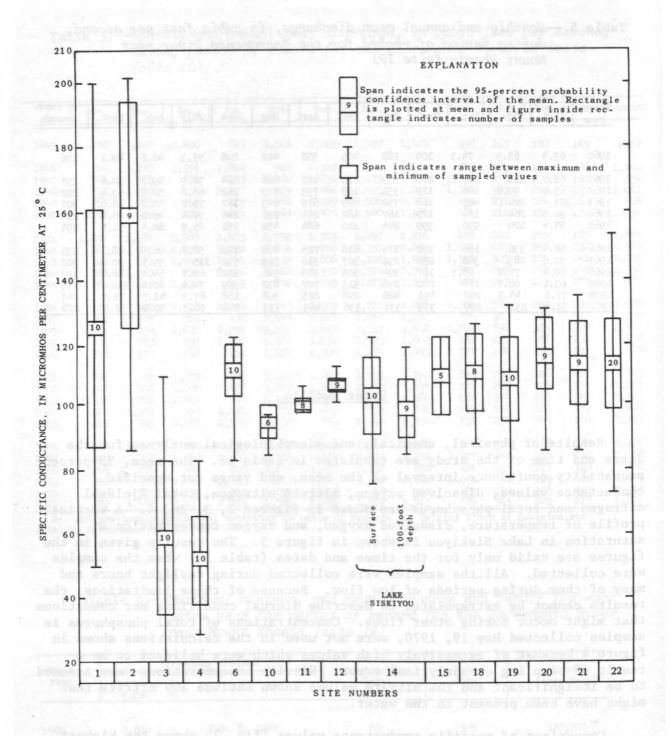


FIGURE 2.--The range of specific conductance values; the mean, and the 95-percent probability confidence interval of the mean.

The periodic determinations of DO were near 100-percent saturation at most sites (fig. 3). The DO concentrations and percentage saturation were different between sites 10 and 11 on Big Springs Creek above and below the fish hatchery, suggesting waste matter from the fish hatchery slightly reduces the oxygen resources of the stream. The oxygen concentration in the Sacramento River immediately downstream from the sewage-disposal pond effluent (site 18) was near saturation when sampled.

Average nitrate nitrogen and total phosphorus concentrations were similar at sampling sites 1 to 4 in the lake tributaries (fig. 4). Concentrations at these sites were much lower than at sites 6, 10, 11, and 12. The highest average nitrate nitrogen concentration was recorded at Wagon Creek (site 6), whereas Big Spring Creek below the fish hatchery (site 11) had the highest total phosphorus concentration. The higher nitrogen and phosphorus concentrations in Wagon, Big Springs, and Cold Creeks (site 12) probably reflect agricultural use in their drainage basins. Again it should be emphasized that many of the samples were collected during periods of low flow.

Average total phosphorus concentrations in Wagon, Big Springs, and Cold Creeks were above the recommended level of 0.05 mg/l (milligram per liter) ([U.S.] Federal Water Pollution Control Adm., 1968, p. 53) for streams entering lakes. The recommentation is based on the role of phosphorus as a stimulating and a limiting nutrient for algal growth.

All sampling sites on streams tributary to Lake Siskiyou except Big Springs Creek below the fish hatchery (site 11) exhibited an overlap of the 95-percent probability confidence intervals for the mean TKN (total Kjeldahl nitrogen) concentrations (fig. 4). The overlapping suggests that the mean TKN concentrations in tributary streams are similar. Big Springs Creek below the fish hatchery and Cold Creek (sites 11 and 12) had relatively high TKN values, possibly a result of organic loading at the fish hatchery.

In the Sacramento River below Lake Siskiyou (sites 15 and 18-22), the average nitrate and total phosphorus concentrations in samples were generally lower than the concentrations in samples from the lake tributaries (sites 6 and 10-12, fig. 4). The average total phosphorus concentration of nine samples at the river-sampling site immediately downstream from the sewage-pond effluent (site 18, fig. 4) was noticeably higher that the average of six samples immediately upstream from the sewage-pond effluent (site 15, fig. 4). Water at site 15 is representative of the direct outflow from Lake Siskiyou through Box Canyon Dam and has a total phosphorus concentration comparable to the lake water at sampling site 14 (fig. 4). The increased concentration of total phosphorus at site 18 (below the sewage-pond effluent) may indicate the effect on the river water of treated sewage discharged from the ponds. Analyses of sewage effluent at the outflow from the ponds and at the river (sites 16 and 17) include total phosphorus concentrations near 4 mg/1 (table 12).

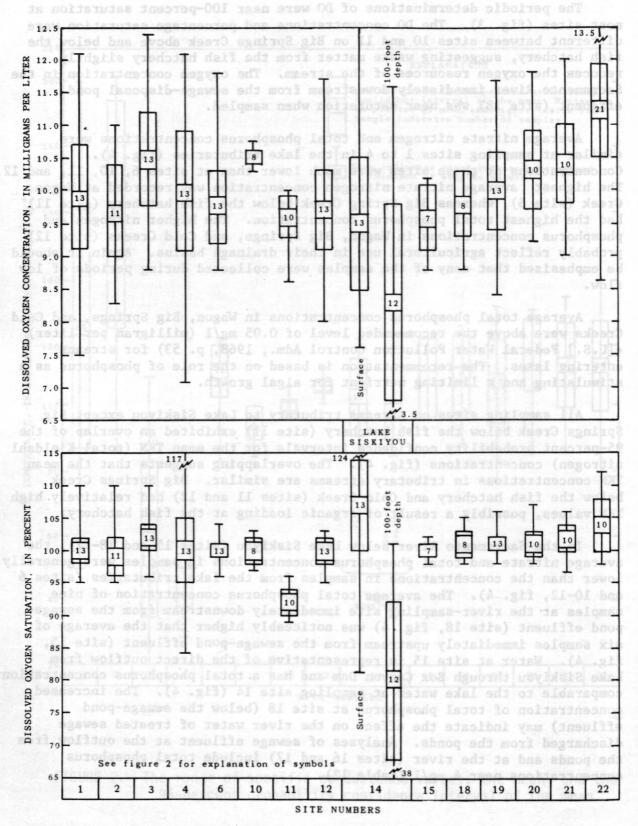


FIGURE 3.--The range of dissolved oxygen and percent saturation of dissolved oxygen, the mean, and the 95-percent probability confidence interval of the mean.

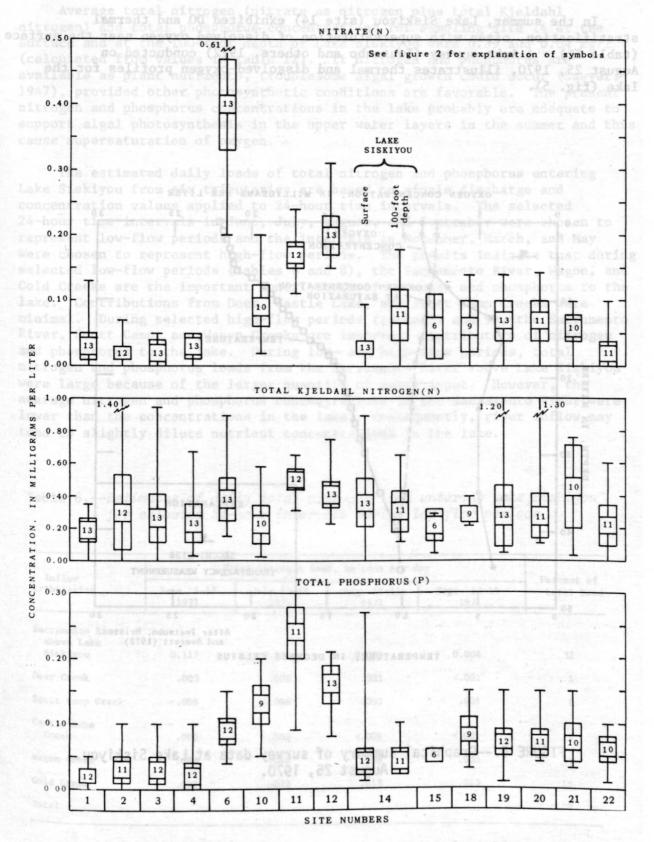


FIGURE 4.--The range of nitrate nitrogen, total Kjeldahl nitrogen, and total phosphorus; the mean and the 95-percent probability confidence interval of the mean.

In the summer, Lake Siskiyou (site 14) exhibited DO and thermal stratification, often with supersaturation of dissolved oxygen near the surface (table 12). A lake survey (Iwatsubo and others, 1972) conducted on August 25, 1970, illustrates thermal and dissolved-oxygen profiles for the lake (fig. 5).

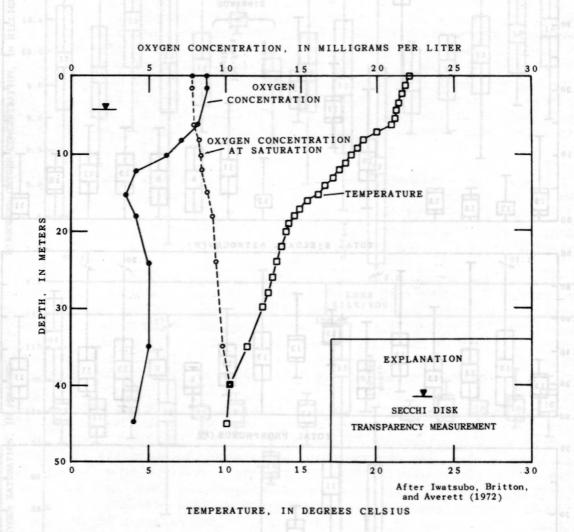


FIGURE 5.--Graphical summary of survey data at Lake Siskiyou, August 25, 1970.

Average total nitrogen (nitrate as nitrogen plus total Kjeldahl nitrogen) and total phosphorus concentrations for sampling site 14 at the surface and at the 100-foot depth of Lake Siskiyou were 0.39 and 0.04 mg/l (calculated from values in table 12). If nitrogen and phosphorus are available as plant nutrients, troublesome algal growth could occur (Sawyer, 1947), provided other photosynthetic conditions are favorable. The present nitrogen and phosphorus concentrations in the lake probably are adequate to support algal photosynthesis in the upper water layers in the summer and thus cause supersaturation of oxygen.

The estimated daily loads of total nitrogen and phosphorus entering Lake Siskiyou from six tributaries are based on single discharge and concentration values applied to 24-hour time intervals. The selected 24-hour time intervals in June, July, August, and September were chosen to represent low-flow periods and the intervals in November, March, and May were chosen to represent high-flow periods. The results indicate that during selected low-flow periods (tables 6 and 8), the Sacramento River, Wagon, and Cold Creeks are the important contributors of nitrogen and phosphorus to the lake. Contributions from Deer, Castle Lake, and Scott Camp Creeks were During selected high-flow periods (tables 7 and 9), the Sacramento River, Scott Camp, and Wagon Creeks are important contributors of nitrogen and phosphorus to the lake. During low- and high-flow periods, total nitrogen and phosphorus loads from the Sacramento River above Lake Siskiyou were large because of the larger quantity of water input. However, the average nitrogen and phosphorus concentrations in the Sacramento River were lower than the concentrations in the lake. Consequently, river inflow may tend to slightly dilute nutrient concentrations in the lake.

Table 6.--Estimates of daily total nitrogen load entering Lake Siskiyou for selected 24-hour intervals during low-flow periods

Inflow	To	lay	Percent of		
tributaries	June 16-17 1971	July 13-15 1971	Aug. 10-11 1971	Sept. 13-15 1971	total load
Sacramento River above Lake	Wilderstelly, B.	100 07 100 0 04-01 000 0		alli forsk bricte stork spisi bel	ris county
Siskiyou	0.117	.0.026	0.021	0.004	32
Deer Creek	.003	.002	.001	<.001	1
Scott Camp Creek	.009	.006	.002	.001	4
Castle Lake				er too stort an	
Creek	.005	.002	<.001	<.001	varial los
Wagon Creek	.093	.058	.056	.035	47
Cold Creek	.025	.023	.018	.013	15
Total	Sulfied on with			unwilled Torrie	100

Table 7.--Estimates of daily total nitrogen load entering Lake Siskiyou for selected 24-hour intervals during high-flow periods

Inflow	Total nitrog	gen load, in to	ns per day	Percent of total load	
tributaries	November 10-12 1970	March 24-25 1971	May 11-12 1971		
acramento River above					
Lake Siskiy	ou 0.091	0.233	0.498	38	
eer Creek	.002	.132	.040	risv na h	
cott Camp Creek	.010	.312		18	
astle Lake Creek	.003	.144	.052	9	
agon Creek	.093	.258	.102	21	
old Creek	.039	.061	.032	6	
Total	f-dg.td bas y	Daring low	the lake.	100	

The loading results are only useful in estimating nitrogen and phosphorus loads carried by Lake Siskiyou tributaries during the selected flow conditions. Nitrogen and phosphorus loads during other flow conditions may vary greatly from loads given in tables 6, 7, 8, and 9. To determine the overall nutrient load flowing into Lake Siskiyou, nitrogen and phosphorus samples in all tributaries should be collected more frequently, in a schedule that includes all flow conditions.

