

Water-quality Data for the South Umpqua River Basin, Oregon, 1990-92

By Chauncey W. Anderson, Dwight Q. Tanner, and Douglas B. Lee

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
inch	0.3937	centimeter
inch	39.37	meter
foot (ft)	0.3048	meter
foot per second (ft/s)	0.3048	meter per second
cubic feet per second (ft ³ /s)	0.0283	cubic meter per second (m ³ /s)
square foot (ft ²)	0.0929	square meter
mile (mi)	1.609	kilometer
square mile (mi ²)	2.590	square kilometer
gallon	0.1337	cubic foot (ft ³)
million gallons per day	1.547	cubic feet per second (ft ³ /s)

Temperature: Air temperatures are given in degrees Celsius (°C), which can be converted to degrees Fahrenheit (°F) by the following equation:

$$^{\circ}\text{F} = 1.8 (^{\circ}\text{C}) + 32$$

Following convention, water temperatures are given in degrees Celsius, which can be converted to degrees Fahrenheit by the following equation:

$$^{\circ}\text{F} = 1.8 (^{\circ}\text{C}) + 32$$

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ABSTRACT

Data are presented from a study of algal and nutrient dynamics in the South Umpqua River Basin in southwestern Oregon during summer, low-flow periods from September 1990 to October 1992. The study was done to assist local and state regulatory agencies in determining total maximum daily loads of nutrients for the basin in order to maintain dissolved oxygen greater than 90 percent of saturation and pH less than 8.5 units. Fifty-one sites, including South Umpqua River, tributaries, and wastewater-treatment plant effluents, were sampled during this period. The study included collection of 537 samples or measurements from surface-water sites, 315 samples of wastewater-treatment-plant effluents, 1,262 field measurements during intensive studies within individual reaches, daily mean flow data from 6 streamflow-gaging stations, daily mean water-quality data from 2 fixed-station monitors recording hourly, and various biological data including bacteria, algae and macroinvertebrates in the river. Also included are notes from field-reconnaissance surveys and a compilation of quality-assurance data.

INTRODUCTION

The South Umpqua River Basin in southwestern Oregon is sparsely populated, with most of the population living along the river corridor. The role of point-source discharges to the river, which has been implicated as contributing to the degradation of water quality and to the process of

eutrophication, is the subject of a water-quality study done by the U.S. Geological Survey (USGS) in cooperation with Douglas County. Each summer, the South Umpqua River experiences excessive growth of periphytic algae, accompanied in places by undesirable odors and aesthetic conditions. Abundant algal growth occurs in the main stem of the river, and in the lower reaches achieves nuisance levels. The large primary productivity and metabolic activities of the periphyton-dominated community result in high pH values, often exceeding the Oregon State standard of 8.5 units, and dissolved-oxygen (DO) concentrations often fall below the Oregon State standard of 90-percent of saturation. Historically, other water-quality problems have included: (1) high ammonia concentrations, and the potential for ammonia toxicity; (2) large populations of fecal-coliform and fecal-streptococci bacteria; and (3) summertime water temperatures as high as 35°C (degrees Celsius) near the mouth of the river. Frequent violations of water-quality standards prompted the State of Oregon to consider the imposition of total maximum daily loads (TMDLs) for the South Umpqua River, in accordance with the TMDL requirements of the Federal Clean Water Act of 1972 (Environmental Protection Agency, 1986; State of Oregon, 1988). These requirements provided the impetus for the USGS to study the relations between nutrients, growth of periphyton, and DO and pH problems in the river. Data in this report were collected for that purpose.

Purpose and Scope

The purpose of this report is to present a compilation of data collected to meet the following objectives: (1) quantification of primary productivity and respiration of

periphytic algae in the South Umpqua River during summer base-flow periods; (2) clarification of the relation between periphytic algal metabolism and the following: nutrient loading, water velocity, water depth, bottom substrate type, and light intensity; (3) determination of critical nutrient loads to control periphyton growth and achieve water-quality standards for pH and dissolved oxygen; and (4) develop reliable technical procedures, methodology, and protocols applicable to conducting studies of periphyton-dominated streams throughout the United States.

This report contains data collected in the South Umpqua River Basin by U.S. Geological Survey from September 1990 to October 1992. Data are from 51 sites in the basin, including 11 tributary sites, 6 wastewater-treatment plants (WWTPs), and miscellaneous sites where water-quality or biological sampling was performed. River-reconnaissance information and quality-assurance (QA) data also are included. Time-of-travel and reaeration data for the South Umpqua River were previously reported by Laenen and Woo (1994). Values for river miles used in this report were taken from a river mile index for the Umpqua River (Columbia Basin Inter-agency Committee, 1966) wherever possible.

Acknowledgments

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Leonard Gondeck, Roseburg Forest Products
Joe Merchep, Umpqua Fishermen Association
Jerry Winterbotham, Umpqua Fishermen Association
Jeff Kruse, Kruse Farms
Webster Briggs, Webster Briggs Ranch
Mikeal Jones, U.S. Forest Service
Jeff Dose, U.S. Forest Service
Joe Ross, U.S. Bureau of Land Management
Scott Siegfried, U.S. Bureau of Land Management
Steve Hofford, U.S. Bureau of Land Management
Jim Vancura, U.S. Soil Conservation District
Dave Zimmer, U.S. Bureau of Reclamation

Hydrology and Physiographic Setting of the South Umpqua River Basin

The South Umpqua River Basin is located in southwestern Oregon and drains an area of 1,762 square miles (fig. 1). The South Umpqua River flows into the Umpqua River at river mile (RM) 111.7. Most of the South Umpqua River Basin is within Douglas County, with a small percentage of the basin located within Coos, Josephine, and Jackson Counties. Headwaters of the South Umpqua River are in the Umpqua National Forest in mountainous terrain. The river channel opens up as it descends from the forest into agricultural and urban areas. Physiography and hydrology of the basin and river have been previously described by Rinella (1986).

DATA COLLECTION

Data collection involved the following tasks: (1) reconnaissance of stream characteristics, (2) collection of water-quality and stream-discharge data, (3) physical and chemical analyses of water samples, (4) collection and analysis of biological data, and (5) collection and compilation of quality-assurance data for the National Water Quality Laboratory (NWQL). These tasks are explained in detail below. The dates and purposes of sampling efforts are presented in table 1.

Reconnaissance of Stream Characteristics

Data were collected in 1991 and 1992 with regard to the stream's physical morphology, habitat for algae, and suitability of sampling. Variables recorded include velocity, width, depth, general descriptions of bed material, stream type (pool, riffle, or run), potential access for vehicles or people on foot, and field notes about biological organisms. Limited water-quality data were collected during some of the reconnaissance surveys in 1992. Surveys were done primarily by canoe to allow continuous access to the river. These surveys were done during periods of summer base flow to maximize visibility of channel

features and ensure that data collected were appropriate for the purposes of the study. Seven reaches of the river were covered in this way, including over 50 miles of the South Umpqua River and 3 miles of Cow Creek. Reaches from South Umpqua River at Days Creek to the mouth of Cow Creek, South Umpqua River at Cow Creek to Myrtle Creek, South Umpqua River at Myrtle Creek to Mary More Bridge (RM 143.7), and the South Umpqua River at Winston to Happy Valley (RM 130.0) were surveyed in 1991 (Laenen and Woo, 1994) and are presented in table 2. Tables 3-5 summarize notes for the remaining reaches; South Umpqua River at RM 176 to Days Creek; Cow Creek from Riddle to the mouth; South Umpqua River from Cow Creek to Missouri Bottom (at Pruner Bridge); and South Umpqua River at Oaks to the mouth (RM 111.7). These surveys were completed in June and August 1992.

Channel reconnaissance data were collected at transects every 1,000 to 3,000 feet, with notations regarding the location of pools, riffles, runs, or other important features between transects. An attempt was made to select transects that adequately approximated the conditions immediately upstream and downstream. For safety reasons, riffles were rarely measured directly, but their locations were noted along with estimates of width, depth, and velocity. Transect widths were determined with a calibrated optical range finder. Water depths were measured at the thalweg using a weighted tag-line or a wading rod. Velocity was measured just below the water surface at the thalweg using a Price¹ AA current meter.

Water-Quality-Sample Collection

Water-quality-sample collection included three phases: (1) synoptic surveys, (2) fixed stations and wastewater-treatment plant (WWTP) sampling, and (3) diel-inflow and outflow sampling. In addition, time of travel and reaeration studies were completed (Laenen and

¹ The use of brand names in this report is for reference only and does not constitute an endorsement by the U.S. Geological Survey.

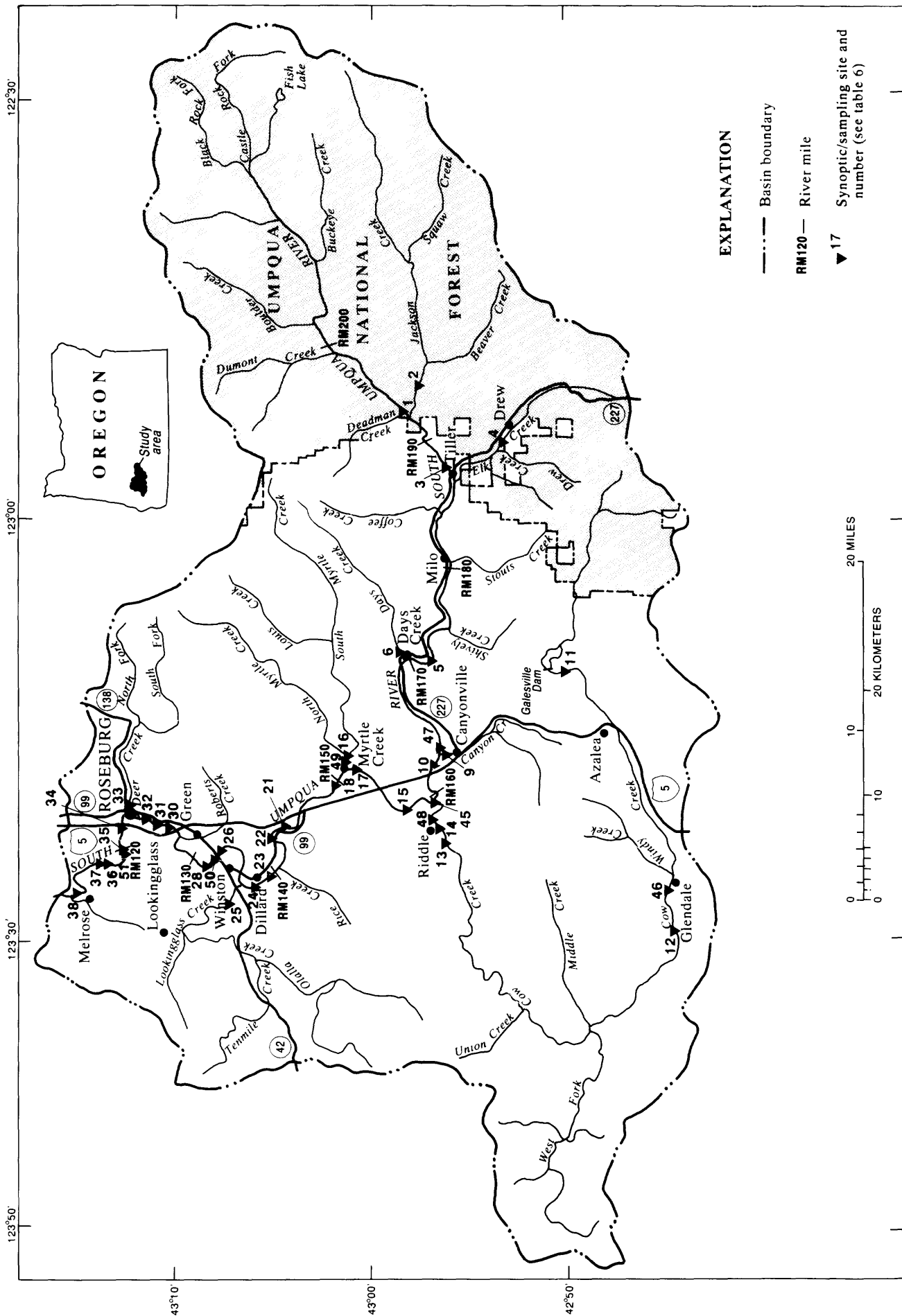


Figure 1. Location of synoptic-sampling sites, South Umpqua River Basin, Oregon, 1990-92.

Woo, 1994). Due to the evolving nature of the sampling scheme, wastewater-treatment plants were sampled in conjunction with synoptic surveys in 1990-1991, but were sampled twice weekly in the summer of 1992. Water-sample collection sites are listed in table 6, and shown schematically in figure 2. Discharge measurements at non-gaged stations were made during synoptic and diel inflow and outflow sampling trips and are summarized in table 7.

Synoptic Surveys

The purposes of synoptic surveys were to: (1) allow mass balances of water-quality constituents and thus identify sources and sinks, (2) identify problem areas relative to pH and DO, and (3) provide data to help identify the major processes and factors controlling periphyton metabolism in the stream. Synoptic surveys included discharge measurements, water sampling for chemical constituents, and measurement of field parameters. Water-quality constituents and field parameters are listed in table 8. During synoptic surveys, three teams of field personnel collected samples over 3-day periods, starting in the upper reaches of the river basin and working downstream towards the lower reaches. Synoptic sampling sites, including the location of all major tributaries and known major point sources are shown in figure 1. Measurements of field parameters were made in early morning (0500-0900 hours) and late afternoon (1500-1830 hours) to estimate daily maximum and minimum pH and DO concentrations in the South Umpqua River and Cow Creek. These measurement times were determined by examination of the instantaneous record at the fixed-station monitors at South Umpqua River near Roseburg and at Days Creek. In addition, field parameters were measured during sample collection at all sites regardless of time of day. Samples of WWTP effluent during 1991 synoptic surveys were collected by the respective WWTP operators and chilled until they could be processed by USGS personnel, generally less than 6 hours after collection. Data from the South Umpqua

River and tributary synoptic surveys are listed in table 9; data from WWTP effluents are listed in table 16.

Discharge was measured at miscellaneous sites according to standard USGS guidelines (Buchanan and Somers, 1984). Depth and width integrated water samples were collected using the Equal Width Increment (EWI) technique described by Edwards and Glysson (1988), except where otherwise noted. Field measurements were made of temperature, specific conductance, pH and DO using calibrated Hydrolab multiparameter water-quality instruments, adapted for low-ionic strength waters. Field measurements were made in at least three locations in a transect and the values averaged.

Fixed-Stations and Wastewater-Treatment-Plant Sampling

Fixed stations included: (1) sites with streamflow-gaging stations; (2) sites with recording, multiparameter monitors; (3) sampling sites visited weekly or biweekly in summer 1992; and (4) WWTP effluents sampled twice weekly in summer 1992. Fixed stations provide estimates of temporal variability to assist in the interpretation of results from synoptic and diel surveys. The fixed stations are shown in figure 3 and the parameters measured are listed in table 8. South Umpqua River near Roseburg (site number 14312260) is also a National Stream Quality Accounting Network (NASQAN) site; hence some additional data were collected and are presented here. Fixed station water-quality data are given in table 9, streamflow records for streamflow-gaging stations are shown in tables 10-15, and WWTP effluent data are listed in table 16.

Continuously recording, four-parameter monitors, that record water temperature, specific conductance, pH, and DO, were located at an upstream site (South Umpqua River at Days Creek, streamflow-gaging station number 14308600) and a downstream site (South

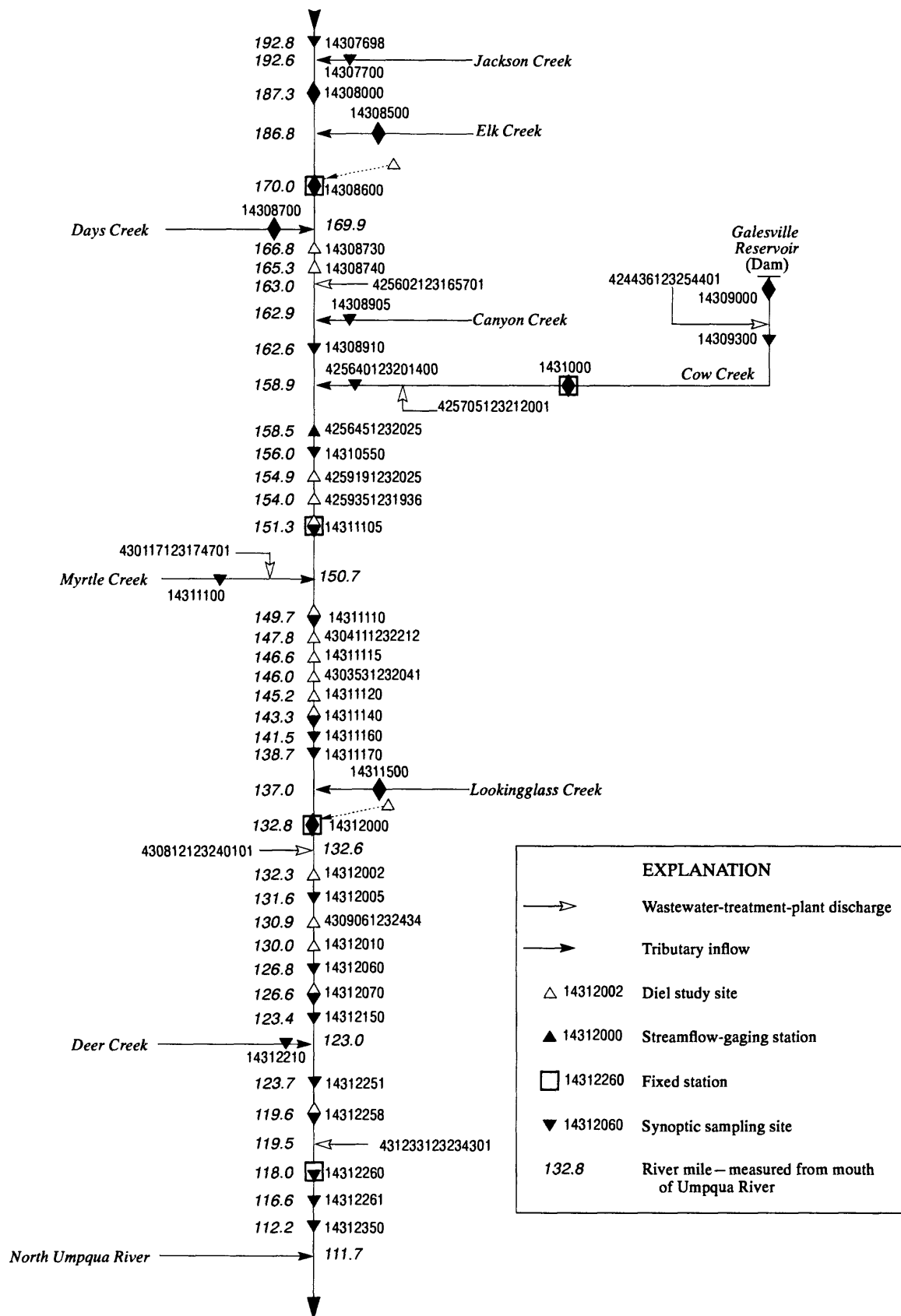


Figure 2. Relative positions of selected tributaries, sampling sites, and selected point sources, South Umpqua River Basin, Oregon, 1990-92 (See table 6 for site description).

Umpqua River at Roseburg, station number 14312260). A third recording monitor, which measured light intensity, was located on the roof of the Winston-Green WWTP (site number 430812123240101). Daily values (maximum, minimum, and mean) for individual field parameters are given in tables 17-26.

Weekly sampling sites were selected to provide temporal data regarding the loading and variability of water-quality constituents, primarily nutrients, without the influences of major point sources. Water samples were collected and field measurements were made in the same manner as described above for synoptic surveys. Twice weekly, 24-hour, composite WWTP effluent sampling for nutrients in summer 1992 provided information about the short-term variability of nutrient loads from these plants and seasonal trends in their concentrations and mass loadings to the river. Sampling of WWTPs in 1992 was conducted with the help of the respective WWTP operators, using automated samplers, and students from Umpqua Community College in Roseburg.

Diel Inflow and Outflow Sampling

Diel sampling was done to obtain hourly measurements of field parameters over 24-hour periods. Three or four sites in each reach, upstream and downstream of point sources, in three 5-10 mile reaches of the South Umpqua River were selected for diel sampling (fig. 4). Discharge was measured at least once in each reach during the 24-hour sampling period. In 1992, water samples were collected several times during the 24-hour diel studies and analyzed for nutrients. Diel data may be used for: (1) estimation of periphyton productivity, in conjunction with time-of-travel and reaeration estimates (Odum, 1956; Britton and Greeson, 1987), and (2) estimation of variability of water-quality that may be associated with algal activity or variable loadings from WWTPs. Field-measurement data collected during these studies are given in table 27. Analytical results

of water samples collected during diel studies are given in table 9.

Twenty-four-hour measurement of field parameters at secure, normally non-instrumented sites was accomplished by use of calibrated, recording, four-parameter minimonitors in 1991 and calibrated recording Hydrolab multiparameter water-quality instruments in 1992. Probes were temporarily attached to stakes driven into the river bottom near the centroid of flow. In each reach in 1992, a light meter was deployed in the water with one of the water-quality monitors. Light measurements in the water were made using a submersible Li-Cor spherical quantum sensor, controlled by a Campbell CR-21 data-logger, and stored on a Campbell SM192 storage module. Instruments were programmed to record parameter values hourly. Unsecure sites were visited approximately every 3 hours, timed to coincide as much as possible with projected minima and maxima of the daily pH and DO cycles, and field parameters were measured manually with a Hydrolab. Data recorded automatically were downloaded to a laptop computer and subsequently transferred to a USGS database. Data collected manually were entered separately into the database.

Physical and Chemical Analysis of Water Samples

Water samples were processed immediately in the field and prepared for shipment to the NWQL. Sample preservation requirements are outlined by Fishman and Friedman (1989). Parameters analyzed and the associated NWQL labcodes or schedules are listed in table 8. Subsamples were taken from a churn splitter with unfiltered subsamples drawn first. Subsamples for dissolved constituent analysis were collected and filtered through a pre-rinsed, 120 mm diameter, 0.45- μ m (micrometer), pore-size membrane filter. Nutrient samples were preserved with mercuric chloride (HgCl_2) and stored on ice in opaque polypropylene bottles. Preserved samples were shipped overnight on ice to the NWQL where

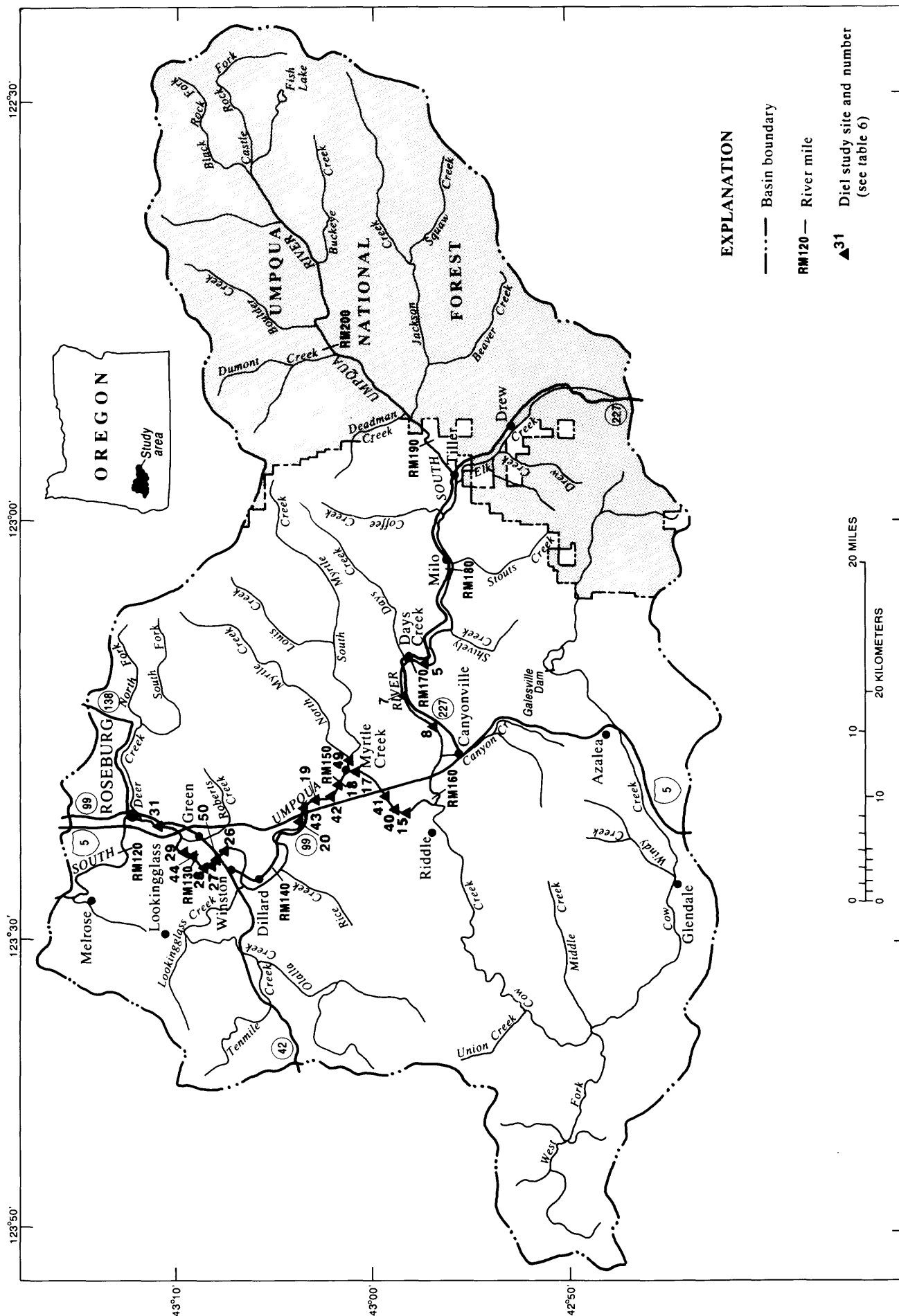


Figure 4. Location of diel inflow and outflow sites, South Umpqua River Basin, Oregon, 1990-92.

they were kept refrigerated at 4°C until analysis. Generally, nutrient analyses were performed within 7 days of delivery. Analyses were performed according to the procedures described by Fishman and Friedman (1989).

Effective October 1, 1991, NWQL analysis for high-level total phosphorus (TP—labcode LC1688) and total Kjeldahl nitrogen (TKN—LC084) changed from USGS Techniques of Water Resources Investigations method I-2600/I-4600 (Fishman and Friedman, 1989) to method I-2610/I-4610 (U.S. Geological Survey, written commun., 1992). The purpose for this change was to produce a more effective and thorough digestion of unfiltered samples. This method change affected only the WWTP effluent samples collected in 1992, because river samples were analyzed by a different procedure.

Biological Data Collection and Analysis

Three categories of biological samples were collected: (1) periphytic algal samples for biomass, species identification, and analysis of tissue nutrient content; (2) bacterial samples for enumeration of fecal streptococcal and fecal coliform bacteria; and (3) samples of benthic macroinvertebrates for identification and enumeration.

Algal Sampling

Periphytic algae were sampled using either Surber or Hess samplers, which were placed on the riverbed in representative locations. The areas delineated by the Surber and Hess samplers were 0.093 and 0.086 m² (square meter), respectively. The Surber sampler net had a nominal pore size of 210 micrometers. A knife was used to circumscribe the inside perimeter of the sampler and algae were scraped from the rocks and collected in the sampler's net. Samples were rinsed in the net, removed, and dried in the field. Further drying and ashing was done in the USGS Oregon District laboratory. Biomass was determined as dry weight and as ash weight (Britton and Greeson, 1987), expressed as mass per unit area

of the riverbed. Biomass results are shown in table 28.

Algae samples for species identification were scraped or pulled from several rocks at selected sites and composited. Samples were preserved in formalin and identified to species level by Aquatic Analysts, Portland, Oregon. Relative abundances were noted as well. Results are listed in table 29. Composite samples for nutrient content of algal tissue were sun dried in the field, stored in jars, dried in the laboratory at 105°C, and analyzed by Huffman Laboratories in Denver, Colorado. Carbon, hydrogen, and nitrogen were determined using CHN analysis. Phosphorus was determined by acid digestion followed by Inductively Coupled Plasma analysis. Results are expressed in terms of percent of sample dry weight, and are shown in table 30.

Bacterial Sampling

Sampling for fecal streptococcal and fecal-coliform bacteria was accomplished on two occasions in the late summer and fall of 1992 along with synoptic and diel inflow and outflow studies. Grab samples were collected from each site in sterilized bottles, filtered, incubated, and enumerated in the field according to the methods described by Britton and Greeson (1987). Results are given in table 31.

Benthic Macroinvertebrates

Benthic macroinvertebrates were sampled using a Surber sampler. The sediment and algae within the sampler's perimeter were stirred and allowed to float into the net of the sampler. The resulting conglomeration of sediment, algae, and invertebrates was preserved in formalin. Macro-invertebrates were separated from the algae and debris under a dissecting microscope at a later date and enumerated to order level to allow for differentiation by functional group. Samples were checked at random by a second biologist to confirm identifications. Macroinvertebrate identification and enumerations are presented in table 32.

Quality-Assurance (QA) Program

Quality assurance was incorporated into the sampling design using a variety of techniques, including: (1) pre- and post-calibration of multiparameter water-quality probes (Hydrolabs), (2) weekly or biweekly calibration of fixed-station monitors at Roseburg and Days Creek, (3) replicate water-quality samples, (3) field and equipment-sampling blanks, and (4) reference samples sent to the NWQL with nutrient levels in the ranges found in the South Umpqua River and WWTP effluents.

On a daily basis, Hydrolabs were calibrated immediately prior to and after use, according to the manufacturer's recommendations. Calibration results were recorded in maintenance logbooks for each instrument. Slight linear shifts were applied to temperature, specific conductance, pH, and DO when calibration differences exceeded 0.2°C, 5 percent, 0.2 pH units, and 0.2 mg/L (milligrams per liter), respectively. Similarly, data from fixed-station monitors were shifted on the basis of field-calibration results. USGS techniques for the computation of streamflow records (Kennedy, 1983) were applied to water-quality data to shift, develop, and check field-parameter data from these monitors.

Replicate and field-blank samples were collected during synoptic, fixed-station, and WWTP sampling trips. QA data, including replicate and blank results, are stored in the WATER STORage and REtrieval System (WATSTORE) and are shown in table 33. Reference samples were prepared at the USGS Oregon District laboratory and sent to the NWQL for analysis. Laboratory-blank samples consisted of inorganic blank water supplied by the USGS laboratory supplies facility in Ocala, Florida. This water was transferred to sample bottles in the district laboratory prior to shipping to NWQL. Blanks were preserved and treated identically to field samples. Analytical results of reference samples and laboratory-blank samples are shown in table 34.

Quality-control samples from the field (replicates and field blanks) were labelled in 5 or 10 minute increments after the original sample time. All QA samples taken at a site where QA sampling was done are listed in table 33. Table 33 also includes the original samples, which appear in table 9. The first QA sample from a site is therefore the original; the second sample is generally a replicate, with a sample time 5 minutes later than the original; and the third sample is usually a field blank (except where triplicate samples were collected), with a sample time 10 minutes later than the original.

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DATA TABLES

Table 1. List of U. S. Geological Survey's sampling activities in the South Umpqua River Basin, Oregon, 1990-1992

["WWTP" = wastewater-treatment plant effluent; USGS = U.S. Geological Survey]

Date	Activity
Hourly, 1970-1992	Four-parameter monitoring at South Umpqua River near Roseburg, USGS station number 14312260
Monthly, 1970-1992	Water sampling at South Umpqua River near Roseburg, USGS station number 14312260
September 4-7, 1990	Reconnaissance synoptic survey, including WWTPs
June 10, 1991-October 27, 1992	Light data collection at Winston-Green WWTP
June 10-12, 1991	Synoptic survey, including WWTPs
June 24-28, 1991	Field-reconnaissance float trip
July 15-19, 1991	Time of travel, reaeration ¹ , diel inflow and outflow
July 22-24, 1991	Synoptic survey, including WWTPs
August 13-October 30, 1991	Four-parameter monitoring on South Umpqua at Days Creek, USGS streamflow-gaging station 14308600
August 14-22, 1991	Diel inflow and outflow
August 26-28, 1991	Synoptic survey, including WWTPs
September 9-13, 1991	Time-of-travel reaeration dye study ¹
September 17-20, 1991	Biomass sampling reconnaissance
September 23-25, 1991	Synoptic survey, including WWTPs
May 5-September 28, 1992	Twice weekly sampling of WWTP effluents
May 7-8, 1992	Miscellaneous biomass sampling
May 18-20, 1992	Synoptic sampling
May 27-October 26, 1992	Four-parameter monitoring on South Umpqua River at Days Creek, USGS streamflow-gaging station 14308600
May 28-October 16, 1992	Weekly river sampling, except during synoptic and diel study dates
June 22-26, 1992	Diel inflow and outflow, biomass sampling
August 3-7, 1992	Diel inflow and outflow, biomass sampling
August 17-21, 1992	Field-reconnaissance float trip
August 31-September 2, 1992	Synoptic sampling, bacteria
September 14-18, 1992	Diel inflow and outflow, biomass, and bacterial

¹Laenen and Woo, 1994

Table 2. Field notes from reconnaissance surveys of selected reaches, South Umpqua River, Oregon, June and July 1991
 [Pumping systems are noted as "LB 6-inch line", meaning a 6 inch pipe attached to a pump were located on the left bank. U.S. Geological Survey (USGS) stations are listed in table 6.
 "LB" = left bank; "RB" = right bank; "ft³/s" = cubic feet per second; "ft/sec" = feet per second; "WWTP" = wastewater treatment plant; "1-5" = Interstate 5; "<" = less than; ">" = greater than; "&" = and; "est" = estimate]

Section	Mile	Time	Depth (feet)	Velocity (ft/s)	Width (feet)	Bed material	Biology	Channel type	Remarks
South Umpqua River - Days Creek Reach, June 24, 1991. Discharge at USGS streamflow-gaging station 14308600 = 364 ft ³ /s									
1	169.7	1500	7.0	0.3	95	Fines		Bridge	Launch point at Days Creek
	169.6		25					Pool	Riffle below pool 1.5 feet deep
2	169.5		3.5	1.0	95	Cobbles	Thin diatoms	Pool	LB 4-inch line
3	169.4		7.0	1.3	93	Fines,		Pool	Long straight pool
						Cobbles			LB 2-inch, 6-inch lines
	168.6		1.5			Bedrock		Riffle	Long riffle
4	168.5	1523						Pool	Beginning of long pool
5	168.2	1527	5.0	1.2	141	Cobbles	Conical snails	Pool	
			.5		Wide	Cobbles		Riffle	
			2.5	1.5	140			Riffle	
			2.0	est 3.0		Cobbles		Riffle	Long riffle section
			4.0			Bedrock, cobble	Fish (bass)	Pool	
6	167.6		4.5	1.8	109	Cobbles	Caddis flies	Pool	LB 4-inch line
								Riffle	
7	167.5		3.0	1.5	107	Cobbles	Ducklings	Pool	RB springs 0.2 ft ³ /s
8	167.4	1556	7.0	1.2	94	Bedrock, cobble		Pool	Bedrock forms steep sides
9	167.3	1600	10	.6	129	Bedrock		Pool	Steel truss bridge, LB 6-inch line
									Pool 1,200 feet long
10	167	1609	3.0	1.6	Wide	Cobbles		Riffle	
					132	Bedrock, cobble		Pool	
						Bedrock		Riffle	Bedrock outcrop
			20			Bedrock, fines		Pool	Sand beach
11	166.8	1617	5.5	1.5	132	Bedrock, cobble		Pool	Power lines, USGS station number 14308730
			.5			Bedrock		Riffle	Class 2 rapids, wadeable below
12	166.2	1631	11	1.0	59	Bedrock		Pool	
			23		40	Bedrock		Pool	

Table 2. Field notes from reconnaissance surveys of selected reaches, South Umpqua River, Oregon, June and July 1991—Continued

Section	Mile	Time	Depth (feet)	Velocity (ft/s)	Width (feet)	Bed material	Biology	Channel type	Remarks
South Umpqua River - Days Creek Reach, June 24, 1991. Discharge at USGS streamflow-gaging station 14308600 = 364 ft ³ /s -- Continued									
		1637	3.5		150	Cobbles		Pool	
						Bedrock		Riffle	Long riffle
13	165.5	1653	2	1.3	140	Gravel, cobble		Pool	Power line, RB 8 inch line
			2			Bedrock		Riffle	LB pump
14	165.3	1704	3	1.3	139	Cobble, fines		Pool	New weigh station, good access, USGS station number 14308740
								Riffle	Long riffle, pumps LB & RB
15	164.7	1706	5	2.0	106	Bedrock		Pool	
16	164.4	1715	2.5	1.2	157	Cobble, gravel		Pool	In fast pool
			1.5		Wide	Bedrock		Riffle	Long riffle, LB 4-inch line
17	163.7	1730	5	1.4	116	Bedrock		Pool	Boat ramp at Canyonville County Park
			.5			Bedrock, cobble		Riffle	LB 4-inch line
			4			Bedrock		Pool	
			.5					Riffle	LB, many 2-inch lines from homes
								Riffle	Class 2
18	162.8	1748	2	1.6	151	Cobble, gravel		Pool	Canyonville WWTP, USGS station number 425602123165701
			3.5					Pool	Canyon Creek
			.5					Riffle	LB & RB, 3-inch, 4-inch lines
								Riffle	Canyonville Bridge (Gazely Road), USGS station number 14308910
19	162.6	1800	3.5	1.5	110	Cobble, gravel		Pool	LB 4-inch line
			9	Slow	140			Pool	Stanton Park, LB 4-inch line
				Fast	Narrow			Riffle	Wadable
20	161.7	1810	2.5	2.3	50	Bedrock		Pool	Fast pool just upstream of riffle
					Bedrock		Cladophora	Riffle	Class 2 rapids, shallow
								Pool	Small indication of <i>Cladophora</i>
								Pool	Bedrock pool and drop
				Fast				Riffle	Short riffle, but fast, LB 4-inch line

Table 2. Field notes from reconnaissance surveys of selected reaches, South Umpqua River, Oregon, June and July 1991—Continued

Section	Mile	Time	Depth (feet)	Velocity (ft/s)	Width (feet)	Bed material	Biology	Channel type	Remarks
South Umpqua River - Riddle Reach, July 15, 1991. Discharge at USGS station number 4256451232025 = 255 ft ³ /s									
1	159.9	1836	3.0	0.9	193	Bedrock, cobble Gravel	Cladophera	Pool	Launch spot, downstream of I-5 freeway bridge Strands >1 foot long 6-inch line LB Beginning of pool 2x4-inch lines RB 2x2-inch lines RB, access at Gazely Road Confluence with Cow Creek 4-inch line, snails living on <i>Cladophora</i> Slow water velocity Shallow, swift Thin films of algae (Diatoms?) Power lines overhead
2	158.9	1907	7.0	.5	143	Gravel, fines		Pool	
3	158.6	1915	5.0	1.4	129	All types	Cladophera	Pool	
4	157.9	1922	.5					Run	
5	157.8	1926	4.0-5.0 1.5	.8	140	Gravel		Run	
6	157.2	1938	7.5 .5	.4	220	All types		Pool	LB, sluice mining, livestock smell Class 2 rapids
7	157.0	1952	8	1.1	77	Bedrock, cobble		Pool	
8	156.6	1959	1.5 3.0 1.5	.6	205	Bedrock	<i>Cladophora</i>	Riffle	RB, farm with cattle at river, 6-inch line. Long shallow run 8-inch line RB, cattle Broad, Pruner bridge (USGS station number 14310550) visible downstream)
9	155.7	2013	5.5	1.0	170	Gravel		Run	Downstream of USGS station number 14310550, 4-inch line RB
			12					Pool	
10	154.7	2030	3.6 3.5	.8	150 180	Gravel, fines	Snails	Run	Swift, shallow LB tributary, approximately 0.5 ft ³ /s, 8-inch line RB Cattle access, smells 4-inch line LB, near railroad tracks

Table 2. Field notes from reconnaissance surveys of selected reaches, South Umpqua River, Oregon, June and July 1991—Continued

Section	Mile	Time	Depth (feet)	Velocity (ft/s)	Width (feet)	Bed material	Biology	Channel type	Remarks
South Umpqua River - Riddle Reach, July 15, 1991. Discharge at USGS station number 4256451232025 = 255 ft ³ /s — Continued									
11	153.9	2045	4.0	0.6	177	Gravel, cobble			Upstream of I-5 bridge, at LB, 4-inch line 4-inch line RB, at I-5 bridge
			0.5-2.0		200			Run	Swift, 4-inch line LB
12	153.0	2103	4.5	.6	250	Gravel			6-inch line LB, 4-inch line RB
13	151.8	2115	0.5-1.0	1.4	275	Gravel			4-inch line RB
									Swift, some access
									6-inch line LB
1	151.1	0955	13	.5	132	Bedrock, gravel	<i>Cladophora</i>	Pool	Below railroad bridge. <i>Cladophora</i> up to 6 inches long
						Bedrock		Riffle	
2	150.5	1005	10	2.8	92	Bedrock	Otter	Riffles	Myrtle Creek (tributary) RB
						Bedrock		Riffle	No algae
3	150.4	1014	8.0	1.8	130	Bedrock	<i>Cladophora</i>	Pool	Below highway bridge
							Diatoms, Ducks		Small amounts of <i>Cladophora</i>
4	150.1	1021	16	.3	235	Bedrock		Riffle	
						Boulders, fines		Pool	Long, wide, deep pool
						Bedrock		Riffle	Island
						Bedrock, cobble		Riffle	End of riffle, possible road access
5	150.0	1043	13	.4	109	Bedrock, gravel		Pool	Just upstream of riffle
						Rocks		Riffle	
6	149.5	1051	7.5	1.5	89	Bedrock, fines	<i>Cladophora</i>	Riffle	Long chute with interspersed riffles
						Riprap		Pool	<i>Cladophora</i> starting to grow
7	148.8	1101	7.0	.9	177	Rocks			Getting slower and deeper
							<i>Cladophora</i>		On downstream side of rocks, not abundant
						Bedrock		Riffle	LB tributary, approximately 1.5 ft ³ /s

Table 2. Field notes from reconnaissance surveys of selected reaches, South Umpqua River, Oregon, June and July 1991—Continued

Section	Mile	Time	Depth (feet)	Velocity (ft/s)	Width (feet)	Bed material	Biology	Channel type	Remarks
Myrtle Creek Reach, June 24, 1991. Discharge at USGS streamflow-gaging station 14312000 = 574 ft ³ /s—Continued									
8	148.3		8.0	0.4	195	Silt, gravel, Bedrock		Pool	In pool, getting shallow
9	147.9	1121	4.5	1.5	139	Gravel, rocks		Riffle	USGS station number 14311115
	146.6					Rock		Riffle	End of riffle area
10	147.5	1130	7.0	.8	180	Rocks, fines, gravel		Pool	LB 2 -inch line
						Bedrock		Riffle	RB tributary, approximately 1.5 ft ³ /s
11	147.1	1144	6.5	1.0	184	Fines, gravel		Pool	
			.5		Wide			Riffle	Wadeable
	146.9	1155							RB 6-inch line
12	146.4	1157	3.0	2.5	190	Gravel		Pool	RB tributary, <0.5 ft ³ /s
			Deep				<i>Cladophera</i>	Riffle	Pump house, deep pool
									Under freeway bridge, USGS station number 4303531232041
13	145.7		3.0	1.2	262	Gravel			1 foot long mats of <i>Cladophera</i> just before riffle
					Wide			Riffle	Broad and flat
									LB 4-inch line, RB 6-inch line
14	145.2	1233	4.5	1.3	239	Gilt		Pool	USGS station number 14311120, lots of water vegetation
							<i>Cladophera</i>		
							Vultures		
			4.0-5.0		Wide		Macrophytes		Many fish (Bass)
15	144.6	1250	9.5	.4	226	Gravel		Pool	Deep and wide
					Wide	Gravel		Riffle	Power lines, access point
								Riffle	End of riffles
16	143.9	1302	4.0	1.3	185	Gravel			
							Macrophytes		
							<i>Cladophera</i> .		
17	143.3	1310	.5					Riffle	
			5.0	4.6	120	Bedrock		Pool	Under Mary Moore bridge, USGS station number 14311140

Table 2. Field notes from reconnaissance surveys of selected reaches, South Umpqua River, Oregon, June and July 1991—Continued

Section	Mile	Time	Depth (feet)	Velocity (ft/s)	Width (feet)	Bed material	Biology	Channel type	Remarks
			South Umpqua River, Winston Reach, June 25, 1991. Discharge at USGS streamflow-gaging station 14312000 = 554 ft ³ /s						
	135.0								Launched boat
1	135.1	1426	10	0.2	180	gravel, rocks		Pool	
						Bedrock	Caddis flies	Riffle	
					92	Bedrock	Otter	Chute	LB 3-inch line
						Bedrock		Riffle	LB 2-inch line
2	134.6	1435	4.0	0	210	Fine gravel	<i>Cladophora</i>	Pool	Downstream of bridge, no visible flow
							<i>Cladophora</i>	Pool	End of long, wide pool
						Bedrock		Riffle	2-ft drop
					235	Boulders, fines		Pool	LB 2-inch line, not pumping
3	1335	1452	6.0	.8	210	Fines		Pool	Island
						Bedrock, cobbles		Riffle	End of long pool
						Gravel, cobbles	<i>Cladophora</i>	Pool	End of moderately long riffle
									<i>Cladophora</i> on rocks, but not abundant
									USGS streamflow-gaging station 14312000
	132.8		12		250	Bedrock, gravel		Pool	
4	132.7		4.5	.8	275	Fines, bedrock		Riffle	
	132.6				89	Bedrock, fines	<i>Cladophora</i>	Riffle	Winston-Green WWTP
					177	Rocks		Pool	End of riffle area
							<i>Cladophora</i>		LB 4-inch line
5	132.1	1521	8.0	1.2	235	Fines	<i>Cladophora</i>	Pool	No long strands of <i>Cladophora</i>
									RB 6-inch line
					195	Silt, gravel, Bedrock		Riffle	End of Class 2 rapids, drop 5 feet
			1			Cobble, gravel		Pool	High velocity flow
					139	Gravel, rocks		Pool	LB tributary, no flow
						Rock		Riffle	USGS station number 14312005, LB line
6	131.5	1537	2.0	0	300	Fine gravel	<i>Cladophora</i>	Pool	<i>Cladophora</i> beginning to grow on rocks
					180			Pool	<i>Cladophora</i> strands 1-2 feet long
			1.0-2.0		Broad			Pool	Broad, shallow area

Table 2. Field notes from reconnaissance surveys of selected reaches, South Umpqua River, Oregon, June and July 1991—Continued

Section	Mile	Time	Depth (feet)	Velocity (ft/s)	Width (feet)	Bed material	Biology	Channel type	Remarks
South Umpqua River, Winston Reach, June 25, 1991. Discharge at USGS streamflow-gaging station 14312000 = 554 ft ³ /s—Continued									
7	130.9	1548	4.5	1.1	250	Bedrock		Pool	End of shallow area
						Fines			RB tributary, 1.5 ft ³ /s
			15		200	Fines, gravel		Pool	RB 6-inch line
			Deep		Broad	Bedrock	Macrophytes	Riffle	<i>Cladophera</i> thicker but not long yet
									RB 4-inch line
8	130.3	1602	13	.4	210	Fines, bedrock		Pool	Bedrock
							Osprey		LB 4-inch line, not pumping
9	129.9	1204	10	.1	300	Silt, gravel	<i>Cladophera</i>	Pool	Green Bridge
							Macrophytes		Boat ramp, access. Lots of vegetation in water
							<i>Cladophera</i>	Pool	Beds of macrophytes and long strands of <i>Cladophera</i>
					262	Gravel	<i>Cladophera</i>	Riffle	Channel dredged here
					Broad		Canada Geese	Riffle	End of riffle area
10	129.2	1627	5.0	.9	315	Cobble, fines	<i>Cladophera</i>	Pool	Short strands of <i>Cladophera</i>
									LB Marsters Creek, 1.0 ft ³ /s
									LB 2-inch line
			.5		Wide	Bedrock	<i>Cladophera</i>	Riffle	Long and wide
129.7						Gravel	Macrophytes	Riffle	Many birds — herons, turkey vultures

Table 3. Field notes from reconnaissance survey of selected reaches, South Umpqua River, June 22-24, 1992
[Plant cover amounts are ocular estimates only; "ft³/s" = cubic feet per second; "ID" = identification; "RB" = right bank; "LB" = left bank; "WWTP" = wastewater treatment plant; "USGS" = U.S. Geological Survey]

Section	River mile	Time	Depth (feet)	Bed material	Plant cover (feet)	Remarks
Days Creek Reach, River mile 169.7-165, June 22, 1992. Discharge at USGS streamflow-gaging station 14308600 = 85 ft ³ /s						
1.0	169.7	1615	8.0			Days Creek bridge
	169.8	1623		4-inch cobble	130 feet x 15 feet—RB	Biomass and species ID samples taken
			Deep		10 feet x 60 feet —RB	
					50 feet x 100 feet —RB, 30 feet x 50 feet—RB	
				Cobble & bedrock	30 feet x 50 feet	RB pump, above riffle
			Big pool		20 feet x 30 feet Clad RB	2-inch drop
						RB house, power line
						Walked through riffle
			1.0		No algae	LB big pump, long slow run of river
				8-inch cobble	No algae	Below a riffle
				2-inch cobble	No algae	LB pump
				2-inch cobble & sand	No algae	Pool cleaner than above
						RB-pump and access road
				1-2-inch cobbles & sand	No algae	
			5.0	Sand	No algae	Pool, bridge near Packard Gulch is in sight
			8.0			Turbid water—can't see bottom
9.0	167.3	1757	1.0	2-inch cobble, sand	No algae	Packard Gulch bridge, small creek RB
						Tissue nutrient sample taken
				Cobble, bedrock		LB—big pump
11.2	166.7	1825		Cobble, bedrock		USGS station number 14308730 inflow and outflow site
				Cobble, bedrock		Class II riffle
			13.0	Cobble, bedrock		LB pump
				Cobble, bedrock		RB pump
				Cobble, bedrock	No algae	RB pump
						RB pump
14.0	165.6	1900				USGS station number 14308740, take out at weigh station

Table 3. Field notes from reconnaissance survey of selected reaches, South Umpqua River, June 22-24, 1992—Continued

Section	River mile	Time	Depth (feet)	Bed material	Plant cover (feet)	Remarks
Myrtle Creek Reach, River mile 151.3-145.2, June 23, 1992. Discharge at USGS streamflow-gaging station 14312000 = 165 ft ³ /s						
1.0	151.3	1025	12.5		10 feet x 30 feet No algae 100 feet x 20 feet	Launch below railroad bridge, USGS station number 14311105 Biomass and nutrient samples. Unhealthy looking <i>Cladophora</i> Walked boat through riffle Biomass sample, added to nutrient composite. Long, bright green algal strands Myrtle Creek confluence, chlorine smell Upstream of bridge. Dead fish (22 inches) on bottom Below rapids, downstream of highway bridge Biomass and tissue nutrients samples; algae of variable health Thick algae here to tributary Lots of algae on most banks; <i>Elodea</i> abundant Biomass sample lots of snails, added to nutrient composite, took species ID sample Walked through one riffle, boated the next USGS station number 14311110, stopped to dry algae samples
3.0	150.6 150.5	1118 1126	10.5		50 feet x 150 feet 50 feet x 100 feet—LB 50 feet x 100 feet—RB	
5.0	149.7	1236		Bedrock pools	No algae 50 feet x 100 feet—RB 30 feet x 50 feet—RB, 30 feet x 100 feet—RB 100 feet x 30 feet—RB	Lake like—long and slow moving stretch
8.0	148.4	1349				Under power line, sluice RB Cobble beach, RB biomass sample USGS station number 430411232212, <i>Cladophora</i>
9.0	148.0	1404			30 feet x 50 feet—LB Continuous	2 feet thick <i>Cladophora</i> mat, columns, continuous since USGS station number 430411232212
10.0	147.6	1417			Mat end	Pump LB, beaches both sides, power line above Small RB tributary, 3 power lines
11.5	147.0	1443	Pool	Gravel	Little algae 50 feet x 100 feet—RB 30 feet x 100 feet—LB	USGS station number 14311115, inflow/outflow site, 2 dead fish, 20"

Table 3. Field notes from reconnaissance survey of selected reaches, South Umpqua River, June 22-24, 1992—Continued

Section	River mile	Time	Depth (feet)	Bed material	Plant cover (feet)	Remarks
Myrtle Creek Reach, River mile 151.3-145.2, June 23, 1992. Discharge at USGS streamflow-gaging station 14312000 = 165 ft ³ /s — Continued						
12.2	146.0	1521	8.0	Sand	100 feet x 100 feet	Algae growing on sand, dead fish
					200 feet x 100 feet — whole channel	Pump with 6-inch or 8-inch line, RB
						Big pool
					250 feet x 30 feet	Biomass sample
						Pacific Power & Light Company gage house, RB
14.0	145.2	1545	13.0			I-5 bridge, USGS station number 4303531232041, riffle upstream
						Osprey on nest RB, dead fish — lots of Canada Geese LB
						Biomass sample — contained small snails
4.0	132.8	950			50 feet x 100 feet	Pump RB, power lines
						Dead fish, 18 inches
						USGS station number 1431120, inflow/outflow site, houses and irrigated fields LB
5.0	132.3	1118		Bedrock		USGS station number 132.8-126.6, June 24, 1992. Discharge at USGS streamflow-gaging station 14312000 = 145 ft ³ /s
						Put in at streamflow-gaging station 14312000 — Cows grazing near RB upstream
					150 feet x 100 feet	Brockway bridge (HWY 99), 2 dead fish
					199 feet x 30 feet	Biomass, species ID, tissue nutrient samples taken, all at RB rocks
						1,000 feet from bridge most <i>Cladophora</i> is healthy and green
5.0	132.6	1022		Bedrock		Biomass sampled and added to nutrient composite
						Winston-Green WWTP
						Pump -RB
					Lots of algae	Biomass, species ID, tissue nutrient samples taken
					100 feet x 80 feet	Adult snails, flat worms (planaria), round worms
5.0	132.3	1118		Bedrock	50 feet x 100 feet <i>Cladophora</i>	Biomass sample, added to nutrient sample. adult snails, planaria, round worms
						Small pump RB, water is dark and green
						Small pump LB, gravel operation RB
5.0	132.3	1118		Bedrock	50 feet x 100 feet <i>Cladophora</i>	USGS station number 4312002, <i>Elodea</i> also, dead fish
					100 feet x 100 feet	

Winston Reach, River mile 132.8-126.6, June 24, 1992. Discharge at USGS streamflow-gaging station 14312000 = 145 ft³/s — Continued

Section	River mile	Time	Depth (feet)	Bed material	Plant cover (feet)	Remarks
Winston Reach, River mile 132.8-126.6, June 24, 1992. Discharge at USGS streamflow-gaging station 14312000 = 145 ft ³ /s — Continued						
6.0	131.6	1127	6.0	Gravel	100 feet x 100 feet <i>Cladophora</i> 100 feet x 100 feet Pool. 200 feet x 50 feet <i>Cladophora</i> , RB USGS station number 14312005	
7.0	131.0	1134	5.0	Sand	50 feet x 100 feet USGS station number 4309061232434, dead carp 100 feet x 100 feet Lake like — continuous <i>Cladophora</i> near banks <i>Elodea</i> 50 feet x 100 feet Pump RB House LB	
7.1	130.8	1146			<i>Elodea</i> , RB 50 feet x 100 feet	
			8.0		Pump, RB river otter Pumphouse, RB. Dead fish Biomass samples, added to nutrient sample- <i>Elodea</i> . Caddis fly larva 2 pumps LB	
9.0	130.0	1311			<i>Elodea</i> , LB 3 feet deep, 50 feet x 100 feet	
					100 feet x 100 feet <i>Cladophora</i>	
					200 feet x 70 feet Riffle, <i>Cladophora</i> & <i>Elodea</i> 100 feet x 50 feet Portable pump RB. <i>Cladophora</i> on substrate 100 feet x 100 feet <i>Cladophora</i> Walked through riffle, now at sharp right hand turn in river (river wide & shallow) Biomass and tissue nutrient sample. Sample is like mud — no snails, dead algae Pool, pump RB, power line above Lake like- <i>Elodea</i> as before, 300 feet wide, green <i>Cladophora</i> 4 feet thick <i>Elodea</i> , <i>Cladophora</i> patches Past riffle to pool. Radio tower directly north Riffle, dead fish <i>Cladophora</i> on bottom 1-5 bridge Dead fish Lake like- — can't see bottom under power line	
10.0	129.0	1346	3.0			
	128.0	1415	8.0			
	127.5	1426	5.0			
			14.0			
			10.0			

Table 4. Field notes from reconnaissance survey, South Umpqua River, Oregon, August 17-20, 1992

[See table 5 for water-quality field data from this survey. U.S. Geological Survey (USGS) stations numbers are listed in table 6. "LB" = left bank; "RB" = right bank; "ft³/s" = cubic feet per second; "m" = meters; "WWTP" = wastewater treatment plant; "RUSA" = Roseburg Urban Sanitary Authority (Roseburg WWTP); "I-5" = Interstate 5; "<" = approximately, "@" = at; "<" = less than; ">" = greater than; "s" = second; "%" = percent; "&" = and]

Section	Mile	Time	Depth (feet)	Velocity (feet/s)	Width (feet)	Bed material	Biology	Remarks
South Umpqua River, Days Creek reach, August 17, 1992. Discharge @ streamflow-gaging station 14308600 = 26 ft ³ /s								
1	177.1	1420	1.4	1.4	101	8-inch cobble	Algae on rocks	100-foot wide run above riffle
2	176.5	1503	4.4	.3	30	Bedrock	Bright, healthy <i>Cladophora</i> .	Walked boat in riffle
					96	Sand		Pump, RB 6-inch line, deep pool
3	176.0	1550	6.0	.3	152	Not visible		Sampled small (<1 ft ³ /s) tributary on LB
4	175.8	1602	2.5	--	--	3-6-inch cobble	Algae very fine (diatoms)	House and beach on LB, long deep pool. water murky
5	175.5	1630	3.5	.3	50	Sand, 12-inch boulders	Dead 15-inch sucker Algae greener in flow	Long pool Sampled algae Head of island, walking boat Walked boat through riffle Walked boat through riffle, joined other branch of flow 2-inch domestic line RB, power, tributary on LB < 1 ft ³ /s
6	174.5	1717	5.5	<.1	142	Sand, long pool		2 rocky chutes with pools between them Bedrock walls, RB and LB, 4-inch pump RB 6-inch pump RB- running, power line above Walked through riffle Walked boat ~1/4 mile, part of river behind an island
8	172.5	1826	1.5	.4	80	Sand, 6-inch cobble	Healthy algae is abundant	Pumps with 2- and 6-inch lines @ LB, power lines, houses LB and RB Walked boat ~1/4 mile Riffle, dry tributary on LB Pumps @ RB with 2- and 4-inch lines Deep pool
9	171.1	1917	2.2	<.1	152	Bedrock 6-inch cobble Bedrock		Riffle Pump and 4-inch line @ RB Pump and 4-inch line @ RB, mostly bedrock ledges USGS minimonitor site 14308600 Pump with 8-inch line Days Creek (tributary) @ RB — dry
10	169.8	1954	10.0	.4	89	Bedrock Bedrock	No algae. Many tadpoles	
1	2.4	0738	2.2	ps	89	Bedrock	Cow Creek below Riddle, August 18, 1992. Discharge @ streamflow-gaging station 14310000 = 49 ft ³ /s <i>Elodea</i> , <i>Spyrogyra</i>	LB trib, < 0.5 ft ³ /s, drains football field LB trib, ~ 500 ft from previous, <1 ft ³ /s

