WASHINGTON STATE
DEPARTMENT OF
ECOLOGY

Freshwater Ambient Monitoring Report for Wateryear 1991

Part I:
Program Description and General Statewide Results

Part II:
Water Quality Summary and 12-Year Trends for Core Stations in the Puget Sound Basin

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Freshwater Ambient Monitoring Report for Wateryear 1991

Part I:
Program Description and General Statewide Results

Part II:
Water Quality Summary and 12-Year Trends for Core Stations in the Puget Sound Basin

by
Brad Hopkins

Environmental Investigations
and Laboratory Services Program
Ambient Monitoring Section
Washington State Department of Ecology
Post Office Box 47710
Olympia, Washington 98504-7710

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ABSTRACT

From October 1, 1990, to September 30, 1991 (Wateryear 1991), the Washington State Department of Ecology (Ecology) Ambient Monitoring Section measured 13 conventional water quality parameters monthly at 81 stations in Washington State. Water quality information from these stations are used to evaluate instream conditions as they relate to Water Quality Standards, detect changes in water quality over time, and provide current water quality information for Ecology's water quality based permitting of dischargers.

In Wateryear 1991, rivers and streams monitored by Ecology's Ambient Monitoring Program exhibited occasional violations of Washington State Water Quality Standards. The majority of these violations involved elevated concentrations of fecal coliform bacteria and increased summer water temperatures. Water quality information collected at the 12 core/bench mark stations within the Puget Sound Basin were selected for more in-depth analysis, including the use of the Seasonal Kendall (SK) Statistical Test for trend detection, and are discussed in more detail. The most significant trends were found on the Lower Green River and reflect substantial water quality improvements that correspond with relocation of the Renton Sewage Treatment Plant Outfall.

PART I:

Program Description and General Statewide Results

INTRODUCTION

The Washington State Department of Ecology (Ecology) has operated a long-term Freshwater Ambient Monitoring Program from Ecology's inception in 1970. The primary objectives of this program are to 1) provide water quality information to determine if designated uses are supported by existing instream water quality (305b Report); 2) track spacial and temporal change in water quality of rivers and streams; and 3) provide site specific water quality information in support of Ecology's water quality based permitting of dischargers.

This report is divided into two parts. Part I presents information on the methods the Freshwater Ambient Monitoring Program used for network design, sample collection, field processing, field and laboratory analysis, data handling, quality assurance/quality control (QA/QC), and data analysis. The data from Ecology's freshwater ambient monitoring network for Wateryear 1991 (WY 1991) are discussed from three perspectives: 1) statewide, 2) rivers and streams within the Puget Sound Basin, and 3) rivers and streams outside of the Puget Sound Basin. Part II presents more detailed analyses of the water quality data collected at core/bench mark stations located inside of the Puget Sound Basin.

METHODS

This section provides information on network design, sample collection, field processing, field/laboratory analysis, data handling, QA/QC, and data analysis techniques.

Network Design

Network design will be discussed as follows: 1) a brief history of the Ambient Monitoring Program; 2) current network design considerations; and 3) a comparison of the proposed Puget Sound Ambient Monitoring Program Inside of Puget Sound Basin to Ecology's Wateryear 1991 Network Inside of the Puget Sound Basin.

Historical

From 1978 to 1990, Ecology's Freshwater Ambient Monitoring Program consisted of a 78-station fixed station network that was sampled monthly. Prior to 1978, various monitoring efforts were undertaken by Ecology and its predecessor agencies ranging from monthly fixed station to bi-monthly rotating station networks. The specific monitoring locations and the years they have been monitored are presented in Appendix 1.

Current

For Wateryear (WY) 1991 (October 1, 1990, to September 30, 1991), Ecology developed a new monitoring network comprised of three types of stations: 1) core/bench mark, 2) rotating, and 3) floating.

This new network design allows Ecology to collect more water quality information with the same level of effort, however, some trend detecting capabilities are sacrificed. This new network will continue to be monitored on a monthly basis. Specific station type and locations for the complete network are presented in Appendix 2. Station locations and water quality parameters monitored in WY 1991 are presented in Figure 1 and Table 1.

Core/Bench Mark Stations

Core/Bench mark stations are sampled monthly year after year and provide information for tracking changes in water quality over time (trends).

Locations of Core stations were based on the following criteria:

1) near the mouth of the major river basins that flow into the three major receiving waters of Washington State;

   a) Puget Sound,
   b) Columbia River, and
   c) Grays Harbor;

2) where major rivers enter Washington State; and

3) downstream of major impact areas.

Bench mark stations are established in the upper reaches of a few select river basins to track upstream/downstream changes.

Rotating Stations

Rotating stations are located at 1) the mouths of the remaining rivers that flow into Puget Sound; 2) on major tributaries to rivers with core stations; or 3) on rivers and streams with known water quality problems. These stations will be active once every three years. When active, a rotating station will be sampled monthly. Information from these stations will be used primarily to determine if the waters meet their designated uses, in support of Ecology's permit process and, to a lesser extent, to track water quality changes over time.

Floating Stations

Floating stations are established primarily to address short-term, site specific water quality concerns expressed within Ecology or by other clients, such as the Puget Sound Water Quality Authority (PSWQA). Floating stations are generally sampled monthly when active but the sampling duration is study specific and may or may not last for the complete wateryear. These

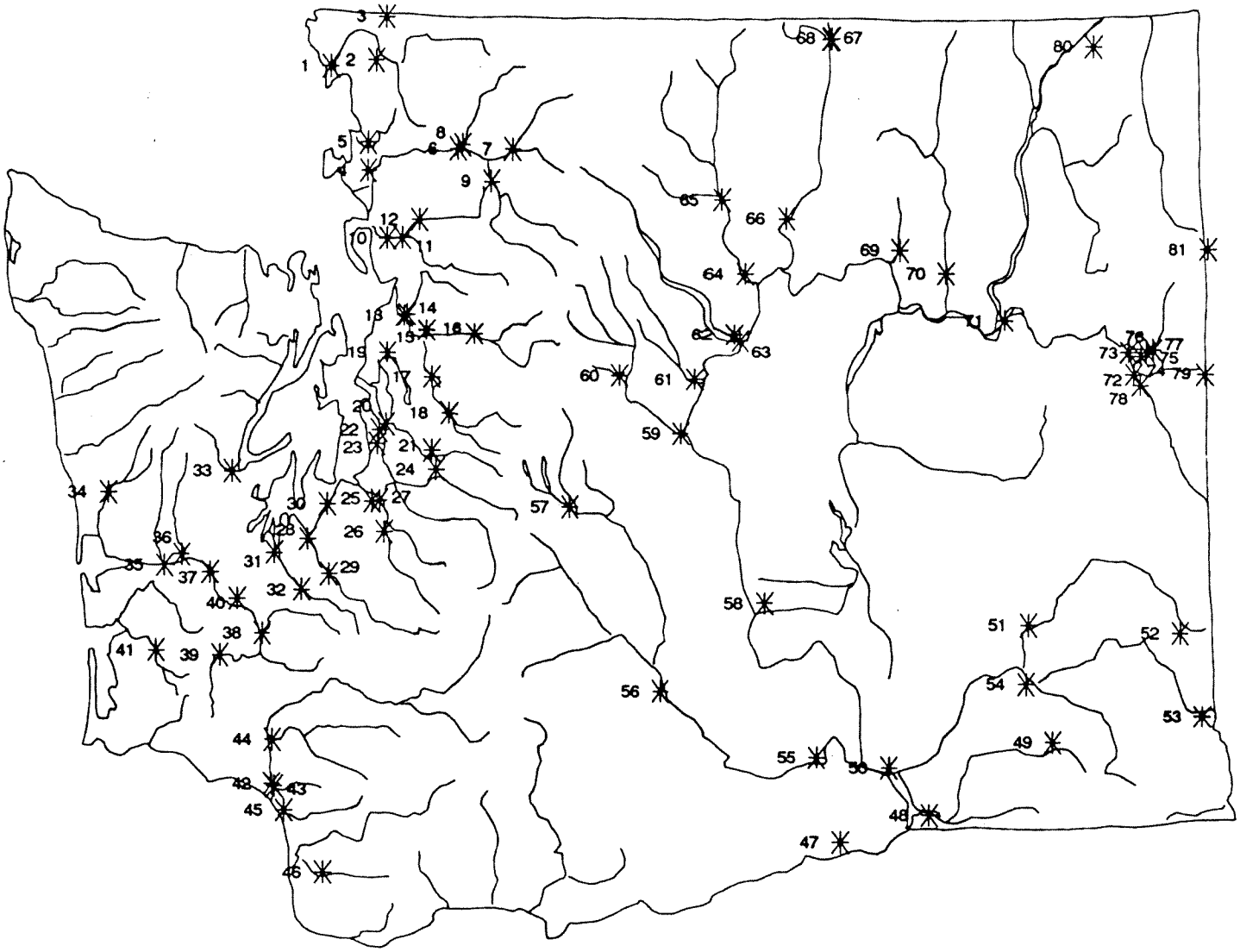


Figure 1. Washington State Department of Ecology, Ambient Monitoring Sections River and Stream Monitoring Network, Wateryear 1991.

Table 1. Washington State Department of Ecology Freshwater Ambient Monitoring Program for Wateryear 1991 (October 1, 1990 – September 30, 1991).

Map No.	Station No.	Description	Flow	D.O.	Temp	pH	Sp. Cond.	FC	Turb	TSS	COD	Nuts (5)	Metals (6)	Total Hard
1	01A050	Nooksack R @ Brennan	X	X	X	X	X	X	X	X		X	X	X
2	01A120	Nooksack R @ No Cedarville	X	X	X	X	X	X	X	X		X		
3	01D070	Sumas R nr Huntingdon BC	X	X	X	X	X	X	X	X		X		
4	03A060	Skagit R nr Mount Vernon	X	X	X	X	X	X	X	X		X		
5	03B050	Samish R nr Burlington	X	X	X	X	X	X	X	X		X		
6	04A060	Skagit R @ Concrete	X	X	X	X	X	X	X	X		X		
7	04A100	Skagit R @ Marblemount	X	X	X	X	X	X	X	X		X		
8	04B070	Baker R @ Concrete	X	X	X	X	X	X	X	X		X		
9	04C070	Sauk R nr Rockport	X	X	X	X	X	X	X	X		X		
10	05A070	Stillaguamish R nr Silvana	X	X	X	X	X	X	X	X		X		
11	05A090	SF Stillaguamish @ Arlington	X	X	X	X	X	X	X	X		X		
12	05B070	NF Stillaguamish @ Cicero	X	X	X	X	X	X	X	X		X		
13	07A090	Snohomish R @ Snohomish	X	X	X	X	X	X	X	X		X		
14	07B055	Pilchuck R @ Snohomish	X	X	X	X	X	X	X	X		X		
15	07C070	Skykomish R @ Monroe	X	X	X	X	X	X	X	X		X		
16	07C120	Skykomish R nr Gold Bar	X	X	X	X	X	X	X	X		X		
17	07D070	Snoqualmie R nr Carnation	X	X	X	X	X	X	X	X		X		
18	07D130	Snoqualmie R @ Snoqualmie	X	X	X	X	X	X	X	X		X		
19	08B070	Sammamish R @ Bothell	X	X	X	X	X	X	X	X		X		
20	08C070	Cedar R @ Logan St/Renton	X	X	X	X	X	X	X	X		X		
21	08C110	Cedar R nr Ladsburg	X	X	X	X	X	X	X	X		X		
22	09A080	Green R @ Tukwila		X	X	X	X	X	X	X		X	X	X
23	09A090	Green R @ 212th St nr Kent	X	X	X	X	X	X	X	X		X	X	X
24	09A190	Green R @ Kanaskat	X	X	X	X	X	X	X	X		X		
25	10A070	Puyallup R @ Meridian St	X	X	X	X	X	X	X	X		X		
26	10A110	Puyallup R @ Orting	X	X	X	X	X	X	X	X		X		
27	10C070	White R @ Sumner	X	X	X	X	X	X	X	X		X		
28	11A070	Nisqually R @ Nisqually	X	X	X	X	X	X	X	X		X	X	X
29	11A080	Nisqually R @ Mckenna	X	X	X	X	X	X	X	X		X		
30	12A070	Chambers Cr nr Steilacoom	X	X	X	X	X	X	X	X		X		
31	13A060	Deschutes R @ E St Bridge	X	X	X	X	X	X	X	X		X	X	X
32	13A150	Deschutes R nr Rainier	X	X	X	X	X	X	X	X		X		
33	16A070	Skokomish R nr Potlatch	X	X	X	X	X	X	X	X		X		
34	22A070	Humptulips R nr Humptulips	X	X	X	X	X	X	X	X		X		
35	22C050	Chehalis R nr Montesano		X	X	X	X	X	X	X		X		
36	22G070	Satsop R nr Satsop	X	X	X	X	X	X	X	X		X		
37	23A070	Chehalis R @ Porter	X	X	X	X	X	X	X	X		X		
38	23A120	Chehalis R @ Centralia	X	X	X	X	X	X	X	X		X		
39	23A160	Chehalis R @ Dryad	X	X	X	X	X	X	X	X		X		
40	23E070	Black River @ Moon Road Bridge		X	X	X	X	X	X	X		X	X	X
41	24B090	Willapa R nr Willapa	X	X	X	X	X	X	X	X		X		
42	26B070	Cowlitz R @ Kelso	X	X	X	X	X	X	X	X		X		
43	26C070	Coweeman R @ Kelso		X	X	X	X	X	X	X		X		
44	26D070	Toutle R nr Castle Rock	X	X	X	X	X	X	X	X		X		
45	27B070	Kalama R nr Kalama		X	X	X	X	X	X	X		X		

Table 1. Continued.

Map No.	Station No.	Description	Flow	D.O.	Temp	pH	Sp. Cond.	FC	Turb	TSS	COD	Nuts (5)	Metals (6)	Total Hard
46	27D090	EF Lewis R nr Dollar Corner	X	X	X	X	X	X	X	X		X		
47	31A070	Columbia R @ Umatilla	X	X	X	X	X	X	X	X		X	X	X
48	32A070	Walla Walla R nr Touchet	X	X	X	X	X	X	X	X		X		
49	32B130	Touchet R @ Dayton	X	X	X	X	X	X	X	X		X		
50	33A050	Snake R nr Pasco	X	X	X	X	X	X	X	X	X	X		
51	34A070	Palouse R @ Hooper	X	X	X	X	X	X	X	X	X	X	X	X
52	34B110	SF Palouse R @ Pullman	X	X	X	X	X	X	X	X		X		
53	35A150	Snake R @ Interstate Br	X	X	X	X	X	X	X	X		X		
54	35B060	Tucannon R @ Powers	X	X	X	X	X	X	X	X		X		
55	37A090	Yakima R @ Kiona	X	X	X	X	X	X	X	X		X		
56	37A190	Yakima R @ Parker	X	X	X	X	X	X	X	X		X		
57	39A090	Yakima R nr Cle Elum	X	X	X	X	X	X	X	X		X		
58	41A070	Crab Cr nr Beverly	X	X	X	X	X	X	X	X		X		
59	45A070	Wenatchee R @ Wenatchee	X	X	X	X	X	X	X	X		X		
60	45A110	Wenatchee R nr Leavenworth	X	X	X	X	X	X	X	X		X		
61	46A070	Entiat R nr Entiat	X	X	X	X	X	X	X	X		X		
62	47A070	Chelan R @ Chelan	X	X	X	X	X	X	X	X		X		
63	47B070	Columbia R @ Chelan Station	X	X	X	X	X	X	X	X		X		
64	48A070	Methow R nr Pateros	X	X	X	X	X	X	X	X		X		
65	48A140	Methow R @ Twisp	X	X	X	X	X	X	X	X		X		
66	49A070	Okanogan R @ Malott	X	X	X	X	X	X	X	X		X		
67	49A190	Okanogan R @ Oroville	X	X	X	X	X	X	X	X		X		
68	49B070	Similkameen R @ Oroville	X	X	X	X	X	X	X	X		X		
69	51A070	Nespelem R @ Nespelem	X	X	X	X	X	X	X	X		X		
70	52A070	Sanpoil R @ Keller	X	X	X	X	X	X	X	X		X		
71	54A050	Spokane R @ Mouth		X	X	X	X	X	X	X		X	X	X
72	54A120	Spokane R @ Riverside State Pk	X	X	X	X	X	X	X	X	X	X	X	X
73	55B070	Little Spokane R nr Mouth	X	X	X	X	X	X	X	X		X	X	X
74	55B080	Little Spokane R nr Griffith Spr		X	X	X	X	X	X	X		X		
75	55B082	Little Spokane R abv Dartford Ck		X	X	X	X	X	X	X		X		
76	55B100	Little Spokane R abv Peone Creek		X	X	X	X	X	X	X		X		
77	55C070	Peone (Deadman) Cr abv L Deep Ck		X	X	X	X	X	X	X		X		
78	56A070	Hangman Cr @ Mouth	X	X	X	X	X	X	X	X		X		
79	54A150	Spokane R @ Stateline Br	X	X	X	X	X	X	X	X		X	X	X
80	61A070	Columbia R @ Northport	X	X	X	X	X	X	X	X		X	X	X
81	62A150	Pend Oreille R @ Newport	X	X	X	X	X	X	X	X		X		

D.O. = Dissolved Oxygen
Temp = Temperature
Sp. Cond = Specific Conductance
FC = Fecal Coliform
COD = Chemical Oxygen Demand
Nuts = Nutrients (Ammonia-N, Nitrate-N, Nitrite-N, Total Phosphorus-N, Orthophosphate-N)
Metals = Cadmium, Chromium, Copper, Lead, Mercury, Zinc
Total Hard = Total Hardness

stations allow the program to generate timely water quality information without disruption to its primary sampling network. These stations not only provide support for Ecology's permit process, but also allow Ecology to focus on areas of increasing concern.

Inside of Puget Sound Basin Monitoring Network vs. Ecology WY 1991 Network

In 1987, PSWQA concluded that "...there is currently no long-term comprehensive program to monitor Puget Sound and its resources..." and appointed a committee to design a Puget Sound Ambient Monitoring Program (PSAMP) (PSAMP, 1988). Ecology, in cooperation with PSWQA, modified a portion of its Freshwater Ambient Monitoring Program to better reflect the specific goals and objectives of PSAMP. For planning purposes, Ecology's statewide freshwater rivers and stream monitoring program was divided into two parts: 1) inside of the Puget Sound Basin (those stations that flow into Puget Sound); and 2) outside of the Puget Sound Basin (the rest of the state).