Table 8.--Estimates of daily total phosphorus load entering Lake Siskiyou for selected 24-hour intervals during low-flow periods

Inflow	T	Percent of			
tributaries	June 16-17 1971	July 13-15 1971	Aug. 10-11 1971	Sept. 13-15 1971	total load
Sacramento River above Lake	100%	- 100	500.	200.	Deer Greak
Siskiyou	0.009	0.002	0.001	0.001	19
Deer Creek	<.001	<.001	<.001	<.001	Castle Lake
Scott Camp Creek	.001	<.001	<.001	<.001	SKI YOM 2
Castle Lake Creek	.001	<.001	<.001	<.001	des 17 bico
Wagon Creek	.009	.008	.004	.006	40 10
Cold Creek	.009	.008	.004	.005	38
Total					100

Table 9.--Estimates of daily total phosphorus load entering Lake Siskiyou for selected 24-hour intervals during high-flow periods

	Inflow	Total phosph	Total phosphorus load, in tons per day				
	tributaries	November 10-12 1970	March 24-25 1971	May 11-12 1971	Percent of total load		
	Sacramento River abov	15 mg	8 6 4	est Mr. Shara S	3.00 Sacras Sightyon, a		
	Lake Siski		0.026	0.089	39		
	Deer Creek	<.001	.009	.005	5		
	Scott Camp Creek	<.001	.030	.010			
	Castle Lake Creek	<.001	13 12		1.15 Castle		
	Wagon Creek	.009	.026	.006	21		
7-1	Cold Creek	.008	.013	.010			
	OOA, E-CO Total	1001.1	11 - 31 -	(ings Creek below			

Average fecal coliform bacteria counts at all but one sampling site (sewage-disposal-pond effluent at site 17) were below the recommended limit of 200 colonies per 100 ml (milliliters) of water for primary contact recreational use ([U.S.] Federal Water Pollution Control Adm., 1968, p. 12). The results are shown in table 8. Single samples taken in August and September 1970 from the effluent of the sewage pond just before it flowed into the river (site 17) revealed counts in excess of the recommended limit1.

Average total and fecal coliform bacteria counts at sites 6, 11, and 12 (table 10) were higher than those at other sites tributary to Lake Siskiyou. The differences probably are a result of cultural variations in the drainage basins of the tributaries. The total and fecal coliform bacteria counts are similar and were usually low at sites 15 and 18 (above and below the sewage effluent), indicating that the effluent has no immediate significant influence on the coliform bacteria population of the reach of Sacramento River near Mount Shasta.

Coliform bacteria counts generally were higher at most sampling sites during the summer months than in the winter and spring. These variations might have been related to changes of flow patterns, faunal activities, and seasonal water temperatures.

¹ Values based on plate counts outside recommended range of 20 to 80 colonies per 100 ml for total coliform and 20 to 60 colonies per 100 ml for fecal coliform.

Table 10.--Summary of total and fecal coliform bacteria counts,

May 1970 through September 1971

Site			er of			acteria count s per 100 ml	ts
umber	Site identification and name	samples		Average		Ran	nge
	tal imperiment to the load	Total	Fecal	Total	Fecal	Total	Fecal
1	11-3413.00 Sacramento River above Lake Siskiyou, near Mt. Shasta	13	8	170	5 0 1 300	4-800	0-32
2	11-3413.05 Deer Creek near Mt. Shasta	12	6	820	3	5-4,600	0-12
3	11-3413.10 Scott Camp Creek at diversion dam near Mt. Shasta	13	9	270	8	2-2,300	0-49
4	11-3413.15 Castle Lake Creek at road crossing near Mt. Shasta	13	12	340	6	0-3,000	0-21
6	11-3413.25 Wagon Creek near Mt. Shasta	13	11	1,600	49	54-4,900	4-120
10	11-3413.41 Big Springs Creek above fish hatchery near Mt. Shasta	9	10	280	28	20-1,000	1-79
11	11-3413.42 Big Springs Creek below fish hatchery near Mt. Shasta	12	11	1,100	42	90-3,400	1-140
12	11-3413.44 Cold Creek above Lake Siskiyou near Mt. Shasta	14	13	2,100	100	80-8,900	25-200
14	11-3413.60 Lake Siskiyou at Box Canyon Dam, near Mt. Shasta				u les	ed flo	enditi
	at surface at 100-ft depth	12 12	8	230 270	0	1-1,000 0-1,100	0-2 0-8
15	11-3413.65 Sacramento River above sewage effluent near Mt. Shasta	8	8	900	3	15-2,800	0-7
16	11-3413.70 Mt. Shasta sewage pond effluent at weir, near Mt. Shasta	6	6	530	0	0-2,500	0-0
17	11-3413.75 Mt. Shasta sewage pond effluent at river, near Mt. Shasta	8	8	4,300	420	0-26,000	0-2,000
18	11-3413.80 Sacramento River below sewage effluent near Mt. Shasta	9	10	850	6	0-2,800	0-35
19	11-3414.00 Sacramento River near Mt. Shasta	14	10	640	14	1-4,800	1-50
20	11-3414.40 Sacramento River at Shasta Retreat near Dunsmuir	13	10	650	6	1-3,600	0-18
21	11-3414.60 Sacramento River at Soda Creek Road near Dunsmuir	12	10	670	18	7-2,000	0-81
22	11-3420.00 Sacramento River at Delta	12	10	1,000	1 bo 7	7-6,200	0-31

In the initial reconnaissance of the Lake Siskiyou area, samples for nitrogen, phosphorus, and total coliform bacteria were collected at five additional sites, numbers 5, 7, 8, 9, and 13. Data collected at these sites during this first sampling period are shown in table 9. Because only a few samples were collected, no discussion of the data will be made.

Table 11. -- Miscellaneous water-quality measurements for discontinued sites

Site number	Site identification and name	Date sampled	Nitrate (N) (mg/l)	Total nitrogen (N) (mg/l)	Total phosphorus (P) (mg/l)	Total coliform bacteria counts, in colonies/100 ml	Temperature (°C)
5	11-3413.20 Spring near Castle Lake Creek site, near Mount Shasta	6-11-70	0.02	0.17	0.01		1 3-10 COR 13 1001 - 1 51 - 0 1 100 - 1
7	11-3413.30 Spring near Wagon Creek site, near Mount Shasta	6-11-70	.05	.28	:11	300	18.0
8	11-3413.35 Cold Creek at	5-20-70	.09	.27	.93		7. HR - 8
	Mount Shasta	6-12-70	.16	.28	.11	200	11.4
9	11-3413.40 Big Springs Cr at So. Pac. RR nr Mount Shasta	6-11-70	.07	.05	.15	# 100 H 100 H 100 H	
13	11-3413.45 Lake Siskiyou at boat ramp, near Mount Shasta	5-19-70	.00	.20	1.1		19 - 19 - 19 -

SUMMARY

The physical, chemical, and microbiological measurements indicate water in the tributaries to Lake Siskiyou is of good quality except in Wagon and Cold Creeks. Inflows from Wagon and Cold Creeks contain relatively higher nitrogen and phosphorus concentrations and during low-flow conditions are probably important contributors to the enrichment of the lake. Total and fecal coliform bacteria counts also were relatively greater in Wagon and Cold Creeks. The quality of the water in Wagon Creek and Cold Creek probably reflects the influence of urban and agricultural activities in their drainage basins.

A noticeable difference in water quality was recorded between the sampling sites (10 and 11) above and below the fish hatchery on Big Spring Creek. Water downstream from the fish hatchery generally was higher in coliform bacteria counts, lower in DO, and higher in nitrogen and phosphorus concentrations than that from the site upstream from the fish hatchery.

Thermal and DO stratification occurred in Lake Siskiyou during the summer. High pH values and supersaturation of oxygen in the surface layer of Lake Siskiyou suggest active photosynthesis taking place near the water surface. Nitrogen and phosphorus concentrations must be adequate to support plant growth. Data on the lake from this study were limited to only one sampling site and variables measured were not sufficient to define adequately the water-quality conditions in the lake. Future monitoring programs should consider more intensive sampling in the lake, including algal cell counts and algal productivity measurements, frequent temperature and dissolved-oxygen profiles, and frequent nitrogen, phosphorus, and phytoplankton determination at several depths including, at a minimum, the euphotic zone and the bottom water.

The water in the Sacramento River downstream from the effluent of the sewage-oxidation ponds had a higher average total phosphorus concentration than that upstream. This probably reflects the influence of the discharged sewage effluent on the river water. Total and fecal coliform bacteria counts, DO, nitrate, and TKN concentrations were not noticeably different in samples collected upstream and downstream from the sewage effluent.

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110.

Table 12.--Results of water-quality analyses
[Type 2, laboratory analysis; type 3, field analysis]

11-3413.00 SACRAMENTO RIVER ABOVE LAKE SISKIYOU (SITE 1)

WATER QUALITY DATA

				INSTAN-				PER-	TOTAL	
				TANEOUS	Tevinen	AIR	DIS-	CENT	NITRO-	
		TIME	TYPE	DIS- CHARGE	TEMPER-	TEMP- ERATURE	SOLVED	SATUR- ATION	GEN (N)	
	DATE	nas in	5 prhe	(CFS)	(DEG C)	(DEG C)	(MG/L)	395	(MG/L)	
	MAY , 19	70								
	19	0730	81.62	342	8.0	13.5	10.8	103	holifon	
	JULY	0900	2	90	8.5	DET TO	11.4	110	S.U. Tas	
	30 AUG.	0900	2	11	16.5	19.0	8.8	101	-	
	28 SEP.	0855	2	6.5	15.0		8.8	99	Hard To	
	29 NOV.	1040	2	6.5	12.0	7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	9.6	101	STEE CLASS	
	11 JAN., 19	1515	5	177	7.0	8.0	10.3	97	SISW VSS Vaccifer	
	26 MAR.	0940	2	133	2.5	.5	12.1	101		
	25	1000	2	192	3.0	5.0	11.5	98	.45	
	MAY 12	1200	2	E660	6.0	14.0	10.9	100	.28	
	JUNE 16	1420	2	167	14.0	24.0	9.1	100	.26	
	JULY 14	0815	2	37	13.0	19.0	9.2	100	.26	
	AUG. 10	1315	2	17	21.0	35.0	7.5	95	•45	one
	SEP. 15	1540	2	8.8	17.0	30.0	8.6	101	.15	
		TOTAL	DIS-			SPE-			IMME-	
		KJEL-	SOLVED			CIFIC		FECAL	DIATE	
		DAHL	NITRITE	DIS-	TOTAL	CON-		COLI-	COLI-	
		NITRO-	PLUS	SOLVED	PHOS-	DUCT-	РН	FORM (COL.	FORM	
		GEN (N)	NITRATE (N)	NITRATE (N)	PHORUS (P)	(MICRO-	PH	PER	(COL. PER	
	DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	MHOS)	(UNITS)	100 ML)	100 ML)	
	MAY , 19	7.0								
	19	.00		.02	.13	50			4	
	JUNE								Thistory of	F the '
	JULY	.05	d a M	.02	.000	total	phospi	0.000	7	
	30 AUG.	.23	proba	• 05	.000	the is	flunce		54	
	28 SEP.	.15	yer ve	.02	.000	200	8.1	Morri.	6	
	29 NOV.	.29	T.	.00	.040	nofit	esbly	3	5	
cellected my	11 JAN., 19	.14	-	.05	.000	100	8.0	me	20	
	26 MAR.	.10		.00	.000	116	7.8	32	428	***
	25 MAY	.35	.10		.050	116	7.6	1	27	
	12 JUNE	.28	.00		.050	70	7.9	0	35	
	16	.24	.02		.020	85	7.9	. 0	26	
	14	•25	.01	.01	.020	136	8.0	2	800	
	10	.32	.13	.13	.020	174	8.2	. 1	550	
	SEP.									