Table 4. Field notes from reconnaissance survey, South Umpqua River, Oregon, August 17-20, 1992—Continued

Section	Mile	Time	Depth (feet)	Velocity (feet/s)	Width (feet)	Bed material	Biology	Remarks
2	2.0	803	1.4	0.2	127	Sand	Cow Creek below Riddle, August 18, 1992. Discharge @ streamflow-gaging station 14310000 = 49 ft ³ /s — Continued Heavy <i>Elodea</i> and <i>Spyrogyra</i> growth between sections 1&2, with some shorter, brownish <i>Cladophora</i> Large <i>Cladophora</i> mats LB	Upstream of unnamed tributary in park near WWTP
		0814					3-2-inch pump lines LB screened intake for pump	
3	1.8	0817	2.0	.2	160	Sand, bedrock	Heavy <i>Cladophora</i> , macrophytes	Below WWTP
4	1.1	0833	2.5	.2	68	Sand	Otter, healthy <i>Cladophora</i> <i>Spyrogyra</i> , <i>Elodea</i> Heavy macrophyte, algae	Rapids Pump RB 6 inches 4-inch lines RB and LB, power line above Power line above
5	.5	0850	4.0	.1	173	Sand		
6	.2	0909	6.5	.2	124		More floating detritus than in morning <i>Cladophora</i>	
7	.05	1516	3.0	.2	121	Sand		Large <i>Cladophora</i> mat (50 feet x 80 feet) Upstream of confluence with South Umpqua
8	158.9	1524	--	--	--		South Umpqua River - Riddle Reach, August 18, 1992. Discharge @ USGS streamflow-gaging station 4256251232025 = 78 ft ³ /s	South Umpqua just 300 feet above Cow Creek mouth
9	158.8	1542	10.0	.3	140		<i>Cladophora</i>	
							<i>Elodea</i> , <i>Cladophora</i> , <i>Spyrogyra</i>	At county gage (USGS streamflow-gaging station 4256251232025). Outer gage. = 2.88 feet
						Bedrock		Tissue nutrient sample, LB Surber sample (biomass) LB Through rapids, alongside 1-5
10	157.9	1625	2.2	.5	146			Lined boat through rapids. 6-inch pump line downstream RB
11	156.9	1711	5.7	.2	150 E	Major rapid Boulders	Clean of algae Healthy <i>Cladophora</i>	6-inch pump RB, somebody built riffle to keep algae clear of pump Walking, 6-inch pump Sampled LB tributary ~0.5 ft ³ /s, 750 feet upstream from Missouri Bottom Bridge 2-, 4-, and 6-inch pump lines LB. downstream of bridge 8- and 6-inch pump lines, RB

Table 4. Field notes from reconnaissance survey, South Umpqua River, Oregon, August 17-20, 1992—Continued

Section	Mile	Time	Depth (feet)	Velocity (feet/s)	Width (feet)	Bed material	Biology	Remarks
12	155.8	1830	3.0	.2	150 E		South Umpqua River - Roseburg Reach, August 19-20, 1992. Discharge @ 14312000 = 74 ft ³ /s	USGS site 14312070. Barometric pressure 751 millimeter mercury
1	126.7	0855	2.2	0.3	135	Gravel	Abundant algae	
						Cobbles, bedrock	90% bottom covered with <i>Cladophora</i> . Bald eagle	Cliff @ LB
2	126.1	0914	6.0	<.1	250	Bedrock	Algae abundant	Pool
							Many snails on <i>Cladophora</i>	Slight stratification in pool - see table 5
							Heavy (60%) <i>Cladophora</i> cover since biomass sampling	Biomass sample LB
							~ 30% algal cover.	
3	125.3	1001	5.0	.2	190	Bedrock, gravel		
						Gravel, no algae		
						Gravel over bedrock		Pool upstream of fairgrounds
						Bedrock		
						Gravel		Pump and 4-inch line, county fairgrounds on LB
4	124.2	1043	3.5	.2	210	Gravel, cobble, and gravel	30% algal cover	
							Clean of algae	
							<i>Potamogeton</i> , 10% algae cover	Old pier downstream of fairgrounds
							~ 20-inch dead sucker	3-inch pump line on LB
							~ 18-inch dead sucker	Pump with 3-inch line @ LB.
							Long <i>Cladophora</i> mats between rocks. first major growth for ~ 1/2 hour	Sampled algae
							<i>Cladophora</i> , long mat	Riffle ahead.
					180		~80% coverage, long strands of algae. 18-inch dead sucker	
5	123.5	1135	3.0	.1	400	Gravel	70% algae cover	At Riverside Park, Roseburg, USGS station number 14312150
							Continuous algal cover for ~ 200 ft	
			10.0				20% algal cover	3-4-inch pump lines on RB
				fast		Bedrock riffle	Luxuriant growth in flowing current	Channelized
			9.0					2x3-inch pump lines LB.
								South Umpqua River - Roseburg Reach, August 19-20, 1992. Discharge @ streamflow-gaging station 14312000 = 74 ft ³ /s—Continued

Table 4. Field notes from reconnaissance survey, South Umpqua River, Oregon, August 17-20, 1992—Continued

Section	Mile	Time	Depth (feet)	Velocity (feet/s)	Width (feet)	Bed material	Biology	Remarks
South Umpqua River - Roseburg Reach, August 19-20, 1992. Discharge @ 14312000 = 74 ft ³ /s — Continued								
							Dead fish. constant floating scum & debris since USGS station number 14312260	Power line overhead
							Edges are choked with algae	Pump with 6-inch line RB, uses powerful water jet to clear intake structure of algae
13	115.6	0750	2.0	.1	400	Bedrock		Pump with 8-inch line LB, power line above. gravel operation LB, some channel alteration is apparent
								Uniform channel since Section 12
								Pump with 6-inch line LB, at road access from gravel pit. still smells septic
								Pump & 6-inch line RB, pumps & 6 & 8" lines LB. dead fish. edges solid with algae
							Sanderlings (birds) using mats as habitat to catch insects. Many birds: herons, ospreys, kingfishers, mergansers	Decaying mats caught on rocks, strong odor
14	114.2	0818	2.5	.1	400	Bedrock	Long strands of <i>Cladophora</i>	Pumps with 6-inch lines RB and LB. septic smell
14.2							Otter, unhealthy <i>Cladophora</i>	
							No more <i>Oscillatoria</i> . many snails, planaria. healthy <i>Cladophora</i> in current	Algae samples
			5					Uniform pool
			<1			Bobbles, rock	Lots of scum, decaying algae	Walked channel, RB. stench is very strong
15	112.7	0918	1.5	.7	250	Bedrock	Heavy algae	Shallow, fluted bedrock channel
							Many fish	DO now 8 mg/L
16	111.7	0946	17.0	<.1	300	Not visible	Several dead fish	Champagne Creek LB, dry (<1 ft ³ /s). USGS station number 14312350
								Singleton Park, upstream of confluence with, the North Umpqua River. field parameters show possible influence (mixing and diluting) by North Umpqua

Table 5. Water-quality field data from reconnaissance survey, South Umpqua River, Oregon, August 17-20, 1992

[See table 4 for field notes from reconnaissance survey. These data are not stored in any USGS database. "WWTP" = wastewater treatment plant; "RUSA" = Roseburg Urban Sanitary Authority (Roseburg WWTP); "DO" = dissolved oxygen; "µS/cm" = microsiemens per centimeter at 25°C (degree Celsius); "mg/L" = milligrams per liter]

Section	River mile	Time (2400- hours)	Water temperature (°C)	pH (units)	Specific conductance (µS/cm)	Dissolved oxygen (mg/L)	Remarks
South Umpqua River, Days Creek Reach, August 17, 1992. Discharge at USGS streamflow-gaging station 14308600 = 26 ft³/s							
2	176.5	1503	25.9	8.6	160	9.0	
3	176.0	1550	24.9	8.2	159	9.2	
5	175.5	1630	27.0	8.4	157	8.5	
6	174.1	1717	25.3	8.2	157	9.8	
8	172.5	1826	27.8	8.9	155	8.3	
9	171.1	1917	27.2	8.8	147	8.6	
10	169.9	1954	26.1	8.5	157	8.8	South Umpqua River at Days Creek, 14308600, mini-monitor site.; compared values to minimonitor values.
Cow Creek below Riddle, August 18, 1992. Discharge at USGS streamflow-gaging station 1431000 = 49 ft³/s							
1	2.4	0738	22.5	7.0	153	6.5	
2	2.0	0803	22.9	7.4	152	5.7	
3	1.8	0817	22.8	7.7	154	6.3	
4	1.1	0833	22.7	7.9	151	6.0	
5	0.5	0850	23.2	7.5	153	5.2	
6	0.2	0909	23.2	7.6	154	5.6	
7	0.0	1516	26.6	8.7	151	10.1	
South Umpqua River, Riddle Reach, August 18, 1992. Discharge at USGS streamflow-gaging station 4256251232025 = 78 ft³/s							
8	159.0	1524	--	--	--	9.0	
9	158.8	1542	27.1	8.6	159	9.6	
10	157.9	1625	27.0	8.6	158	9.2	
11	156.9	1711	27.3	8.3	160	8.4	
12	155.8	1830	27.9	8.7	--	7.3	
South Umpqua River, Roseburg Reach, August 19-20, 1992. Discharge at USGS streamflow-gaging station 14312000 = 74 ft³/s							
1	126.7	0855	25.1	8.7	182	8.6	
2	126.1	0914	24.3	8.4	182	7.4	DO = 6.4 mg/L near bottom, 7.4 at surface
3	125.3	1001	23.9	8.3	179	6.5	
4	124.2	1043	24.8	8.7	182	7.7	
5	123.5	1135	25.6	9.0	181	8.7	
6	122.3	1225	24.9	8.7	181	7.5	Stratified: DO = 7.7 at top, 1.7 at 18 ft
7	121.3	1326	25.9	8.8	178	8.7	

Table 5. Water-quality field data from reconnaissance survey, South Umpqua River, Oregon, August 17-20, 1992—Continued

Section	River mile	Time (2400- hours)	Water temperature (°C)	pH (units)	Specific conductance (µS/cm)	Dissolved oxygen (mg/L)	Remarks
South Umpqua River, Roseburg Reach, August 19-20, 1992. Discharge at USGS streamflow-gaging station 14312000 = 74 ft ³ /s							
8	120.4	1435	27.7	9.0	176	9.5	
8.1	119.6	1504	27.2	8.9	176	8.8	RUSA outfall
9	119.1	1545	27.3	9.0	194	10.4	
10	117.7	1650	27.4	9.2	192	12.0	
11	117.3	1715	27.9	9.2	194	12.8	
12	116.7	1733	28.2	9.4	194	13.0	
12	116.7	0717	23.1	7.3	197	3.8	August 20, 1992
13	115.6	0750	22.7	7.4	202	2.1	
14	114.2	0818	22.8	7.3	203	3.0	
15	112.8	0918	23.6	8.4	202	8.0	Verified DO meter calibration
16	111.8	0946	23.3	8.4	174	5.2	Singleton Park, deep pool. No significant stratification

Table 6. Sampling sites for the South Umpqua River Basin, Oregon, 1990-92

["Map reference number" = sampling location, see figures 1, 3, and 4; "RM" = river mile, measured from mouth; "I-5" = Interstate 5; "S" = synoptic site; "D" = diel inflow/outflow site; "F" = fixed station; "G" = USGS streamflow-gaging station]

Map reference number	Station number	Station name	Latitude	Longitude	River mile	Site use code
1	14307698	South Umpqua River above Jackson Creek, near Tiller	425812	1225242	192.8	S
2	14307700	Jackson Creek near Tiller	425715	1224940	192.6	S
3	14308000	South Umpqua River at Tiller	425550	1225650	187.3	S,G
4	14308500	Elk Creek near Drew	425325	1225500	187.0	S,G
5	14308600	South Umpqua River at Days Creek	425803	1230959	170.0	S,F,D,G
6	14308700	Days Creek at Days Creek	425823	1231013	169.9	S
7	14308730	South Umpqua River below Packard Gulch, near Days Creek	425802	1231329	166.8	D
8	14308740	South Umpqua River above Morgan Creek, near Canyonville	425702	1231413	165.3	D
9	14308905	Canyon Creek at Hamlin Road at Canyonville	425604	1231638	162.9	S
10	14308910	South Umpqua at Canyonville	425638	1231703	162.6	S
11	14309000	Cow Creek near Azalea	424930	1231040	158.9	S
12	14309300	Cow Creek at Reuben	424407	1232930	158.9	S
13	14310000	Cow Creek near Riddle	425525	1232540	158.9	S,F,G
14	14310510	Unnamed tributary to Cow Creek at Riddle	425700	1232128	158.9	S
15	14310550	South Umpqua River at Missouri Bottom Bridge at Tricity	425824	1232046	156.0	S,D
16	14311100	Myrtle Creek at Myrtle Creek	430124	1231718	150.7	S
17	14311105	South Umpqua River at Myrtle Creek	430121	1231746	151.3	S,F,D
18	14311110	South Umpqua River near Myrtle Creek	430150	1231857	149.7	S,D
19	14311115	South Umpqua River at Ruckles	430332	1232004	146.6	D
20	14311120	South Umpqua River below I-5 Bridge, near Ruckles	430352	1232132	145.2	D
21	14311140	South Umpqua River above Mary Moore Bridge, near Round Prairie	430449	1232200	143.3	S,D
22	14311160	South Umpqua River, at RM 141.5, near Dillard	430451	1232307	141.5	S
23	14311170	South Umpqua River at Dillard	430610	1232600	138.7	S
24	14311172	Effluent, Roseburg Forest Products, near Dillard	430613	1232603	138.6	S
25	14311500	Lookingglass Creek at Brockway	430750	1232750	137.0	S,G
26	14312000	South Umpqua River near Brockway	430800	1232350	132.8	S,F,D,G
27	14312002	South Umpqua River below Treatment Plant near Brockway	430818	1232418	132.3	D
28	14312005	South Umpqua River near Winston	430839	1232457	131.6	S,D

Table 6. Sampling sites for the South Umpqua River Basin, Oregon, 1990-92—Continued

Map reference number	Station number	Station name	Latitude Longitude	River mile	Site use code
29	14312010	South Umpqua River at Happy Valley Road, near Roseburg	430938 1232340	130.0	D
30	14312060	South Umpqua River at Shady, near Roseburg	431031 1232140	126.8	S
31	14312070	South Umpqua River at Oaks near Roseburg	431044 1232205	126.6	S,D
32	14312150	South Umpqua River at Roseburg	431245 1232050	123.4	S
33	14312210	Deer Creek at mouth, at Roseburg	431254 1232031	123.0	S
34	14312251	South Umpqua River at Stewart Park at Roseburg	431258 1232234	121.6	S
35	14312258	South Umpqua River above sewer treatment plant at Roseburg	431245 1232336	119.6	S
36	14312260	South Umpqua River near Roseburg	431320 1232445	118.0	S,F
37	14312261	South Umpqua River at Melrose Road	431426 1232446	116.6	S
38	14312350	South Umpqua River near Melrose	431545 1232625	112.2	S
39	4256451232025	South Umpqua River near Riddle	425645 1232025	158.5	G
40	4259191232025	South Umpqua River at RM 154.9, near Riddle	425919 1232025	154.9	D
41	4259351231936	South Umpqua River at RM 154.0 near Tricity	425935 1231936	154.0	D
42	4304111232212	South Umpqua River near Boomer Hill Road	430411 1232212	147.8	D
43	4303531232041	South Umpqua River at RM 146, above I-5 Bridge near Ruckles	430353 1232041	146.0	D
44	4309061232434	South Umpqua River above Happy Valley Road near Winston	430906 1232434	130.9	D
45	425640123201400	Cow Creek at mouth near Riddle	425640 1232014	158.9	S
46	424436123254401	Wastewater Treatment Plant; Glendale	424436 1232544	158.9	S
47	425602123165701	Wastewater Treatment Plant; Canyonville	425602 1231657	163.0	S,F
48	425705123212001	Wastewater Treatment Plant; Riddle	425705 1232120	158.9	S,F
49	430117123174701	Wastewater Treatment Plant; Myrtle Creek	430117 1231747	150.7	S,F,D
50	430812123240101	Wastewater Treatment Plant; Winston-Green	430812 1232401	132.6	S,F,D
51	431233123234301	Wastewater Treatment Plant; Roseburg	431233 1232343	119.5	S,F

Table 7. Summary of miscellaneous flow measurements made in the South Umpqua River Basin, Oregon, 1990-92
 [Flow measurements listed here for stream gaging stations were also used for computation of the continuous record for those stations. "JAN" = January; "FEB" = February; "MAR" = March; "APR" = April; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "OCT" = October; "NOV" = November; "DEC" = December]

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND
14307698 South Umpqua River above Jackson Creek, near Tiller		
MAY 1992		
19...	0908	135
AUG		
31...	1610	19
14307700 Jackson Creek near Tiller		
MAY 1992		
18...	1730	48
AUG		
31...	1415	9.1
14308000 South Umpqua River at Tiller		
SEP 1990		
04...	1400	70
05...	0700	68
JUL 1991		
22...	1500	148
AUG		
26...	1330	48
AUG 1992		
31...	1720	33
14308500 Elk Creek near Drew		
SEP 1990		
04...	1520	0.93
JUL 1991		
22...	1330	4.3
AUG		
26...	1130	0.63
MAY 1992		
18...	1410	4.3
14308600 South Umpqua River at Days Creek		
SEP 1990		
04...	1650	82
05...	0600	82
JUN 1991		
03...	1200	891
JUL		
22...	1730	182
AUG		
01...	1200	110
26...	1700	67

Table 7. Summary of miscellaneous flow measurements made in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND
14308600 South Umpqua River at Days Creek		
SEP 1991		
24...	0805	48
MAY 1992		
19...	0703	217
JUN		
23...	0940	85
JUL		
15...	1300	87
AUG		
03...	1525	50
31...	1617	29
SEP		
14...	1500	33
14308700 Days Creek at Days Creek		
AUG 1991		
26...	1545	0.16
MAY 1992		
18...	1550	3.1
14308905 Canyon Creek at Hamlin Road at Canyonville		
JUL 1991		
22...	1340	1.7
AUG		
26...	1220	1.4
SEP		
23...	1630	0.87
MAY 1992		
18...	1410	2.7
AUG		
31...	1310	1.0
SEP		
02...	1200	0.10
14308910 South Umpqua River at Canyonville		
SEP 1990		
05...	0700	79
05...	0730	79
05...	1450	79
JUN 1991		
10...	1045	583
JUL		
22...	1300	142

Table 7. Summary of miscellaneous flow measurements made in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND
14308910 South Umpqua River at Canyonville		
AUG 1991		
26...	1435	68
26...	1840	68
SEP		
23...	1430	52
MAY 1992		
18...	1915	238
SEP		
02...	1600	26
14309000 Cow Creek near Azalea		
SEP 1990		
06...	1215	54
14309300 Cow Creek at Reuben		
SEP 1990		
06...	1045	45
14310000 Cow Creek near Riddle		
SEP 1990		
05...	0600	71
05...	1445	71
JUL 1991		
22...	1405	117
AUG 1991		
26...	1235	79
26...	1658	79
27...	0803	79
SEP		
23...	1318	62
MAY 1992		
18...	1600	125
19...	0745	122
29...	0700	81
29...	1744	87

Table 7. Summary of miscellaneous flow measurements made in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND
14310550	South Umpqua River at Missouri Bottom Bridge at Tricity	
AUG 1991		
26...	1732	137
SEP		
23...	1824	93
MAY 1992		
19...	0830	367
SEP		
01...	0745	64
14311100	Myrtle Creek at Myrtle Creek	
SEP 1990		
05...	1240	4.2
JUN 1991		
10...	1420	44
JUL		
23...	1140	9.8
AUG		
27...	1145	3.7
SEP		
24...	1200	4.0
MAY 1992		
18...	1315	21
SEP		
02...	1320	0.98
14311110	South Umpqua River near Myrtle Creek	
SEP 1990		
05...	1130	142
05...	1340	142
05...	1545	142
06...	0700	142
JUL 1991		
23...	0700	273
AUG		
27...	0645	132
SEP		
24...	0830	100
JUN 1992		
24...	0920	131
AUG		
04...	1530	77
SEP		
16...	1025	66

Table 7. Summary of miscellaneous flow measurements made in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND
14311140	South Umpqua River above Mary Moore Bridge near Dillard	
SEP 1990		
05...	1400	148
05...	1630	148
06...	0630	148
14311170	South Umpqua River at Dillard	
SEP 1990		
06...	0710	149
06...	1620	149
JUN 1991		
10...	1535	890
JUL		
23...	1700	269
AUG		
27...	1215	139
SEP		
24...	1640	93
MAY 1992		
19...	1612	426
SEP		
02...	0816	67
14311500	Lookingglass Creek at Brockway	
SEP 1990		
05...	0930	5.0
MAY 1992		
19...	1444	18
SEP		
01...	1259	18
14312000	South Umpqua River near Brockway	
SEP 1990		
05...	1330	154
06...	0500	141
06...	1045	141
AUG 1991		
27...	1550	134
28...	0702	134
MAY 1992		
19...	1310	479
20...	0844	474
28...	1600	308

Table 7. Summary of miscellaneous flow measurements made in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND
14312000	South Umpqua River near Brockway	
MAY 1992		
29...	0801	298
SEP		
01...	1135	75
OCT		
16...	0800	136
14312005	South Umpqua River near Winston	
SEP 1990		
05...	1730	138
06...	0550	138
06...	1245	138
JUL 1991		
16...	1200	310
SEP		
10...	1200	129
SEP 1992		
01...	1757	74
14312060	South Umpqua River at Shady, near Roseburg	
AUG 1991		
27...	1127	151
SEP 1992		
03...	1315	70
14312070	South Umpqua River at Oaks near Roseburg	
SEP 1990		
06...	1545	149
07...	0710	149
14312150	South Umpqua River at Roseburg	
JUL 1991		
23...	1330	289
MAY 1992		
19...	1200	530
14312210	Deer Creek at mouth, at Roseburg	
JUL 1991		
24...	0645	3.0
AUG		
28...	0700	2.2

Table 7. Summary of miscellaneous flow measurements made in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND
14312210	Deer Creek at mouth, at Roseburg — Continued	
SEP 1991		
25...	0700	0.48
MAY 1992		
19...	1200	20
SEP		
01...	1200	0.04
03...	1200	0.04
14312251	South Umpqua River at Stewart Park at Roseburg	
SEP 1990		
06...	1700	166
07...	0615	166
14312260	South Umpqua River near Roseburg	
OCT 1990		
17...	0930	156
NOV		
07...	0930	844
DEC		
05...	1330	1600
JAN 1991		
15...	1400	10500
FEB		
27...	1000	1360
MAR		
26...	0930	3210
MAY		
01...	1330	1890
30...	1430	1710
JUN		
25...	1130	536
JUL		
25...	1000	280
AUG		
13...	1400	179
SEP		
04...	1400	126
24...	1522	171
OCT		
17...	0930	99
NOV		
12...	1345	272

Table 7. Summary of miscellaneous flow measurements made in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND
14312260 South Umpqua River near Roseburg— Continued		
DEC		
11...	0915	2630
JAN 1992		
14...	1330	1850
FEB		
12...	1130	972
MAR		
09...	1330	1030
APR		
09...	0930	606
MAY		
04...	1130	857
19...	1730	477
JUN		
09...	1130	187
JUL		
15...	1200	149
AUG		
17...	1600	75
SEP		
08...	1300	116
OCT		
21...	1330	144
14312261 South Umpqua River at Melrose Road near Roseburg		
SEP 1990		
06...	1515	158
07...	0625	158
JUL 1991		
24...	0640	290
AUG		
27...	1620	141
SEP		
24...	1639	105
MAY 1992		
19...	1530	477
SEP		
03...	1000	71
14312350 South Umpqua River near Melrose		
SEP 1990		
06...	1530	141
07...	0645	141

Table 8. Field and laboratory parameters quantified in the South Umpqua River Basin, Oregon, 1990-92

[Laboratory constituents were analyzed at the U.S. Geological Survey National Water-Quality Laboratory in Denver, Colorado, except periphyton biomass and ash weight, which were analyzed at the U.S. Geological Survey Oregon-District's laboratory. Percent saturation of dissolved oxygen is calculated based on water temperature, barometric pressure, and dissolved oxygen. "WATSTORE" = water data storage and retrieval system"; "NA" = not applicable; "LC" = laboratory code; "S" = synoptic; "F" = fixed station; "D" = diel inflow/outflow; "WWTP" = wastewater-treatment plant effluent; "R" = reconnaissance; "°C" = degrees Celsius; "mm of Hg" = millimeters of mercury; "µS/cm" = microsiemens per centimeter; "mg/L" = milligrams per liter; "O" = oxygen; "nm" = nanometer wavelength"; "µE/m²/s" = micro-Einsteins per meter squared per second; "total" = unfiltered; "dissolved" = filtered; "N" = nitrogen; "P" = phosphorus; "C" = carbon; "SiO₂" = silica; "mm" = micrometer; "MF" = membrane filter; "g/m²" = grams per square meter]

Parameter name	WATSTORE parameter code	Laboratory code	Minimum reporting level	Sample type
Field parameters				
Temperature, water (°C)	00010	NA	0.1	S,F,D
Temperature, air (°C)	00020	NA	.5	S,F,D
Barometric pressure (mm of Hg)	00025	NA	1	S,F,D
Specific conductance (µS/cm at 25 °C)	00095	NA	1	S,F,D
Oxygen, dissolved (mg/L as O)	00300	NA	.1	S,F,D
Oxygen, dissolved, percent saturation	00301	NA	1	S,F,D
pH (pH units)	00400	NA	.1	S,F,D
Incident light intensity, 400-700 nm (µE/m ² /s)	00200	NA	1	F,D
Coliform, fecal, 0.7 µm-MF (colonies/100 ml)	31625	NA	1	S,D ¹
Streptococci, fecal, MF, KF agar, (colonies/100 ml)	31673	NA	1	S,D ¹
Laboratory constituents				
Conductivity, laboratory (µS/cm at 25 °C)	90095	LC0069	1	WWTP
pH, laboratory (pH units)	00403	LC1286	.1	WWTP
Nitrogen, ammonia, dissolved (mg/L as N)	00608	LC0830	.002	S,F,D
		LC0301	.01	WWTP
Nitrogen, ammonia plus organic, total (mg/L as N)	00625	LC1688	.2	All samples
Nitrogen, nitrite, dissolved (mg/L as N)	00613	LC0827	.001	S,F,D
		LC0160	.01	WWTP
Nitrogen, nitrate plus nitrite, dissolved (mg/L as N)	00631	LC0826	.005	S,F,D
		LC0228	.1	WWTP
Phosphorus, total (mg/L as P)	00665	LC0837	.001	S,F,D
		LC0129	.01	WWTP
Phosphorus, dissolved (mg/L as P)	00666	LC0829	.001	S,F,D
		LC0128	.01	WWTP
Phosphorus, orthophosphate, dissolved (mg/L as P)	00671	LC0828	.001	S,F,D
		LC0162	.01	WWTP
Carbon, organic, dissolved (mg/L as C)	00681	LC0113	.1	S ²
Carbon, organic total (mg/L as C)	00680	LC0114	.1	S ³
Silica, dissolved (mg/L as SiO ₂)	00955	LC056	.1	S,F,D
Alkalinity, total (mg/L as CaCO ₃)	90410	LC070	1	All samples
Chloride, dissolved (mg/L as Cl)	00940	LC015	.1	S ³
Periphyton, biomass, total dry weight (g/m ²)	00573	NA	.1	R,D
Periphyton, total ash weight (g/m ²)	00572	NA	.1	R,D

¹ September 1992 synoptic and diel sampling only.

² September 1991 synoptic sampling only.

³ September 1990 synoptic sampling only.

[Data discrepancies in water temperature, pH, and dissolved oxygen between this table and tables 17-24 are the results of slight differences in sampling times, locations, and instrumentation. Discrepancies between total (unfiltered, digested) phosphorus and dissolved phosphorus (filtered, digested) or orthophosphate (filtered, undigested) may reflect analytical uncertainty of the procedures used. "INST" = instantaneous; "US/CM" = micrometers per centimeter at 25 degrees Celsius; "DEG C" = degrees Celsius; "MM OF HG" = millimeters of mercury; "MG/L" = milligrams per liter; "TOTAL" = unfiltered, digested; "dissolved" = filtered; "CaCO₃" = calcium carbonate; "SI02" = silica; "N" = nitrogen; "NO2+NO3" = nitrite plus nitrate; "P" = phosphorus; "C" = carbon; "--" = not analyzed or not available; "E" = mean value; "A" = less than; "RM" = river mile; "1-5" = Interstate 5; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "OCT" = October]

[illegible]

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

14308500 Elk Creek near Drew																				
SEP 1990	1520	0.93	190	8.4	20.5	--	728	8.7	102	79	17	<0.010	<0.100	0.020	0.6	0.030	--	0.010	3.6	--
JUN 1991	1000	--	112	8.0	E16.0	--	730	9.8	--	55	21	0.00	<0.005	0.016	<0.2	0.038	0.022	0.016	--	--
JUL	1330	4.3	149	8.5	22.5	--	730	9.5	115	67	16	0.003	.009	0.011	0.8	0.026	0.021	0.015	--	--
AUG	1130	0.63	226	7.9	16.5	--	730	10.1	108	83	14	<0.001	.012	0.007	0.3	0.016	0.011	0.002	--	--
SEP	1300	--	248	8.0	12.5	--	740	10.5	102	85	13	0.002	.017	0.018	<0.2	0.020	0.009	0.004	--	--
MAY 1992	1410	4.3	135	8.6	19.0	21.0	727	9.9	112	63	16	0.00	0.009	0.011	0.3	0.017	0.014	0.009	--	--
14308600 South Umpqua River at Days Creek																				
SEP 1990	1650	82	127	8.4	22.0	--	741	9.2	108	46	15	<0.010	<0.100	<0.010	0.2	0.040	--	<0.010	2.1	--
04...	0600	82	126	7.9	21.5	--	750	7.9	90	--	--	--	--	--	--	--	--	--	--	--
JUN 1991	1200	891	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	0600	--	84	7.8	17.0	--	742	9.0	95	--	--	--	--	--	--	--	--	--	--	--
10...	1300	--	81	7.8	19.5	--	745	10.4	115	34	17	0.007	0.010	0.032	0.2	0.021	0.014	0.008	--	--
10...	1710	--	86	8.2	21.0	--	742	9.0	104	35	17	0.005	0.008	0.021	0.5	0.018	0.015	0.009	--	--
JUL	1730	182	113	8.3	26.0	--	741	8.5	108	44	14	0.001	0.007	0.008	0.5	0.015	0.008	0.003	--	--
22...	0650	--	118	7.7	23.0	--	741	7.6	91	--	--	--	--	--	--	--	--	--	--	--
23...																				
AUG	1200	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	1700	67	137	8.4	21.5	--	741	9.6	112	49	13	<0.001	<0.005	<0.002	0.6	0.009	0.003	0.003	--	--
26...	0812	--	141	7.9	20.0	--	746	8.0	90	--	--	--	--	--	--	--	--	--	--	--
SEP	1630	--	155	8.2	18.5	--	748	9.9	107	51	13	0.003	0.011	0.017	0.3	0.011	0.007	0.002	--	--
23...	0805	48	153	8.0	17.5	--	746	8.7	93	--	--	--	--	--	--	--	--	--	--	--
MAY 1992	1730	--	126	8.5	22.5	21.0	739	8.6	103	40	13	0.001	<0.005	0.008	<0.2	0.008	0.004	0.002	--	--
18...	0703	217	103	7.7	19.0	15.0	740	8.4	93	--	--	--	--	--	--	--	--	--	--	--
19...	0743	--	106	7.6	17.0	10.0	746	9.1	96	--	--	--	--	--	--	--	--	--	--	--
20...	1300	--	108	--	20.5	--	742	9.3	106	42	12	0.002	<0.005	0.012	<0.2	0.007	0.003	<0.001	--	--
29...																				
JUN	1830	--	116	8.8	25.0	26.0	740	8.2	103	42	11	0.001	0.005	0.003	<0.2	0.006	0.004	0.001	--	--
03...	1645	--	119	8.5	23.0	22.0	737	8.8	106	44	10	0.005	0.014	0.037	<0.2	0.001	0.003	0.001	--	--
10...	0705	--	122	7.9	20.0	15.5	740	8.2	94	--	--	--	--	--	--	--	--	--	--	--
11...	1220	--	116	8.1	17.0	21.0	745	9.5	100	43	12	<0.001	<0.005	<0.002	<0.2	0.006	0.005	<0.001	--	--
22...	1445	--	124	8.4	26.5	--	740	8.3	106	45	11	0.008	0.008	0.015	<0.2	0.009	0.002	<0.001	--	--
22...	1945	--	128	8.5	29.5	--	738	7.6	--	45	12	0.005	0.009	0.014	0.2	0.009	0.003	<0.001	--	--
22...	2345	--	128	8.7	29.0	23.0	737	6.5	87	45	12	0.007	0.010	0.018	<0.2	0.007	0.001	<0.001	--	--
22...	0230	--	129	8.3	28.0	21.0	738	6.4	84	46	12	0.009	0.012	0.017	<0.2	0.008	0.005	<0.001	--	--
23...	0940	85	133	7.8	25.0	--	742	7.9	98	47	11	0.003	0.005	0.012	<0.2	0.009	0.003	<0.001	--	--
JUL																				
01...	1345	--	136	8.4	19.5	23.0	742	8.0	90	48	14	<0.001	<0.005	0.016	<0.2	0.006	0.004	<0.001	--	--
08...	1315	--	122	7.9	23.0	24.0	747	8.3	100	46	12	0.005	0.007	0.030	<0.2	0.003	0.003	<0.001	--	--
15...	1300	87	129	7.8	24.5	26.0	743	9.5	116	49	12	0.002	<0.005	0.002	<0.2	0.007	0.003	<0.001	--	--

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DIS-CHARGE, CUBIC FEET PER SECOND	SPE- CIFIC DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	ALKA- LINIT LAB AS CACO3	SILICA, DIS- SOLVED AS SiO2	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
Canyon Creek at Hamlin Road at Canyonville																			
14308905																			
JUN 1991																			
10...	0920	--	159	7.9	15.0	--	745	9.6	98	62	17	0.004	0.074	0.036	<0.2	0.024	0.021	0.009	--
JUL																			
22...	1340	1.7	194	8.0	19.5	--	743	9.5	106	70	16	0.002	0.090	0.004	0.3	0.013	0.010	0.002	--
AUG																			
26...	1220	1.4	198	8.1	16.5	--	748	9.8	102	76	15	<0.001	<0.005	0.017	0.3	0.020	0.010	0.003	--
SEP																			
23...	1630	0.87	202	8.0	16.0	--	750	9.5	97	75	15	0.002	0.046	0.022	<0.2	0.013	0.009	0.006	--
MAY 1992																			
18...	1410	2.7	187	7.4	18.0	22.5	742	9.4	101	69	16	0.002	0.096	0.019	<0.2	0.019	0.012	0.007	--
AUG																			
31...	1310	1.0	240	7.9	18.0	--	742	9.1	98	93	15	0.001	0.116	0.021	<0.2	0.011	0.008	0.005	--
SEP																			
02...	1200	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
South Umpqua River at Canyonville																			
14308910																			
SEP 1990																			
05...	0700	79	132	8.0	20.0	--	746	7.8	88	48	15	<0.010	<0.100	<0.010	<0.2	0.020	--	0.020	2.1
05...	0730	79	131	7.9	20.0	--	746	7.8	88	48	15	<0.010	<0.100	0.020	<0.2	0.020	--	<0.010	2.0
05...	1450	79	134	8.5	24.0	--	753	9.8	118	--	--	--	--	--	--	--	--	--	--
JUN 1991																			
10...	0710	--	87	7.7	16.5	--	743	9.0	95	36	17	0.003	0.022	0.014	0.4	0.018	0.013	0.008	--
10...	1045	583	86	8.0	18.0	--	743	9.4	102	36	17	0.001	0.014	0.012	0.4	0.019	0.014	0.009	--
10...	1805	--	87	8.4	21.5	--	744	9.1	106	--	--	--	--	--	--	--	--	--	--
JUL																			
1300	142	121	121	8.3	25.0	--	744	9.1	113	47	15	0.007	0.026	0.029	0.3	0.012	0.008	0.003	--
22...	1700	--	121	8.7	27.5	--	745	8.8	114	--	--	--	--	--	--	--	--	--	--
22...	0620	--	122	7.6	23.0	--	740	7.3	88	--	--	--	--	--	--	--	--	--	--
AUG																			
1435	68	151	151	8.6	22.5	--	745	9.7	115	53	13	<0.001	0.043	0.013	<0.4	0.030	0.009	0.008	--
26...	1840	68	150	8.9	24.5	--	745	9.1	111	--	--	--	--	--	--	--	--	--	--
26...	0914	--	152	8.0	19.0	--	746	9.1	101	--	--	--	--	--	--	--	--	--	--
SEP																			
1430	52	163	163	8.6	19.0	--	752	10.7	117	55	14	0.003	0.057	0.022	0.3	0.017	0.011	0.008	1.5
23...	0850	--	167	7.8	15.5	--	753	9.3	94	--	--	--	--	--	--	--	--	--	--
MAY 1992																			
1915	238	109	109	8.3	19.5	17.0	740	8.5	95	43	13	<0.001	0.029	0.009	<0.2	0.017	0.011	0.006	--
19...	0815	--	115	7.6	19.0	14.5	740	8.3	93	--	--	--	--	--	--	--	--	--	--
AUG																			
31...	1730	--	192	8.6	22.5	--	742	9.6	115	63	15	0.005	0.040	0.025	0.2	0.030	0.024	0.021	--
SEP																			
01...	0644	--	191	7.7	21.0	17.0	742	6.6	76	--	--	--	--	--	--	--	--	--	--
02...	1600	26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cow Creek near Azalea																			
14309000																			
SEP 1990																			
06...	1215	54	114	7.6	8.5	--	720	10.4	94	54	18	<0.010	<0.100	0.040	0.3	0.030	--	<0.010	4.0
Cow Creek at Reuben																			
14309300																			
SEP 1990																			
06...	1045	45	121	8.0	17.0	--	730	8.8	95	56	18	<0.010	0.200	0.030	0.3	0.040	--	0.040	2.8

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DIS- CHARGE, INST.	SPE- CIFIC CON- DUCT- ANCE	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	ALKA- LINIT LAB SOLVED (MG/L AS CaCO3)	SILICA, DIS- SOLVED (MG/L AS SiO2)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DISE- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOS- PHOS- PHATE (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISE- SOLVED (MG/L AS C)
14310000 Cow Creek near Riddle																		
SEP 1990																		
05...	0600	71	148	7.7	19.0	--	750	7.7	84	--	--	--	--	--	--	--	--	--
05...	1445	71	137	8.8	23.5	--	745	11.5	139	58	15	<0.010	--	--	--	--	2.5	--
JUN 1991																		
10...	0745	--	123	7.8	19.0	--	746	8.6	95	--	--	--	--	--	--	--	--	--
10...	1530	--	123	8.3	22.5	--	744	8.9	106	53	15	0.002	0.009	0.029	0.013	0.008	0.003	--
JUL																		
22...	1405	117	135	8.3	24.0	--	748	8.8	107	58	15	0.003	0.009	0.005	0.013	0.007	0.005	--
22...	1810	--	132	8.5	25.0	--	748	8.6	107	--	--	--	--	--	--	--	--	--
23...	1715	--	130	7.8	23.0	--	746	7.6	91	--	--	--	--	--	--	--	--	--
AUG																		
26...	1235	79	135	8.3	20.5	--	743	9.5	109	63	17	0.001	<0.005	0.010	0.014	0.008	0.001	--
26...	1658	79	142	8.6	23.0	--	740	10	119	--	--	--	--	--	--	--	--	--
27...	0803	79	134	7.7	18.5	--	742	8.3	91	--	--	--	--	--	--	--	--	2.3
SEP																		
23...	1318	62	138	8.3	17.0	--	747	10.5	110	61	16	0.003	0.006	0.017	0.008	0.008	0.003	--
23...	1729	--	134	8.6	18.5	--	747	10.4	113	--	--	--	--	--	--	--	--	--
24...	0717	--	136	7.8	15.0	--	745	8.2	84	--	--	--	--	--	--	--	--	--
MAY 1992																		
18...	1600	125	125	8.1	21.0	28.0	747	8.8	101	55	14	0.001	0.008	0.007	<0.2	0.012	0.010	0.002
19...	0745	122	125	7.7	19.5	15.0	740	8.0	90	--	--	--	--	--	--	--	--	--
29...	0700	81	129	7.7	19.5	20.0	746	8.3	92	58	14	0.001	<0.005	0.012	<0.2	0.010	0.003	0.003
29...	1744	87	131	8.3	22.0	--	742	9.1	107	--	--	--	--	--	--	--	--	--
JUN																		
17...	1450	--	134	8.0	19.5	--	743	9.9	110	56	15	0.001	0.007	0.004	<0.2	0.006	0.003	0.001
18...	0755	--	137	7.6	18.0	16.0	743	8.6	93	--	--	--	--	--	--	--	--	--
JUL																		
01...	1608	--	143	8.6	22.5	24.0	742	9.1	108	58	14	<0.001	<0.005	0.013	<0.2	0.011	0.006	<0.001
02...	0644	--	142	7.7	20.5	--	743	7.6	87	--	--	--	--	--	--	--	--	--
08...	1536	--	138	8.4	24.0	--	749	8.6	104	58	13	0.006	0.006	0.024	<0.2	0.004	0.003	<0.001
09...	0645	--	139	7.8	20.5	12.0	749	7.2	81	--	--	--	--	--	--	--	--	--
15...	0646	--	149	7.4	22.5	13.5	744	6.5	77	--	--	--	--	--	--	--	--	--
15...	1520	--	148	8.6	26.5	31.5	744	9.4	120	63	13	0.002	<0.005	<0.002	0.005	0.004	<0.001	--
22...	1509	--	145	8.6	22.5	19.5	747	9.2	109	62	13	0.001	<0.005	0.006	0.011	0.002	0.001	--
23...	0701	--	146	7.8	20.0	--	747	7.5	85	--	--	--	--	--	--	--	--	--
AUG																		
11...	1340	--	151	8.5	25.0	36.0	740	9.4	118	64	14	<0.001	0.007	0.009	<0.2	0.009	<0.001	--
12...	0704	--	153	7.8	23.0	--	740	6.6	80	--	--	--	--	--	--	--	--	--
18...	0719	--	151	7.6	22.5	--	743	7.1	84	--	--	--	--	--	--	--	--	--
18...	1501	--	149	8.5	26.0	33.0	743	9.3	118	53	15	<0.001	<0.005	0.017	<0.2	0.010	0.004	<0.001
25...	1504	--	147	8.6	22.0	32.0	745	9.8	114	A65	15	0.001	0.012	0.012	0.010	0.002	0.001	--
26...	0653	--	151	7.8	18.5	9.0	748	7.6	83	--	--	--	--	--	--	--	--	--
31...	1715	--	142	8.4	21.5	24.0	744	9.2	106	64	14	0.001	<0.005	0.019	<0.2	0.008	0.004	0.001
SEP																		
01...	0700	--	144	7.8	20.0	17.5	744	7.2	81	--	--	--	--	--	--	--	--	--
08...	1525	--	146	8.4	18.5	26.0	748	10.5	115	65	14	0.002	0.006	0.016	<0.2	0.002	0.002	0.002
09...	0704	--	147	7.9	17.0	13.0	746	8.4	88	--	--	--	--	--	--	--	--	--
OCT																		
1745		--	--	--	--	--	746	--	--	61	13	0.006	0.014	0.008	<0.2	0.006	0.003	0.002
0708		--	158	7.8	16.0	--	743	8.7	90	--	--	--	--	--	--	--	--	--
15...	1700	--	160	8.3	11.5	11.0	747	10.8	101	65	16	0.004	0.005	0.005	<0.2	0.006	0.005	<0.001
16...	0715	--	161	7.9	10.0	4.0	747	10.1	91	--	--	--	--	--	--	--	--	--
1635		--	160	8.1	14.5	--	747	10.1	101	--	--	--	--	--	--	--	--	--
27...	0702	--	166	7.7	13.5	--	746	8.9	87	69	17	0.007	0.008	0.008	<0.2	0.008	0.005	0.003

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

425640123201400 Cow Creek at mouth, near Riddle																			
SEP 1990																			
05...	0700	65	148	7.8	20.5	--	750	6.2	70	--	--	--	--	--	--	--	--	--	--
05...	1545	65	141	9.2	23.5	--	746	14.0	169	59	14	<0.010	<0.100	0.020	0.030	--	0.010	2.6	--
JUN 1991																			
10...	0630	--	129	7.8	19.0	--	746	8.1	89	56	14	0.002	0.049	0.036	0.016	0.009	0.009	--	--
10...	0945	--	129	7.9	19.0	--	745	8.7	96	55	14	0.002	0.031	0.026	0.013	0.009	0.003	--	--
10...	1715	--	129	8.5	24.5	--	744	9.1	112	--	--	--	--	--	--	--	--	--	--
JUL																			
22...	1635	--	136	9.0	25.5	--	--	10.5	--	57	14	0.004	0.016	0.006	0.017	0.011	0.007	--	--
23...	0650	--	141	7.6	23.5	--	748	6.6	79	--	--	--	--	--	--	--	--	--	--
AUG																			
26...	1605	--	135	8.9	22.5	--	740	11.2	133	59	16	<0.001	0.019	0.018	0.013	0.012	0.004	--	--
27...	0705	--	137	7.6	19.5	--	742	7.1	80	--	--	--	--	--	--	--	--	--	--
SEP																			
23...	1614	--	140	8.8	18.5	--	748	11.6	126	61	15	0.003	0.016	0.010	0.013	0.010	0.005	--	2.4
24...	0753	--	143	7.8	16.0	--	746	7.5	77	--	--	--	--	--	--	--	--	--	--
MAY 1992																			
18...	1430	--	133	8.3	22.0	27.5	748	9.8	115	56	14	<0.001	0.013	0.009	<0.2	0.012	0.007	0.003	--
18...	1745	--	119	8.2	22.5	27.0	746	9.0	106	--	--	--	--	--	--	--	--	--	--
19...	0715	--	135	7.5	19.0	15.0	740	7.6	85	--	--	--	--	--	--	--	--	--	--
AUG																			
31...	1530	--	150	8.9	21.5	25.0	746	11.2	130	68	14	0.001	<0.005	0.016	<0.2	0.013	0.007	0.003	--
SEP																			
01...	0708	--	154	7.6	20.5	17.0	743	6.1	69	--	--	--	--	--	--	--	--	--	--
14310510 Unnamed tributary to Cow Creek at Riddle																			
JUN 1991																			
10...	1415	--	640	8.2	19.5	--	745	8.5	95	259	29	0.037	0.360	0.114	1.3	0.164	0.099	0.049	--
14310550 South Umpqua River at Missouri Bottom Bridge at Tricity																			
JUN 1991																			
10...	0845	--	98	7.7	18.0	--	747	9.0	97	--	--	--	--	--	--	--	--	--	--
10...	1630	--	100	8.1	21.5	--	748	9.7	112	42	16	0.002	0.010	0.015	<0.2	0.018	0.011	0.008	--
JUL																			
22...	1723	--	129	8.7	26.5	--	746	8.9	113	--	--	--	--	--	--	--	--	--	--
23...	0817	--	131	7.9	24.5	--	749	7.4	90	52	14	0.003	0.017	0.004	0.3	0.012	0.004	<0.001	--
AUG																			
26...	1732	137	143	8.8	23.5	--	743	10.1	122	--	--	--	--	--	--	--	--	--	--
27...	0845	--	146	7.9	20.0	--	743	8.1	91	58	14	<0.001	<0.005	0.019	0.2	0.011	0.008	0.005	--
SEP																			
23...	1824	93	153	8.6	19.5	--	749	10.4	115	60	14	0.003	0.012	0.013	0.4	0.011	0.005	0.001	--
24...	0824	--	155	7.9	16.5	--	748	8.0	83	--	--	--	--	--	--	--	--	--	--
MAY 1992																			
19...	0830	367	117	7.5	20.0	15.0	740	8.1	92	48	13	0.001	0.031	0.010	<0.2	0.026	0.009	0.005	--
AUG																			
31...	1830	--	164	8.9	23.5	--	747	9.5	114	--	--	--	--	--	--	--	--	--	--
SEP																			
01...	0745	64	165	8.0	21.0	18.5	748	6.7	77	68	13	<0.001	0.010	0.018	<0.2	0.010	0.004	0.002	--

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TEMPERATURE AIR (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	14311100 Myrtle Creek at Myrtle Creek										14311105 South Umpqua River at Myrtle Creek												
								OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	ALKALINITY LAB (MG/L AS CAO3)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, DIS-SOLVED (MG/L AS P)	PHOSPHORUS, DIS-SOLVED (MG/L AS P)	PHOSPHORUS, ORTHO-DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)											
SEP 1990	1240	4.2	270	8.3	19.0	--	747	10.0	110	89	22	<0.010	<0.100	0.020	0.3	0.010	--	<0.010	2.1	--	--	--	--	--	--	--	--	--	--	--
JUN 1991	1420	44	197	8.1	19.0	--	742	9.1	101	77	23	0.001	0.063	0.014	0.4	0.014	0.010	0.005	--	--	--	--	--	--	--	--	--	--	--	--
JUL	1140	9.8	234	8.1	22.0	--	749	8.7	101	86	19	0.001	0.038	0.008	<0.2	0.010	0.006	0.003	--	--	--	--	--	--	--	--	--	--	--	--
AUG	1145	3.7	257	8.2	15.5	--	746	10.2	105	90	22	<0.001	0.059	0.003	0.3	0.011	0.006	0.001	--	--	--	--	--	--	--	--	--	--	--	--
SEP	1200	4.0	270	8.0	14.5	--	750	10.7	106	91	20	0.004	0.062	0.057	<0.2	0.006	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY 1992	1315	21	227	8.2	19.0	26.0	750	9.2	101	87	20	0.003	0.038	0.022	<0.2	0.009	0.010	0.006	--	--	--	--	--	--	--	--	--	--	--	--
AUG	1400	--	292	7.9	18.5	19.0	748	10.1	110	105	20	0.002	0.083	0.030	0.2	0.019	0.011	0.007	--	--	--	--	--	--	--	--	--	--	--	--
SEP	1320	0.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 1990	0645	--	140	7.7	22.0	--	751	6.4	74	55	13	<0.010	<0.100	0.030	0.2	0.020	--	<0.010	2.8	--	--	--	--	--	--	--	--	--	--	--
OCT 1991	1415	--	136	8.3	23.0	--	749	9.2	109	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV	1813	--	145	8.8	23.5	--	745	11.1	133	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC	1020	--	150	8.1	20.5	--	748	7.4	83	58	13	<0.001	0.008	0.017	0.3	0.010	0.005	<0.001	--	--	--	--	--	--	--	--	--	--	--	--
JAN	1315	--	162	8.1	21.5	--	--	8.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB	1320	--	162	8.1	21.5	--	--	8.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR	1810	--	158	8.7	19.5	--	750	10.7	118	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APR	0730	--	159	7.8	17.0	--	753	7.9	83	60	14	0.002	0.019	0.019	0.4	0.010	0.005	0.001	--	--	--	--	--	--	--	--	--	--	--	2.1
MAY 1992	0840	--	122	7.7	20.5	15.5	740	7.5	85	46	13	0.001	0.022	0.013	0.6	0.012	0.007	0.003	--	--	--	--	--	--	--	--	--	--	--	--
JUN	1637	--	120	8.0	20.5	--	745	9.0	102	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL	1823	--	127	8.5	23.0	24.5	745	9.6	115	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG	0750	--	128	7.8	20.5	7.0	751	7.5	84	52	13	0.002	0.017	0.019	<0.2	0.015	0.008	0.004	--	--	--	--	--	--	--	--	--	--	--	--
SEP	0710	--	139	7.7	22.0	--	748	6.9	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCT	1615	--	137	8.2	20.5	28.0	746	10.6	121	53	13	<0.001	0.008	0.003	<0.2	0.007	0.006	0.001	--	--	--	--	--	--	--	--	--	--	--	--
NOV	0840	--	138	7.6	18.5	18.0	747	8.0	88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC	1500	--	148	8.6	29.5	--	745	9.6	129	56	13	0.007	0.015	0.010	<0.2	0.010	0.005	0.002	--	--	--	--	--	--	--	--	--	--	--	--
JAN	1930	--	149	8.8	29.5	30.5	740	10	135	56	13	0.006	0.017	0.016	<0.2	0.009	0.005	0.002	--	--	--	--	--	--	--	--	--	--	--	--
FEB	23...	--	151	8.5	28.5	--	741	7.7	102	56	13	0.003	0.013	0.006	<0.2	0.010	0.005	<0.001	--	--	--	--	--	--	--	--	--	--	--	--
MAR	0015	--	151	7.7	27.0	--	740	6.3	82	57	13	0.006	0.019	0.016	<0.2	0.011	0.007	<0.001	--	--	--	--	--	--	--	--	--	--	--	--
APR	0420	--	151	7.4	27.0	--	743	6.1	79	57	13	0.003	0.015	0.006	<0.2	0.016	--	0.004	--	--	--	--	--	--	--	--	--	--	--	--
MAY	1010	--	152	7.4	27.0	--	740	6.3	79	57	13	0.003	0.015	0.006	<0.2	0.016	--	0.004	--	--	--	--	--	--	--	--	--	--	--	--
JUN	1445	--	144	8.2	28.0	--	741	8.9	118	57	15	0.004	0.014	0.007	<0.2	0.011	0.006	0.002	--	--	--	--	--	--	--	--	--	--	--	--
JUL	1650	--	147	8.5	23.0	25.5	746	9.9	119	56	13	<0.001	0.009	0.011	<0.2	0.005	0.007	<0.001	--	--	--	--	--	--	--	--	--	--	--	--
AUG	0715	--	151	7.7	24.0	14.0	747	6.2	75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP	1600	--	148	8.6	27.0	31.5	747	9.3	120	--	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCT	1500	--	163	8.3	23.5	--	749	9.1	110	64	15	<0.001	0.008	0.007	<0.2	0.010	0.004	0.002	--	--	--	--	--	--	--	--	--	--	--	--
NOV	0930	--	159	7.9	21.5	--	749	7.2	83	63	15	<0.001	0.010	0.006	<0.2	0.010	0.006	0.001	--	--	--	--	--	--	--	--	--	--	--	--

South Umpqua River at Myrtle Creek

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	ALKAL- LITY LAB (MG/L AS CAO3)	SILICA, DIS- SOLVED (MG/L AS SiO2)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA DIS- SOLVED (MG/L AS N)	NITRO- AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
SEP 1992																			
15...	1520	--	178	8.5	18.0	--	746	10.5	113	66	14	0.001	0.016	0.014	<0.2	0.007	0.005	<0.001	--
16...	0925	--	180	7.8	16.5	13.0	750	7.8	81	66	14	<0.001	0.011	0.014	<0.2	0.005	0.007	<0.001	--
OCT																			
1708	1708	--	183	8.3	15.5	--	749	10.9	111	--	--	--	--	--	--	--	--	--	--
1750	0750	--	186	7.7	14.5	--	748	8.6	85	65	14	0.004	0.025	0.013	<0.2	0.009	0.004	0.002	--
SEP 1990																			
14311105 South Umpqua River at Myrtle Creek																			
14311110 South Umpqua River near Myrtle Creek																			
05...	1130	142	147	8.0	21.5	--	752	8.9	102	55	13	<0.010	<0.100	0.020	0.3	0.030	--	0.020	2.7
05...	1340	142	147	8.1	22.5	--	749	8.8	104	55	14	<0.010	<0.100	0.090	0.3	0.020	--	0.020	2.4
05...	1545	142	145	9.1	23.5	--	754	10.6	126	--	--	--	--	--	--	--	--	--	--
06...	0700	142	146	8.0	22.0	--	755	7.5	87	--	--	--	--	--	--	--	--	--	--
JUN 1991																			
0645	0645	--	107	7.8	20.5	--	749	8.2	92	44	16	0.004	0.029	0.029	0.4	0.015	0.020	0.011	--
11...	1220	--	108	7.9	20.5	--	751	8.9	100	45	16	0.007	--	--	0.2	0.024	0.019	0.015	--
11...	1545	--	108	8.1	21.0	--	751	9.2	105	--	--	--	--	--	--	--	--	--	--
JUL																			
1735	1735	--	135	8.6	25.5	--	745	9.0	112	--	--	--	--	--	--	--	--	--	--
23...	0700	273	133	7.8	24.5	--	747	7.3	90	55	14	0.005	0.036	0.055	<0.2	0.026	0.020	0.015	--
AUG																			
26...	1934	--	155	8.6	22.0	--	745	9.1	106	--	--	--	--	--	--	--	--	--	--
27...	0645	132	152	8.2	20.5	--	746	7.9	90	60	14	0.021	0.034	0.023	0.4	0.035	0.033	0.017	--
SEP																			
18...	1430	--	162	8.6	22.5	36.5	--	9.5	--	--	--	--	--	--	--	--	--	--	--
18...	1435	--	162	8.6	22.5	36.5	--	9.5	--	--	--	--	--	--	--	--	--	--	--
0830	0830	100	166	7.9	17.0	--	754	8.6	90	58	13	0.016	0.059	0.062	0.2	0.031	0.024	0.019	2.0
24...	1526	--	164	8.7	20.0	--	753	10.1	113	--	--	--	--	--	--	--	--	--	--
MAY 1992																			
1819	1819	--	129	8.0	20.5	15.5	745	9.0	103	52	13	0.002	0.027	0.041	0.6	0.024	0.016	0.011	--
20...	0729	--	135	7.7	18.0	10.0	749	8.5	91	--	--	--	--	--	--	--	--	--	--
JUN																			
23...	1640	--	156	8.5	28.5	--	745	8.9	118	58	13	0.008	0.089	0.016	<0.2	0.030	0.025	0.021	--
23...	2050	--	158	8.4	28.0	26.0	741	8.0	106	58	15	0.007	0.089	0.021	<0.2	0.031	0.029	0.025	--
0120	0120	--	158	8.3	27.5	--	741	7.4	96	58	15	0.007	0.082	0.024	<0.2	0.034	0.028	0.023	--
24...	0510	--	158	8.0	27.0	--	740	6.9	90	58	15	0.013	0.080	0.043	0.2	0.038	0.029	0.023	--
24...	0920	131	149	7.7	27.0	--	743	7.3	94	58	15	0.006	0.038	0.022	<0.2	0.028	0.022	0.015	--
24...	1510	--	151	8.2	27.5	--	741	8.4	110	58	13	0.006	0.042	0.020	<0.2	0.029	0.022	0.018	--
AUG																			
04...	1530	77	165	8.9	24.5	--	750	10.2	124	63	15	0.012	0.028	0.024	<0.2	0.031	0.021	0.020	--
04...	2003	--	165	9.0	24.0	--	750	10.4	127	64	15	0.025	0.070	0.019	<0.2	0.039	0.031	0.029	--
05...	1005	--	169	8.3	22.5	--	750	8.7	102	64	15	0.019	0.045	0.048	<0.2	0.046	0.039	0.038	--
SEP																			
01...	1705	--	170	8.8	23.5	--	753	11.3	134	68	14	0.010	0.036	0.038	0.3	0.045	0.034	0.026	--
1643	1643	--	180	8.9	18.0	--	746	11.2	121	66	14	0.009	0.034	0.034	0.3	0.037	0.032	0.024	--
2007	2007	--	183	8.7	18.0	--	747	10	107	66	14	0.010	0.059	0.033	0.2	0.049	0.035	0.030	--
16...	1025	66	186	8.3	16.5	18.0	750	9.4	99	68	14	0.016	0.072	0.035	0.2	0.033	0.034	0.023	--