For WY 1991, the Ambient Monitoring Section collected water quality samples at 36 stations on rivers and streams that flow into Puget Sound (see Figure 1). These stations represent approximately 43% of Ecology's statewide freshwater ambient monitoring efforts. Ecology's new network design inside of the Puget Sound Basin is comparable to the design developed by PSAMP (Table 2). The major difference between the two plans is the addition of two bench mark stations in place of two floating stations in Ecology's new design. However, Ecology's program in WY 1991 reflected a transition, and the final rotating network will require additional fine tuning to reflect a basin wide perspective.

Table 2. Comparison of PSAMP Rivers and Stream Monitoring Network (PSWQA, 1988) and Ecology's WY 1991 Network.

Station Type	PSAMP	Ecology
Core	10	10
Bench Mark	0	2
Rotating	20	21
Floating	5	3
Total Per Year	**35**	**36**

Sample Collection

Monthly samples are collected as part of four monitoring "runs": Eastern, Central, Northwest, and Southwest. The Eastern, Central, and the first two days of the Southwest Run cover all freshwater stations outside of the Puget Sound Basin and are typically completed the first, second, and fourth weeks of each month. The Puget Sound portion of Ecology's Freshwater Program is collected as part of the Northwest Run and the last day of the Southwest Run. The Northwest Run includes all monitoring stations north of the Puyallup River and is typically completed the third week of the month. The Southwest Run includes stations in South Puget Sound and Hood Canal and occurs during the fourth week of the month.

The majority of the water samples are collected as single grab samples from highway bridges near midchannel. At a few sample locations, where bridge sites have inadequate mixing or pose a potential hazard to monitoring staff, the sampling sites are accessed from the river bank. All water samples are collected from approximately six inches below the surface to minimize surface contamination. Water samples for all conventional parameters, except fecal coliform bacteria and total suspended solids (TSS), are collected in a stainless steel sampler similar to the dissolved oxygen (D.O.) and BOD sampler design presented on page 4-151 of the 17th Edition of Standard Methods (APHA-AWWA-WPCF, 1989). The TSS samples are collected directly in a separate sample bottle secured as a passenger to the D.O. sampler. Water samples for fecal coliform analysis are collected in a sterilized sample bottle in a flow orienting sampler. Whole water samples for metals analysis are collected directly in a specially cleaned and quality controlled sample bottle provided by Ecology's Manchester Laboratory. The sample container is placed in a flow orientating stainless steel sampler designed specifically to hold the sample bottle.

Concurrent with the collection of water samples, on site measurements are taken for barometric pressure, time of day, stage height for flow determination by USGS (if required), and *in-situ* temperature.

Water samples are analyzed for the following conventional parameters:

Specific Conductivity	Total Suspended Solids	pH
Nitrate+nitrite	Dissolved Oxygen	Turbidity
Dissolved Nitrite	Fecal Coliform Bacteria	Total Phosphorus
Ammonia	Dissolved Ortho-phosphorus	

At select stations the following additional parameters are included:

Total Hardness	Cadmium (Total Recoverable)
Lead (Total Recoverable)	Chromium (Total Recoverable)
Mercury (Total)	Copper (Total Recoverable)
Zinc (Total Recoverable)	

Field Processing

Most of the conventional parameters, except TSS, and fecal coliform, require additional processing in the field. The D.O. bottle is removed from the D.O. sampler and fixed with alkaline iodide-azide and manganous sulfate. Water remaining in the D.O. sampler is split out for 1) field analysis, 2) laboratory analyses requiring whole water, and 3) filtering in the field. Water samples for dissolved nitrite and dissolved ortho-phosphorus determination are filtered in the field through a 0.45 μm acetate filter. After processing, all samples for laboratory analysis are tagged, buried in ice, and shipped to arrive at Ecology's Manchester Laboratory within 30 hours from the time of collection.

Field Analysis

Conductivity and pH are typically measured within 10 minutes of collection of the water sample. Dissolved oxygen samples are fixed in the field, as previously described, for subsequent Winkler titration upon completion of the sampling run (within three days of collection).

Laboratory Analysis

For specific information on method of analysis, detection limits, holding time, and other important information for each of the above parameters, see Appendix 3.

Data Handling

Data collected as part of this program are entered into two independent computer systems and follows the flow diagram presented in Figure 2. Monitoring staff enter field observations and data directly into the Ambient Monitoring Section Database (AMSD). Laboratory data, after bench and senior level review, are entered into the laboratory computer system and later downloaded via modem to AMSD. As part of this transfer, laboratory data are passed through a two step quality assurance (QA) check. Data are accepted, qualified, or rejected (see QA Section). The data are 100% verified for transcription errors and finalized. Ecology's finalized data sets are uploaded to EPA's STORET database, and to PCSTORET (a Micro-computer version of STORET) quarterly. Data transfer will expand to include PSAMP central database when the freshwater portion becomes available.

Quality Assurance

Quality assurance practices (QA) in the Freshwater Ambient Monitoring Program are incorporated in each of the three major components of the program: 1) field, 2) laboratory, and 3) data.

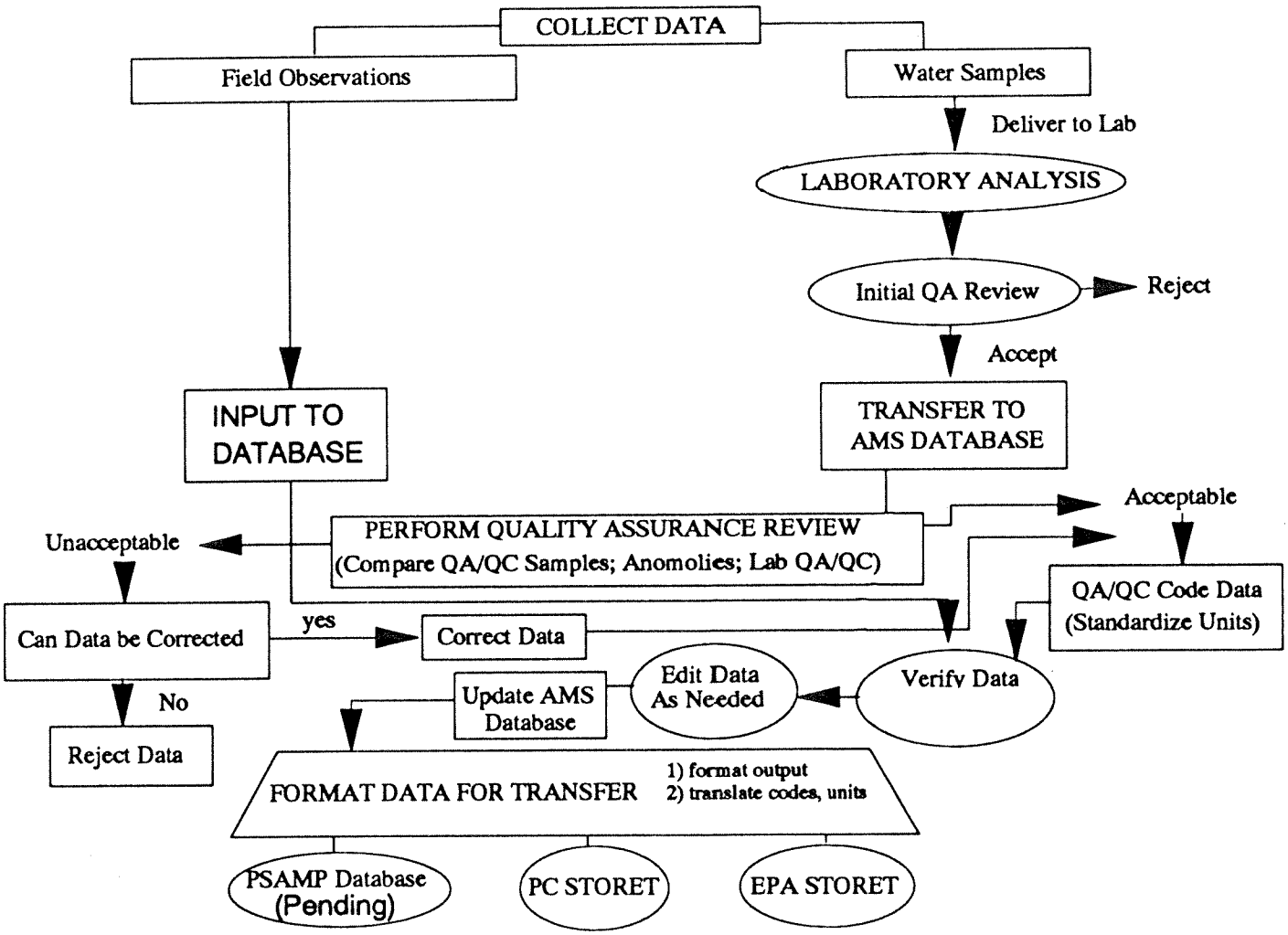


Figure 2. Date flow diagram for Ecology's Ambient Monitoring Section's River and Stream Monitoring Program.

Field QA

The QA practices for field operations consist of three parts: 1) adherence to a standard operating procedure manual and annual performance evaluation of sampling personnel; 2) instrument calibration schedules; and 3) collection of an additional water sample, at random, each day of the run for the purpose of Quality Control (QC). The first two parts help minimize variability from multiple samplers and field instruments. Analysis of field replicates, blanks, and splits are used in conjunction with laboratory QC to ascertain overall data quality.

Laboratory QA

The laboratory conducts a comprehensive QA program to ensure that analytical data meet project requirements for accuracy. The QA program includes the use of control charts for some QC results and the QC procedures specified in the analytical methods (Ecology, 1991).

Data QA

Data from the Freshwater Ambient Monitoring Program are subjected to two levels of verification before entry into the final database. "Level one" runs the data through a series of checks ranging from holding time to comparing variability between field duplicate results, and assigns a quality code to each datum. The "level two" QA check consists of a manual review of data failing "level one" and re-coding the quality code from 1-9, 1 = the data meets all QA requirements and 9 = the data are unusable.

Data Analysis

All graphic presentations and data analysis performed on Ecology's ambient freshwater data were completed using a water quality/hydrological graphic/analysis system developed by Eric Aroner (WQHYDRO) (Aroner, 1992).

Trends

Seasonal Kendall Trends determinations (Hirsch *et al.*, 1982) were completed for most of the major water quality constituents on core/bench mark stations located inside of the Puget Sound Basin. Data were checked for autocorrelation and for correlation to stream flow. Autocorrelation, if present, indicated that part of the information from one sample may be present in the preceding sample, therefore, the measurements were not truly independent. Correlation to stream flow indicates concentrations are in some way related to flow. This relationship with flow introduces variability (noise) into the data set that reduces the ability to detect trends. However, if the purpose of the study, as in our case, is to address in-stream concentrations as they relate to potential uses rather than address the cause of the trend, then removal of variability due to flow may not be desirable (Hirsch *et al.*, 1991). Correction for serial correlation (autocorrelation), was conducted on data that expressed probability of > 80%

for serial correlation. When serial correlation was present, SK tests with correction for serial correlation (SKWC) were used in place of SK tests for trend determination. Seasonal Kendall tests were flow adjusted if the data showed a regression with $R^2 > .10$ for flow versus concentration. Table 3 lists the regression and the corresponding formulas used to evaluate the relationship between flow and concentration.

If the median of the given data set was above the working quantitation limit for the parameter (data fall within the working range of the test) and the trend had a probability of > 95%, then percent change per year was calculated (slope/mean x 100) and the corresponding trend graphs are included in this report. The working quantitation limit is defined as twice the pooled standard deviations of replicate pairs near the laboratory detection limit. If the median was below the working quantitation limit, apparent trends may be an artifact of changing detection limits, so percent change per year was not calculated and the trend information should be used with care.

Upstream/Downstream Comparison

For upstream and downstream comparison between bench mark and core stations inside of the Puget Sound Basin, the following non-parametric tests were used; Klotz, Anderson-Darling, and the Wilcoxon-Mann-Whitney Rank Sum Test (non-parametric alternative to t-test). The Klotz Test of equality of variances/spread was the first statistical test completed (for more information see Aroner, 1992). Significant results (>80% probability) of the Klotz Test indicate the data sets do not have equal variance and further statistical comparisons should use the Anderson-Darling Test. Non-significant results of the Klotz Test indicate the data sets are similar in distribution and the assumptions of the Wilcoxon Rank Sum Test are met. The Anderson-Darling Test (Scholtz and Stephens, 1987) is a non-parametric test for differences between distributions which compares central tendencies and variance/spread (together and separately). The Anderson-Darling Test is not limited by the requirement that populations have equivalent distributions. The Wilcoxon-Mann-Whitney Ranked Sum Test (Marascuilo and McSweeney, 1977) compares the difference between means of the two populations to see if they are statistically different.

GENERAL RESULTS AND DISCUSSION

Raw data and six-year summary statistics for WY 1991 are presented by station in Appendix 4. All Water quality data for WY 1991, and six-year summary statistics, are presented by station in Appendix 4.

Ecology's ambient monitoring data are part of the public record, and are widely distributed. In a typical year, over 100 data requests are received from consulting firms, local and state agencies, schools, and private individuals. Within Ecology, the data are used to support wasteload allocation models, preparation of the 305(b) and other management reports, and

Table 3. Regression formula used to evaluate if parameter is correlation to Stream Flow. (Aroner, 1992)

#	Regression	Formula
1	Linear - Linear	{Y = a+bX}
2	Linear - Log	{Y = a+b(lnX0}
3	Log - Linear	{Y = a*EXP(b*X)}
4	Log - Log	{Y = aX(power b)*bias}
5	Log - Log	{Y = aX(power b)*MVUE-bias}
6	Linear - 1/Linear	{Y = a+b(1/X)}
7	Hyperbolic	{Y = a+b*(1/(1+b1*X))}
8	Quadratic	{Y = a+b*X+b1*SQR(X)}
9	Lin - Log Quad	{Y = a+b*LN(X)+b1*SQR(LN(X))}
10	Log Quad	{Y = EXP(a+b*LN(X)+b1*SQR(LN(X)))}
11	Cubic	{Y = a+b*X+b1*SQR(X)+b2*CUBE(X)}
12	Log/Cubic	{Y = a+b*LnX+b1*SQR(LnX)+b2*CUBE(LnX)}
13	L/L/Cubic	{Y =EXP(a+b*LnX+b1*SQR(LnX)+b2*CUBE(LnX))}

For more information see water quality/hydrological graphic/analysis system (WQHYDRO) (Aroner, 1992).

provide environmental quality information necessary for Centennial Clean Water Fund and other grant awards. The Puget Sound Water Quality Authority also uses these data to address the current status of rivers and streams that flow into Puget Sound in their annual Puget Sound Update Report.

The following discussion is divided into four areas: 1) QA review; 2) general water quality for WY 1991; 3) water quality at core/bench mark stations inside of Puget Sound Basin; and 4) water quality at floating stations.

QA Review

The results of field replicate pairs provide an estimate of total variability (instream+field processing+laboratory). Appendix 5 summarizes the raw field QC data for the replicate pair samples collected in WY 1991. The goal of our program is to have 90% of the replicate pair data fall within the assigned range of percent of coefficient of variation (%CV=SD/$\bar{x}$ x 100). The acceptable ranges for specific parameters, and the corresponding percent of the statewide WY 1991 replicate data that were within the range, are shown below:

Difference between 20% CV	10% CV	Replicates + 0.1 unit
Conductivity - 98%	Ammonia - 77%	pH - 70%
Fecal Coliform Bacteria - 49%	Nitrate+nitrite - 97%	D.O. - 90%
Suspended solids - 64%	Dissolved Nitrite - 94%	Temperature - 92%
Turbidity - 88%	Total Phosphorus - 90%	
	Ortho-Phosphorus - 93%	

At low level concentrations, near detection limits, relatively small differences can result in high %CV values. For example, fecal coliform counts of one and two on replicate samples would result in a %CV of >47%, when in reality this difference is indistinguishable (Nancy Jenson, personal communication, 1992).

A significant portion of the fecal coliform, suspended solids, and ammonia data pairs used to calculate %CV were below the working quantitation limits of the test (44% ,34%, and 61%, respectively). Even after replicate pairs near detection limits were removed, and the percent CV recalculated, 31% of the fecal coliform and 26% of the suspended solids still fell outside the desired ranges. Both of these parameters are, however, typically patchy in nature and high total variability can be expected.

Replicate pairs for pH, D.O., and temperature were compared against a $\pm$ 0.1 standard unit range (instead of %CV) for ease of in field tracking (this allows problems with methods and equipment to be corrected as they became apparent). Temperature and D.O. pairs were acceptable (Appendix 5); however, > 30% of pH replicate pairs exceeded the $\pm$ 0.1 criteria range (Appendix 5).

The remaining element of the QA program, laboratory variability was assessed by laboratory staff via manual review of laboratory quality control charts, check standards, in-house matrix spikes, and laboratory blanks (Ecology, 1991). Laboratory variability fell within acceptable ranges and did not appear to present any problems for WY 1991 analyses.

It should be noted that the above described QA information pertains to WY 1991 data only and similar information is not available for previous years.

Overview of Water Quality for Wateryear 1991

The discussion of general water quality for WY 1991 is divided into three areas: 1) statewide, 2) inside of the Puget Sound Drainage Basin and, 3) outside of the Puget Sound Basin. Select water quality parameters in each of these areas are presented graphically as box plots. These plots also display Class "A" water quality standards for those parameters where standards are established (the criteria line for fecal coliform bacteria is included even though the water quality standards permit up to 10% of the samples to exceed 200 organisms per 100 mL and comparisons to standards should be based on more than one sample). Figure 3 shows how to interpret the box plots.

Statewide Water Quality

On a statewide basis, Washington's rivers and streams exhibit a wide range of water quality (see Figure 4; Table 4). Fecal coliform violations occurred in every month of the year, and was the most frequently violated water quality standard in Washington in WY 1991. Temperature, being seasonal in nature, had a higher percentage of violations in August 1991. Dissolved oxygen violations were infrequent in WY 1991.