.12 .03

.03

.040

8.3 1

Table 12.--Continued

11-3413.05 DEER CREEK NEAR MT SHASTA (SITE 2)

WATER QUALITY DATA

			INSTAN-				PER-	TOTAL
			TANEOUS		AIR	DIS-	CENT	NITRO-
			DIS-	TEMPER-	TEMP-	SOLVED	SATUR-	GEN
	TIME	TYPE	CHARGE	ATURE	ERATURE	OXYGEN	ATION	(N)
DATE	ITHE	100					ATTON	(MG/L)
DATE			(CFS)	(DEG C)	(DEG C)	(MG/L)		(MG/L)
NOV 19	70							
10	1345	2	3.7	7.0		10.1	95	101
MAR., 19	71							
24	1320	2	E35	5.0	11.0	11.0	99	1.4
MAY								
11	0810	2	39	6.0	10.0	10.9	100	.38
JUNE			0.01	212	2.5			
16	0945	2	5.0	10.5	19.0	9.8	100	.24
JULY		3.00	0.25	8.11	8.7			
13	1045	2	2.5	12.0	23.0	9.3	99	.32
AUG.	100	Y 0.97	2445	0.11	0.0		0.780	13.00
10	0720	2	1.2	15.5	18.5	8.4	95	.29
SEP.	Tlop	0.0	JACO	15.0			1518	50.01
15	0740	2	.95	10.0	5.5	9.7	99	.15
200	181	0.0	0.05	0.11	Aut			********
	TOTAL	DIS-			SPE-			IMME-
	KJEL-	SOLVED			CIFIC		FECAL	DIATE
	DAHL	NITRITE	DIS-	TOTAL	CON-		COLI-	COLI-
	NITRO-	PLUS	SOLVED	PHOS-	DUCT-		FORM	FORM
	GEN	NITRATE	NITRATE	PHOKUS	ANCE	PH	(COL.	(COL.
	(N)	(N)	(N)	(P)	(MICRO-		PER	PER
DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	MHOS)	(UNITS)	100 ML)	100 ML)
	0 100.1			1 1 2 2 2 3	1 (3) 000	CINER	6.0000	- STAU
NOV., 19	70							
10	.14		.02	.000	197	8.1		48
MAR. , 19	71							
24	1.4	.00		.10	111	7.4	0	52
MAY								
11	.38	.00		.050	108	7.9	U	96
JUNE								
16	.23	.01		.030	157	8.0	2	240
JULY	0.00	434.5		0.000		1000	4275	11000
13	.25	.07	.07	.020	180	8.1	1	1200
AUG.	1000	6 10 7			-30	1000 7 7 1	109.85	100.00
10	.25	.04	.04	.040	192	8.1	12	4600
SEP.	1.6.10	100		080			18.	
15	.13	.02	.02	.040	194	8.2	4	3500
					.,,		180	0.1

Table 12.--Continued beautiful of unter-quality analysis of universal transfer of univer

11-3413.10 SCOTT CAMP CREEK AT DIVERSION DAM, NEAR MT SHASTA (SITE 3)
WATER QUALITY DATA

DATE			INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	AIR TEMP- ERATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	TOTAL NITRO- GEN (N) (MG/L)
NOV. 1	970							
12	0830	2	11	4.5	3.0	11.0	96	11 61 1 7 7 Th
JAN. 1							5951	
27	1545	2	8.5	2.0	13,5 20	12.4	102	
MAR. 26	0945	2	110	3.0	7.0	12.0	101	1.0
MAY	0743	E 0.05	110	3.0	7.0	12.0	0180	1.00
12 JUNE	1615	2	77.	6.5	18.0	10.9	101	•31
16 JULY	1530	2	14	11.5	25.0	9.5	100	.22
15	0750	2	4.0	11.0	14.5	9.7	100	.55
AUG.					2 - 1		0.88.0	9 4
10	1515	2	2.1	15.0	34.0	8.8	99	.36
SEP.	1500	2	1.6	11.0	28.0	9.8	101	.17
15	1500	2	1.0	11.0	20.0	7.0	101	.11
	TOTAL	DIS-			SPE-			TITLE
	KJEL-	SOLVED			CIFIC		FECAL	DIATE
	DAHL	NITRITE	DIS-	TOTAL	CON-		COLI-	COLI-
	NITRO-	PLUS	SOLVED	PHOS-	DUCT-		FORM	FORM
	GEN	NITRATE	NITRATE		ANCE	РН	(COL.	(COL.
	(N)						PER	PER
DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MHOS)	(UNITS)	100 ML)	100 ML)
NOV 1	970							
12	.35		.02	.000	44	8.0	13	
JAN. 1								
27	.08		.00	.000	48	7.7	1	7
MAR.								
26	.95	.10		.10	33	6.9	3	39
MAY		D1, 12.0-8		960 17		10.	OLIV O	26
12	.30	.01	O. William I. Do	.050	25	7.4	BERN 25.	20
JUNE	.20	.02	78278	.030	39	7.3	1	150
JULY	.20	.02	192 185	.030	TOWORD .	.00	DER 85.	PER 1 7 6 6 1
15	.51	.04	.04	.020	76	7.7	0	500
AUG.								
10	.31	.05	.05	.030	94	7.9	7	2300
SEP.	199			0.10	101	0.0	2	220
15	.14	.03	.03	.060	104	8.0	2	330

Table 12.--Continued

11-3413.15 CASTLE LAKE CREEK AT ROAD CROSSING, NEAR MT SHASTA (SITE 4)
WATER QUALITY DATA

-ONTIN	TIME	TYPE	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	AIR TEMP- ERATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	TOTAL NITRO- GEN (N) (MG/L)
					District Co.	BUFFE		
MAY + 197		9.01		0.0		10.0	108	1911
JUNE	1410	2	11	13.0		10.0	108	
11	1130	2		10.0		11.6	117	Y 200
JULY	1901	8.6		0.40	15	3.	5061	
29 AUG.	1410	2		15.5	25.0	8.9	100	- 55 N
28	1315	2	.17	11.5	14-4	9.7	101	
SEP.	1.00						10,0,0,1	
29	1445	2	.13	9.0		10.0	98	+754
12	0945	2	12	5.5	5.5	10.9	97	01
JAN. , 197						5	1135	
27 MAR.	1455	2	8.4	2.5		12.1	101	
26 MAY	0815	2	97	3.0	5.5	12.0	101	.55
12	1430	2	60	6.5	18.0	10.9	101	.32
JUNE				0.50		3	Seri	10,000
JULY	0800	S	6.5	11.0	12.5	9.6	99	.27
15	0830	2	1.5	12.5	14.5	9.4	100	.42
11	1500	2	.34	17.0	33.0	7.1	84	.42
SEP.	WO-1			8.81				
15	1320	5	•55	13.0	25.0	8.2	88	•25
	TOTAL	DIS-			SPE-		5504	IMME-
	DAHL	SOLVED	DIS-	TOTAL	CIFIC CON-		FECAL COLI-	DIAJE
	NITRO-	PLUS	SOLVED	PHOS-	DUCT-		FORM	FORM
	GEN	NITRATE	NITRATE	PHORUS	ANCE	PH	(COL.	(COL.
1700 001	(N)	(N)	(N)	(P)	(MICRO-	134011	PER	PER 100 ML)
DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	MHOS)	(UNITS)	100.ML)	100 ML)
MAY , 1	970							
19	.08		.02	.030	32			6
JUNE	0.4		.00	.000	1940		ee	0
JULY	.06		.00	.000	26.			
29	.68		.02	.000				18
AUG.	934	0.10	.02	.010	83	7.5	05.	4
28 SEP.	.14		.02	.010	De.			
29	.04		.00	.020				21
NOV.	355	110	.02	.000	46	7.7	****	17
12 JAN., 1	.08	I+b	.02	.000	32	-		
27	.03		.00	.000	46	7.8	11	192
MAR.	335	10	- 593	.10	39	7.0	4	82
26	.45	.10	116	.10	37	0.5		
12	.32	.00		.040	28	6.9	0	27
JUNE	0 30	100	041	040	41	7.2	1	84
JULY	.25	.02	155	040	281			
15	.36	.06	.06	.020	56	7.5	0	240
AUG.	99	9.1	051	.030	70	10.	7	3000
SEP.	.36	.06	.06	.030		12.		13
15	.19	.06	.06	.040	82	7.0	0	670

Table 12.--Continued

11-3413.25 WAGON CREEK NEAR MT SHASTA (SITE 6)
WATER QUALITY DATA

DATE	TIME		INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	(DEG C)		PER- CENT SATUR- ATION	TOTAL NITRO- GEN (N) (MG/L)
MAY , 1	970							
19	0840	2	44	9.0		10.6	104	101
JUNE	71 001	0.01		0.01			0141	
10	1645	2	43	13.0		9.4	101	
JULY	431	11.6					1130	
28 AUG.	1545	2	21	16.0	29.5	8.8	100	300
27 SEP.	1430	2	16	14.5	111.00	9.2	102	44.85
30 NOV.	1000	2	16	9.0	31	10.2	100	
10	1225	2	43	8.0	10.00	10.1	96	
JAN., 1	1145	2	72	4.0	-	11.8	103	
MAR.	1145	1.31	12	4.0		11.0	105	
24 MAY	1415	2	87	8.0	10.0	10.6	102	1.1
11	1015	2	73	11.0	18.0	9.6	99	.52
16 JULY	1045	2	49	12.0	18.0	9.5	100	.70
13 AUG.	1355	2	25	14.5	25.5	9.0	100	.86
10	0930	2	20	12.5	25.5	9.4	100	1.0
SEP. 13	1630	2	19	15.5	29.5	8.8	100	.69
	7074	0.10			SPF-			7.445
	TOTAL KJEL-	DIS- SOLVED			CIFIC		FECAL	IMME- DIATE
	DAHL	NITRITE	DIS-	TOTAL	CON-		COLI-	COLI-
	NITRO-	PLUS	SOLVED	PHOS-	DUCT-		FORM	FORM
	GEN	NITRATE	NITRATE	PHORUS	ANCE	PH	(COL.	(COL.
	(N)	(N)	(N)	(P)	(MICRO-		PER	PER
		(14)						
DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	MHOS)	(UNITS)	100 ML)	100 ML)
0.84 460 1	(MG/L)		(MG/L)	(MG/L)		(UNITS)	100 ML)	100 ML)
MAY , 19	(MG/L)			(JAPEN)		(UNITS)		
0.84 460 1	(MG/L)		(MG/L)	(MG/L)	MHOS)	2.4-		100 ML)
MAY , 19 19 JUNE 10	(MG/L)			.59	MHOS)	1,77(98)		
MAY , 19 19	(MG/L) 970 •15		.36	•59	MHOS)	2.4-	CA 390	100
MAY , 19 19 JUNE 10 JULY 28 ÁUG.	(MG/L) 970 •15 •36 •29	(MG/L)	•36 •41 •45	•59 •040 •12	83	1,000	45 86	100 120 164
MAY , 19 19 JUNE 10 JULY 28 AUG. 27	(MG/L) 970 .15	(MG/L)	.36	•59 •040	MHOS)	1,000	45	100
MAY , 19 19 JUNE 10 JULY 28 AUG. 27 SEP.	(MG/L) 970 •15 •36 •29 •20	(MG/L)	•36 •41 •45 •52	.59 .040 .12	83 113	8.0	45 86 120	100 120 164 450
MAY , 19 19 JUNE 10 JULY 28 AUG. 27 SEP. 30	(MG/L) 970 •15 •36 •29	(MG/L)	•36 •41 •45	•59 •040 •12	83	1,000	45 86	100 120 164
MAY , 19 19 JUNE 10 JULY 28 AUG. 27 SEP.	(MG/L) 970 •15 •36 •29 •20	(MG/L)	•36 •41 •45 •52	.59 .040 .12	83 113	8.0	45 86 120	100 120 164 450
MAY , 19 19 JUNE 10 JULY 28 AUG. 27 SEP. 30 NOV. 10 JAN. 19	(MG/L) 970 .15 .36 .29 .20 .70 .48	(MG/L)	.36 .41 .45 .52 .43	.59 .040 .12 .10 .070	83 113 120	8.0	45 86 120	100 120 164 450 180 400
MAY , 19 19 JUNE 10 JULY 28 AUG. 27 SEP. 30 NOV. 10 JAN. 19 26 MAR.	(MG/L) 970 .15 .36 .29 .20 .70 .48 971 .34	(MG/L)	.36 .41 .45 .52 .43 .32	.59 .040 .12 .10 .070 .080	83 113 120 104	8.0	45 86 120 32	100 120 164 450 180
MAY , 19 19 JUNE 10 JULY 28 AUG. 27 SEP. 30 NOV. 10 JAN. 19 26	(MG/L) 970 .15 .36 .29 .20 .70 .48	(MG/L)	.36 .41 .45 .52 .43	.59 .040 .12 .10 .070	83 113 120	8.0	45 86 120 32	100 120 164 450 180 400
MAY , 19 JUNE 10 JUNE 10 AUG. 27 SEP. 30 NOV. 10 JAN 19 26 MAR. 24	(MG/L) 970 .15 .36 .29 .20 .70 .48 971 .34	(MG/L)	.36 .41 .45 .52 .43 .32	.59 .040 .12 .10 .070 .080	83 113 120 104	8.0	45 86 120 32 4	100 120 164 450 180 400 54
MAY , 19 JUNE 10 JULY 28 AUG. 27 SEP. 30 NOV. 10 JAN 19 26 MAR 24 MAY 11 JUNE 16 JUNE 16	(MG/L) 970 .15 .36 .29 .20 .70 .48 971 .34	(MG/L)	.36 .41 .45 .52 .43 .32	.59 .040 .12 .10 .070 .080 .060	83 113 120 104	8.0 8.0 8.1 7.6	45 86 120 32 4	100 120 164 450 180 400 54
MAY , 19 19 JUNE 10 JULY 28 AUG. 27 SEP. 30 NOV. 10 JAN. 19 26 MAR. 24 MAY 11 JUNE 16 JULY 13	(MG/L) 970 .15 .36 .29 .20 .70 .48 .971 .34 .90 .22	(MG/L) 30	.36 .41 .45 .52 .43 .32	.59 .040 .12 .10 .070 .080 .060 .15	83 113 120 104 102 116	8.0 8.0 8.1 7.6	45 86 120 32 4 10	100 120 164 450 180 400 54 1360 2800
MAY , 19 19 JUNE 10 JULY 28 AUG. 27 SEP. 30 NOV. 10 JAN., 19 26 MAR. 24 MAY 11 JUNE 16 JULY 13 AUG. 10	(MG/L) 970 .15 .36 .29 .20 .70 .48 971 .34 .90 .22 .43	(MG/L)	.36 .41 .45 .52 .43 .32	.59 .040 .12 .10 .070 .080 .060 .15	83 113 120 104 102 116	8.0 8.0 8.1 7.6 8.0	45 86 120 32 4 10 12	100 120 164 450 180 400 54 1360 2800
MAY , 19 JUNE 10 JULY 28 AUG. 27 SEP. 30 NOV. 10 JAN . 19 26 MAY 11 JULY 13 JULY 13 AUG. AUG. AUG. AUG. AUG. AUG. AUG.	(MG/L) 970 .15 .36 .29 .20 .70 .48 .90 .22 .43 .31	(MG/L)	.36 .41 .45 .52 .43 .32 .32	.59 .040 .12 .10 .070 .080 .060 .15 .090 .070	83 113 120 104 102 116 116	8.0 8.0 8.1 7.6 8.0 8.1 7.9	45 86 120 32 4 10 12 30	100 120 164 450 180 400 54 1360 2800 2600 3000