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CON- DANCE (US/CM)	PH WATER FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	ALKAL- LITY LAB (MG/L AS CACO3)	SILICA, DIS- SOLVED (MG/L STO2)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)		
14311115 South Umpqua River at Ruckles																				
JUN 1992																				
23...	1720	--	152	8.8	28.0	--	744	9.6	126	58	13	0.005	0.035	0.018	<0.2	0.024	0.020	0.015	--	--
23...	2155	--	150	8.6	27.5	23.0	741	8.3	109	56	13	0.004	0.030	0.021	<0.2	0.022	0.020	0.013	--	--
24...	0210	--	E152	8.2	27.0	--	741	6.9	--	58	13	0.004	0.029	0.024	<0.2	0.021	0.017	0.012	--	--
24...	0550	--	--	7.9	26.5	--	741	6.1	--	58	14	0.005	0.037	0.020	<0.2	0.024	0.020	0.015	--	--
24...	1100	--	153	8.2	27.0	--	742	7.1	92	59	15	0.005	0.040	0.022	<0.2	0.026	0.023	0.016	--	--
24...	1600	--	157	8.7	28.0	--	741	8.9	117	58	15	0.004	0.047	0.039	<0.2	0.027	0.026	0.028	--	--
AUG																				
1645		--	169	8.9	25.0	--	--	9.8	--	64	14	0.004	0.010	0.009	<0.2	0.020	0.016	0.010	--	--
2027		--	163	8.7	24.0	--	--	8.5	--	64	14	0.004	0.013	0.005	<0.2	0.020	0.016	0.011	--	--
05...	1115	--	166	8.5	23.5	--	749	8.7	104	64	14	0.002	0.008	0.005	<0.2	0.022	0.016	0.010	--	--
SEP																				
1520		--	180	8.9	18.0	17.5	744	11.2	121	69	13	0.003	0.012	0.024	<0.2	0.025	0.026	0.015	--	--
15...	2010	--	180	8.7	18.0	--	745	9.6	103	69	13	0.003	0.014	0.015	<0.2	0.030	0.023	0.016	--	--
16...	1300	--	180	8.8	18.0	22.0	750	11.6	125	68	13	0.003	0.012	--	<0.2	0.033	0.020	0.021	--	--
14311120 South Umpqua River below I-5 Bridge, near Ruckles																				
JUN 1992																				
23...	1800	--	149	8.9	29.0	--	743	10.7	143	57	14	0.002	0.018	0.010	<0.2	0.021	0.017	0.011	--	--
23...	2300	--	142	8.7	28.0	--	741	8.7	115	57	14	0.003	0.021	0.015	<0.2	0.022	0.017	0.012	--	--
24...	0315	--	E145	8.1	27.0	--	741	6.8	--	58	14	0.003	0.021	0.015	<0.2	0.021	0.017	0.009	--	--
24...	0620	--	150	7.8	26.0	--	741	6.1	78	58	14	0.003	0.022	0.015	<0.2	0.019	0.017	0.012	--	--
24...	1145	--	149	8.1	26.5	--	742	7.6	97	58	14	0.003	0.018	0.012	<0.2	0.020	0.018	0.011	--	--
24...	1645	--	149	8.8	28.0	--	741	10.1	133	58	14	0.002	0.019	0.012	<0.2	0.023	0.018	0.011	--	--
AUG																				
1720		--	162	8.4	24.5	--	--	9.3	--	63	14	0.003	0.012	0.017	<0.2	0.019	0.010	0.007	--	--
05...	1145	--	165	8.1	23.0	--	749	7.5	88	64	14	0.002	0.012	0.011	<0.2	0.018	0.012	0.006	--	--
SEP																				
1610		--	179	8.6	18.0	21.0	744	9.9	107	68	12	0.003	0.006	0.110	<0.2	0.024	0.017	0.011	--	--
16...	1215	--	181	8.3	17.0	22.0	749	8.8	93	69	13	0.001	0.005	0.070	<0.2	0.023	0.016	0.013	--	--
14311140 South Umpqua River above Mary Moore Bridge near Dillard																				
SEP 1990																				
05...	1400	148	146	8.9	24.0	--	752	10.5	127	55	12	<0.010	<0.100	<0.010	0.3	0.020	--	0.010	2.5	--
05...	1630	148	145	9.3	24.0	--	754	10.9	131	--	--	--	--	--	--	--	--	--	--	--
06...	0630	148	145	8.7	22.0	--	755	8.6	99	--	--	--	--	--	--	--	--	--	--	--
JUN 1991																				
0755		--	110	7.8	20.0	--	750	8.3	93	--	--	--	--	--	--	--	--	--	--	--
11...	1710	--	109	8.3	22.0	--	750	9.2	107	45	16	0.004	0.030	0.027	0.4	0.017	0.017	0.010	--	--
JUL																				
0830		--	134	7.8	24.0	--	749	7.4	90	54	13	0.003	0.015	0.012	0.3	0.020	0.012	0.006	--	--
23...	1615	--	132	8.6	27.5	--	749	10.1	131	--	--	--	--	--	--	--	--	--	--	--
AUG																				
0800		--	149	8.4	20.5	--	745	7.9	90	60	14	<0.001	<0.005	<0.002	0.4	0.017	0.010	0.007	--	--
27...	1530	--	149	8.8	21.5	--	746	10.0	116	--	--	--	--	--	--	--	--	--	--	--
SEP																				
0648		--	165	8.2	17.5	--	754	8.7	92	--	--	--	--	--	--	--	--	--	--	--
24...	1800	--	164	8.8	20.0	--	754	10.9	121	62	13	0.005	0.013	0.015	0.3	0.017	0.012	0.006	--	--

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

14312000 South Umpqua River near Brockway																			
SEP 1990	1330	154	146	8.3	23.5	--	753	8.5	101	--	--	--	--	--	--	--	--	--	--
05...	0500	141	149	8.1	22.5	--	756	7.9	92	--	--	--	--	--	--	--	--	--	--
06...	1045	141	150	8.0	22.5	--	751	7.9	93	54	12	<0.010	<0.100	0.030	0.3	0.030	--	0.020	2.7
JUN 1991	0945	--	113	7.8	20.5	--	751	8.0	91	--	--	--	--	--	--	--	--	--	--
11...	1730	--	114	8.3	22.0	--	750	9.2	107	46	16	0.003	0.034	0.047	0.5	0.026	0.021	0.013	--
JUL	1225	--	144	8.1	26.5	--	750	7.5	95	55	13	0.003	0.011	0.012	0.3	0.020	0.012	0.009	--
23...	1625	--	144	8.2	27.5	--	747	8.2	106	--	--	--	--	--	--	--	--	--	--
23...	0655	--	145	8.2	27.0	19.0	750	6.9	88	--	--	--	--	--	--	--	--	--	--
AUG	1550	134	166	8.5	22.0	--	751	8.8	102	60	11	<0.001	0.008	0.020	0.4	0.015	0.008	0.002	--
27...	0702	134	168	8.1	21.0	--	751	7.7	87	--	--	--	--	--	--	--	--	--	--
SEP	1600	--	174	8.2	20.0	--	754	9.0	101	61	12	0.004	0.039	0.044	0.4	0.017	0.013	0.008	--
24...	0755	--	174	7.9	19.0	--	754	8.0	87	--	--	--	--	--	--	--	--	--	2.7
MAY 1992	1310	479	133	7.9	21.5	18.0	746	8.6	100	53	12	0.001	0.011	0.011	<0.2	0.015	0.009	0.004	--
19...	1707	--	134	8.2	21.5	19.0	746	8.9	103	--	--	--	--	--	--	--	--	--	--
19...	0844	474	137	7.7	19.5	13.5	752	8.0	89	--	--	--	--	--	--	--	--	--	--
20...	1600	308	140	8.2	22.5	24.5	749	8.9	105	56	12	0.001	0.011	0.020	<0.2	0.017	0.014	0.007	--
28...	0801	298	140	8.1	22.5	18.0	750	7.6	90	--	--	--	--	--	--	--	--	--	--
JUN	1930	--	159	8.5	28.5	--	743	8.2	108	58	13	0.002	0.011	0.019	<0.2	0.019	0.013	0.007	--
24...	0100	--	160	8.4	28.0	22.0	742	8.1	106	57	13	0.002	0.008	0.021	<0.2	0.020	0.015	0.009	--
25...	0500	--	161	8.0	27.0	19.0	743	7.5	97	58	14	0.002	0.008	0.019	<0.2	0.017	0.014	0.009	--
25...	0940	--	164	8.0	26.5	--	744	6.9	87	59	13	0.002	0.011	0.020	<0.2	0.017	0.014	0.009	--
25...	1500	--	163	8.1	28.0	--	745	7.5	98	58	14	0.003	0.011	0.024	<0.2	0.018	0.013	0.008	--
25...	1912	--	162	8.5	28.0	30.0	745	8.0	105	58	13	0.002	0.011	0.021	<0.2	0.018	0.016	0.007	--
JUL	1720	--	157	8.4	24.5	23.0	755	9.1	110	60	10	0.009	0.016	0.035	<0.2	0.010	0.006	0.003	--
08...	0735	--	154	8.6	23.5	14.0	755	7.4	88	--	--	--	--	--	--	--	--	--	--
09...	1705	--	174	8.1	24.0	18.5	754	6.9	83	64	11	0.002	0.020	0.038	0.3	0.015	0.013	0.004	--
22...	0745	--	174	7.8	22.0	--	753	7.0	81	--	--	--	--	--	--	--	--	--	--
AUG	1650	--	177	8.3	25.5	--	749	8.6	107	63	13	0.001	0.018	0.027	<0.2	0.017	0.014	0.006	--
05...	1417	--	179	8.2	25.0	--	750	8.7	106	63	13	0.002	0.016	0.027	<0.2	0.014	0.013	0.006	--
06...	1559	--	184	8.7	26.5	31.0	749	9.2	117	67	12	0.001	0.014	0.016	<0.2	0.015	0.009	0.003	--
18...	0622	--	187	8.1	25.5	--	--	7.2	--	--	--	--	--	--	--	--	--	--	--
SEP	1135	75	170	8.2	22.0	8.0	752	8.2	96	64	10	0.001	0.014	0.024	<0.2	0.013	0.008	0.003	--
01...	1735	--	172	8.6	23.0	--	747	8.6	102	--	--	--	--	--	--	--	--	--	--
01...	0856	--	170	8.1	22.0	--	752	8.0	92 <th>--</th> <th>--</th> <th>--</th> <th>--</th> <th>--</th> <th>--</th> <th>--</th> <th>--</th> <th>--</th> <th>--</th>	--	--	--	--	--	--	--	--	--	--
02...	1706	--	179	8.6	18.5	--	--	9.6	--	66	9.6	0.001	0.010	0.151	0.5	0.013	0.007	0.002	--
16...	1337	--	178	8.6	18.5	--	753	10	108	66	9.4	0.002	0.011	0.104	<0.2	0.013	0.005	0.006	--
OCT	1840	--	195	8.3	13.5	11.0	753	10.5	102	--	--	--	--	--	--	--	--	--	--
15...	0800	136	195	8.0	12.0	5.0	753	9.6	90	68	11	0.005	0.017	0.010	<0.2	0.012	0.010	0.004	--
16...	1844	--	191	8.1	15.5	--	753	10.5	107	--	--	--	--	--	--	--	--	--	--
26...	1044	--	193	7.8	15.0	--	750	9.2	92	66	12	0.006	0.009	0.014	<0.2	0.015	0.012	0.005	--

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	ALKA-LINITY LAB (MG/L AS CAC03)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)		NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)		NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)		PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)		CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON ORGANIC SOLVED (MG/L AS C)	
											TEMPER-ATURE (DEG C)	TEMPER-ATURE (DEG C)	DIS-SOLVED (MG/L)	AS N		DIS-SOLVED (MG/L)	AS N	DIS-SOLVED (MG/L)	AS P			DIS-SOLVED (MG/L)
South Umpqua River below treatment plant near Brockway																						
14312002											14312005											
South Umpqua River near Winston																						
14312005											South Umpqua River near Roseburg											
14312010																						
South Umpqua River at Happy Valley Road, near Roseburg																						
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Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, PER- CENT SATUR- ATION	ALKAL- LINEITY LAB (MG/L AS CACO3)	SILICA, DIS- SOLVED AS SIO2	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
South Umpqua River at Happy Valley Road, near Roseburg																				
14312010																				
AUG 1992																				
05...	1840	--	182	8.5	24.5	--	750	9.6	117	62	11	0.009	0.032	0.025	<0.2	0.029	0.015	0.006	--	--
06...	1040	--	177	8.9	25.5	--	750	13.2	165	62	11	0.009	0.030	0.014	0.2	0.021	0.018	0.005	--	--
06...	1535	--	180	9.1	26.5	9.0	750	14.5	183	62	11	0.009	0.035	0.017	<0.2	0.024	0.018	0.006	--	--
SEP																				
16...	1740	--	190	9.0	18.5	--	--	11.4	--	67	8.6	0.009	0.047	0.016	0.2	0.013	0.012	0.002	--	--
17...	1020	--	189	8.8	18.0	--	--	11.4	--	66	8.6	0.010	0.051	0.014	0.2	0.016	0.013	0.004	--	--
17...	1439	--	187	9.2	19.0	--	753	14.3	156	68	8.4	0.008	0.047	0.021	0.2	0.016	0.012	0.002	--	--
South Umpqua River at Shady, near Roseburg																				
14312060																				
JUL 1991																				
23...	1125	--	148	7.9	26.0	30.0	754	7.1	88	54	13	0.003	0.010	0.009	0.7	0.017	0.009	0.007	--	--
AUG																				
27...	1127	151	164	9.0	22.0	--	748	10.1	118	60	11	<0.001	<0.005	0.019	0.2	0.015	0.003	0.001	--	--
27...	1726	--	165	8.7	22.5	--	748	9.3	109	--	--	--	--	--	--	--	--	--	--	--
28...	0757	--	167	8.4	21.0	--	749	8.3	95	--	--	--	--	--	--	--	--	--	--	--
SEP																				
24...	1013	87	173	8.6	19.5	--	748	9.4	104	61	11	0.006	0.027	0.019	0.3	0.015	0.007	0.001	--	--
24...	1754	--	171	8.8	21.0	--	750	9.8	111	--	--	--	--	--	--	--	--	--	--	--
25...	0816	--	176	8.4	19.5	--	750	8.5	94	--	--	--	--	--	--	--	--	--	--	--
South Umpqua River at Oaks near Roseburg																				
14312070																				
SEP 1990																				
06...	1545	149	145	9.3	24.0	--	753	12.0	144	42	10	<0.010	<0.100	0.010	<0.2	0.050	--	0.030	2.8	--
07...	0710	149	148	8.4	22.0	--	757	7.5	87	--	--	--	--	--	--	--	--	--	--	--
JUL 1991																				
23...	1845	--	148	8.7	28.0	--	754	9.7	125	--	--	--	--	--	--	--	--	--	--	--
24...	0730	--	148	7.9	26.5	--	756	6.9	86	--	--	--	--	--	--	--	--	--	--	--
JUN 1992																				
24...	2225	--	159	8.4	27.5	--	745	7.7	101	58	10	0.002	<0.005	0.008	<0.2	0.019	0.012	0.005	--	--
25...	0405	--	158	8.5	27.0	20.0	743	7.6	99	57	10	0.002	0.006	0.009	0.3	0.021	0.014	0.007	--	--
25...	0900	--	161	8.8	27.0	--	745	8.3	106	57	11	0.001	0.005	0.009	<0.2	0.019	0.015	0.005	--	--
25...	1230	--	161	8.9	28.5	--	746	9.7	128	57	11	0.002	<0.005	0.008	<0.2	0.021	0.014	0.007	--	--
25...	1701	--	155	8.6	27.5	--	746	8.6	112	57	11	0.002	<0.005	0.009	<0.2	0.022	0.014	0.006	--	--
25...	2112	--	160	8.2	27.0	23.0	747	7.1	91	58	11	0.002	<0.005	0.009	<0.2	0.018	0.012	0.004	--	--
AUG																				
05...	1900	--	181	9.0	25.0	--	750	10.0	124	63	9.9	<0.001	<0.005	0.006	<0.2	0.018	0.009	0.004	--	--
06...	1605	--	176	9.0	27.0	--	750	12.2	156	62	9.9	0.001	<0.005	0.007	<0.2	0.016	0.013	0.003	--	--
SEP																				
01...	1444	--	177	9.4	24.5	--	748	12.2	149	66	7.4	<0.001	<0.005	0.014	0.3	0.020	0.013	0.006	--	--
01...	1705	--	178	9.5	25.0	9.5	748	12.3	152	--	--	--	--	--	--	--	--	--	--	--
02...	0750	--	178	9.0	22.0	--	750	8.0	93	--	--	--	--	--	--	--	--	--	--	--
16...	1740	--	184	9.1	19.5	--	751	12.5	138	68	6.0	<0.001	<0.005	0.010	0.2	0.011	0.008	<0.001	--	--
17...	1400	--	184	9.2	20.5	--	753	12.5	140	69	6.0	0.001	<0.005	0.013	<0.2	0.010	0.015	0.001	--	--

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

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		South Umpqua River at Roseburg, OR																			Deer Creek at mouth, at Roseburg																			South Umpqua River at Stewart Park at Roseburg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
SEP 1990		1330	--	151	9.3	23.5	--	756	9.5	113	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

South Umpqua River above sewer treatment plant at Roseburg																	
14312258																	
South Umpqua River near Roseburg																	
14312260																	
SEP 1992	0715	--	176	8.8	22.0	13.5	755	7.2	83	--	--	--	--	--	--	--	--
01...	1554	--	180	9.3	24.0	--	750	10.2	123	67	7.0	<0.001	0.011	0.015	0.2	0.017	0.004
01...	1800	--	185	9.0	25.0	31.0	752	10.1	124	--	--	--	--	--	--	--	--
OCT 1990																	
17...	0930	156	179	7.9	13.5	8.5	751	9.0	88	63	6.3	0.040	0.200	0.150	0.5	0.090	0.110
MAY 1991																	
01...	1330	1890	95	7.9	12.5	19.5	750	10.0	95	42	15	<0.010	<0.050	0.030	0.3	0.030	<0.010
30...	1430	1710	107	7.7	14.5	16.5	755	10.2	101	--	--	--	0.088	--	0.4	0.030	0.010
JUN	1130	536	126	8.0	19.5	16.5	753	10.1	112	50	14	0.020	0.075	0.080	0.3	0.050	0.030
JUL	25...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	1000	280	147	7.6	25.0	18.5	756	6.8	83	--	--	--	0.079	--	0.4	0.030	<0.010
AUG	1400	179	158	8.9	24.5	30.0	748	12.1	148	56	11	0.040	0.120	0.110	0.8	0.090	0.070
SEP	1400	126	170	8.9	24.0	32.5	752	13.5	163	--	--	--	0.190	--	0.4	0.110	0.070
04...	1245	--	--	--	23.5	31.5	755	--	--	--	--	--	--	--	--	--	--
19...	1300	--	--	--	22.0	31.5	755	--	--	--	--	--	--	--	--	--	--
24...	1522	171	178	9.0	21.0	--	748	12.2	140	61	11	0.085	0.338	0.136	0.4	0.169	0.148
OCT	0930	99	197	7.6	16.0	13.5	758	7.3	74	65	9.7	0.090	0.510	0.200	0.5	0.160	0.150
MAY 1992																	
04...	1130	857	118	8.1	19.0	18.5	752	9.5	104	--	--	--	<0.050	--	<0.2	0.020	0.020
19...	1730	477	142	8.5	22.5	16.0	751	10.1	119	54	11	0.014	0.070	0.040	0.3	0.062	0.038
20...	0715	--	146	7.6	20.5	13.0	756	7.6	85	--	--	--	--	--	--	--	--
28...	1415	--	--	--	--	24.5	750	--	--	56	--	0.024	0.108	0.053	<0.2	0.074	0.066
JUN	1215	--	--	--	--	24.0	752	--	--	57	8.7	0.027	0.111	0.026	0.2	0.067	0.055
03...	1130	187	157	8.4	23.5	21.0	752	9.6	114	57	8.5	0.040	0.130	0.040	0.2	0.070	0.060
09...	1115	--	--	--	--	17.5	749	--	--	57	7.9	0.048	0.161	0.048	<0.2	0.066	0.069
18...	1015	--	--	--	--	21.0	750	--	--	59	9.9	0.018	0.080	0.011	<0.2	0.049	0.030
JUL	0815	--	--	--	--	--	751	--	--	60	11	0.020	0.065	0.060	0.4	0.038	0.021
09...	0825	--	--	--	--	17.0	757	--	--	59	6.8	0.028	0.083	0.072	0.3	0.045	0.033
1200	149	--	171	8.4	24.5	30.5	755	10.7	130	--	--	--	0.160	--	0.4	0.100	0.070
16...	0805	--	--	--	--	20.5	756	--	--	60	8.4	0.077	0.191	0.260	0.5	0.121	0.093
22...	1832	--	--	--	--	18.5	755	--	--	60	9.8	0.125	0.353	0.148	--	--	0.156
AUG	1635	--	--	--	--	38.0	747	--	--	61	11	0.099	0.481	0.067	0.4	0.230	0.180
17...	1600	75	193	9.0	28.5	36.5	750	15.2	200	62	11	0.160	0.720	0.090	0.5	0.250	0.270
18...	1650	--	--	--	32.0	750	--	--	64	11	0.112	0.532	0.053	0.5	0.240	0.198	0.198
25...	1708	--	--	--	--	31.5	752	--	--	66	10	0.094	0.534	0.063	0.5	0.236	0.194
SEP	1400	--	187	8.6	23.5	29.5	753	8.5	102	65	8.3	0.090	0.524	0.086	0.4	0.190	0.164
01...	0745	--	195	7.6	21.5	--	753	4.0	46	--	--	--	--	--	--	--	--
02...	1300	116	183	8.6	21.0	26.5	756	9.6	108	--	--	--	0.320	--	0.4	0.130	0.090
08...	1700	--	--	--	--	--	754	--	--	65	6.6	0.090	0.452	0.096	0.4	0.170	0.148
OCT	1845	--	--	--	--	--	753	--	--	67	5.2	0.141	0.501	0.299	0.5	0.192	0.177
01...	1135	--	--	--	--	--	755	--	--	70	8.4	0.043	0.257	0.086	0.3	0.084	0.076
15...	1330	144	200	8.4	20.5	16.0	752	11.1	--	65	7.8	0.050	0.280	0.130	0.4	0.120	0.100
21...	1150	--	--	--	--	--	752	--	--	68	8.2	0.033	0.184	0.077	0.3	0.082	0.068

Table 9. Synoptic and fixed station water-quality data from the South Umpqua River Basin, Oregon, 1990-92—Continued

	South Umpqua River at Melrose Road near Roseburg																			
	14312261																			
SEP 1990																				
06...	1515	158	160	9.6	26.0	--	752	18.5	232	43	8.8	0.040	0.100	<0.010	0.4	0.160	--	0.130	3.2	
07...	0625	158	160	7.6	19.5	--	757	4.7	52	--	--	--	--	--	--	--	--	--	--	
JUN 1991																				
11...	0630	--	117	7.7	20.5	--	755	7.9	88	47	15	0.008	0.057	0.063	0.3	0.049	0.039	0.033	--	
11...	1430	--	121	8.8	23.5	--	755	10.1	120	48	15	0.013	0.058	0.074	0.3	0.046	0.039	0.036	--	
11...	1810	--	120	8.8	24.0	--	753	10.4	125	--	--	--	--	--	--	--	--	--	--	
JUL																				
23...	1728	--	150	9.3	30.0	--	754	13.1	175	53	13	0.024	0.077	0.008	0.4	0.084	0.072	0.060	--	
24...	0640	290	155	7.1	25.5	--	756	5.2	64	--	--	--	--	--	--	--	--	--	--	
AUG																				
27...	1620	141	170	9.4	22.5	--	748	15.5	182	58	10	0.073	0.169	0.013	0.4	0.111	0.093	0.051	--	
28...	0713	--	177	7.4	21.0	--	749	4.7	53	--	--	--	--	--	--	--	--	--	--	
SEP																				
24...	1639	105	177	9.5	23.0	--	750	14.5	172	60	10	0.070	0.294	0.019	0.4	0.138	0.127	0.111	2.9	
25...	0719	--	188	7.2	18.5	--	750	4.3	47	--	--	--	--	--	--	--	--	--	--	
MAY 1992																				
19...	1530	477	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SEP																				
03...	1000	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
14312350 South Umpqua River near Melrose																				
SEP 1990																				
06...	1530	141	159	9.7	25.5	--	757	12.1	150	--	--	--	--	--	--	--	--	--	--	
07...	0645	141	151	9.2	22.0	--	756	7.0	81	54	7.8	0.040	0.100	0.310	0.5	0.170	--	0.150	3.5	
MAY 1992																				
28...	1245	--	149	8.6	24.0	22.0	752	10.8	130	57	6.8	0.002	<0.005	0.012	<0.2	0.041	0.030	0.023	--	
28...	1925	--	146	9.4	25.5	22.0	752	12.0	148	--	--	--	--	--	--	--	--	--	--	
29...	0704	--	150	7.6	21.5	16.0	752	6.3	72	--	--	--	--	--	--	--	--	--	--	
SEP																				
01...	1530	--	199	9.7	26.0	30.0	754	13.1	163	69	8.8	0.025	0.123	0.026	0.5	0.190	0.175	0.153	--	
01...	1715	--	199	9.8	26.5	31.0	754	14.0	176	--	--	--	--	--	--	--	--	--	--	
02...	0815	--	200	8.0	21.5	14.0	754	6.1	70	--	--	--	--	--	--	--	--	--	--	

Table 10. Daily mean flows for South Umpqua River at Tiller, Oregon, September 1990 to October 1992

[Discharge units are in cubic feet per second. "OCT" = October; "NOV" = November; "DEC" = December; "JAN" = January; "FEB" = February; "MAR" = March; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "MAX" = monthly maximum; "MIN" = monthly minimum; "---" = missing data or not applicable; "e" = estimated]

SEPTEMBER 1990 TO SEPTEMBER 1991													
DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	57	755	1040	e330	413	620	1260	1030	837	247	99	63
2	84	55	377	928	e310	533	1050	1190	986	801	235	97	61
3	81	53	246	799	e300	1100	5340	1080	953	773	221	96	61
4	77	53	264	742	e290	1740	7280	1000	885	715	210	94	59
5	75	54	810	1010	e330	2860	7070	1230	851	652	200	92	57
6	70	55	561	825	e330	2290	3750	1950	845	604	193	90	55
7	68	55	391	688	e380	1640	2700	2120	850	555	186	90	54
8	66	53	743	623	623	1290	2140	1850	1410	518	179	90	53
9	64	53	997	638	586	1080	1840	3670	1500	498	173	85	53
10	64	52	616	2690	2580	931	1650	3340	1330	494	167	86	53
11	64	51	428	3300	3230	821	1450	2360	1180	497	163	85	53
12	64	52	320	1880	6580	762	1370	1890	1060	468	159	81	52
13	60	53	334	1330	7030	2140	1520	1660	1060	432	155	79	51
14	60	54	1060	1040	6990	2110	1480	1520	1130	398	155	75	51
15	58	59	689	864	6640	1610	1360	1360	1070	364	152	74	51
16	58	70	493	728	4240	1360	1260	1250	1000	340	168	72	50
17	58	67	385	624	2750	1320	1150	1110	2480	321	298	71	49
18	60	74	393	1180	2090	1390	1140	1040	3840	311	211	70	48
19	57	150	380	1550	1700	1890	1120	960	3120	358	171	69	48
20	56	98	488	1120	1390	1660	1020	934	2490	491	157	68	47
21	56	80	1070	e800	1170	1400	918	1060	2270	387	147	73	45
22	54	208	1300	e730	1010	1200	849	1050	1940	335	141	70	45
23	52	155	1030	e700	882	1040	938	1060	1630	311	158	65	45
24	52	106	796	e640	786	901	1220	1120	1400	305	150	64	45
25	54	88	1800	e580	706	797	1250	1190	1230	288	132	63	45
26	120	81	2030	484	644	714	1260	1300	1080	276	124	62	44
27	111	77	1330	441	584	653	1240	1600	969	273	120	62	44
28	76	82	1110	469	533	614	1130	1380	878	272	115	63	43
29	68	97	937	422	488	---	1010	1210	818	282	111	75	42
30	63	120	1200	e330	458	---	1000	1100	1010	265	107	76	43
31	---	1160	---	e320	435	---	1210	---	936	---	104	66	---
TOTAL	2040	3522	23333	29515	56395	36259	58335	44844	43231	13421	5209	2402	1510
MEAN	68.0	114	778	952	1819	1295	1882	1495	1395	447	168	77.5	50.3
MAX	120	1160	2030	3300	7030	2860	7280	3670	3840	837	298	99	63
MIN	52	51	246	320	290	413	620	934	818	265	104	62	42

Table 10. Daily mean flows for South Umpqua River at Tiller, Oregon, September 1990 to October 1992—Continued

OCTOBER 1991 TO OCTOBER 1992													
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	43	119	875	341	631	644	205	561	120	204	52	33	36
2	42	104	1040	337	706	575	199	464	117	152	50	34	36
3	41	97	1080	344	618	535	192	409	113	120	49	35	43
4	41	94	916	381	544	489	191	367	109	109	48	39	60
5	41	91	804	486	485	489	204	335	106	120	48	46	54
6	41	117	8010	502	438	446	212	309	105	169	48	46	45
7	40	195	7680	483	403	420	203	285	103	140	48	45	42
8	40	148	3650	446	370	387	200	264	101	116	48	40	39
9	41	132	2310	419	350	357	452	246	97	105	48	39	38
10	41	126	1680	415	329	331	1670	233	95	98	45	38	e37
11	40	109	1310	577	309	311	1670	227	94	92	45	37	e37
12	39	114	1130	652	290	297	1230	215	104	88	44	36	e37
13	38	321	1080	603	284	284	1560	203	136	84	43	34	e37
14	38	579	933	563	291	274	1210	198	163	79	42	34	37
15	39	353	814	548	380	277	965	189	145	75	41	34	36
16	38	247	714	583	351	273	855	178	128	73	40	34	36
17	38	1330	639	918	450	328	1960	173	120	71	38	34	37
18	38	2070	757	849	473	328	2910	170	109	70	38	33	37
19	39	1200	953	737	603	295	2030	198	104	68	37	33	37
20	40	2060	846	632	1220	272	1460	269	98	75	36	32	36
21	40	1910	801	559	2270	257	1150	215	93	95	36	33	58
22	40	1160	793	491	2860	245	970	181	89	79	35	33	127
23	53	795	716	442	2350	244	821	167	84	82	35	32	74
24	79	862	646	408	1620	258	710	162	81	81	38	35	56
25	124	1770	589	409	1250	243	624	147	80	72	38	68	49
26	547	2690	546	420	1040	237	552	140	85	67	35	60	46
27	298	3980	505	391	897	228	497	140	80	63	34	47	45
28	172	2080	468	504	790	220	445	135	77	60	34	43	45
29	240	1470	439	600	708	212	411	133	115	57	33	40	58
30	280	1110	402	533	---	215	565	130	183	55	32	39	319
31	156	---	373	492	---	212	---	125	---	54	32	---	278
TOTAL	2827	27433	43499	16065	23310	10183	26323	7168	3234	2873	1270	1166	1952
MEAN	91.2	914	1403	518	804	328	877	231	108	92.7	41.0	38.9	63.0
MAX	547	3980	8010	918	2860	644	2910	561	183	204	52	68	319
MIN	38	91	373	337	284	212	191	125	77	54	32	32	36

Table 11. Daily mean flows for Elk Creek near Drew, Oregon, September 1990 to October 1992

[Discharge units are in cubic feet per second. "OCT" = October; "NOV" = November; "DEC" = December; "JAN" = January; "FEB" = February; "MAR" = March; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "MAX" = monthly maximum; "MIN" = monthly minimum; e = estimated; "---" = missing data or not applicable]

SEPTEMBER 1990 TO SEPTEMBER 1991													
DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.3	48	73	e31	e21	35	94	52	51	9.8	1.7	.61
2	1.3	1.4	24	62	e31	103	255	88	47	44	8.8	2.0	.57
3	1.1	1.3	14	50	e32	191	1290	77	43	38	7.7	1.6	.52
4	.92	1.2	12	44	e33	266	1140	70	37	33	7.0	1.3	.51
5	.82	1.2	16	45	e34	365	652	91	33	30	6.4	1.1	.40
6	.74	1.3	21	40	e36	223	337	126	30	26	6.0	1.1	.39
7	.66	1.4	17	34	e45	150	238	118	29	24	5.8	1.2	.42
8	.66	1.4	31	30	e65	110	190	103	38	21	5.3	1.6	.55
9	.64	1.4	33	27	e60	85	158	142	53	20	5.0	1.3	.69
10	.65	1.4	22	137	172	72	143	160	51	18	4.5	1.9	.64
11	.51	1.4	16	194	180	61	126	148	49	16	3.7	1.5	.49
12	.48	1.5	12	113	412	55	143	128	46	16	3.2	1.1	.44
13	.56	1.6	22	79	320	127	149	112	48	14	3.2	.91	.42
14	.51	1.6	89	63	237	98	153	96	50	13	3.1	.76	.32
15	.40	1.7	49	50	213	78	146	89	48	13	3.0	.74	.22
16	.44	1.7	32	43	167	74	133	82	46	12	6.5	.61	.29
17	.49	1.6	23	36	129	80	117	75	297	11	21	.71	.38
18	.47	3.0	24	62	104	118	112	69	448	11	11	.65	.32
19	.50	6.1	26	84	89	155	115	61	308	16	7.6	.64	.21
20	.33	3.9	41	67	75	122	102	55	237	22	6.2	.70	.23
21	.36	3.5	65	e40	65	96	92	60	198	15	5.5	.61	.28
22	.45	8.2	74	e38	54	79	85	53	152	13	4.9	.43	.30
23	.41	7.1	54	e40	48	69	119	48	116	11	5.6	.40	.24
24	.37	4.8	40	e41	43	57	146	51	90	11	5.9	.48	.30
25	.53	3.6	146	e41	38	49	132	52	75	10	4.7	.54	.26
26	14	3.1	150	e42	35	44	124	71	65	9.6	3.5	.52	.09
27	5.4	3.3	96	e41	e30	39	105	89	55	10	3.0	.63	.06
28	2.9	4.0	82	e38	e25	36	90	78	48	12	3.0	.62	.36
29	1.9	5.5	70	e34	e23	---	80	70	47	15	2.3	1.1	.35
30	1.4	6.4	83	e33	e22	---	77	60	66	12	2.2	.95	.23
31	---	68	---	e32	e21	---	89	---	60	---	1.9	.68	---
TOTAL	41.50	154.9	1432	1753	2869	3023	6873	2616	2962	567.6	177.3	30.08	11.09
MEAN	1.38	5.00	47.7	56.5	92.5	108	222	87.2	95.5	18.9	5.72	.97	.37
MAX	14	68	150	194	412	365	1290	160	448	51	21	2.0	.69
MIN	.33	1.2	12	27	21	21	35	48	29	9.6	1.9	.40	.06

Table 11. Daily mean flows for Elk Creek near Drew, Oregon, September 1990 to October 1992—Continued

OCTOBER 1991 TO OCTOBER 1992													
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	.14	3.8	45	15	67	27	7.9	24	1.5	13	.06	.00	.06
2	.18	3.2	66	14	60	23	7.4	19	1.7	7.4	.00	.00	.17
3	.28	2.9	71	13	50	22	7.1	16	1.7	4.6	.00	.00	.56
4	.19	2.7	56	22	43	20	7.1	14	1.3	4.2	.00	.00	.81
5	.11	2.6	47	40	37	22	7.6	12	.87	7.7	.00	.00	.67
6	.31	2.5	212	40	32	22	7.9	11	.75	8.6	.00	.00	.53
7	.35	2.6	275	42	28	19	7.3	9.7	.83	5.5	.10	.00	.48
8	.31	2.7	146	38	25	17	7.2	8.8	.91	3.7	.07	.00	.45
9	.22	3.4	95	33	23	16	14	8.1	.73	2.6	.02	.00	.46
10	.32	3.5	73	31	21	15	42	7.7	.69	2.1	.01	.00	.44
11	.28	3.1	57	45	18	13	30	7.1	.82	1.7	.00	.04	.47
12	.29	3.7	48	48	17	13	41	6.6	2.8	1.3	.00	.03	.40
13	.25	8.5	42	41	16	12	87	6.3	5.7	.87	.00	.01	.40
14	.32	18	36	38	19	11	56	5.9	6.3	.76	.00	.00	.38
15	.27	11	31	35	29	11	41	5.4	5.1	.62	.00	.00	.53
16	.22	8.1	26	39	28	14	38	5.0	3.6	.61	.00	.00	.74
17	.43	93	23	67	35	23	76	4.8	2.8	.57	.00	.00	.77
18	.47	86	63	57	33	21	101	5.1	2.3	.58	.00	.00	.77
19	.55	45	90	47	39	17	80	6.5	1.7	.59	.00	.00	.63
20	.59	46	65	39	96	15	60	8.3	1.3	.62	.00	.00	.54
21	.61	45	52	34	138	13	47	6.2	1.1	.73	.00	.00	.50
22	.78	30	46	28	133	12	40	5.5	.84	.79	.00	.00	.49
23	1.2	21	39	24	95	12	33	4.8	.63	.86	.00	.00	1.1
24	2.1	34	34	22	74	11	27	4.1	.67	.71	.00	.00	2.2
25	2.9	46	30	24	59	10	23	3.6	1.2	.59	.00	.04	1.6
26	6.2	69	26	24	49	9.8	20	3.5	5.2	.45	.00	.32	1.1
27	5.8	163	23	24	41	9.3	17	3.4	2.2	.34	.00	.34	1.3
28	4.6	87	21	75	35	8.9	15	3.1	1.7	.32	.00	.22	1.4
29	8.1	76	20	78	31	8.5	14	2.7	6.3	.26	.00	.16	1.3
30	7.3	59	18	60	---	8.4	28	2.5	12	.19	.00	.12	1.4
31	4.8	---	16	49	---	8.5	---	2.0	---	.12	.00	---	5.9
TOTAL	50.47	982.3	1892	1186	1371	464.4	989.5	232.7	75.24	72.98	0.26	1.28	28.55
MEAN	1.63	32.7	61.0	38.3	47.3	15.0	33.0	7.51	2.51	2.35	.008	.043	.92
MAX	8.1	163	275	78	138	27	101	24	12	13	.10	.34	5.9
MIN	.11	2.5	16	13	16	8.4	7.1	2.0	.63	.12	.00	.00	.06

Table 12. Daily mean flows for South Umpqua River at Days Creek , Oregon, September 1990 to October 1992

[Discharge units are in cubic feet per second. "OCT" = October; "NOV" = November; "DEC" = December; "JAN" = January; "FEB" = February; "MAR" = March; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "MAX" = monthly maximum; "MIN" = monthly minimum; "---" = missing data or not applicable; "e" = estimated]

SEPTEMBER 1990 TO SEPTEMBER 1991													
DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	67	960	1240	416	486	705	1410	1150	989	271	107	59
2	98	64	526	1110	392	575	1290	1350	1080	927	257	102	54
3	91	60	354	935	389	1370	7450	1220	1040	884	244	103	53
4	83	57	288	819	408	2130	9300	1120	971	803	229	101	51
5	79	58	789	1050	417	4010	9700	1240	922	725	218	97	49
6	74	59	656	912	420	3180	5200	2180	907	676	212	94	46
7	64	61	493	759	450	2150	3760	2510	907	628	203	95	43
8	60	57	631	670	670	1620	2870	2180	1380	590	197	97	43
9	57	56	1120	654	671	1320	2370	3870	1670	565	188	96	43
10	56	55	728	2410	2580	1120	2090	4250	1480	553	180	97	44
11	55	55	518	4220	4230	982	1820	3080	1320	547	173	95	44
12	53	54	408	2330	7060	884	1700	2420	1180	524	167	89	42
13	51	57	374	1570	---	2270	1910	2060	1140	488	163	84	41
14	49	59	1240	1200	---	2550	1880	1850	1230	458	159	78	41
15	49	64	872	974	---	1900	1800	1640	1180	429	155	74	40
16	47	74	608	825	---	1590	1650	1490	1100	406	173	72	39
17	47	81	481	697	---	1530	1490	1320	3120	383	289	71	38
18	48	94	457	1080	---	1630	1430	1210	5800	367	---	70	37
19	46	178	463	1880	---	2350	1450	1110	4640	389	206	66	35
20	44	165	547	1330	---	2080	1300	1060	3440	532	186	63	33
21	42	116	1020	930	---	1720	1160	1190	2950	454	170	63	33
22	42	197	1520	772	---	1450	1060	1190	2450	395	158	72	33
23	38	262	1190	752	1000	1240	1130	1170	2020	354	160	62	33
24	36	163	900	643	898	1070	1460	1220	1700	339	179	60	32
25	38	126	1740	633	809	940	1510	1320	1470	327	154	59	31
26	105	110	2680	573	735	844	1530	1410	1290	313	142	57	31
27	159	101	1630	518	661	770	1480	1820	1140	302	138	55	---
28	103	104	1350	560	611	714	1350	1590	1030	304	130	58	---
29	84	122	1090	525	558	---	1200	1390	956	310	123	64	30
30	74	148	1380	434	525	---	1130	1250	1170	293	117	82	30
31	---	1100	---	405	507	---	1330	---	1110	---	112	69	---
TOTAL	1988	4024	27013	33410	---	44475	75505	52120	52943	15254	---	2452	---
MEAN	66.3	130	900	1078	---	1588	2436	1737	1708	508	---	79.1	---
MAX	159	1100	2680	4220	---	4010	9700	4250	5800	989	---	107	---
MIN	36	54	288	405	---	486	705	1060	907	293	---	55	---

Table 12. Daily mean flows for South Umpqua River at Days Creek , Oregon, September 1990 to October 1992—Continued

OCTOBER 1991 TO OCTOBER 1992

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	30	165	---	---	---	679	255	616	135	262	56	29	39
2	28	138	---	---	---	613	245	508	130	224	54	29	42
3	27	125	---	---	---	569	239	454	126	163	51	33	44
4	28	119	---	---	641	530	235	413	121	142	48	39	59
5	30	114	---	---	572	542	249	384	115	152	47	43	80
6	28	116	---	---	520	506	259	358	113	198	47	48	62
7	28	215	---	---	479	474	253	333	110	196	47	49	52
8	28	203	---	---	445	442	245	308	106	153	46	45	46
9	29	167	---	---	423	415	495	289	102	129	46	39	43
10	30	164	---	---	403	391	3500	278	98	116	45	37	41
11	29	143	---	---	383	370	1840	267	97	108	43	36	40
12	28	138	---	---	367	355	1310	255	114	100	43	35	39
13	27	271	---	---	366	341	1770	247	151	93	42	33	e39
14	26	622	---	---	358	330	1390	237	192	85	40	32	e39
15	26	435	---	---	447	330	1070	227	196	79	40	31	e39
16	26	320	---	---	433	330	905	217	163	79	37	32	e38
17	26	1140	---	---	490	378	1820	209	147	76	34	32	e38
18	26	---	---	---	532	395	3090	208	133	76	34	31	e39
19	28	---	---	---	602	359	2290	238	120	72	33	30	e39
20	29	---	---	---	1070	333	1600	296	112	68	32	30	e39
21	30	---	---	---	2230	315	1240	269	104	101	31	30	e38
22	32	---	---	---	3030	302	1030	224	96	96	31	29	e63
23	38	---	---	---	2570	299	870	206	89	91	32	29	e150
24	79	---	---	---	1770	305	747	192	80	95	33	33	e78
25	111	---	---	---	1340	298	661	180	77	85	34	44	e60
26	466	---	---	---	1100	286	589	170	91	e76	33	98	e53
27	390	---	---	---	942	278	537	162	93	e69	31	64	e50
28	242	---	---	---	825	269	488	156	86	e65	30	49	e48
29	295	---	---	---	739	262	453	151	140	e62	29	42	e47
30	397	---	---	---	---	265	535	148	243	e59	29	39	e60
31	228	---	---	---	---	266	---	142	---	e57	28	---	e325
TOTAL	2865	---	---	---	---	11827	30210	8342	3680	3427	1206	1170	1869
MEAN	92.4	---	---	---	---	382	1007	269	123	111	38.9	39.0	60.3
MAX	466	---	---	---	---	679	3500	616	243	262	56	98	325
MIN	26	---	---	---	---	262	235	142	77	57	28	29	38

Table 13. Daily mean flows for Cow Creek near Riddle, Oregon, September 1990 to October 1992

[Discharge units are in cubic feet per second. "OCT" = October; "NOV" = November; "DEC" = December; "JAN" = January; "FEB" = February; "MAR" = March; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "MAX" = monthly maximum; "MIN" = monthly minimum; "---" = missing data or not applicable; "e" = estimated]

SEPTEMBER 1990 TO SEPTEMBER 1991													
DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	58	417	511	235	194	248	515	365	283	129	102	80
2	73	58	248	577	220	797	1130	497	344	259	127	102	74
3	71	60	180	471	205	1800	6130	458	318	242	122	103	72
4	69	61	144	398	199	2040	6950	426	287	229	118	102	69
5	67	62	132	406	185	3980	5950	497	267	218	116	102	66
6	65	62	134	360	191	2480	2990	876	250	213	115	100	71
7	62	62	125	310	248	1530	2140	1380	247	205	113	100	74
8	60	62	123	277	431	1040	1640	1200	284	193	112	97	76
9	62	64	154	250	432	775	1330	1260	302	184	108	92	73
10	62	64	144	342	1130	632	1200	1410	302	177	112	90	67
11	62	64	127	625	2050	541	1090	1440	290	171	112	91	61
12	58	66	118	537	3780	481	1730	1270	277	168	111	89	58
13	59	68	126	438	2540	466	2300	1050	288	163	108	86	56
14	59	69	395	362	1670	439	1720	848	323	160	112	84	62
15	58	69	335	307	1320	405	1400	749	314	156	114	84	61
16	58	69	241	275	1040	379	1200	659	300	152	125	83	59
17	61	69	181	242	828	356	1040	586	417	148	152	82	58
18	60	82	163	268	684	342	935	525	1650	143	139	81	54
19	59	129	185	624	577	357	900	489	2200	163	126	83	50
20	57	98	235	533	486	346	828	461	1460	177	120	81	53
21	58	86	336	410	422	333	757	452	1020	160	116	77	57
22	57	101	397	314	376	324	665	415	783	148	114	77	59
23	53	107	329	e275	336	307	666	394	629	142	115	75	60
24	46	91	262	e260	304	289	801	396	521	137	112	80	54
25	45	84	376	e270	281	276	824	444	458	134	112	80	51
26	53	81	866	275	265	262	786	437	407	133	112	77	50
27	60	80	564	245	247	255	681	439	371	135	112	72	48
28	60	83	458	297	231	250	592	418	344	141	109	74	49
29	60	83	399	314	217	---	530	400	323	151	108	81	47
30	60	103	534	276	204	---	501	379	333	139	105	75	47
31	---	686	---	237	200	---	499	---	316	---	104	72	---
TOTAL	1810	2981	8428	11286	21534	21676	50153	20770	15990	5224	3610	2674	1816
MEAN	60.3	96.2	281	364	695	774	1618	692	516	174	116	86.3	60.5
MAX	76	686	866	625	3780	3980	6950	1440	2200	283	152	103	80
MIN	45	58	118	237	185	194	248	379	247	133	104	72	47

Table 13. Daily mean flows for Cow Creek near Riddle, Oregon, September 1990 to October 1992—Continued

OCTOBER 1991 TO OCTOBER 1992													
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	47	80	248	208	946	421	185	317	96	107	54	52	54
2	45	75	217	198	968	389	174	283	92	95	57	58	82
3	43	76	216	196	781	355	168	246	90	88	54	58	91
4	43	73	211	602	651	328	172	229	88	89	48	64	72
5	43	72	189	936	551	426	169	219	84	103	48	64	63
6	45	71	701	956	485	465	164	206	83	122	48	60	60
7	45	71	2480	829	438	412	159	194	82	105	48	57	60
8	46	72	1290	667	394	374	156	181	80	89	47	54	62
9	66	74	753	555	376	342	322	174	79	81	47	53	60
10	60	76	529	492	355	312	1760	168	77	73	47	50	74
11	49	73	418	640	329	287	1110	163	77	66	45	60	71
12	47	77	351	797	312	270	2040	160	82	63	43	54	73
13	53	96	306	697	296	257	2480	159	95	60	44	46	73
14	46	119	271	566	295	247	1640	154	110	55	44	45	73
15	46	129	242	485	346	265	1080	146	107	51	45	47	64
16	45	104	222	429	532	267	813	141	97	48	48	46	59
17	46	457	207	439	922	290	1040	136	90	47	49	47	60
18	47	808	452	418	871	287	1380	129	84	52	49	45	58
19	48	481	1470	385	961	264	1230	127	80	62	48	45	57
20	54	601	953	351	1970	246	928	153	76	59	48	48	57
21	52	570	679	319	2380	236	724	166	72	58	48	52	64
22	55	358	548	291	1830	230	609	140	66	54	52	48	70
23	59	247	466	266	1380	218	513	132	61	52	54	46	66
24	67	216	410	251	1050	211	450	119	69	53	55	47	62
25	71	282	370	323	819	199	403	114	61	49	55	51	62
26	114	271	333	428	670	191	366	113	55	46	52	55	62
27	118	810	304	508	568	188	333	112	58	46	54	53	64
28	87	618	281	2130	497	181	304	109	62	53	62	54	66
29	92	409	269	1730	450	175	288	106	74	54	58	53	82
30	100	297	250	1080	---	196	312	104	104	53	52	48	186
31	86	---	223	800	---	206	---	100	---	54	52	---	221
TOTAL	1865	7763	15859	18972	22423	8735	21472	5000	2431	2087	1555	1560	2328
MEAN	60.2	259	512	612	773	282	716	161	81.0	67.3	50.2	52.0	75.1
MAX	118	810	2480	2130	2380	465	2480	317	110	122	62	64	221
MIN	43	71	189	196	295	175	156	100	55	46	43	45	54

Table 14. Daily mean flows for Lookingglass Creek at Brockway, Oregon, September 1990 to October 1992

[Discharge units are in cubic feet per second. "OCT" = October; "NOV" = November; "DEC" = December; "JAN" = January; "FEB" = February; "MAR" = March; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "MAX" = monthly maximum; "MIN" = monthly minimum; "---" = missing data or not applicable; "e" = estimated]

SEPTEMBER 1990 TO SEPTEMBER 1991													
DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	6.7	49	139	83	55	62	106	71	57	14	3.5	9.8
2	8.6	7.1	30	167	71	147	256	96	66	50	12	4.7	10
3	9.0	7.3	22	129	64	297	1590	87	61	44	10	6.7	6.3
4	8.0	6.7	18	102	58	510	2010	83	56	38	9.3	4.8	8.3
5	6.4	6.4	25	95	52	1140	1660	119	52	35	11	4.6	9.8
6	5.5	6.8	25	79	49	705	968	306	48	32	11	4.4	9.9
7	3.8	6.3	20	69	51	452	684	730	48	32	11	5.5	10
8	3.7	5.2	15	60	61	326	507	589	60	30	11	5.4	9.1
9	5.2	6.4	15	53	72	252	402	681	70	28	11	6.8	8.6
10	4.8	6.0	16	117	161	205	416	683	69	26	10	10	10
11	3.6	7.5	14	165	375	172	371	637	66	23	10	7.4	9.8
12	2.7	8.4	12	130	826	148	604	507	62	22	9.0	5.3	9.0
13	4.2	9.1	12	102	638	178	723	400	73	20	9.2	4.7	8.9
14	6.7	9.1	35	82	508	158	585	317	98	22	6.3	4.3	9.0
15	9.4	10	45	70	478	144	459	262	98	24	9.7	4.4	11
16	7.7	10	31	60	398	133	368	219	91	22	10	5.2	11
17	7.2	7.7	24	51	329	120	306	184	106	21	11	6.0	9.0
18	6.8	8.9	22	61	270	116	258	158	215	20	5.8	6.5	11
19	6.7	12	20	225	223	112	234	139	357	28	3.6	9.8	10
20	7.4	11	24	181	181	103	219	123	293	38	2.2	9.2	11
21	7.6	10	64	124	149	96	245	119	227	30	2.6	7.7	11
22	5.5	11	79	97	127	90	209	105	177	26	1.4	6.8	11
23	4.6	12	55	93	111	83	254	94	143	23	1.8	6.0	9.8
24	3.9	12	41	74	98	77	279	92	116	22	1.7	5.5	9.2
25	5.0	10	72	69	91	72	265	102	98	21	1.5	5.7	9.6
26	7.0	9.1	173	63	81	67	239	101	84	20	1.3	5.6	9.2
27	7.0	8.3	114	63	73	63	201	95	74	20	1.4	6.5	9.0
28	6.6	8.0	83	99	67	62	168	87	64	20	.93	12	10
29	6.7	8.3	72	130	61	---	144	83	60	18	.85	17	11
30	6.7	13	147	112	57	---	128	77	72	16	1.0	9.4	12
31	---	55	---	96	57	---	115	---	68	---	2.3	12	---
TOTAL	187.4	315.3	1374	3157	5920	6083	14929	7381	3243	828	203.88	213.4	293.3
MEAN	6.25	10.2	45.8	102	191	217	482	246	105	27.6	6.58	6.88	9.78
MAX	9.4	55	173	225	826	1140	2010	730	357	57	14	17	12
MIN	2.7	5.2	12	51	49	55	62	77	48	16	.85	3.5	6.3

Table 14. Daily mean flows for Lookingglass Creek at Brockway, September 1990 to October 1992—Continued

OCTOBER 1991 TO OCTOBER 1992													
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	12	7.8	61	51	256	108	46	78	3.3	25	5.4	17	18
2	8.9	6.7	52	51	221	98	42	65	3.0	23	7.8	16	23
3	7.7	6.0	45	55	190	88	38	58	2.8	21	7.0	20	22
4	7.9	5.9	40	148	167	81	36	51	3.3	21	5.5	19	20
5	8.8	5.5	37	286	149	95	37	46	3.7	21	6.1	22	18
6	7.0	5.8	553	287	133	83	42	42	7.1	25	6.2	22	17
7	7.8	5.7	892	309	117	72	42	38	6.9	23	6.2	23	17
8	7.5	5.7	432	274	104	64	40	35	5.6	21	6.5	22	17
9	7.1	6.8	264	231	108	59	415	31	5.8	17	6.7	21	16
10	7.5	6.7	185	206	95	54	971	28	5.2	15	6.7	14	16
11	7.6	6.7	140	290	87	50	552	27	5.0	13	7.1	9.3	16
12	8.4	10	113	277	81	47	739	26	8.7	10	6.3	10	15
13	7.9	14	101	239	72	45	748	25	17	8.0	4.6	13	15
14	9.6	22	87	200	69	44	496	24	23	6.4	4.4	14	16
15	9.2	21	77	175	71	57	358	22	22	5.6	6.4	14	16
16	8.9	17	68	180	84	54	301	20	17	5.2	5.3	14	15
17	9.0	32	61	290	126	52	411	19	14	3.9	4.1	14	14
18	11	102	144	264	133	48	468	18	10	4.3	13	12	12
19	11	81	502	232	191	45	425	17	8.6	5.0	18	13	12
20	14	128	338	198	271	42	335	18	9.1	4.5	18	12	14
21	13	135	249	171	390	40	262	16	8.2	3.9	18	13	17
22	13	92	193	145	389	39	215	14	6.9	4.6	20	14	17
23	16	62	153	125	326	38	179	12	5.9	8.7	21	14	17
24	16	53	125	110	268	36	145	9.8	5.2	6.8	21	17	16
25	17	72	106	138	220	34	122	8.5	4.1	7.0	18	18	16
26	19	89	92	133	185	32	104	8.0	3.4	7.3	18	17	16
27	17	271	81	149	157	30	94	7.8	11	5.2	17	16	16
28	14	180	73	301	134	29	80	7.0	18	3.7	17	16	15
29	13	113	67	332	118	28	77	5.6	27	2.8	18	16	17
30	12	79	62	273	---	46	83	4.9	32	3.0	17	16	22
31	10	---	55	238	---	54	---	4.0	---	2.9	17	---	27
TOTAL	338.8	1642.3	5448	6358	4912	1692	7903	785.6	302.8	333.8	353.3	478.3	525
MEAN	10.9	54.7	176	205	169	54.6	263	25.3	10.1	10.8	11.4	15.9	16.9
MAX	19	271	892	332	390	108	971	78	32	25	21	23	27
MIN	7.0	5.5	37	51	69	28	36	4.0	2.8	2.8	4.1	9.3	12

Table 15. Daily mean flows for South Umpqua River near Brockway, Oregon, September 1990 to October 1992

[Discharge units are in cubic feet per second. "OCT" = October; "NOV" = November; "DEC" = December; "JAN" = January; "FEB" = February; "MAR" = March; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "MAX" = monthly maximum; "MIN" = monthly minimum; "---" = missing data or not applicable]

SEPTEMBER 1990 TO SEPTEMBER 1991													
DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	259	140	2030	2470	932	942	1270	2420	1940	1630	508	208	154
2	208	132	1190	2310	912	1120	1770	2370	1830	1480	466	201	155
3	184	129	753	2040	852	3460	14900	2180	1730	1380	431	193	142
4	168	125	570	1730	856	4330	19900	2020	1610	1300	404	197	129
5	154	124	672	1730	839	9600	23500	2010	1500	1210	384	198	125
6	141	127	1050	1770	842	7930	11700	3280	1440	1120	370	187	118
7	134	127	838	1490	858	5270	8230	5080	1440	1050	349	183	117
8	124	129	673	1290	1200	3870	6320	4740	1600	983	336	191	119
9	124	130	1250	1190	1510	3080	5240	5290	2390	919	321	199	131
10	125	127	1210	1660	1960	2590	4710	7330	2250	876	303	201	131
11	122	126	865	5850	7700	2240	4210	6220	2080	842	302	203	123
12	122	130	671	4010	10500	1990	4410	5200	1890	826	292	193	116
13	115	133	593	2840	12200	2470	5740	4400	1810	783	286	180	114
14	111	140	1390	2230	10800	3830	5150	3770	1970	741	280	165	112
15	110	150	1860	1840	10500	3030	4770	3360	1970	704	282	156	114
16	115	152	1220	1580	7840	2610	4150	3000	1850	662	309	153	122
17	115	152	926	1350	5550	2420	3710	2680	2920	627	401	154	117
18	116	186	780	1270	4260	2410	3320	2410	8300	598	536	152	107
19	118	237	776	3070	3590	3050	3380	2220	9070	613	444	151	107
20	121	334	832	2780	2960	3110	3100	2050	6470	768	357	148	100
21	113	286	1230	2080	2520	2710	2880	2080	5180	840	328	142	98
22	111	254	2330	1500	2180	2390	2580	2110	4270	691	304	138	106
23	104	356	2040	1400	1930	2110	2540	2010	3510	617	285	139	110
24	105	361	1590	1270	1720	1880	3000	1990	2950	574	277	139	112
25	104	274	1400	1230	1550	1670	3230	2180	2560	554	280	140	106
26	102	237	4270	1240	1420	1510	3210	2240	2240	531	262	138	97
27	127	221	3010	1120	1290	1400	2980	2590	2000	516	255	138	96
28	226	214	2410	1170	1190	1310	2700	2590	1810	521	250	135	96
29	174	215	2050	1300	1100	---	2420	2310	1650	543	241	150	103
30	153	254	2270	1160	1020	---	2220	2090	1750	541	228	156	103
31	---	1050	---	974	980	---	2230	---	1860	---	216	154	---
TOTAL	4105	6752	42749	58944	103561	84332	169470	94220	85840	25040	10287	5182	3480
MEAN	137	218	1425	1901	3341	3012	5467	3141	2769	835	332	167	116
MAX	259	1050	4270	5850	12200	9600	23500	7330	9070	1630	536	208	155
MIN	102	124	570	974	839	942	1270	1990	1440	516	216	135	96

Table 15. Daily mean flows for South Umpqua River near Brockway, Oregon, September 1990 to October 1992—Continued