Water Quality in the Puget Sound Drainage Basin

In general, the water quality of rivers and streams that flow into Puget Sound is relatively good with occasional violations of Class "A" standards for fecal coliform; to a lesser extent for temperature; and infrequently for D.O. and pH (see Figure 5). Of course, individual stations may have violated these standards at a different frequency than was indicated by the Puget Sound summary. Thirty-eight percent of the 34 stations inside of Puget Sound were in violation of state water quality standards for fecal coliform at least one time during WY 1991. More important, five locations: the Sumas River, Sammamish River, Puyallup River, White River, and Chambers Creek comprised over 63% of the total fecal coliform bacteria violations recorded in WY 1991 (Table 4). Temperature violations occurred at 32% of the stations, but at a frequency no higher than twice for any one station. Dissolved oxygen violations were found at four stations during WY 1991, but a review of the raw data for percent saturation indicate the

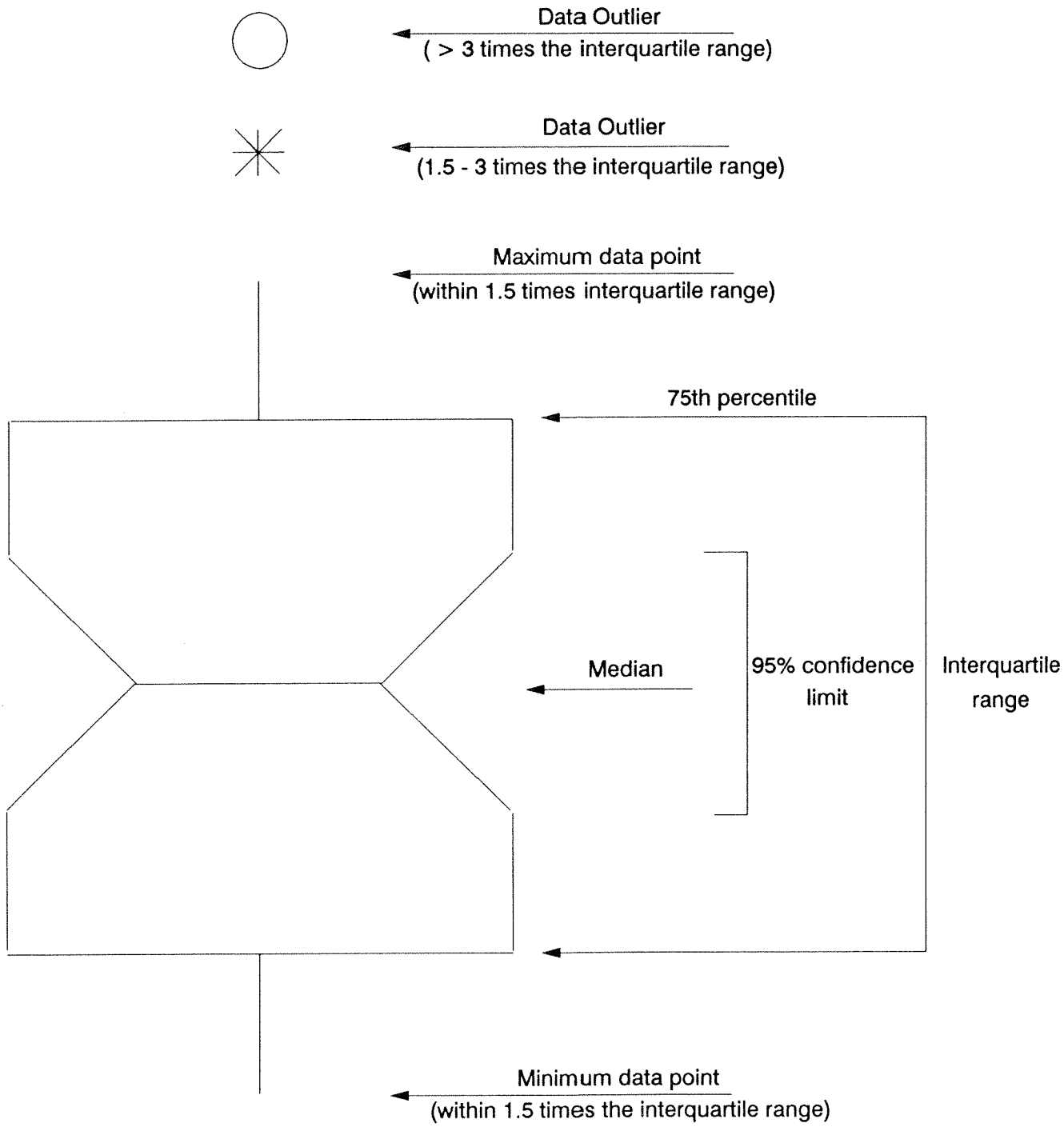


Figure 3. How to interpret a box plot (modeled after figure in Coots, 1991).

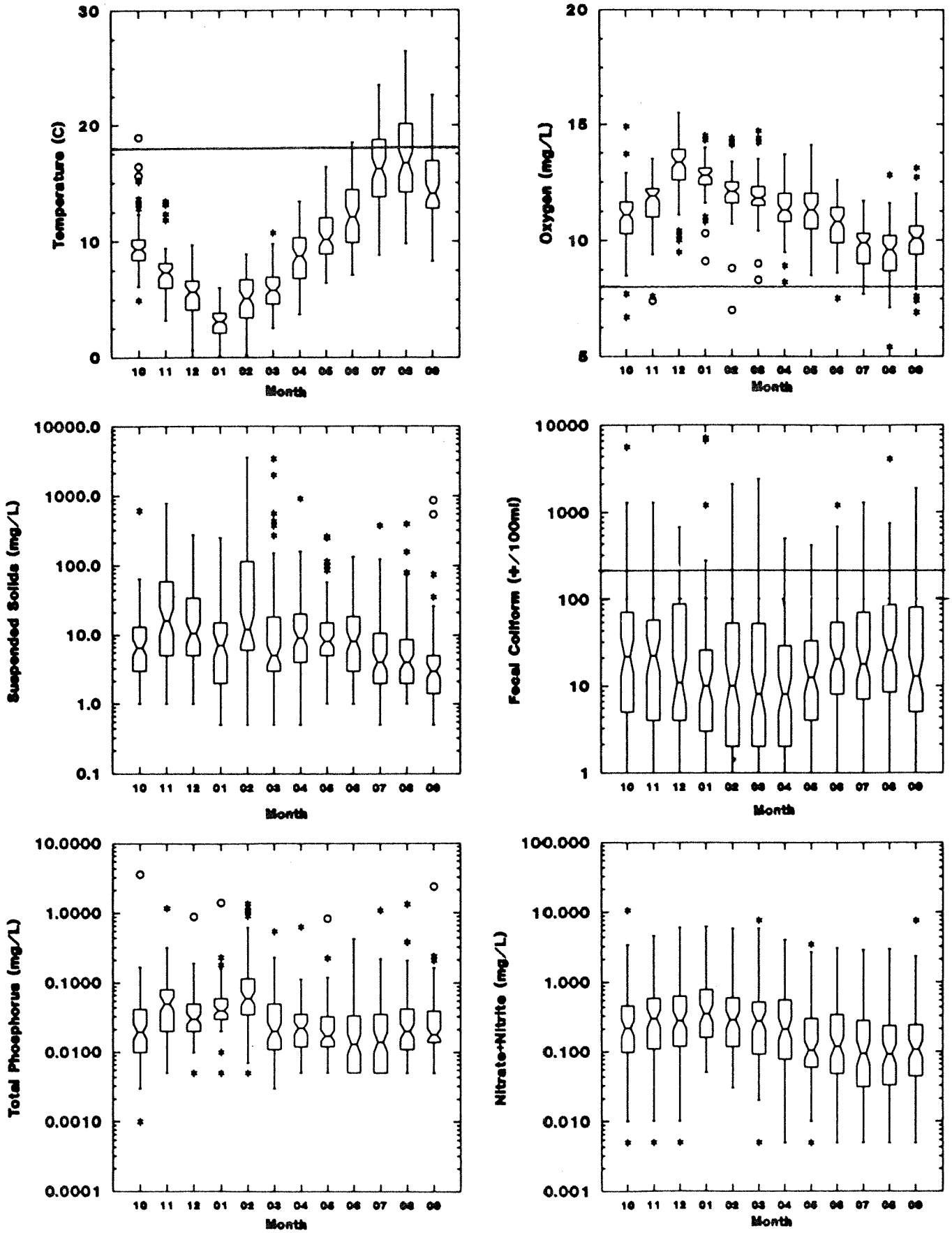


Figure 4. Washington State temperature, dissolved oxygen, total suspended solids, fecal coliform, total phosphorus, and nitrate+nitrite levels for Wateryear 1991. (Class "A" Washington State Water Quality Standards, if established, included as a solid line.)

Table 4. Summary of Wateryear 1992 violations of Water Quality Standards (Chapter 173-201 WAC) for each ambient freshwater station collected by Ecology.

NORTHWEST REGION

DATE: 92/03/12 ANNUAL WATER YEAR 1991 VIOLATIONS REPORT Page No. 1

STANO	STATION NAME	CLASS	TEMPERATURE NO	TEMPERATURE EXCEEDED	TEMPERATURE PCT	OXYGEN NO	OXYGEN EXCEEDED	OXYGEN PCT	pH NO	pH EXCEEDED	pH PCT	FECAL COLIFORM a NO	FECAL COLIFORM a EXCEEDED	FECAL COLIFORM a PCT	GEOMETRIC MEAN b NO	GEOMETRIC MEAN b > GM
01A050	Nooksack R @ Brennan	A	12			12			12			12	2	17	5	
01A120	Nooksack R @ No Cedarville	A	12			12			12			12				
01D070	Sumas R nr Huntingdon BC	A	12			12	3	25	12			12	9	75	10	328
03A060	Skagit R nr Mount Vernon	A	12			12			12			12				
03B050	Samish R nr Burlington	A	12			12			12	1	8	12	3	25	5	
04A060	Skagit R @ Concrete	AA	12			12			12			12				
04A100	Skagit R @ Marblemount	AA	12			12			12			12				
04B070	Baker R @ Concrete	AA	12			12			12			12			1	
04C070	Sauk R nr Rockport	AA	12			12			12			12				
05A070	Stillaguamish R nr Silvana	A	12	2	17	12			12			12	3	25	4	
05A090	SF Stillaguamish @ Arlington	A	12	1	8	12			12	1	8	12	2	17	2	
05B070	NF Stillaguamish @ Cicero	A	12			12			12			12			1	
07A090	Snohomish R @ Snohomish	A	12	1	8	12			12			11	1	9	2	
07B055	Pilchuck R @ Snohomish	A	12	2	17	12			12			11			1	
07C070	Skykomish R @ Monroe	A	8	1	13	7			7			7				
07C120	Skykomish R nr Gold Bar	AA	12	1	8	12			12			11				
07D070	Snoqualmie R nr Carnation	A	10	1	10	10			10			10				
07D130	Snoqualmie R @ Snoqualmie	A	12			12			12			11				
07D150	M F Snoqualmie R near Ellisville	AA	4	1	25	4	1	25	4	1	25	4	1	25	1	
07M070	S F Snoqualmie R at North Bend	AA	4			4			4			4				
07N070	N F Snoqualmie R near Ellisville	AA	4	1	25	4	1	25	4			4				
08B070	Sammamish R @ Bothell	A	12	2	17	12	1	8	12			12	6	50	7	117
08C070	Cedar R @ Logan St/Renton	A	12			12			12			11			2	
08C110	Cedar R nr Landsburg	AA	12			12			12			11				
09A060	Duwamish R @ Allentown Br	B	2			2			2			2				
09A080	Green R @ Tukwila	A	10	2	20	10			10			10	1	10	4	
09A090	Green R @ 212th St nr Kent	A	12	2	17	12			11			11	1	9	3	
09A190	Green R @ Kanaskat	AA	12			12			12			11				

Table 4. Continued.

AMBIENT DATA MANAGEMENT SYSTEM

SOUTHWEST REGION

DATE: 92/03/12 ANNUAL WATER YEAR 1991 VIOLATIONS REPORT Page No. 1

STANO	STATION NAME	CLASS	TEMPERATURE NO	TEMPERATURE EXCEEDED	TEMPERATURE PCT	OXYGEN NO	OXYGEN EXCEEDED	OXYGEN PCT	pH NO	pH EXCEEDED	pH PCT	FECAL COLIFORM a NO	FECAL COLIFORM a EXCEEDED	FECAL COLIFORM a PCT	GEOMETRIC MEAN b NO	GEOMETRIC MEAN b > GM
10A070	Puyallup R @ Meridian St	A	12			11			12			11	5	45	7	160
10A110	Puyallup R @ Orting	A	12			11			12			11				
10C070	White R @ Sumner	A	12			11			12			11	4	36	6	148
11A070	Nisqually R @ Nisqually	A	12			11			12			11				
11A080	Nisqually R @ McKenna	A	12			11			12			11			1	
12A070	Chambers Cr nr Steilacoom	A	12			11			12			11	4	36	5	112
13A060	Deschutes R @ E St Bridge	A	12			11			12			9	2	22	2	
13A150	Deschutes R nr Rainier	A	12			11			12			11				
16A070	Skokomish R nr Potlatch	AA	12			11			12	1	8	11				
22A070	Humptulips R nr Humptulips	A	12			11			12			11			1	
22C050	Chehalis R nr Montesano	A	12	1	8	11			12			11	2	18	3	
22G070	Satsop R nr Satsop	A	12			11			12			11				
23A070	Chehalis R @ Porter	A	12	1	8	11			12			11	1	9	2	
23A120	Chehalis R @ Centralia	A	12	2	17	11	2	18	12	1	8	11	1	9	3	
23A160	Chehalis R @ Dryad	A	12	1	8	11			12	1	8	11				
23E070	Black River @ Moon Road Bridge	A	12			11	6	55	12			10	4	40	4	
24B090	Willapa R nr Willapa	A	9	1	11	8			9			9	2	22	4	
24B130	Willapa R @ Lebam	A	2			2			2			2	1	50	2	262
26B070	Cowlitz R @ Kelso	A	12			11			12			11				
26C070	Coweeman R @ Kelso	A	12	1	8	11	1	9	12	1	8	11			3	
26D070	Toutle R nr Castle Rock	A	12	1	8	11			12			11				
27B070	Kalama R nr Kalama	A	12			11			12			11				
27D090	EF Lewis R nr Dollar Corner	A	12	1	8	11			12	1	8	11				

aUnits are number of colonies/100ml.
bBased on about 12 monthly samples.

Table 4. Continued.

AMBIENT DATA MANAGEMENT SYSTEM

EAST REGION

DATE: 92/03/12 ANNUAL WATER YEAR 1991 VIOLATIONS REPORT Page No. 1

STANO	STATION NAME	CLASS	TEMPERATURE NO	TEMPERATURE EXCEEDED	TEMPERATURE PCT	OXYGEN NO	OXYGEN EXCEEDED	OXYGEN PCT	pH NO	pH EXCEEDED	pH PCT	FECAL COLIFORM a NO	FECAL COLIFORM a EXCEEDED	FECAL COLIFORM a PCT	GEOMETRIC MEAN b NO	GEOMETRIC MEAN b > GM
32A070	Walla Walla R nr Touchet	B	12	3	25	11			12	2	17	12			1	
32B070	Touchet R @ Touchet	A	2			2			2			2			1	
32B130	Touchet R @ Dayton	A	10	2	20	10			10	1	10	10				
33A050	Snake R nr Pasco	A	10	2	20	10	2	20	10			10				
33A070	Snake R blw Ice Harbor Dam	A	2	1	50	2			2			2				
34A070	Palouse R @ Hooper	B	11	1	9	11			11	4	36	9	1	11	4	
34B110	SF Palouse R @ Pullman	A	12	2	17	12			12	2	17	11	11	100	11	1162
35A150	Snake R @ Interstate Br	A	10	2	20	10			10	3	30	9				
35B060	Tucannon R @ Powers	A	12	1	8	12			12			11	4	36	7	187
36A070	Columbia R nr Vernita	A	2			2			2			2				
41A070	Crab Cr nr Beverly	B	12	1	8	12			12	8	67	12			1	
52A070	Sanpoil R @ Keller	A	11			11			11	1	9	11				
52B070	Lake Roosevelt from Keller Ferry	AA	6	3	50	3	3	100	6	1	17			***		
54A050	Spokane R @ Mouth	A	9	3	33	9			9			9				
54A120	Spokane R @ Riverside State Pk	A	12	1	8	12			12	1	8	11				
55B070	Little Spokane R nr Mouth	A	12			12			12			11	1	9	2	
55B080	Little Spokane R nr Griffith Spring	A	9			9			9			8	3	38	4	
55B082	Little Spokane R abv Dartford Creek	A	9			9			9	1	11	8	2	25	2	
55B100	Little Spokane R abv Peone Creek	A	9			9			9			8	2	25	2	
55C070	Peone (Deadman) Creek abv L Deep Cr	A	8			8			8	1	13	7				
56A070	Hangman Cr @ Mouth	A	11	4	36	11			11	5	45	10	1	10	2	
57A150	Spokane R @ Stateline Br	A	10	3	30	10	2	20	10			10	1	10	1	
57A190	Spokane R nr Post Falls	A	2			2			2			2				
59A070	Colville R @ Kettle Falls	A	2			2			2			2				
60A070	Kettle R nr Barstow	A	2			2			2			2				
61A070	Columbia R @ Northport (USGS)	AA	9	2	22	9			8			9				
62A150	Pend Oreille R @ Newport	A	12	2	17	12			11			12				

aUnits are number of colonies/100ml.
bBased on about 12 monthly samples.

Table 4. Continued.

AMBIENT DATA MANAGEMENT SYSTEM

CENTRAL REGION

DATE: 92/03/12 ANNUAL WATER YEAR 1991 VIOLATIONS REPORT Page No. 1

STANO	STATION NAME	CLASS	TEMPERATURE NO	TEMPERATURE EXCEEDED	TEMPERATURE PCT	OXYGEN NO	OXYGEN EXCEEDED	OXYGEN PCT	pH NO	pH EXCEEDED	pH PCT	FECAL COLIFORM a NO	FECAL COLIFORM a EXCEEDED	FECAL COLIFORM a PCT	GEOMETRIC MEAN b NO > GM
31A070	Columbia R @ Umatilla	A	10	2	20	10			10	2	20	10	1	10	2
37A090	Yakima R @ Kiona	A	12	4	33	12			12	2	17	12			2
37A190	Yakima R @ Parker	A	11			11			11			11			3
39A090	Yakima R nr Cle Elum	AA	12			12	3	25	11			12			
44A070	Columbia R blw Rock Is Dam	A	2			2			2			2	1	50	1
45A070	Wenatchee R @ Wenatchee	A	11			11			11	1	9	11			
45A110	Wenatchee R nr Leavenworth	AA	12			12	1	8	12			12			
46A070	Entiat R nr Entiat	A	12	1	8	12			12	1	8	12			
47A070	Chelan R @ Chelan	LC	12	2	17	12			12	1	8	12			
47B070	Columbia R @ Chelan Station	A	10	1	10	10			10	2	20	10			
48A070	Methow R nr Pateros	A	11			11			11	1	9	11			
48A140	Methow R @ Twisp	A	12			12	1	8	12	3	25	12			
49A070	Okanogan R @ Malott	A	11	2	18	11			11	1	9	11			2
49A190	Okanogan R @ Oroville	A	12	3	25	12	1	8	12	5	42	11			
49B070	Similkameen R @ Oroville	A	12			12			12	6	50	12			
51A070	Nespelem R @ Nespelem	A	11			11			11			11	1	9	3
53A070	Columbia R @ Grand Coulee	A	2			2			2			2			

aUnits are number of colonies/100ml.
bBased on about 12 monthly samples.