Table 12.--Continued

11-3413.41 BIG SPRINGS CREEK ABOVE HATCHERY, NEAR MT SHASTA (SITE 10) WATER QUALITY DATA

			INSTAN-				PER-	
					AIR		CENT	
					TEMP-			
	TIME	TYPE		ATURE		OXYGEN		(N)
DATE			(CFS)	(DEG C)	(DEG C)	(MG/L)		(MG/L)
MAY , 19	970							
19		2		9.5				
JUNE				2.0				
12	0850	2		8.0			44.0	4
18	0850	2		8.0				
JULY								
28	0800	. 2		8.0	14.0	10.7	103	
AUG.	94							
27	0915	2		7.0		10.7	101	1
OCT.	0.6	6.4						
01	0915	2		7.0		10.4	98	
NOV. 10	0800	2		7.0		10 7	0.7	
MAR 19		2	7.5	7.0	-	10.3	97	
24	0840	2	16	7.0	5.0	10.7	101.	.55
MAY	0040	6.0	10,01	7.0	3.0	10.1	101	
12	0840	2	16	8.5	11.5	10.3	100	.25
JUNE								
15	0800	2	15	8.0	13.0	10.4	100	.28
JULY .								
13	0730	2	16	7.5	15.0	10.5	100	.37
					CDF -			THE
	TOTAL	DIS-			SPE-			IMME-
	TOTAL KJEL-	DIS- SOLVED	015-		CIFIC		FECAL	DIATE
	TOTAL KJEL- DAHL	DIS- SOLVED NITRITE		TOTAL	CIFIC CON-		FECAL COLI-	DIATE COLI-
	TOTAL KJEL- DAHL NITRO-	DIS- SOLVED NITRITE PLUS	SOLVED	TOTAL PHOS-	CIFIC CON- DUCT-		FECAL COLI- FORM	DIATE COLI- FORM
	TOTAL KJEL- DAHL NITRO- GEN	DIS- SOLVED NITRITE PLUS NITRATE	SOLVED	TOTAL PHOS- PHORUS	CIFIC CON- DUCT- ANCE		FECAL COLI- FORM (COL.	DIATE COLI- FORM (COL.
	TOTAL KJEL- DAHL NITRO- GEN (N)	DIS- SOLVED NITRITE PLUS NITRATE (N)	SOLVED NITRATE (N)	TOTAL PHOS- PHORUS (P)	CIFIC CON- DUCT- ANCE (MICRO-	PH	FECAL COLI- FORM (COL. PER	COLI- FORM (COL. PER
	TOTAL KJEL- DAHL NITRO- GEN	DIS- SOLVED NITRITE PLUS NITRATE	SOLVED	TOTAL PHOS- PHORUS	CIFIC CON- DUCT- ANCE (MICRO-		FECAL COLI- FORM (COL.	COLI- FORM (COL. PER
	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N)	SOLVED NITRATE (N)	TOTAL PHOS- PHORUS (P)	CIFIC CON- DUCT- ANCE (MICRO-	PH	FECAL COLI- FORM (COL. PER	COLI- FORM (COL. PER
DATE	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N)	SOLVED NITRATE (N)	TOTAL PHOS- PHORUS (P)	CIFIC CON- DUCT- ANCE (MICRO-	PH	FECAL COLI- FORM (COL. PER	COLI- FORM (COL. PER
DATE	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	CIFIC CON- DUCT- ANCE (MICRO-	PH	FECAL COLI- FORM (COL- PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 19	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	CIFIC CON- DUCT- ANCE (MICRO-	PH	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 19 19 JUNE 12 18	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	FECAL COLI- FORM (COL- PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 19 JUNE 12 18 JULY	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L) -82 -050	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 19 JUNE 12 18 JULY 28	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 19 JUNE 12 18 JULY 28 AUG.	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) -07	TOTAL PHOS- PHORUS (P) (MG/L) -82 -050 	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML) 90 108
DATE MAY , 11 19 JUNE 12 18 JULY 28 AUG. 27	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L) -82 -050	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 19 19 JUNE 12 18 JULY 20 AUG. 27 OCT.	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) -07 -02 	TOTAL PHOS- PHORUS (P) (MG/L) -62 -050 	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 19 19 JUNE 12 18 JULY 28 AUG. 27 OCT. 01	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 .04 .09	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) -07	TOTAL PHOS- PHORUS (P) (MG/L) -82 -050 	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML) 90 108
DATE MAY , 11 19 JUNE 12 18 JULY 28 AUG. 27 OCT. 01 NOV.	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 .04 .09	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .07 .02 .09 .09	TOTAL PHOS-PHORUS (P) (MG/L) -82 -05012 -13 -12	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 19 19 JUNE 12 18 JULY 20 AUG. 27 OCT. 01 NOV.	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 .04 .09 .35	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) -07 -02 	TOTAL PHOS- PHORUS (P) (MG/L) -62 -050 	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML) 90 108 104 75
DATE MAY , 19 19 JUNE 12 18 JULY 20 AUG. 27 OCT. 01 NOV. 10 MAR., 19	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 .04 .09 .35	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .07 .02 .09 .09	TOTAL PHOS-PHORUS (P) (MG/L) -82 -05012 -13 -12	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML) 90 108 104 75
DATE MAY , 19 19 JUNE 12 18 JULY 20 AUG. 27 OCT. 01 NOV.	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 .04 .09 .35	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .07 .02 .09 .09	TOTAL PHOS- PHORUS (P) (MG/L) -62 -050 -12 -13 -12	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS) 7.5 7.5 7.2	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML) 90 108 104 75 20 260
DATE MAY , 1' 19 JUNE 12 18 JULY 28 AUG. 27 OCT. NOV. 10 MAR., 1' 24	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 .04 .09 .35	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .07 .02 .09 .09	TOTAL PHOS- PHORUS (P) (MG/L) -62 -050 -12 -13 -12	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS) 7.5	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 1' 19 JUNE 12 18 JULY 28 AUG. 01 NOV. 10 MAR., 1' 24 MAY 12 JUNE	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 .04 .09 .35 .58	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .07 .02 .09 .09	TOTAL PHOS-PHORUS (P) (MG/L) -82 -05012 -13 -12 -12 -20	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS) 7.5 7.5 7.5 7.7	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
DATE MAY , 19 19 JUNE 12 18 JULY 28 AUG. 27 OCT. 01 NOV. 10 MAY 12 JUNE 15	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 .04 .09 .35 .58 971 .35	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .07 .02 .09 .09	TOTAL PHOS-PHORUS (P) (MG/L) -82 -05012 -13 -12 -12 -20	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS) 7.5 7.5 7.2	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML) 90 108 104 75 20 260
DATE MAY , 1' 19 JUNE 12 18 JULY 28 AUG. 01 NOV. 10 MAR., 1' 24 MAY 12 JUNE	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .02 .17 .04 .09 .35 .58 971 .35	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .07 .02 .09 .09 .07	TOTAL PHOS-PHORUS (P) (MG/L) -82 -05012 -13 -12 -12 -17	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS) 7.5 7.5 7.5 7.7	FECAL COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)