OCTOBER 1991 TO OCTOBER 1992													
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	102	344	1660	803	2340	1510	631	1250	260	462	81	73	115
2	99	284	1470	767	2710	1400	588	1100	244	432	89	72	130
3	95	254	1810	769	2350	1260	556	970	230	361	91	81	152
4	91	244	1620	954	2000	1170	536	862	224	304	87	88	167
5	90	233	1390	1880	1750	1230	546	784	212	309	79	99	159
6	91	230	4250	2090	1550	1330	559	731	206	337	76	115	156
7	94	228	16400	2100	1400	1220	563	683	203	379	76	118	150
8	95	322	7590	1930	1270	1120	542	630	195	335	77	115	139
9	96	312	4660	1690	1190	1030	895	586	185	274	79	104	130
10	101	283	3300	1520	1120	949	5480	554	177	239	79	99	126
11	122	275	2560	1760	1050	875	4640	529	172	212	78	80	131
12	107	266	2120	2210	971	822	4160	506	201	192	70	74	136
13	99	300	1930	2130	932	782	5720	495	265	178	67	87	138
14	103	640	1730	1870	901	755	4510	476	360	161	66	83	136
15	100	838	1520	1660	960	759	3280	452	384	147	65	77	135
16	96	603	1350	1560	1110	782	2640	426	359	135	64	76	131
17	97	607	1210	1920	1610	809	3190	413	308	123	70	76	126
18	101	3460	1250	2110	1760	875	5200	412	274	121	65	78	125
19	98	2760	3040	1890	1850	836	4980	457	247	121	74	80	123
20	108	2020	2770	1660	2490	764	3730	497	224	122	71	78	120
21	115	3600	2270	1480	4950	720	2930	574	205	123	73	76	138
22	123	2310	1980	1320	5440	690	2450	493	186	132	72	78	147
23	134	1580	1780	1190	4960	675	2080	424	161	160	79	77	194
24	150	1230	1560	1090	3760	665	1780	391	145	149	85	75	209
25	201	1820	1410	1140	2940	650	1560	357	135	141	88	82	165
26	282	3110	1270	1300	2450	618	1390	338	134	137	81	94	149
27	790	5420	1170	1290	2100	596	1250	324	126	119	76	121	140
28	582	4310	1080	2330	1840	585	1130	311	157	103	73	127	138
29	391	2790	1030	3140	1640	566	1030	299	262	95	75	107	152
30	529	2140	963	2430	---	625	1030	289	373	90	84	100	208
31	491	---	879	2000	---	679	---	279	---	84	78	---	627
TOTAL	5773	42813	79022	51983	61394	27347	69576	16892	6814	6277	2368	2690	4992
MEAN	186	1427	2549	1677	2117	882	2319	545	227	202	76.4	89.7	161
MAX	790	5420	16400	3140	5440	1510	5720	1250	384	462	91	127	627
MIN	90	228	879	767	901	566	536	279	126	84	64	72	115

Table 16. Water quality of wastewater-treatment plant effluents in the South Umpqua River Basin, Oregon, 1990-92

[Samples were analyzed at U.S. Geological Survey's National Water-Quality Laboratory in Denver, Colorado. Some of the samples are 24-hour composite samples and are listed with start and end times for the sampling period. Discrepancies between total (unfiltered, digested) phosphorus and dissolved phosphorus (filtered, digested) or orthophosphate (filtered, undigested) may reflect the analytical uncertainty of the procedures used. "K GAL" = thousands of gallons; "US/CM" = microsiemens per centimeter at 25 degrees Celsius; "MG/L" = milligrams per liter; "TOTAL" = unfiltered, digested, "dissolved" = filtered, "CACO3" = calcium carbonate; "N" = nitrogen; "NO2+NO3" = nitrite plus nitrate; "P" = phosphorus; "--" = not analyzed or not available; "E" = estimated, "<" = less than, ">" = greater than, "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "OCT" = October]

DATE	TIME	ENDING DATE	ENDING TIME	FLOW TOTAL DURING COMPO-SITE PERIOD (K GAL)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	PH WATER WHOLE LAB (STAND-ARD UNITS)	ALKA-LINITY LAB (MG/L AS CACO3)	NITRO-GEN, NITRITE SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)
425602123165701 Wastewater-Treatment Plant; Canyonville															
SEP 1990															
05...	0900	--	--	--	535	7.2	--	100	0.01	9.4	0.15	1.7	--	--	--
JUN 1991															
10...	0600	--	--	--	--	7.6	--	50	0.03	16	0.08	2.4	3.4	3.3	3.3
10...	0930	--	--	--	--	7.2	--	51	0.02	15	0.10	2.0	3.6	3.2	3.4
JUL															
22...	0600	--	--	--	--	7.4	--	153	0.39	1.8	16	20	0.70	0.78	0.68
22...	0945	--	--	--	--	7.2	--	123	0.05	2.0	9.1	17	--	--	0.28
AUG															
26...	0615	--	--	--	--	7.3	--	73	0.04	9.0	0.74	2.0	3.3	3.2	3.0
26...	0945	--	--	--	--	7.2	--	76	0.03	7.6	0.28	1.7	3.1	3.1	2.8
SEP															
23...	0600	--	--	--	--	7.3	--	90	0.01	7.3	0.85	1.9	2.0	1.9	1.8
23...	1100	--	--	--	--	7.4	--	98	0.02	5.4	0.23	1.1	2.1	1.9	1.8
MAY 1992															
04...	0700	920505	0820	149	437	--	7.2	37	<0.01	16	0.06	1.5	3.7	--	3.0
06...	0800	920507	0800	160	427	--	7.0	35	<0.01	16	0.06	1.6	3.5	--	2.7
11...	0715	920512	0830	136	462	--	7.6	85	0.26	6.5	3.0	4.8	3.9	--	3.4
13...	0710	920514	0730	136	464	--	7.5	107	0.03	1.1	5.2	6.8	3.5	--	3.2
18...	0715	920519	0750	172	457	--	7.6	88	0.14	4.8	0.63	1.8	3.3	--	3.2
20...	0800	920521	0800	153	407	--	7.4	61	<0.01	8.0	<0.01	0.8	2.6	--	2.2
25...	0715	920526	0750	142	460	--	7.3	97	0.11	4.4	1.9	3.2	3.6	--	3.3
27...	0730	920528	0730	134	448	--	7.5	84	0.11	6.2	0.64	1.8	3.5	--	3.1
JUN															
01...	0715	920602	0730	137	460	--	7.7	82	<0.01	8.0	0.03	1.1	3.2	--	3.2
03...	0730	920604	0730	132	475	--	7.4	60	<0.01	8.1	0.04	1.2	3.5	--	3.3
08...	0730	920609	0730	132	475	--	7.7	77	0.03	7.5	0.26	1.5	3.6	--	3.4
10...	0730	920611	0730	127	474	--	7.8	94	0.03	5.8	0.24	2.1	3.2	--	3.1
15...	0715	920616	0800	139	452	--	7.5	90	0.05	4.4	1.5	3.3	3.1	--	2.6
17...	0800	920618	0800	131	463	--	7.5	89	0.03	5.3	1.0	3.0	3.1	--	2.7
22...	0720	920623	0800	139	417	--	7.3	82	0.90	5.0	5.4	10	3.4	--	2.2
24...	0800	920625	0800	134	453	--	7.6	101	0.03	2.5	0.71	1.9	3.7	--	2.9
29...	0720	920630	0800	176	449	--	7.6	101	0.04	2.9	1.4	2.6	2.2	--	1.5
JUL															
01...	0800	920702	0800	150	434	--	7.6	93	0.02	4.1	1.2	2.6	2.6	--	2.2
06...	0715	920707	0800	153	431	--	7.8	81	0.04	5.4	0.95	2.2	2.5	--	1.9
08...	0800	920709	0800	145	435	--	7.6	83	<0.01	6.3	0.05	1.3	3.0	--	2.2
13...	0800	920714	0800	137	471	--	7.5	102	0.02	3.3	0.31	1.7	3.2	--	2.8
15...	0800	920716	0800	129	474	--	7.5	109	0.04	1.6	1.5	3.8	2.7	--	2.5
20...	0720	920721	0840	145	468	--	7.9	98	0.03	5.0	0.33	1.5	3.2	--	2.7
22...	0745	920723	0800	125	475	--	7.5	97	0.03	4.3	0.41	1.5	2.4	--	2.1
27...	0715	920728	0830	139	475	--	7.5	105	0.02	3.2	0.59	2.2	2.9	--	1.1
29...	0800	920730	0800	136	479	--	7.5	100	<0.01	4.2	0.03	1.2	3.1	--	2.8
AUG															
03...	0800	920804	0800	178	482	--	7.8	104	0.02	4.4	0.1	1.2	3.1	--	2.6
05...	0800	920806	0800	132	487	--	7.6	96	<0.01	5.3	<0.01	1.1	3.4	--	2.9
10...	0720	920811	0800	138	550	--	7.8	154	0.10	0.57	8.8	9.8	3.6	--	3.2
12...	0800	920813	0800	138	543	--	7.7	153	0.10	0.52	10	14	2.3	--	2.1
17...	0715	920818	0815	135	496	--	7.7	106	0.09	3.8	1.7	3.5	2.1	--	1.9
19...	0720	920820	0750	133	473	--	7.7	104	0.04	3.2	0.96	2.4	2.8	--	2.4
24...	0710	920825	0730	144	516	--	7.6	127	0.10	1.7	4.4	5.9	2.9	--	2.8
26...	0715	920827	0800	135	486	--	7.7	122	0.08	2.7	2.6	0.8	2.8	--	2.4
31...	0715	920901	0800	141	487	--	7.7	107	0.08	2.3	1.5	2.6	2.5	--	2.2
SEP															
02...	0800	920903	0800	137	476	--	7.7	96	0.04	5.4	0.58	1.7	3.0	--	2.6
07...	0715	920908	0800	144	486	--	7.5	88	0.02	5.8	0.26	1.7	4.0	--	2.7
09...	0730	920910	0800	138	486	--	7.8	102	0.01	5.4	0.06	1.0	2.7	--	2.6
14...	0715	920915	0815	138	517	--	7.4	88	<0.01	7.1	0.02	1.1	3.1	--	3.0
16...	0715	920917	0800	138	503	--	7.4	85	<0.01	6.4	<0.01	<0.2	2.7	--	2.5
21...	0720	920922	0745	134	507	--	7.5	93	0.01	7.4	0.45	1.6	3.2	--	2.7
23...	0715	920924	0800	131	500	--	7.5	84	<0.01	7.3	0.02	1.3	3.3	--	2.9
28...	0720	920929	0800	128	506	--	7.5	100	<0.01	6.5	0.02	1.2	1.8	--	1.6

Table 16. Water quality of wastewater-treatment plant effluents in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	ENDING DATE	ENDING TIME	FLOW TOTAL DURING COMPO- SITE PERIOD (K GAL)	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	PH WATER WHOLE LAB (STAND- ARD UNITS)	ALKA- LITY LAB (MG/L CACO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- ONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
425705123212001 Wastewater-Treatment Plant; Riddle															
SEP 1990															
05...	0950	--	--	--	478	7.0	--	51	<0.01	18	0.06	1.6	--	--	--
JUN 1991															
10...	0330	--	--	--	--	7.4	--	96	0.16	3.5	0.50	2.5	2.7	2.3	2.4
10...	0730	--	--	--	--	7.3	--	93	0.09	3.7	0.45	2.1	2.6	2.3	2.2
JUL															
22...	0300	--	--	--	--	7.1	--	74	0.49	12	1.1	4.0	2.9	3.0	2.5
22...	1130	--	--	--	--	7.0	--	73	0.16	13	0.22	2.0	2.9	2.8	2.5
AUG															
26...	0330	--	--	--	--	6.9	--	63	0.12	14	0.28	1.9	2.9	2.6	2.2
26...	0830	--	--	--	--	6.8	--	61	0.07	14	0.19	1.9	2.8	2.6	2.3
SEP															
23...	0330	--	--	--	--	7.0	--	90	1.4	3.9	4.1	6.3	3.4	2.9	2.7
23...	0830	--	--	--	--	7.0	--	82	0.68	8.7	2.5	4.9	2.9	2.9	3.9
MAY 1992															
04...	0730	920505	0730	120	420	--	7.2	77	1.1	11	0.62	2.1	3.2	--	2.3
06...	0735	920507	0740	127	415	--	7.2	86	0.95	9.9	0.49	2.0	1.9	--	1.5
11...	0740	920512	0745	113	437	--	7.6	78	1.5	9.7	1.5	3.5	2.3	--	1.8
13...	0745	920514	0750	114	449	--	7.3	63	0.24	15	0.09	1.4	2.7	--	2.3
18...	0745	920519	0800	134	421	--	7.4	73	0.42	12	0.08	1.6	2.1	--	2.0
20...	0750	920521	0740	117	430	--	7.1	52	0.19	17	0.07	1.6	2.8	--	2.7
25...	0735	920526	0745	112	449	--	7.1	54	0.55	17	0.34	2.2	2.9	--	2.2
27...	0815	920528	0745	113	458	--	7.0	51	0.38	19	0.32	2.9	3.2	--	2.7
JUN															
01...	0740	920602	0755	119	452	--	7.3	64	0.81	13	3.0	5.0	3.0	--	2.6
03...	0740	920604	0740	111	447	--	7.0	44	0.49	17	0.21	2.3	2.4	--	2.2
08...	0730	920609	0800	102	464	--	7.3	55	0.66	15	1.6	3.4	3.1	--	2.6
10...	0745	920611	0800	96.9	449	--	7.1	42	0.31	20	0.37	2.0	2.8	--	2.8
15...	0745	920616	0800	116	466	--	7.3	102	0.75	8.9	5.7	8.4	3.1	--	2.4
17...	0745	920618	0745	110	459	--	7.0	65	0.86	15	2.1	5.2	3.4	--	2.7
22...	0745	920623	0745	105	586	--	7.6	82	0.85	8.0	5.7	9.3	2.0	--	1.2
24...	0745	920625	0745	118	470	--	7.1	60	0.72	16	0.68	2.4	3.4	--	2.8
29...	0740	920630	0740	227	362	--	7.3	78	0.75	3.6	1.5	4.3	--	--	--
JUL															
01...	0745	920702	0745	136	417	--	7.3	76	0.19	13	0.30	1.8	2.1	--	1.6
06...	0745	920707	0745	121	448	--	7.3	71	0.70	14	1.2	2.7	3.0	--	2.2
08...	0745	920709	0745	108	455	--	7.2	67	0.17	17	0.21	1.8	4.0	--	3.0
13...	0745	920714	0745	116	451	--	7.2	63	0.52	17	0.24	1.9	3.3	--	2.7
15...	0730	920716	0820	114	474	--	7.1	56	0.25	19	0.56	2.3	3.7	--	3.0
20...	0750	920721	0745	127	481	--	7.1	59	1.0	17	1.4	3.4	3.9	--	2.6
22...	0750	920723	0745	122	460	--	7.0	59	0.35	18	0.24	1.8	2.8	--	2.7
27...	0750	920728	0755	111	467	--	7.1	61	0.26	18	0.18	2.3	3.6	--	3.0
29...	0740	920730	0800	120	478	--	7.2	68	0.57	15	0.61	2.5	3.6	--	3.1
AUG															
03...	0800	920804	0810	114	467	--	7.3	70	0.16	17	0.22	1.7	3.2	--	2.7
05...	0745	920806	0745	133	488	--	7.2	68	0.46	17	0.30	2.8	3.8	--	3.1
10...	0730	920811	0750	106	497	--	7.3	70	0.38	19	0.23	1.7	3.5	--	2.9
12...	0745	920813	0745	129	460	--	7.2	54	0.31	19	0.24	0.3	3.5	--	3.0
17...	0740	920818	0745	96.9	481	--	7.2	51	0.14	21	0.13	1.8	3.7	--	3.2
19...	0745	920820	0745	94.5	462	--	7.2	68	0.47	17	0.27	1.8	3.5	--	2.9
24...	0800	920825	0830	96.2	474	--	7.3	63	0.31	18	0.34	1.8	3.0	--	2.7
26...	0820	920827	0800	94.3	475	--	7.5	60	0.81	19	1.3	1.9	3.8	--	3.4
31...	0750	920901	0745	112	469	--	7.4	78	1.3	13	0.39	1.8	3.2	--	2.0
SEP															
02...	0800	920903	0750	114	445	--	7.2	81	1.9	10	0.76	1.9	3.4	--	3.1
07...	0740	920908	0745	100	463	--	7.4	84	0.96	11	0.49	1.9	4.5	--	3.0
09...	0800	920910	0735	102	457	--	7.5	78	0.19	12	0.14	1.4	3.2	--	2.8
14...	0740	920915	0750	101	507	--	7.4	81	0.24	17	0.16	1.4	2.9	--	2.6
16...	0745	920917	0740	99.2	467	--	7.2	61	0.18	17	0.25	1.0	3.0	--	2.9
21...	0740	920922	0750	91.8	473	--	7.3	85	0.25	12	0.26	1.7	3.6	--	3.1
23...	0745	920924	0740	114	488	--	7.4	69	0.14	15	0.40	2.0	3.2	--	2.7
28...	0745	920929	0745	94.0	473	--	7.3	83	0.16	13	0.33	1.8	3.4	--	3.0

Table 16. Water quality of wastewater-treatment plant effluents in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	ENDING DATE	ENDING TIME	FLOW TOTAL DURING COMPO-SITE PERIOD (K GAL)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	PH WATER WHOLE LAB (STAND-ARD UNITS)	ALKA-LINITY LAB (MG/L CACO3)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)
43017123174701 Wastewater-Treatment Plant; Myrtle Creek															
SEP 1990															
05...	1100	--	--	--	488	6.9	--	123	0.05	9.0	8.6	14	1.5	--	1.3
JUN 1991															
11...	0400	--	--	--	--	7.5	--	174	0.03	0.06	15	17	3.9	3.3	3.3
11...	1200	--	--	--	--	7.3	--	156	0.03	0.05	15	17	3.6	3.3	3.3
JUL															
23...	0715	--	--	--	--	7.1	--	97	0.18	0.23	15	17	2.3	2.2	2.6
23...	1130	--	--	--	--	7.1	--	99	1.4	5.2	16	23	3.4	3.5	3.0
AUG															
27...	0635	--	--	--	--	7.2	--	104	0.12	0.65	12	13	2.7	2.6	2.5
27...	1150	--	--	--	--	7.0	--	64	0.43	5.4	11	11	1.7	1.6	1.4
SEP															
24...	0600	--	--	--	--	7.1	--	84	0.68	2.2	11	11	1.9	--	1.0
24...	1145	--	--	--	--	7.0	--	57	2.6	8.0	9.6	12	2.9	2.3	2.0
MAY 1992															
04...	0900	920505	0920	840	445	--	7.3	101	1.1	8.8	4.4	6.0	3.3	--	2.7
06...	0900	920507	0930	810	473	--	7.2	140	0.78	2.9	9.7	13	3.2	--	2.8
11...	0930	920512	0830	740	463	--	7.3	77	1.2	11	3.3	5.6	3.2	--	2.9
13...	0830	920514	0830	710	462	--	7.3	81	1.2	12	3.0	4.9	3.6	--	3.1
18...	0900	920519	0900	830	478	--	7.4	107	0.54	5.0	8.8	9.7	3.3	--	3.1
20...	0800	920521	0800	880	461	--	7.4	116	0.09	1.9	12	15	2.6	--	2.5
25...	0900	920526	0900	710	468	--	7.3	95	0.74	4.7	5.5	7.4	3.3	--	2.9
27...	0900	920528	0900	720	338	--	7.3	58	0.64	2.8	4.2	6.0	2.4	--	2.1
JUN															
01...	0830	920602	0830	710	424	--	7.4	78	0.32	3.3	6.5	9.0	3.2	--	3.0
03...	1000	920604	0900	690	486	--	7.4	66	0.38	4.8	7.3	9.5	4.0	--	3.5
08...	1100	920609	0800	650	507	--	7.5	87	0.42	3.2	8.5	12	3.9	--	3.4
10...	0900	920611	0900	600	516	--	7.5	118	0.26	1.7	8.7	14	2.8	--	2.6
15...	0900	920616	0900	740	463	--	7.3	64	0.67	15	2.3	4.6	3.3	--	2.8
17...	0900	920618	0900	700	484	--	6.9	55	0.88	19	2.1	4.5	3.9	--	3.4
23...	1500	--	--	--	--	--	--	--	--	--	--	8.9	4.4	--	--
23...	1500	920623	1900	160	--	--	--	--	--	--	--	--	--	--	--
23...	1900	--	--	--	--	--	--	--	--	--	--	9.7	4.3	--	--
23...	1900	920623	2300	130	--	--	--	--	--	--	--	--	--	--	--
23...	2300	--	--	--	--	--	--	--	--	--	--	9.0	3.8	--	--
23...	2300	920624	0300	56.2	--	--	--	--	--	--	--	--	--	--	--
24...	0300	--	--	--	--	--	--	--	--	--	--	8.8	3.8	--	--
24...	0300	920624	0700	47.9	--	--	--	--	--	--	--	--	--	--	--
24...	0700	--	--	--	--	--	--	--	--	--	--	4.4	3.6	--	--
24...	0700	920624	1100	132	--	--	--	--	--	--	--	--	--	--	--
24...	1100	--	--	--	--	--	--	--	--	--	--	3.4	3.7	--	--
24...	1100	920624	1500	141	--	--	--	--	--	--	--	--	--	--	--
24...	1500	--	--	--	--	--	--	--	--	--	--	10	4.9	--	--
24...	1500	920624	1900	147	--	--	--	--	--	--	--	--	--	--	--
24...	1500	920625	0900	650	476	--	7.3	80	0.29	4.7	6.1	7.7	4.3	--	3.7
29...	1200	920630	0915	1210	384	--	7.3	75	0.62	5.4	2.8	5.5	--	--	--
JUL															
01...	0900	920702	0900	920	424	--	7.3	78	0.54	7.6	3.5	5.7	2.7	--	2.1
06...	0900	920707	0900	860	493	--	7.4	107	0.20	0.90	1.3	2.8	3.2	--	2.3
08...	0900	920709	0930	740	503	--	7.3	100	0.26	1.4	12	17	3.4	--	2.5
13...	0900	920714	0900	680	474	--	7.4	91	0.76	6.2	4.3	6.4	3.1	--	2.5
15...	1000	920716	0900	610	471	--	7.2	70	1.1	10	3.8	7.1	3.6	--	3.1
20...	1100	920721	0930	650	550	--	7.5	116	0.26	1.9	14	21	4.7	--	3.9
22...	0940	920723	0940	640	556	--	7.3	65	0.35	2.4	15	20	4.2	--	4.3
27...	0900	920728	0900	680	515	--	7.6	95	0.78	2.5	--	17	2.8	--	2.2
29...	0900	920730	0915	680	571	--	7.3	134	0.05	0.63	17	25	4.6	--	3.8
AUG															
05...	1500	--	--	--	--	--	--	--	--	--	--	3.2	4.1	--	--
05...	1500	920805	1900	161	--	--	--	--	--	--	--	--	--	--	--
05...	1500	920806	1500	690	--	--	--	--	--	--	--	--	--	--	--
05...	1900	--	--	--	--	--	--	--	--	--	--	3.7	4.2	--	--
05...	1900	920805	2300	138	--	--	--	--	--	--	--	--	--	--	--
05...	2300	--	--	--	--	--	--	--	--	--	--	3.7	5.1	--	--
05...	2300	920806	0300	48.7	--	--	--	--	--	--	--	--	--	--	--
06...	0300	920806	0700	55.8	--	--	--	--	--	--	--	--	--	--	--
06...	0700	--	--	--	--	--	--	--	--	--	--	2.7	2.6	--	--
06...	0700	920806	1100	131	--	--	--	--	--	--	--	--	--	--	--
06...	1100	--	--	--	--	--	--	--	--	--	--	13	1.8	--	--
06...	1100	920806	1500	138	--	--	--	--	--	--	--	--	--	--	--
06...	1500	--	--	--	--	--	--	--	--	--	--	3.6	3.3	--	--
06...	1500	920806	1900	150	--	--	--	--	--	--	--	--	--	--	--
10...	0900	920811	0900	690	503	--	7.4	123	0.94	2.8	9.5	14	4.1	--	3.1
12...	0900	920813	0900	640	526	--	7.2	118	0.46	1.5	12	17	4.4	--	3.5
17...	0900	920818	0900	610	501	--	7.4	75	1.2	4.6	7.9	11	2.8	--	2.3
19...	0900	920820	0900	630	519	--	7.5	77	0.35	1.7	10	14	4.0	--	3.4
24...	0900	920825	0900	650	516	--	7.7	79	0.51	3.5	8.7	12	3.2	--	2.7
26...	0700	920827	0730	630	519	--	7.4	69	0.55	3.1	11	14	4.3	--	3.7
31...	0900	920901	0900	660	521	--	7.5	84	0.25	1.8	12	15	3.6	--	3.3

Table 16. Water quality of wastewater-treatment plant effluents in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	ENDING DATE	ENDING TIME	FLOW TOTAL DURING COMPO-SITE PERIOD (K GAL)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	PH WATER WHOLE LAB (STAND-ARD UNITS)	ALKA-LINITY LAB (MG/L CACO3)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-ONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)
430117123174701 Wastewater-Treatment Plant; Myrtle Creek														
SEP 1992														
02...	0830	920903	0830	600	525	--	7.4	73	0.27	2.0	1.1	3.0	3.4	-- 3.0
07...	0900	920908	0900	610	476	--	7.5	78	1.5	6.0	6.2	8.5	4.0	-- 2.9
09...	0900	920910	0900	640	525	--	7.4	62	0.86	3.4	--	14	4.1	-- 3.6
14...	0900	920915	0900	640	527	--	7.2	74	0.53	2.8	9.2	17	4.2	-- 3.5
15...	1500	--	--	--	--	--	--	--	--	--	--	9.4	3.2	-- --
15...	1500	920915	1900	128	--	--	--	--	--	--	--	--	--	-- --
15...	1900	--	--	--	--	--	--	--	--	--	--	8.5	2.9	-- --
15...	1900	920915	2300	121	--	--	--	--	--	--	--	--	--	-- --
15...	2300	--	--	--	--	--	--	--	--	--	--	8.5	3.0	-- --
15...	2300	920916	0300	47.5	--	--	--	--	--	--	--	--	--	-- --
16...	0300	--	--	--	--	--	--	--	--	--	--	7.6	3.1	-- --
16...	0300	920916	0700	48.4	--	--	--	--	--	--	--	--	--	-- --
16...	0700	--	--	--	--	--	--	--	--	--	--	4.4	2.8	-- --
16...	0700	920916	1100	125	--	--	--	--	--	--	--	--	--	-- --
16...	1100	--	--	--	--	--	--	--	--	--	--	9.0	3.6	-- --
16...	1100	920916	1500	131	--	--	--	--	--	--	--	--	--	-- --
16...	1500	--	--	--	--	--	--	--	--	--	--	13	4.9	-- --
16...	1500	920916	1900	137	--	--	--	--	--	--	--	--	--	-- --
21...	0900	920922	0900	590	502	--	7.4	91	0.58	5.0	4.9	7.0	3.7	-- 3.0
23...	0900	920924	0900	580	505	--	7.5	88	0.38	3.9	6.0	8.6	3.5	-- 2.8
28...	1130	920929	0845	610	573	--	7.5	164	0.10	0.88	14	19	4.0	-- 3.2
430812123240101 Wastewater-Treatment Plant; Winston-Green														
SEP 1990														
07...	1335	--	--	--	577	7.2	--	67	0.67	8.2	5.9	11	--	-- --
JUN 1991														
11...	0330	--	--	--	--	7.2	--	111	0.90	5.9	9.6	14	4.2	3.5 3.7
11...	0915	--	--	--	--	7.0	--	82	1.1	9.3	6.4	10	4.5	3.9 3.8
JUL														
23...	0700	--	--	--	--	7.1	--	21	0.97	9.3	4.4	6.8	0.71	0.27 0.18
23...	1200	--	--	--	--	6.9	--	20	0.56	9.1	5.7	8.9	0.71	0.29 0.19
AUG														
27...	0530	--	--	--	--	6.6	--	22	0.64	9.0	6.1	9.0	0.76	0.72 0.25
27...	1300	--	--	--	--	6.6	--	13	0.46	10	5.5	9.6	0.68	0.61 0.18
SEP														
24...	0600	--	--	--	--	6.9	--	23	0.66	10	8.0	11	1.3	0.48 0.43
24...	1230	--	--	--	--	7.1	--	17	0.83	11	5.4	12	0.85	0.31 0.26
MAY 1992														
04...	0800	920505	0800	959	611	--	7.3	94	0.56	6.4	10	14	1.3	-- 0.23
06...	0800	920507	1000	919	596	--	7.2	93	0.65	6.6	9.1	15	1.4	-- 0.34
11...	0800	920512	0900	851	615	--	7.3	93	0.82	6.3	11	14	1.8	-- 0.50
13...	0800	920514	0900	896	606	--	7.3	82	0.87	7.6	9.4	11	1.5	-- 0.43
18...	0800	920519	0830	879	593	--	7.4	64	1.1	8.3	8.7	10	1.9	-- 0.98
20...	0800	920521	0800	829	430	--	7.6	82	0.76	5.0	7.5	11	1.0	-- 0.36
25...	0900	920526	0900	874	594	--	7.3	38	0.88	9.3	7.7	10	1.6	-- 0.49
27...	0800	920528	0800	880	636	--	7.3	45	0.19	1.6	8.6	11	1.6	-- 0.67
JUN														
01...	0830	920602	0830	843	584	--	7.6	60	0.97	9.3	7.4	10	3.0	-- 2.2
03...	0900	920604	0900	822	566	--	7.3	65	0.93	10	7.2	9.5	3.4	-- 2.5
08...	0900	920609	0900	836	594	--	7.5	58	0.94	9.7	6.6	9.6	2.4	-- 1.2
10...	0900	920611	0900	815	622	--	7.5	59	0.99	9.4	5.8	9.2	1.1	-- 0.44
15...	0900	920616	0900	933	559	--	7.2	28	1.1	9.9	5.7	8.1	1.0	-- 0.35
17...	0900	920618	0900	852	576	--	7.0	36	1.1	10	5.3	7.5	1.0	-- 0.36
22...	0900	920623	0900	928	462	--	7.4	80	1.1	8.9	2.5	6.3	2.7	-- 1.8
24...	2000	--	--	851	--	--	--	--	--	--	--	8.5	0.65	-- --
24...	2400	--	--	--	--	--	--	--	--	--	--	7.2	0.64	-- --
25...	0400	--	--	--	--	--	--	--	--	--	--	8.4	0.75	-- --
25...	0800	--	--	--	--	--	--	--	--	--	--	8.0	0.70	-- --
25...	1200	--	--	--	--	--	--	--	--	--	--	5.9	0.48	-- --
25...	1600	--	--	--	--	--	--	--	--	--	--	6.9	0.74	-- --
25...	2000	--	--	--	--	--	--	--	--	--	--	12	0.97	-- --
29...	0900	920630	0900	1500	486	--	7.4	57	0.65	3.4	2.5	6.5	1.1	-- 0.22
JUL														
01...	0800	920702	0800	1080	562	--	7.3	54	0.81	8.2	3.9	6.6	0.90	-- 0.26
06...	0930	920707	0930	1230	545	--	7.4	46	0.92	8.5	4.4	6.4	1.0	-- 0.16
08...	0800	920709	0800	909	595	--	7.3	49	1.1	10	4.2	6.4	1.0	-- 0.27
13...	0900	920714	0900	867	568	--	7.2	26	1.3	10	5.0	7.2	1.2	-- 0.35
15...	0915	920716	0915	832	579	--	7.1	39	1.2	10	5.0	7.5	1.0	-- 0.39
20...	0900	920721	0900	825	626	--	7.6	52	1.1	11	5.3	8.6	1.4	-- 0.57
22...	0900	920723	0900	976	613	--	7.2	48	1.1	11	4.9	8.7	1.6	-- 0.58
27...	0900	920728	0900	807	638	--	7.6	68	1.2	9.9	5.7	9.3	1.9	-- 0.88
29...	0900	920730	0900	782	638	--	7.2	75	1.2	10	5.2	7.8	1.9	-- 0.94

Table 16. Water quality of wastewater-treatment plant effluents in the South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	ENDING DATE	ENDING TIME	FLOW TOTAL DURING COMPO-SITE PERIOD (K GAL)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	PH WATER WHOLE LAB (STAND-ARD UNITS)	ALKA-LINITY LAB (MG/L AS CACO3)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)
430812123240101 Wastewater-Treatment Plant; Winston-Green															
AUG 1992															
03...	0900	920804	0900	813	586	--	7.3	48	1.2	9.7	5.2	7.5	1.9	--	0.94
05...	2000	--	--	--	--	--	--	--	--	--	--	8.4	2.0	--	--
05...	2400	--	--	--	--	--	--	--	--	--	--	8.1	1.9	--	--
06...	0400	--	--	--	--	--	--	--	--	--	--	7.3	1.8	--	--
06...	0800	--	--	--	--	--	--	--	--	--	--	6.1	1.6	--	--
06...	1200	--	--	--	--	--	--	--	--	--	--	5.2	1.5	--	--
06...	1600	--	--	--	--	--	--	--	--	--	--	8.4	2.7	--	--
10...	0830	920811	0830	860	571	--	7.4	79	1.3	9.6	5.2	7.5	4.3	--	3.4
12...	0900	920813	0900	781	564	--	7.3	63	1.4	10	4.6	7.6	4.1	--	3.4
17...	0830	920818	0815	791	578	--	7.5	89	1.5	8.7	5.6	9.5	3.8	--	3.4
19...	0900	920820	0900	777	563	--	7.2	67	1.3	8.6	5.4	8.6	4.0	--	3.3
24...	0830	920825	0830	819	585	--	7.5	43	1.3	9.4	6.4	9.1	2.8	--	2.4
26...	0830	920827	0830	804	624	--	7.4	71	1.1	9.7	6.8	8.5	3.4	--	2.6
31...	0830	920901	0830	814	618	--	7.5	50	1.0	9.6	5.8	9.1	1.4	--	0.67
SEP															
02...	0900	920903	0900	721	617	--	7.0	54	1.1	11	5.5	8.0	1.5	--	0.80
07...	0900	920908	0930	856	670	--	7.6	78	1.1	10	6.2	8.7	1.5	--	0.73
09...	0800	920910	0830	806	630	--	7.3	67	1.1	9.1	5.6	8.7	1.7	--	0.63
14...	0900	920915	0900	809	611	--	7.2	52	1.2	9.9	6.2	9.6	1.5	--	0.47
16...	0900	920917	0900	785	641	--	7.2	65	1.0	11	5.8	7.8	1.4	--	0.59
16...	2000	--	--	--	--	--	--	--	--	--	--	11	1.9	--	--
16...	2400	--	--	--	--	--	--	--	--	--	--	8.1	1.5	--	--
17...	0400	--	--	--	--	--	--	--	--	--	--	7.8	1.6	--	--
17...	0800	--	--	--	--	--	--	--	--	--	--	6.9	1.4	--	--
17...	1200	--	--	--	--	--	--	--	--	--	--	5.3	1.4	--	--
17...	1600	--	--	--	--	--	--	--	--	--	--	2.0	2.1	--	--
17...	2000	--	--	--	--	--	--	--	--	--	--	2.1	2.3	--	--
21...	0900	920922	0900	821	632	--	7.5	66	1.1	9.5	5.8	3.9	--	--	0.67
23...	0830	920924	0830	829	642	--	7.6	59	1.2	8.9	6.6	8.5	1.3	--	0.53
28...	0900	920929	0900	789	623	--	7.4	76	1.2	9.4	7.1	8.9	1.7	--	0.80
431233123234301 Wastewater-Treatment Plant; Roseburg															
SEP 1990															
07...	0840	--	--	--	509	7.5	--	74	0.53	1.3	13	21	--	--	--
JUN 1991															
11...	0630	--	--	--	--	7.3	--	114	0.88	4.1	7.5	11	4.0	3.4	3.4
11...	1145	--	--	--	--	7.3	--	104	1.1	5.2	5.9	10	3.3	2.9	3.1
JUL															
23...	0725	--	--	--	--	7.3	--	98	1.3	4.5	6.7	11	3.9	3.9	3.4
23...	1155	--	--	--	--	7.2	--	79	1.6	5.6	6.4	8.5	3.6	3.4	3.2
AUG															
27...	0715	--	--	--	--	7.1	--	50	0.66	1.2	15	15	3.9	3.8	3.6
27...	1130	--	--	--	--	7.2	--	93	1.1	2.0	7.7	14	3.9	3.7	3.5
SEP															
24...	0730	--	--	--	--	7.2	--	55	1.0	3.6	11	15	4.0	4.0	3.6
24...	0955	--	--	--	--	7.2	--	52	1.3	4.6	10	13	4.1	4.1	4.1
MAY 1992															
04...	0910	920505	0815	4170	455	--	7.7	130	0.86	2.3	9.8	11	3.0	--	2.5
06...	0850	920507	0840	3850	450	--	7.5	131	1.1	3.0	9.7	12	2.6	--	2.5
11...	0815	920512	0750	3720	426	--	7.5	74	1.3	6.9	5.2	8.5	3.1	--	2.8
13...	0900	920514	0850	3690	427	--	7.6	95	0.96	6.1	5.5	7.7	3.6	--	3.2
18...	0900	920519	0900	4280	422	--	7.5	75	0.80	5.4	6.2	8.8	3.2	--	2.9
20...	0900	920521	0855	3760	430	--	7.6	82	0.94	8.7	7.7	8.5	3.1	--	3.0
25...	0740	920526	0900	3440	521	--	7.5	56	1.0	7.6	5.7	8.3	3.3	--	2.9
27...	0830	920528	0845	3680	434	--	7.5	68	0.19	1.1	7.6	11	3.4	--	--
JUN															
01...	0905	920602	0845	3650	421	--	7.8	52	1.0	6.3	7.0	13	3.4	--	3.1
03...	0900	920604	0830	3720	432	--	7.3	73	0.97	5.7	7.7	10	3.5	--	3.1
08...	0740	920609	0840	3720	427	--	7.5	61	0.86	5.4	7.5	11	3.4	--	3.1
10...	0845	920611	0900	3540	421	--	7.5	54	0.96	7.2	5.5	9.4	4.4	--	3.1
15...	0910	920616	0850	4300	392	--	7.5	69	0.71	5.3	4.4	7.0	2.8	--	2.2
17...	0910	920618	0858	3780	423	--	7.3	70	0.84	6.5	6.2	8.4	3.0	--	2.8
22...	0900	920623	0900	3790	469	--	7.6	105	0.06	3.0	1.3	3.4	3.4	--	2.6
24...	0845	920625	0845	3870	418	--	7.4	67	1.0	4.1	7.1	9.5	3.5	--	3.0
29...	0900	920630	0900	7730	334	--	7.6	71	0.95	2.9	3.1	5.6	--	--	--
JUL															
01...	0830	920702	0845	4530	392	--	7.5	70	1.4	4.8	4.5	7.4	2.6	--	2.1
06...	0845	920707	0845	3570	412	--	7.5	56	1.3	6.5	5.4	8.2	3.5	--	2.6
08...	0833	920709	0856	3490	417	--	7.5	57	1.3	5.7	6.2	9.9	3.7	--	2.8
13...	0910	920714	0840	3330	408	--	7.5	50	1.4	5.9	6.8	9.1	3.1	--	3.0
15...	0847	920716	0852	3350	430	--	7.4	59	1.2	3.7	9.0	12	3.4	--	3.0
20...	0844	920721	0837	3430	437	--	7.6	52	1.4	3.5	9.4	14	3.7	--	3.1
22...	0825	920723	0852	3520	428	--	7.4	46	1.3	4.2	8.7	13	3.7	--	3.1
27...	0848	920728	0855	3400	472	--	7.6	74	0.53	2.8	1.5	20	4.1	--	3.3
29...	0858	920730	0854	3350	485	--	7.5	96	0.69	2.5	15	20	4.1	--	3.7

Table 16. Water quality of wastewater-treatment plant effluents in the South Umpqua River Basin, Oregon, 1990-92—Continued

				FLOW TOTAL DURING COMPO- SITE PERIOD (K GAL)	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	PH WATER WHOLE LAB (STAND- ARD UNITS)	ALKA- LITY LAB (MG/L CACO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
DATE	TIME	ENDING DATE	ENDING TIME											
431233123234301 Wastewater-Treatment Plant; Roseburg														
AUG 1992														
03...	0920	920804	0853	3530	438	--	7.6	64	1.4	5.1	9.5	12	3.4	-- 3.1
05...	0856	920806	0857	3620	428	--	7.4	45	1.4	6.1	7.3	10	3.8	-- 3.1
10...	0855	920811	0842	3510	430	--	7.5	53	1.1	7.1	7.1	9.2	3.7	-- 3.1
12...	0901	920813	0855	3530	413	--	7.4	44	1.3	6.0	7.4	9.8	3.7	-- 3.2
17...	0854	920818	0840	3470	416	--	7.5	44	1.3	7.1	6.3	9.0	3.5	-- 3.0
19...	0911	920820	0849	3320	411	--	7.4	45	1.3	7.1	6.2	8.8	3.8	-- 3.1
24...	0820	920825	0815	3390	439	--	7.2	52	1.9	8.9	5.6	7.9	3.9	-- 3.5
26...	0810	920827	0829	3210	415	--	7.4	51	1.4	7.3	5.5	7.9	4.1	-- 3.1
31...	0845	920901	0841	3310	407	--	7.4	41	2.0	10	4.0	6.1	3.7	-- 3.1
SEP														
02...	0745	920903	0820	3540	410	--	7.0	37	2.7	8.6	5.8	8.4	4.0	-- 3.3
07...	0803	920908	0836	2980	411	--	7.4	33	2.4	9.2	6.5	9.3	3.7	-- 3.3
09...	0757	920910	0800	3120	434	--	7.3	40	1.9	6.4	7.3	12	3.9	-- 3.3
14...	0835	920915	0854	3060	460	--	7.7	29	1.3	5.0	11	17	4.1	-- 3.3
16...	0921	920917	0849	3100	470	--	7.6	40	0.61	2.1	14	--	4.0	-- 3.2
23...	0800	920924	0800	3040	461	--	7.6	41	1.2	3.5	12	14	4.1	-- 3.4
28...	0802	920929	0830	2980	454	--	7.6	91	1.6	4.9	11	15	3.9	-- 3.3

Table 17. Daily values for water temperature during summers, South Umpqua River at Days Creek, Oregon, 1991-92

[Units are in degrees Celsius. Data discrepancies between daily maximum or minimum water temperature values listed in this table and instantaneous values listed in table 9 are the results of slight differences in sampling times, locations, and instrumentation. "MAX" = daily maximum; "MIN" = daily minimum; "--" = data missing or not analyzed]

AUGUST 1991 TO OCTOBER 1991									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	AUGUST			SEPTEMBER			OCTOBER		
1	---	---	---	22.5	20.5	22.0	---	---	---
2	---	---	---	22.5	20.0	21.5	---	---	---
3	---	---	---	23.5	20.5	22.0	---	---	---
4	---	---	---	24.0	21.5	23.0	---	---	---
5	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	17.0	15.5	16.5
10	---	---	---	---	---	---	17.0	15.5	16.5
11	---	---	---	---	---	---	17.0	15.5	16.5
12	---	---	---	---	---	---	17.0	16.0	16.5
13	---	---	---	---	---	---	16.5	15.5	16.0
14	---	---	---	---	---	---	16.5	15.5	16.0
15	---	---	---	---	---	---	16.5	15.5	16.0
16	25.5	22.5	24.0	---	---	---	16.0	15.0	15.5
17	26.0	22.5	24.5	---	---	---	15.5	14.5	15.0
18	26.5	23.0	25.0	22.0	19.0	20.5	14.5	13.0	14.0
19	26.5	23.5	25.5	21.0	19.5	20.5	13.0	12.0	13.0
20	27.0	24.0	25.5	21.0	19.0	20.0	14.0	13.0	13.5
21	26.5	24.0	25.5	19.0	16.5	17.5	14.0	13.0	13.5
22	26.5	23.5	25.5	17.5	16.0	17.0	13.0	11.0	12.0
23	25.5	22.5	24.0	---	---	---	11.5	11.0	11.5
24	23.5	21.5	23.0	19.5	17.5	18.5	11.5	10.0	11.0
25	23.5	20.5	22.0	20.5	18.5	19.5	11.5	10.5	11.0
26	23.0	20.0	21.5	20.5	19.0	20.0	11.5	9.0	10.0
27	22.5	20.0	21.0	20.5	19.5	20.0	10.0	8.0	9.0
28	21.5	20.0	21.0	20.5	19.0	19.5	8.5	8.0	8.5
29	23.5	20.0	22.0	19.5	18.0	19.0	8.5	7.5	8.5
30	23.5	20.5	22.0	20.0	18.5	19.5	---	---	---
31	23.0	20.5	22.0	---	---	---	---	---	---

Table 17. Daily values for water temperature during summers, South Umpqua River at Days Creek, Oregon, 1991-92—Continued

MAY 1992 TO JULY 1992									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MAY			JUNE			JULY		
1	---	---	---	25.0	20.5	23.0	24.5	20.0	21.5
2	---	---	---	25.0	20.5	22.5	24.0	21.0	22.0
3	---	---	---	25.0	19.5	22.5	25.5	20.5	22.5
4	---	---	---	25.0	19.5	22.5	24.5	21.5	23.0
5	---	---	---	24.5	19.0	22.0	24.0	21.0	22.5
6	---	---	---	25.0	19.5	22.5	25.0	20.5	22.5
7	---	---	---	25.0	20.0	22.5	25.5	20.5	22.5
8	---	---	---	25.0	20.0	22.5	---	---	---
9	---	---	---	24.5	20.0	22.5	---	---	---
10	---	---	---	24.0	20.5	22.0	---	---	---
11	---	---	---	23.5	20.0	21.0	---	---	---
12	---	---	---	20.5	18.5	19.0	---	---	---
13	---	---	---	19.0	17.0	18.0	---	---	---
14	---	---	---	18.5	16.0	17.5	---	---	---
15	---	---	---	19.0	16.5	17.5	---	---	---
16	---	---	---	18.5	16.0	17.0	---	---	---
17	---	---	---	21.0	16.0	18.0	---	---	---
18	---	---	---	24.0	17.0	20.0	---	---	---
19	---	---	---	25.5	19.0	22.0	---	---	---
20	---	---	---	26.0	20.0	23.0	---	---	---
21	---	---	---	28.0	21.5	24.5	---	---	---
22	---	---	---	29.5	23.5	26.5	---	---	---
23	---	---	---	29.5	24.5	27.0	---	---	---
24	---	---	---	28.5	25.0	27.0	---	---	---
25	---	---	---	27.5	25.0	26.0	---	---	---
26	---	---	---	28.5	24.0	26.0	---	---	---
27	---	---	---	27.5	24.0	26.0	---	---	---
28	---	---	---	27.0	23.0	24.0	26.5	23.0	25.0
29	---	---	---	23.5	21.0	22.0	26.5	22.5	24.5
30	25.0	19.0	22.0	23.0	20.0	21.0	27.0	23.5	25.0
31	26.0	19.5	22.5	---	---	---	27.0	24.0	26.0

Table 17. Daily values for water temperature during summers, South Umpqua River at Days Creek, Oregon, 1991-92—Continued

AUGUST 1992 TO OCTOBER 1992									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	AUGUST			SEPTEMBER			OCTOBER		
1	26.5	24.5	25.5	24.0	21.5	22.5	20.0	17.5	19.0
2	26.0	23.5	25.0	24.0	22.0	22.5	17.5	16.0	16.5
3	26.0	23.5	25.0	24.0	22.0	22.5	17.5	16.5	16.5
4	25.5	23.0	24.0	23.0	22.0	22.5	18.0	16.5	17.0
5	25.0	22.5	23.5	22.0	20.0	21.0	17.5	15.5	16.5
6	25.0	23.0	24.5	20.0	18.5	19.0	16.5	15.0	16.0
7	25.0	23.5	24.5	19.5	18.0	19.0	16.5	15.0	15.5
8	24.0	22.5	23.5	22.0	18.0	20.0	16.0	15.0	16.0
9	24.5	22.0	23.5	24.0	21.5	22.5	17.5	15.5	16.5
10	25.5	22.5	24.0	22.5	22.0	22.5	16.5	16.0	16.5
11	26.0	23.5	25.0	23.0	21.0	22.0	17.0	16.0	16.5
12	26.0	24.0	25.0	21.5	19.5	21.0	17.0	16.0	16.5
13	27.0	23.5	25.0	19.5	18.0	19.0	16.0	14.5	15.5
14	26.5	24.5	25.5	18.5	17.0	18.0	14.5	13.0	13.5
15	25.5	24.5	25.0	18.5	17.5	18.0	13.0	12.0	12.5
16	25.5	23.5	24.5	19.0	16.5	17.5	13.5	12.0	12.5
17	25.5	23.0	24.0	17.5	15.5	17.0	14.0	12.5	13.0
18	26.5	23.0	24.5	17.5	15.5	16.5	15.0	13.5	14.5
19	26.0	24.0	25.0	18.5	16.0	17.0	14.5	13.5	14.0
20	25.5	23.5	24.5	19.0	16.5	17.5	14.5	14.0	14.0
21	24.0	22.0	23.0	---	---	---	15.5	14.0	14.5
22	22.0	20.5	21.0	---	---	---	15.5	13.0	14.5
23	22.5	19.5	21.0	---	---	---	15.5	11.5	13.5
24	23.5	20.5	22.0	---	---	---	15.0	12.5	13.5
25	23.5	21.0	22.0	---	---	---	15.0	13.5	14.5
26	23.0	20.5	21.5	---	---	---	---	---	---
27	23.5	20.5	22.0	---	---	---	---	---	---
28	24.0	21.5	22.5	---	---	---	---	---	---
29	23.0	21.0	22.0	---	---	---	---	---	---
30	23.0	20.5	22.0	---	---	---	---	---	---
31	24.0	21.5	22.0	---	---	---	---	---	---

Table 18. Daily values for specific conductance during summers, South Umpqua River at Days Creek, Oregon, 1991-92

[Units are in microsiemens per centimeter at 25 degrees Celsius. Data discrepancies between daily maximum or minimum specific conductance values listed in this table and instantaneous values listed in table 9 are the results of slight differences in sampling times, locations, and instrumentation. "MAX" = daily maximum; "MIN" = daily minimum; "--" = data missing or not analyzed]

AUGUST 1991 TO OCTOBER 1991									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	AUGUST			SEPTEMBER			OCTOBER		
1	---	---	---	144	140	142	---	---	---
2	---	---	---	143	141	142	---	---	---
3	---	---	---	144	140	142	---	---	---
4	---	---	---	143	140	141	---	---	---
5	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	161	158	160
10	---	---	---	---	---	---	162	159	160
11	---	---	---	---	---	---	162	159	161
12	---	---	---	---	---	---	162	159	161
13	---	---	---	---	---	---	163	160	162
14	---	---	---	---	---	---	163	161	162
15	---	---	---	---	---	---	163	162	162
16	---	---	---	---	---	---	163	161	162
17	133	130	131	---	---	---	164	162	163
18	133	130	132	---	---	---	166	163	164
19	133	130	132	---	---	---	166	164	165
20	134	130	132	---	---	---	166	164	165
21	135	131	133	---	---	---	166	164	165
22	136	132	134	---	---	---	167	165	166
23	137	133	136	---	---	---	167	166	166
24	138	135	136	153	149	151	169	166	167
25	138	136	137	153	149	151	170	167	169
26	139	135	137	153	149	151	168	132	157
27	139	136	137	154	150	152	132	97	109
28	140	137	139	155	152	154	98	96	97
29	142	138	140	156	153	154	---	98	102
30	143	139	141	156	153	154	---	---	---
31	144	141	142	---	---	---	---	---	---

Table 18. Daily values for specific conductance during summers, South Umpqua River at Days Creek, Oregon, 1991-92—Continued

MAY 1992 TO JULY 1992									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MAY			JUNE			JULY		
1	---	---	---	113	110	112	144	131	138
2	---	---	---	113	111	112	131	126	127
3	---	---	---	113	111	112	126	123	125
4	---	---	---	116	112	114	123	121	122
5	---	---	---	116	115	116	124	122	123
6	---	---	---	119	116	118	129	124	126
7	---	---	---	120	118	119	130	126	128
8	---	---	---	121	120	121	---	---	---
9	---	---	---	122	121	122	---	---	---
10	---	---	---	124	122	123	---	---	---
11	---	---	---	126	120	123	---	---	---
12	---	---	---	122	120	121	---	---	---
13	---	---	---	121	119	120	---	---	---
14	---	---	---	125	120	123	---	---	---
15	---	---	---	123	117	120	---	---	---
16	---	---	---	118	114	117	---	---	---
17	---	---	---	115	113	114	---	---	---
18	---	---	---	117	114	116	---	---	---
19	---	---	---	120	116	118	---	---	---
20	---	---	---	124	120	122	---	---	---
21	---	---	---	129	124	126	---	---	---
22	---	---	---	133	128	130	---	---	---
23	---	---	---	134	132	133	---	---	---
24	---	---	---	136	134	134	---	---	---
25	---	---	---	136	134	135	---	---	---
26	---	---	---	138	135	136	---	---	---
27	---	---	---	139	136	138	---	---	---
28	---	---	---	141	137	139	141	137	139
29	---	---	---	140	128	135	142	138	140
30	112	109	111	143	128	136	142	138	140
31	113	110	112	---	---	---	144	140	142

Table 18. Daily values for specific conductance during summers, South Umpqua River at Days Creek, Oregon, 1991-92—Continued

AUGUST 1992 TO OCTOBER 1992									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	AUGUST			SEPTEMBER			OCTOBER		
1	145	140	143	176	172	173	182	180	181
2	146	140	143	176	172	174	180	175	177
3	148	142	144	177	173	175	177	175	176
4	148	143	145	177	173	175	177	173	175
5	148	142	145	177	173	175	176	172	175
6	148	143	146	178	172	175	179	175	177
7	151	145	148	182	175	178	181	177	179
8	153	146	149	180	177	178	181	177	179
9	155	147	152	182	177	179	180	177	178
10	158	150	154	181	177	179	179	176	177
11	157	153	155	178	174	176	180	176	177
12	157	152	155	177	173	175	179	175	177
13	160	154	157	176	172	174	178	175	176
14	162	155	158	176	172	174	177	174	175
15	162	156	159	174	172	173	177	174	175
16	164	158	161	174	171	173	177	175	176
17	166	159	162	175	171	174	178	175	176
18	163	160	162	176	172	174	179	176	177
19	164	157	161	177	172	175	180	176	178
20	165	159	162	178	174	176	180	178	179
21	163	159	161	180	176	178	179	178	178
22	163	161	162	181	177	179	182	178	180
23	164	160	163	181	177	179	182	179	181
24	167	161	164	181	177	179	180	172	176
25	169	163	166	181	178	179	173	172	172
26	171	165	168	182	179	181	---	---	---
27	173	167	170	185	181	183	---	---	---
28	174	169	171	186	182	183	---	---	---
29	174	170	172	185	181	183	---	---	---
30	176	171	173	184	180	182	---	---	---
31	176	172	173	---	---	---	---	---	---

Table 19. Daily values for pH during summers, South Umpqua River at Days Creek, Oregon, 1991-92

[Units are in pH units. Data discrepancies between daily maximum or minimum pH values listed in this table and instantaneous values listed in table 9 are the results of slight differences in sampling times, locations, and instrumentation. "MAX" = daily maximum; "MIN" = daily minimum; "--" = data missing or not analyzed]

AUGUST 1991 TO OCTOBER 1991									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	AUGUST			SEPTEMBER			OCTOBER		
1	---	---	---	8.6	7.8	8.2	---	---	---
2	---	---	---	8.6	7.8	8.2	---	---	---
3	---	---	---	8.6	7.8	8.2	---	---	---
4	---	---	---	8.6	7.8	8.2	---	---	---
5	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	8.3	8.0	8.1
10	---	---	---	---	---	---	8.3	8.0	8.1
11	---	---	---	---	---	---	8.3	8.0	8.1
12	---	---	---	---	---	---	8.3	8.0	8.2
13	---	---	---	---	---	---	8.2	8.0	8.1
14	---	---	---	---	---	---	8.2	7.9	8.0
15	---	---	---	---	---	---	8.2	7.9	8.0
16	8.8	7.9	8.3	---	---	---	8.2	7.9	8.1
17	8.8	7.8	8.3	---	---	---	8.2	8.0	8.1
18	8.8	7.8	8.4	8.5	8.0	8.2	8.2	8.0	8.1
19	8.9	7.8	8.4	8.5	7.9	8.2	8.1	8.0	8.1
20	8.8	7.8	8.4	8.5	8.0	8.3	8.2	8.0	8.1
21	8.8	7.8	8.4	8.5	8.2	8.4	8.1	8.0	8.0
22	8.8	7.8	8.4	8.5	8.2	8.4	8.2	7.9	8.0
23	8.8	7.8	8.4	---	---	---	8.1	7.9	8.0
24	8.8	7.9	8.4	8.3	8.0	8.2	8.1	7.8	8.0
25	8.7	7.9	8.4	8.3	7.9	8.2	8.0	7.8	7.9
26	8.7	7.9	8.3	8.4	7.9	8.2	7.9	7.7	7.8
27	8.6	7.9	8.3	8.3	8.0	8.2	7.8	7.6	7.7
28	8.5	7.8	8.2	8.2	8.0	8.1	7.8	7.6	7.7
29	8.6	7.8	8.2	8.3	8.0	8.1	7.8	7.6	7.7
30	8.6	7.8	8.2	8.3	7.9	8.1	---	---	---
31	8.6	7.8	8.2	---	---	---	---	---	---

Table 19. Daily values for pH during summers, South Umpqua River at Days Creek, Oregon, 1991-92—Continued

MAY 1992 TO JULY 1992									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MAY			JUNE			JULY		
1	---	---	---	8.9	7.9	8.4	---	---	---
2	---	---	---	8.9	7.8	8.3	8.8	7.8	8.2
3	---	---	---	8.9	7.8	8.4	8.7	7.8	8.2
4	---	---	---	9.0	7.8	8.4	8.6	7.7	8.2
5	---	---	---	9.0	7.9	8.4	8.5	7.6	8.1
6	---	---	---	8.9	7.8	8.3	8.6	7.7	8.1
7	---	---	---	8.9	7.8	8.3	8.6	7.7	8.1
8	---	---	---	8.9	7.8	8.3	---	---	---
9	---	---	---	8.9	7.8	8.4	---	---	---
10	---	---	---	8.8	7.9	8.3	---	---	---
11	---	---	---	8.7	7.8	8.2	---	---	---
12	---	---	---	8.5	7.8	8.1	---	---	---
13	---	---	---	8.5	7.8	8.1	---	---	---
14	---	---	---	8.6	7.8	8.2	---	---	---
15	---	---	---	8.7	7.9	8.2	---	---	---
16	---	---	---	8.7	7.9	8.3	---	---	---
17	---	---	---	8.7	7.9	8.3	---	---	---
18	---	---	---	8.7	7.9	8.3	---	---	---
19	---	---	---	8.7	7.7	8.2	---	---	---
20	---	---	---	8.7	7.7	8.2	---	---	---
21	---	---	---	8.6	7.6	8.1	---	---	---
22	---	---	---	8.7	7.6	8.1	---	---	---
23	---	---	---	8.7	7.6	8.2	---	---	---
24	---	---	---	8.7	7.6	8.2	---	---	---
25	---	---	---	8.7	7.6	8.2	---	---	---
26	---	---	---	8.9	7.8	8.3	---	---	---
27	---	---	---	8.9	7.8	8.4	---	---	---
28	---	---	---	8.8	7.8	8.3	8.4	7.5	8.0
29	---	---	---	8.7	7.8	8.2	8.4	7.6	8.0
30	8.9	7.9	8.4	8.7	7.9	8.3	8.4	7.6	8.1
31	9.0	7.9	8.4	---	---	---	8.4	7.6	8.1