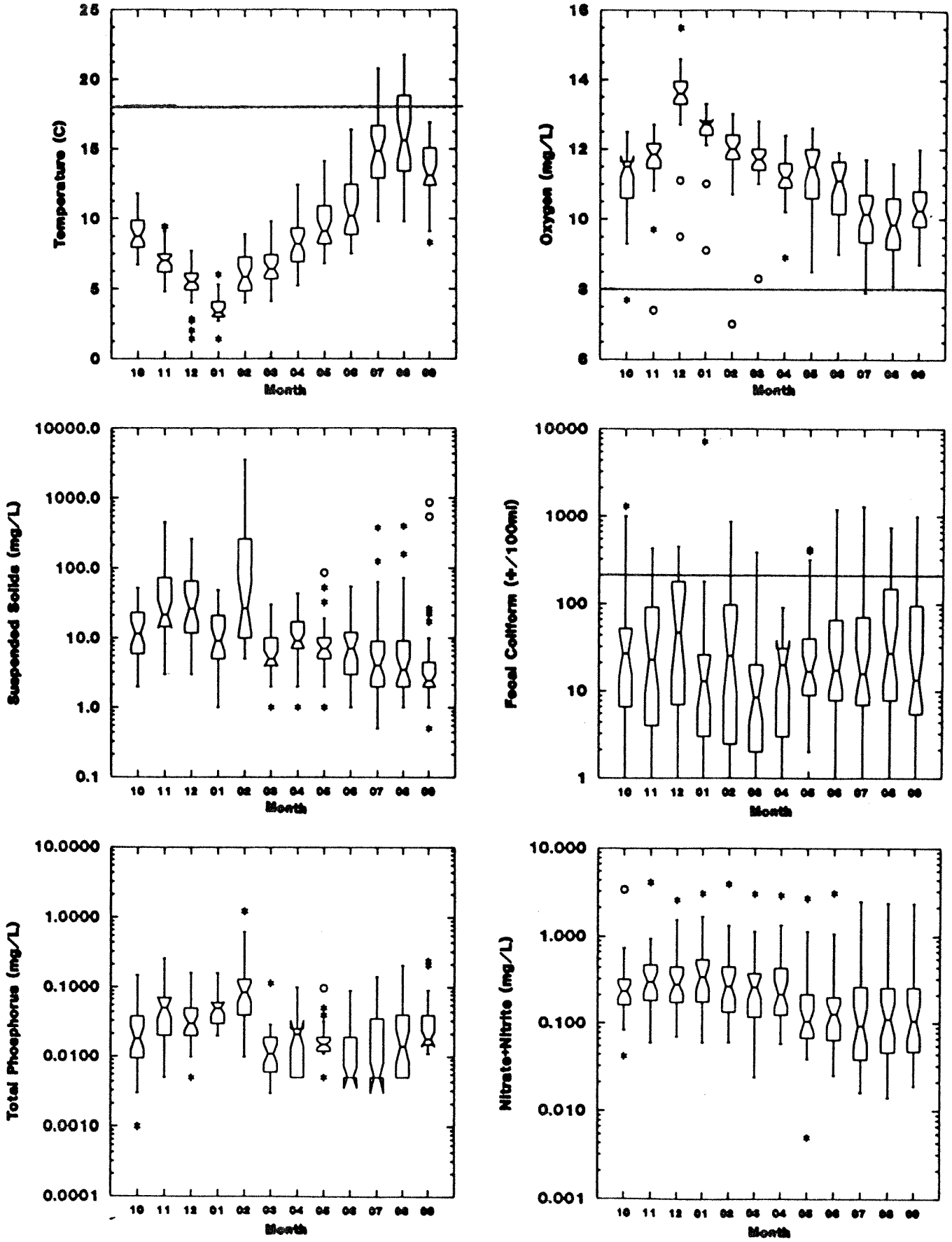


Figure 5. Inside of Puget Sound Basin temperature, dissolved oxygen, total suspended solids, fecal coliform, total phosphorus, and nitrate+nitrite levels for Wateryear 1991. (Class "A" Washington State Water Quality Standards, if established, included as a solid line.)

Sumas River may be the only site that may truly express a D.O. problem. Violations for pH occurred during WY 1991 at the same frequency as for D.O. However, as discussed, pH values have a large potential for measurement error and should be used with care (Appendix 5). See "Water Quality at Core/Bench Mark Stations Inside of the Puget Sound Basin" for station-specific discussions of water quality.

Water Quality in Washington Outside the Puget Sound Basin

Washington State excluding the Puget Sound Basin is broken into two distinct areas: 1) east side - stations located east of the Cascade mountains; and 2) west side - stations located west of the Cascade Mountains and not in the Puget Sound drainage basin.

Water Quality East of the Cascades

Water quality for the east side of Washington State for WY 1991 was generally good with only occasional and somewhat seasonal water quality violations (Figure 6). The most significant of these violations involved temperature and fecal coliform bacteria levels. In August and September 1991, half of the instream water temperatures did not meet Class "A" water quality standards. As for fecal coliform bacteria, 34% of the stations violated state standards at least once during WY 1991, but three stations (the S.F. Palouse River at Pullman, Tucannon River at Powers, and Little Spokane River near Griffith Springs) comprised over 60% of the total violations. Table 4 lists stations and the number of water quality violations in WY 1991 for temperature, D.O., pH, and fecal coliform bacteria.

Water Quality West of the Cascades (Excluding Puget Sound Basin)

Water quality for west side stations was similar to that found statewide. That is, generally good with occasional violations of water quality standards. The majority of these water quality violations involved elevated fecal coliform bacteria concentrations and temperature. Table 4 lists stations and the number of water quality violations in WY 1991 for temperature, D.O., pH, and fecal coliform bacteria. The majority of water quality violations (48%) were measured on two rivers: the Black River near Moon Road Bridge, and the Chehalis River at Centralia. The most significant of these violations is the high number of D.O. violations on the Black River near Moon Road Bridge. The raw data and summary statistics present in Appendix 4 show that the Black River has a chronic D.O. problem expressed by the low maximum percent saturation for WY 1991 of 81.3%.

Water Quality at Floating Stations

At the request of Ecology's Northwest and Eastern Regional Office, the Freshwater Ambient Monitoring Program collected water quality information at three locations on the upper Snoqualmie River and at five locations on the Little Spokane River system in WY 1991. The purpose of these studies were to generate water quality information to be used to support regional activities. For more specific information, see Appendix 6.

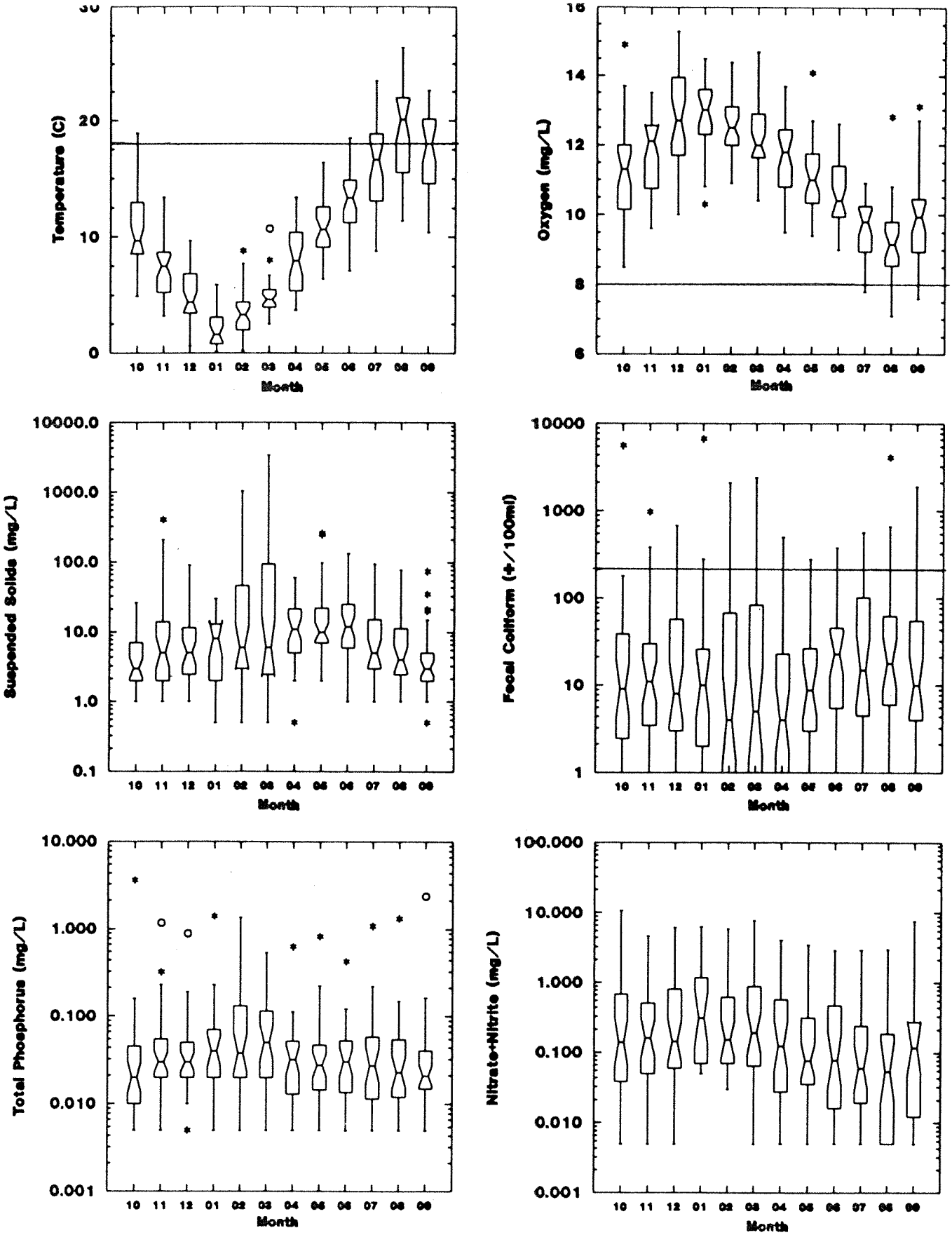


Figure 6. East of the Cascades temperature, dissolved oxygen, total suspended solids, fecal coliform, total phosphorus, and nitrate+nitrite levels for Wateryear 1991. (Class "A" Washington State Water Quality Standards, if established, included as a solid line.)

PART II:

Water Quality Summary and 12-Year Trends for Core Stations in the Puget Sound Basin

INTRODUCTION

In Part II of this report, the 10 core stations and 2 bench mark stations located in the Puget Sound Basin are addressed individually to a) compare WY 1991 data to the last 10 years of data (October 1982 to September 1991), b) examine trends over the 12-year period from October 1979 through September 1991, and c) to discuss general water quality conditions at each station. Individual station accounts of the 12 Puget Sound core/bench mark stations that were analyzed begin on page 27. For a program description and discussion of field, laboratory, and analytical methods, see Part I of this report.

Ranking of Puget Sound Core Stations

The 10 Puget Sound core stations were ranked, by parameter, according to the mean of the highest quarterly concentrations recorded at the stations over each of the last six years (Appendix 7). Appendix 7 provides only a simple ranking of means and does not address the variance around the mean nor does it indicate the significance of the differences between means.

Summary of Trends at Core/Bench Mark Stations Inside of the Puget Sound Basin

Appendix 8 presents a summary of the trends at core/bench mark stations in the Puget Sound Basin. Turbidity and conductivity levels inside the Puget Sound Basin appeared to be the only parameters showing a general basin wide trend with 6 of the 12 stations showing declining trends. Ammonia levels also appeared to be decreasing at 5 of the 12 core/bench mark stations, but these trends should be viewed cautiously (see below). Fecal coliform bacteria levels appeared to decline at one third of the stations; however, it was still the most frequently violated Water Quality Standard in WY 1991. The remaining parameters did not exhibit overall trends pointing in any one direction.

Limitations of Trend Analysis on Core/Bench Mark Stations Inside of the Puget Sound Basin

One area that may be confusing to the reader is when the Seasonal Kendall Trend Test (see page __) indicates a significant trend in the data set but the trend has a slope of 0.0000. The SK Trend Test and the slope of the trend are calculated independently. Therefore, a significant trend may be present in the data set but the rate of change is below the ability of the slope calculations to detect. Most of these significant trends with 0.0000 slope were calculated using data sets where the historical median levels are below the working quantitation limit. These data sets contain many data points at or near detection limits which consistently includes a high number of equal values ("ties"). This limitation of the slope calculation can, and occasionally does, also occur on data sets well within the working range of the specific parameter. An example is the pH data for the Puyallup River, where a significant trend was present with a slope of 0.0000. The direction of the trend is indicated by the ↑ or ↓ following the slope and is determined from the Seasonal Kendall Z statistic.

Another issue worth noting is that trend work performed on low level results, especially nutrient and turbidity data, should be used with caution. Laboratory or procedural changes have occurred during the last 10 years that may be reflected in the data set (Dave Hallock personal communication, 1992). These changes may manifest themselves in false or misleading trends, especially when the data are near the reported detection limits. The comparison between the working quantitation and the historical median is one attempt to minimize the reporting of these misleading trends. However, this comparison alone may not eliminate all questionable trends for nutrients. For example, the trend graphs for ammonia for 4 different stations (Sammamish River at Bothell, Cedar River at Renton, Puyallup River at Meridian Bridge, and Nisqually River at Nisqually) look surprisingly similar.

The most significant question to address when discussing trend analyses on core/bench mark stations in the Puget Sound Basin is "Do these trends reflect true in-stream changes or do they merely reflect procedural changes within the program (introduced bias)?" Potential sources that may have introduced bias into the data include, but are not limited to, changes in 1) sampling and/or analytical methods, 2) laboratories performing the analyses, 3) detection limits, 4) time of collection, and 5) sampling personnel. Unfortunately, historical QA procedures have not always been as rigorous as they are currently, and the absence of this information limits the evaluations of data quality and makes it difficult to address how greatly any parameter may have been affected by program changes. This should be kept in mind when interpreting all trend results presented within this report.

INDIVIDUAL STATION ACCOUNTS

NOOKSACK RIVER AT BRENNAN

Wateryear 1991

Wateryear 1991 data are compared to the last 10 years of data for most of the conventional parameters in Figures 7, 8, and 9. Temperature appeared to be the only parameter to be seasonally above average with half of the measurements in WY 1991 above the 75th percentile line. However, temperature levels during the critical months of August and September were still below "Class A" water quality standards of 18°C. Dissolved oxygen for the most part reflected the expected inverse relation to temperature with five of the twelve measurements at or below the 25th percentile line. The remaining parameters, with the exception of total phosphorus, were generally within historical levels. Total phosphorous levels for November, December, and February were at (or established) new 10-year maximums.

Trends in Conventional Water Quality (10/79 - 09/91)

Seasonal Kendall (SK) Trend information is provided in Table 5. Significant trends were detected for conductivity, pH, and turbidity all at the 99% probability levels. The pH data showed a significant amount of serial correlation and the corresponding SK Trend with Serial Correction was not significant. Both conductivity and turbidity showed a significant correlation to stream flow. Flow adjusted SK Trend (FASK) for conductivity is increasing by < 1% per year, while FASK trends for turbidity are decreasing at < 2% per year (see Figure 10).

Overall Water Quality

The primary concern at this location is the persistent problem of elevated fecal coliform levels. This station had a three-month mean for fecal coliform levels (352 organisms per 100 mL) that ranked fourth among freshwater core stations inside of the Puget Sound Basin (Appendix 7). Fecal coliform levels for WY 1991 had 17% of the samples collected violate water quality standards. The highest three month mean value over the last six years occurred during summer low flow conditions. However, low correlation between flow and fecal coliform levels ($R^2=0.0928$) did not point to a consistent source. The Nooksack Station also ranked in the top three core stations for suspended solids, ammonia, nitrate+nitrite, total phosphorus, turbidity, and conductivity. Part of the problem, specifically suspended solids and turbidity, can be attributed to the nature of the river which is largely impacted by glacial till. However, this station still appears to have an elevated level of nutrients.