Table 12. -- Continued

11-3413.42 BIG SPRINGS CREEK BELOW HATCHERY, NEAR MT SHASTA (SITE 11) WATER QUALITY DATA

			INSTAN- TANEOUS	TEMPER-	AIR TEMP-	DIS-	PER- CENT SATUR-	TOTAL NITRO- GEN
		TYPE					ATION	(N)
DATE				(DEG C)	(DEG C)			(MG/L)
Lavel and	MAG							
MAY , 19		-						
19	1630	2		14.5				
JUNE 12	1015	2	44	9.5			- 31	
19	1015	2		12.0				
JULY	1030	-		12.0				
28	0920	2		9.0	21.0	9.7	96	
AUG.								
27	1015	2		8.0		10.0	96	
OCT.	300	7+01		0.5		9.5	90	20 2341
01 NOV.	0945	2	0.5	7.0		9.5	90	
10	0900	2		6.5		9.7	90	
MAR 19		6.07		0.5		1100	100	
24	1020	2	9.3	7.5	7.5	10.0	95	.80
MAY					3219			
12	1015	2	9.3	9.0	15.0	9.3	92	.65
JUNE	0015	E			15.5	9.6	93	.82
JULY	0845	2	7.1	8.5	15.5	7.0	73	-02
13	0800	2	5.8	8.0	15.0	9.8	94	.64
AUG.								
10	1115	2	4.4	11.0	31.5	8.6	89	.75
SEP.		-	2.4		19.0	9.4	90	•55
15	0930	2	2.6	8.0	19.0	7.4	90	• 55
	TOTAL	DIS-			SPE-			IMME-
	KJEL-	SOLVED			CIFIC		FECAL	DIATE
	DAHL	NITRITE	DIS-	TOTAL	CON-		COLI-	
	NITRO-	PLUS	SOLVED		DUCT-		FORM	FORM
	GEN	NITRATE	NITRATE	PHORUS	ANCE	PH	(COL.	1001
								(COL.
	(N)	(N)		(P)	(MICRO-	105 50	PER	PER
			(MG/L)	(P) (MG/L)	(MICRO- MHOS)	(UNITS)	PER 100 ML)	PER
DATE	(N) (MG/L)	(N)	(MG/L)	(P) (MG/L)	(MICRO- MHOS)	(UNITS)	PER 100 ML)	PER
DATE MAY , 19	(N) (MG/L)	(N) (MG/L)	(MG/L)	(P) (MG/L)	(MICRO- MHOS)	(UNITS)	PER 100 ML)	PER
DATE	(N) (MG/L)	(N) (MG/L)	(MG/L)	(P) (MG/L)	(MICRO- MHOS)	(UNITS)	PER 100 ML)	PER
DATE MAY , 19 19 JUNE 12	(N) (MG/L) 70 .53	(N) (MG/L)	.16	(P) (MG/L) •50	(MICRO- MHOS)	(UNITS)	PER 100 ML)	PER
MAY , 19 19 JUNE 12	(N) (MG/L) 70 .53	(N) (MG/L)	(MG/L)	(P) (MG/L) •50	(MICRO- MHOS)	(UNITS)	PER 100 ML)	PER 100 ML)
MAY , 19 19 JUNE 12 19	(N) (MG/L) 70 .53	(N) (MG/L)	.16	(P) (MG/L) •50	(MICRO-MHOS)	(UNITS)	PER 100 ML)	PER 100 ML) 450 410
DATE MAY , 19 19 JUNE 12 19 JULY 28	(N) (MG/L) 70 .53	(N) (MG/L)	.16	(P) (MG/L) •50	(MICRO- MHOS)	(UNITS)	PER 100 ML)	PER 100 ML)
MAY , 19 19 JUNE 12 19	(N) (MG/L) 70 .53	(N) (MG/L)	.16	(P) (MG/L) •50	(MICRO-MHOS)	(UNITS)	PER 100 ML)	PER 100 ML) 450 410 680
DATE MAY , 19 19 JUNE 12 19 JULY 28 AUG. 27 OCT.	(N) (MG/L) 170 .53 .57 .41	(N) (MG/L)	.16 .14 .14	(P) (MG/L) •50 •090 •19 •26	(MICRO-MHOS)	(UNITS)	PER 100 ML) 140 88 77	PER 100 ML) 450 410
DATE MAY , 19 19 JUNE 12 19 JULY 28 AUG. 27 OCT. 01	(N) (MG/L) 70 .53 .57 	(N) (MG/L)	.16 .14 	(P) (MG/L) •50 •090	(MICRO-MHOS)	(UNITS)	PER 100 ML) 140 88	PER 100 ML) 450 410 680
DATE MAY , 19 19 JUNE 12 19 JULY 28 AUG. 27 OCT. 01 NOV.	(N) (MG/L) 70 .53 .57 .41 .50	(N) (MG/L)	.16 .14 .14 .18	(P) (MG/L) .50 .090 .19 .26	(MICRO-MHOS)	(UNITS)	PER 100 ML) 140 88 77 8	PER 100 ML) 450 410 680 300 120
DATE MAY , 19 19 JUNE 12 19 JULY 28 AUG. 27 OCT. 01 NOV. 10	(N) (MG/L) 70 .53 .57 .41 .50 .47	(N) (MG/L)	.16 .14 .14	(P) (MG/L) •50 •090 •19 •26	(MICRO-MHOS)	(UNITS)	PER 100 ML) 140 88 77	PER 100 ML) 450 410 680 300
DATE MAY , 19 19 JUNE 12 19 JULY 28 AUG. 27 OCT. 01 NOV. 10 MAR., 19	(N) (MG/L) 170 .53 .57 .41 .50 .47	(N) (MG/L)	.16 .14 .14 .18	(P) (MG/L) .50 .090 .19 .26	(MICRO-MHOS)	(UNITS) 7.3 7.4	PER 100 ML) 140 88 77 8	PER 100 ML) 450 410 680 300 120 90
DATE MAY , 19 19 JUNE 12 19 28 AUG. 27 OCT. 01 NOV. 10 MAR, 19 24 MAY	(N) (MG/L) 70 .53 .57 .41 .50 .47	(N) (MG/L)	.16 .14 .14 .18 .11	(P) (MG/L) .50 .090 .19 .26 .29	(MICRO-MHOS)	(UNITS)	PER 100 ML) 140 88 77 8	PER 100 ML) 450 410 680 300 120
DATE MAY , 19 19 JUNE 12 19 JULY 28 OCT OI NOV. 10 MAR, 19 24 MAY 12	(N) (MG/L) 170 .53 .57 .41 .50 .47	(N) (MG/L)	.16 .14 .14 .18 .11	(P) (MG/L) .50 .090 .19 .26 .29	(MICRO-MHOS)	(UNITS) 7.3 7.4	PER 100 ML) 140 88 77 8	PER 100 ML) 450 410 680 300 120 90
DATE MAY , 19 19 JUNE 12 19 JULY 28 AUG. 27 OCT. 01 NOV. 10 MAR., 19 24 MAY 12 JUNE	(N) (MG/L) 70 .53 .57 .41 .50 .47 .45	(N) (MG/L)	.16 .14 .14 .18 .11	(P) (MG/L) .50 .090 .19 .26 .29 .22 .30	(MICRO-MHOS)	(UNITS) 7.3 7.4 7.0 7.3	PER 100 ML) 140 88 77 8 4	PER 100 ML) 450 410 680 300 120 90 1200 2800
DATE MAY , 19 19 JUNE 12 19 JULY 28 AUG. 27 OCT. 01 NOV. 10 MAR, 19 24 JUNE 12 JUNE 15	(N) (MG/L) 170 .53 .57 .41 .50 .47 .45	(N) (MG/L)	.16 .14 .14 .18 .11	(P) (MG/L) .50 .090 .19 .26 .29 .22	(MICRO-MHOS)	(UNITS) 7.3 7.4 7.0	PER 100 ML)	PER 100 ML) 450 410 680 300 120 90 1200
DATE MAY , 19 19 JUNE 12 19 JULY 28 AUG. 27 OCT. 01 NOV. 10 MAR., 19 24 MAY 12 JUNE	(N) (MG/L) 70 .53 .57 .41 .50 .47 .45	(N) (MG/L)	.16 .14 .14 .18 .11	(P) (MG/L) .50 .090 .19 .26 .29 .22 .30 .30	(MICRO-MHOS)	(UNITS) 7.3 7.4 7.0 7.3 7.8	PER 100 ML) 140 88 77 8 4 1 46 14	PER 100 ML) 450 410 680 300 120 90 1200 2800 620
DATE MAY , 19 19 JUNE 12 19 JULY 28 OCT OCT NOV. 10 MAY, 19 24 MAY 12 JUNE 15 JULY	(N) (MG/L) 170 .53 .57 .41 .50 .47 .45	(N) (MG/L)	(MG/L) .16 .14 .18 .11 .11 .16	(P) (MG/L) .50 .090 .19 .26 .29 .22 .30	(MICRO-MHOS)	(UNITS) 7.3 7.4 7.0 7.3	PER 100 ML) 140 88 77 8 4	PER 100 ML) 450 410 680 300 120 90 1200 2800
DATE MAY , 19 19 JUNE 12 19 JULY 28 OCT OI NOV. 10 MAY, 19 24 MAY 12 JUNE 15 JUNE 13 AUG. 10	(N) (MG/L) 170 .53 .57 .41 .50 .47 .45	(N) (MG/L)	.16 .14 .14 .18 .11	(P) (MG/L) .50 .090 .19 .26 .29 .22 .30 .30	(MICRO-MHOS)	(UNITS) 7.3 7.4 7.0 7.3 7.8	PER 100 ML) 140 88 77 8 4 1 46 14	PER 100 ML) 450 410 680 300 120 90 1200 2800 620
DATE MAY , 19 19 JUNE 12 19 JULY 28 AUG. 27 OCT. 01 NOV. 10 MAR., 19 24 JUNE 15 JUNE 15 JUNE 15 JUNE 15 AUG. 10 SEP.	(N) (MG/L) 170 .53 .57 .41 .50 .47 .45 .60 .45	(N) (MG/L)	(MG/L) .16 .14 .18 .11 .11 .16 .19	(P) (MG/L) .50 .090 .19 .26 .29 .22 .30 .30 .30	(MICRO-MHOS) 99 99 100 106 99 98 100	(UNITS) 7.3 7.4 7.0 7.3 7.8 7.3 7.6	PER 100 ML) 140 88 77 8 4 1 46 14 16 48	PER 100 ML) 450 410 680 300 120 90 1200 2800 620 1100 3400
DATE MAY . 19 19 JUNE 12 19 28 AUG. 27 OCT. 01 NOV. 10 MAY . 19 24 MAY . 19 24 JUNE 15 JULY 13 AUG. 10	(N) (MG/L) 170 .53 .57 .41 .50 .47 .45 .60 .45	(N) (MG/L)	(MG/L) .16 .14 .18 .11 .11 .16	(P) (MG/L) .50 .090 -19 .26 .29 .22 .30 .30	(MICRO-MHOS) 99 99 100 106 99 98	(UNITS) 7.3 7.4 7.0 7.3 7.8 7.8	PER 100 ML)	PER 100 ML) 450 410 680 300 120 90 1200 2800 620 1100