Table 19. Daily values for pH during summers, South Umpqua River at Days Creek, Oregon, 1991-92—Continued

AUGUST 1992 TO OCTOBER 1992									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	AUGUST			SEPTEMBER			OCTOBER		
1	8.4	7.7	8.1	8.1	7.8	8.0	7.8	7.5	7.6
2	8.4	7.8	8.2	8.1	7.7	7.9	7.7	7.2	7.5
3	8.4	7.8	8.2	8.2	7.7	7.9	7.8	7.5	7.7
4	8.3	7.7	8.0	8.1	7.8	8.0	7.9	7.5	7.7
5	8.3	7.9	8.1	8.1	7.8	8.0	7.8	7.4	7.6
6	8.3	7.7	8.1	8.2	7.8	8.0	7.9	7.4	7.7
7	8.3	7.8	8.1	8.2	7.8	8.0	7.9	7.5	7.7
8	8.3	7.8	8.1	8.2	7.8	8.0	7.8	7.6	7.7
9	8.3	7.8	8.1	8.2	7.9	8.1	7.9	7.7	7.8
10	8.3	7.7	8.0	8.1	7.8	8.0	7.9	7.6	7.8
11	8.2	7.7	8.0	8.1	7.8	8.0	7.9	7.6	7.8
12	8.1	7.6	7.8	8.1	7.8	8.0	7.9	7.6	7.8
13	8.2	7.6	7.9	8.2	7.9	8.0	7.9	7.7	7.8
14	8.2	7.8	8.0	8.2	7.9	8.0	7.9	7.7	7.8
15	8.2	7.8	8.0	8.1	7.7	7.9	7.9	7.7	7.8
16	8.2	7.9	8.1	8.0	7.7	7.9	7.9	7.7	7.8
17	8.2	7.9	8.1	8.0	7.5	7.8	7.9	7.7	7.8
18	8.4	7.9	8.1	8.0	7.7	7.9	7.9	7.7	7.8
19	8.3	8.0	8.2	8.0	7.6	7.8	7.8	7.7	7.8
20	8.4	8.0	8.2	8.0	7.7	7.8	7.8	7.6	7.7
21	8.3	8.0	8.1	8.0	7.6	7.8	7.8	7.6	7.7
22	8.3	7.9	8.1	8.0	7.6	7.8	7.8	7.5	7.7
23	8.2	7.9	8.1	8.1	7.7	7.9	7.8	7.5	7.6
24	8.2	7.9	8.1	7.9	7.6	7.7	7.7	7.5	7.6
25	8.3	7.9	8.0	7.9	7.5	7.7	7.8	7.5	7.6
26	8.2	7.9	8.1	8.0	7.4	7.7	---	---	---
27	8.2	7.9	8.0	8.0	7.4	7.7	---	---	---
28	8.2	7.8	8.0	7.9	7.5	7.7	---	---	---
29	8.2	7.8	8.0	8.0	7.6	7.8	---	---	---
30	8.2	7.8	8.0	7.9	7.6	7.8	---	---	---
31	8.1	7.8	8.0	---	---	---	---	---	---

Table 20. Daily values for dissolved Oxygen during summers, South Umpqua River at Days Creek, Oregon, 1991-92

[Units are in milligrams per liter as oxygen. Data discrepancies between daily maximum or minimum dissolved oxygen values listed in this table and instantaneous values listed in table 9 are the results of slight differences in sampling times, locations, and instrumentation. "MAX" = daily maximum; "MIN" = daily minimum; "--" = data missing or not analyzed]

AUGUST 1991 TO OCTOBER 1991									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	AUGUST			SEPTEMBER			OCTOBER		
1	---	---	---	9.4	8.2	8.8	---	---	---
2	---	---	---	9.7	8.3	8.9	---	---	---
3	---	---	---	9.5	8.3	8.8	---	---	---
4	---	---	---	9.6	8.1	---	---	---	---
5	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	10.1	9.1	9.6
10	---	---	---	---	---	---	10.2	9.1	9.6
11	---	---	---	---	---	---	10.1	9.2	9.6
12	---	---	---	---	---	---	10.1	9.2	9.6
13	---	---	---	---	---	---	10.2	9.3	9.7
14	---	---	---	---	---	---	10.1	9.3	9.7
15	---	---	---	---	---	---	10.2	9.3	9.8
16	8.7	7.2	7.6	---	---	---	10.3	9.4	9.8
17	8.8	7.3	7.9	---	---	---	10.4	9.6	10.0
18	8.9	7.2	8.0	9.0	7.9	8.4	10.7	9.7	10.2
19	8.9	7.3	8.0	9.0	7.8	8.3	10.9	10.2	10.5
20	8.8	7.3	7.9	9.2	7.9	8.5	10.8	10.0	10.4
21	8.9	7.1	7.9	9.6	8.3	8.9	10.6	9.9	10.2
22	8.9	7.2	8.0	9.7	8.6	9.1	11.0	10.0	10.5
23	9.2	7.3	8.2	---	---	---	11.2	10.5	10.8
24	9.2	7.7	8.4	9.3	8.4	8.8	11.2	10.6	10.8
25	9.3	7.8	8.5	9.1	8.0	8.5	11.0	10.5	10.7
26	9.3	8.0	8.6	9.1	7.8	8.4	10.9	10.4	10.7
27	9.5	7.9	8.7	9.0	7.8	8.4	11.5	10.9	11.3
28	9.3	8.2	8.7	9.0	7.8	8.4	11.7	11.3	11.5
29	9.2	8.0	8.6	9.2	8.1	8.6	11.7	11.3	11.4
30	9.3	8.0	8.6	9.1	8.1	8.5	---	---	---
31	9.5	8.0	8.7	---	---	---	---	---	---

Table 20. Daily values for dissolved Oxygen during summers, South Umpqua River at Days Creek, Oregon, 1991-92—Continued

DAY	MAY 1992 TO JULY 1992								
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MAY			JUNE			JULY		
1	---	---	---	8.6	7.5	8.1	8.4	7.5	7.9
2	---	---	---	8.8	7.7	8.2	8.2	7.3	7.7
3	---	---	---	9.0	7.7	8.3	8.2	7.2	7.7
4	---	---	---	8.7	7.7	8.3	8.1	7.1	7.6
5	---	---	---	8.8	7.7	8.2	8.3	7.2	7.7
6	---	---	---	8.8	7.6	8.2	8.3	7.4	7.8
7	---	---	---	8.7	7.6	8.1	8.3	7.4	7.8
8	---	---	---	8.7	7.6	8.1	---	---	---
9	---	---	---	8.7	7.6	8.1	---	---	---
10	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---
12	---	---	---	9.0	8.0	8.5	---	---	---
13	---	---	---	9.1	8.3	8.7	---	---	---
14	---	---	---	9.2	8.5	8.8	---	---	---
15	---	---	---	9.3	8.4	8.8	---	---	---
16	---	---	---	9.2	8.3	8.7	---	---	---
17	---	---	---	9.4	8.1	8.7	---	---	---
18	---	---	---	8.9	7.6	8.4	---	---	---
19	---	---	---	8.5	7.2	7.9	---	---	---
20	---	---	---	8.3	6.9	7.6	---	---	---
21	---	---	---	8.0	6.6	7.3	---	---	---
22	---	---	---	7.8	6.4	7.0	---	---	---
23	---	---	---	7.4	6.2	6.8	---	---	---
24	---	---	---	7.4	6.1	6.8	---	---	---
25	---	---	---	7.6	6.2	6.8	---	---	---
26	---	---	---	7.6	6.4	7.0	---	---	---
27	---	---	---	7.8	6.5	7.1	---	---	---
28	---	---	---	7.7	6.6	7.0	9.0	7.2	8.0
29	---	---	---	8.0	6.9	7.4	8.9	7.1	7.9
30	8.4	7.6	8.0	8.1	7.3	7.7	8.9	7.0	7.8
31	8.5	7.5	8.0	---	---	---	8.7	6.8	7.7

Table 20. Daily values for dissolved Oxygen during summers, South Umpqua River at Days Creek, Oregon, 1991-92—Continued

AUGUST 1992 TO OCTOBER 1992									
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
AUGUST			SEPTEMBER			OCTOBER			
1	8.9	6.8	7.8	8.3	7.8	8.0	9.1	8.4	8.8
2	8.8	7.0	7.8	8.8	7.4	8.1	10.0	9.0	9.5
3	8.7	6.8	7.7	9.1	7.6	8.3	10.2	9.2	9.6
4	8.7	6.8	7.7	9.1	7.7	8.3	10.1	9.1	9.6
5	9.0	7.3	8.1	9.3	7.8	8.5	10.3	9.1	9.6
6	8.8	7.1	7.9	9.6	8.4	9.0	10.4	9.5	9.9
7	8.5	7.0	7.7	9.7	8.4	9.0	10.5	9.3	9.9
8	8.7	7.2	7.9	9.5	8.3	8.9	10.4	9.3	9.8
9	8.7	7.4	8.0	9.2	8.1	8.6	10.1	9.3	9.7
10	8.6	7.3	7.9	9.1	7.8	8.4	10.3	9.2	9.7
11	9.7	7.0	8.3	9.0	7.9	8.5	10.2	9.3	9.7
12	9.3	7.9	8.5	9.2	7.9	8.6	10.2	9.2	9.7
13	9.4	8.0	8.7	9.5	8.4	8.9	10.3	9.3	9.8
14	9.4	7.7	8.5	9.6	8.5	9.0	10.7	9.8	10.2
15	9.4	7.6	8.5	9.5	8.5	9.0	10.8	10.0	10.3
16	9.3	7.7	8.4	9.4	8.6	9.0	10.5	9.8	10.2
17	9.2	7.5	8.3	9.3	8.4	8.9	10.3	9.7	10.0
18	8.2	7.2	7.7	9.2	8.3	8.8	10.3	9.4	9.8
19	8.4	6.9	7.7	9.3	8.2	8.8	10.1	9.5	9.8
20	8.8	7.1	7.9	9.2	8.3	8.8	10.0	9.3	9.6
21	9.0	7.5	8.2	9.2	8.1	8.7	10.0	9.3	9.7
22	9.3	7.9	8.6	9.0	8.0	8.5	10.2	9.4	9.7
23	9.4	8.3	8.8	9.2	8.0	8.6	10.2	9.4	9.8
24	9.2	8.2	8.7	9.2	8.1	8.7	10.3	9.4	9.8
25	9.6	8.2	8.9	9.5	8.4	8.9	10.1	9.3	9.7
26	9.4	8.2	8.8	9.6	8.5	9.0	---	---	---
27	9.2	8.0	8.6	9.6	8.4	8.9	---	---	---
28	8.9	7.8	8.4	9.5	8.5	8.9	---	---	---
29	8.9	7.7	8.2	9.7	8.4	9.0	---	---	---
30	8.8	7.7	8.2	9.6	8.6	9.0	---	---	---
31	9.0	7.4	8.2	---	---	---	---	---	---

Table 21. Daily values for water temperature, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992

[Units are in pH units. Data discrepancies between daily maximum or minimum water temperature values listed in this table and instantaneous values listed in table 9 are the results of slight differences in sampling times, locations, and instrumentation. "MAX" = daily maximum; "MIN" = daily minimum; "--" = data missing or not analyzed]

JULY 1990 TO OCTOBER 1990												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER			OCTOBER		
1	26.0	23.0	24.5	27.0	23.5	25.0	23.5	22.0	22.5	20.0	18.5	19.5
2	24.5	22.5	23.5	27.5	23.0	25.0	25.0	21.5	23.0	20.0	17.5	18.5
3	23.5	21.0	22.5	28.0	23.0	25.5	25.0	21.0	23.0	20.5	18.0	19.0
4	24.5	21.0	22.5	29.0	23.5	26.0	26.0	22.0	23.5	20.5	17.0	---
5	23.5	21.5	22.5	29.0	24.0	26.5	26.0	22.0	23.5	---	---	---
6	24.0	21.0	22.5	27.5	23.5	25.5	25.5	22.0	24.0	18.5	15.5	17.0
7	25.0	20.5	23.0	28.0	23.5	26.0	24.5	22.0	23.5	18.0	14.5	16.0
8	26.0	22.0	24.0	---	---	---	24.0	22.0	23.0	17.5	14.0	15.5
9	26.5	22.5	24.5	---	---	---	23.5	21.5	22.5	17.0	13.5	15.0
10	28.0	23.5	25.5	30.0	---	---	24.5	21.0	23.0	16.0	14.0	15.0
11	28.0	24.5	26.5	30.0	25.5	27.5	23.0	21.5	22.0	16.0	12.5	14.5
12	29.5	25.5	27.5	29.5	25.5	27.5	23.0	20.5	21.5	15.0	14.0	14.5
13	30.0	---	---	---	---	---	---	---	---	15.5	13.5	14.5
14	30.0	25.5	27.5	28.5	---	---	---	---	---	16.0	13.0	14.5
15	29.5	25.0	27.5	26.0	24.0	25.0	22.0	20.5	21.5	15.5	14.5	14.5
16	29.5	25.5	27.0	26.0	23.0	24.5	22.0	19.5	21.0	---	13.5	---
17	29.0	24.5	26.5	24.5	22.5	24.0	22.5	20.5	21.5	14.5	---	---
18	---	24.5	---	24.5	21.5	23.0	22.5	19.5	21.0	14.0	13.0	13.5
19	---	---	---	25.5	21.5	23.5	21.5	19.5	20.5	14.5	12.5	13.5
20	---	---	---	25.0	22.0	23.5	22.5	19.0	20.5	13.5	12.0	12.5
21	30.0	---	---	24.5	23.0	23.5	22.5	19.0	21.0	13.0	12.0	12.5
22	30.0	25.5	27.5	26.5	23.0	24.5	23.0	19.0	21.0	13.0	12.0	12.5
23	28.5	---	---	26.0	22.5	24.0	21.5	19.5	20.5	14.5	12.5	13.5
24	28.0	24.5	26.0	25.0	21.5	23.0	22.0	19.5	20.5	14.5	13.0	13.5
25	27.5	23.5	25.5	---	---	---	22.5	20.0	21.0	14.5	12.5	13.5
26	27.5	23.0	25.0	---	---	---	22.0	20.0	21.0	15.0	13.5	14.0
27	28.0	23.5	25.5	---	---	---	22.0	20.0	20.5	16.0	14.0	14.5
28	28.5	23.5	25.5	---	---	---	22.0	19.5	20.5	16.0	14.0	14.5
29	29.0	24.0	26.5	---	---	---	22.5	19.5	21.0	15.0	13.5	---
30	28.0	24.5	26.0	23.5	---	---	22.5	19.5	21.0	14.0	---	---
31	27.5	24.0	25.5	24.0	20.5	22.5	---	---	---	14.0	13.5	14.0

Table 21. Daily values for water temperature, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

NOVEMBER 1990 TO FEBRUARY 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
NOVEMBER			DECEMBER			JANUARY			FEBRUARY			
1	13.5	11.5	12.5	6.5	6.0	6.5	.5	.0	.5	4.0	3.0	3.5
2	11.5	10.5	11.0	6.5	6.0	6.5	.5	.0	.5	6.0	4.0	5.0
3	11.0	10.5	11.0	6.0	6.0	6.0	1.0	.5	.5	7.0	5.5	6.5
4	12.0	11.0	11.5	6.5	6.0	6.5	1.0	1.0	1.0	7.5	7.0	7.5
5	11.5	10.5	11.5	6.5	6.0	6.5	1.0	1.0	1.0	8.0	7.5	7.5
6	11.0	10.5	10.5	7.0	6.5	6.5	1.5	1.0	1.5	8.0	7.5	8.0
7	10.5	10.0	10.5	6.5	6.0	6.5	2.5	1.5	2.0	8.0	7.5	7.5
8	11.0	10.0	10.5	6.5	6.0	6.5	3.0	2.5	3.0	7.5	7.0	7.5
9	11.5	10.5	11.0	7.0	6.5	6.5	3.5	2.5	3.0	8.0	7.0	7.5
10	10.5	10.0	10.5	7.5	7.0	7.5	4.0	3.0	3.5	7.5	7.0	7.5
11	10.0	9.5	10.0	7.5	7.0	7.5	5.5	4.0	5.0	8.0	7.5	7.5
12	10.5	10.0	10.0	7.0	6.5	7.0	7.0	5.5	6.5	8.0	8.0	8.0
13	10.5	10.0	10.5	6.5	6.0	6.5	7.5	7.0	7.5	9.0	8.0	8.5
14	10.5	10.0	10.0	6.0	5.5	5.5	8.0	7.5	7.5	9.5	9.0	9.0
15	9.5	8.5	9.0	5.5	5.0	5.0	8.0	7.5	7.5	9.5	9.0	9.5
16	8.5	7.5	8.0	5.0	5.0	5.0	---	---	---	10.0	9.0	9.5
17	8.0	7.5	7.5	6.0	5.0	5.5	---	---	---	9.5	9.5	9.5
18	8.0	7.5	7.5	6.5	6.0	6.0	---	---	---	9.5	9.0	9.0
19	8.0	7.5	7.5	6.0	4.5	5.5	6.5	---	---	9.0	8.5	9.0
20	8.0	7.5	7.5	4.5	2.0	3.0	7.0	6.5	6.5	10.0	8.5	9.0
21	8.5	8.0	8.0	2.0	.0	1.0	6.5	5.5	6.0	9.5	9.0	9.5
22	8.5	8.0	8.0	.5	.0	.5	5.5	4.5	5.0	9.0	8.5	9.0
23	8.0	8.0	8.0	---	---	---	4.5	3.5	4.0	9.0	8.0	8.5
24	8.5	7.5	8.0	---	---	---	3.5	3.5	3.5	9.0	8.5	9.0
25	8.5	8.5	8.5	---	---	---	3.5	3.0	3.5	9.5	8.5	9.0
26	8.5	7.0	7.5	---	---	---	3.5	3.0	3.5	9.5	8.5	9.0
27	7.5	7.0	7.5	1.0	---	---	3.5	3.0	3.0	9.0	8.5	9.0
28	7.0	7.0	7.0	1.5	1.0	1.0	3.0	2.5	2.5	---	---	---
29	7.0	6.5	7.0	1.0	.5	.5	3.0	2.0	2.5	---	---	---
30	7.0	6.5	7.0	.5	.0	.5	2.5	1.5	2.0	---	---	---
31	---	---	---	.5	.0	.5	3.0	2.0	2.5	---	---	---

Table 21. Daily values for water temperature, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

MARCH 1991 TO JUNE 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MARCH			APRIL			MAY			JUNE		
1	9.0	8.5	9.0	11.0	11.0	11.0	13.5	12.0	12.5	16.5	14.0	15.5
2	9.0	8.5	9.0	11.0	10.5	10.5	14.0	12.5	13.5	18.5	16.0	17.0
3	9.0	8.5	8.5	10.5	10.0	10.5	14.0	12.5	13.5	18.5	17.0	18.0
4	9.0	8.5	9.0	10.5	10.0	10.0	15.0	13.5	14.0	---	---	---
5	---	---	---	10.5	10.0	10.0	16.0	14.5	15.0	---	---	---
6	7.5	7.0	7.0	10.0	9.5	9.5	15.5	14.5	15.0	19.0	16.5	18.0
7	7.5	7.0	7.5	9.5	8.5	9.0	14.5	14.0	14.5	19.0	17.5	18.5
8	7.5	7.0	7.5	8.5	8.0	8.5	14.0	13.0	13.5	20.0	18.0	19.0
9	8.0	7.0	7.5	9.0	8.0	8.5	13.0	12.0	12.5	21.0	19.0	20.0
10	7.5	7.0	7.5	8.5	7.5	8.0	12.5	11.5	12.0	22.0	21.0	21.5
11	7.0	6.5	7.0	8.0	7.0	7.5	12.0	11.0	11.5	22.0	21.0	21.5
12	7.5	6.5	7.0	9.0	7.5	8.0	12.5	11.5	12.0	21.5	20.0	21.0
13	8.0	7.0	7.5	11.0	8.5	9.5	12.5	12.0	12.5	20.5	19.0	20.0
14	7.5	7.0	7.5	11.5	10.0	10.5	14.5	12.5	13.5	20.5	19.0	19.5
15	8.0	6.5	7.0	11.0	10.0	10.5	14.5	13.5	14.0	20.0	18.5	19.5
16	7.5	6.5	7.0	10.0	9.5	10.0	14.5	14.0	14.5	20.0	18.5	19.5
17	8.0	7.0	7.5	11.0	9.5	10.0	14.0	12.5	13.5	20.5	18.5	19.5
18	9.0	7.5	8.5	11.5	10.0	10.5	12.5	9.5	10.5	21.0	19.5	20.0
19	9.0	8.0	8.5	12.5	11.0	11.5	9.5	9.0	9.5	19.5	18.0	19.0
20	9.0	8.0	8.5	12.5	12.0	12.5	10.5	9.5	10.0	19.0	17.5	18.0
21	8.0	7.5	8.0	13.0	12.0	12.5	12.0	10.5	11.0	19.5	18.0	18.5
22	8.0	7.0	7.5	14.0	12.0	13.0	13.0	12.0	12.5	20.5	19.0	19.5
23	8.0	7.5	7.5	13.5	13.0	13.0	15.0	12.5	13.5	21.0	19.0	20.0
24	8.5	7.5	8.0	13.0	12.0	12.5	15.5	13.5	14.5	21.0	19.5	20.0
25	8.5	7.5	8.0	12.0	11.5	12.0	15.5	13.5	14.5	20.0	19.0	19.5
26	8.5	7.0	8.0	11.5	10.5	11.0	15.5	13.5	14.5	21.0	19.0	20.0
27	9.0	7.0	8.0	11.5	10.0	10.5	15.0	14.0	14.5	21.0	19.5	20.5
28	9.0	8.0	8.5	11.0	10.0	10.5	15.5	14.0	14.5	21.5	19.5	20.5
29	9.5	8.0	9.0	12.0	10.0	11.0	15.0	14.5	14.5	22.0	20.0	21.0
30	10.5	8.5	9.5	12.5	11.0	11.5	14.5	13.5	14.5	22.5	20.0	21.0
31	11.5	10.0	10.5	---	---	---	15.0	13.0	14.0	---	---	---

Table 21. Daily values for water temperature, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

JULY 1991 TO OCTOBER 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER			OCTOBER		
1	24.0	20.5	22.5	28.0	24.5	26.0	24.0	21.5	22.5	22.0	19.0	20.5
2	26.0	22.0	24.0	28.0	24.5	26.0	24.0	20.5	22.5	21.5	18.5	20.0
3	27.5	24.0	25.5	27.5	24.0	26.0	25.0	21.0	23.0	20.5	17.5	19.0
4	27.5	24.5	26.0	27.0	24.5	25.5	25.5	21.5	23.5	20.5	17.0	---
5	27.0	24.0	25.5	26.5	24.0	25.0	---	22.0	---	---	---	---
6	26.5	23.0	24.5	27.0	24.0	25.5	---	---	---	---	---	---
7	26.5	22.5	24.5	25.0	24.0	24.5	24.0	---	---	19.5	17.0	18.0
8	27.0	23.0	25.0	27.5	23.5	25.5	23.0	20.5	22.0	19.5	16.5	---
9	27.0	23.0	25.0	25.5	24.0	24.5	23.0	20.0	21.5	---	---	---
10	27.0	23.0	24.5	26.0	23.0	24.0	23.5	20.0	21.5	20.0	---	---
11	27.0	23.0	25.0	25.5	22.0	24.0	---	19.5	---	20.0	16.5	18.5
12	27.5	23.5	25.5	26.0	22.0	24.0	---	---	---	20.0	16.5	---
13	26.5	24.0	25.5	26.5	22.5	24.5	---	---	---	---	---	---
14	26.5	24.0	25.0	27.0	23.0	25.0	---	---	---	19.5	---	---
15	25.5	23.0	24.5	27.0	23.5	25.5	23.0	19.0	21.0	19.5	16.5	18.0
16	24.5	23.0	23.5	27.0	23.5	25.0	23.5	19.5	21.5	18.0	16.5	17.5
17	25.0	22.0	23.5	27.5	24.0	25.5	23.5	20.0	22.0	18.0	15.5	17.0
18	25.0	22.0	23.5	27.0	24.0	25.5	24.5	20.5	22.5	16.5	14.5	15.5
19	25.5	22.5	24.0	27.5	24.0	25.5	24.0	21.0	22.5	17.0	14.0	15.5
20	26.0	22.5	24.0	28.0	24.5	26.0	23.0	20.5	21.5	17.5	14.5	16.0
21	26.5	22.0	24.5	28.0	24.5	26.0	22.0	19.0	20.5	---	14.5	---
22	27.5	23.0	25.5	27.5	24.5	26.0	22.0	18.0	20.0	---	---	---
23	29.0	24.5	26.5	25.5	23.5	24.5	---	18.5	---	---	---	---
24	28.0	25.5	26.5	25.5	22.5	24.0	---	---	---	---	---	---
25	26.5	24.5	25.5	25.0	22.0	23.5	22.5	19.0	21.0	13.0	---	---
26	26.5	23.5	25.0	24.5	21.0	23.0	22.0	19.0	20.5	13.5	12.5	13.0
27	27.5	23.5	25.5	22.5	21.0	22.0	21.5	19.5	20.5	12.5	11.5	12.0
28	28.0	24.0	26.0	23.0	21.0	22.0	21.0	19.0	20.0	12.0	11.0	11.5
29	28.5	24.5	26.5	24.5	21.0	22.5	21.0	18.0	19.5	11.5	10.5	11.0
30	29.0	25.0	27.0	24.5	21.0	23.0	22.0	18.5	20.5	11.0	9.5	10.5
31	29.0	25.5	27.0	23.5	21.5	22.5	---	---	---	10.0	---	---

Table 21. Daily values for water temperature, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

NOVEMBER 1991 TO FEBRUARY 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
NOVEMBER			DECEMBER			JANUARY			FEBRUARY			
1	10.5	9.0	9.5	6.5	5.5	6.0	7.0	6.5	6.5	9.0	8.5	8.5
2	10.5	9.5	10.0	6.5	6.0	6.5	7.0	6.5	6.5	8.5	8.0	8.5
3	11.0	9.5	10.5	6.5	6.5	6.5	6.5	6.5	6.5	8.0	7.5	7.5
4	11.5	10.5	11.0	7.0	6.0	6.5	6.5	6.0	6.0	7.5	6.5	7.0
5	12.5	11.0	12.0	7.5	7.0	7.0	6.0	6.0	6.0	7.0	6.0	6.5
6	13.0	12.0	12.5	8.0	7.5	8.0	6.5	6.0	6.5	7.0	6.0	6.5
7	15.0	13.0	14.0	8.5	7.5	8.5	6.5	6.5	6.5	6.5	6.0	6.5
8	15.0	14.0	14.5	8.5	7.5	8.0	6.5	6.0	6.0	7.0	5.5	6.5
9	15.0	14.0	14.5	7.5	7.0	7.5	6.0	5.5	6.0	7.5	6.5	7.0
10	15.5	14.0	14.5	7.5	7.0	7.0	6.5	5.5	6.0	8.0	7.0	7.5
11	---	---	---	7.0	6.5	7.0	6.5	6.0	6.5	8.5	7.5	8.0
12	15.5	14.5	15.0	7.5	7.0	7.5	6.5	6.0	6.0	9.5	8.0	8.5
13	15.0	13.5	---	7.5	7.0	7.0	6.0	5.5	6.0	9.5	9.0	9.5
14	13.5	12.0	13.0	7.0	7.0	7.0	6.0	5.5	6.0	9.5	8.5	9.0
15	12.0	11.0	12.0	7.0	6.5	7.0	6.5	6.0	6.5	8.5	8.0	8.5
16	11.5	10.5	11.0	6.5	6.0	6.5	7.0	6.5	6.5	8.5	8.0	8.0
17	11.5	10.5	11.0	6.0	5.5	6.0	7.5	7.0	7.0	8.5	7.5	8.0
18	11.5	9.0	10.0	6.0	5.5	5.5	7.5	7.0	7.0	8.5	8.0	8.5
19	9.5	9.0	9.0	6.0	5.5	5.5	7.0	6.0	6.5	9.0	8.5	9.0
20	9.5	9.5	9.5	6.0	5.5	6.0	6.0	5.5	5.5	9.5	9.0	9.5
21	9.5	9.0	9.5	6.0	5.5	6.0	5.5	5.0	5.0	10.5	9.5	10.0
22	9.0	8.5	9.0	6.0	5.5	5.5	6.0	5.0	5.5	10.5	9.5	10.0
23	8.5	8.0	8.0	6.0	5.5	5.5	6.5	5.5	6.0	10.0	9.5	9.5
24	9.0	8.0	8.5	6.0	5.5	6.0	6.5	6.0	6.5	10.5	9.0	9.5
25	9.5	8.5	9.0	6.0	5.5	6.0	7.5	6.5	7.0	10.5	9.0	9.5
26	9.5	9.0	9.0	6.0	5.5	6.0	7.5	7.0	7.0	11.0	9.5	10.0
27	9.5	9.0	9.0	6.5	6.0	6.0	8.5	7.5	8.0	11.5	10.5	11.0
28	9.0	8.5	8.5	7.0	6.5	7.0	9.0	8.5	8.5	11.5	11.0	11.0
29	8.5	7.0	8.0	7.5	7.0	7.0	9.0	8.5	9.0	11.0	10.5	10.5
30	7.0	6.5	6.5	8.0	7.5	7.5	9.0	8.5	9.0	---	---	---
31	---	---	---	7.5	7.0	7.0	8.5	8.5	8.5	---	---	---

Table 21. Daily values for water temperature, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

MARCH 1991 TO JUNE 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MARCH			APRIL			MAY			JUNE		
1	11.0	10.0	10.5	16.5	14.5	15.5	18.0	16.0	17.0	26.0	23.0	24.5
2	11.5	10.5	11.0	17.5	15.0	16.5	18.0	16.0	17.0	26.0	23.0	24.5
3	12.5	11.0	12.0	17.5	15.5	16.5	19.5	17.0	18.0	26.0	22.5	24.0
4	12.5	11.5	11.5	16.5	14.5	15.5	20.0	19.0	19.5	25.5	22.0	24.0
5	11.5	11.0	11.5	15.0	13.5	14.5	21.5	20.0	21.0	25.5	22.0	24.0
6	11.5	10.5	11.0	15.0	13.0	14.0	23.0	21.5	22.0	26.0	22.0	24.0
7	11.5	10.5	11.0	14.0	12.5	13.5	24.0	22.0	22.5	25.5	22.0	23.5
8	11.0	10.0	10.5	13.5	12.5	13.0	23.0	20.5	22.0	26.0	22.0	24.0
9	11.0	10.0	10.5	13.0	13.0	13.0	22.0	20.5	21.0	25.0	22.5	23.5
10	11.5	10.0	11.0	13.0	12.0	12.5	22.0	20.0	21.0	25.0	22.5	23.5
11	11.5	11.0	11.5	12.0	11.5	12.0	21.5	19.5	20.5	23.5	21.5	22.5
12	12.5	11.0	12.0	13.0	11.5	12.0	21.0	19.0	20.0	22.5	20.5	21.5
13	12.5	11.5	12.0	13.0	12.0	12.5	21.5	19.0	20.0	21.0	19.5	20.5
14	12.5	11.5	12.0	13.5	12.0	12.5	22.5	19.5	21.0	20.5	19.0	20.0
15	12.0	11.5	11.5	14.0	12.5	13.0	23.0	19.5	21.5	21.5	19.0	20.0
16	12.0	11.5	12.0	14.0	13.0	13.5	23.5	20.0	21.5	21.0	19.0	20.0
17	12.5	11.5	12.0	14.0	13.0	13.5	24.0	20.5	22.5	22.5	19.0	20.5
18	12.5	11.5	12.0	14.0	12.5	13.0	24.5	21.0	22.5	24.0	19.5	21.5
19	13.0	12.0	12.5	13.0	12.0	12.5	23.0	20.5	22.0	25.0	20.5	23.0
20	13.5	12.5	13.0	12.5	12.0	12.5	22.5	20.0	21.0	26.0	21.5	24.0
21	14.0	12.5	13.0	12.5	11.0	12.0	22.0	19.5	20.5	27.5	23.5	25.5
22	14.0	13.0	13.5	13.0	11.5	12.5	22.0	19.5	20.5	29.0	24.5	27.0
23	15.0	13.0	14.0	13.5	11.5	12.5	23.5	19.5	21.5	29.5	25.5	27.5
24	15.5	13.5	14.0	14.0	12.5	13.5	25.5	21.0	23.0	29.0	26.0	27.5
25	16.0	14.0	15.0	15.0	13.0	14.0	24.5	22.0	23.0	29.5	26.0	27.5
26	15.5	14.0	15.0	15.5	13.5	14.5	24.5	22.0	23.0	28.0	25.0	26.5
27	14.5	13.5	14.0	17.0	14.5	16.0	24.5	21.0	22.5	28.0	25.0	26.0
28	15.0	13.0	14.0	18.5	16.0	17.5	24.5	21.0	22.5	26.0	24.0	24.5
29	15.5	13.5	14.5	18.5	17.5	18.0	24.5	21.5	23.0	24.0	22.0	23.0
30	15.0	14.0	14.5	18.0	17.0	17.5	25.5	22.0	23.5	23.0	21.0	22.0
31	15.5	14.0	14.5	---	---	---	26.5	22.5	24.5	---	---	---

Table 21. Daily values for water temperature, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

JULY 1992 TO OCTOBER 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER			OCTOBER		
1	24.5	21.0	---	26.5	24.0	25.5	24.0	21.5	23.0	21.0	18.5	20.0
2	---	---	---	27.5	23.5	25.5	24.5	21.5	23.0	18.5	18.0	18.0
3	---	---	---	27.0	24.0	25.5	24.5	21.5	23.0	19.5	17.5	18.5
4	---	---	---	25.5	23.5	24.5	23.0	22.0	22.5	19.0	17.5	18.0
5	---	---	---	26.5	22.5	24.5	23.0	20.5	21.5	18.0	16.5	17.0
6	---	---	---	26.0	23.5	25.0	22.5	19.0	20.5	17.5	15.5	16.5
7	---	---	---	25.5	23.5	24.5	22.0	18.5	20.5	17.5	15.0	16.5
8	---	---	---	25.5	21.5	23.5	22.0	19.0	20.5	17.5	15.0	16.5
9	---	---	---	26.0	22.0	24.0	22.5	19.5	21.0	18.5	16.0	17.0
10	---	---	---	---	22.5	---	22.0	19.5	21.0	18.5	15.0	17.0
11	---	---	---	27.0	---	---	22.5	19.5	21.0	18.5	15.5	17.0
12	---	---	---	26.5	24.5	25.5	21.0	19.0	20.0	18.5	15.5	17.0
13	---	---	---	28.5	24.5	26.5	20.5	18.0	19.5	17.5	16.0	17.0
14	---	---	---	28.5	25.0	26.5	20.0	17.5	19.0	17.0	14.5	15.5
15	---	---	---	29.0	25.0	26.5	19.0	18.0	18.5	15.5	13.5	14.5
16	---	---	---	28.5	24.5	26.5	---	17.0	---	15.5	13.0	14.5
17	27.0	---	---	28.5	24.0	26.5	20.5	---	---	15.5	13.5	14.5
18	29.5	25.5	27.5	28.5	24.0	26.0	21.0	17.5	19.5	15.5	13.5	14.5
19	28.5	25.5	27.0	28.0	24.0	26.0	21.5	18.5	20.0	16.0	13.5	15.0
20	26.5	25.0	26.0	26.5	24.0	25.0	22.0	19.0	20.5	15.0	14.5	15.0
21	26.0	24.5	25.5	24.5	22.5	23.5	23.0	20.0	21.5	16.5	14.5	15.5
22	24.5	23.0	24.0	22.5	21.5	22.0	23.5	20.5	22.0	16.5	14.5	15.5
23	24.5	22.0	23.0	24.0	21.0	22.5	22.5	20.5	21.5	---	---	---
24	25.5	21.5	23.5	24.0	21.0	22.5	21.5	20.0	20.5	16.5	14.5	15.5
25	26.0	21.5	24.0	24.0	20.5	22.5	21.5	19.0	20.5	16.0	15.5	15.5
26	27.0	23.0	25.0	24.5	20.5	22.5	22.0	19.0	20.5	16.0	15.0	15.5
27	28.0	23.5	25.5	24.5	21.0	22.5	22.0	20.0	21.0	16.0	14.5	15.0
28	28.0	24.0	26.0	24.5	21.5	23.0	22.0	19.0	20.5	15.5	14.5	15.0
29	28.0	24.0	26.5	24.0	21.0	22.5	21.5	19.0	20.5	15.0	14.0	14.5
30	28.5	24.5	26.5	24.0	21.0	22.5	21.5	19.0	20.5	14.0	13.5	14.0
31	28.5	25.0	26.5	23.0	21.5	22.5	---	---	---	13.5	13.0	13.5

Table 22. Daily values for specific conductance, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992

[Units are in microsiemens per centimeter at 25 degrees Celsius. Data discrepancies between daily maximum or minimum specific conductance values listed in this table and instantaneous values listed in table 9 are the results of slight differences in sampling times, locations, and instrumentation. "MAX" = daily maximum; "MIN" = daily minimum; "--" = data missing or not analyzed]

JULY 1990 TO OCTOBER 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JULY			AUGUST			SEPTEMBER			OCTOBER			
1	121	116	119	156	147	153	163	155	159	183	175	178
2	123	119	121	156	148	153	158	153	156	183	175	179
3	125	117	121	158	151	155	163	154	158	180	174	177
4	125	120	123	162	151	156	163	155	159	---	---	---
5	125	119	123	159	151	155	163	153	159	---	---	---
6	126	120	124	162	151	156	163	155	160	182	173	179
7	129	122	126	162	152	158	163	155	161	183	173	179
8	132	121	128	---	---	---	164	157	162	182	173	178
9	132	126	130	---	---	---	165	156	162	182	174	179
10	132	126	130	---	---	---	166	157	162	182	175	179
11	133	127	130	163	152	158	167	160	165	182	173	179
12	133	127	131	162	152	157	169	159	164	182	172	179
13	---	---	---	---	---	---	---	---	---	182	173	179
14	136	146	133	---	---	---	---	---	---	183	173	180
15	135	131	134	163	153	159	173	163	169	183	180	182
16	137	131	135	162	152	158	173	163	169	183	---	---
17	139	132	136	162	154	158	173	163	169	---	---	---
18	---	---	---	162	156	159	173	163	169	181	170	177
19	---	---	---	158	151	155	173	165	169	171	165	168
20	---	---	---	172	155	160	173	165	170	180	171	177
21	---	---	---	172	163	167	174	166	171	181	174	176
22	143	137	140	165	159	162	175	166	172	182	177	179
23	145	135	141	164	158	161	175	166	171	181	176	178
24	146	139	143	163	154	159	178	169	174	182	179	180
25	147	141	145	---	---	---	179	170	175	180	177	179
26	149	141	146	---	---	---	178	172	176	179	175	177
27	149	141	146	---	---	---	178	170	176	182	178	179
28	149	141	146	---	---	---	179	174	177	181	178	179
29	149	142	146	---	---	---	178	173	176	---	---	---
30	152	142	148	---	---	---	179	171	175	---	---	---
31	154	146	151	163	157	160	---	---	---	177	157	164

Table 22. Daily values for specific conductance, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

NOVEMBER 1990 TO FEBRUARY 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
NOVEMBER			DECEMBER			JANUARY			FEBRUARY			
1	173	146	162	106	104	105	125	121	123	117	114	116
2	146	120	133	105	102	103	127	124	126	125	116	119
3	122	118	120	103	102	102	129	127	128	126	102	118
4	127	119	123	105	102	103	131	128	129	100	93	95
5	138	126	131	107	105	106	131	128	129	97	79	87
6	138	130	133	107	104	106	131	129	130	80	77	78
7	133	124	130	104	102	103	132	129	131	85	80	82
8	124	120	122	104	102	103	131	127	130	91	85	88
9	121	116	118	109	103	105	127	119	123	95	91	93
10	116	107	113	124	108	116	119	113	116	100	95	97
11	106	102	104	122	81	100	116	70	88	103	99	101
12	106	101	103	86	81	83	80	66	76	106	102	104
13	111	104	107	92	86	89	66	63	64	110	106	108
14	131	109	120	97	92	95	65	63	64	109	84	96
15	129	118	123	102	97	100	66	63	64	87	83	84
16	121	115	118	105	102	104	---	---	---	93	87	90
17	117	113	114	107	105	106	---	---	---	95	93	94
18	121	115	118	115	107	110	---	---	---	99	95	97
19	127	120	124	115	101	112	---	---	---	99	94	97
20	128	123	126	100	92	94	88	84	86	94	89	90
21	129	126	127	96	91	93	91	88	89	92	89	90
22	129	117	125	104	96	99	94	91	92	95	92	93
23	117	100	106	---	---	---	97	94	95	98	95	97
24	100	97	98	---	---	---	99	97	98	102	99	100
25	108	97	101	---	---	---	102	99	101	104	102	103
26	108	88	101	---	---	---	105	102	103	107	104	105
27	88	83	85	---	---	---	107	104	105	109	106	108
28	94	87	91	120	116	118	108	106	107	113	109	111
29	98	93	95	119	117	118	110	108	109	---	---	---
30	104	99	103	120	118	119	112	110	111	---	---	---
31	---	---	---	121	119	120	116	112	114	---	---	---

Table 22. Daily values for specific conductance, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

MARCH 1991 TO JUNE 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
MARCH			APRIL			MAY			JUNE			
1	116	113	115	102	99	101	94	92	94	102	100	101
2	121	114	116	99	94	96	96	94	95	103	101	102
3	122	68	98	95	94	94	98	96	97	105	102	103
4	76	66	71	96	94	95	99	97	98	---	---	---
5	---	---	---	104	96	99	99	97	98	---	---	---
6	79	68	73	105	100	103	101	98	100	106	104	105
7	84	79	81	100	88	93	102	99	100	108	105	106
8	88	84	86	88	85	86	105	101	102	110	107	108
9	91	88	89	89	86	88	102	92	99	112	108	110
10	94	92	93	86	73	77	92	85	88	114	110	112
11	95	94	94	81	76	78	89	86	87	114	112	113
12	98	94	97	86	81	83	90	88	89	118	112	116
13	95	86	91	89	86	87	98	90	93	119	116	117
14	90	86	88	92	89	90	98	96	97	120	116	118
15	92	89	91	94	92	93	98	96	97	120	117	119
16	94	91	93	95	93	94	97	95	96	122	117	120
17	96	94	95	97	95	96	111	95	104	124	119	121
18	99	96	97	100	97	98	102	84	91	125	121	123
19	103	100	101	102	99	100	84	81	82	127	123	125
20	101	100	101	104	101	102	85	82	84	130	125	128
21	103	101	102	105	104	104	87	85	86	128	125	127
22	105	103	103	104	103	104	88	87	87	128	126	127
23	110	105	106	103	102	102	90	87	88	126	122	124
24	113	104	108	102	101	101	92	90	91	127	123	125
25	104	98	101	101	99	100	95	92	93	129	126	127
26	98	96	97	99	96	98	96	94	95	131	126	128
27	96	95	96	97	93	94	98	96	97	132	129	130
28	97	95	96	93	88	90	101	98	100	134	130	132
29	99	96	97	91	88	89	104	101	102	134	131	133
30	101	98	100	93	90	92	106	104	105	135	132	134
31	103	101	102	---	---	---	105	102	104	---	---	---

Table 22. Daily values for specific conductance, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

JULY 1991 TO OCTOBER 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER			OCTOBER		
1	136	132	135	157	149	153	177	169	173	189	181	186
2	138	134	136	157	152	155	175	168	172	191	180	188
3	139	135	137	158	151	155	175	168	172	193	186	190
4	139	135	138	158	153	156	175	168	172	---	---	---
5	141	135	138	158	153	156	---	---	---	---	---	---
6	142	136	140	160	153	157	---	---	---	---	---	---
7	144	138	141	161	155	159	---	---	---	193	186	190
8	146	140	143	162	155	159	176	168	173	---	---	---
9	146	141	144	164	157	161	178	169	174	---	---	---
10	147	141	145	163	156	161	177	169	174	---	---	---
11	147	142	145	163	156	160	---	---	---	194	188	192
12	147	142	145	163	157	161	---	---	---	---	---	---
13	148	143	146	163	156	160	---	---	---	---	---	---
14	148	143	146	165	157	161	---	---	---	---	---	---
15	149	144	147	165	157	162	180	171	176	199	192	196
16	151	146	148	167	159	163	180	171	176	199	193	197
17	150	144	147	168	159	164	179	171	176	200	192	197
18	152	146	149	168	161	165	179	171	176	199	193	197
19	147	144	146	170	163	167	181	173	178	200	192	197
20	148	144	146	173	165	169	181	173	178	200	193	198
21	148	144	147	174	165	170	181	173	178	---	---	---
22	148	143	146	174	165	171	181	173	178	---	---	---
23	150	143	146	174	166	170	---	---	---	---	---	---
24	152	146	149	173	163	169	---	---	---	---	---	---
25	151	147	149	171	163	168	183	176	180	---	---	---
26	151	146	149	172	163	168	185	177	182	191	181	184
27	151	146	149	173	165	170	186	179	184	191	182	187
28	151	146	149	174	166	170	187	180	185	193	187	190
29	153	146	150	174	167	171	188	179	185	188	181	184
30	154	149	152	176	167	172	188	180	185	181	176	180
31	155	149	152	178	170	175	---	---	---	---	---	---

Table 22. Daily values for specific conductance, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

NOVEMBER 1991 TO FEBRUARY 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
NOVEMBER			DECEMBER			JANUARY			FEBRUARY			
1	149	143	146	97	93	95	123	120	121	112	108	111
2	149	145	147	102	97	100	126	121	123	112	108	111
3	148	143	145	103	101	102	129	124	127	110	108	109
4	149	144	147	102	99	101	134	128	131	112	108	111
5	153	148	150	103	100	101	134	122	128	115	112	113
6	156	149	153	125	103	110	123	111	116	118	114	116
7	157	153	156	105	62	70	114	110	112	120	117	118
8	160	156	158	75	67	71	114	111	112	122	119	121
9	161	157	159	81	75	78	117	113	115	126	122	124
10	166	161	163	86	81	83	121	117	118	129	125	127
11	---	---	---	92	85	88	123	120	121	131	127	129
12	169	157	166	96	91	93	121	116	119	132	130	131
13	167	---	---	100	96	98	116	110	113	134	130	132
14	174	168	170	101	99	100	114	109	111	135	131	133
15	173	165	168	102	99	100	115	111	113	136	132	134
16	166	152	161	104	101	103	121	114	116	134	132	133
17	156	138	149	107	104	105	124	121	123	134	126	130
18	153	124	142	115	105	109	120	114	118	126	115	121
19	124	96	102	115	107	112	115	111	113	116	112	114
20	105	96	101	107	96	99	113	110	111	113	106	110
21	106	89	100	102	97	99	115	112	113	106	84	94
22	89	85	86	104	101	103	118	115	116	84	78	81
23	94	87	90	105	103	104	121	118	119	78	76	77
24	103	94	98	108	105	106	123	120	121	83	77	80
25	107	104	105	110	108	109	129	121	125	89	83	86
26	107	95	103	113	109	111	128	126	127	94	88	91
27	95	84	91	114	112	113	130	126	128	98	94	96
28	84	81	82	116	113	114	129	119	126	102	97	99
29	90	83	86	118	115	117	119	91	101	105	101	103
30	93	90	91	120	116	118	100	91	95	---	---	---
31	---	---	---	122	119	120	108	99	102	---	---	---

Table 22. Daily values for specific conductance, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

MARCH 1991 TO JUNE 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MARCH			APRIL			MAY			JUNE		
1	107	104	106	150	144	147	126	122	125	150	143	147
2	112	107	109	150	145	147	122	117	119	151	146	149
3	113	111	112	151	146	148	117	114	116	152	146	150
4	116	112	114	151	146	149	119	115	116	153	148	151
5	123	115	119	152	147	149	120	116	118	154	148	152
6	123	119	120	151	148	150	124	119	120	155	149	152
7	121	119	120	152	148	150	124	120	122	155	148	152
8	121	118	119	153	149	151	125	121	123	157	149	153
9	124	120	122	155	140	149	127	122	124	162	154	158
10	125	122	124	169	92	131	128	123	126	163	155	160
11	127	123	125	92	80	82	130	126	128	163	157	161
12	129	125	127	99	86	93	133	127	129	165	160	162
13	131	127	129	96	90	94	134	130	132	165	157	161
14	132	129	130	94	90	92	135	131	133	167	158	161
15	134	130	132	98	94	95	136	132	134	167	160	163
16	135	131	133	107	97	100	138	133	135	165	160	162
17	137	133	135	111	107	109	139	135	137	174	163	169
18	137	134	135	109	86	98	140	135	137	174	164	168
19	135	133	134	86	82	83	141	135	138	168	162	165
20	134	131	133	89	85	87	145	139	141	167	161	165
21	134	130	132	94	89	92	143	136	138	168	162	166
22	135	131	133	97	94	96	140	136	138	171	163	167
23	138	131	134	101	97	98	142	138	140	172	164	169
24	138	134	136	103	100	102	142	137	139	173	165	170
25	139	134	136	106	103	104	142	137	139	174	167	171
26	141	135	138	110	106	107	144	139	141	176	167	172
27	142	137	139	113	109	111	145	139	142	176	169	173
28	142	139	140	116	112	114	145	140	143	177	169	174
29	144	138	141	119	115	117	146	140	144	173	157	162
30	148	141	143	124	117	120	147	141	145	179	162	171
31	151	147	149	---	---	---	148	143	146	---	---	---

Table 22. Daily values for specific conductance, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

JULY 1992 TO OCTOBER 1993												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER			OCTOBER		
1	---	---	---	188	177	184	196	188	192	213	205	208
2	---	---	---	188	179	184	196	186	192	206	198	201
3	---	---	---	189	175	183	197	185	191	202	199	201
4	---	---	---	188	177	184	195	186	191	213	201	205
5	---	---	---	187	177	183	192	183	188	213	208	210
6	---	---	---	191	179	186	191	181	187	209	205	207
7	---	---	---	192	185	189	189	181	185	208	204	206
8	---	---	---	197	183	190	189	183	187	208	204	206
9	---	---	---	195	182	190	191	186	189	206	202	204
10	---	---	---	---	---	---	193	186	190	206	200	203
11	---	---	---	---	---	---	192	185	189	205	200	203
12	---	---	---	196	186	192	193	186	190	207	201	204
13	---	---	---	197	186	193	195	187	192	208	204	207
14	---	---	---	200	164	194	196	187	192	207	203	206
15	---	---	---	201	189	196	198	191	195	208	202	206
16	---	---	---	200	187	194	---	---	---	208	204	206
17	---	---	---	199	191	196	---	---	---	209	203	207
18	179	171	176	203	178	196	198	190	195	209	202	205
19	180	172	176	201	186	196	202	191	196	207	201	205
20	180	170	175	201	190	195	200	191	197	207	203	205
21	182	172	177	199	190	195	206	198	202	206	197	201
22	180	172	177	201	193	197	209	202	206	198	194	196
23	179	170	175	201	191	196	210	200	206	---	---	---
24	181	173	177	200	191	196	208	201	205	206	200	202
25	185	174	179	200	192	197	209	201	205	204	199	201
26	186	176	181	202	192	197	207	199	204	210	203	206
27	185	175	181	202	194	199	207	198	203	210	207	209
28	187	176	182	204	194	199	209	198	203	209	205	208
29	189	175	183	202	192	198	213	206	210	211	205	208
30	187	175	182	202	191	197	213	208	211	207	193	200
31	188	174	182	198	187	193	---	---	---	207	190	197

Table 23. Daily values for pH, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992

[Units are in pH units. Data discrepancies between daily maximum or minimum pH values listed in this table and instantaneous values listed in table 9 are the results of slight differences in sampling times, locations, and instrumentation. "MAX" = daily maximum; "MIN" = daily minimum; "--" = data missing or not analyzed]

JULY 1990 TO OCTOBER 1990												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JULY			AUGUST			SEPTEMBER			OCTOBER			
1	9.1	7.2	8.2	9.0	7.3	8.2	8.7	7.3	7.9	8.2	7.1	7.5
2	8.8	7.2	8.0	9.2	7.2	8.3	8.9	7.4	8.2	8.5	7.1	---
3	8.9	7.2	8.0	9.2	7.2	8.3	9.0	7.3	8.2	8.6	7.2	7.7
4	9.0	7.2	8.1	9.2	7.1	8.2	9.0	7.3	8.2	8.9	7.2	6.8
5	9.0	7.3	8.2	9.1	7.1	8.2	9.1	7.3	8.3	8.7	---	5.5
6	9.1	7.3	8.2	8.7	7.0	7.8	9.2	7.4	8.4	8.9	7.2	6.9
7	9.2	7.3	8.2	8.7	6.9	7.6	9.2	7.3	8.3	8.8	7.2	7.0
8	9.2	7.3	8.3	---	---	---	9.0	7.3	8.1	8.9	7.3	7.6
9	9.2	7.3	8.2	---	---	---	9.0	7.2	8.1	8.9	7.3	7.7
10	9.1	7.3	8.2	8.8	---	---	9.2	7.1	8.2	8.7	7.4	7.4
11	9.1	7.2	8.1	8.7	6.9	7.7	8.3	7.1	7.6	8.9	7.4	7.3
12	9.0	7.0	7.7	8.7	6.8	7.6	9.1	7.1	8.0	8.6	7.3	7.6
13	9.0	---	---	---	---	---	---	---	---	8.8	7.3	7.9
14	9.0	7.3	8.1	8.7	---	---	---	---	---	8.9	7.4	7.0
15	9.0	7.3	8.2	8.4	6.8	7.4	8.8	7.1	7.9	8.6	7.3	---
16	9.1	7.3	8.2	8.6	6.8	7.5	9.0	7.1	8.0	---	7.4	7.3
17	9.1	7.3	8.2	7.9	6.8	7.2	8.8	7.1	7.9	8.8	---	---
18	---	7.2	---	7.9	6.8	7.2	9.0	7.1	8.0	7.8	7.3	7.5
19	---	---	---	8.5	6.8	7.4	8.8	7.1	7.8	8.2	7.4	7.6
20	---	---	---	7.7	6.9	7.2	9.0	7.1	8.0	8.1	7.4	7.6
21	9.1	---	---	8.0	7.0	7.4	9.0	7.2	8.1	7.9	7.4	7.6
22	9.1	7.2	8.2	8.3	7.0	7.5	9.1	7.2	8.1	7.9	7.4	7.6
23	9.1	---	---	8.6	7.0	7.7	8.9	7.2	7.9	8.1	7.4	7.7
24	9.0	7.1	8.2	8.7	7.0	7.8	8.9	7.1	7.9	8.0	7.5	7.7
25	9.1	7.1	8.2	---	---	---	8.7	7.1	7.8	7.9	7.4	7.6
26	9.1	7.1	8.3	---	---	---	8.8	7.1	7.8	7.9	7.3	7.4
27	9.2	7.2	8.3	---	---	---	8.8	7.1	7.8	8.0	7.4	7.6
28	9.2	7.2	8.3	---	---	---	8.4	7.1	7.6	7.9	7.4	7.6
29	9.2	7.3	8.4	---	---	---	8.6	7.3	7.8	7.9	7.3	7.5
30	9.2	7.3	8.4	---	---	---	8.7	7.2	7.8	---	---	---
31	9.1	7.3	8.3	8.7	7.2	8.0	---	---	---	7.5	7.3	7.4

Table 23. Daily values for pH, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

NOVEMBER 1990 TO FEBRUARY 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
NOVEMBER			DECEMBER			JANUARY			FEBRUARY			
1	7.5	7.4	7.5	7.5	7.5	7.5	7.8	7.6	7.7	7.8	7.7	7.7
2	7.5	7.4	7.4	7.5	7.4	7.5	7.8	7.7	7.8	7.8	7.7	7.7
3	7.4	7.3	7.4	7.6	7.5	7.5	7.9	7.7	7.8	7.7	7.6	7.6
4	7.5	7.3	7.4	7.6	7.5	7.6	7.9	7.7	7.8	7.6	7.5	7.6
5	7.6	7.3	7.4	7.6	7.5	7.6	7.9	7.8	7.8	7.5	7.4	7.5
6	7.5	7.4	---	7.7	7.4	---	7.9	7.8	7.8	7.5	7.4	7.5
7	7.5	7.4	7.5	7.8	7.6	7.7	8.0	7.7	7.8	7.5	7.5	7.5
8	7.6	7.4	7.4	7.8	7.6	7.7	8.1	7.8	7.9	7.6	7.5	7.2
9	7.6	7.4	7.4	7.8	7.6	7.7	8.1	7.7	7.9	7.6	7.5	7.6
10	7.6	7.4	7.5	7.6	7.5	7.6	7.9	7.7	7.7	7.7	7.5	7.6
11	7.5	7.4	7.4	7.6	7.5	7.5	7.7	7.4	7.5	7.8	7.6	7.7
12	7.6	7.4	7.4	7.5	7.5	7.5	7.4	7.3	7.4	7.7	7.6	7.4
13	7.4	7.3	7.4	7.6	7.5	7.6	7.3	7.3	7.3	7.8	7.6	7.7
14	7.5	7.3	7.4	7.7	7.6	7.6	7.4	7.3	7.3	7.7	7.6	7.7
15	7.5	7.4	7.5	7.7	7.6	7.7	7.4	7.4	7.4	7.7	7.5	7.6
16	7.5	7.4	7.4	7.8	7.6	7.7	---	---	---	7.8	7.6	7.7
17	7.5	7.4	7.4	7.8	7.6	7.7	---	---	---	7.8	7.6	7.7
18	7.4	7.4	7.4	7.8	7.6	7.7	---	---	---	7.7	7.6	7.7
19	7.6	7.4	7.5	7.8	7.7	7.8	---	---	---	7.8	7.5	7.6
20	7.7	7.5	7.6	7.7	7.6	7.7	7.6	7.5	7.5	7.7	7.5	7.6
21	7.7	7.5	7.6	7.7	7.6	7.7	7.6	7.5	7.6	7.7	7.5	7.6
22	7.6	7.5	7.2	7.7	7.6	7.7	7.6	7.5	7.6	7.8	7.6	7.7
23	7.5	7.4	7.5	---	---	7.6	7.6	7.5	7.6	7.9	7.6	7.7
24	7.6	7.4	7.5	---	---	7.3	7.7	7.5	7.6	7.9	7.6	7.7
25	7.6	7.5	7.5	---	---	7.3	7.7	7.6	7.6	8.0	7.6	7.8
26	7.5	7.4	7.4	---	---	7.3	7.7	7.6	7.7	8.1	7.6	7.9
27	7.4	7.3	7.3	7.8	---	7.5	7.7	7.6	7.7	8.1	7.7	7.9
28	7.4	7.3	7.4	7.8	7.7	7.7	7.8	7.6	7.7	8.0	7.5	---
29	7.5	7.4	7.4	7.8	7.6	7.7	7.8	7.6	7.7	---	---	---
30	7.5	7.4	7.5	7.7	7.6	7.7	7.8	7.6	7.7	---	---	---
31	---	---	---	7.8	7.6	7.7	7.8	7.6	7.7	---	---	---

Table 23. Daily values for pH, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