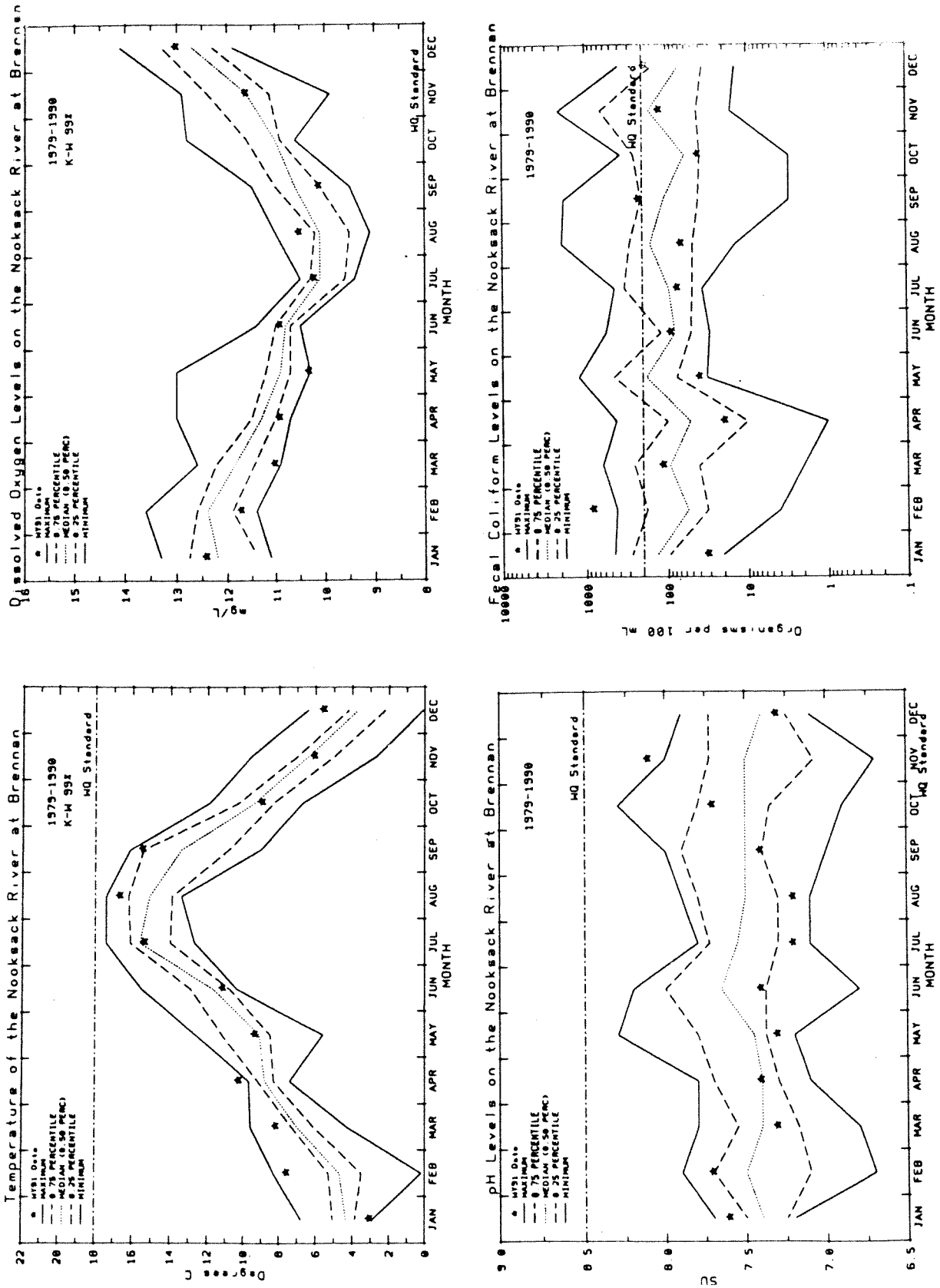


Figure 7. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Nooksack River at Brennan. (Water quality standard included.)

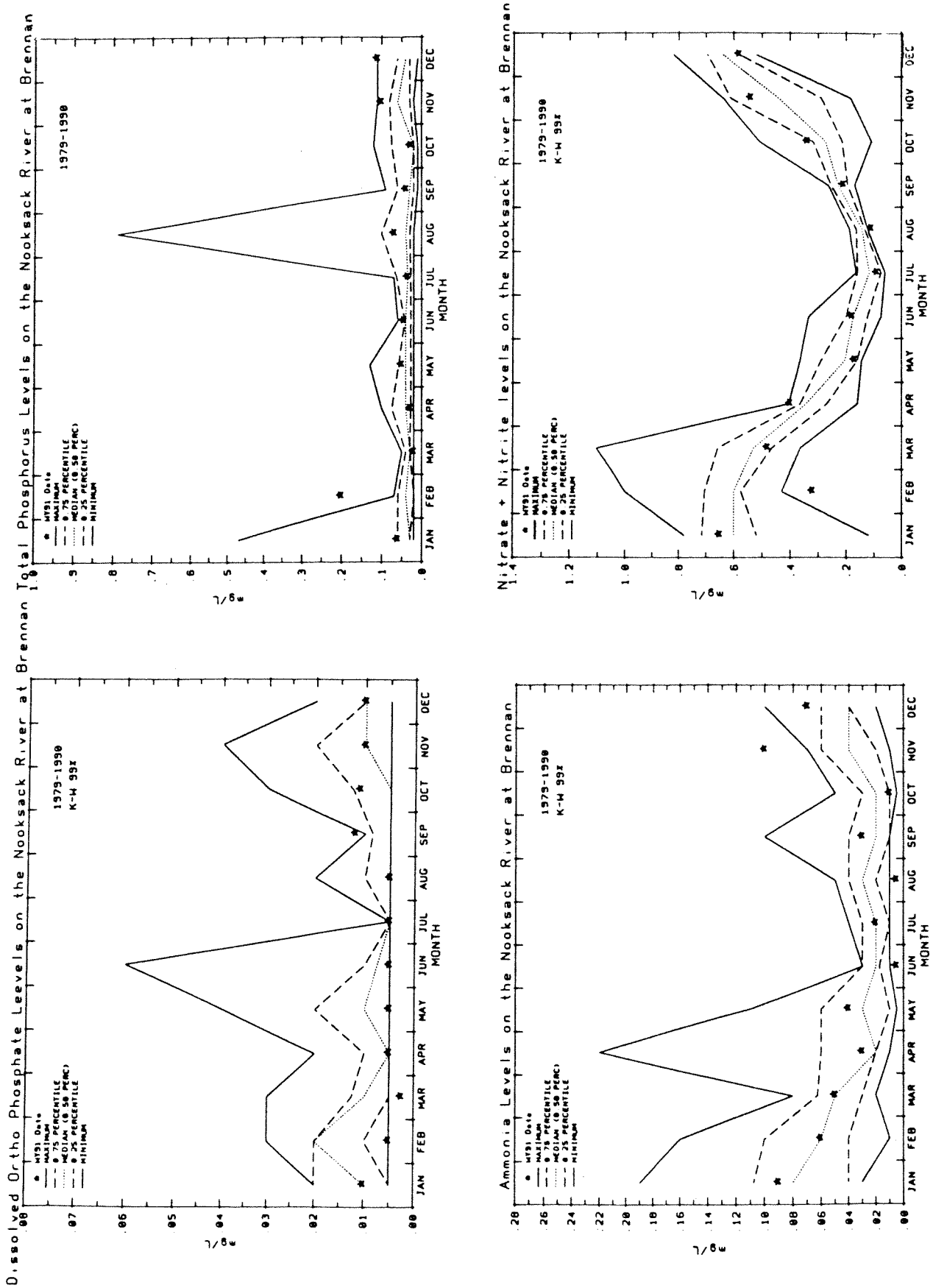


Figure 8. Wateryear 1991 ortho and total phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Nooksack River at Brennan.

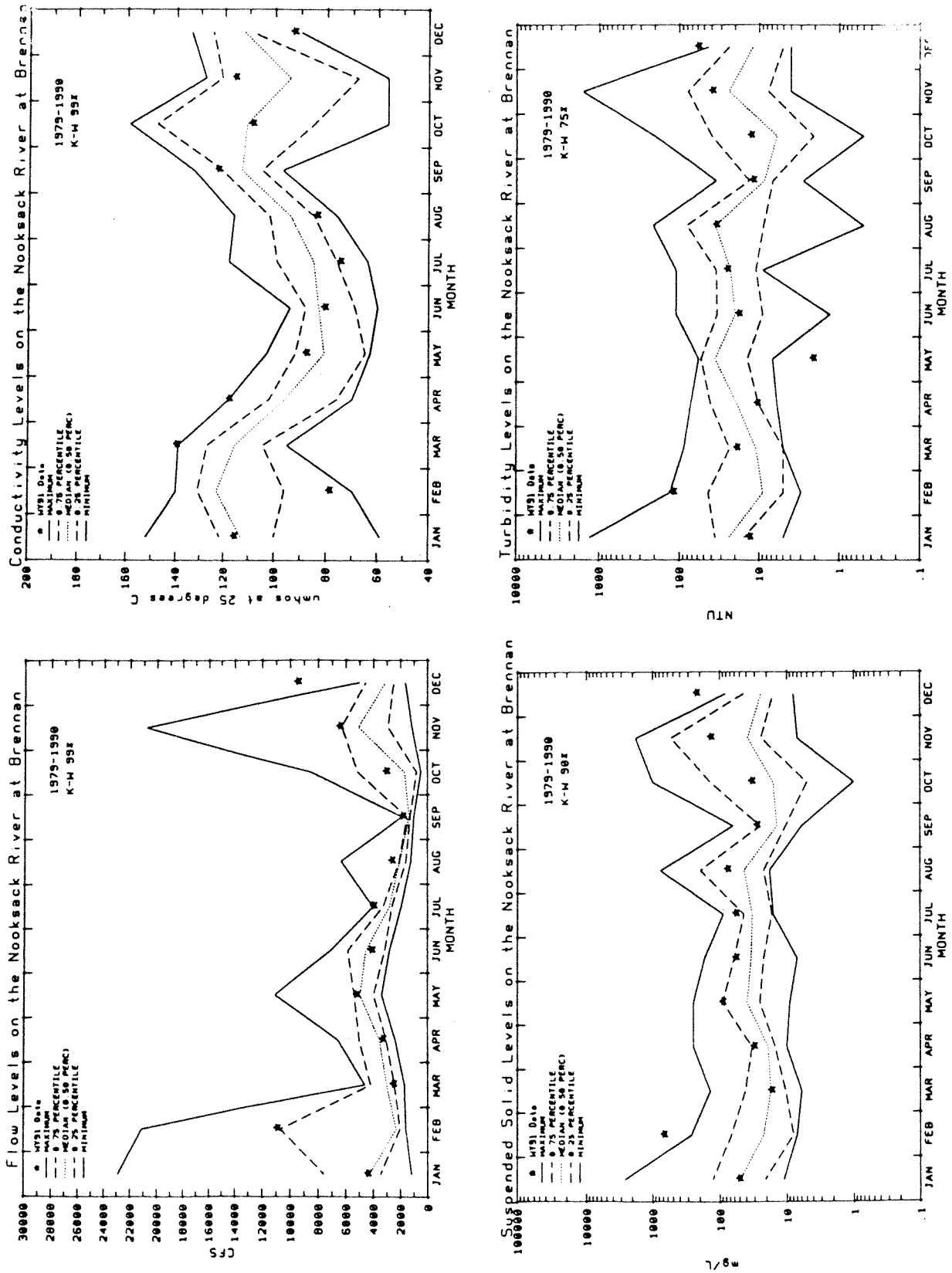


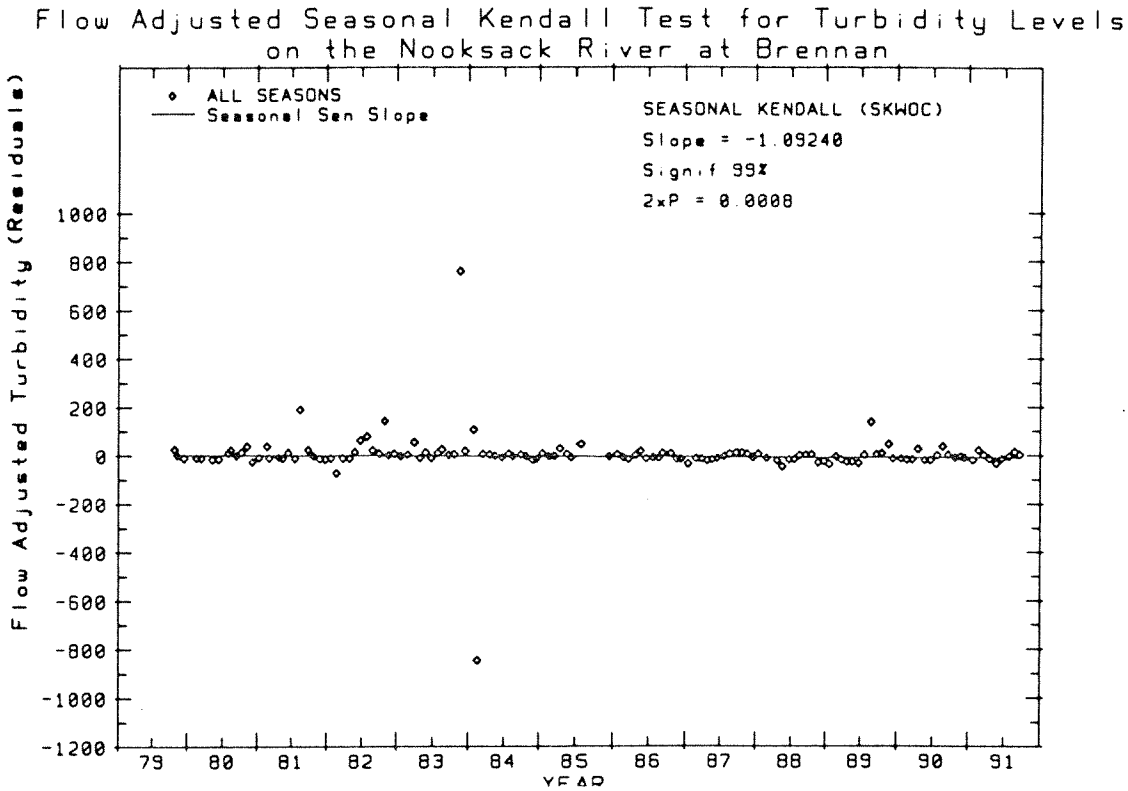
Figure 9. Wateryear 1991 flow, conductivity, suspended solids, and turbidity levels compared to the last 10 years of data on the Nooksack River at Brennan.

Table 5. Seasonal Kendall Trend information on the Nooksack River at Brennan (1979-1991).

Parameter	Uncorrected Slope	Trend Probability	Corrected Slope	Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
Temperature	0.0000	0.9839	0.0000	0.9859	95.0000	<.1					8.85	9.1486	Y		
Conductivity	0.8320	0.0749			NS 80	0.4806	16.2354	4.0000	0.7545	0.0089**	100	100.5634	Y	0.75 (10)	X
Dissolved Oxygen	0.0166	0.2855	0.0166	0.4336	99.0000	<.1					11.1	11.3078	Y		
pH	0.0222	0.0089**	0.0222	0.0898	99.0000	<.1					7.5	7.4826	Y	0.3 (2)	X
Suspended Solids	0.7151	0.3405			NS 80	0.6084	191.9296	11.0000	0.3318	0.6116	31	101.4759	Y		
Turbidity	-0.8465	0.0038**			NS 80	0.6578	108.8136	11.0000	-1.0924	0.0008**	17	49.9197	Y	-1.7 (2)	X
Fecal Coliform	-2.4422	0.3407			NS 80	<.1					92	198.1799	Y		
Ammonia	0.0000	0.9032	0.0000	0.2831	95.0000	<.1					0.03	0.0427	Y		
Phosphorus Total	0.0000	0.0650	0.0000	0.1422	95.0000	<.1					0.04	0.0543	Y		
Phosphorus Ortho	0.0000	0.0040**			NS 80	<.1					0.005	0.0102	N		
Nitrate + Nitrite	0.0000	0.8440	0.0000	0.9032	95.0000	<.1					0.3175	0.3666	Y		
Flow	-1.4588	0.9517			NS 80	NA					3230	4080.7676	Y		

* Significant at 95%

** Siginificant at 99%



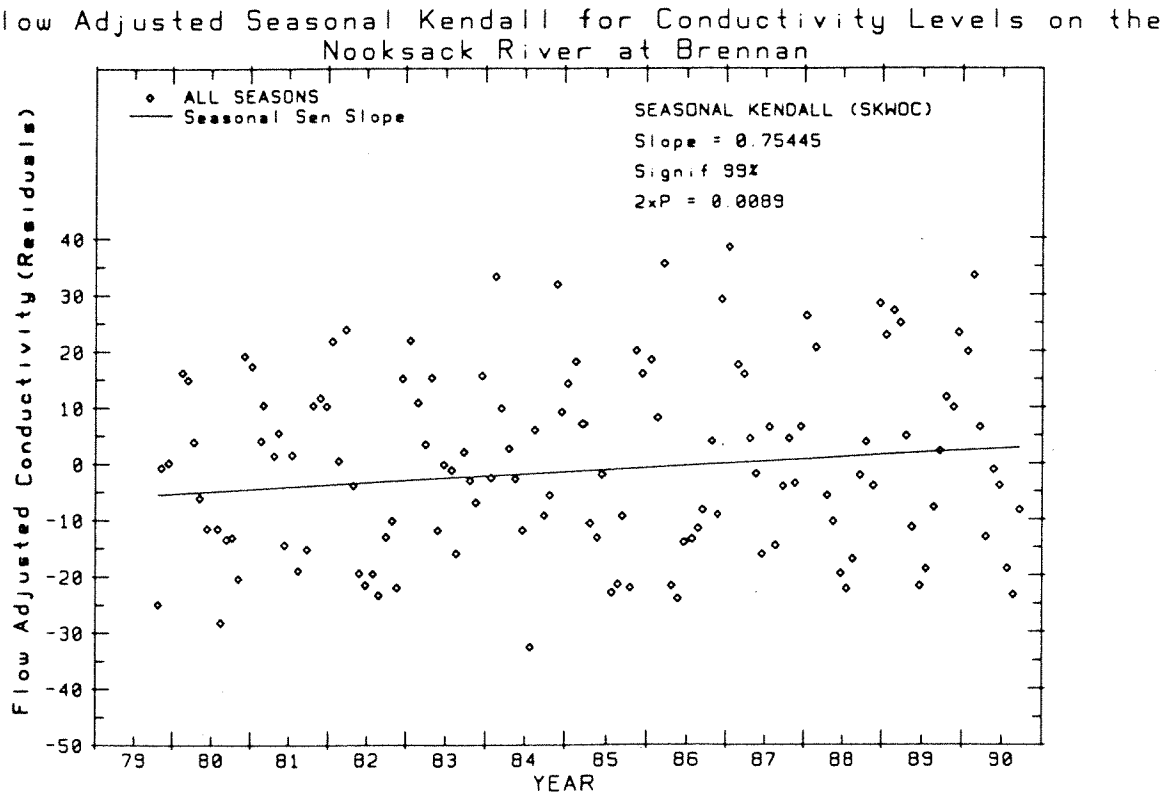


Figure 10. Significant trend graphs for the Nooksack River at Brennan.

SKAGIT RIVER AT MOUNT VERNON

Wateryear 1991

Wateryear 1991 data are compared to the last 10 years of data for most of the conventional parameters in Figures 11, 12, and 13. Temperature, flow, suspended solids, and turbidity were all generally above historical median levels. Flow was especially high during the months of December, February, and July with each month reaching a new 10-year maximum level. Dissolved oxygen, pH, and nitrate+nitrite levels were below historical median levels. Dissolved oxygen levels reached new 10-year minimums for the months of March, April, and June and were below the 10-year historical median line 75% of the time in WY 1991. Conductivity and fecal coliform levels were scattered with both parameters setting seasonal maxima and minima.

Trends in Conventional Water Quality (10/79 - 09/91)

Seasonal Kendall Trend information is provided in Table 6. Significant trends were detected for turbidity, ammonia, and nitrate+nitrite, all at the 99% probability levels. Turbidity (FASK) expressed a decreasing trend with a 7.42% change per year (see Figure 14). Nitrate+nitrite and ammonia also exhibited a declining trend, but the median values of the data are below the working quantitation limit of the test.