Table 12.--Continued

11-3413.44 COLD CREEK ABOVE LAKE SISKIYOU, NEAR MT SHASTA (SITE 12)
WATER QUALITY DATA

DATE	TIME	TYPE	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	AIR TEMP- ERATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	TOTAL NITRO- GEN (N) (MG/L)
MAY , 19	70							
19		2	19	15.0		9.1	101	0251
JUNE			.00	- A				
10	1445	2	16	13.5		9.4	102	
JULY	1215	5		14.0	88	0		erri
28	1400	2	9.2	16.5	28.0	8.7	100	
AUG.	100	11 8.		80 8	7.0	0 -05		
27 OCT.	1120	5	12	10.5	21	10.0	103	0001
01	1030	2	20	8.5	36	10.6	102	1200
NOV. 10	1025	2	26	7.0	E1	10.2	95	1730
JAN., 19 27	1016		29	4.5	5.5	11.7	103	0091
MAR.	1015		-/-					GACI -
24 MAY	1600	2	24	10.0	11.5	10.2	102	.95
11 JUNE	1210	2	19	13.0	25.5	9.4	101	.62
16 JULY		2	16	12.5	21.0	9.4	100	.58
13	1610	2	14	16.5	30.0	8.6	100	.61
AUG.					h in	onl	95	001033
SEP.	1630	. 5	10	17.5	27.5	8.1	95	.66
15	1015	2	13	9.5	12.0	10.2	101	.38
	TOTAL	DIS-						THUE
- 1000	TOTAL KJEL- DAHL NITRO- GEN (N)	SOLVED NITRITE PLUS NITRATE (N)	DIS- SOLVED NITRATE (N)	TOTAL PHOS- PHORUS (P)	SPE- CIFIC CON- DUCT- ANCE (MICRO-	PH	FECAL COLI- FORM (COL. PER	IMME- DIATE COLI- FORM (COL. PER
DATE	KJEL- DAHL NITRO- GEN	SOLVED NITRITE PLUS NITRATE	SOL VED NITRATE	PHOS- PHORUS	CIFIC CON- DUCT- ANCE	PH (UNITS)	FORM (COL.	DIATE COLI- FORM (COL.
	KJEL- DAHL NITRO- GEN (N) (MG/L)	SOLVED NITRITE PLUS NITRATE (N)	SOLVED NITRATE (N)	PHOS- PHORUS (P)	CIFIC CON- DUCT- ANCE (MICRO-		COLI- FORM (COL. PER	DIATE COLI- FORM (COL. PER 100 ML)
MAY , 19	KJEL- DAHL NITRO- GEN (N) (MG/L)	SOLVED NITRITE PLUS NITRATE (N)	SOLVED NITRATE (N)	PHOS- PHORUS (P)	CIFIC CON- DUCT- ANCE (MICRO-		COLI- FORM (COL. PER	DIATE COLI- FORM (COL. PER
MAY , 19	NJEL- DAHL NITRO- GEN (N) (MG/L)	SOLVED NITRITE PLUS NITRATE (N)	SOLVED NITRATE (N) (MG/L)	PHOS- PHORUS (P) (MG/L)	CIFIC CON- DUCT- ANCE (MICRO- MHOS)		COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
MAY , 19 19 JUNE 10	KJEL- DAHL NITRO- GEN (N) (MG/L)	SOLVED NITRITE PLUS NITRATE (N)	SOLVED NITRATE (N) (MG/L)	PHOS- PHORUS (P) (MG/L)	CIFIC CON- DUCT- ANCE (MICRO-		COLI- FORM (COL. PER	DIATE COLI- FORM (COL. PER 100 ML)
MAY , 19 19 JUNE 10 19 JULY	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	PHOS- PHORUS (P) (MG/L)	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
MAY , 19 19 JUNE 10 19 JULY 28	KJEL- DAHL NITRO- GEN (N) (MG/L)	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	PHOS- PHORUS (P) (MG/L)	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
MAY , 19 JUNE 10 19 JULY 28 AUG. 27	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	PHOS- PHORUS (P) (MG/L)	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
MAY , 19 JUNE 10 19 JULY 28 AUG. 27 OCT.	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L)	PHOS- PHORUS (P) (MG/L) -68 -080	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML)
MAY , 19 JUNE 10 19 JULY 28 AUG. 27 OCT. 01 NOV.	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .16 .18 .20 .18	PHOS- PHORUS (P) (MG/L) .68 .080 .16 .21	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML) 122 65 140 144	DIATE COLI- FORM (COL. PER 100 ML) 600 440 260 460 450 510
MAY , 19 JUNE 10 19 JULY 28 AUG. 27 OCT. Ol NOV. 10	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52 .34	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) -16 -18 	PHOS- PHORUS (P) (MG/L) -68 -080 -16 -21	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML)	DIATE COLI- FORM (COL. PER 100 ML) 600 440 260 460
MAY , 19 JUNE 10 19 JULY 28 AUG. 27 OCT. 01 NOV.	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52 .34	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .16 .18 .20 .18	PHOS- PHORUS (P) (MG/L) .68 .080 .16 .21	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML) 122 65 140 144	DIATE COLI- FORM (COL. PER 100 ML) 600 440 260 460 450 510
MAY , 19 19 JUNE 10 19 JULY 28 AUG. 27 OCT. 01 NOV. 10 JAN. 19 27 MAR.	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52 .34 .37	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) -16 -18 -20 -18 -16 -18	PHOS- PHORUS (P) (MG/L) .68 .080 .16 .21 .19 .12	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML) 122 65 140 144 150 89	DIATE COLI- FORM (COL- PER 100 ML) 600 440 260 460 450 510 400 80
MAY , 19 JUNE 10 19 JULY 28 AUG. 27 OCT. Ol NOV. 10 JAN , 19 JAN , 19 JAN , 19 Z7 MAR. 24	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52 .34	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .16 .1820 .18 .16 .18	PHOS-PHORUS (P) (MG/L) .68 .080 .16 .21 .19	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML) 122 65 140 144 150 89 30 25	DIATE COLI- COLI- FORM (COL. PER 100 ML) 600 440 260 450 450 510 400 80 620
MAY , 19 19 JUNE 10 19 JULY 28 AUG. 27 OCT. 01 NOV. 10 JAN 24 MAY 11	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52 .34 .37	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) -16 -18 -20 -18 -16 -18	PHOS- PHORUS (P) (MG/L) .68 .080 .16 .21 .19 .12	CIFIC CON- DUCT- ANCE (MICRO- MHOS)	(UNITS)	COLI- FORM (COL. PER 100 ML) 122 65 140 144 150 89 30 25 64	DIATE COLI- FORM (COL PER 100 ML) 600 440 260 460 450 510 400 80 620 3900
MAY , 19 JUNE 10 19 JULY 28 AUG. 27 OCT OI NOV. 10 JAN 19 27 MAR. 24 MAY 11 JUNE 16 JUNE 16	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52 .34 .37 971 .32	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .16 .18 .20 .18 .19	PHOS-PHORUS (P) (P) (MG/L) .68 .080 .16 .21 .19 .12 .090 .20	CIFIC CONDUCT- ANCE (MICRO-MHOS)	(UNITS) 7.6 7.7 8.1 7.3	COLI- FORM (COL. PER 100 ML) 122 65 140 144 150 89 30 25 64	DIATE COLI- COLI- FORM (COL. PER 100 ML) 600 440 260 450 450 510 400 80 620
MAY , 19 19 JUNE 10 19 20LY 28 OCT. 01 NOV. 10 JAN 24 MAR. 24 MAY 11 JUNE 16 JULY 13	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52 .34 .37 .32 .75	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .16 .18 .20 .18 .16 .18	PHOS-PHORUS (P) (MG/L) .68 .080 .16 .21 .19 .12 .090 .20	CIFIC CONDUCT- ANCE (MICRO-MHOS)	(UNITS) 7.6 7.7 8.1 7.3 7.9	COLI- FORM (COL. PER 100 ML) 122 65 140 144 150 89 30 25 64 46	DIATE COLI- COLI- FORM (COL. PER 100 ML) 600 440 260 450 450 510 400 80 620 3900 800 4600
MAY , 19 JUNE 10 19 JULY 28 AUG. 27 OCT NOV 10 JAN 19 JAN 19 JUNE 16 JUNE 16 JULY 13 AUG. 11 JULY 13 AUG. 11	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52 .34 .37 .37 .32 .75 .42	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	**SOLVED NITRATE (N) (MG/L) ***16 ***18 ***16 ***18 ***29 ********************************	PHOS-PHORUS (P) (MG/L) -68 -080 -16 -21 -19 -12 -090 -20 -20	CIFIC CON- CON- DUCT- ANCE (MICRO- MHOS) 106 107 101 103 105	(UNITS) 7.6 7.7 8.1 7.3 7.9 8.1	COLI- FORM (COL. PER 100 ML) 122 65 140 144 150 89 30 25 64	DIATE COLI- COLI- FORM (COL. PER 100 ML) 600 440 260 460 450 510 400 80 620 3900 800
MAY , 19 19 JUNE 10 19 20LY 28 OCT. 01 NOV. 10 JAN 24 MAR. 24 MAY 11 JUNE 16 JULY 13	KJEL- DAHL NITRO- GEN (N) (MG/L) 970 .27 .56 .43 .52 .34 .37 971 .32 .75 .42 .42	SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE (N) (MG/L) .16 .18 .20 .18 .16 .18 .29	PHOS-PHORUS (P) (MG/L) .68 .080 .16 .21 .19 .12 .090 .20 .20	CIFIC CON- CON- DUCT- ANCE (MICRO- MHOS) 106 107 101 103 105 105	(UNITS) 7.6 7.7 8.1 7.3 7.9 8.1 7.8	COLI- FORM (COL. PER 100 ML) 122 65 140 144 150 89 30 25 64 46	DIATE COLI- COLI- FORM (COL. PER 100 ML) 600 440 260 450 450 510 400 80 620 3900 800 4600

Table 12.--Continued

11-3413.60 LAKE SISKIYOU NEAR MT SHASTA (SITE 14)
WATER QUALITY DATA

				Also-	AIR	DIS-	PER CENT	BICAR-	CAR-
	TIME	TYPE	DEPTH	TEMP- ERATURE	TEMP- ERATURE	SOLVED	SATUR- ATION	BONATE (HCO3)	BONATE (CO3)
DATE	0.30	00174 T	(FT)	(DEG C)	(DEG C)	(MG/L)	MIION	(MG/L)	(MG/L)
MAY, 19	970								
19	1105	2	0	13.5		11.4	124		
19	1335	2	100	9.5		9.8	97		
JUNE									
10		2	0	17.0	31.36	9.6	112	- 687	. 172
JULY 29	1115	2		00 5		8.8	114	181	.01
29	1115	2	100	22.5 14.0	4. P. T.	6.6	72	50	YJUU
AUG.	1140	WI T	100	14.0	05 5	0.0		1044	y 8 S
25	1755	2	0	21.5	28.5	8.8	113		-BUS-
25	1800	2	100	13.0	28.5	5.2	56	1511	
SEP.									
29	1700	2	0	16.0		7.6	86		1700
29	1730	2	100	13.5		3.5	38	10.44	
NOV.		3.25		04				40 1XE1	
10	1600	2	0	11.0		7.9	81	101	75
10 JAN., 1	1545	2	100	10.5	920	7.9	81	196	57920
27	1215	2	0	2.0	10	12.5	102	1001	+48
27	1130	2	100	3.0	8.5	11.4	96		- 750
MAR.	2100	01 - 0	100				5		
25	1505	2	0	5.0	5.0	11.8	105		3800
25	1415	2	100	4.0	5.0	11.6	101		
MAY					41	45	5 0		
11	1430	2	0	11.0	23.0	10.7	110		1864
11	1400	2	100	6.5	23.0	10.0	93	201	.17
11	1430	3	S		77			7.000	9833
JUNE 14	1620	2	0	16.5	21.5	9.9	114	40435	A84
14	1545	2	100	7.5	21.5	9.7	92	3	.1-
14	1620	3			21.0			ATOT	
JULY	I A I G	Section of the							
14	1530	2	0	21.5	32.0	8.6	110	Store	
14	1500	2	100	8.0	32.0	8.5	82		
14	1530	3		mother					
AUG.	P 201.	DELEGIE 12	TIME!	20101	SONO an GA	GN: - E'I	10 M		
09	1640	2	0	25.5	33.0	7.9	108	7-	
09	1500	2 3	100	8.0	34.0	8.2	79	1970-	45.50
09 SEP.	1640	3			04- 01		- TS	240	485
14	1415	2	0	20.0	25.5	8.6	106		Bistut
TATOR	LAID	4	U	20.0	20.0	0.0	100		

Table 12.--Continued

11-3413.60 LAKE SISKIYOU NEAR MT SHASTA (SITE 14).--Continued
WATER QUALITY DATA

			TOTAL	DIS-	DIS-			DIS-	
			KJEL-	SOLVED	SOLVED			SOLVED	
	ORGANIC	TOTAL	DAHL	NITRITE	AMMONIA	DIS-	TOTAL	ORTHO.	ALKA-
	NITRO-	NITRO-	NITRO-	PLUS	NITRO-	SOLVED	PHOS-	PHOS-	LINITY
	GEN	GEN	GEN	NITRATE	GEN	NITRATE	PHORUS	PHORUS	AS
	(N)	(N)	(N)	(N)	(N)	(N)	(P)	(P)	CACO3
DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)
MAY , 1	970								
19			.00			.00	.27		
19	1105		11.0						
JUNE									
10	1995		.56	21.0		.02	.010		
JULY									
29			.29			.05	.010		
29			.39			.11	.020		
AUG.									
25			.35			.00	.030		
25	1040		.12			.11	.020		
SEP.									
29			.78			.07	.030		
29			.12			.11	.040		
NOV.				77.00					
10			.22			.09	.030		
10			.14			.09	.030		
JAN. 1	971								
27	,		.23			.18	.030		
27			.27			.05	.040		
MAR.									
25			.55	.00			.10	.030	
25			.90	.00			.10	.030	
MAY									
11	1970		.28	.00			.060	.030	
11			.18	.03			.060	.030	
11									
JUNE									
14			.24	.03		E	.050		
14			.26	.00			.040		
14									
JULY									
14	1991		.66	.05		.05	.040		
14			.45	.03		.03	.020		
14			.45	.03		.03	.020	. 20.	
	0 .02	64 .02		0 00		2.5	0.0	A 8900	1200
AUG.	0		.40	.08		.08	.030		
09	- 10		.33			.04	.030	3200	
09			.33	.04		.04	.030	420	
09 SEP.	. 0 .09	01	36	11		4 del	121		
14		.22	.19	.03		.03	.040		

Table 12. -- Continued

11-3413.60 LAKE SISKIYOU NEAR MT SHASTA (SITE 14).--Continued

	SPECI- FIC COND-		COLOR (PLAT-	TUR-	TRANS- PAR- ENCY	CARBON	FECAL COLI- FORM	IMME- DIATE COLI- FORM
	UCTANCE (MICRO-	РН	INUM- COBALT	BID-	SECCHI	DIOXIDE (CO2)	(COL.	(COL.
DATE	MHOS)	(UNITS)	UNITS)	(JTU)	(IN)	(MG/L)	100 ML)	100 ML)
MAY . 1	970							
19	76							3
19 JUNE	125	00.75	- 77		08.77			4
10			44	1000	46.00	200	0.00	19.00
JULY			A 372	3	-			3906
29	0.110	200			000			5
29	0.70	50						30
AUG.								
25	118	8.6	2	0			0	1
25	100	6.9	4	0	85, 77		0	0
SEP.								
29								27
29 NOV.	0000	10.70	- TO		SI. 7	8 8		37
10	118	7.6						16
10	118	7.7			55.70			18
JAN., 1	971							
27	104	7.7					8	860
27.000	100	7.8			0 65.75	77	0	420
MAR.								
25	113	7.5					1	35
25	112	7.6		00.77	0 65 10			60
MAY	91.0					U 30		78
11	98	7.6					0 2	
11	85	7.9		00.	66			290
JUNE	240 27	-	36.	S Edv. 12	00	0 11-		
14	89	7.4				7	0	190
14	85	8.3					U	12
14					120			
JULY					0.000.0			
14	89	7.4					0	450
14	98	8.4					0	110
14	000-	60			120			
AUG.								
09	88	7.5					0	1100
09	116	8.4		80. **	00,77		0	790
09	950.77	40. 77		491.75	180			
SEP.	10-40	-						
14	121	8.5					0	1100