DAY	MARCH 1991 TO JUNE 1991											
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MARCH			APRIL			MAY			JUNE		
1	8.1	7.6	7.9	7.8	7.5	7.7	8.1	7.5	7.8	8.0	7.6	7.8
2	8.0	7.6	7.7	8.0	7.5	7.7	8.1	7.5	---	8.1	7.6	7.8
3	7.6	7.2	7.4	7.7	7.5	7.6	8.2	7.6	7.9	8.1	7.6	7.9
4	7.4	7.2	7.3	7.9	7.5	7.7	8.2	7.6	8.0	---	---	---
5	---	---	7.3	7.7	7.5	7.6	8.3	7.6	8.0	---	---	---
6	7.4	7.3	7.4	7.7	7.6	7.6	8.1	7.7	7.9	8.0	7.6	7.9
7	7.4	7.3	7.4	7.6	7.5	7.5	7.9	7.6	7.7	8.0	7.7	7.8
8	7.4	7.4	7.4	7.5	7.5	7.5	8.0	7.6	7.8	8.0	7.7	7.9
9	7.5	7.4	7.5	7.6	7.5	7.5	8.1	7.6	7.9	8.0	7.7	7.9
10	7.5	7.5	7.5	7.5	7.4	7.4	7.9	7.5	7.7	8.0	7.6	7.8
11	7.5	7.5	7.5	7.5	7.4	7.4	7.9	7.5	7.7	8.0	7.6	7.8
12	7.5	7.5	7.5	7.6	7.4	7.5	8.0	7.5	7.8	8.1	7.7	---
13	7.5	7.5	7.5	7.7	7.5	7.6	7.9	7.5	7.8	8.1	7.7	7.9
14	7.5	7.5	7.5	7.7	7.5	7.6	8.2	7.6	7.9	8.2	7.7	8.0
15	7.5	7.5	7.5	7.8	7.5	7.6	8.1	7.7	7.9	8.3	7.7	8.0
16	7.6	7.5	7.5	7.8	7.5	7.7	7.9	7.5	7.8	8.3	7.6	8.0
17	7.6	7.5	7.6	7.8	7.5	7.7	7.7	7.5	7.6	8.4	7.6	8.0
18	7.6	7.5	7.6	7.9	7.5	7.7	7.6	7.5	7.5	8.5	7.6	8.0
19	7.6	7.5	7.6	8.0	7.5	7.7	7.5	7.5	7.5	7.9	7.4	7.7
20	7.7	7.6	7.6	7.9	7.5	7.7	7.5	7.5	7.5	8.1	7.4	7.7
21	7.6	7.6	7.6	8.0	7.5	7.7	7.6	7.5	7.5	8.2	7.7	8.0
22	7.7	7.5	7.6	8.0	7.6	7.8	7.7	7.5	7.6	8.4	7.6	8.1
23	7.6	7.5	7.6	7.9	7.5	7.7	7.7	7.5	7.6	8.5	7.6	8.0
24	7.7	7.6	7.6	8.0	7.5	7.7	7.8	7.5	7.6	8.5	7.5	---
25	7.7	7.5	---	8.0	7.5	7.8	7.9	7.5	7.7	8.4	7.5	7.9
26	7.7	7.5	7.6	7.9	7.6	7.7	7.9	7.6	7.7	8.6	7.5	8.0
27	7.7	7.5	7.6	8.0	7.5	7.8	7.9	7.6	7.7	8.6	7.6	8.0
28	7.7	7.5	7.6	7.9	7.5	7.7	8.0	7.6	7.8	8.6	7.5	8.0
29	7.8	7.5	7.6	8.1	7.5	7.7	7.9	7.6	7.8	8.6	7.5	8.0
30	7.8	7.5	7.7	8.1	7.5	7.8	8.0	7.6	7.8	8.7	7.5	8.1
31	7.9	7.5	7.7	---	---	---	8.0	7.5	---	---	---	---

Table 23. Daily values for pH, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

JULY 1991 TO OCTOBER 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JULY			AUGUST			SEPTEMBER			OCTOBER			
1	8.7	7.5	8.1	8.8	7.3	8.0	9.0	7.2	8.0	8.7	7.1	7.7
2	8.7	7.5	8.1	8.8	7.3	8.0	9.0	7.2	8.0	8.7	7.1	7.7
3	8.7	7.4	8.0	8.9	7.3	8.0	9.0	7.2	8.0	8.8	7.1	7.8
4	8.7	7.3	8.0	8.8	7.3	8.0	9.0	7.2	8.0	8.7	7.1	7.8
5	8.7	7.3	8.0	8.7	7.2	7.9	---	7.1	---	---	---	7.2
6	8.7	7.3	8.0	8.7	7.2	7.9	---	---	7.3	---	---	7.4
7	8.8	7.3	8.0	8.5	7.2	7.7	9.0	7.2	7.9	8.4	7.1	7.6
8	8.8	7.3	8.0	8.7	7.1	7.9	9.1	7.3	8.1	8.6	7.1	7.7
9	8.8	7.3	8.1	8.3	7.1	7.6	9.0	7.2	8.0	---	---	7.1
10	8.8	7.3	8.0	8.7	7.2	7.9	9.0	7.3	8.1	8.5	---	7.4
11	8.8	7.3	8.0	8.8	7.2	7.9	---	7.3	8.0	8.5	7.1	7.6
12	8.9	7.2	8.0	8.8	7.2	8.0	---	---	7.3	8.5	7.1	7.7
13	8.8	7.2	8.0	8.9	7.2	8.1	---	---	7.2	---	---	7.2
14	8.8	7.2	7.9	8.9	7.2	8.1	9.1	---	7.7	8.5	---	7.6
15	8.7	7.2	7.9	8.9	7.1	---	9.1	7.2	8.1	8.5	7.1	7.7
16	8.4	7.2	7.6	8.9	7.2	7.9	9.1	7.2	8.1	8.3	7.1	7.6
17	8.4	7.2	7.6	9.0	7.1	8.0	9.0	7.2	8.0	8.5	7.1	7.7
18	8.4	7.3	7.8	8.9	7.1	7.9	9.0	7.2	8.0	8.3	7.2	---
19	8.5	7.4	7.9	8.9	7.1	7.8	9.0	7.1	7.9	8.5	7.2	7.7
20	8.6	7.3	7.9	8.9	7.1	7.9	9.0	7.1	7.9	8.5	7.2	7.7
21	8.6	7.3	7.9	8.9	7.1	7.9	9.0	7.2	7.9	---	7.2	7.5
22	8.6	7.2	7.9	8.9	7.0	7.9	9.0	7.2	7.9	---	---	7.1
23	8.6	7.2	7.9	8.8	7.0	7.8	---	7.2	7.8	---	---	7.2
24	8.6	7.1	---	9.0	7.1	8.0	8.9	---	7.6	---	---	7.0
25	8.6	7.3	7.8	9.1	7.1	8.0	8.8	7.2	---	7.7	---	7.2
26	8.7	7.3	7.9	9.1	7.2	8.1	8.8	7.1	7.8	7.7	7.4	7.5
27	8.8	7.3	8.0	8.8	7.2	7.9	8.6	7.1	7.6	7.7	7.4	7.5
28	8.8	7.3	8.0	8.9	7.2	7.9	8.4	7.1	7.5	7.7	7.5	7.6
29	8.8	7.3	8.0	9.0	7.2	8.0	8.7	7.1	7.6	7.7	7.5	7.6
30	8.8	7.3	8.0	9.0	7.2	8.0	8.7	7.1	7.7	7.8	7.5	7.6
31	8.8	7.3	8.0	8.8	7.2	7.9	---	---	---	7.7	---	7.4

Table 23. Daily values for pH, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

NOVEMBER 1991 TO FEBRUARY 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	NOVEMBER			DECEMBER			JANUARY			FEBRUARY		
1	7.7	7.5	7.6	7.5	7.5	7.5	7.7	7.6	7.6	7.8	7.7	7.7
2	7.8	7.4	7.5	7.6	7.5	7.5	7.8	7.6	7.7	7.8	7.7	7.7
3	7.7	7.4	7.5	7.6	7.5	7.6	7.7	7.6	7.7	7.8	7.2	7.7
4	7.6	7.3	7.5	7.6	7.5	7.6	7.8	7.6	7.7	7.8	7.6	7.7
5	7.7	7.4	7.5	7.6	7.5	7.6	7.7	7.6	7.7	7.9	7.6	7.8
6	7.6	7.3	7.4	7.5	7.5	7.5	7.6	7.6	7.6	7.9	7.6	7.8
7	7.6	7.3	7.4	7.5	7.2	7.3	7.6	7.5	7.6	8.0	7.7	7.8
8	7.6	7.3	7.4	7.4	7.3	7.4	7.6	7.5	7.6	8.0	7.7	7.8
9	7.7	7.4	7.5	7.4	7.4	---	7.7	7.5	7.6	8.0	7.7	7.8
10	7.8	7.4	7.5	7.5	7.4	7.5	7.7	7.6	7.6	8.1	7.7	7.9
11	7.7	---	7.4	7.5	7.5	7.5	7.7	7.6	7.6	8.1	7.7	7.9
12	7.5	7.3	7.4	7.6	7.5	7.5	7.7	7.6	7.6	8.2	7.8	8.0
13	7.5	---	---	7.6	7.5	7.5	7.7	7.6	7.6	8.2	7.8	---
14	7.6	7.3	7.5	7.6	7.5	7.6	7.7	7.5	7.6	8.1	7.8	7.9
15	7.6	7.5	7.5	7.6	7.6	7.6	7.8	7.5	---	8.2	7.7	7.9
16	7.6	7.5	7.6	7.6	7.6	7.6	7.7	7.6	7.7	8.2	7.8	8.0
17	7.5	7.4	7.5	7.7	7.6	7.6	7.8	7.7	7.7	8.1	7.7	7.9
18	7.5	7.4	7.5	7.7	7.6	7.6	7.8	7.7	7.8	7.9	7.6	7.8
19	7.5	7.4	7.4	7.6	7.6	7.6	7.8	7.7	7.8	7.8	7.5	7.7
20	7.4	7.4	7.4	7.6	7.6	7.6	7.8	7.7	7.7	7.8	7.3	7.7
21	7.4	7.4	7.4	7.6	7.6	7.6	7.8	7.6	7.7	7.7	7.5	7.5
22	7.4	7.3	7.4	7.7	7.6	7.6	7.9	7.7	7.8	7.5	7.4	7.5
23	7.5	7.4	7.4	7.7	7.6	7.6	7.9	7.7	7.8	7.5	7.4	7.5
24	7.5	7.4	7.4	7.6	7.5	7.6	7.9	7.7	7.8	7.6	7.4	7.5
25	7.5	7.4	7.5	7.6	7.5	7.6	8.0	7.7	7.9	7.7	7.4	7.5
26	7.5	7.4	7.5	7.6	7.5	7.6	8.0	7.8	7.9	7.7	7.5	7.6
27	7.4	7.4	7.4	7.7	7.5	7.6	7.9	7.8	7.8	7.8	7.5	7.6
28	7.4	7.4	7.4	7.7	7.6	7.6	8.0	7.7	7.8	7.9	7.5	7.7
29	7.5	7.4	7.4	7.7	7.6	7.6	7.8	7.6	7.7	7.8	7.5	7.7
30	7.5	7.4	7.5	7.7	7.6	7.6	7.7	7.6	7.6	---	---	---
31	---	---	---	7.7	7.6	7.6	7.7	7.6	7.7	---	---	---

Table 23. Daily values for pH, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

MARCH 1992 TO JUNE 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MARCH			APRIL			MAY			JUNE		
1	8.0	7.5	7.8	8.2	7.5	7.8	8.0	7.7	7.9	8.9	7.2	8.1
2	8.0	7.6	7.8	8.3	7.5	7.9	8.1	7.7	7.9	8.9	7.2	8.1
3	8.1	7.6	7.9	8.3	7.5	7.8	8.1	7.7	7.9	8.9	7.2	8.1
4	8.0	7.6	7.8	8.3	7.5	7.8	8.1	7.7	7.9	9.0	7.1	8.1
5	8.0	7.6	7.8	8.3	7.5	7.9	8.2	7.6	7.9	9.0	7.1	8.1
6	8.0	7.6	7.9	8.4	7.5	7.9	8.3	7.6	7.9	9.1	7.1	8.2
7	8.1	7.6	7.9	8.4	7.6	8.0	8.4	7.6	7.9	9.1	7.1	8.2
8	8.0	7.6	7.9	8.4	7.6	7.9	8.5	7.6	8.0	9.1	7.1	8.2
9	8.1	7.6	7.9	7.6	7.4	7.5	8.6	7.6	8.1	9.0	7.1	---
10	8.2	7.7	8.0	7.5	7.2	7.4	8.7	7.5	8.1	9.1	7.1	8.2
11	8.2	7.7	8.0	7.4	7.3	7.3	8.7	7.5	8.1	8.7	7.1	7.8
12	8.2	7.8	8.0	7.4	7.4	7.4	8.8	7.6	8.2	8.8	7.1	7.9
13	8.2	7.8	8.0	7.4	7.4	7.4	8.9	7.6	8.3	8.4	7.1	7.6
14	8.1	7.7	7.9	7.4	7.4	7.4	8.9	7.6	8.3	8.4	7.2	7.7
15	8.2	7.7	7.9	7.5	7.4	7.5	8.9	7.6	8.3	8.5	7.3	7.7
16	8.2	7.8	7.9	7.5	7.4	7.5	8.9	7.5	8.3	8.6	7.3	7.9
17	8.2	7.8	8.0	7.5	7.5	7.5	9.0	7.5	8.3	8.7	7.3	8.0
18	8.2	7.8	8.0	7.5	7.4	7.5	8.9	7.4	8.2	8.9	7.3	8.1
19	8.3	7.8	8.0	7.4	7.4	7.4	8.5	7.4	7.9	9.0	7.3	8.2
20	8.3	7.9	8.1	7.6	7.4	7.5	8.8	7.4	8.1	9.2	7.3	8.3
21	8.4	7.8	8.1	7.7	7.6	7.6	8.8	7.5	8.2	9.2	7.4	8.4
22	8.3	7.7	8.0	7.8	7.6	7.7	8.9	7.6	8.2	9.2	7.3	8.3
23	8.3	7.6	8.0	7.8	7.6	7.7	8.9	7.5	8.2	9.3	7.3	8.3
24	8.4	7.6	8.0	7.8	7.6	7.7	8.9	7.4	8.2	9.2	7.2	8.2
25	8.4	7.6	8.0	7.8	7.6	7.7	8.8	7.3	8.1	9.3	7.2	8.3
26	8.3	7.6	8.0	7.8	7.6	7.7	8.8	7.3	8.0	9.1	7.1	8.1
27	8.3	7.6	7.9	7.9	7.6	7.8	8.9	7.3	8.1	9.2	7.1	8.2
28	8.4	7.6	8.0	7.9	7.6	7.8	8.9	7.3	8.1	8.9	7.1	7.8
29	8.5	7.6	8.0	7.9	7.6	7.8	8.9	7.3	8.0	8.3	7.2	7.6
30	8.1	7.5	7.8	8.0	7.6	7.8	8.9	7.2	8.1	8.1	7.3	7.6
31	8.1	7.5	7.7	---	---	---	8.9	7.2	8.0	---	---	---

Table 23. Daily values for pH, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

JULY 1992 TO OCTOBER 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER			OCTOBER		
1	8.5	7.4	7.9	8.6	7.0	7.7	8.9	7.5	8.4	7.5	7.2	7.3
2	---	---	8.3	9.0	7.0	8.0	8.9	7.5	---	7.7	7.2	7.4
3	---	---	8.3	9.0	7.0	8.0	8.9	7.3	8.3	7.9	7.3	7.6
4	---	---	8.3	8.6	7.0	7.8	8.7	7.3	8.1	8.3	7.4	7.7
5	---	---	8.3	9.0	7.0	8.0	8.8	7.3	8.1	8.2	7.5	7.8
6	---	---	---	9.0	7.2	8.1	8.9	7.3	8.2	8.3	7.5	7.8
7	---	---	---	8.8	7.2	8.0	8.9	7.4	8.2	8.5	7.5	7.9
8	---	---	---	9.0	7.2	8.1	8.8	7.4	8.1	8.5	7.5	7.9
9	---	---	---	9.0	7.3	8.2	8.8	7.3	---	8.6	7.5	8.0
10	---	---	---	---	7.3	7.9	8.8	7.4	8.2	8.8	7.6	8.1
11	---	---	---	9.0	---	8.0	8.9	7.3	8.1	8.8	7.6	8.1
12	---	---	---	8.8	7.2	8.1	8.8	7.3	8.2	8.8	7.6	8.1
13	---	---	---	8.9	7.2	8.1	8.9	7.4	8.3	8.6	7.6	8.0
14	---	---	---	8.8	7.2	8.0	9.0	7.4	8.3	8.8	7.6	8.1
15	---	---	---	8.8	7.2	8.0	8.7	7.4	8.1	8.8	7.6	8.1
16	---	---	---	8.8	7.2	8.0	---	7.3	---	8.8	7.6	8.1
17	8.6	---	---	8.7	7.2	7.9	8.9	---	8.0	8.9	7.6	8.2
18	9.0	7.1	8.0	8.7	7.2	7.9	8.9	7.5	7.9	9.0	7.6	8.2
19	8.9	7.0	8.0	9.0	7.2	8.0	9.0	7.5	8.4	8.9	7.6	8.2
20	8.7	7.0	7.8	9.0	7.4	---	9.0	7.5	8.3	8.4	7.6	7.9
21	8.7	7.0	7.7	8.9	7.4	8.3	9.0	7.4	8.3	8.7	7.5	8.0
22	8.1	7.0	7.4	8.8	7.3	8.1	8.9	7.4	8.2	8.7	7.5	8.0
23	8.8	7.0	7.8	9.0	7.4	8.3	8.8	7.3	8.1	---	---	---
24	8.9	7.1	7.9	9.1	7.5	8.5	8.8	7.3	8.0	8.4	7.4	7.8
25	9.0	7.1	8.0	9.1	7.6	8.5	8.7	7.3	8.0	8.1	7.5	7.7
26	9.0	7.0	8.0	9.1	7.6	8.5	8.8	7.3	8.0	8.2	7.4	7.7
27	9.0	7.0	8.0	9.1	7.7	8.6	8.7	7.2	7.9	8.3	7.4	7.7
28	9.0	7.0	8.0	9.1	7.6	8.6	8.6	7.3	7.9	8.4	7.4	7.8
29	9.0	7.0	8.0	9.2	7.7	8.6	8.5	7.3	7.8	7.9	7.4	7.6
30	9.0	7.0	8.0	9.2	7.8	8.7	8.5	7.3	7.8	7.8	7.4	7.6
31	8.9	7.0	8.0	9.1	7.6	8.5	---	---	---	7.7	7.4	7.5

Table 24. Daily values for dissolved Oxygen, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992

[Units are in milligrams per liter as oxygen. Data discrepancies between daily maximum or minimum dissolved oxygen values listed in this table and instantaneous values listed in table 9 are the results of slight differences in sampling times, locations, and instrumentation. "MAX" = daily maximum; "MIN" = daily minimum; "--" = data missing or not analyzed]

JULY 1990 TO OCTOBER 1990												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER			OCTOBER		
1	11.6	6.8	9.0	11.3	4.9	7.8	11.0	5.9	7.9	9.3	2.5	5.3
2	11.4	7.3	9.1	12.3	4.7	8.5	10.7	6.1	8.2	12.4	2.5	6.7
3	12.1	7.4	9.6	11.7	4.6	8.2	11.6	5.0	7.8	11.0	4.3	7.1
4	13.0	7.7	9.9	11.3	4.3	7.8	10.7	3.7	7.0	11.8	4.4	7.4
5	12.2	7.2	9.4	10.4	3.7	7.0	11.9	4.2	7.3	10.8	3.2	---
6	13.1	7.4	10.2	9.7	3.1	6.0	13.5	3.2	7.7	12.7	4.8	8.3
7	14.5	7.2	10.1	9.7	2.7	6.2	14.6	3.0	8.1	13.4	4.5	8.9
8	12.9	6.9	9.3	---	---	---	12.8	2.8	7.1	13.5	6.2	9.3
9	13.6	6.4	9.0	10.8	---	---	12.9	2.1	6.7	13.6	6.7	9.6
10	13.0	6.0	8.8	9.8	---	---	14.1	1.6	7.1	12.1	6.3	8.8
11	11.3	5.3	8.0	9.1	3.7	6.3	8.3	.6	4.2	14.7	6.5	10.0
12	10.6	4.9	7.4	10.6	3.6	6.7	13.2	1.3	6.7	11.9	6.5	8.9
13	8.6	---	---	---	---	---	---	---	---	13.0	6.4	9.3
14	8.7	4.6	6.6	13.3	---	---	---	---	---	13.3	6.9	9.5
15	9.0	4.8	6.8	11.9	4.5	8.2	13.5	2.4	7.7	13.7	6.1	9.7
16	9.0	5.0	7.0	12.4	4.5	8.5	14.6	2.7	8.3	---	---	---
17	10.0	5.4	7.5	11.0	4.6	7.7	13.7	2.6	7.3	13.0	---	---
18	---	5.5	---	10.6	4.9	7.6	14.6	2.3	8.0	8.3	5.7	7.2
19	---	---	---	12.6	5.4	8.7	12.6	2.0	6.6	10.4	7.2	8.6
20	---	---	---	9.8	6.2	8.0	13.7	1.8	7.2	9.8	7.7	8.6
21	11.6	---	---	10.1	7.0	8.3	14.9	1.9	8.0	8.8	6.0	7.5
22	11.2	5.8	8.4	9.9	6.4	8.1	13.8	1.6	7.2	8.8	5.5	7.1
23	13.2	---	---	10.3	6.2	8.1	12.3	1.2	6.0	8.9	6.5	7.5
24	12.9	5.7	9.2	10.4	6.1	8.1	12.0	1.0	5.8	---	6.7	---
25	13.9	6.0	9.6	---	---	---	12.2	.2	5.8	---	---	---
26	13.9	6.0	10.0	---	---	---	11.3	1.1	5.9	---	---	---
27	13.3	6.2	9.8	---	---	---	11.5	.9	5.5	---	---	---
28	12.8	5.8	9.0	---	---	---	9.2	.7	4.8	---	---	---
29	13.0	5.5	9.2	---	---	---	11.2	3.3	6.6	---	---	---
30	12.9	5.0	8.9	---	---	---	11.1	3.2	6.5	8.4	---	---
31	12.1	4.7	8.2	12.4	---	---	---	---	---	8.6	6.5	7.7

Table 24. Daily values for dissolved Oxygen, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

NOVEMBER 1990 TO FEBRUARY 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
NOVEMBER			DECEMBER			JANUARY			FEBRUARY			
1	10.0	7.4	8.8	11.2	10.6	11.0	---	---	---	13.6	12.5	13.1
2	11.3	10.1	10.8	11.2	10.8	11.0	---	---	---	12.5	11.3	11.7
3	10.6	7.5	9.4	11.2	10.2	11.0	---	---	---	11.3	10.6	11.0
4	9.8	7.1	8.2	11.5	10.3	10.9	---	---	---	10.8	10.1	10.5
5	12.4	8.9	11.0	11.9	11.4	11.7	---	---	---	10.3	9.7	10.1
6	11.5	---	---	12.1	11.2	11.6	---	---	---	10.0	9.6	9.9
7	11.3	---	---	12.1	11.4	11.7	---	---	---	11.1	9.9	10.5
8	11.7	10.4	10.8	12.8	11.2	11.9	---	---	---	11.4	10.9	11.1
9	10.7	10.0	10.3	11.9	10.8	11.4	---	---	---	11.2	10.7	11.0
10	11.0	9.9	10.3	10.8	9.7	10.2	---	---	---	11.2	10.6	10.9
11	10.9	9.9	10.4	10.2	9.7	9.9	---	---	---	11.9	10.6	11.2
12	11.4	9.8	10.3	11.5	10.4	11.0	---	---	---	11.4	10.7	11.1
13	10.0	8.7	9.5	11.3	11.0	11.2	---	---	---	11.1	10.2	10.7
14	10.5	8.9	9.7	11.5	11.0	11.3	---	---	---	10.7	9.9	10.3
15	11.0	10.4	10.8	11.7	11.0	11.4	---	---	---	10.2	9.9	10.0
16	11.6	10.6	11.0	13.3	11.3	12.0	---	---	---	10.6	9.9	10.1
17	11.1	10.3	10.7	13.0	11.6	12.3	---	---	---	11.4	10.0	10.7
18	10.4	10.0	10.2	11.7	10.9	11.2	---	---	---	11.3	10.3	10.8
19	11.2	10.0	10.7	12.0	11.0	11.5	12.7	---	---	11.2	10.4	10.8
20	11.5	10.6	11.0	13.5	11.9	12.6	13.0	11.6	12.4	11.3	10.1	10.8
21	11.8	10.6	11.0	14.7	13.4	14.2	13.2	12.4	12.8	10.8	10.1	10.4
22	10.9	10.0	10.5	15.3	14.4	14.8	13.9	13.0	13.5	11.6	10.3	10.9
23	10.6	10.1	10.3	---	---	---	14.1	13.5	13.9	11.6	10.8	11.1
24	11.1	9.9	10.4	---	---	---	14.5	13.7	14.1	11.3	10.6	10.9
25	10.7	9.8	10.2	---	---	---	15.0	13.6	14.2	11.0	10.3	10.6
26	10.6	10.2	10.4	---	---	---	13.8	13.2	13.5	10.9	10.1	10.4
27	11.2	10.1	10.7	---	---	---	14.1	13.3	13.7	11.0	10.1	10.5
28	10.9	10.4	10.7	13.5	12.7	13.1	14.2	13.6	13.9	11.2	9.9	10.5
29	10.8	10.3	10.5	14.8	12.6	14.0	15.8	13.5	14.6	---	---	---
30	11.6	10.6	11.0	14.9	14.3	14.5	14.8	13.5	14.3	---	---	---
31	---	---	---	---	---	---	13.7	13.2	13.5	---	---	---

Table 24. Daily values for dissolved Oxygen, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

MARCH 1991 TO JUNE 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MARCH			APRIL			MAY			JUNE		
1	11.1	9.9	10.5	10.4	9.6	10.0	10.5	9.2	9.8	9.5	7.8	8.9
2	11.0	10.2	10.5	11.0	9.6	10.3	11.2	8.5	10.1	8.1	6.8	7.6
3	10.2	9.0	9.7	11.1	9.8	10.5	11.0	9.2	10.1	8.0	6.5	7.3
4	9.3	8.6	8.9	11.5	10.1	10.7	10.9	8.5	9.8	---	6.6	---
5	---	---	---	10.7	9.9	10.3	10.2	8.3	9.4	---	---	---
6	---	---	---	10.7	9.9	10.3	9.5	8.4	9.0	---	---	---
7	12.2	11.2	11.7	10.8	10.2	10.6	9.7	8.5	9.1	---	---	---
8	12.3	11.5	11.9	11.3	10.8	11.1	10.3	8.4	9.4	---	---	---
9	12.1	11.3	11.8	10.8	10.5	10.7	11.9	9.6	10.8	---	---	---
10	11.8	11.3	11.5	11.0	10.4	10.8	11.8	10.6	11.3	---	---	---
11	11.8	11.5	11.7	11.7	11.1	11.5	11.8	10.6	11.2	---	---	---
12	11.9	11.4	11.6	11.4	10.6	11.2	11.4	10.4	10.9	10.2	---	---
13	12.1	11.5	11.8	10.7	10.0	10.4	10.7	9.5	10.2	10.8	9.0	9.9
14	11.8	11.3	11.6	9.9	9.4	9.7	11.3	9.4	10.4	10.9	9.0	9.9
15	12.2	11.5	11.8	10.2	9.4	9.8	10.4	9.0	9.7	10.5	8.9	9.7
16	11.7	11.4	11.6	10.9	9.8	10.3	11.0	8.2	9.5	10.4	8.8	9.5
17	11.7	11.0	11.4	10.5	9.8	10.2	10.5	8.9	9.6	10.1	8.6	9.4
18	11.2	10.4	10.8	11.4	9.6	10.5	12.1	10.0	11.1	10.7	8.3	9.4
19	10.6	10.1	10.3	10.8	9.6	10.2	12.2	11.7	12.0	9.9	8.3	8.9
20	10.9	10.2	10.6	10.4	9.1	9.7	11.9	11.0	11.4	10.6	8.3	9.4
21	11.4	10.5	11.0	10.4	8.8	9.6	11.1	10.2	10.8	10.4	8.9	9.6
22	12.4	11.1	11.7	10.1	9.0	9.5	10.7	10.1	10.4	10.5	8.6	9.4
23	11.7	11.1	11.4	10.2	8.4	9.4	10.8	9.6	10.3	10.2	8.1	9.0
24	11.4	10.7	11.1	10.6	9.0	9.9	10.2	9.1	9.6	11.7	7.9	9.2
25	11.6	10.7	11.2	11.1	9.5	10.4	10.3	9.2	9.8	11.0	8.7	9.6
26	12.1	11.2	11.8	11.4	10.0	10.7	10.4	9.2	9.7	11.3	8.5	9.9
27	12.6	11.6	12.1	12.2	10.5	11.3	10.4	9.0	9.7	11.7	8.7	9.9
28	12.1	11.4	11.8	12.1	10.6	11.3	10.5	9.2	9.8	11.7	8.6	10.0
29	12.8	11.3	11.9	11.8	10.2	11.0	9.7	8.7	9.2	11.6	8.4	9.7
30	12.1	10.5	11.4	11.2	9.8	10.4	10.4	9.0	9.7	11.4	8.4	9.6
31	11.3	9.8	10.6	---	---	---	10.9	9.5	10.1	---	---	---

Table 24. Daily values for dissolved Oxygen, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

JULY 1991 TO OCTOBER 1991												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER			OCTOBER		
1	11.3	7.6	9.3	12.9	5.8	9.0	13.3	6.3	9.2	13.4	5.0	8.5
2	10.7	6.7	8.6	13.5	5.5	8.8	13.7	6.5	9.5	12.3	4.6	8.2
3	12.0	6.2	8.6	13.1	6.1	9.3	14.1	6.6	9.8	13.3	4.8	8.3
4	11.5	7.2	9.1	12.5	5.5	8.8	13.5	6.2	9.4	---	5.3	---
5	11.5	6.9	8.9	12.0	5.6	8.3	---	5.8	---	---	---	---
6	11.9	6.8	9.3	13.2	5.3	8.8	---	---	---	---	---	---
7	13.0	7.9	10.0	11.2	5.8	8.4	14.1	---	---	9.8	4.6	6.8
8	12.4	7.3	9.5	12.4	5.7	8.7	14.7	5.5	9.7	---	4.1	---
9	12.3	6.8	9.1	10.1	5.1	7.4	14.3	5.7	9.5	---	---	---
10	11.9	6.5	8.6	13.3	5.2	8.7	12.9	5.7	9.0	12.5	---	---
11	12.2	6.6	9.1	13.4	6.1	9.5	---	5.5	---	11.7	5.3	8.2
12	13.7	7.0	10.0	13.5	6.3	9.4	---	---	---	12.8	6.1	---
13	13.3	6.7	9.6	13.7	6.0	9.4	---	---	---	---	---	---
14	13.0	6.6	9.1	13.4	5.7	9.1	---	---	---	14.0	---	---
15	12.6	6.7	9.2	12.7	5.1	8.5	14.1	5.4	9.3	12.4	6.1	8.8
16	10.8	6.6	8.2	14.7	4.5	8.6	14.0	5.3	9.1	11.7	5.9	8.5
17	10.7	6.6	8.6	14.7	4.9	9.2	13.4	5.0	8.6	12.6	6.2	9.0
18	12.4	8.7	10.2	13.8	4.5	8.4	12.2	4.7	7.9	13.0	6.5	9.6
19	12.2	8.6	10.2	13.0	4.7	8.1	11.5	3.9	7.2	13.1	7.3	9.8
20	12.6	8.1	10.0	13.2	4.5	8.7	11.1	3.7	7.1	12.0	6.6	8.9
21	12.7	8.2	10.1	14.1	4.5	8.9	10.8	4.1	7.1	---	6.1	---
22	12.5	7.6	9.7	13.6	4.1	8.4	12.3	4.8	7.9	---	---	---
23	11.9	7.1	9.1	13.1	4.0	7.8	---	---	---	---	---	---
24	10.5	6.2	7.8	14.4	4.5	8.9	---	---	---	---	---	---
25	10.7	5.4	7.7	14.3	4.9	9.1	13.2	5.7	9.0	---	---	---
26	13.4	5.8	9.1	14.6	5.3	9.5	14.7	4.9	9.4	---	---	---
27	13.0	7.3	9.8	13.9	6.3	9.6	13.1	4.9	8.2	---	---	---
28	13.1	6.8	9.6	13.7	6.3	9.4	12.1	4.8	7.7	12.5	11.3	11.9
29	12.9	6.4	9.2	14.1	6.1	9.7	12.9	4.6	8.1	11.8	10.6	11.1
30	13.1	5.6	9.1	14.3	6.3	9.8	12.3	4.5	8.1	11.7	10.5	11.0
31	12.9	6.0	9.1	13.7	5.8	9.0	---	---	---	---	---	---

Table 24. Daily values for dissolved Oxygen, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

NOVEMBER 1991 TO FEBRUARY 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
NOVEMBER			DECEMBER			JANUARY			FEBRUARY			
1	12.2	10.4	11.5	---	---	---	12.9	11.2	12.1	---	---	---
2	12.4	10.9	11.5	---	---	---	13.8	11.1	11.8	---	---	---
3	11.7	10.2	11.0	---	---	---	13.9	11.5	12.2	12.8	---	---
4	11.0	9.3	10.2	---	---	---	12.0	11.3	11.7	12.7	11.7	12.1
5	11.2	9.2	10.5	---	---	---	12.9	11.5	11.7	11.9	11.3	11.7
6	10.4	8.9	9.7	---	---	---	11.9	11.5	11.7	11.9	11.2	11.6
7	9.1	7.6	8.7	---	---	---	11.8	10.9	11.3	12.2	11.2	11.8
8	9.0	7.0	7.9	---	---	---	12.3	11.1	11.7	12.3	11.3	11.8
9	8.8	6.8	7.7	---	---	---	13.3	11.9	12.5	13.2	11.2	11.9
10	8.3	6.8	7.6	---	---	---	12.9	11.8	12.2	13.3	11.5	12.6
11	---	---	---	11.9	---	---	13.1	11.6	12.0	12.9	11.5	12.0
12	8.4	7.2	7.7	12.0	10.9	11.5	13.0	11.7	12.1	12.2	10.9	11.7
13	9.0	---	---	12.4	10.8	11.6	12.9	11.5	12.2	11.9	10.6	11.3
14	9.3	7.5	8.5	12.9	12.0	12.5	12.6	11.3	11.8	11.7	10.6	11.1
15	10.8	8.6	9.3	13.0	12.3	12.6	---	---	---	12.5	10.9	11.6
16	10.9	8.8	9.7	---	---	---	---	---	---	12.2	10.9	11.6
17	11.2	9.3	10.3	---	---	---	---	---	---	12.1	11.0	11.7
18	13.6	10.1	12.2	12.7	11.4	12.1	---	---	---	11.9	10.9	11.4
19	13.8	12.8	13.3	12.5	11.1	11.9	---	---	---	11.6	10.8	11.1
20	13.8	13.2	13.5	12.8	12.0	12.4	---	---	---	12.4	10.7	11.3
21	13.8	13.2	13.5	12.6	12.0	12.2	---	---	---	12.4	11.3	11.9
22	14.0	13.3	13.6	12.6	12.0	12.4	---	---	---	12.0	11.3	11.6
23	14.3	13.2	13.7	12.8	12.2	12.4	---	---	---	12.1	10.2	11.4
24	13.9	13.1	13.5	12.5	11.2	12.0	---	---	---	12.1	10.6	11.4
25	13.5	12.8	13.3	11.9	11.1	11.5	---	---	---	11.9	10.9	11.3
26	13.8	12.3	13.2	---	---	---	---	---	---	11.7	10.6	11.2
27	13.7	12.2	13.1	12.5	11.5	11.8	---	---	---	11.6	10.8	11.1
28	13.5	12.0	12.7	12.2	11.2	11.6	---	---	---	11.6	10.4	10.9
29	---	---	---	12.1	11.2	11.6	---	---	---	11.5	10.6	11.0
30	---	---	---	12.3	11.3	11.7	---	---	---	---	---	---
31	---	---	---	12.3	11.3	11.8	---	---	---	---	---	---

Table 24. Daily values for dissolved Oxygen, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

MARCH 1992 TO JUNE 1992												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	MARCH			APRIL			MAY			JUNE		
1	11.5	10.4	10.9	10.4	7.6	8.5	9.9	8.8	9.3	11.0	4.7	7.7
2	12.5	10.6	11.3	9.3	7.6	8.3	9.9	8.7	9.3	13.1	4.4	8.5
3	12.6	11.3	11.9	9.0	7.3	8.0	9.8	8.5	9.2	14.1	5.3	9.1
4	11.5	10.7	11.0	9.2	7.2	8.2	10.4	8.1	9.1	13.3	4.9	8.7
5	11.7	10.4	11.0	9.6	7.7	8.7	9.9	8.2	9.0	12.8	4.6	8.3
6	12.0	10.6	11.3	10.1	8.3	9.1	9.9	7.9	8.7	13.1	4.6	8.3
7	12.1	10.9	11.4	10.3	8.5	9.2	9.8	7.6	8.6	13.1	4.7	8.3
8	13.3	10.8	11.7	9.7	8.2	8.9	9.9	7.7	8.7	12.6	4.5	8.3
9	13.0	10.8	12.0	9.1	8.1	8.7	11.2	7.9	9.2	12.9	4.7	8.4
10	11.9	10.1	10.9	9.8	8.9	9.4	10.9	8.2	9.5	---	---	---
11	11.2	9.6	10.2	10.0	9.6	9.8	11.2	8.2	9.5	---	---	---
12	10.7	9.2	9.8	10.2	9.5	9.8	11.5	8.5	9.9	---	---	---
13	10.2	8.9	9.5	10.3	9.9	10.1	11.6	8.5	9.9	---	---	---
14	10.2	9.0	9.5	10.2	9.5	10.0	11.7	8.3	9.8	---	---	---
15	10.3	9.0	9.6	10.0	9.6	9.8	11.9	8.0	9.7	---	---	---
16	10.5	9.3	9.8	9.7	9.3	9.5	11.9	7.7	9.5	---	---	---
17	11.3	9.3	10.2	9.7	9.2	9.4	11.8	7.3	9.2	---	---	---
18	11.3	10.1	10.6	9.8	9.4	9.6	11.3	6.9	8.6	---	---	---
19	11.2	9.6	10.3	10.2	9.6	9.8	9.8	6.6	8.1	---	---	---
20	11.1	9.2	10.1	10.8	9.8	10.3	11.4	7.1	9.0	---	---	---
21	10.7	9.2	9.9	10.9	10.3	10.6	12.0	7.5	9.5	---	---	---
22	10.1	8.8	9.3	11.0	10.2	10.6	12.3	8.2	10.1	---	---	---
23	10.2	8.5	9.3	11.0	10.2	10.5	12.9	7.6	9.9	---	---	---
24	9.7	8.3	8.8	10.4	9.8	10.1	12.4	7.0	9.4	---	---	---
25	9.6	7.9	8.6	10.3	9.6	9.8	12.0	6.5	8.9	---	---	---
26	9.4	8.0	8.6	10.1	9.5	9.7	12.1	6.5	8.9	---	---	---
27	9.5	7.9	8.5	10.3	9.3	9.7	12.6	6.6	9.2	---	---	---
28	9.5	7.6	8.5	10.0	9.1	9.5	12.2	6.3	8.9	---	---	---
29	9.4	7.8	8.5	9.7	8.7	9.2	11.9	5.9	8.2	---	---	---
30	8.8	7.7	8.2	9.7	8.5	9.1	12.0	5.5	8.2	---	---	---
31	9.0	7.7	8.3	---	---	---	11.6	5.1	7.9	---	---	---

Table 24. Daily values for dissolved Oxygen, South Umpqua River near Roseburg, Oregon, July 1990 to October 1992—Continued

DAY	JULY 1992 TO OCTOBER 1992											
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JULY			AUGUST			SEPTEMBER			OCTOBER		
1	---	---	---	10.1	.6	4.5	11.6	5.3	8.3	6.8	4.5	5.7
2	---	---	---	11.6	1.4	6.6	11.5	4.8	8.1	8.1	5.3	6.5
3	---	---	---	10.8	1.4	6.2	12.8	3.8	7.8	9.3	5.7	7.3
4	---	---	---	9.1	1.5	4.9	10.3	4.0	6.7	9.6	6.1	7.7
5	---	---	---	10.0	1.8	5.9	12.0	4.2	7.7	9.9	6.7	8.0
6	---	---	---	8.5	1.5	5.1	10.3	4.8	7.5	10.1	7.1	8.3
7	---	---	---	9.1	1.4	5.4	9.9	4.6	6.8	10.4	7.3	8.6
8	---	---	---	9.4	2.1	5.7	9.3	4.8	6.7	10.5	7.1	8.5
9	---	---	---	9.0	2.4	5.7	11.1	3.9	7.6	10.2	7.0	8.3
10	---	---	---	---	---	---	11.2	5.4	8.2	10.6	6.7	8.4
11	---	---	---	10.6	---	---	11.2	5.1	8.0	10.3	6.7	8.2
12	---	---	---	8.3	2.0	5.3	10.8	4.7	7.7	10.4	6.6	8.2
13	---	---	---	7.1	1.8	4.5	10.6	4.7	7.7	9.7	6.7	7.9
14	---	---	---	---	---	---	10.6	4.7	7.6	10.6	6.7	8.3
15	---	---	---	---	---	---	11.0	4.3	7.6	10.7	6.9	8.5
16	---	---	---	---	---	---	---	---	---	11.2	7.0	8.7
17	12.7	---	---	---	---	---	---	---	---	13.7	7.2	10.2
18	14.6	4.3	9.1	---	---	---	11.1	5.2	8.1	13.7	8.6	10.6
19	14.0	3.7	8.6	---	---	---	11.9	4.8	8.2	13.1	8.3	10.2
20	12.6	3.8	7.8	---	---	---	11.1	5.4	8.1	11.1	8.1	9.3
21	12.0	3.8	7.5	10.5	3.5	6.9	12.1	4.7	8.2	12.2	7.7	9.5
22	10.5	3.8	7.1	8.8	3.5	6.2	11.2	4.5	7.8	12.1	7.8	9.5
23	12.9	4.4	8.3	12.2	3.9	7.6	10.5	4.3	7.4	---	---	---
24	12.6	4.7	8.4	12.7	5.1	9.1	10.3	4.3	7.2	10.3	7.2	8.3
25	12.9	4.4	8.3	12.6	5.3	8.9	10.7	4.4	7.3	8.8	6.7	7.6
26	12.2	3.5	7.5	13.2	5.2	9.0	11.0	4.5	7.4	9.0	6.4	7.4
27	11.8	2.6	6.8	12.9	5.4	9.2	10.3	4.4	7.0	9.3	6.3	7.6
28	13.2	2.0	7.2	12.5	5.0	8.9	9.3	4.7	6.8	9.8	6.7	7.9
29	11.1	1.6	6.2	12.5	5.2	8.9	9.1	5.0	6.8	8.3	6.5	7.1
30	9.1	1.2	5.1	12.4	5.3	8.9	9.4	4.7	6.7	8.3	6.6	7.3
31	8.3	.7	4.5	12.6	5.2	8.8	---	---	---	9.2	7.5	8.1

Table 25. Daily mean incident solar radiation at the Winston-Green wastewater-treatment plant, Oregon, June 1991 to October 1992

[The wavelength of measured radiation is 280 - 2,800 nanometers. Units are in cal/sq cm/d (calories per square centimeter per day); "OCT" = October; "NOV" = November; "DEC" = December; "JAN" = January; "FEB" = February; "MAR" = March; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "OCT" = October; "MAX" = monthly maximum; "MIN" = monthly minimum; "---" = missing data or not applicable]

JUNE 1991 TO FEBRUARY 1992									
DAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
1	---	---	647	508	421	233	120	94	195
2	---	---	675	564	414	106	154	135	244
3	---	---	639	555	418	149	127	31	236
4	---	---	587	550	405	99	87	72	180
5	---	---	505	518	399	72	29	39	207
6	---	---	544	542	152	96	19	109	233
7	---	---	235	368	318	245	128	46	212
8	---	---	654	453	371	63	181	---	148
9	---	---	225	509	378	95	131	150	80
10	---	---	671	518	381	201	58	103	139
11	---	---	668	524	365	206	68	133	170
12	---	---	653	521	353	64	68	96	191
13	---	---	651	486	355	80	57	103	176
14	792	---	647	509	350	178	113	154	68
15	558	---	628	506	348	237	151	97	225
16	592	---	491	472	212	52	118	37	136
17	782	---	606	496	344	118	41	112	164
18	492	---	495	482	219	139	58	214	95
19	---	---	490	478	318	113	109	192	73
20	---	730	539	497	305	116	152	127	165
21	---	721	596	491	134	147	86	122	202
22	---	708	568	472	165	140	105	187	275
23	---	698	413	436	164	138	139	79	302
24	---	652	561	464	166	81	105	66	331
25	---	481	586	438	78	63	61	182	315
26	---	608	589	399	149	32	34	153	272
27	---	701	252	314	220	135	124	46	300
28	---	692	255	241	81	126	77	212	197
29	---	687	557	387	86	154	89	170	101
30	---	698	534	426	232	126	157	71	---
31	---	690	327	---	---	---	104	49	---
TOTAL	---	---	16488	14124	---	3804	3050	---	5632
MEAN	---	---	532	471	---	127	98	---	194
MAX	---	---	675	564	---	245	181	---	331
MIN	---	---	225	241	---	32	19	---	68

Table 25. Daily mean incident solar radiation at the Winston-Green wastewater-treatment plant, Oregon, June 1991 to October 1992—Continued

MARCH 1992 TO OCTOBER 1993								
DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	219	443	582	---	643	412	433	42
2	214	477	610	---	494	682	464	102
3	333	258	629	---	590	667	546	224
4	92	309	---	---	433	425	306	340
5	223	317	645	---	442	655	403	219
6	213	449	566	---	585	517	537	233
7	251	339	637	---	696	453	521	327
8	222	189	605	---	709	631	470	349
9	304	96	620	---	715	654	461	316
10	358	386	562	---	673	632	323	348
11	347	120	623	---	705	511	495	366
12	371	234	545	---	711	393	480	340
13	194	355	644	---	688	621	458	214
14	134	509	655	---	700	608	404	324
15	182	300	688	---	717	569	238	214
16	204	127	607	---	701	616	410	228
17	326	292	637	---	326	601	476	292
18	398	540	---	---	682	614	476	221
19	390	423	---	---	670	595	474	318
20	409	254	633	---	463	594	468	67
21	427	422	712	---	541	373	442	226
22	266	497	671	---	170	260	435	299
23	347	557	696	---	536	544	339	306
24	413	354	704	---	611	598	300	262
25	371	462	455	---	683	601	425	100
26	349	353	618	---	681	578	440	122
27	230	491	653	---	680	567	355	---
28	436	440	---	---	691	579	408	---
29	376	334	---	278	695	565	265	---
30	178	362	---	425	654	529	291	---
31	341	---	---	---	661	321	---	---
TOTAL	9118	10689	---	---	18946	16965	12543	---
MEAN	294	356	---	---	611	547	418	---
MAX	436	557	---	---	717	682	546	---
MIN	92	96	---	---	170	260	238	---

Table 26. Daily mean incident photosynthetically active radiation at the Winston-Green wastewater-treatment plant, Oregon, September 1991 to October 1992

[The wavelength of measured radiation is 400 - 700 nanometers. Units are in UE/SQ M/S (micro-einsteins per square meter per second). "OCT" = October; "NOV" = November; "DEC" = December; "JAN" = January; "FEB" = February; "MAR" = March; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "MAX" = monthly maximum; "MIN" = monthly minimum; "---" = missing data or not applicable]

SEPTEMBER 1991 TO MARCH 1992							
DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	---	399	228	118	87.1	187	211
2	---	399	105	149	128	241	206
3	---	391	149	120	29.2	219	324
4	---	381	100	85.2	67.7	169	86.7
5	---	376	76.8	29.7	37.4	195	215
6	545	147	101	20.6	105	221	205
7	367	308	245	121	43.1	200	241
8	449	354	64.9	172	---	142	208
9	502	356	94.3	124	141	74.5	284
10	512	351	194	54.3	95.9	132	338
11	516	339	203	65.6	127	163	328
12	515	333	64.9	64.4	87.5	188	350
13	490	338	77.2	53.9	99.0	169	180
14	503	326	171	104	151	64.6	128
15	495	323	222	140	89.9	217	173
16	461	207	52.8	110	34.1	128	196
17	485	324	115	38.3	107	157	309
18	474	209	133	53.4	201	90.6	369
19	466	304	108	102	181	72.5	363
20	477	293	111	146	122	161	379
21	469	131	140	81.6	113	196	402
22	455	155	133	100	178	268	253
23	428	156	131	131	73.2	296	333
24	447	163	81.0	100	60.4	327	397
25	418	78.5	61.5	58.2	177	306	353
26	387	144	32.8	32.1	145	260	333
27	311	214	125	115	43.7	286	218
28	234	82.0	121	73.5	205	183	421
29	370	84.3	147	85.2	163	93.4	366
30	402	219	122	149	65.8	---	172
31	---	---	---	99.1	48.0	---	326
TOTAL	---	---	3710.2	2896.1	---	5406.6	8667.7
MEAN	---	---	124	93.4	---	186	280
MAX	---	---	245	172	---	327	421
MIN	---	---	32.8	20.6	---	64.6	86.7

Table 26. Daily mean incident photosynthetically active radiation at the Winston-Green wastewater-treatment plant, Oregon, September 1991 to October 1992—Continued

APRIL 1992 TO OCTOBER 1992

DAY	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	421	---	---	615	384	419	44.9
2	458	---	---	473	639	447	97.7
3	249	---	---	562	631	533	208
4	292	---	---	420	402	302	310
5	298	---	---	427	622	390	201
6	417	---	---	559	502	519	206
7	---	---	---	659	437	504	279
8	---	---	---	674	597	459	315
9	---	---	---	683	617	441	294
10	---	---	---	643	592	309	322
11	---	---	---	679	475	483	337
12	---	---	---	681	376	460	305
13	---	---	---	665	588	436	195
14	---	---	---	675	579	383	285
15	---	---	---	676	538	229	190
16	---	---	---	665	585	392	207
17	---	---	---	308	570	460	266
18	---	---	---	658	578	455	203
19	---	---	---	650	563	455	298
20	---	---	---	443	563	458	67.2
21	---	---	---	513	354	427	197
22	---	---	---	167	250	412	266
23	---	---	---	506	506	333	272
24	---	---	---	571	549	290	226
25	---	---	---	645	547	417	89.9
26	---	---	---	644	531	429	110
27	---	---	---	642	531	339	---
28	---	---	---	644	540	380	---
29	---	---	268	643	532	251	---
30	---	---	399	616	504	280	---
31	---	---	---	624	311	---	---
TOTAL	---	---	---	18030	15993	12092	---
MEAN	---	---	---	582	516	403	---
MAX	---	---	---	683	639	533	---
MIN	---	---	---	167	250	229	---

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92

[Flow measurements were completed during each diel survey but may not be included in this table. See table 7 and tables 10-15 of this report for a complete listing of stream discharge information. "US/CM" = microsiemens per centimeter at 25 degrees Celsius; "DEG C" = degrees Celsius; "MM OF HG" = millimeters of mercury; "U-EINS/SQM/S" = micro-einsteins per square meter per second; "MG/L" = milligrams per liter; "--" = missing data or not analyzed; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "RM" = river mile; "I-5" = Interstate 5; "E" = estimated]

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	
14308730 South Umpqua River below Packard Gulch, near Days Creek										
JUN 1992										
22...	1555	--	128	8.6	29.0	--	740	--	8.9	120
22...	2000	--	135	8.5	29.0	--	--	--	8.2	--
22...	2100	--	134	8.5	28.5	--	--	--	7.9	--
22...	2200	--	134	8.4	28.5	--	--	--	7.6	--
22...	2255	--	134	8.3	28.0	24.0	739	--	7.4	97
22...	2300	--	135	8.3	28.0	--	--	--	7.3	--
23...	0001	--	134	8.2	27.5	--	--	--	7.1	--
23...	0100	--	134	8.1	27.0	--	--	--	6.8	--
23...	0145	--	134	8.0	26.5	21.5	739	--	6.7	86
23...	0200	--	134	7.9	26.5	--	--	--	6.6	--
23...	0300	--	133	7.8	26.0	--	--	--	6.4	--
23...	0400	--	133	7.7	26.0	--	--	--	6.2	--
23...	0430	--	134	7.6	25.5	18.0	739	--	6.2	78
23...	0500	--	133	7.6	25.5	--	--	--	6.1	--
23...	0600	--	133	7.6	25.5	--	--	--	6.1	--
23...	0700	--	133	7.6	25.5	--	--	--	6.1	--
23...	0800	--	132	7.6	25.5	--	--	--	6.2	--
23...	0900	--	132	7.7	25.5	--	--	--	6.5	--
23...	1000	--	133	7.8	26.0	--	--	--	6.8	--
23...	1016	--	134	7.8	26.0	--	742	--	6.9	87
AUG 1992										
03...	1600	--	147	8.6	26.0	--	--	716	--	--
03...	1636	--	153	8.7	26.5	--	743	--	--	93
03...	1700	--	146	8.7	26.5	--	--	1350	--	--
03...	1800	--	148	8.8	27.0	--	--	781	--	--
03...	1900	--	156	8.8	27.0	--	--	123	--	--
03...	2000	--	161	8.8	27.0	--	--	60.3	--	--
03...	2100	--	154	8.8	26.5	--	--	7.13	--	--
03...	2200	--	158	8.8	26.5	--	--	0.0	--	--
03...	2300	--	148	8.8	26.0	--	--	0.0	--	--
04...	0001	--	159	8.8	26.0	--	--	--	--	--
04...	0100	--	156	8.7	25.5	--	--	0.0	--	--
04...	0200	--	151	8.7	25.5	--	--	0.0	--	--
04...	0300	--	158	8.6	24.5	--	--	0.0	--	--
04...	0400	--	157	8.4	24.0	--	--	0.0	--	--
04...	0500	--	152	8.2	23.5	--	--	0.0	--	--
04...	0600	--	158	7.9	23.5	--	--	0.0	--	--
04...	0700	--	153	7.7	23.0	--	--	5.78	--	--
04...	0800	--	155	7.6	22.5	--	--	28.6	--	--
04...	0900	--	160	7.6	22.5	--	--	66.4	--	--
04...	0945	--	162	7.7	22.5	--	743	--	--	83
04...	1000	--	157	7.6	22.0	--	--	83.7	--	--
04...	1100	--	150	7.6	22.0	--	--	122	--	--
04...	1200	--	158	7.7	22.0	--	--	167	--	--
SEP 1992										
14...	1400	--	187	8.2	17.0	--	738	685	10.8	115
14...	1500	--	179	8.3	17.5	--	--	824	11.1	--
14...	1600	--	188	8.4	18.0	--	--	723	11.4	--
14...	1620	--	186	8.4	18.0	24.0	735	--	11.5	126
14...	1700	--	187	8.5	18.0	--	--	476	11.6	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)
14308730 South Umpqua River below Packard Gulch, near Days Creek										
SEP 1992										
14...	1800	--	187	8.5	18.0	--	--	190	11.6	--
14...	1900	--	188	8.5	17.5	--	--	70.9	11.6	--
14...	2000	--	192	8.6	17.5	--	--	3.75	11.4	--
14...	2100	--	178	8.6	17.5	--	--	0.0	11.0	--
14...	2200	--	176	8.5	17.5	--	--	0.0	10.7	--
14...	2300	--	190	8.5	17.5	--	--	0.0	10.2	--
14...	2400	--	--	--	--	--	--	0.0	--	--
15...	0001	--	185	8.4	17.5	--	--	--	9.8	--
15...	0100	--	182	8.4	17.5	--	--	0.0	9.4	--
15...	0200	--	186	8.4	17.5	--	--	0.0	9.1	--
15...	0300	--	185	8.3	17.0	--	--	0.0	8.9	--
15...	0400	--	181	8.3	17.0	--	--	0.0	8.7	--
15...	0500	--	187	8.2	17.0	--	--	0.0	8.5	--
15...	0600	--	182	8.0	16.5	--	--	0.0	8.3	--
15...	0700	--	190	7.9	16.5	--	--	0.09	8.0	--
15...	0800	--	186	7.8	16.5	--	--	30.1	7.8	--
15...	0900	--	188	7.7	16.0	--	--	127	7.9	--
15...	0950	--	186	7.7	16.0	--	739	--	8.9	93
15...	1000	--	184	7.7	16.0	--	--	263	8.3	--
15...	1100	--	191	7.8	16.5	--	--	393	8.6	--
15...	1200	--	--	--	--	--	--	261	--	--
15...	1300	--	--	--	--	--	--	36.2	--	--
14308740 South Umpqua River above Morgan Creek, near Canyonville										
JUN 1992										
22...	1700	--	129	8.7	30.0	--	740	--	8.6	117
22...	2147	--	129	8.5	29.0	24.0	739	--	7.5	101
22...	2200	--	129	8.5	28.5	--	--	--	7.4	--
22...	2300	--	129	8.3	28.5	--	--	--	7.3	--
23...	0001	--	129	8.2	28.0	--	--	--	7.1	--
23...	0050	--	129	8.2	27.5	25.0	739	--	7.0	91
23...	0100	--	129	8.1	27.5	--	--	--	6.9	--
23...	0200	--	130	8.0	27.0	--	--	--	6.9	--
23...	0300	--	130	8.0	26.5	--	--	--	6.8	--
23...	0350	--	129	7.9	26.5	19.0	740	--	6.8	86
23...	0400	--	129	7.9	26.0	--	--	--	6.7	--
23...	0500	--	129	7.8	25.5	--	--	--	6.7	--
23...	0600	--	129	7.8	25.5	--	--	--	6.6	--
23...	0700	--	128	7.7	25.0	--	--	--	6.8	--
23...	0800	--	128	7.8	25.0	--	--	--	7.0	--
23...	0900	--	128	7.8	25.0	--	--	--	7.2	--
23...	1000	--	127	7.9	25.5	--	--	--	7.5	--
23...	1100	--	128	8.1	26.0	--	742	--	7.8	99
AUG 1992										
03...	1600	--	153	8.8	27.0	--	--	--	11.1	--
03...	1700	--	152	8.9	27.5	--	--	--	11.3	--
03...	1800	--	149	8.9	27.5	--	743	--	11.2	146
03...	1900	--	154	8.9	26.5	--	--	--	10.8	--
03...	2000	--	152	8.8	26.0	--	--	--	10.2	--
03...	2100	--	146	8.8	25.5	--	--	--	9.4	--
03...	2200	--	149	8.7	25.0	--	--	--	8.8	--
03...	2300	--	148	8.6	25.0	--	--	--	8.3	--
04...	0001	--	149	8.5	24.5	--	--	--	8.0	--
04...	0100	--	152	8.5	24.5	--	--	--	7.9	--
04...	0200	--	156	8.5	24.0	--	--	--	7.6	--
04...	0300	--	155	8.5	24.0	--	--	--	7.5	--
04...	0400	--	150	8.4	24.0	--	--	--	7.4	--
04...	0500	--	148	8.4	24.0	--	--	--	7.2	--
04...	0600	--	157	8.3	23.5	--	--	--	7.1	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	
		14308740 South Umpqua River above Morgan Creek, near Canyonville								
AUG 1992										
04...	0700	--	152	8.3	23.5	--	--	--	7.0	--
04...	0800	--	151	8.2	23.5	--	--	--	7.1	--
04...	0900	--	153	8.2	23.0	--	--	--	7.4	--
04...	1000	--	151	8.3	23.0	--	--	--	7.8	--
04...	1100	--	158	8.3	23.0	--	--	--	8.4	--
04...	1105	--	158	8.3	23.0	--	743	--	8.4	100
04...	1200	--	154	8.4	23.0	--	--	--	9.0	--
SEP 1992										
14...	1430	--	186	8.6	18.5	--	736	--	10.8	120
14...	1500	--	190	8.6	19.0	--	--	--	10.8	--
14...	1600	--	185	8.7	19.0	--	--	--	11.1	--
14...	1700	--	188	8.7	19.5	--	--	--	11.2	--
14...	1800	--	188	8.8	19.0	--	--	--	11.2	--
14...	1900	--	188	8.8	18.5	--	--	--	11.0	--
14...	2000	--	185	8.7	18.0	--	--	--	10.7	--
14...	2100	--	187	8.6	18.0	--	--	--	10.1	--
14...	2200	--	188	8.5	17.5	--	--	--	9.7	--
14...	2300	--	187	8.4	17.5	--	--	--	9.4	--
15...	0001	--	189	8.3	17.0	--	--	--	9.2	--
15...	0100	--	191	8.2	17.0	--	--	--	9.0	--
15...	0200	--	189	8.1	16.5	--	--	--	8.9	--
15...	0300	--	184	8.0	16.5	--	--	--	8.8	--
15...	0400	--	187	7.9	16.5	--	--	--	8.7	--
15...	0500	--	190	7.9	16.0	--	--	--	8.7	--
15...	0600	--	188	7.8	16.0	--	--	--	8.6	--
15...	0700	--	187	7.8	16.0	--	--	--	8.5	--
15...	0800	--	187	7.8	16.0	--	--	--	8.5	--
15...	0900	--	190	7.8	16.0	--	--	--	8.7	--
15...	1000	--	186	7.9	16.0	--	--	--	9.2	--
15...	1010	--	185	8.0	16.0	18.0	739	--	9.2	97
15...	1100	--	187	8.2	16.5	--	--	--	9.7	--
		14310550 South Umpqua River @ Missouri Bottom Bridge at Tricity								
JUL 1991										
18...	1830	--	135	8.2	24.0	--	--	--	10.7	--
18...	1900	--	135	8.2	24.0	--	--	--	10.4	--
18...	1930	--	135	8.2	23.5	--	--	--	10.2	--
18...	2000	--	135	8.2	23.5	--	--	--	9.9	--
18...	2030	--	135	8.2	23.5	--	--	--	9.7	--
18...	2100	--	135	8.2	23.5	--	--	--	9.5	--
18...	2130	--	135	8.2	23.5	--	--	--	9.3	--
18...	2200	--	135	8.2	23.5	--	--	--	9.2	--
18...	2230	--	135	8.1	23.5	--	--	--	9.0	--
18...	2300	--	135	8.1	23.5	--	--	--	9.0	--
18...	2330	--	135	8.1	23.5	--	--	--	8.8	--
18...	2400	--	135	8.0	23.5	--	--	--	8.7	--
19...	0100	--	135	8.0	23.0	--	--	--	8.6	--
19...	0130	--	135	7.9	23.0	--	--	--	8.5	--
19...	0200	--	135	7.8	23.0	--	--	--	8.4	--
19...	0230	--	135	7.8	23.0	--	--	--	8.4	--
19...	0300	--	135	7.7	23.0	--	--	--	8.3	--
19...	0330	--	135	7.7	23.0	--	--	--	8.3	--
19...	0400	--	135	7.6	22.5	--	--	--	8.2	--
19...	0430	--	135	7.6	22.5	--	--	--	8.2	--
19...	0500	--	135	7.6	22.5	--	--	--	8.2	--
19...	0530	--	136	7.5	22.5	--	--	--	8.2	--
19...	0600	--	136	7.5	22.5	--	--	--	8.2	--
19...	0630	--	135	7.5	22.0	--	--	--	8.2	--
19...	0700	--	136	7.5	22.0	--	--	--	8.3	--
19...	0730	--	136	7.5	22.0	--	--	--	8.4	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
14310550		South Umpqua River @ Missouri Bottom Bridge at Tricity							
JUL 1991									
19...	0800	--	136	7.5	22.0	--	--	--	8.4 --
19...	0830	--	135	7.5	22.0	--	--	--	8.5 --
19...	0900	--	135	7.5	22.0	--	--	--	8.7 --
19...	0930	--	135	7.5	22.0	--	--	--	8.9 --
19...	1000	--	136	7.6	22.0	--	--	--	9.0 --
19...	1030	--	136	7.6	22.0	--	--	--	9.1 --
19...	1100	--	136	7.6	22.0	--	--	--	9.2 --
19...	1130	--	136	7.7	22.5	--	--	--	9.2 --
19...	1200	--	136	7.8	22.5	--	--	--	9.4 --
19...	1230	--	136	7.8	23.0	--	--	--	9.4 --
19...	1300	--	136	7.8	23.0	--	--	--	9.5 --
19...	1330	--	136	7.8	23.0	--	--	--	9.5 --
19...	1400	--	136	7.8	23.5	--	--	--	9.6 --
19...	1430	--	136	7.9	23.5	--	--	--	9.6 --
19...	1500	--	136	8.0	23.5	--	--	--	9.7 --
19...	1530	--	136	8.0	24.0	--	--	--	9.7 --
19...	1600	--	136	8.1	24.0	--	--	--	9.6 --
19...	1630	--	135	8.1	24.0	--	--	--	9.7 --
19...	1700	--	135	8.2	24.0	--	--	--	9.6 --
19...	1730	--	135	8.2	24.0	--	--	--	9.6 --
19...	1800	--	135	8.2	24.0	--	742	--	9.5 116
20...	1530	--	137	8.6	29.0	--	748	--	8.8 116
20...	1600	--	136	8.6	29.0	--	--	--	8.8 --
20...	1630	--	136	8.7	29.0	--	--	--	8.7 --
20...	1700	--	136	8.7	29.0	--	--	--	8.7 --
20...	1730	--	137	8.7	29.0	--	--	--	8.6 --
20...	1800	--	136	8.7	28.5	--	--	--	8.5 --
20...	1830	--	137	8.7	28.5	--	--	--	8.3 --
20...	1900	--	137	8.6	28.5	--	--	--	7.9 --
20...	1930	--	137	8.6	28.0	--	--	--	7.7 --
20...	2000	--	137	8.5	28.0	--	--	--	7.5 --
20...	2030	--	137	8.5	28.0	--	--	--	7.4 --
20...	2100	--	137	8.5	28.0	--	--	--	7.3 --
20...	2130	--	137	8.4	27.5	--	--	--	7.2 --
20...	2200	--	137	8.4	27.5	--	--	--	7.2 --
20...	2230	--	137	8.4	27.5	--	--	--	7.1 --
20...	2300	--	137	8.3	27.5	--	--	--	7.0 --
20...	2330	--	137	8.3	27.0	--	--	--	7.0 --
20...	2400	--	137	8.3	27.0	--	--	--	6.9 --
21...	0030	--	137	8.2	27.0	--	--	--	6.9 --
21...	0100	--	137	8.2	27.0	--	--	--	6.8 --
21...	0130	--	137	8.1	27.0	--	--	--	6.8 --
21...	0200	--	137	8.1	27.0	--	--	--	6.8 --
21...	0230	--	137	8.1	26.5	--	--	--	6.7 --
21...	0300	--	137	8.0	26.5	--	--	--	6.7 --
21...	0330	--	137	8.0	26.5	--	--	--	6.7 --
21...	0400	--	137	8.0	26.5	--	--	--	6.6 --
21...	0430	--	137	7.9	26.0	--	--	--	6.6 --
21...	0500	--	137	7.9	26.0	--	--	--	6.6 --
21...	0530	--	137	7.8	26.0	--	--	--	6.6 --
21...	0600	--	137	7.8	26.0	--	--	--	6.5 --
21...	0630	--	137	7.8	26.0	--	--	--	6.5 --
21...	0700	--	137	7.8	25.5	--	--	--	6.5 --
21...	0730	--	137	7.8	25.5	--	--	--	6.6 --
21...	0800	--	137	7.8	25.5	--	--	--	6.7 --
21...	0830	--	137	7.8	25.5	--	--	--	6.9 --
21...	0900	--	137	7.9	25.5	--	--	--	7.1 --
21...	0930	--	137	7.9	26.0	--	--	--	7.2 --