Overall Water Quality

The Skagit River Station appears to have some of the best water quality of the core stations inside of Puget Sound. This station has not violated any water quality standards over the last 10 years.

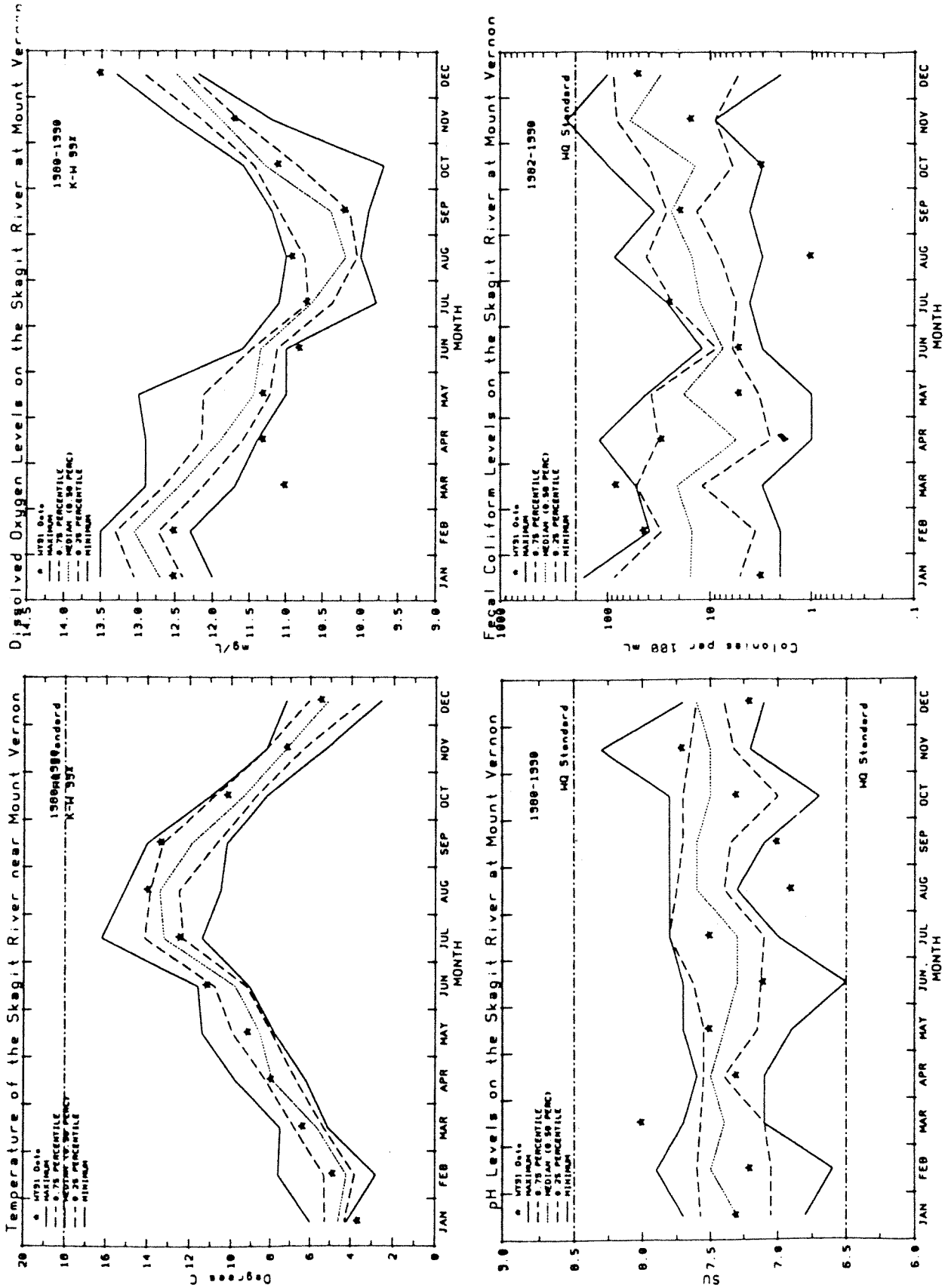


Figure 11. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Skagit River at Mount Vernon. (Water quality standard included.)

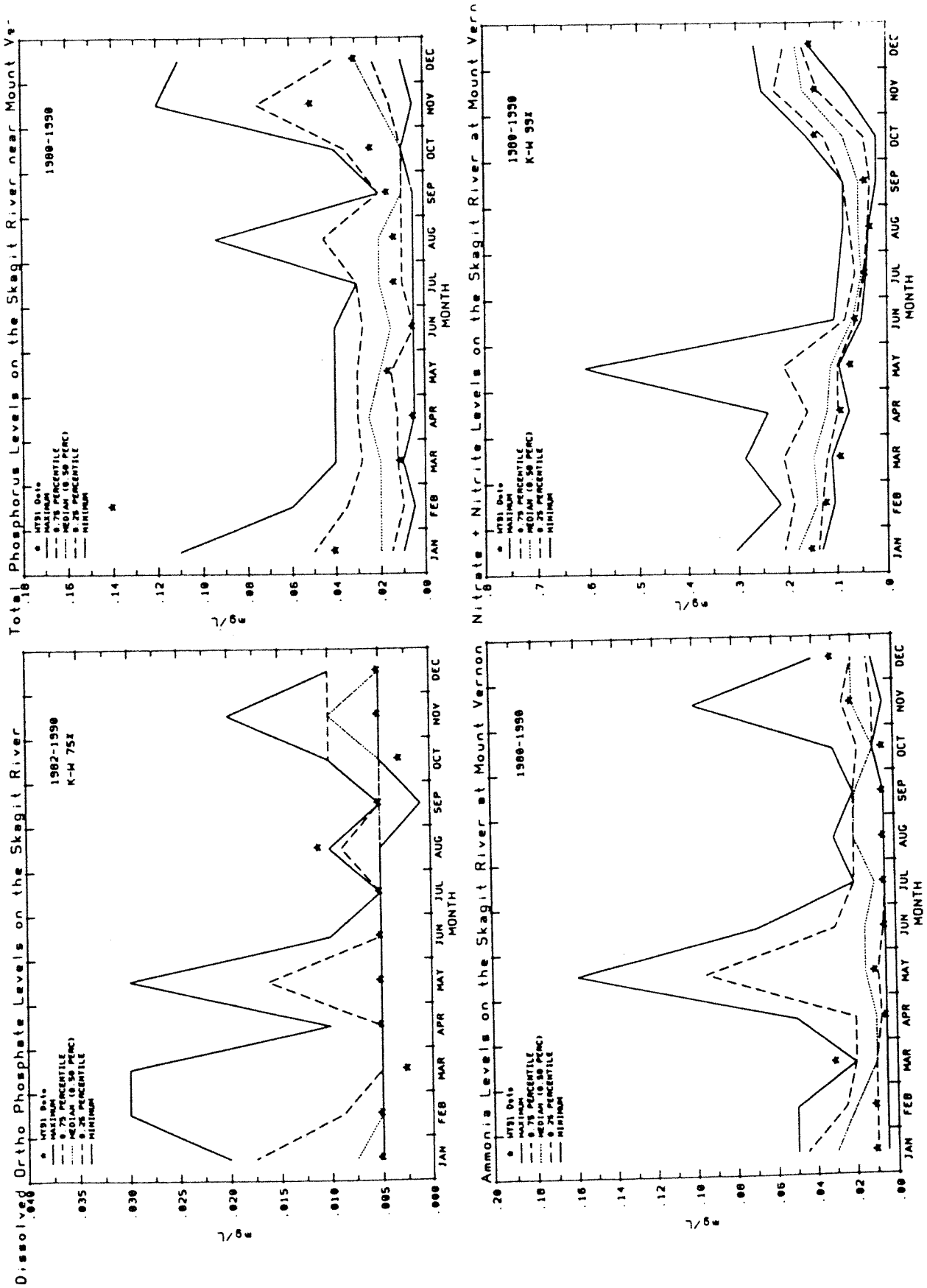


Figure 12. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Skagit River at Mount Vernon.

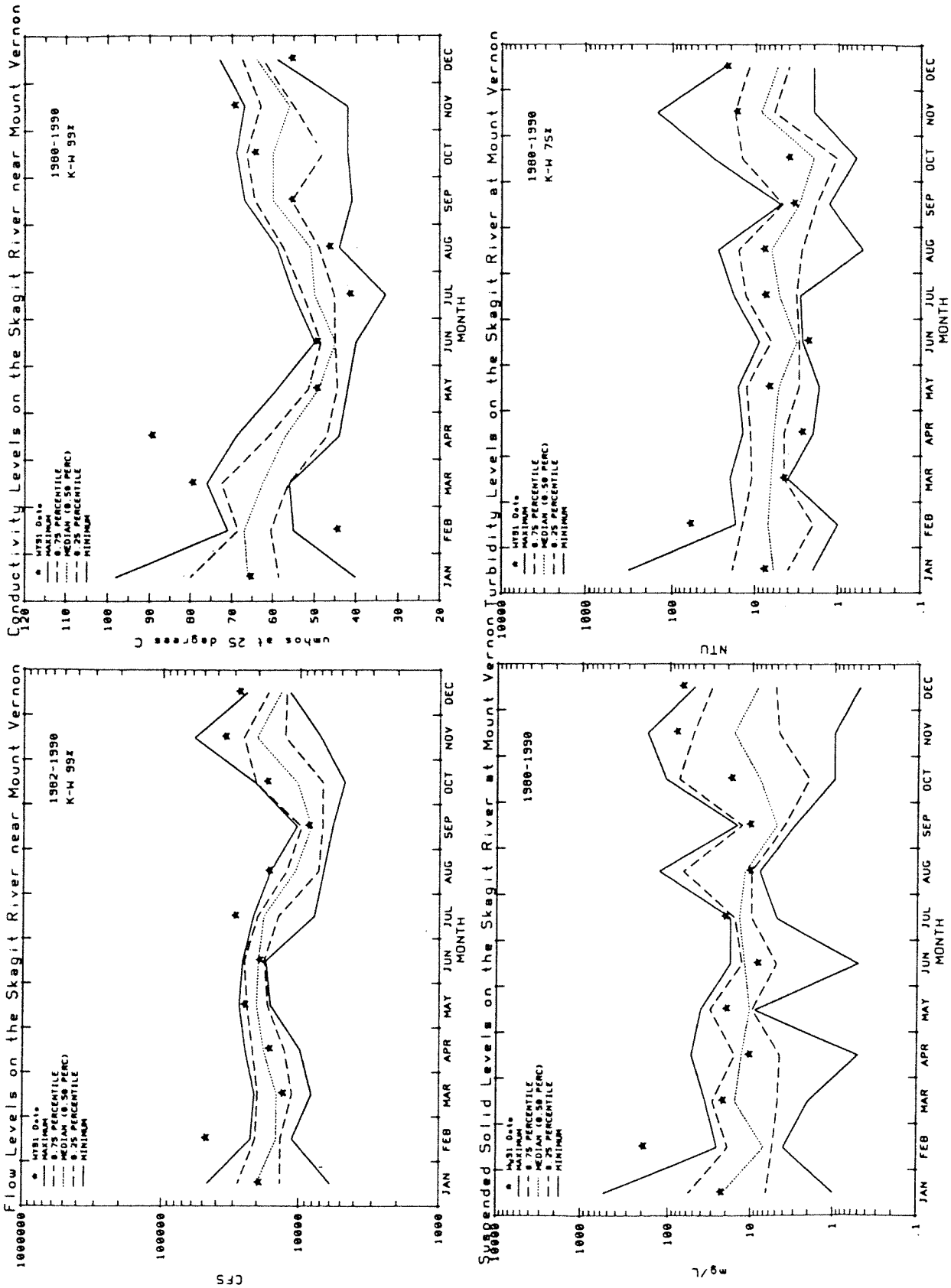


Figure 13. Wateryear 1991 flow, conductivity, suspended solid, and turbidity levels compared to the last 10 years of data on the Skagit River at Mount Vernon.

Table 6. Seasonal Kendall Trend information on the Skagit River at Mount Vernon (1979–1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Flow Adjusted Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperature	0.0000	0.7889	Insufficient Data			0.1151	3.0650	7.0000	0.0356	0.3704	8.2	8.5333	Y		
Conductivity	0.0000	0.7320				0.1179	10.6481	2.0000	0.0907	0.4934	56	56.6825	Y		
Dissolved Oxygen	0.0000	0.5181				0.1860	0.8607	7.0000	-0.2340	0.0742	11.6	11.6375	Y		
pH	0.0000	0.1896				<.1					7.4	7.3782	Y		
Suspended Solids	0.2503	0.5136				0.5724	39.2600	11.0000	-0.4105	0.3226	12	26.7509	Y		
Turbidity	-0.2754	0.0164 *				0.5630	22.0655	11.0000	-0.8550	1.7E-005**	5.65	11.518	Y	-7.42 (10)	X
Fecal Coliform	-0.8428	0.0888				<.1					15	27.5981	Y		
Ammonia	-0.0009	1.8E-005 **				<.1					0.01	0.0197	N		
Phosphorus Total	0.0000 v	0.0373 *				<.1					0.02	0.0269	N		
Phosphorus Ortho	0.0000 v	0.0005 *				<.1					0.005	0.007	N		
Nitrate + Nitrite	-0.0050	6.5E-007 **				0.1000	0.0650	11.0000	-0.5480	1.5E-007 **	0.115	0.1263	N		
Flow	194.0000	0.1625				NA					16200	16953.220	Y		

* Significant at 95%

** Significant at 99%

Uncorrected - Uncorrected for Serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text

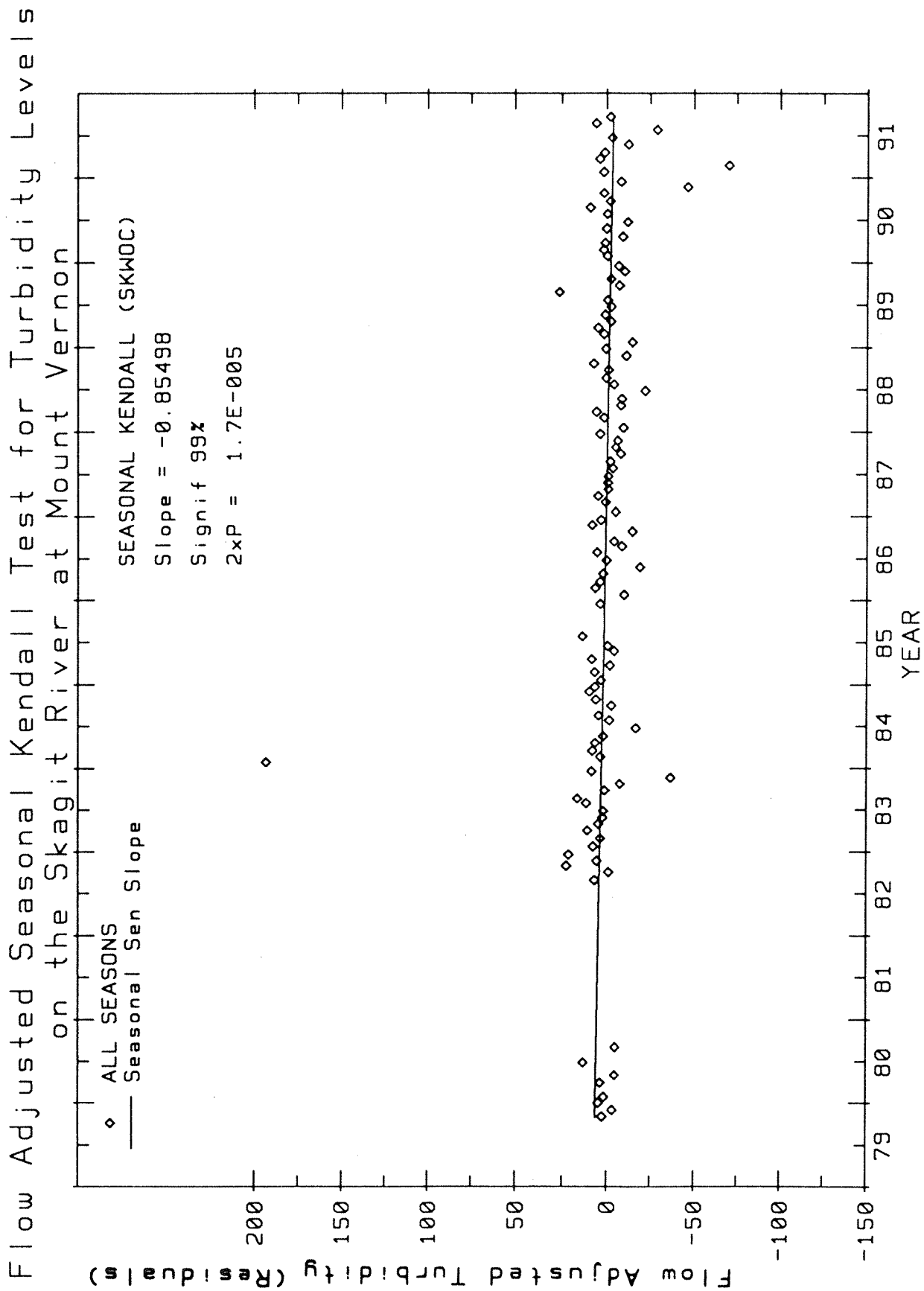


Figure 14. Significant trend graphs for the Skagit River at Mount Vernon.

SKAGIT RIVER AT MARBLEMOUNT

Wateryear 1991

This station is one of two bench mark stations operated within the Puget Sound. Wateryear 1991 data are compared to the last 10 years of data for most of the conventional parameters in Figures 15, 16, and 17. Most parameters were generally within the historical range. Flow and conductivity were the only parameters above historic median levels. Each parameter set three new 10-year maximum levels. Nitrate+nitrite levels in WY 1991 were low with 11 of the 12 measurements below historical median levels. March, August, and October all set new 10-year minimum levels for nitrate+nitrite.

Trends in Conventional Water Quality (10/79 - 09/91)

Significant decreasing trends were detected for temperature, ammonia, total and ortho-phosphorus, and nitrate+nitrite; all, except temperature, at the 99% probability levels (see Table 7). Temperature shows a declining trend, however, the data shows a large degree of serial correlation and corresponding SK with correction that did not indicate a significant trend. The remaining trends, though significant, are below the working quantitation limit of the specific parameters. It should be noted here that a significant portion of the indicated trend may be driven by changes in detection limits and should be used with care.