Table 12.--Continued

11-3413.65 SACRAMENTO RIVER ABOVE SEWAGE EFFLUENT, NEAR MT SHASTA (SITE 15)
WATER QUALITY DATA

DATE	TIME		TEM	P- TE	IR MP- TURE G C)	DIS SOLV OXYG (MG/	ED	PER CEN SATU ATIO	T DI	TAL SI- UAL LO- INE G/L)	TOTA	RO- N	TOTA KJEI DAHI NITE GEI (NI	L- L RO- N
AUG. , 1		10	37						0.11	-80				
26 SEP.	1020	2	-1	0.5		10	. 1	1	02			77		-
09	1105	2	1	1.0										
14	1245	2		0.8						.00				
30	1645	2		1.2	21.5	9	.6		98	.00				.05
NOV.														
11	1000	2	1	0.5	10.5	9	. 8		99	.00				.29
JUNE, 1	971									45.				-01
15	1410	2	1	6.0	24.0		.0	1		.00				.26
JULY						0.8		98	.00	00		(2.1.		24
14	1040	2	1	6.5	25.0	8	. 8	1	.00	.00				.26
AUG.	0815	2		8.5	14.5		.2		98	.00				.29
SEP.	0015			0.7	14.7	6.5			,,					-
14	0915	2	1	1.5	17.5		0.0	1	01	.00		.29		.20
D	NI NI	DIS- ULVED TRITE PLUS TRATE (N) MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	PHOS- PHORUS (P)	UCTA	IC ND- ANCE CRO-	P	H TS)	CHEM-	FOR	RM DL. ER	CO F (C	ATE LI- ORM OL.	
A116	G., 1970													
2	6 P.	- 77	10	11	120 2005								18	
	9		3H3		218	"					6			
	4				-OPPOID				NT2		2		178	
	0	830	.11	.040	BCTARG				1730 -		4		15	
	V.	1 118	.11	.040		121		8.0			7		60	
	NE, 1971										. 1 4 4			
	5	.01		.050)	97		8.2			0		330	
	4	.02	.02	.050)	110		8.0			5	1	700	
AU	G.	Ten sul											100	
SE	1	.02	.02	.040)	103		7.9			1	2	100	
	4	.09	.09	.060)	116		7.9			0	2	008	

Table 12.--Continued

11-3413.70 MT SHASTA SEWAGE EFFLUENT AT WEIR, NEAR MT SHASTA (SITE 16)
WATER QUALITY DATA

								TOTAL	
								RESI-	
					ATR	DIS-			
			DIS-	TEMP-	TEMP-	SOLVED	SATUR-	CHLO-	GEN
	TIME	TYPE				OXYGEN			
DATE	CACT TYSIN	Pality/any				(MG/L)			
JULY. 1	970								
28 AUG.	1115	2	.72	23.5		6.5	87	1.6	177
25	1700	-2		21.0		5.7	72	3.2	.53
26	0845		.67	18.0		4.8	58	1.8	****
26	1800	2				0.0.0		3.2	
SEP.	1003							5001	
09	1710	2	.71	19.7				2.3	No - VO
14	1000	2	.62	12.0				4.6	
14	1600	2	8-101	2.0	0			10	1
30	1510	2	.80	15.0				3.6	100
.VOV									
11	1445	2		9.0				1.8	27 A
JUNE, 1	971								
15		2	.76	22.0	25.5			4.8	
JULY								4783790	
14	1010	2	.49	21.0	26.0			2.3	
	MR 1 T 2 L F -							210	
14	0815	2	.55	18.0	15.5		779	3.1	0.60
16		2	131		0000	ATOT THE	ner st	3.2	450
	TOTAL	DIS-							IMME-
		SOLVED			SPECI-		B10-	FECAL	DIATE
	DAHL				FIC		CHEM-	COLI-	COLI-
		PLUS					ICAL	FORM	FORM
	GEN				UCTANCE		OXYGEN	(COL.	(COL.
	(N)		(N)		(MICRU-		DEMAND	PER	PER
DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	MHOS)	(UNITS)	(MG/L)	100 ML)	100 ML)
JULY, 1			5.4	1.7				2000	51.4
28	5.9	55	.11	2.3				0	600
AUG.					0.00		50.	0	Mag.
25	-			-				0	0
26					11	134	20.	0	7.0
26		100	A-S P. 1	- 11	- 0.00			0	60
SEP. 09	4.4		.23	4.6	198	E0.	8.0	4	784E-0
14	4.4		•23	4.0			0.0	0	0
14									
30			.11	4.9				0	0
NOV.									
11									
JUNE , 1	971								
15									
JULY									414
14									
SEP.									
14									

Table 12. -- Continued

11-3413.75 MT SHASTA SEWAGE EFFLUENT AT RIVER, NEAR MT SHASTA (SITE 17)

WATER QUALITY DATA

									TOTAL
				AIR	DIS-	PER- CENT		TOTAL NITRO-	KJEL- DAHL NITRO-
			TEMP-	TEMP-	SOLVED	SATUR-	CHLO-	GEN	GEN
	TIME	TYPE	ERATURE	ERATURE	OXYGEN	ATION	RINE	(N)	(N)
DATE	T. Dr. Story	TANCALON	(DEG C)	(DEG C)	(MG/L)	147/19/19/19	(MG/L)	(MG/L)	(MG/L)
AUG.,	970								
26	1100	2	17.0	1.01		0-5	.80	() L	6.2
SEP.	1.340		973						
09	1120	2	16.0			0.5	2.0	177	4.1
14	1240	2	13.0			2000	6.3	211	4. 1. 1.
30	1655	2	15.0	21.5	9.5	104	2.8	300-	7.6
NOV.									
11	1020	2	0 % 4	19.0	10000-		1.1	CANAL	8.3
JUNE,		-	Letter.	0.00		80 B	3.9	0000-	
15	1530	2	21.0	24.0			3.9	200-	
JULY	1577	2	20.0	25.0	0.45	0.00	.70	3594-	
14	1130		20.0	25.0			.10	27.77	
SEP. 14	0930	2	15.5	17.5	0-35	9259	1.9	C.L	11.0
				5,01 .					
	DIS-								IMME-
	SOLVED			SPECI-			810-	FECAL	DIATE
	NITRITE	DIS-	TOTAL	FIC			CHEM-	COLI-	COLI-
	PLUS	SOLVED	PHOS-	COND-		TUR-	ICAL	FORM	FORM
	NITRATE	NITRATE	PHORUS	UCTANCE	PH	BID-	OXYGEN	(COL.	(COL.
	(N)	(N)	(P)	(MICRO-		ITY	DEMAND	PER	
DATE	(MG/L)	(MG/L)	(MG/L)	MHOS)	(UNITS)	(UTU)	(MG/L)	100 ML)	100 ML)
AUG.,	1970								
26	1 (34 55)	.09	4.6	187	6.8	10	0.050=+	2000	6200
SEP.									1000
09		.25	4.2	202			10	1360	
14	37155	15		1-1		94,		0	0
30	1000	.14	4.6		70 10 77			0	41
NOV.				107		24.4	- C	0	0
11		105	OF ALL LA	187		2.0	1000	0	
JUNE,		RATE ME	PRATE P	AND STATE OF THE PARTY OF		-	Habitan Total	0	0
15	(14)			(C)	75.1	dro.		MANUEL SE	
JULY	MAX BOX 1 1 M	WALE O	CAST II	10121				0	0
SEP.	11.	-							
14	-05							0	26000

Table 12. -- Continued

11-3413.80 SACRAMENTO RIVER BELOW SEWAGE EFFLUENT, NEAR MT SHASTA (SITE 18)
WATER QUALITY DATA

TOTAL RIEL- DARE WITRO-		TOTAL REST- COAL	-#54 T093	AIR	015-	PER- CENT	TOTAL RESI- DUAL	TOTAL NITRO-	TOTAL KJEL- DAHL NITRO-
			TEMP-	TEMP-	SOLVED	SATUR-	CHLO-	GEN	GEN
161	TIME	TYPE	ERATURE	ERATURE	OXYGEN	ATION	RINE	(N)	(N)
DATE		127583	(DEG C)	(DEG C)	(MG/L)		(MG/L)	(MG/L)	(MG/L)
AUG., 1	970								
26	1145	2	12.0		10.1	105	.00	100.77	.32
SFP.									027
09	1430	2	12.0			0581	.00	3 no 77	.32
14	1215	2	10.5				.00	1000	4.4.5
30	1630	2	11.0	21.5	9.8	101	.00	PERAL	.23
NOV.									10/24
11	1045	2	10.5	9.0	9.8	99	.00	7-0-So /	.28
MAY , 1									
JUNE	0930	2	9.5	14.5	10.3	101		15300	•22
15	1435	2	16.0	24.0	9.0	101	.00	00.07	.40
JULY				6.40			-		100
14	1115	2	17.0	25.0	8.8	101	.00	00.00	.35
AUG.	730			72.0.	15.5	-			
11	0845	2	8.5	14.5	10.2	98	.00		.25
SEP.					10.0	101	00	24	20
14	1000	2	11.5	18.0	10.0	101	.00	.34	.28
DIATE								SOLVED	
					919			211011	
	DIS-						COLVER	20.19	IMME-
+3051	SOLVED	SPEANO	-018	SPECI-			810-	FECAL	
	NITRITE	DIS-	TOTAL	FIC		199	CHEM-	COLI-	COLI-
			PHOS-	COND-		TUR-	ICAL	FORM	FORM
	NITRATE	NITRATE	PHORUS	UCTANCE	РН	BID-	OXYGEN	(COL.	(COL.
DATE	(N)	(N)	(P)	(MICRU-		ITY	DEMAND	PER	PER
DATE	(MG/L)	(MG/L)	(MG/L)	MHOS)	(UNITS)	(JTU)	(MG/L)	100 ML)	100 ML)
AUG., 1	970								
26	16000	.09	.10	125	7.7	1	Children Tr	35	233
SEP.					44	0.4			
09	1907	.09	.12	124				2	
14	0		-	443	181			0	0
30		.11	.15					1	25
NOV.				100 m					
11		.14	.070	121	8.0			3	420
MAY , 1			010	00					
13	.00		.060	88	8.1		8-0	17	400
JUNE	0.1		040	90	0.0				- x = 0.25
JULY	.01		.060	89	8.0			0	210
14	.03	.03	.050	109	8.0			12	
AUG.	.03	.03	.000	109	0.0			2	2800
11	.01	.01	.030	105	7.8			2	1100
SEP.									
									1100

Table 12.--Continued

11-3414.00 SACRAMENTO RIVER NEAR MT SHASTA (SITE 19)

WATER QUALITY DATA

DATE	TIME	TYPE	DIS- CHARGE (CFS)	TEMP- ERATURE (DEG C)	AIR TEMP- ERATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	TOTAL RESI- DUAL CHLO- RINE (MG/L)	TOTAL NITRO- GEN (N) (MG/L)
MAY , 19	70								
20	1340	2	478	13.5		9.7	102	.00	
JUNE								1735	
10	1255	2	267	9.0		11.0	106	.00	177
19	1650	2	129	12.0	0.64-	356	170	.00	
JULY	1135	2	63	12.5	27.0	10.0	104	0.77	
AUG.	10930								
26	1430	2	40	15.0	0.44-	9.5	103	.00	
OCT.								00	
01	1455	2	41	13.0		9.3	98	.00	
NOV. 12	1345	2	213	10.0	7.5	9.9	98	niee	
JAN., 19		-	200						
26	1635	2	119	4.5	3.0	11.7	101	2000	
MAR.									
23	1445	2	241	6.0	10.0	11.4	102	0077	
MAY									
13	1030	2	967	9.5	13.0	10.4	101		
JUNE 17	1030	2	296	15.0	12.5	9.1	100	07	
JULY	1030	2	290	13.0	12.5	/			
15	1200	2	88	18.5	32.0	8.4	101	12 170	
AUG.									
11	1315	2	60	14.0	38.0	9.3	100	0000	107
SEP.						0.0	100	1	.20
16	1030	2	48	11.5	18.0	9.8	100		•20