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)
14310550 South Umpqua River @ Missouri Bottom Bridge at Tricity										
AUG 1991										
21...	1000	--	137	8.0	26.0	--	--	--	7.4	--
21...	1030	--	137	8.1	26.5	--	--	--	7.6	--
21...	1100	--	137	8.1	26.5	--	--	--	7.7	--
21...	1130	--	137	8.2	27.0	--	--	--	7.9	--
21...	1200	--	137	8.3	27.0	--	--	--	8.0	--
21...	1230	--	137	8.3	27.5	--	--	--	8.1	--
21...	1300	--	137	8.4	28.0	--	--	--	8.2	--
21...	1330	--	137	8.5	28.0	--	--	--	8.3	--
21...	1400	--	137	8.5	28.0	--	--	--	8.4	--
21...	1430	--	137	8.6	28.5	--	--	--	8.5	--
21...	1500	--	137	8.6	28.5	--	--	--	8.5	--
21...	1530	--	137	8.6	29.0	--	--	--	8.6	--
21...	1600	--	137	8.7	29.0	--	--	--	8.6	--
21...	1630	--	137	8.7	29.0	--	--	--	8.5	--
21...	1700	--	137	8.7	29.0	--	749	--	8.5	112
4259191232025 South Umpqua River at river mile 154.9, near Riddle										
AUG 1991										
20...	1830	--	140	8.8	27.5	--	748	--	9.5	122
20...	1900	--	140	8.8	27.5	--	--	--	9.2	--
20...	1930	--	140	8.8	27.5	--	--	--	9.1	--
20...	2000	--	140	8.8	27.5	--	--	--	8.8	--
20...	2030	--	140	8.8	27.0	--	--	--	8.6	--
20...	2100	--	140	8.7	27.0	--	--	--	8.4	--
20...	2130	--	140	8.7	27.0	--	--	--	8.2	--
20...	2200	--	140	8.7	26.5	--	--	--	8.0	--
20...	2230	--	140	8.6	26.5	--	--	--	7.8	--
20...	2300	--	140	8.6	26.5	--	--	--	7.6	--
20...	2330	--	140	8.5	26.5	--	--	--	7.4	--
20...	2400	--	140	8.5	26.0	--	--	--	7.3	--
21...	0030	--	140	8.4	26.0	--	--	--	7.2	--
21...	0100	--	141	8.4	26.0	--	--	--	7.1	--
21...	0130	--	140	8.3	26.0	--	--	--	7.0	--
21...	0200	--	140	8.3	25.5	--	--	--	7.0	--
21...	0230	--	140	8.2	25.5	--	--	--	6.9	--
21...	0300	--	140	8.2	25.5	--	--	--	6.9	--
21...	0330	--	140	8.1	25.5	--	--	--	6.9	--
21...	0400	--	140	8.1	25.0	--	--	--	6.8	--
21...	0430	--	140	8.1	25.0	--	--	--	6.8	--
21...	0500	--	140	8.0	25.0	--	--	--	6.8	--
21...	0530	--	140	8.0	25.0	--	--	--	6.7	--
21...	0600	--	140	8.0	24.5	--	--	--	6.7	--
21...	0630	--	140	8.0	24.5	--	--	--	6.7	--
21...	0700	--	140	7.9	24.5	--	--	--	6.7	--
21...	0730	--	140	7.9	24.5	--	--	--	6.7	--
21...	0800	--	140	7.9	24.5	--	--	--	6.8	--
21...	0830	--	140	7.9	24.0	--	--	--	6.8	--
21...	0900	--	140	7.9	24.0	--	--	--	6.9	--
21...	0930	--	140	7.9	24.0	--	--	--	7.0	--
21...	1000	--	140	8.0	24.0	--	--	--	7.2	--
21...	1030	--	140	8.0	24.0	--	--	--	7.4	--
21...	1100	--	140	8.0	24.5	--	--	--	7.6	--
21...	1130	--	140	8.1	24.5	--	--	--	7.9	--
21...	1200	--	140	8.2	25.0	--	--	--	8.2	--
21...	1230	--	140	8.3	25.0	--	--	--	8.5	--
21...	1300	--	140	8.4	25.5	--	--	--	8.8	--
21...	1330	--	140	8.5	26.0	--	--	--	9.0	--
21...	1400	--	140	8.6	26.0	--	--	--	9.3	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
4259191232025 South Umpqua River at river mile 154.9, near Riddle										
AUG 1991										
21...	1430	--	140	8.7	26.5	--	--	--	9.5	--
21...	1500	--	140	8.7	27.0	--	--	--	9.6	--
21...	1530	--	140	8.7	27.0	--	--	--	9.6	--
21...	1600	--	140	8.8	27.5	--	--	--	9.7	--
21...	1630	--	140	8.8	27.5	--	--	--	9.7	--
21...	1700	--	140	8.8	27.5	--	--	--	9.7	--
21...	1730	--	140	8.8	27.5	--	--	--	9.6	--
21...	1800	--	140	8.8	27.5	--	--	--	9.4	--
21...	1830	--	140	8.8	27.5	--	--	--	9.3	--
21...	1900	--	140	8.8	27.0	--	749	--	9.1	117
4259351231936 South Umpqua River at river mile 154.0, near Tricity										
JUL 1991										
18...	1930	--	127	8.4	23.5	--	743	--	8.5	103
18...	2000	--	127	8.4	23.5	--	--	--	8.4	--
18...	2030	--	127	8.4	23.5	--	--	--	8.3	--
18...	2100	--	127	8.4	23.5	--	--	--	8.2	--
18...	2130	--	128	8.4	23.5	--	--	--	8.1	--
18...	2200	--	127	8.4	23.5	--	--	--	8.0	--
18...	2230	--	128	8.4	23.0	--	--	--	7.9	--
18...	2300	--	128	8.4	23.0	--	--	--	7.8	--
18...	2330	--	128	8.3	23.0	--	--	--	7.7	--
18...	2400	--	128	8.3	23.0	--	--	--	7.6	--
19...	0100	--	128	8.3	23.0	--	--	--	7.5	--
19...	0130	--	128	8.2	22.5	--	--	--	7.4	--
19...	0200	--	128	8.2	22.5	--	--	--	7.4	--
19...	0230	--	128	8.2	22.5	--	--	--	7.3	--
19...	0300	--	128	8.1	22.5	--	--	--	7.3	--
19...	0330	--	128	8.1	22.5	--	--	--	7.2	--
19...	0400	--	128	8.1	22.5	--	--	--	7.2	--
19...	0430	--	128	8.0	22.5	--	--	--	7.1	--
19...	0500	--	129	8.0	22.5	--	--	--	7.1	--
19...	0530	--	129	7.9	22.5	--	--	--	7.1	--
19...	0600	--	129	7.9	22.0	--	--	--	7.1	--
19...	0630	--	129	7.9	22.0	--	--	--	7.1	--
19...	0700	--	130	7.9	22.0	--	--	--	7.1	--
19...	0730	--	130	7.9	22.0	--	--	--	7.2	--
19...	0800	--	130	7.8	22.0	--	--	--	7.2	--
19...	0830	--	130	7.8	22.0	--	--	--	7.3	--
19...	0900	--	130	7.9	22.0	--	--	--	7.4	--
19...	0930	--	130	7.9	22.0	--	--	--	7.5	--
19...	1000	--	131	7.9	22.0	--	--	--	7.6	--
19...	1030	--	131	7.9	22.0	--	--	--	7.7	--
19...	1100	--	131	8.0	22.0	--	--	--	7.8	--
19...	1130	--	131	8.0	22.0	--	--	--	8.0	--
19...	1200	--	131	8.1	22.5	--	--	--	8.1	--
19...	1230	--	131	8.1	22.5	--	--	--	8.2	--
19...	1300	--	131	8.2	23.0	--	--	--	8.3	--
19...	1330	--	131	8.2	23.0	--	--	--	8.4	--
19...	1400	--	130	8.2	23.5	--	--	--	8.5	--
19...	1430	--	130	8.3	23.5	--	--	--	8.6	--
19...	1500	--	130	8.3	23.5	--	--	--	8.6	--
19...	1530	--	130	8.4	24.0	--	--	--	8.6	--
19...	1600	--	130	8.4	24.0	--	--	--	8.7	--
19...	1630	--	130	8.4	24.5	--	--	--	8.7	--
19...	1700	--	130	8.4	24.5	--	--	--	8.7	--
19...	1730	--	129	8.5	24.5	--	--	--	8.7	--
19...	1800	--	129	8.5	24.5	--	--	--	8.6	--
19...	1830	--	129	8.5	24.5	--	--	--	8.6	--
19...	1900	--	129	8.5	24.5	--	742	--	8.5	105

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)
4259351231936 South Umpqua River at river mile 154.0, near Tricity										
AUG 1991										
20...	2130	--	--	8.6	27.5	--	749	--	9.7	--
20...	2200	--	--	8.6	27.5	--	--	--	9.6	--
20...	2230	--	--	8.6	27.0	--	--	--	9.2	--
20...	2300	--	--	8.6	27.0	--	--	--	9.0	--
20...	2330	--	--	8.5	27.0	--	--	--	8.9	--
20...	2400	--	--	8.5	27.0	--	--	--	8.7	--
21...	0030	--	--	8.5	26.5	--	--	--	8.6	--
21...	0100	--	--	8.4	26.5	--	--	--	8.3	--
21...	0130	--	--	8.4	26.5	--	--	--	8.3	--
21...	0200	--	--	8.4	26.5	--	--	--	8.0	--
21...	0230	--	--	8.3	26.0	--	--	--	7.9	--
21...	0300	--	--	8.2	26.0	--	--	--	7.8	--
21...	0330	--	--	8.2	26.0	--	--	--	7.6	--
21...	0400	--	--	8.1	26.0	--	--	--	7.5	--
21...	0430	--	--	8.1	25.5	--	--	--	7.5	--
21...	0500	--	--	8.0	25.5	--	--	--	7.4	--
21...	0530	--	--	8.0	25.5	--	--	--	7.5	--
21...	0600	--	--	8.0	25.0	--	--	--	7.4	--
21...	0630	--	--	7.9	25.0	--	--	--	7.4	--
21...	0700	--	--	7.9	25.0	--	--	--	7.4	--
21...	0730	--	--	7.9	25.0	--	--	--	7.5	--
21...	0800	--	--	8.0	25.0	--	--	--	7.6	--
21...	0830	--	--	8.0	25.0	--	--	--	7.9	--
21...	0900	--	--	8.0	25.0	--	--	--	8.0	--
21...	0930	--	--	8.1	25.0	--	--	--	8.2	--
21...	1000	--	--	8.1	25.0	--	--	--	8.3	--
21...	1030	--	--	8.1	25.0	--	--	--	8.4	--
21...	1100	--	--	8.2	25.0	--	--	--	8.6	--
21...	1130	--	--	8.2	25.0	--	--	--	8.8	--
21...	1200	--	--	8.3	25.0	--	--	--	8.9	--
21...	1230	--	--	8.3	25.5	--	--	--	9.1	--
21...	1300	--	--	8.3	25.5	--	--	--	9.3	--
21...	1330	--	--	8.4	25.5	--	--	--	9.5	--
21...	1400	--	--	8.5	26.0	--	--	--	9.7	--
21...	1430	--	--	8.5	26.0	--	--	--	10.0	--
21...	1500	--	--	8.6	26.5	--	--	--	10.2	--
21...	1530	--	--	8.6	26.5	--	--	--	10.3	--
21...	1600	--	--	8.7	27.0	--	--	--	10.5	--
21...	1630	--	--	8.7	27.0	--	--	--	10.6	--
21...	1700	--	--	8.7	27.0	--	--	--	10.7	--
21...	1730	--	--	8.8	27.5	--	--	--	10.7	--
21...	1800	--	--	8.8	27.5	--	--	--	10.7	--
21...	1830	--	--	8.8	27.5	--	--	--	10.5	--
21...	1900	--	--	8.7	27.5	--	--	--	10.2	--
21...	1930	--	--	8.7	27.0	--	--	--	10.0	--
21...	2000	--	--	8.7	27.0	--	--	--	9.8	--
21...	2030	--	--	8.7	27.0	--	--	--	9.5	--
21...	2100	--	--	8.7	27.0	--	750	--	9.4	--
JUN 1992										
23...	1500	--	148	8.6	29.5	--	745	--	9.6	129
23...	1930	--	149	8.8	29.5	30.5	740	--	10	135
24...	0015	--	151	8.5	28.5	--	741	--	7.7	102
24...	0420	--	151	7.7	27.0	--	740	--	6.3	82
24...	1010	--	152	7.4	27.0	--	743	--	6.1	79
24...	1307	--	145	7.9	28.0	--	742	--	7.9	104
24...	1445	--	144	8.2	28.0	--	741	--	8.9	118
AUG										
04...	1500	--	163	8.3	23.5	--	749	--	9.1	110

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)
		14311105 South Umpqua River at Myrtle Creek								
JUN 1992										
04...	1600	--	163	8.5	24.5	--	--	--	10	--
04...	1700	--	165	8.6	24.5	--	--	--	10.5	--
04...	1800	--	155	8.6	25.0	--	--	--	10.6	--
04...	1900	--	157	8.6	24.5	--	--	--	10.2	--
04...	2000	--	155	8.6	24.5	--	--	--	9.7	--
04...	2100	--	162	8.6	24.5	--	--	--	9.5	--
04...	2200	--	154	8.6	24.5	--	--	--	9.3	--
04...	2300	--	149	8.6	24.0	--	--	--	9.1	--
05...	0001	--	158	8.5	24.0	--	--	--	8.8	--
05...	0100	--	162	8.5	23.5	--	--	--	8.6	--
05...	0200	--	153	8.5	23.5	--	--	--	8.3	--
05...	0300	--	162	8.4	23.0	--	--	--	7.8	--
05...	0400	--	151	8.2	22.5	--	--	--	7.4	--
05...	0500	--	149	8.1	22.5	--	--	--	7.0	--
05...	0600	--	156	8.0	22.0	--	--	--	6.8	--
05...	0700	--	163	7.8	21.5	--	--	--	6.7	--
05...	0800	--	161	7.8	21.5	--	--	--	6.7	--
05...	0900	--	158	7.8	21.5	--	--	--	6.8	--
05...	0930	--	159	7.9	21.5	--	749	--	7.2	83
05...	1000	--	159	7.9	21.5	--	--	--	7.2	--
05...	1100	--	160	8.0	22.0	--	--	--	7.8	--
05...	1200	--	168	8.1	22.5	--	--	--	8.3	--
05...	1300	--	161	8.3	23.5	--	--	--	9.1	--
05...	1400	--	164	8.5	24.0	--	--	--	10.2	--
SEP 1992										
15...	1520	--	178	8.5	18.0	--	746	--	10.5	113
15...	1724	--	177	8.8	18.0	--	743	--	11.3	123
16...	0647	--	179	8.0	17.0	7.0	746	--	8.0	85
16...	0925	--	180	7.8	16.5	13.0	750	--	7.8	81
16...	1221	--	179	8.0	17.0	--	--	--	8.5	--
16...	1429	--	177	8.4	17.5	--	--	--	9.4	--
		14311110 South Umpqua River near Myrtle Creek								
JUN 1992										
23...	1640	--	156	8.5	28.5	--	745	--	8.9	118
23...	2050	--	158	8.4	28.0	26.0	741	--	8.0	106
24...	0120	--	158	8.3	27.5	--	741	--	7.4	96
24...	0510	--	158	8.0	27.0	--	740	--	6.9	90
24...	0920	131	149	7.7	27.0	--	743	--	7.3	94
24...	1325	--	149	8.1	27.5	--	742	--	8.2	108
24...	1510	--	151	8.2	27.5	--	741	--	8.4	110
AUG 1992										
04...	1530	77	165	8.9	24.5	--	750	--	10.2	124
04...	2003	--	165	9.0	24.0	--	750	--	10.4	127
05...	0703	--	171	7.7	22.0	--	750	--	6.9	80
05...	1005	--	169	8.3	22.5	--	750	--	8.7	102
05...	1417	--	163	8.9	24.5	--	749	--	11.1	135
SEP 1992										
15...	1643	--	180	8.9	18.0	--	746	--	11.2	121
15...	2007	--	183	8.7	18.0	--	747	--	10	107
16...	1025	66	186	8.3	16.5	18.0	750	--	9.4	99
16...	1248	--	182	8.9	18.0	--	--	--	10.7	--
16...	1454	--	181	9.0	18.5	--	--	--	11.4	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)
4304111232212 South Umpqua River near Boomer Hill Road										
JUL 1991										
17...	1400	--	142	8.1	21.5	--	750	--	9.3	108
17...	1500	--	142	8.1	22.0	--	--	--	9.4	--
17...	1600	--	142	8.2	22.0	--	--	--	9.5	--
17...	1700	--	141	8.2	22.5	--	--	--	9.5	--
17...	1800	--	141	8.2	22.5	--	--	--	9.4	--
17...	1900	--	141	8.3	22.5	--	--	--	9.3	--
17...	2000	--	141	8.3	23.0	--	--	--	9.2	--
17...	2100	--	141	8.3	23.0	--	--	--	9.1	--
17...	2200	--	141	8.2	23.0	--	--	--	8.8	--
17...	2300	--	141	8.2	22.5	--	--	--	8.7	--
17...	2400	--	141	8.1	22.5	--	--	--	8.5	--
18...	0100	--	141	8.0	22.5	--	--	--	8.4	--
18...	0200	--	140	8.0	22.0	--	--	--	8.3	--
18...	0300	--	140	8.0	22.0	--	--	--	8.2	--
18...	0400	--	140	7.9	22.0	--	--	--	8.2	--
18...	0500	--	139	7.9	21.5	--	--	--	8.1	--
18...	0600	--	139	7.9	21.5	--	--	--	8.1	--
18...	0700	--	138	7.9	21.0	--	--	--	8.1	--
18...	0800	--	138	7.9	21.0	--	--	--	8.2	--
18...	0900	--	138	7.9	21.0	--	--	--	8.3	--
18...	1000	--	137	8.0	21.0	--	--	--	8.5	--
18...	1100	--	137	8.1	21.5	--	--	--	8.7	--
18...	1200	--	137	8.1	22.0	--	--	--	8.8	--
18...	1300	--	136	8.2	22.0	--	--	--	9.0	--
18...	1400	--	136	8.2	22.5	--	--	--	9.1	--
18...	1500	--	136	8.3	22.5	--	752	--	9.1	108
AUG 1991										
19...	1400	--	147	8.6	25.5	--	751	--	9.5	118
19...	1430	--	147	8.6	25.5	--	--	--	9.6	--
19...	1500	--	147	8.7	25.5	--	--	--	9.7	--
19...	1530	--	148	8.7	25.5	--	--	--	9.8	--
19...	1600	--	147	8.7	25.5	--	--	--	10	--
19...	1630	--	146	8.7	25.5	--	--	--	9.8	--
19...	1700	--	146	8.7	26.0	--	--	--	9.7	--
19...	1730	--	146	8.7	26.0	--	--	--	9.6	--
19...	1800	--	145	8.7	26.0	--	--	--	9.5	--
19...	1830	--	145	8.7	26.0	--	--	--	9.2	--
19...	1900	--	145	8.6	25.5	--	--	--	9.0	--
19...	1930	--	145	8.6	25.5	--	--	--	8.8	--
19...	2000	--	146	8.6	25.5	--	--	--	8.6	--
19...	2030	--	146	8.5	25.5	--	--	--	8.4	--
19...	2100	--	146	8.5	25.5	--	--	--	8.3	--
19...	2130	--	146	8.5	25.5	--	--	--	8.1	--
19...	2200	--	147	8.5	25.5	--	--	--	8.0	--
19...	2230	--	148	8.5	25.5	--	--	--	7.9	--
19...	2300	--	148	8.4	25.5	--	--	--	7.8	--
19...	2330	--	148	8.4	25.5	--	--	--	7.7	--
19...	2400	--	149	8.4	25.5	--	--	--	7.7	--
20...	0030	--	150	8.4	25.5	--	--	--	7.6	--
20...	0100	--	150	8.3	25.5	--	--	--	7.5	--
20...	0130	--	150	8.3	25.5	--	--	--	7.4	--
20...	0200	--	150	8.3	25.5	--	--	--	7.4	--
20...	0230	--	151	8.3	25.5	--	--	--	7.3	--
20...	0300	--	151	8.2	25.0	--	--	--	7.1	--
20...	0330	--	151	8.2	25.0	--	--	--	7.1	--
20...	0400	--	151	8.1	25.0	--	--	--	6.9	--
20...	0430	--	151	8.0	25.0	--	--	--	6.8	--
20...	0500	--	152	8.0	25.0	--	--	--	6.8	--
20...	0530	--	152	8.0	25.0	--	--	--	6.7	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)
4304111232212 South Umpqua River near Boomer Hill Road										
AUG 1991										
20...	0600	--	152	7.9	25.0	--	--	--	6.6	--
20...	0630	--	152	7.9	25.0	--	--	--	6.5	--
20...	0700	--	152	7.9	25.0	--	--	--	6.5	--
20...	0730	--	151	7.9	25.0	--	--	--	6.5	--
20...	0800	--	151	7.9	25.0	--	--	--	6.6	--
20...	0830	--	151	8.0	25.0	--	--	--	6.8	--
20...	0900	--	151	8.0	25.0	--	--	--	7.0	--
20...	0930	--	151	8.1	25.0	--	--	--	7.4	--
20...	1000	--	150	8.2	25.0	--	--	--	7.5	--
20...	1030	--	150	8.3	25.0	--	--	--	8.0	--
20...	1100	--	150	8.4	25.5	--	--	--	8.3	--
20...	1130	--	150	8.5	25.5	--	--	--	8.5	--
20...	1200	--	150	8.5	25.5	--	--	--	8.7	--
20...	1230	--	150	8.6	26.0	--	--	--	9.0	--
20...	1300	--	150	8.6	26.0	--	--	--	9.2	--
20...	1330	--	150	8.7	26.0	--	750	--	9.2	116
20...	2000	--	143	9.1	26.0	--	749	--	9.5	120
14311115 South Umpqua River at Ruckles										
AUG 1991										
19...	1530	--	146	8.7	26.0	--	749	--	9.3	117
19...	1600	--	146	8.7	26.0	--	--	--	9.4	--
19...	1630	--	146	8.8	26.0	--	--	--	9.6	--
19...	1700	--	146	8.8	26.0	--	--	--	9.6	--
19...	1730	--	146	8.8	26.0	--	--	--	9.7	--
19...	1800	--	146	8.8	26.0	--	--	--	9.7	--
19...	1830	--	146	8.8	26.0	--	--	--	9.7	--
19...	1900	--	146	8.8	26.0	--	--	--	9.6	--
19...	1930	--	146	8.8	26.0	--	--	--	9.5	--
19...	2000	--	146	8.8	26.0	--	--	--	9.3	--
19...	2030	--	146	8.8	26.0	--	--	--	9.2	--
19...	2100	--	146	8.7	26.0	--	--	--	9.0	--
19...	2130	--	146	8.7	25.5	--	--	--	8.9	--
19...	2200	--	146	8.7	25.5	--	--	--	8.8	--
19...	2230	--	146	8.7	25.5	--	--	--	8.6	--
19...	2300	--	146	8.6	25.5	--	--	--	8.5	--
19...	2330	--	146	8.6	25.0	--	--	--	8.4	--
19...	2400	--	146	8.6	25.0	--	--	--	8.2	--
20...	0100	--	147	8.5	24.5	--	--	--	7.9	--
20...	0130	--	147	8.4	24.5	--	--	--	7.7	--
20...	0200	--	147	8.4	24.0	--	--	--	7.6	--
20...	0230	--	147	8.3	24.0	--	--	--	7.5	--
20...	0300	--	147	8.3	24.5	--	--	--	7.4	--
20...	0330	--	147	8.3	24.5	--	--	--	7.3	--
20...	0400	--	--	8.2	--	--	--	--	7.2	--
20...	0430	--	147	8.2	24.5	--	--	--	7.1	--
20...	0500	--	148	8.2	24.5	--	--	--	7.1	--
20...	0530	--	148	8.1	24.5	--	--	--	7.0	--
20...	0600	--	148	8.1	24.5	--	--	--	6.9	--
20...	0630	--	148	8.1	24.5	--	--	--	6.9	--
20...	0700	--	148	8.1	24.5	--	--	--	6.9	--
20...	0730	--	148	8.1	24.0	--	--	--	6.9	--
20...	0800	--	148	8.1	21.0	--	--	--	7.0	--
20...	0830	--	148	8.2	24.5	--	--	--	7.1	--
20...	0900	--	148	8.2	24.5	--	--	--	7.2	--
20...	0930	--	148	8.2	24.0	--	--	--	7.4	--
20...	1000	--	148	8.3	23.5	--	--	--	7.5	--
20...	1030	--	148	8.3	23.0	--	--	--	7.7	--
20...	1100	--	149	8.3	25.0	--	--	--	7.8	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)
14311115 South Umpqua River at Ruckles										
AUG 1991										
20...	1130	--	149	8.4	24.5	--	--	--	8.0	--
20...	1200	--	148	8.5	25.0	--	--	--	8.3	--
20...	1230	--	148	8.5	25.0	--	--	--	8.5	--
20...	1300	--	148	--	25.0	--	--	--	8.5	--
20...	1330	--	148	8.6	25.0	--	--	--	8.6	--
20...	1400	--	148	8.6	25.5	--	--	--	8.9	--
20...	1430	--	148	8.7	25.5	--	--	--	9.1	--
20...	1500	--	148	8.7	25.5	--	--	--	9.3	--
20...	1530	--	148	8.8	25.5	--	--	--	9.5	--
20...	1600	--	148	8.8	26.0	--	--	--	9.7	--
20...	1630	--	148	8.9	25.5	--	--	--	9.8	--
20...	1700	--	148	8.9	26.5	--	750	--	9.9	125
JUN 1992										
23...	1335	--	150	8.4	27.5	--	745	--	8.6	111
23...	1720	--	152	8.8	28.0	--	744	--	9.6	126
23...	1800	--	--	8.8	28.0	--	--	--	9.6	--
23...	1900	--	--	8.8	28.0	--	--	--	9.5	--
23...	2000	--	--	8.7	28.0	--	--	--	9.1	--
23...	2100	--	--	8.7	28.0	--	--	--	8.6	--
23...	2155	--	150	8.6	27.5	23.0	741	--	8.3	109
23...	2200	--	148	8.6	27.5	--	--	--	8.3	--
23...	2300	--	--	8.5	27.5	--	--	--	8.0	--
24...	0001	--	154	8.4	27.5	--	--	--	7.6	--
24...	0100	--	154	8.3	27.0	--	--	--	7.4	--
24...	0200	--	152	8.2	27.0	--	--	--	7.0	--
24...	0210	--	E152	8.2	27.0	--	741	--	6.9	--
24...	0300	--	--	8.0	27.0	--	--	--	6.7	--
24...	0400	--	--	8.0	26.5	--	--	--	6.5	--
24...	0500	--	--	7.9	26.5	--	--	--	6.3	--
24...	0550	--	--	7.9	26.5	--	741	--	6.1	--
24...	0600	--	--	7.8	26.5	--	--	--	6.1	--
24...	0700	--	--	7.9	26.5	--	--	--	6.3	--
24...	0800	--	--	7.9	26.5	--	--	--	6.4	--
24...	0900	--	154	8.0	26.5	--	--	--	6.6	--
24...	1000	--	--	8.0	26.5	--	--	--	6.8	--
24...	1100	--	153	8.2	27.0	--	742	--	7.1	92
24...	1200	--	157	8.2	27.0	--	--	--	7.5	--
24...	1300	--	--	8.4	27.5	--	--	--	7.9	--
24...	1400	--	--	8.5	27.5	--	--	--	8.2	--
24...	1500	--	--	8.6	27.5	--	--	--	8.5	--
24...	1600	--	157	8.7	28.0	--	741	--	8.9	117
AUG 1992										
04...	1645	--	169	8.9	25.0	--	--	--	9.8	--
04...	1700	--	162	8.9	25.0	--	--	558	9.8	--
04...	1800	--	161	8.9	24.5	--	--	672	9.5	--
04...	1900	--	163	8.8	24.5	--	--	164	9.6	--
04...	2000	--	159	8.7	24.0	--	--	161	9.0	--
04...	2027	--	163	8.7	24.0	--	--	--	8.5	--
04...	2100	--	165	8.7	24.0	--	--	11.4	8.7	--
04...	2200	--	162	8.6	24.0	--	--	0.0	8.4	--
04...	2300	--	163	8.6	23.5	--	--	0.0	8.3	--
04...	2400	--	--	--	--	--	--	0.0	--	--
05...	0001	--	160	8.6	23.5	--	--	--	8.0	--
05...	0100	--	165	8.5	23.5	--	--	0.0	7.9	--
05...	0200	--	165	8.5	23.5	--	--	0.0	7.7	--
05...	0300	--	166	8.4	23.0	--	--	0.0	7.5	--
05...	0400	--	163	8.3	23.0	--	--	0.0	7.1	--
05...	0500	--	164	8.2	22.5	--	--	0.0	6.9	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)
14311115 South Umpqua River at Ruckles										
AUG 1992										
05...	0600	--	163	8.0	22.5	--	--	0.0	6.6	--
05...	0700	--	164	7.9	22.5	--	--	38.5	7.0	--
05...	0800	--	164	8.0	22.5	--	--	291	7.2	--
05...	0900	--	162	8.1	22.5	--	--	789	7.7	--
05...	1000	--	163	8.2	23.0	--	--	1220	8.1	--
05...	1100	--	163	8.4	23.0	--	--	1520	8.5	--
05...	1115	--	166	8.5	23.5	--	749	--	8.7	104
05...	1200	--	164	8.5	23.5	--	--	1670	8.7	--
05...	1300	--	161	8.6	24.0	--	--	1810	9.0	--
05...	1400	--	164	8.8	24.5	--	--	1750	9.4	--
05...	1500	--	162	8.8	24.5	--	--	1730	9.7	--
05...	1600	--	164	8.9	24.5	--	--	--	11.0	--
SEP 1992										
15...	1400	--	178	8.8	18.0	--	--	--	11.1	--
15...	1500	--	182	8.8	18.0	--	--	--	11.2	--
15...	1520	--	180	8.9	18.0	17.5	744	--	11.2	121
15...	1600	--	177	8.9	18.0	--	--	--	11.3	--
15...	1700	--	177	8.9	18.0	--	--	--	11.4	--
15...	1800	--	180	8.9	18.0	--	--	--	11.1	--
15...	1900	--	183	8.8	18.0	--	--	--	10.5	--
15...	2000	--	176	8.7	18.0	--	--	--	9.8	--
15...	2010	--	180	8.7	18.0	--	745	--	9.6	103
15...	2100	--	178	8.6	17.5	--	--	--	9.6	--
15...	2200	--	176	8.6	17.5	--	--	--	9.6	--
15...	2300	--	180	8.6	17.5	--	--	--	9.6	--
16...	0001	--	173	8.6	17.5	--	--	--	9.5	--
16...	0100	--	180	8.6	17.5	--	--	--	9.4	--
16...	0200	--	181	8.5	17.5	--	--	--	9.2	--
16...	0300	--	184	8.4	17.5	--	--	--	9.1	--
16...	0400	--	176	8.3	17.0	--	--	--	8.9	--
16...	0500	--	179	8.2	17.0	--	--	--	8.6	--
16...	0600	--	186	8.1	17.0	--	--	--	8.3	--
16...	0700	--	182	8.0	17.0	--	--	--	8.1	--
16...	0800	--	178	7.9	16.5	--	--	--	8.4	--
16...	0900	--	187	8.1	17.0	--	--	--	9.1	--
16...	1000	--	182	8.4	17.0	--	--	--	9.9	--
16...	1100	--	179	8.6	17.5	--	--	--	10.5	--
16...	1200	--	175	8.7	18.0	--	--	--	11.1	--
16...	1300	--	180	8.8	18.0	22.0	750	--	11.6	125
16...	1400	--	183	8.9	18.5	--	--	--	12.0	--
4303531232041 South Umpqua River at river mile 146.0, above I-5 bridge near Ruckles										
JUL 1991										
17...	1630	--	141	7.9	23.0	--	750	--	--	--
17...	1700	--	141	7.9	23.0	--	--	--	--	--
17...	1730	--	141	7.9	23.0	--	--	--	--	--
17...	1800	--	141	7.9	23.0	--	--	--	--	--
17...	1830	--	141	7.9	23.0	--	--	--	--	--
17...	1900	--	141	7.9	23.0	--	--	--	--	--
17...	1930	--	141	7.9	23.0	--	--	--	--	--
17...	2000	--	141	7.9	22.5	--	--	--	--	--
17...	2030	--	141	7.9	22.5	--	--	--	--	--
17...	2100	--	141	7.9	22.5	--	--	--	--	--
17...	2130	--	141	7.8	22.5	--	--	--	--	--
17...	2200	--	141	7.8	22.5	--	--	--	--	--
17...	2230	--	141	7.8	22.5	--	--	--	--	--
17...	2300	--	141	7.8	22.5	--	--	--	--	--
17...	2330	--	141	7.8	22.5	--	--	--	--	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)
4303531232041 South Umpqua River at river mile 146.0, above I-5 bridge near Ruckles										
JUL 1991										
17...	2400	--	141	7.8	22.5	--	--	--	--	--
18...	0030	--	141	7.8	22.5	--	--	--	--	--
18...	0100	--	141	7.8	22.5	--	--	--	--	--
18...	0130	--	141	7.8	22.5	--	--	--	--	--
18...	0200	--	141	7.7	22.5	--	--	--	--	--
18...	0230	--	141	7.7	22.5	--	--	--	--	--
18...	0300	--	141	7.7	22.5	--	--	--	--	--
18...	0330	--	141	7.7	22.5	--	--	--	--	--
18...	0400	--	141	7.6	22.5	--	--	--	--	--
18...	0430	--	141	7.6	22.5	--	--	--	--	--
18...	0500	--	141	7.6	22.0	--	--	--	--	--
18...	0530	--	141	7.6	22.0	--	--	--	--	--
18...	0600	--	141	7.6	22.0	--	--	--	--	--
18...	0630	--	140	7.6	22.0	--	--	--	--	--
18...	0700	--	140	7.6	22.0	--	--	--	--	--
18...	0730	--	140	7.6	22.0	--	--	--	--	--
18...	0800	--	140	7.6	22.0	--	--	--	--	--
18...	0830	--	140	7.6	22.0	--	--	--	--	--
18...	0900	--	140	7.6	22.0	--	--	--	--	--
18...	0930	--	140	7.6	22.0	--	--	--	--	--
18...	1000	--	140	7.7	22.0	--	--	--	--	--
18...	1030	--	139	7.7	22.0	--	--	--	--	--
18...	1100	--	139	7.7	22.0	--	--	--	--	--
18...	1130	--	139	7.7	22.5	--	--	--	--	--
18...	1200	--	139	7.8	22.5	--	--	--	--	--
18...	1230	--	139	7.8	22.5	--	--	--	--	--
18...	1300	--	139	7.8	22.5	--	--	--	--	--
18...	1330	--	139	7.9	23.0	--	--	--	--	--
18...	1400	--	139	7.9	23.0	--	--	--	--	--
18...	1430	--	139	7.9	23.0	--	--	--	--	--
18...	1500	--	138	8.0	23.5	--	--	--	--	--
18...	1530	--	138	8.0	23.5	--	746	--	--	--
AUG 1991										
19...	2030	--	141	9.0	26.0	--	747	--	--	--
19...	2100	--	141	8.9	25.5	--	--	--	9.8	--
19...	2130	--	141	8.9	25.5	--	--	--	9.4	--
19...	2200	--	141	8.8	25.5	--	--	--	--	--
19...	2230	--	141	8.8	25.5	--	--	--	8.8	--
19...	2300	--	141	8.7	25.5	--	--	--	8.7	--
19...	2330	--	142	8.7	25.5	--	--	--	8.5	--
19...	2400	--	143	8.7	25.5	--	--	--	--	--
20...	0030	--	143	8.6	25.0	--	--	--	8.1	--
20...	0100	--	143	8.6	25.0	--	--	--	8.0	--
20...	0130	--	143	8.6	25.0	--	--	--	7.8	--
20...	0200	--	144	8.5	25.0	--	--	--	7.6	--
20...	0230	--	144	8.5	25.0	--	--	--	--	--
20...	0300	--	144	8.4	25.0	--	--	--	7.3	--
20...	0330	--	144	8.4	25.0	--	--	--	7.2	--
20...	0400	--	144	8.3	25.0	--	--	--	7.1	--
20...	0430	--	144	8.3	24.5	--	--	--	6.9	--
20...	0500	--	144	8.2	24.5	--	--	--	6.8	--
20...	0530	--	145	8.2	24.5	--	--	--	6.7	--
20...	0600	--	145	8.2	24.5	--	--	--	--	--
20...	0630	--	145	8.2	24.5	--	--	--	6.5	--
20...	0700	--	145	8.1	24.5	--	--	--	--	--
20...	0730	--	145	8.1	24.5	--	--	--	6.5	--
20...	0800	--	146	8.2	24.5	--	--	--	6.5	--
20...	0830	--	146	8.2	24.5	--	--	--	6.7	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)
4303531232041 South Umpqua River at river mile 146.0, above I-5 bridge near Ruckles										
AUG 1991										
20...	0900	--	145	8.3	24.5	--	--	--	7.4	--
20...	0930	--	145	8.3	24.5	--	--	--	7.2	--
20...	1000	--	145	8.5	25.0	--	752	--	7.7	94
20...	1030	--	144	8.6	25.0	--	--	--	--	--
20...	1100	--	144	8.7	25.5	--	--	--	9.1	--
20...	1130	--	144	8.7	25.5	--	--	--	9.6	--
20...	1200	--	144	8.8	26.0	--	--	--	9.9	--
20...	1230	--	144	8.9	26.0	--	--	--	10.2	--
20...	1300	--	144	8.9	26.5	--	--	--	10.3	--
20...	1330	--	144	8.9	26.5	--	--	--	10.4	--
20...	1400	--	144	9.0	26.5	--	--	--	10.7	--
20...	1430	--	144	9.0	26.5	--	--	--	10.7	--
20...	1500	--	144	9.0	27.0	--	--	--	10.8	--
20...	1530	--	143	9.1	27.0	--	--	--	10.4	--
20...	1600	--	143	9.1	27.0	--	--	--	10.5	--
20...	1630	--	143	9.1	27.0	--	--	--	10.5	--
20...	1700	--	143	9.1	27.0	--	--	--	10.6	--
20...	1730	--	143	9.1	27.0	--	--	--	10.6	--
20...	1800	--	143	9.2	26.5	--	--	--	10.5	--
20...	1830	--	143	9.1	26.5	--	--	--	10.3	--
20...	1900	--	143	9.1	26.5	--	--	--	10.0	--
20...	1930	--	143	9.1	26.5	--	--	--	9.8	--
14311120 South Umpqua River below I-5 bridge, near Ruckles										
JUN 1992										
23...	1800	--	149	8.9	29.0	--	743	--	10.7	143
23...	1900	--	148	8.9	29.0	--	--	--	10.5	--
23...	2000	--	149	8.8	29.0	--	--	--	10.2	--
23...	2100	--	--	8.8	28.5	--	--	--	9.8	--
23...	2200	--	155	8.7	28.5	--	--	--	9.3	--
23...	2300	--	142	8.7	28.0	--	741	--	8.7	115
24...	0001	--	146	8.6	28.0	--	--	--	8.2	--
24...	0100	--	155	8.4	27.5	--	--	--	7.7	--
24...	0200	--	149	8.3	27.0	--	--	--	7.3	--
24...	0315	--	E145	8.1	27.0	--	741	--	6.8	--
24...	0400	--	149	8.0	26.5	--	--	--	6.6	--
24...	0500	--	140	7.9	26.5	--	--	--	6.4	--
24...	0600	--	146	7.8	26.0	--	--	--	6.1	--
24...	0620	--	150	7.8	26.0	--	741	--	6.1	78
24...	0700	--	152	7.7	26.0	--	--	--	6.0	--
24...	0800	--	144	7.7	26.0	--	--	--	6.1	--
24...	0900	--	150	7.8	26.0	--	--	--	6.3	--
24...	1000	--	145	7.8	26.0	--	--	--	6.7	--
24...	1100	--	--	8.0	26.5	--	--	--	7.2	--
24...	1145	--	149	8.1	26.5	--	742	--	7.6	97
24...	1200	--	--	8.2	27.0	--	--	--	7.7	--
24...	1300	--	--	8.4	27.0	--	--	--	8.5	--
24...	1400	--	--	8.6	27.5	--	--	--	9.1	--
24...	1500	--	--	8.7	27.5	--	--	--	9.6	--
24...	1600	--	--	8.8	28.0	--	--	--	9.8	--
24...	1645	--	149	8.8	28.0	--	741	--	10.1	133
24...	1700	--	--	8.8	28.0	--	--	--	10.1	--
24...	1848	--	--	8.8	28.5	--	--	--	11.2	--
AUG										
04...	1720	--	162	8.4	24.5	--	--	--	9.3	--
04...	1800	--	162	8.4	24.5	--	--	--	9.3	--
04...	1900	--	165	8.6	25.0	--	--	--	9.9	--
04...	2000	--	160	8.7	25.0	--	--	--	10.1	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
14311120 South Umpqua River below I-5 bridge, near Ruckles										
AUG 1992										
04...	2100	--	161	8.7	25.0	--	--	--	10.1	--
04...	2200	--	158	8.7	25.0	--	--	--	9.9	--
04...	2300	--	165	8.7	24.5	--	--	--	9.6	--
05...	0001	--	166	8.7	24.5	--	--	--	9.2	--
05...	0100	--	159	8.7	24.5	--	--	--	8.9	--
05...	0200	--	165	8.6	24.0	--	--	--	8.5	--
05...	0300	--	161	8.5	23.5	--	--	--	8.0	--
05...	0400	--	161	8.4	23.5	--	--	--	7.5	--
05...	0500	--	169	8.3	23.0	--	--	--	7.2	--
05...	0600	--	166	8.2	23.0	--	--	--	6.9	--
05...	0700	--	160	8.1	22.5	--	--	--	6.7	--
05...	0800	--	165	8.0	22.5	--	--	--	6.6	--
05...	0900	--	163	7.9	22.5	--	--	--	6.6	--
05...	1000	--	158	7.9	22.5	--	--	--	6.9	--
05...	1100	--	167	8.0	22.5	--	--	--	7.4	--
05...	1145	--	165	8.1	23.0	--	749	--	7.5	88
05...	1200	--	160	8.1	23.0	--	--	--	7.8	--
05...	1300	--	162	8.2	23.0	--	--	--	8.4	--
05...	1400	--	162	8.4	23.5	--	--	--	8.9	--
05...	1500	--	161	8.5	24.0	--	--	--	9.6	--
05...	1600	--	164	8.6	25.0	--	--	--	10.1	--
SEP 1992										
15...	1500	--	174	8.4	18.0	--	--	--	9.5	--
15...	1600	--	182	8.5	18.0	--	--	--	9.7	--
15...	1610	--	179	8.6	18.0	21.0	744	--	9.9	107
15...	1700	--	174	8.7	18.5	--	--	--	10.3	--
15...	1800	--	178	8.8	18.5	--	--	--	10.7	--
15...	1900	--	177	8.9	18.5	--	--	--	11.2	--
15...	2000	--	168	8.9	18.5	--	--	--	11.3	--
15...	2100	--	183	8.9	18.5	--	--	--	11.3	--
15...	2200	--	171	8.9	18.5	--	--	--	11.2	--
15...	2300	--	181	8.9	18.0	--	--	--	11.1	--
16...	0001	--	179	8.9	18.0	--	--	--	10.8	--
16...	0100	--	168	8.8	18.0	--	--	--	10.4	--
16...	0200	--	175	8.8	18.0	--	--	--	10.1	--
16...	0300	--	176	8.8	17.5	--	--	--	9.7	--
16...	0400	--	181	8.7	17.5	--	--	--	9.2	--
16...	0500	--	180	8.6	17.0	--	--	--	8.8	--
16...	0600	--	182	8.5	17.0	--	--	--	8.5	--
16...	0700	--	175	8.3	17.0	--	--	--	8.2	--
16...	0900	--	183	8.1	16.5	--	--	--	8.0	--
16...	1000	--	171	8.1	16.5	--	--	--	8.0	--
16...	1100	--	173	8.1	17.0	--	--	--	8.3	--
16...	1200	--	177	8.2	17.0	--	--	--	8.6	--
16...	1215	--	181	8.3	17.0	22.0	749	--	8.8	93
16...	1300	--	187	8.3	17.5	--	--	--	9.0	--
16...	1400	--	181	8.4	17.5	--	--	--	9.5	--
16...	1500	--	172	8.6	18.0	--	--	--	10.1	--
14312000 South Umpqua River near Brockway										
JUL 1991										
16...	1000	--	142	8.2	23.0	--	752	--	7.1	84
16...	1100	--	142	8.1	23.0	--	--	--	7.1	--
16...	1200	--	142	8.1	23.0	--	--	--	7.2	--
16...	1300	--	142	8.1	23.0	--	--	--	7.3	--
16...	1400	--	142	8.1	23.0	--	--	--	7.5	--
16...	1500	--	143	8.1	23.0	--	--	--	7.6	--
16...	1600	--	142	8.1	23.0	--	--	--	7.7	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)
		14312000 South Umpqua River near Brockway								
JUL 1991										
16...	1700	--	142	8.0	23.0	--	--	--	7.7	--
16...	1800	--	142	8.0	23.0	--	--	--	7.7	--
16...	1900	--	142	8.0	22.5	--	--	--	7.7	--
16...	2000	--	142	8.0	22.5	--	--	--	7.6	--
16...	2100	--	142	8.0	22.5	--	--	--	7.6	--
16...	2200	--	142	8.0	22.5	--	--	--	7.5	--
16...	2300	--	142	7.9	22.5	--	--	--	7.5	--
16...	2400	--	142	8.0	22.5	--	--	--	7.4	--
17...	0100	--	142	8.0	22.5	--	--	--	7.3	--
17...	0200	--	142	8.0	22.5	--	--	--	7.3	--
17...	0300	--	142	8.0	22.5	--	--	--	7.3	--
17...	0400	--	142	8.0	22.5	--	--	--	7.2	--
17...	0500	--	142	8.0	22.5	--	--	--	7.2	--
17...	0600	--	142	7.9	22.0	--	--	--	7.1	--
17...	0700	--	142	7.9	22.0	--	--	--	7.0	--
17...	0800	--	142	7.9	22.0	--	--	--	7.1	--
17...	0900	--	142	7.8	21.5	--	--	--	7.0	--
17...	1000	--	142	7.8	21.5	--	--	--	7.1	--
17...	1100	--	143	7.8	21.5	--	754	--	6.9	79
AUG 1991										
15...	1130	--	155	8.3	24.5	--	--	--	8.2	--
15...	1200	--	155	8.3	24.5	--	--	--	8.2	--
15...	1230	--	155	8.4	24.5	--	--	--	8.3	--
15...	1300	--	155	8.5	25.0	--	--	--	8.4	--
15...	1330	--	154	8.5	25.0	--	--	--	8.4	--
15...	1400	--	154	8.5	25.0	--	--	--	8.5	--
15...	1430	--	154	8.6	25.5	--	--	--	8.5	--
15...	1500	--	154	8.6	25.5	--	--	--	8.5	--
15...	1530	--	154	8.7	25.5	--	--	--	8.5	--
15...	1600	--	154	8.7	25.5	--	--	--	8.6	--
15...	1630	--	154	8.7	25.5	--	--	--	8.6	--
15...	1700	--	154	8.8	26.0	--	--	--	8.7	--
15...	1730	--	153	8.8	26.0	--	--	--	8.7	--
15...	1800	--	153	8.8	26.0	--	--	--	8.8	--
15...	1830	--	153	8.8	26.0	--	--	--	8.8	--
15...	1900	--	153	8.8	26.0	--	--	--	8.8	--
15...	1930	--	154	8.9	26.0	--	--	--	8.8	--
15...	2000	--	154	8.8	26.0	--	--	--	8.7	--
15...	2030	--	154	8.8	26.0	--	--	--	8.7	--
15...	2100	--	154	8.8	26.0	--	--	--	8.6	--
15...	2130	--	154	8.8	26.0	--	--	--	8.6	--
15...	2200	--	154	8.8	26.0	--	--	--	8.6	--
15...	2230	--	155	8.8	26.0	--	--	--	8.5	--
15...	2300	--	155	8.7	25.5	--	--	--	8.5	--
15...	2330	--	155	8.7	25.5	--	--	--	8.5	--
15...	2400	--	155	8.7	25.5	--	--	--	8.4	--
16...	0030	--	155	8.7	25.5	--	--	--	8.3	--
16...	0100	--	156	8.6	25.0	--	--	--	8.2	--
16...	0130	--	156	8.6	25.0	--	--	--	8.2	--
16...	0200	--	157	8.5	25.0	--	--	--	8.1	--
16...	0230	--	157	8.5	25.0	--	--	--	8.1	--
16...	0300	--	157	8.4	24.5	--	--	--	8.0	--
16...	0330	--	157	8.4	24.5	--	--	--	8.0	--
16...	0400	--	157	8.3	24.5	--	--	--	7.9	--
16...	0430	--	157	8.2	24.5	--	--	--	7.8	--
16...	0500	--	158	8.2	24.5	--	--	--	7.8	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	
DATE		TIME								
14312000 South Umpqua River near Brockway										
AUG 1991										
16...	0530	--	158	8.2	24.0	--	--	--	7.7	--
16...	0600	--	158	8.1	24.0	--	--	--	7.7	--
16...	0630	--	158	8.1	24.0	--	--	--	7.6	--
16...	0700	--	158	8.1	24.0	--	--	--	7.6	--
16...	0730	--	158	8.1	24.0	--	--	--	7.6	--
16...	0800	--	158	8.1	24.0	--	--	--	7.6	--
16...	0830	--	158	8.1	24.0	--	--	--	7.6	--
16...	0900	--	158	8.1	24.0	--	--	--	7.6	--
16...	0930	--	158	8.1	24.0	--	--	--	7.6	--
16...	1000	--	158	8.1	24.0	--	--	--	7.6	--
16...	1030	--	157	8.1	24.0	--	--	--	7.6	--
16...	1100	--	157	8.1	24.0	--	--	--	7.7	--
16...	1130	--	157	8.1	24.0	--	--	--	7.8	--
16...	1200	--	157	8.2	24.5	--	--	--	7.9	--
JUN 1992										
24...	1930	--	159	8.5	28.5	--	743	--	8.2	108
25...	0100	--	160	8.4	28.0	22.0	742	--	8.1	106
25...	0500	--	161	8.0	27.0	19.0	743	--	7.5	97
25...	0940	--	164	8.0	26.5	--	744	--	6.9	87
25...	1100	--	163	8.0	26.0	--	744	--	7.0	89
25...	1208	--	163	8.0	27.0	--	744	--	7.3	94
25...	1300	--	163	8.1	27.5	--	744	--	7.3	95
25...	1400	--	163	8.2	27.5	--	744	--	7.4	96
25...	1500	--	163	8.1	28.0	--	745	--	7.5	98
25...	1600	--	163	8.2	28.0	--	744	--	7.5	99
25...	1700	--	162	8.4	28.0	--	744	--	7.7	101
25...	1800	--	161	8.4	28.0	--	744	--	7.8	103
25...	1912	--	162	8.5	28.0	30.0	745	--	8.0	105
25...	1954	--	161	8.5	28.0	--	744	--	8.0	105
AUG 1992										
05...	1650	--	177	8.3	25.5	--	749	--	8.6	107
06...	1417	--	179	8.2	25.0	--	750	--	8.7	106
SEP 1992										
16...	1706	--	179	8.6	18.5	--	--	--	9.6	--
16...	1815	--	179	8.6	18.5	--	--	--	9.3	--
17...	0717	--	181	8.0	17.0	--	--	--	8.5	--
17...	0915	--	181	8.2	17.0	--	--	--	8.8	--
17...	1337	--	178	8.6	18.5	--	753	--	10	108
17...	1632	--	178	8.6	19.0	--	751	--	9.8	108
14312002 South Umpqua River below treatment plant near Brockway										
JUL 1991										
16...	1300	--	142	--	22.5	--	750	--	8.3	98
16...	1400	--	145	--	22.5	--	--	--	8.4	--
16...	1500	--	144	--	22.5	--	--	--	8.5	--
16...	1600	--	143	--	22.5	--	--	--	8.4	--
16...	1700	--	144	--	22.0	--	--	--	8.4	--
16...	1800	--	145	--	22.0	--	--	--	8.3	--
16...	1900	--	145	--	22.0	--	--	--	8.3	--
16...	2000	--	145	--	22.0	--	--	--	8.2	--
16...	2100	--	145	--	21.5	--	--	--	8.1	--
16...	2200	--	145	--	21.5	--	--	--	8.0	--
16...	2300	--	145	--	21.5	--	--	--	8.0	--
16...	2400	--	144	--	21.5	--	--	--	7.9	--
17...	0100	--	144	--	21.5	--	--	--	7.9	--
17...	0200	--	144	--	21.5	--	--	--	7.9	--
17...	0300	--	144	--	21.5	--	--	--	7.8	--
17...	0400	--	144	--	21.5	--	--	--	7.8	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	
14312002 South Umpqua River below treatment plant near Brockway										
JUL 1991										
17...	0500	--	144	--	21.5	--	--	--	7.8	--
17...	0600	--	143	--	21.5	--	--	--	7.7	--
17...	0700	--	143	--	21.5	--	--	--	7.8	--
17...	0800	--	143	--	21.0	--	--	--	7.8	--
17...	0900	--	143	--	21.0	--	--	--	7.9	--
17...	1000	--	143	--	21.0	--	--	--	8.0	--
17...	1100	--	143	--	21.0	--	--	--	8.2	--
17...	1200	--	143	--	21.0	--	754	--	8.4	96
AUG 1991										
15...	1300	--	155	8.4	25.0	--	752	--	9.4	115
15...	1330	--	155	8.5	25.0	--	--	--	9.5	--
15...	1400	--	156	8.5	25.5	--	--	--	9.5	--
15...	1430	--	157	8.5	25.5	--	--	--	9.5	--
15...	1500	--	157	8.5	25.5	--	--	--	9.5	--
15...	1530	--	157	8.5	26.0	--	--	--	9.4	--
15...	1600	--	157	8.5	26.0	--	--	--	9.3	--
15...	1630	--	157	8.5	26.0	--	--	--	9.3	--
15...	1700	--	158	8.5	26.0	--	--	--	9.2	--
15...	1730	--	157	8.5	26.0	--	--	--	9.2	--
15...	1800	--	157	8.5	26.0	--	--	--	9.0	--
15...	1830	--	157	8.5	26.0	--	--	--	9.0	--
15...	1900	--	157	8.5	26.0	--	--	--	8.8	--
15...	1930	--	157	8.5	26.0	--	--	--	8.7	--
15...	2000	--	156	8.5	25.5	--	--	--	8.6	--
15...	2030	--	157	8.5	25.5	--	--	--	8.4	--
15...	2100	--	156	8.5	25.5	--	--	--	8.3	--
15...	2130	--	156	8.4	25.5	--	--	--	8.2	--
15...	2200	--	157	8.4	25.5	--	--	--	8.1	--
15...	2230	--	157	8.4	25.5	--	--	--	8.0	--
15...	2300	--	157	8.4	25.5	--	--	--	8.0	--
15...	2330	--	157	8.3	25.5	--	--	--	7.9	--
15...	2400	--	157	8.3	25.5	--	--	--	7.9	--
16...	0030	--	158	8.3	25.5	--	--	--	7.8	--
16...	0100	--	158	8.3	25.0	--	--	--	7.8	--
16...	0130	--	158	8.2	25.0	--	--	--	7.7	--
16...	0200	--	157	8.2	25.0	--	--	--	7.7	--
16...	0230	--	157	8.2	25.0	--	--	--	7.7	--
16...	0300	--	157	8.2	25.0	--	--	--	7.6	--
16...	0330	--	157	8.1	25.0	--	--	--	7.6	--
16...	0400	--	156	8.1	24.5	--	--	--	7.6	--
16...	0430	--	156	8.1	24.5	--	--	--	7.5	--
16...	0500	--	156	8.0	24.5	--	--	--	7.5	--
16...	0530	--	156	8.0	24.5	--	--	--	7.5	--
16...	0600	--	156	8.0	24.5	--	--	--	7.4	--
16...	0630	--	156	7.9	24.5	--	--	--	7.4	--
16...	0700	--	156	7.9	24.0	--	--	--	7.4	--
16...	0730	--	156	7.9	24.0	--	--	--	7.4	--
16...	0800	--	156	7.9	24.0	--	--	--	7.4	--
16...	0830	--	156	7.9	24.0	--	--	--	7.5	--
16...	0900	--	156	7.9	24.0	--	--	--	7.6	--
16...	0930	--	156	7.9	24.0	--	--	--	7.7	--
16...	1000	--	155	7.9	24.0	--	--	--	7.9	--
16...	1030	--	156	8.0	24.0	--	--	--	8.0	--
16...	1100	--	155	8.1	24.0	--	--	--	8.3	--
16...	1130	--	155	8.1	24.0	--	--	--	8.5	--
16...	1200	--	155	8.2	24.5	--	--	--	8.7	--
16...	1230	--	155	8.3	24.5	--	--	--	8.8	--
16...	1300	--	156	8.3	24.5	--	--	--	9.0	--
16...	1330	--	156	8.4	25.0	--	--	--	9.1	--
16...	1400	--	155	8.4	25.0	--	--	--	9.2	--
16...	1430	--	157	8.5	25.0	--	--	--	9.4	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)
14312002 South Umpqua River below treatment plant near Brockway										
JUN 1992										
24...	2100	--	165	8.4	28.0	--	743	--	7.7	102
24...	2200	--	164	8.3	28.0	--	--	--	7.4	--
24...	2300	--	161	8.3	28.0	--	--	--	7.2	--
25...	0001	--	162	8.2	27.5	--	--	--	7.1	--
25...	0100	--	166	8.2	27.5	--	--	--	6.9	--
25...	0200	--	166	8.2	27.5	19.0	744	--	7.0	91
25...	0300	--	163	8.2	27.5	--	--	--	7.0	--
25...	0400	--	160	8.2	27.5	--	--	--	7.0	--
25...	0500	--	166	8.1	27.0	--	--	--	6.9	--
25...	0545	--	163	8.1	27.0	16.0	742	--	6.8	88
25...	0600	--	164	8.1	27.0	--	--	--	6.9	--
25...	0700	--	165	8.0	27.0	--	--	--	6.9	--
25...	0800	--	166	8.0	26.5	--	--	--	7.0	--
25...	0900	--	165	8.1	27.0	--	--	--	7.4	--
25...	1000	--	160	8.1	27.0	--	--	--	7.6	--
25...	1100	--	162	8.2	27.0	--	744	--	8.0	102
25...	1200	--	161	8.3	27.5	--	--	--	8.3	--
25...	1300	--	163	8.3	27.5	--	--	--	8.6	--
25...	1400	--	164	8.3	28.0	--	--	--	8.8	--
25...	1500	--	171	8.4	28.5	--	--	--	8.9	--
25...	1530	--	158	8.4	28.0	--	745	--	8.7	115
25...	1600	--	164	8.4	28.0	--	--	--	8.4	--
25...	1700	--	158	8.4	28.5	--	--	--	8.6	--
25...	1800	--	166	8.4	28.0	--	--	--	8.6	--
25...	1900	--	167	8.3	28.0	--	--	--	8.4	--
25...	2000	--	165	8.2	28.0	--	--	--	7.7	--
25...	2010	--	165	8.2	27.5	25.5	746	--	7.5	98
AUG 1992										
05...	1725	--	180	8.7	26.5	--	749	--	11.2	142
05...	1800	--	180	8.7	26.5	--	--	1830	10.6	--
05...	1900	--	179	8.7	26.0	--	--	530	10.1	--
05...	2000	--	181	8.6	26.0	--	--	140	9.6	--
05...	2100	--	183	8.5	25.5	--	--	12.8	9.0	--
05...	2200	--	185	8.4	25.5	--	--	0.0	8.5	--
05...	2300	--	185	8.3	25.0	--	--	0.0	8.1	--
05...	2400	--	--	--	--	--	--	0.0	--	--
06...	0001	--	186	8.1	24.5	--	--	--	7.8	--
06...	0100	--	186	8.0	24.5	--	--	0.0	7.5	--
06...	0200	--	186	7.8	24.5	--	--	0.0	7.2	--
06...	0300	--	185	7.7	24.0	--	--	0.0	7.0	--
06...	0400	--	185	7.7	24.0	--	--	0.0	6.8	--
06...	0500	--	183	7.6	24.0	--	--	0.0	6.7	--
06...	0600	--	184	7.6	23.5	--	--	0.0	6.6	--
06...	0700	--	182	7.6	23.5	--	--	37.3	6.7	--
06...	0800	--	182	7.6	23.5	--	--	210	7.0	--
06...	0900	--	180	7.7	23.5	--	--	497	7.5	--
06...	1000	--	180	8.0	24.0	--	--	1020	8.2	--
06...	1005	--	180	7.9	24.0	--	750	--	8.4	101
06...	1100	--	181	8.2	24.0	--	--	1340	8.9	--
06...	1200	--	181	8.3	24.5	--	--	1660	9.5	--
06...	1300	--	182	8.5	25.0	--	--	1630	10.0	--
06...	1400	--	183	8.6	25.5	--	--	1300	10.3	--
06...	1440	--	183	8.6	25.5	--	750	--	10.5	131
06...	1500	--	182	8.6	25.5	--	--	1010	10.5	--
06...	1600	--	181	8.6	25.5	--	--	855	10.5	--
06...	1700	--	179	8.7	25.5	--	--	969	10.7	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED CENT SATUR- ATION)
14312002 South Umpqua River below treatment plant near Brockway										
SEP 1992										
16...	1700	--	177	8.7	19.0	--	--	566	12.1	--
16...	1800	--	183	8.8	19.0	--	--	348	11.8	--
16...	1820	--	183	8.7	19.0	--	750	--	11.4	125
16...	1900	--	187	8.7	19.0	--	--	71.2	11.0	--
16...	2000	--	185	8.6	18.5	--	--	6.31	10.4	--
16...	2100	--	185	8.5	18.5	--	--	0.0	9.9	--
16...	2200	--	176	8.4	18.5	--	--	0.0	9.5	--
16...	2300	--	187	8.3	18.0	--	--	0.0	9.2	--
17...	0001	--	187	8.2	18.0	--	--	--	8.9	--
17...	0100	--	188	8.1	18.0	--	--	0.0	8.6	--
17...	0200	--	188	8.0	18.0	--	--	0.0	--	--
17...	0300	--	189	7.9	17.5	--	--	0.0	8.3	--
17...	0400	--	186	7.8	17.5	--	--	0.0	8.2	--
17...	0700	--	184	7.8	17.5	--	--	0.0	8.1	--
17...	0800	--	174	7.8	17.5	--	--	37.5	8.4	--
17...	0900	--	193	7.9	17.5	--	--	179	8.9	--
17...	0940	--	182	8.0	17.5	--	--	--	8.9	--
17...	1000	--	185	8.1	17.5	--	--	271	9.6	--
17...	1100	--	187	8.4	18.0	--	--	228	10.6	--
17...	1200	--	181	8.6	18.5	--	--	766	11.4	--
17...	1300	--	176	8.8	19.0	--	--	1150	12.3	--
17...	1330	--	186	8.5	19.0	--	752	--	11.8	129
17...	1400	--	179	8.9	19.0	--	--	1250	12.7	--
17...	1500	--	180	8.9	19.5	--	--	1210	13.2	--
17...	1600	--	186	8.9	19.5	--	--	1020	13.2	--
17...	1700	--	194	8.8	19.5	--	752	738	12.9	142
4309061232434 South Umpqua River above Happy Valley Road near Winston										
JUL 1991										
16...	1600	--	--	8.6	24.0	--	--	--	--	--
16...	1700	--	--	8.6	23.5	--	--	--	--	--
16...	1800	--	--	8.5	23.5	--	--	--	--	--
16...	1900	--	--	8.3	23.0	--	--	--	--	--
16...	2000	--	--	8.2	23.0	--	--	--	--	--
16...	2100	--	--	8.1	23.0	--	--	--	--	--
16...	2200	--	--	8.0	22.5	--	--	--	--	--
16...	2300	--	--	8.0	22.5	--	--	--	--	--
16...	2400	--	--	7.9	22.5	--	--	--	--	--
17...	0100	--	--	7.9	22.5	--	--	--	--	--
17...	0200	--	--	7.9	22.5	--	--	--	--	--
17...	0300	--	--	7.9	22.5	--	--	--	--	--
17...	0400	--	--	7.9	22.5	--	--	--	--	--
17...	0500	--	--	7.9	22.5	--	--	--	--	--
17...	0600	--	--	7.9	22.0	--	--	--	--	--
17...	0700	--	--	7.9	22.0	--	--	--	--	--
17...	0800	--	--	8.0	22.0	--	--	--	--	--
17...	0900	--	--	8.1	22.0	--	--	--	--	--
17...	1000	--	--	8.2	22.0	--	--	--	--	--
17...	1100	--	--	8.2	22.5	--	--	--	--	--
17...	1200	--	--	8.3	22.5	--	--	--	--	--
17...	1300	--	--	8.4	23.0	--	--	--	--	--
17...	1400	--	--	8.4	23.5	--	--	--	--	--
17...	1500	--	--	8.5	23.5	--	--	--	--	--
17...	1600	--	--	8.7	24.0	--	--	--	--	--
AUG 1991										
15...	1500	--	152	9.2	26.5	--	752	--	12.1	152
15...	1530	--	152	9.2	26.5	--	--	--	12.1	--
15...	1600	--	152	9.2	26.5	--	--	--	12.1	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
4309061232434 South Umpqua River above Happy Valley Road near Winston										
AUG 1991										
15...	1630	--	152	9.2	26.5	--	--	--	11.9	--
15...	1700	--	153	9.2	26.5	--	--	--	11.5	--
15...	1730	--	153	9.1	26.5	--	--	--	11.3	--
15...	1800	--	153	9.1	26.5	--	--	--	10.8	--
15...	1830	--	153	9.0	26.5	--	--	--	10.2	--
15...	1900	--	154	8.9	26.0	--	--	--	9.7	--
15...	1930	--	154	8.8	26.0	--	--	--	9.4	--
15...	2000	--	154	8.8	26.0	--	--	--	9.1	--
15...	2030	--	154	8.7	25.5	--	--	--	8.7	--
15...	2100	--	154	8.6	25.5	--	--	--	8.4	--
15...	2130	--	154	8.5	25.5	--	--	--	8.1	--
15...	2200	--	154	8.4	25.0	--	--	--	7.9	--
15...	2230	--	154	8.3	25.0	--	--	--	7.6	--
15...	2300	--	154	8.3	25.0	--	--	--	7.4	--
15...	2330	--	154	8.2	25.0	--	--	--	7.3	--
15...	2400	--	154	8.1	25.0	--	--	--	7.1	--
16...	0030	--	154	8.1	24.5	--	--	--	7.0	--
16...	0100	--	154	8.1	24.5	--	--	--	7.0	--
16...	0130	--	154	8.0	24.5	--	--	--	6.9	--
16...	0200	--	154	8.0	24.5	--	--	--	6.8	--
16...	0230	--	154	8.0	24.5	--	--	--	6.8	--
16...	0300	--	154	8.0	24.5	--	--	--	6.7	--
16...	0330	--	154	7.9	24.5	--	--	--	6.7	--
16...	0400	--	154	7.9	24.5	--	--	--	6.7	--
16...	0430	--	154	7.9	24.5	--	--	--	6.6	--
16...	0500	--	154	7.9	24.0	--	--	--	6.6	--
16...	0530	--	154	7.9	24.0	--	--	--	6.6	--
16...	0600	--	154	7.9	24.0	--	--	--	6.6	--
16...	0630	--	154	7.8	24.0	--	--	--	6.5	--
16...	0700	--	154	7.8	24.0	--	--	--	6.5	--
16...	0730	--	154	7.8	24.0	--	--	--	6.6	--
16...	0800	--	154	7.8	24.0	--	--	--	6.7	--
16...	0830	--	153	7.9	24.0	--	--	--	6.9	--
16...	0900	--	153	7.9	24.0	--	--	--	7.1	--
16...	0930	--	153	8.0	24.0	--	--	--	7.4	--
16...	1000	--	153	8.1	24.0	--	--	--	7.8	--
16...	1030	--	153	8.2	24.0	--	--	--	8.2	--
16...	1100	--	153	8.5	24.0	--	--	--	8.9	--
16...	1130	--	152	8.6	24.5	--	--	--	9.6	--
16...	1200	--	152	8.7	24.5	--	--	--	10.0	--
16...	1230	--	152	8.8	25.0	--	--	--	10.5	--
16...	1300	--	152	9.0	25.0	--	--	--	10.9	--
16...	1330	--	152	9.0	25.5	--	--	--	11.2	--
16...	1400	--	152	9.1	25.5	--	--	--	11.6	--
16...	1430	--	152	9.1	26.0	--	--	--	11.8	--
16...	1500	--	152	9.2	26.0	--	--	--	11.9	--
16...	1530	--	152	9.2	26.0	--	--	--	12.0	--
16...	1600	--	152	9.2	26.5	--	--	--	12.1	--
16...	1630	--	152	9.2	26.5	--	--	--	12.0	--
16...	1700	--	152	9.2	26.5	--	--	--	12.0	--
16...	1730	--	152	9.2	26.5	--	--	--	11.8	--
16...	1800	--	153	9.2	26.5	--	--	--	11.5	--
16...	1830	--	153	9.1	26.0	--	--	--	10.9	--
16...	1900	--	153	9.0	26.0	--	--	--	10.3	--
16...	1930	--	154	9.0	26.0	--	--	--	9.6	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
14312010 South Umpqua River at Happy Valley Road, near Roseburg										
JUN 1992										
24...	2350	--	162	8.2	28.0	--	743	--	8.8	115
25...	0300	--	163	8.3	27.5	20.0	743	--	9.1	119
25...	0730	--	162	8.3	27.0	--	744	--	8.7	112
25...	0826	--	162	8.3	27.0	--	744	--	8.7	112
25...	0855	--	164	8.3	27.0	--	744	--	8.7	113
25...	1000	--	164	8.4	27.0	--	744	--	8.7	113
25...	1100	--	163	8.4	27.0	--	745	--	8.8	114
25...	1150	--	163	8.3	27.5	--	745	--	9.0	116
25...	1300	--	167	8.5	28.0	--	745	--	9.1	118
25...	1400	--	164	8.5	28.0	--	745	--	9.2	120
25...	1500	--	164	8.5	28.0	--	745	--	9.3	122
25...	1600	--	163	8.4	27.5	--	744	--	8.7	114
25...	1625	--	166	8.4	27.5	--	745	--	8.6	113
25...	1700	--	166	8.4	27.5	--	745	--	8.8	114
25...	1800	--	168	8.4	27.5	--	744	--	8.6	113
25...	1835	--	169	8.3	27.5	--	745	--	8.2	107
25...	2335	--	167	8.2	27.0	20.0	747	--	7.6	98
AUG 1992										
05...	1840	--	182	8.5	24.5	--	750	--	9.6	117
05...	2100	--	181	8.0	24.5	--	--	--	8.0	--
05...	2200	--	179	7.9	24.5	--	--	--	7.8	--
05...	2300	--	180	7.8	24.5	--	--	--	7.5	--
06...	0001	--	180	7.8	24.0	--	--	--	7.5	--
06...	0100	--	178	7.7	24.0	--	--	--	7.2	--
06...	0200	--	177	7.6	23.5	--	--	--	7.0	--
06...	0300	--	179	7.5	23.5	--	--	--	6.8	--
06...	0400	--	178	7.5	23.5	--	--	--	6.7	--
06...	0500	--	181	7.5	23.5	--	--	--	6.7	--
06...	0600	--	178	7.5	23.5	--	--	--	6.8	--
06...	0700	--	176	7.6	23.5	--	--	--	7.3	--
06...	0800	--	177	8.2	24.0	--	--	--	9.1	--
06...	0900	--	175	8.6	24.5	--	--	--	10.9	--
06...	1000	--	176	8.9	25.0	--	--	--	12.7	--
06...	1040	--	177	8.9	25.5	--	750	--	13.2	165
06...	1100	--	178	9.0	26.0	--	--	--	13.9	--
06...	1200	--	176	9.1	26.5	--	--	--	15.1	--
06...	1300	--	179	9.1	27.5	--	--	--	15.3	--
06...	1400	--	181	9.1	27.5	--	--	--	15.2	--
06...	1500	--	180	9.0	26.0	--	--	--	14.3	--
06...	1535	--	180	9.1	26.5	9.0	750	--	14.5	183
06...	1600	--	178	9.1	26.5	--	--	--	14.0	--
06...	1700	--	183	9.1	26.5	--	--	--	13.6	--
06...	1800	--	181	9.0	26.5	--	--	--	13.0	--
SEP 1992										
16...	1740	--	190	9.0	18.5	--	--	--	11.4	--
17...	0742	--	190	8.3	17.5	--	--	--	9.7	--
17...	1020	--	189	8.8	18.0	--	--	--	11.4	--
17...	1439	--	187	9.2	19.0	--	753	--	14.3	156
17...	1509	--	187	9.2	19.0	--	753	--	14.8	161
17...	1552	--	187	9.2	19.0	--	--	--	14.9	--
14312070 South Umpqua River at Oaks, near Roseburg										
JUN 1992										
24...	2225	--	159	8.4	27.5	--	745	--	7.7	101
24...	2300	--	--	8.3	27.5	--	--	--	7.6	--
25...	0001	--	153	8.3	27.5	--	--	--	7.5	--
25...	0100	--	159	8.3	27.5	--	--	--	7.5	--
25...	0200	--	159	8.4	27.0	--	--	--	7.6	--