Overall Water Quality

For the most part, this station has exceptional water quality with the median of most conventional parameters falling below the working quantitation limit (see Table 7, column 12; and Appendix 5)

Upstream/Downstream Comparison

Table 8 presents results of the statistical analysis of paired upstream/downstream results from WY 1980 to WY 1991. The individual data pairs for each parameter are presented graphically in Appendix 9. The Klotz Test indicates conductivity and ammonia are the only parameters with similar distributions (shapes) for both upstream and downstream data sets. The subsequent Paired Wilcoxon-Mann-Whitney Test on these two parameters shows the means of the two data sets for both parameters are statistically different at the 95% confidence levels. The mean conductivity at Mount Vernon of the paired data was 3 μmhos higher than the mean calculated at Marblemount. As for ammonia, it also appeared to be statistically different, however, the difference of $\Delta = 0.00$ indicates there may be a problem with this statistical test when applied to data sets with a significant number of data points at or near detection limits.

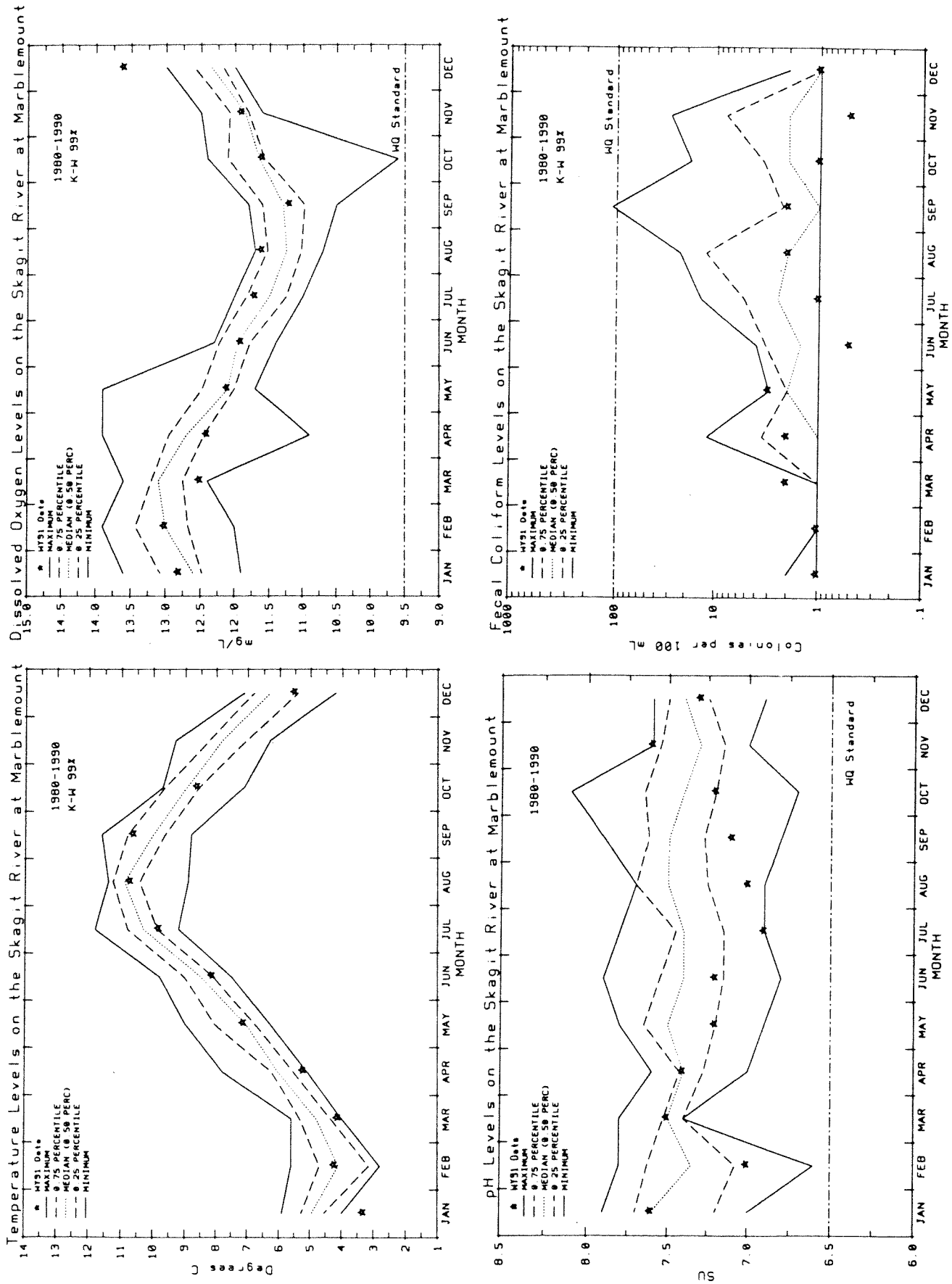


Figure 15. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Skagit river at Marblemount. (Water quality standard included.)

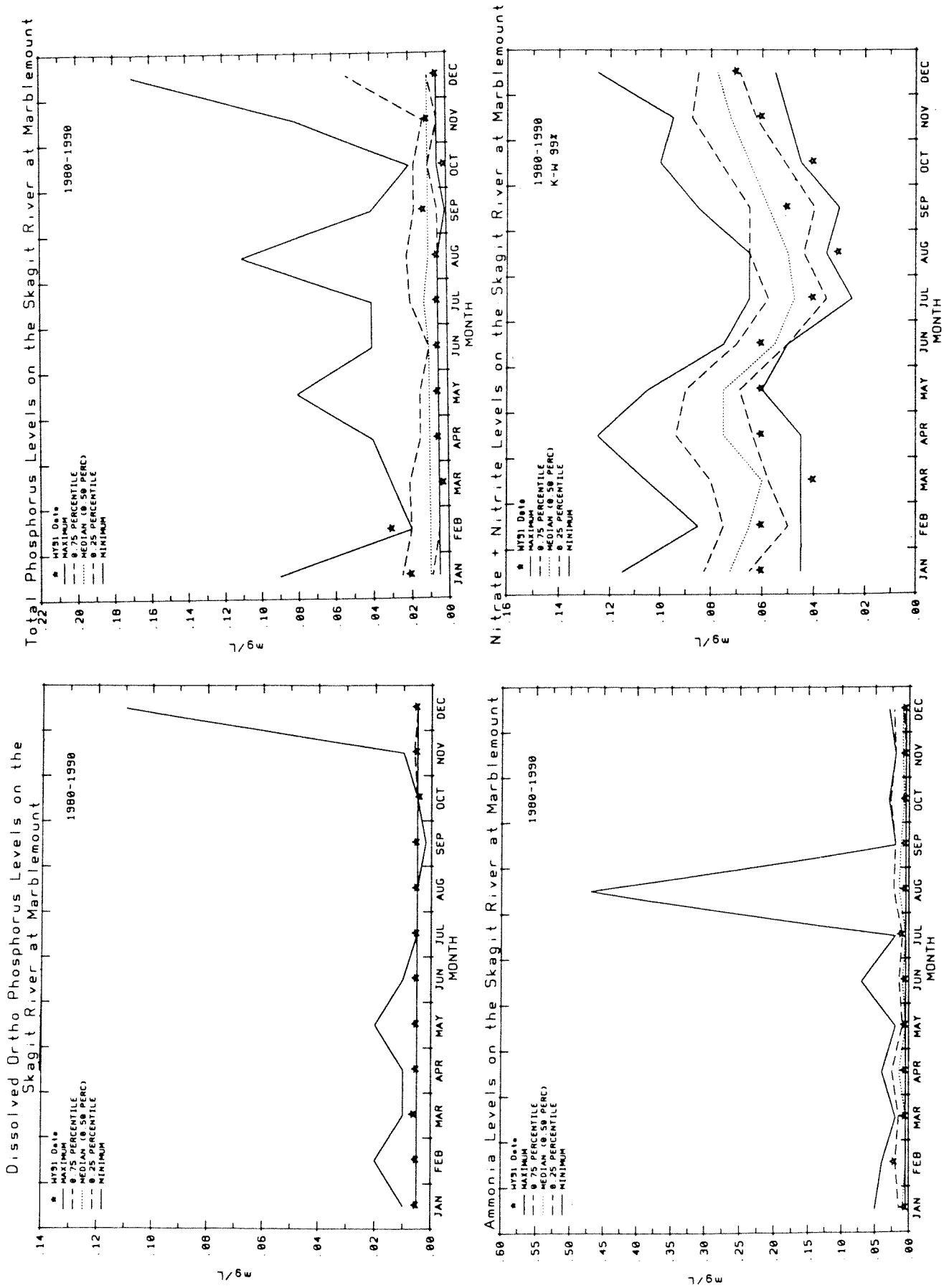


Figure 16. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Skagit River at Marblemount.

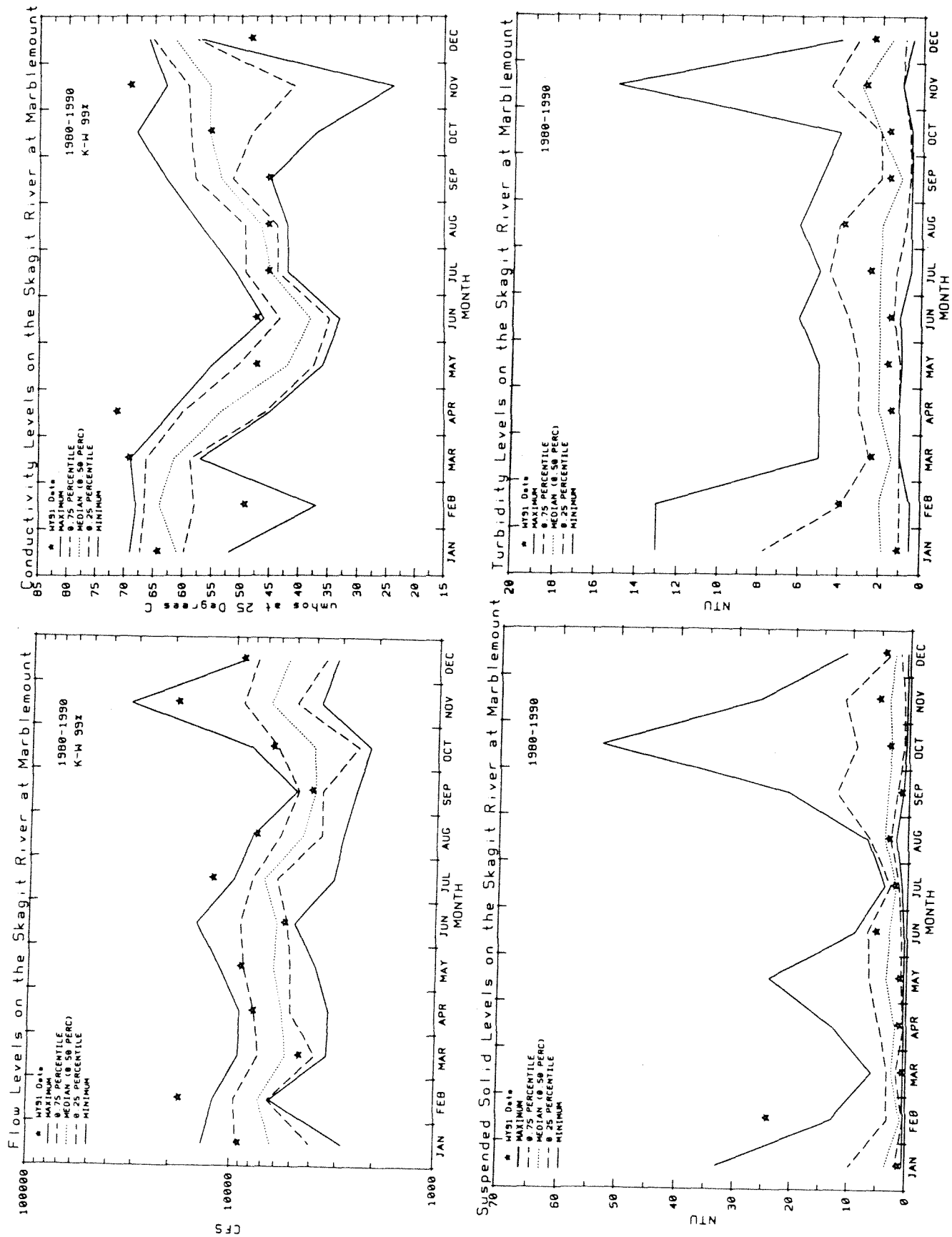


Figure 17. Wateryear 1991 flow, conductivity, suspended solids, and turbidity levels compared to the last 10 years of data on the Skagit River at Marblemount.

Table 7. Seasonal Kendall Trend information on the Skagit River at Marblemount (1979–1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Flow Adjusted Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperature	-0.0491	.0243*	-0.0491	0.1443	99.0000	<.1					7.6	7.4278	Y		
Conductivity	0.2215	0.1690			NS 80	<.1					54.5	52.9861	Y		
Dissolved Oxygen	-0.0100	0.1423	-0.0100	0.3186	99.0000	<.1					12.1	12.1722	Y		
pH	0.0000	0.3138	0.0000	0.4224	90.0000	<.1					7.4	7.3766	Y		
Suspended Solids	0.0000	0.1812			NS 80	0.0982	7.4741	11.0000	-0.1006	0.3002	3	5.1957	N		
Turbidity	-0.1167	0.0001**			NS 80	0.1048	2.1653	7.0000	-0.1434	5.7E-008**	2	2.4727	N		
Fecal Coliform	0.0000	0.3873			NS 80	<.1					1	3.6084	N		
Ammonia	-0.0005	2.0E-007**			NS 80	<.1					0.01	0.0161	N		
Phosphorus Total	-0.0005	0.0001**	-0.0005	0.0525	99.0000	<.1					0.01	0.0166	N		
Phosphorus Ortho	0.0000 v	0.0071**	0.0000	.0071**	99.0000	<.1					0.005	0.0064	N		
Nitrate + Nitrite	-0.0018	3.4E-006**	-0.0018	0.0239*	99.0000	<.1					0.065	0.067	N		
Flow	22.7773	0.5524			NS 80						5935	6571	Y		

* Significant at 95%

** Siginificant at 99%

Uncorrected - Uncorrected for Serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text.

Table 8. Statistical analysis of upstream/downstream data pairs from WY80 to WY90 on the Skagit River at Mount Vernon and Marblemount.

Parameter	Klotz	Paired Wilcoxon	A-D L & S/R	A-D S/R only	Mean MV	Mean M
Temperature	99%	--	99%	95%	8.175	7.175
Conductivity	NS 80%	95%	--	--	57	54
Dissolved Oxygen	95%	--	99%	NS 90%	11.60	12.10
Percent Saturation	80%	--	99%	NS 90%	97.55	101.05
pH	90%	--	NS 90%	NS 90%	7.4	7.4
Suspended Solids	99%	--	99%	99%	12	3
Ammonia	NS 80%	95%	--	--		
Total Phosphorus	99%	--	99%	99%	0.02	0.01
Ortho-phosphorus	95%	--	99%	99%	0.005	0.005
Turbidity	99%	--	99%	99%	5.375	2.275
Fecal Coliform	99%	--	99%	99%	14.57	1.5
Nitrate+Nitrite	99%	--	99%	99%	0.1125	0.0675
Flow	99%	--	99%	99%	16008.75	5928.75

Klotz - Nonparametric test of equality of variances/spread (populations of equal shape. significant results indicate data set do not have equal variance and A-D should be used.

Paired Wilcoxon - Nonparametric test for difference between means (assumes populations of equal shape). Significant test indicated the mean are different.

Anderson-Darling - Nonparametric test for difference between distributions (does not assume populations of equal shape).

L & S/R - Compares Central tendencies and spread/variance between stations.

S/R only - Tests scale and range (spread/variance) only by normalizing the data by subtracting the median (removes central tendencies) and retesting the new data set. Compares spread/variance only.

MV - Mount Vernon

M - Marblemount

The remaining parameters all had populations that had different distributions as indicated by significant Klotz in Table 8 and were tested using the Anderson-Darling Test. The only parameter that did not show a statistical difference between distributions at the 90% confidence level was pH. Dissolved oxygen and corresponding percent saturation did express a statistical difference in distribution, but when the data sets where corrected for central tendency and retested (A-D S/R only in Table 8), the data sets were not statistically different at the 90% confidence level. In other words, while the central tendency were statistically different, there was no difference in distribution. The remaining parameters: temperature, suspended solids, total and ortho-phosphorus, turbidity, fecal coliform, nitrate+nitrite, and flow were all statistically different comparing distribution and when corrected for central tendencies.

STILLAGUAMISH RIVER NEAR SILVANA

Wateryear 1991

Wateryear 1991 data are compared to the last 10 years of data in Figures 18, 19, and 20. Temperature was significantly higher than historical median levels in WY 1991, especially during the critical summer months of July, August, and September. This elevated summer temperature in turn was reflected in lower D.O. levels. Fecal coliform levels were also high in WY 1991 with the months of February, September, and December establishing new 10-year maximum levels. The Stillaguamish had five water quality violations in WY 1991, two for temperature (July and August), and three for fecal coliform bacteria (February, September, and December).

Trends in Conventional Water Quality (10/79 - 09/91)

Significant SK Trends at the 95th probability levels were indicated for turbidity and total phosphorus (see Table 9). Turbidity was significantly correlated to flow ($R^2 = 0.352$) and the flow adjusted turbidity levels show a decrease of 2.3% per year (Figure 21). Total phosphorus also showed a significant trend, but the median of the data set was below the working quantitation limit.

Overall Water Quality

The July-September mean temperature of 16.1°C present in the six-year summary indicates, as stated above, the temperatures for WY 1991 are above normal. As for fecal coliform, the highest mean occurred during the July-September quarter, however, fecal coliform levels do not show a significant correlation to flow ($R^2 < .05$) and therefore do not point to a consistent source.