DATE	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)		SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH (UNITS)	TUR- BID- ITY (JTU)	BIO- CHEM- ICAL DXYGEN DEMAND (MG/L)	FECAL COLI- FORM (COL. PER 100 ML)	IMME- DIATE COLI- FORM (COL. PER 100 ML)
MAY , 19	70									
JUNE	.05		.00	.23	78				3NUL	1
10	.22		.00	.010					Value	4
19					:	0			1	17
JULY									- AUa	31
30	.28		.05	.050		34	-		2202	31
AUG. 26	.17		.07	.10	131	8.3	1		13	96
OCT.			0.0						EVDN .	ma di salah
01	.16		.14	.11		0			1	14
NOV.				050	121	8.0	1	1461	1-645	480
12 JAN., 19	.23	10	.09	.050	121	0.0				100
26	.24		.14	.050	110	7.9	1		50	104
MAR.									YAR	24.0
23	1.2	.10		.15	109	7.6	10	. 5	31	260
MAY 13	.18	.03		.070	83	7.9			26	330
JUNE	.18	.03	34	.010						
17	.25	.02		.050	91	7.8	100		8	220
JULY						8.0	2			2000
15 AUG.	.34	.04	.04	.090	116	8.0	-		4.363	2000
11	.24	.11	.11	.030	110	8.1	1		1	650
SEP.										4000
16	.14	.06	.06	.090	128	8.2	1		2	4800

Table 12.--Continued

11-3414.40 SACRAMENTO RIVER AT SHASTA RETREAT, NEAR DUNSMUIR (SITE 20)
WATER QUALITY DATA

DATE	TIME	TYPE	DIS- CHARGE (CFS)	TEMP- ERATURE (DEG C)	AIR TEMP- ERATURE (DEG C)	DIS- SOLVED DXYGEN (MG/L)	PER- CENT SATUR- ATION	TOTAL NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)
MAY , 19									
22	0800	2	1100-	13.0	10-1-	3.05			T01 . 1344H
JUNE									
19	1735	2		14.0					23 HeL
JULY									
30	1400	2	152	13.0	0 y S 4 -	10.3	107		.12
AUG.							101		7 JUL
26 UCT.	1550	2	10104-	13.0	2134-	10.0	104	700	.76
02	0745	2	2.0	13.0	9.6	101			.05
NOV.	0.45			13.0	7.0				.03
12	1450	2	332	9.5	8.0	10.2	98	2244	.18
JAN., 19	71								
28	0810	2	10:0-	4.5	0104-	11.8	101	0.000	.18
MAR.	0.00			144					TPI L. HAL
23	1345	2	9:34-	6.0	10,2	11.3	100	0007	. 55
MAY 13	1400	2	13 / 14-	10.5	20.0	10.3	101		.22
JUNE	1400			10.5	20.0	10.5	101	40000	
17	1245	2	0.04-	15.0	24.5	9.3	101	07.44	.29
JULY									2000
15	1410	2	171	16.0	31.0	9.2	101	00.00	. 35
AUG.									
12	0715	2	151	9.5	17.0	10.3	99	00.44	.27
SEP.	0000		124	0.5	10.5	10.7	101	20	PLATERUA
16	0900	2	136	8.5	10.5	10.7	101	.20	.12

DATE	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	SOLVED NITRATE	TOTAL PHOS- PHORUS (P) (MG/L)		PH (UNITS)		FECAL COLI- FORM (COL. PER 100 ML)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	
MAY . 1	970								
22							-17	ove 1	
JUNE									
19							2	4	
JULY		- 0.25	1.59						
30		.05	.050					13	
AUG.		.05	.070	130	7.8			1100	
26 OCT.		.05	.070	130	7.8	1	3	8	
02		.11	.10	1 11	N20		6	12	
NOV.									
12		.09	.050	126	7.8			220	
JAN., 1	971								
28		.14	.050	118	7.6		18	120	
MAR.		-4.5	.15					1281	
23 MAY	.10		.15	111	7.3		6	243	
13	.00		.070	86	7.6		10	650	
JUNE			-				10	0,0	
17	.04		.050	99	7.5		- 0	940	
JULY									
15	.08	.08	.080	122	7.6		2	1200	
AUG.									
12	.06	.06	.040	123	7.6		4	1400	
SEP. 16	.08	.08	.090	127	7.0				
10	.00	•00	.090	121	7.8		6	3600	

Table 12.--Continued

11-3414.60 SACRAMENTO RIVER AT SODA CREEK ROAD, NEAR DUNSMUIR (SITE 21)

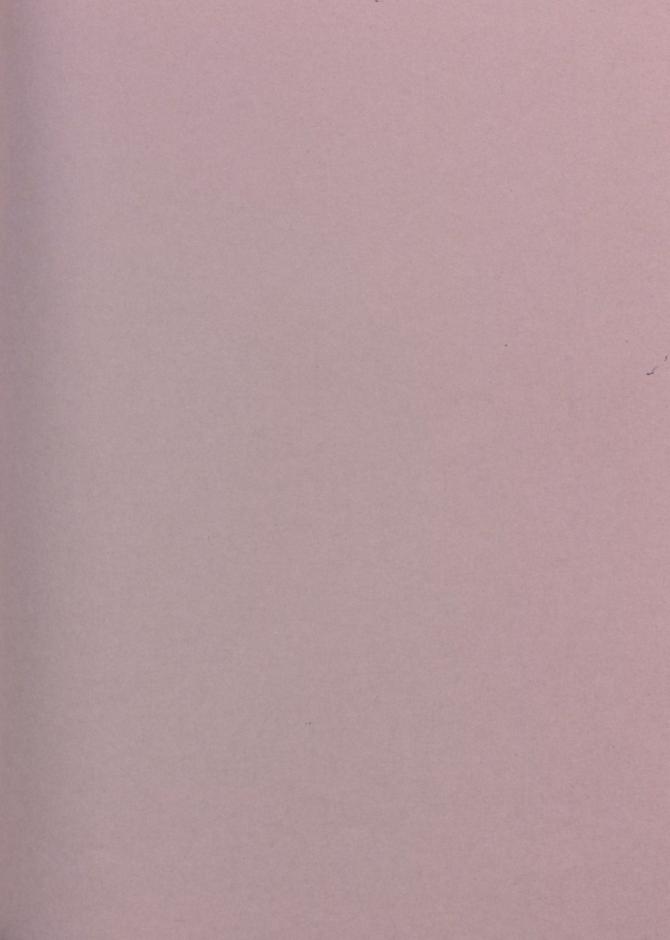
WATER QUALITY DATA

			W	ATER QUAL	ITY DATA				
DATE	TIME	TYPE	DIS- CHARGE (CFS)		AIR TEMP- ERATURE (DEG C)	DIS- SOLVED DXYGEN (MG/L)	PER- CENT SATUR- ATION		TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)
MAY , 19	970								
JUNE		2	555					-	
19	1830	2	228	17.0					
AUG. 28	1440	2	129	15.0		10.0	106		.39
02	0930	2	126	8.0		11.1	101		.16
NOV. 13	0825	2	329	7.5	3.5	10.8	97	200	.17
JAN., 19	0900	2	362	4.0		12.0	99	-	.79
MAR. 23	1015	2	566	6.0	9.0	11.4	99	2802	.65
MAY								100	
JUNE	1500	2	1280	11.5	20.5	10.1	100		• 20
17 JULY	1315	2	410	16.0	23.5	9.6	104	-	.40
15 AUG.	1545	2	184	19.0	33.0	9.0	105		.44
12	0945	2	161	12.5	27.0	10.2	103		1.3
SEP. 16	1415	2	147	14.0	28.0	10.2	106	.18	.12
	DIS- SOLVED NITRITE	DIS-		SPECI- FIC			BIO- CHEM-	FECAL COLI-	IMME- DIATE COLI-
	PLUS	SOLVED	PHOS- PHORUS	COND- UCTANCE	РН	TUR- BID-	OXYGEN	FORM (COL.	FORM (COL.
0475	(N)	(N)	(P)	(MICRO-		ITY	DEMAND	PER 100 ML)	PER
DATE		(MG/L)	(MG/L)	MHOS)	(UNITS)	(JTU)	THOTE	100 ML)	100 ML)
MAY , 1	.970								7
JUNE 19			100	191		-		20	78
AUG.								2	12
28 UCT.		.07	.080	134	8.2	0			1901
02 NOV.		.09	.10	08.	216	107		2	52
13 JAN., 1	971	.09	.040	121	7.7				220
28 MAR.		.09	.030	99	7.8			24	200
23	.10		.15	100	7.4			81	1500
MAY 13	.00		.070	86	8.0			13	850
17	.03		.050	99	8.1			8	1100
JULY 15	.04	.04	.080	123	8.3			2	1400
AUG. 12	.04	.04	.040	125	8.1			28	2000
SEP.	0.4		10	122	0 2			0	640

Table 12.--Continued

11-3420.00 SACRAMENTO RIVER AT DELTA (SITE 22)
WATER QUALITY DATA

DATE	G JAT	TYPE	DIS- CHARGE			OXYGEN	PER- CENT SATUR- ATION	TOTAL NITRO- GEN (N) (MG/L)	
137,034			10.37	1000 01	1020 07	(5,12)		(1107)	STAD
MAY ,									
22	1030	2	984	177	0	281	5		
JUNE	1000		396	20.0					
19 AUG.	1920	2	396	20.0	17.0	825	-	1830	
28	1625	2	182	19.0		9.7	108		
UCT.	10, 2	100	0.01	17.00		129	100		
02	1215	2	188	13.5	31.2	10.9	108		
NOV.									02
13	1015	2	977	7.5	2.5	11.4	98		
JAN.,	1971		10,01						
28 MAR.	1045	2	1620	5.5	0.4	12.3	102	0000	Treat told
23	0830	2	2270	6.5	7.5	11.7	99		
MAY	0030	66.	2011	0+9	0.0	999	3.		23
14	0900	2	2280	9.0	18.0	10.9	99		
JUNE			. 1-01				1 8		
17	1500	2	722	17.0	30.0	9.6	102	5151	
JULY	1845	2	320	21.0	28.0	8.6	100		
15 AUG.	1045	-	320	21.0	20.0	0.0	100	1549	
12	1215	2	236	22.5	34.5	9.4	112		-34
SEP.		601						. 2490	
16	1625	2	204	18.5	33.5	9.8	108	.20	
				0.05					******
	TOTAL	D15-							IMME-
	KJEL-	SOLVED			SPECI-		B10-	FECAL	DIATE
	DAHL	NITRITE	DIS-	TOTAL	FIC		CHEM-	COLI-	COL I-
	NITRO-	PLUS	SOLVED	PHOS-	COND-		ICAL	FORM	FORM
	GEN	NITRATE		PHORUS	UCTANCE		OXYGEN	(COL.	(COL.
	(N)	(N)	(N)	(P)	(MICRO-		(MG/L)	PER 100 ML)	PER 100 ML)
DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	WHOSI	(UNITS)	(MG/L)	100 ML	100 ML)
MAY , 19								FURS (M)	
22		ODI NEW H	.00	.31	Heli	H HART	Add to	(NOT 1)	3070
JUNE								100 -11	00.00
19								2	10
AUG. 28	.18	770	.02	.060	147	8.8		2	8
OCT.	•10				-	-			1,101
02	.22		.00	.060				1	31
NOV.			0	2.78	134				785
13	.08		.05	.020	106	8.0			80
JAN., 19			.02	.010	80	7.8	PO.	11	56
28 MAR.	.10	-	.02	.010	. 60	1.0	mo i		20
23	.60	.10		.10	82	7.3		31	1020
MAY							.09.		
14	.25	.03	429	.070	73	7.9		2	1200
JUNE	3.8			24.0	001	111		011	2371
17	.25	.00	414	.040	96	8.1		002	220
JULY 15	.44	.02	.02	.070	124	8.3		8	2100
AUG.	23 g	427			200	076			
12	.31	.00	.00	.050	133	8.4		9	6200
SEP.	1995			000	173	985		204	1400
16	.19	.01	.01	.080	143	8.7		0	1600



RINGS ... FLOOD FREQUENCY ... DIGITAL MONITOR ... RAIN GAGE THE OF SATURATION ... BASE OF FRESH WATER ... DEPOSITION "HYDROLOGIC BUDGET " LIMNOLOGY . . . AQUICLUDE . . . WATER VE SIZE ... STREAMS ... TOTAL NITROGEN ... GRAIN SIZE ... ANIC POLLUTION ... SPECIFIC CONDUCTANCE ... TOTAL ORGANIL TER TABLE ... HYDROLOGY ... SUBSURFACE GEOLOGY ... DIVERS