Table 27. Field data from diel inflow-outflow surveys, South Umpqua River, Oregon, 1991-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	LIGHT INCID. 400- 700NM INTENS. (U-EINS /SQM/S)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
14312070 South Umpqua River at Oaks, near Roseburg									
JUN 1992									
25...	0300	--	161	8.4	27.0	--	--	--	7.6 --
25...	0400	--	162	8.5	27.0	--	--	--	7.6 --
25...	0405	--	158	8.5	27.0	20.0	743	--	7.6 99
25...	0500	--	154	8.5	27.0	--	--	--	7.6 --
25...	0600	--	157	8.5	27.0	--	--	--	7.5 --
25...	0700	--	162	8.6	27.0	--	--	--	7.6 --
25...	0800	--	153	8.7	27.0	--	--	--	7.8 --
25...	0900	--	161	8.8	27.0	--	745	--	8.3 106
25...	1000	--	160	8.8	27.0	--	--	--	8.6 --
25...	1100	--	162	8.9	27.5	--	--	--	9.2 --
25...	1200	--	--	8.9	28.0	--	--	--	9.7 --
25...	1230	--	161	8.9	28.5	--	746	--	9.7 128
25...	1300	--	160	8.9	28.5	--	--	--	9.9 --
25...	1400	--	155	8.9	29.0	--	--	--	9.8 --
25...	1500	--	162	8.9	29.0	--	--	--	9.9 --
25...	1600	--	160	8.8	28.0	--	--	--	9.1 --
25...	1700	--	156	8.7	27.5	--	--	--	8.7 --
25...	1701	--	155	8.6	27.5	--	746	--	8.6 112
25...	1800	--	157	8.7	27.5	--	--	--	9.0 --
25...	1900	--	160	8.6	27.5	--	--	--	8.4 --
25...	2000	--	164	8.4	27.0	--	--	--	7.7 --
25...	2100	--	161	8.2	27.0	--	--	--	7.1 --
25...	2112	--	160	8.2	27.0	23.0	747	--	7.1 91
AUG 1992									
05...	1900	--	181	9.0	25.0	--	750	--	10.0 124
05...	2100	--	182	8.7	24.5	--	--	--	8.5 --
05...	2200	--	182	8.4	24.5	--	--	--	7.7 --
05...	2300	--	179	8.3	24.5	--	--	--	7.3 --
06...	0001	--	179	8.2	24.5	--	--	--	7.2 --
06...	0808	--	180	8.6	24.0	--	751	--	8.5 103
06...	1605	--	176	9.0	27.0	--	750	--	12.2 156
06...	1946	--	181	8.7	25.5	--	750	--	9.9 123
SEP 1992									
16...	1740	--	184	9.1	19.5	--	751	--	12.5 138
16...	1800	--	175	9.1	19.0	--	--	--	11.4 --
16...	1900	--	188	9.0	18.5	--	--	--	10.5 --
16...	2000	--	182	8.9	18.0	--	--	--	9.8 --
16...	2100	--	188	8.8	18.0	--	--	--	9.0 --
16...	2200	--	185	8.7	18.0	--	--	--	8.6 --
16...	2300	--	186	8.6	18.0	--	--	--	8.4 --
17...	0001	--	186	8.6	18.0	--	--	--	8.3 --
17...	0100	--	193	8.6	18.0	--	--	--	8.4 --
17...	0200	--	188	8.7	18.0	--	--	--	8.6 --
17...	0300	--	187	8.7	18.0	--	--	--	8.7 --
17...	0400	--	187	8.7	18.0	--	--	--	8.9 --
17...	0500	--	191	8.7	18.0	--	--	--	8.8 --
17...	0600	--	181	8.7	18.0	--	--	--	8.6 --
17...	0700	--	190	8.7	18.0	--	--	--	8.5 --
17...	0800	--	189	8.8	18.0	--	--	--	8.8 --
17...	0900	--	181	8.9	18.0	--	--	--	9.5 --
17...	1000	--	183	9.0	18.5	--	--	--	10.3 --
17...	1100	--	181	9.1	19.0	--	--	--	11.1 --
17...	1200	--	180	9.1	19.5	--	--	--	11.8 --
17...	1300	--	179	9.2	20.0	--	--	--	12.2 --
17...	1400	--	184	9.2	20.5	--	753	--	12.5 140
17...	1500	--	181	9.2	20.5	--	--	--	12.7 --
17...	1600	--	189	9.2	20.5	--	--	--	12.5 --
17...	1700	--	194	9.2	20.0	--	--	--	12.1 --
17...	1800	--	179	9.1	19.5	--	--	--	11.6 --

Table 28. Periphyton biomass, South Umpqua River Basin, Oregon, 1991-92

["G/SQ M" = grams per square meter]

			PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M
14308600	South Umpqua River at Days Creek			
SEP 1991				
18...	1015	70.1	37.6	
JUN 1992				
22...	1630	9.7	2.9	
AUG				
03...	1530	10.5	4.7	
17...	1420	40.6	27.4	
17...	1602	89.7	62.0	
17...	1623	12.7	6.8	
SEP				
14...	1400	17.3	9.6	
14308730	South Umpqua River below Packard Gulch, near Days Creek			
AUG 1992				
03...	1630	18.3	3.6	
SEP				
14...	1507	34.7	14.5	
14310550	South Umpqua River at Missouri Bottom Brdg at Tricity			
AUG 1992				
18...	1608	102.2	61.8	
18...	1726	34.2	18.8	
14311105	South Umpqua River at Myrtle Creek			
SEP 1991				
18...	1315	53.8	35.8	
18...	1320	48.5	25.4	
JUN 1992				
23...	1030	22.4	11.6	
AUG				
04...	0820	60.4	36.1	
04...	0835	11.5	7.7	
04...	0910	69.4	25.3	
SEP				
15...	0830	39.7	17.4	
15...	0845	54.8	22.2	
15...	0905	186.1	90.2	
14311110	South Umpqua River near Myrtle Creek			
SEP 1991				
18...	1430	57.2	44.6	
18...	1435	26.3	--	
JUN 1992				
23...	1354	81.9	50.2	
AUG				
04...	0955	53.6	21.0	
SEP				
15...	0928	249.7	89.6	

Table 28. Periphyton biomass, South Umpqua River Basin, Oregon, 1991-92—Continued

			PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M
	DATE	TIME		
14311115	South Umpqua River at Ruckles			
	JUN 1992			
	23...	1430	128.2	53.9
	AUG			
	04...	1205	219.7	116.8
	04...	1210	101.7	45.2
	SEP			
	15...	1030	112.7	41.8
	15...	1045	119.7	32.6
14311120	South Umpqua River below I-5 bridge, near Ruckles			
	JUN 1992			
	23...	1527	83.3	55.2
	AUG			
	04...	1120	199.5	83.4
	04...	1125	97.8	43.0
	SEP			
	15...	1005	311.8	145.1
	15...	1010	166.4	63.4
14311170	South Umpqua River at Dillard			
	SEP 1991			
	18...	1720	126.1	88.5
	18...	1725	46.5	32.8
14312000	South Umpqua River near Brockway			
	JUN 1992			
	24...	0953	67.5	17.6
	24...	1007	60.4	31.8
	AUG			
	04...	1335	102.8	47.7
	04...	1340	122.4	52.6
	SEP			
	15...	1120	236.7	129.5
	15...	1130	168.8	74.3
14312002	South Umpqua River below treatment plant near Brockway			
	JUN 1992			
	24...	1032	86.6	23.6
	24...	1052	238.4	79.6
	AUG			
	04...	1420	138.6	77.6
	SEP			
	15...	1250	144.2	54.5
	15...	1300	338.2	54.5
14312005	South Umpqua River near Winston			
	JUN 1992			
	24...	1225	118.0	20.8
	AUG			
	04...	1515	132.5	51.2
	04...	1520	39.3	30.9
	SEP			
	15...	1310	86.4	27.5
	15...	1320	96.8	34.1

Table 28. Periphyton biomass, South Umpqua River Basin, Oregon, 1991-92—Continued

			PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M
	DATE	TIME		
14312010	South Umpqua River at Happy Valley Road, near Roseburg			
	JUN 1992			
	24...	1247	248.0	96.7
	24...	1347	176.0	127.7
14312060	South Umpqua River at Shady, near Roseburg			
	JUN 1992			
	24...	1445	102.3	78.7
	AUG			
	04...	1620	208.0	127.7
	04...	1630	328.5	217.9
	SEP			
	15...	1355	348.5	165.3
	15...	1405	419.2	217.6
14312070	South Umpqua River at Oaks near Roseburg			
	AUG 1992			
	19...	0936	244.7	147.6
14312150	South Umpqua River at Roseburg			
	SEP 1991			
	19...	0915	233.6	176.6
	19...	0920	266.5	114.0
	AUG 1992			
	19...	1100	126.5	75.9
14312251	South Umpqua River at Stewart Park at Roseburg			
	SEP 1991			
	19...	1110	155.6	94.7
	19...	1111	106.6	82.6
	AUG 1992			
	19...	1336	213.3	125.6
14312258	South Umpqua River above sewer treatment plant at Roseburg			
	AUG 1992			
	19...	1454	247.0	137.6
14312260	South Umpqua River near Roseburg			
	SEP 1991			
	19...	1245	603.0	303.9
	19...	1300	1109	769.6
	AUG 1992			
	19...	1550	242.5	102.0
14312261	South Umpqua River at Melrose Road near Roseburg			
	AUG 1992			
	19...	1737	155.4	89.9
14312350	South Umpqua River near Melrose			
	AUG 1992			
	20...	0830	206.7	128.0

Table 29. Algal species identification and relative abundance, South Umpqua River, Oregon, 1991 and 1992

["spp." = several species; "mi" = miles; "Myrtle Cr WWTP" = Myrtle Creek wastewater-treatment plant; "RM = river mile; "--" = not given; % = percent]

Station	Date	Dominant	Abundant	Common	Somewhat common	Uncommon or rare
14307698	5/19/92	Cladophora	Cocconeis pediculus ¹ Rhoicosphenia curvata ²	Melosira varians	--	Gomphonema ventricosa, Diatoma vulgare, Cocconeis placentula, Synedra ulna
RM 174	8/17/92	--	Oscillatoria, Synedra ulna	Cymbella mexicana, Epithemia sores, Fragilaria crotonensis	Diatoma vulgare	Rhopalodia gibba, Epithemia turgida, Fragilaria construens, Nitzschia palea, Cymbella minuta, Gomphonema, Cocconeis pediculus, Cocconeis placentula
14308600	9/18/91	Cladophora	Diatoma vulgare	Synedra ulna	Cocconeis placentula	Ulothrix, Gomphonema
14308600 ³	6/22/92	Ulothrix (75 %) ⁴ Spirogyra (25 %) ⁴	Synedra ulna	Epithemia sores, Cocconeis placentula	--	Rhopalodia gibba, Cymbella mexicana, Cymbella affinis, Cocconeis pediculus, Fragilaria construens ventricosa, Navicula cryptocephala, Cymbella tumida
14308730	8/3/92	Ulothrix ⁴	Cymbella affinis	--	--	Synedra ulna, Achnanthes minutissima, Epithemia sores, Synedra rumpens, Nitzschia palea, Cymbella tumida, Cocconeis placentula, Cocconeis pediculus
RM 150.5	5/7/92	Cocconeis placentula	Diatoma vulgare	Cocconeis pediculus	Cladophora, Navicula tripunctata, Rhoicosphenia curvata ¹	Synedra ulna, Cymbella affinis, Cyclotella meneghiniana, Navicula cryptocephala veneta, Navicula cryptocephala, Gomphonema angustatum, Melosira varians
RM 150.5	6/23/92	Spirogyra	Anabaena ⁵	Epithemia sores	--	Cocconeis placentula, Rhoicosphenia curvata, Synedra ulna, Nitzschia, Cocconeis pediculus
14311110	9/19/91	Fragilaria	--	--	Cladophora	Melosira varians, Oscillatoria, Navicula spp., Cocconeis placentula, Nitzschia spp., Synedra ulna, Cymbella spp., Melosira (italica?)
14311110 ⁶	8/4/92	Cladophora	Cocconeis pediculus ¹	Rhoicosphenia curvata, Epithemia sores, Cocconeis placentula	Synedra ulna, Fragilaria construens ⁹ , Cymbella affinis	Gomphonema ventricosa, Fragilaria crotonensis, Gomphonema, Navicula cryptocephala, Nitzschia palacea, Gomphonema angustatum, Cymbella minutula
14311110	9/2/92	Fragilaria construens ⁹	--	Fragilaria crotonensis, Cocconeis pediculus	Oscillatoria, Epithemia sores, Cocconeis placentula	Cymbella affinis, Synedra ulna, Gomphonema ventricosa, Gomphonema angustatum, Cymbella mexicana, Fragilaria capucina, Rhoicosphenia curvata, Navicula tripunctata, Gomphonema subclavatum
14311120 ^{6,7}	9/2/92	Cocconeis placentula, Epithemia sores	--	--	Cocconeis pediculus	Rhopalodia gibba, Nitzschia frustulum, Fragilaria construens, Naviculadecussis, Hannia arcus
14312150	9/19/91	Spirogyra	--	Oscillatoria	--	Rhoicosphenia curvata, Epithemia sores, Gomphonema angustatum, Nitzschia spp., Navicula cryptocephala, Cocconeis placentula, Nitzschia spp., Gomphonema, Rhoicosphenia curvata
RM 119	8/19/92	Ulothrix spp	Cladophora	Oscillatoria, Fragilaria construens ⁹	Spirogyra, Cocconeis pediculus ¹	Cymbella spp., Cocconeis placentula, Epithemia sores, Rhoicosphenia curvata
14312260	9/19/91	Ulothrix	--	Cladophora	Cocconeis placentula ¹	Rhoicosphenia curvata
14312260	9/19/91	Spirogyra	Cocconeis pediculus ¹ Cocconeis placentula ¹	--	--	Melosira varians, Gomphonema herculeana, Navicula cryptocephala, Diatoma vulgare
14312260 ⁸	5/7/92	Cocconeis pediculus, Rhoicosphenia curvata	--	Cocconeis placentula, Fragilaria construens ⁹	--	

¹ Epiphytic on Ulothrix or Cladophora.

² Intermingled with Cladophora filaments.

³ Actually located 0.3 mi below Days Creek Bridge.

⁴ No attached diatoms.

⁵ the only sample with Anabaena in it.

⁶ scraped from tile (artificial substrate).

⁷ Sparse algae, on incubated tile since 8/4/92.

⁸ Condensed mixture of diatoms and sediment, no filaments observed.

⁹ Long chains of cells.

Table 30. Elemental concentrations of algae-tissue samples taken from the South Umpqua River, Oregon, 1992

[All concentrations are in percent of dry weight. Samples are composites of algal mats at multiple locations at a site or within a reach; "WWTP" = wastewater-treatment plant; "ID" = identification; "—" = not applicable]

River mile	Station ID	Date, time	Comments	Carbon	Hydrogen	Nitrogen	Phosphorus
170.2 - 166.7	--	08/03/92, 1550	--	¹ 39.04	5.39	2.98	0.14
167.0	--	06/22/92, 1802	--	36.03	5.30	2.43	.14
151.3 - 150.6	--	06/23/92, 1031	Upstream of WWTP	34.49	5.41	2.09	.21
151.3 - 151.2	--	09/15/92, 0900	Upstream of WWTP	¹ 28.07	4.25	1.61	.18
151.3	14311105	08/04/92, 0820	Upstream of WWTP	¹ 31.50	4.55	2.32	.22
150.6 - 149.7	--	06/23/92, 1130	Downstream of WWTP	19.54	3.45	2.05	.27
150.5	--	08/04/92, 0920	Downstream of WWTP	30.11	4.85	3.03	.42
149.7	14311110	09/15/92, 0945	Downstream of WWTP	¹ 24.70	3.92	2.94	.54
147.8	4304111232212	09/15/92, 1100	--	¹ 28.13	4.27	2.81	.36
145.2	14311120	09/15/92, 1445	--	¹ 22.27	3.75	2.00	.30
132.8 - 132.6	--	06/24/92, 0952	Upstream of WWTP	23.94	3.98	2.28	.31
132.8	14312000	08/04/92, 1345	Upstream of WWTP	30.52 ¹	4.57	3.60	.29
132.6 - 132.3	--	06/24/92, 1031	Downstream of WWTP	28.03	4.47	2.93	.35
132.3 - 130.0	--	06/24/92, 1230	--	23.68	3.77	3.39	.33
132.3	14312002	08/04/92, 1500	Downstream of WWTP	¹ 21.02	3.63	2.87	.35
130.0 - 126.6	--	06/24/92, 1346	--	19.07	3.46	2.21	.27
119.5	14312258	08/19/92, 1454	Upstream of WWTP	33.54	5.08	1.69	.34
119.5	14312258	08/19/92, 1454	Duplicate	27.81	4.31	1.89	.44
119.5	--	08/19/92, 1535	Plume of RUSA WWTP	36.50	5.51	4.57	.60
116.6	14312261	08/19/92, 1737	Downstream of WWTP	30.28	4.64	4.14	.65
114.0	--	08/20/92, 0830	Downstream of WWTP	30.58	4.75	4.76	.72

¹ Duplicate carbon analyses did not replicate well. Reported carbon values are the average of several sample analyses.

Table 31. Sanitary quality at selected sites, South Umpqua River Basin, Oregon, 1990-92

["0.7 UM-MF" = 0.7 micron-millipore filter; "COLS./100 ML" = colonies per 100 milliliters;
 "K" = non-ideal colony count; "--" = missing data or not collected; "SEP" = September;
 "OCT" = October; "NOV" = November; "DEC" = December; "JAN" = January; "FEB" = February;
 "MAR" = March; "JUN" = June; "JUL" = July; "AUG" = August]

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
14308600		South Umpqua River at Days Creek		
SEP 1992				
01...	1220	--	K6	--
15...	0710	--	25	--
425640123201400		Cow Creek at mouth, near Riddle		
SEP 1992				
01...	0700	--	35	--
15...	0810	--	21	--
14311105		South Umpqua River at Myrtle Creek		
SEP 1992				
01...	0930	--	K16	--
15...	0830	--	K16	--
14311110		South Umpqua River near Myrtle Creek		
SEP 1992				
01...	0940	--	K5	--
15...	0845	--	K11	--
14311500		Lookingglass Creek at Brockway		
SEP 1992				
01...	1025	--	34	--
15...	0920	--	58	--
14312005		South Umpqua River near Winston		
SEP 1992				
01...	1045	--	170	--
15...	0935	--	30	--
14312260		South Umpqua River near Roseburg		
OCT 1990				
17...	0930	156	K14	21
NOV				
07...	0930	844	K33	57
DEC				
05...	1330	1600	39	37
JAN 1991				
15...	1400	10500	41	40
FEB				
27...	1000	1360	K18	K12
MAR				
26...	0930	3210	36	55
MAY				
01...	1330	1890	K33	K3
30...	1430	1710	23	K7
JUN				
25...	1130	536	20	K5
JUL				
25...	1000	280	K1	53

Table 31. Sanitary quality at selected sites, South Umpqua River Basin, Oregon, 1990-92—Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
14312260	South Umpqua River near Roseburg			
AUG				
13...	1400	179	<1	K510
SEP				
04...	1400	126	K20	31
OCT				
17...	0930	99	K14	190
NOV				
12...	1345	272	670	22
DEC				
11...	0915	2630	53	88
JAN 1992				
14...	1330	1850	26	K15
FEB				
12...	1130	972	K13	K6
MAR				
09...	1330	1030	K10	K2
APR				
09...	0930	606	K10	55
MAY				
04...	1130	857	K13	K2
JUN				
09...	1130	187	K2	740
JUL				
15...	1200	149	K14	960
AUG				
17...	1600	75	K9	K420
SEP				
01...	1110	--	55	--
08...	1300	116	21	39
15...	0955	--	29	--
OCT				
21...	1330	144	K1	70

Table 32. Benthic macroinvertebrates at selected sites, South Umpqua River, Oregon, 1992

[Identifications are to Class or Order level except where identification to Family or Genus level was necessary to describe functional group. Numbers are in animals per square meter. "--" = no station number exists]

Class	Station number and (river mile)						
	--	--	14312002	14312002	14312010	14312010	14312260
	(150.6)	(149.9)	(132.3)	(132.3)	(130.0)	(130.0)	(118.0)
	Date						
	08-04-92	08-04-92	08-04-92	08-04-92	09-17-92	09-17-92	09-17-92
.....Order							
.....Family..Genus							
Counts per square meter							
Turbellaria							
.....Triladida							
.....Planariidae	92	48	140	69	56	32	24
Oligochaeta	116	76	40	26	40	28	432
Crustacea							
.....Copepoda							
.....Cyclopoida			4				
.....Amphipoda							
.....Gammaridae..Gammaru				1	72		52
Arachnoidea							
.....Hydracarina	8		4			4	
Insecta							
.....Plecoptera							
.....Perlidae	8						
.....Ephemeroptera							
.....Baetidae..Baetis	24	4			128	72	4
.....Trichoptera							
.....Helicopsychidae	22						
.....Leptoceridae	22		12	22	8	20	
.....Hemiptera							
.....Corixidae							4
.....Coleoptera							
.....Psephenidae	12	8					
.....Elmidae..Optioserrus			8	1		48	
.....Haliplidae	24	8					
.....Anisoptera							
.....Gomphidae							4
.....Diptera							
.....Chironomidae	72	736	668	188	928	208	
Mollusca							
.....Gastropoda							
.....Lymnaeidae	66	14	22	40	122	16	181
.....Vivipauidae	40		8		2		90
.....Planorbidae	28	14	22	20	80	12	181
.....Pelecypoda							
.....Unionidae				3		4	

Table 33. Quality-control data for water samples collected in the South Umpqua River Basin, Oregon, 1991-92

[Samples analyzed at U.S. Geological Survey's National Water Quality Laboratory in Denver, Colorado; each sample is labeled with a "QA TYPE" which indicates whether the sample was a replicate or a field blank. "R" = replicate; "FB" = field blank; "MG/L" = milligrams per liter; "CaCO₃" = calcium carbonate; "SiO₂" = silica; "TOTAL" = unfiltered, digested; "dissolved" = filtered; "N" = nitrogen; "NO₂+NO₃" = nitrite plus nitrate; "P" = phosphorus; "--" = not analyzed or not available; "E" = estimated; "<" = less than; "JUN" = June; "JUL" = July; "AUG" = August; "SEP" = September; "OCT" = October]

DATE	TIME	QA TYPE	ALKA- LINEITY LAB (MG/L CaCO ₃)	SILICA, DIS- SOLVED (MG/L SiO ₂)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
14308910 South Umpqua River at Canyonville											
JUN 1991											
10...	1040	R	36	17	0.002	0.014	0.018	<0.20	0.019	0.015	0.009
10...	1045	R	36	17	0.001	0.014	0.012	0.40	0.019	0.014	0.009
10...	1050	R	36	17	0.002	0.016	0.015	0.20	0.017	0.016	0.009
JUL											
22...	1300	R	47	15	0.007	0.026	0.029	0.30	0.012	0.008	0.003
22...	1305	R	46	15	0.008	0.027	0.032	0.30	0.014	0.008	0.006
AUG											
26...	1435	R	53	13	<0.001	0.043	0.013	<0.40	0.030	0.009	0.008
26...	1440	R	53	13	<0.001	0.033	0.010	--	0.017	0.008	0.002
SEP											
23...	1430	R	55	14	0.003	0.057	0.022	0.30	0.017	0.011	0.008
23...	1435	R	55	14	0.002	0.055	0.016	0.30	0.017	0.011	0.008
14310000 Cow Creek near Riddle											
JUN 1991											
10...	1530	R	53	15	0.002	0.009	0.029	<0.20	0.013	0.008	0.003
10...	1535	R	53	15	0.002	<0.005	0.019	0.20	0.013	0.012	0.003
10...	1540	R	53	14	0.003	0.015	0.030	0.20	0.014	0.008	0.005
14311105 South Umpqua River at Myrtle Creek											
JUN 1992											
24...	0015	R	56	13	0.003	0.013	0.006	<0.20	0.010	0.006	<0.001
24...	0020	R	57	14	<0.001	0.015	0.013	<0.20	0.010	0.005	0.001
24...	1000	FB	1.5	<0.1	0.005	<0.005	0.009	<0.20	<0.001	<0.001	<0.001
AUG											
05...	0930	R	63	15	<0.001	0.010	0.006	<0.20	0.010	0.006	0.001
05...	0935	R	61	15	<0.001	0.011	0.004	<0.20	0.008	0.006	0.001
SEP											
15...	1520	R	66	14	0.001	0.016	0.014	<0.20	0.007	0.005	<0.001
15...	1525	R	--	--	0.001	0.016	0.015	<0.20	0.007	0.004	<0.001
16...	0930	FB	3.9	0.3	<0.001	<0.005	0.015	<0.20	<0.001	0.003	<0.001
14311110 South Umpqua River near Myrtle Creek											
MAY 1992											
19...	1819	R	52	13	0.002	0.027	0.041	0.60	0.024	0.016	0.011
19...	1824	R	52	14	0.002	0.028	0.042	1.0	0.024	0.016	0.012
19...	1829	FB	--	--	<0.001	<0.005	0.004	0.50	<0.001	0.001	<0.001
AUG											
04...	1530	R	63	15	0.012	0.028	0.024	<0.20	0.031	0.021	0.020
04...	1535	R	--	--	0.012	0.027	0.025	<0.20	0.034	0.025	0.019
SEP											
01...	1705	R	68	14	0.010	0.036	0.038	0.30	0.045	0.034	0.026
01...	1710	R	69	14	0.010	0.036	0.021	0.20	0.047	0.033	0.026
01...	1715	FB	3.4	0.4	<0.001	<0.005	0.011	<0.20	0.003	<0.001	<0.001
15...	1643	R	66	14	0.009	0.034	0.034	0.30	0.037	0.032	0.024
15...	1648	R	--	--	0.009	0.033	0.028	0.20	0.036	0.035	0.024
14311170 South Umpqua River at Dillard											
JUL 1991											
23...	1000	R	55	14	0.003	0.012	0.007	0.30	<0.019	0.011	0.004
23...	1005	R	54	14	--	--	--	0.30	--	--	--
AUG											
27...	1215	R	60	12	<0.001	0.008	0.013	0.20	0.019	0.011	0.007
27...	1220	R	60	12	<0.001	0.086	0.014	--	0.015	0.009	0.005

Table 33. Quality-control data for water samples collected in the South Umpqua River Basin, Oregon, 1991-92--Continued

DATE	TIME	QA TYPE	ALKA- LINEITY LAB (MG/L AS CACO3)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
14312000 South Umpqua River near Brockway											
JUN 1992											
25...	0100	R	57	13	0.002	0.008	0.021	<0.20	0.020	0.015	0.009
25...	0105	R	58	14	0.002	0.008	0.023	0.30	0.019	0.021	0.009
AUG											
06...	1417	R	63	13	0.002	0.016	0.027	<0.20	0.014	0.013	0.006
06...	1422	R	63	13	0.001	0.018	0.029	<0.20	0.016	0.011	0.007
SEP											
17...	1337	R	66	9.4	0.002	0.011	0.104	<0.20	0.013	0.005	0.006
17...	1342	R	63	9.5	0.001	0.009	0.045	<0.20	0.014	0.006	0.003
14312002 South Umpqua River below treatment plant near Brockway											
AUG 1992											
06...	1005	R	63	13	0.013	0.084	0.031	0.30	0.029	0.024	0.013
06...	1010	R	63	13	0.013	0.084	0.030	0.20	0.030	0.022	0.013
06...	1500	FB	2.3	0.2	<0.001	<0.005	0.004	<0.20	<0.001	<0.001	<0.001
14312005 South Umpqua River near Winston											
JUL 1991											
23...	1600	R	55	14	0.005	0.053	0.019	0.40	0.022	0.014	0.013
23...	1605	R	55	14	0.005	0.043	0.017	0.30	0.022	0.014	0.010
SEP 1992											
01...	1116	R	65	--	0.011	0.063	0.031	0.20	0.023	0.016	0.009
01...	1121	R	65	--	0.011	0.065	0.032	0.30	0.025	0.018	0.010
01...	1131	FB	3.1	0.3	<0.001	<0.005	0.013	<0.20	<0.001	0.001	<0.001
425602123165701 Waste Water Treatment Plant; Canyonville											
MAY 1992											
04...	0700	R	37	--	<0.01	16	0.06	1.5	3.7	--	3.0
04...	0705	R	--	--	0.02	16	0.10	1.6	3.8	--	2.9
JUN											
08...	0730	R	77	--	0.03	7.5	0.26	1.5	3.6	--	3.4
08...	0735	R	--	--	0.02	7.1	0.20	1.4	3.6	--	3.1
JUN 1991											
10...	0600	R	50	20	0.03	16	0.08	2.4	3.4	3.3	3.3
10...	0605	R	53	19	0.03	16	0.07	2.5	3.4	3.2	3.3
10...	0930	R	51	20	0.02	15	0.10	2	3.6	3.2	3.4
10...	0935	R	52	19	0.02	15	0.05	1.7	4.0	3.3	3.1
JUN 1992											
29...	0720	R	101	--	0.04	2.9	1.4	2.6	2.2	--	1.5
29...	0725	R	--	--	0.05	2.9	0.86	2.7	2.4	--	2.0
AUG											
03...	0800	R	104	--	0.02	4.4	0.18	1.2	3.1	--	2.6
03...	0805	R	--	--	0.03	4.5	0.19	1.4	3.0	--	2.7
AUG 1991											
26...	0945	R	76	19	0.03	7.6	0.28	1.7	3.1	3.1	2.8
26...	0950	R	76	18	0.03	7.8	0.29	1.6	3.2	3.0	3.0
SEP 1992											
07...	0715	R	88	--	0.02	5.8	0.26	1.7	4.0	--	2.7
07...	0720	R	--	--	0.02	5.8	0.28	1.8	4.5	--	2.8
425640123201400 Cow Creek at mouth, near Riddle											
MAY 1992											
18...	1430	R	56	14	<0.001	0.013	0.009	<0.20	0.012	0.007	0.003
18...	1435	R	--	--	0.001	0.013	0.015	<0.20	0.015	0.008	0.004
18...	1440	FB	1.8	0.4	<0.001	<0.005	0.003	<0.20	0.002	0.001	0.001
AUG											
31...	1530	R	68	14	0.001	<0.005	0.016	<0.20	0.013	0.007	0.003
31...	1540	R	69	14	0.001	0.005	0.013	<0.20	0.015	0.009	0.005
31...	1550	FB	3.3	0.3	<0.001	<0.005	0.013	<0.20	<0.001	<0.001	<0.001

Table 33. Quality-control data for water samples collected in the South Umpqua River Basin, Oregon, 1991-92—Continued

DATE	TIME	QA TYPE	ALKA-	SILICA,	NITRO-	NITRO-	NITRO-	NITRO-	PHOS- PHORUS	PHOS-	PHOS-
			LINITY	DIS-	GEN,	GEN,	GEN,	GEN,AM-		PHORUS	ORTH,
			LAB	SOLVED	NITRITE	NO2+NO3	AMMONIA	MONIA +		DIS-	DIS-
			(MG/L	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L		(MG/L	(MG/L
			AS	AS	SOLVED	SOLVED	SOLVED	TOTAL		SOLVED	SOLVED
			(CAO3)	(SIO2)	(AS N)	(AS N)	(AS N)	(AS N)	(AS P)	(AS P)	(AS P)
425705123212001 Waste Water Treatment Plant; Riddle											
MAY 1992											
11...	0740	R	78	--	1.5	9.7	1.5	3.5	2.3	--	1.8
11...	0745	R	--	--	1.5	9.6	1.5	3.5	1.9	--	1.7
JUN											
15...	0745	R	102	--	0.75	8.9	5.7	8.4	3.1	--	2.4
15...	0750	R	--	--	0.72	8.6	5.6	8.9	3.0	--	2.4
JUL											
06...	0745	R	71	--	0.70	14	1.2	2.7	3.0	--	2.2
06...	0750	R	--	--	0.72	14	1.2	2.8	2.9	--	2.2
AUG											
10...	0730	R	70	--	0.38	19	0.23	1.7	3.5	--	2.9
10...	0735	R	--	--	0.38	19	0.20	1.4	3.6	--	2.8
SEP											
14...	0740	R	81	--	0.24	17	0.16	1.4	2.9	--	2.6
14...	0745	R	81	--	0.24	15	0.17	1.4	2.8	--	2.2
430117123174701 Waste Water Treatment Plant; Myrtle Creek											
MAY 1992											
18...	0900	R	107	--	0.54	5.0	8.8	9.7	3.3	--	3.1
18...	0905	R	--	--	0.53	5.0	9.2	9.1	3.1	--	3.0
JUL											
13...	0900	R	91	--	0.76	6.2	4.3	6.4	3.1	--	2.5
13...	0905	R	--	--	0.75	6.1	4.3	6.5	3.0	--	2.5
AUG											
17...	0900	R	75	--	1.2	4.6	7.9	11	2.8	--	2.3
17...	0905	R	--	--	1.4	5.0	8.1	11	2.8	--	2.5
SEP											
21...	0900	R	91	--	0.58	5.0	4.9	7	3.7	--	3.0
21...	0905	R	91	--	0.60	5.1	5.1	7.1	3.4	--	3.1
430812123240101 Waste Water Treatment Plant; Winston-Green											
MAY 1992											
25...	0900	R	38	--	0.88	9.3	7.7	10	1.6	--	0.49
25...	0905	R	--	--	0.83	8.7	7.3	11	1.6	--	0.46
JUL											
20...	0900	R	52	--	1.1	11	5.3	8.6	1.4	--	0.57
20...	0905	R	--	--	1.1	11	5.4	7.9	1.5	--	0.56
AUG											
24...	0830	R	43	--	1.3	9.4	6.4	9.1	2.8	--	2.4
24...	0835	R	58	--	1.2	8.8	6.1	7.7	2.7	--	2.3
SEP											
28...	0900	R	76	--	1.2	9.4	7.1	8.9	1.7	--	0.80
28...	0905	R	--	--	1.1	9.2	6.9	9.3	1.9	--	0.84
431233123234301 Waste Water Treatment Plant; Roseburg											
JUN 1992											
01...	0905	R	52	--	1.0	6.3	7.0	13	3.4	--	3.1
01...	0910	R	--	--	1.0	6.7	6.8	9.2	3.4	--	3.1
22...	0900	R	105	--	0.06	3.0	1.3	3.4	3.4	--	2.6
22...	0905	R	--	--	0.900	5.0	7.6	10	3.6	--	3.1
JUL											
27...	0848	R	74	--	0.53	2.8	1.5	20	4.1	--	3.3
27...	0853	R	--	--	0.53	2.8	1.5	3.9	4.1	--	3.3
AUG											
31...	0845	R	41	--	2.0	10	4.0	6.1	3.7	--	3.1
31...	0850	R	--	--	2.1	11	4.1	5.9	3.8	--	3.2

Table 34. Quality-control reference-sample results for nutrient samples analyzed by the National Water Quality Laboratory in 1991 and 1992

[Reference samples of nutrients were submitted to the NWQL (National Water Quality Laboratory) in concentrations varying within the range of values being reported by the NWQL for South Umpqua River Basin water samples, including wastewater-treatment plant (WWTP) effluent samples. The values reported by the NWQL are given in the top section of the table and are denoted as S1-S14. The corresponding expected values for the same reference samples are given in the bottom section of the table. "QA" = Quality Assurance; "mg/L" = milligrams per liter; "N" = nitrogen; "P" = phosphorus; "S1"- "S14" = reference samples 1 through 14; "LB" = laboratory blank; "--" = missing data or not analyzed; "<" = less than]

			NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
DATE	QA TYPE	TIME							
AUG 1991									
20...	S1	1200	<0.010	0.110	<0.010	--	0.050	0.050	0.060
20...	S2	1230	<0.010	1.0	0.59	--	0.23	0.23	0.21
20...	S3	1300	<0.010	5.2	3.0	--	--	1.2	1.1
OCT 1991									
18...	S4	1115	<0.010	1.0	0.46	0.5	0.21	--	0.200
MAY 1992									
21...	S5	1148	<0.001	0.011	0.018	<0.20	0.008	0.004	0.003
21...	S6	1143	<0.001	0.066	0.035	<0.20	0.033	0.021	0.022
21...	S7	1138	<0.001	0.329	0.120	<0.20	0.117	0.114	0.111
JUN									
01...	LB	1100	0.001	<0.005	0.014	<0.20	<0.001	<0.001	<0.001
JUL									
28...	LB	1000	<0.010	<0.050	<0.010	<0.20	<0.010	<0.010	<0.010
28...	S8	1110	<0.010	0.130	0.070	<0.20	0.040	0.050	0.050
28...	S9	1115	<0.010	1.60	0.730	0.70	0.320	0.340	0.310
28...	S10	1130	<0.010	5.4	6.9	6.5	1.1	0.99	0.93
AUG 1992									
25...	LB	1000	<0.001	<0.005	<0.002	--	--	--	<0.001
SEP 1992									
03...	LB	1000	<0.001	<0.005	0.009	<0.20	<0.001	<0.001	<0.001
03...	S11	1110	<0.001	0.082	0.040	<0.20	0.024	0.024	0.018
03...	S12	1115	<0.001	0.527	0.233	<0.20	0.143	0.142	0.098
03...	S13	1130	<0.010	6.5	2.8	2.8	2.3	2.6	1.80
03...	S13	1200	<0.001	0.006	0.029	<0.20	<0.001	0.005	0.002
OCT 1992									
20...	LB	1000	--	0.010	0.004	--	0.002	--	0.019
REFERENCE SAMPLE EXPECTED VALUES:									
	S1		--	0.093	0.031	<0.20	0.049	0.049	0.049
	S2		--	1.17	0.58	0.58	0.235	0.235	0.235
	S3		--	5.84	3.05	3.05	1.12	1.12	1.12
	S4		--	1.17	0.488	0.49	0.222	0.222	0.222
	S5		--	0.017	0.006	<0.20	0.006	0.006	0.006
	S6		--	0.068	0.023	<0.20	0.023	0.023	0.023
	S7		--	0.340	0.113	<0.20	0.113	0.113	0.113
	S8		--	0.130	--	<0.20	0.050	0.050	0.050
	S9		--	1.62	0.070	<0.20	0.310	0.310	0.310
	S10		--	5.39	7.11	7.1	1.03	1.03	1.03
	S11		--	0.086	--	<0.20	0.030	0.020	0.020
	S12		--	0.540	0.21	0.2	0.153	0.103	0.103
	S13		--	6.47	2.8	2.8	2.35	1.85	1.85
	S14		--	0.009	--	<0.20	0.003	0.003	0.003