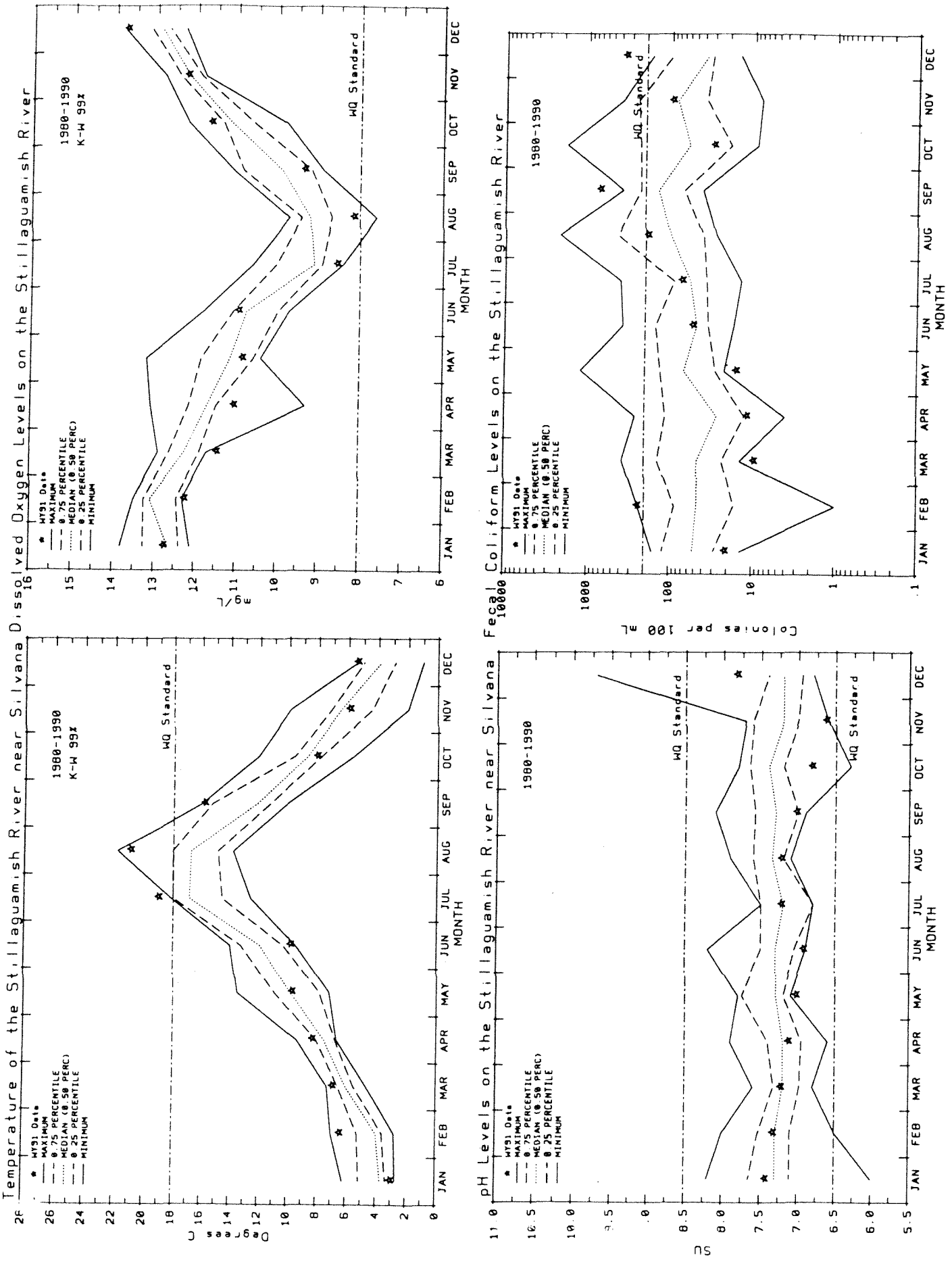


Figure 18. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Stillaguamish River near Silvana. (Water quality standard included.)

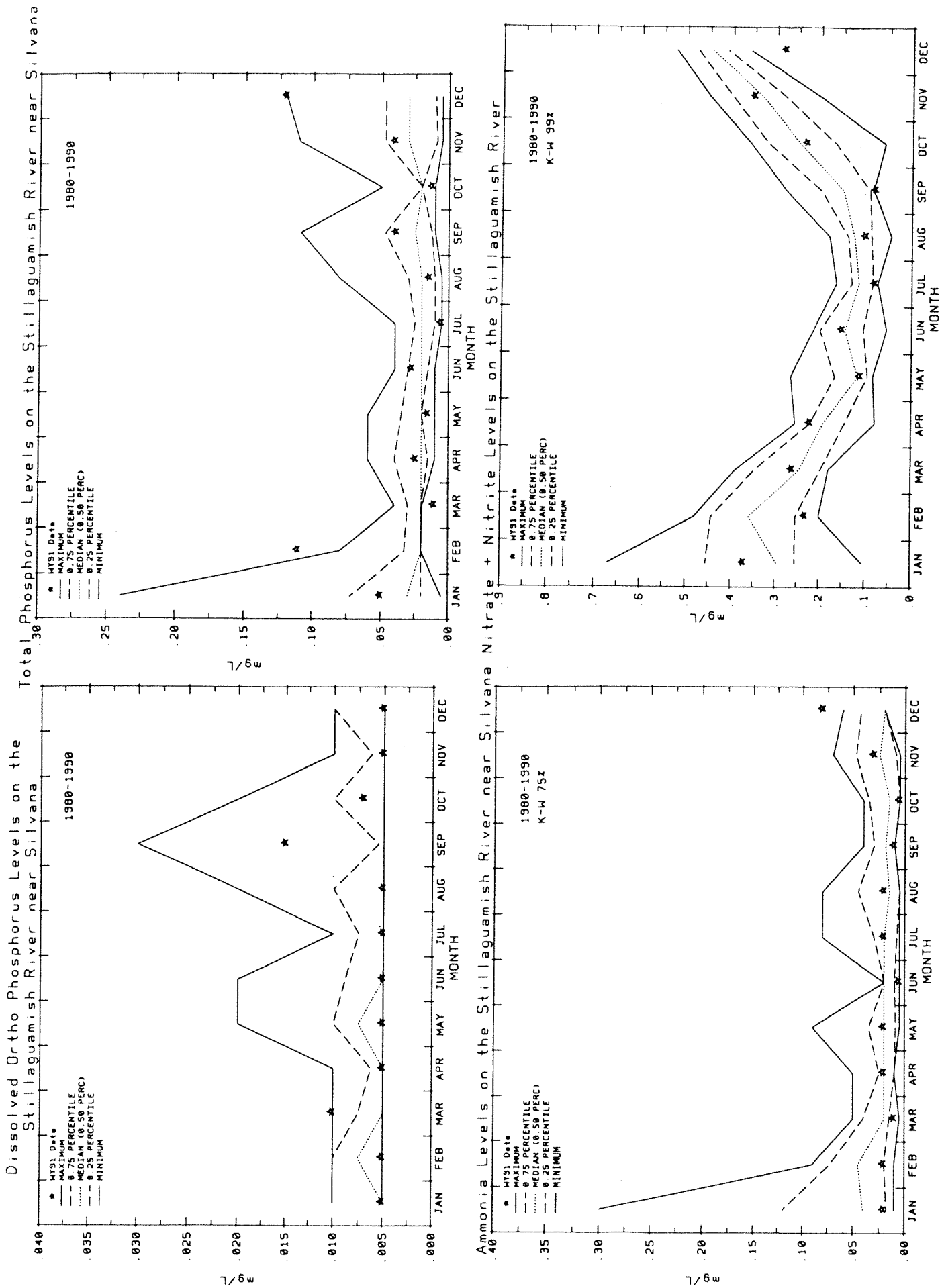


Figure 19. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Stillaguamish River near Silvana.

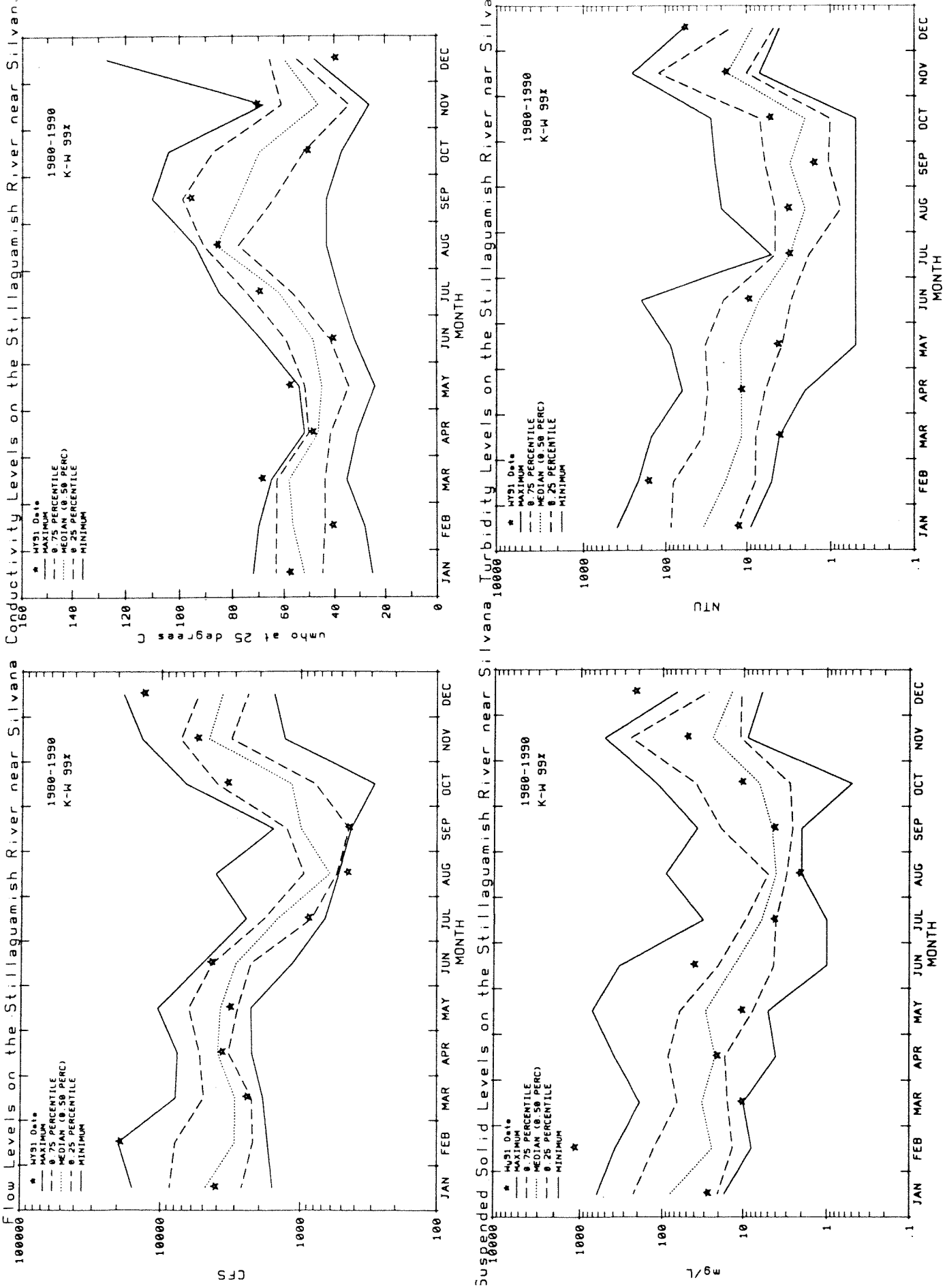


Figure 20. Wateryear 1991 flow, conductivity, suspended solids, and turbidity levels compared to the last 10 years of data on the Stillaguamish River near Silvana.

Table 9. Seasonal Kendall Trend information on the Stillaguamish River near Silvana (1979-1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Flow Adjusted Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperature	-0.0398	0.3256	-0.0398	0.5004	99.0000	0.4416	3.6121	7.0000	-0.0509	0.4241	8	9.1266	Y		
Conductivity	0.3868	0.1899			NS 80	0.6780	10.4384	5.0000	-0.0195	0.8276	57	59.0347	Y		
Dissolved Oxygen	0.0000	0.5869	0.0000	0.6705	99.0000	0.4831	1.0800	7.0000	-0.0124	0.5225	11.6	11.314	Y		
pH	0.0000	0.7785	0.0000	0.8299	95.0000	<.1					7.3	7.2788	Y		
Suspended Solids	-0.1814	0.3077			NS 80	0.6495	114.7890	4.0000	-0.3008	0.3841	16	65.5604	Y		
Turbidity	-0.2004	0.1035			NS 80	0.3052	47.3265	7.0000	-0.6169	0.0210*	8	26.8309	Y	-2.30(10)	X
Fecal Coliform	-1.0574	0.2662			NS 80	<.1					57	135.285	Y		
Ammonia	0.0000	0.0512	0.0000	0.1067	95.0000	<.1					0.02	0.0303	Y		
Phosphorus Total	0.0000	0.1005	0.0000	.0437*	95.0000	0.1915	0.0302	7.0000	0.0007	0.0359*	0.02	0.0323	N		
Phosphorus Ortho	0.0000	0.1755	0.0000	0.3377	80.0000	<.1					0.005	0.0083	N		
Nitrate + Nitrite	-0.0025	0.0935			NS 80	0.1520	0.1287	7.0000	-0.0015	0.3304	0.215	0.2393	Y		
Flow	-21.9060	0.1479			NS 80	NA					2800	3704.49	Y		

* Significant at 95%

** Siginificant at 99%

Uncorrected - Uncorrected for Serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text.

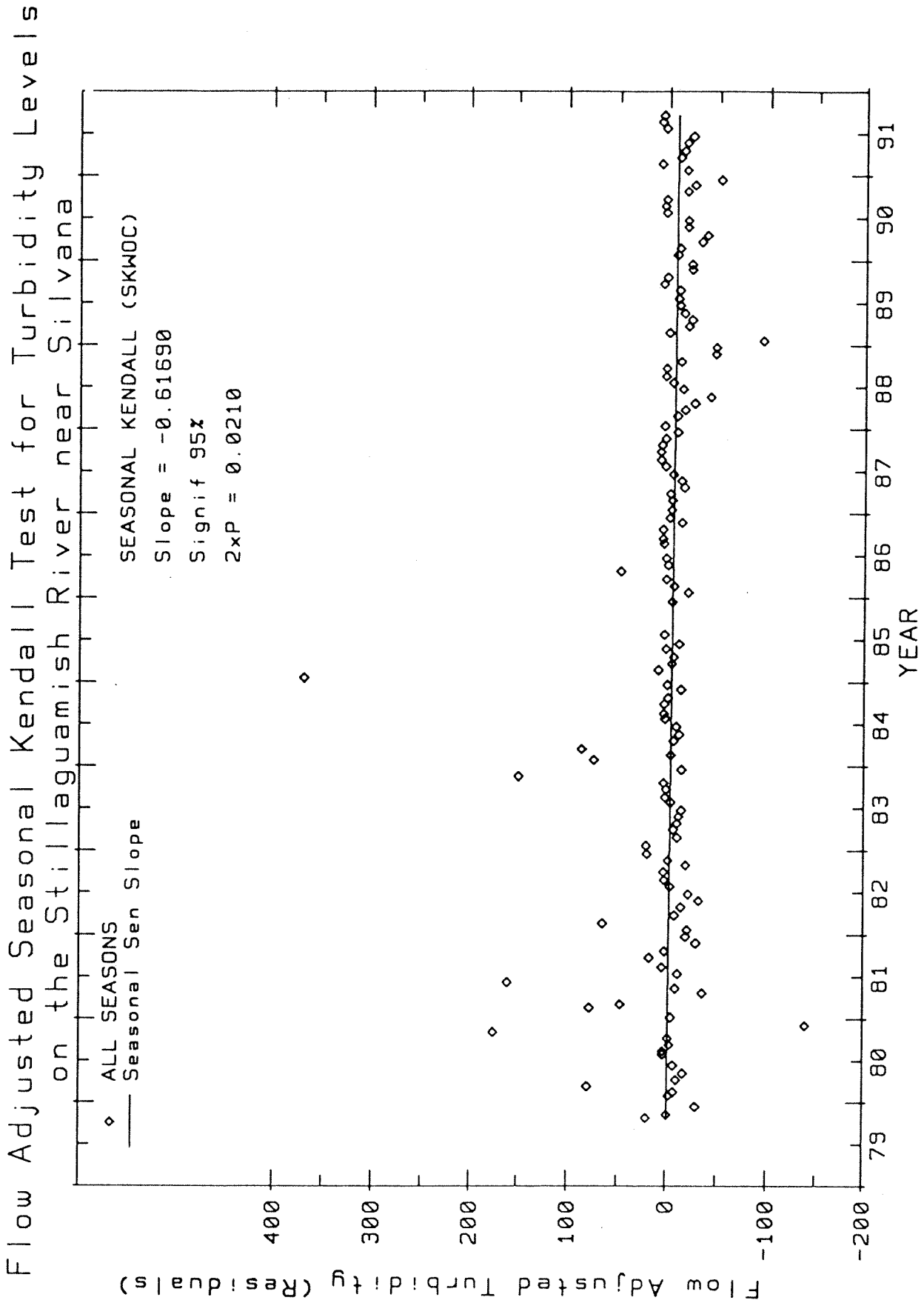


Figure 21. Significant trend graph for the Stillaguamish River near Silvana.

SNOHOMISH RIVER AT SNOHOMISH

Wateryear 1991

Wateryear 1991 data compared to the last 10 years of data are located in Figures 22, 23, and 24. The Snohomish River appeared to be generally within the historical range for most of the conventional parameters except for fecal coliform, pH, and suspended solids. Fecal coliform and pH were below and suspended solids were above historical median levels. The August temperature did set a new 10-year maxima and as expected, the corresponding D.O. concentration was a new 10-year minima.

Trends in Conventional Water Quality (10/79 - 09/91)

Seasonal Kendall Trend information is presented in Table 10. Significant trends were detected in half of the parameters tested including temperature, suspended solids, fecal coliform, nitrate+nitrite, and ammonia. Trends for temperature and ammonia had a significant level of serial correlation and the corresponding SK with correction were not significant. Suspended solids levels are increasing at 1.75% per year, however, the data had a strong correlation to flow (R^2 = 0.8255,) and the corresponding flow adjusted SK Tests were not significant. The remaining parameters showed decreasing trends: fecal coliform (1.62% change per year); and nitrate+nitrite (1.84%) (see Figure 25).

Overall Water Quality

The Snohomish River generally has good water quality when compared to the other core stations in the Puget Sound Basin. The primary concerns at this station are temperature and fecal coliform levels. Figure 22 shows that up to 50% of the July and August temperature levels over the last 10 years have exceeded water quality standard. The August 1991 temperature of 21.2°C was among the highest temperatures recorded at this station in the last 32 plus years of sampling. This station does express a declining SK Trend in temperature, but is limited by a strong serial and flow correlation as mentioned above. Temperature will most likely continue to be a problem at this location. Fecal coliform levels show a decreasing trend and a decline in the number of water quality violations and from all indications this station show signs of improving (see Figure 25).

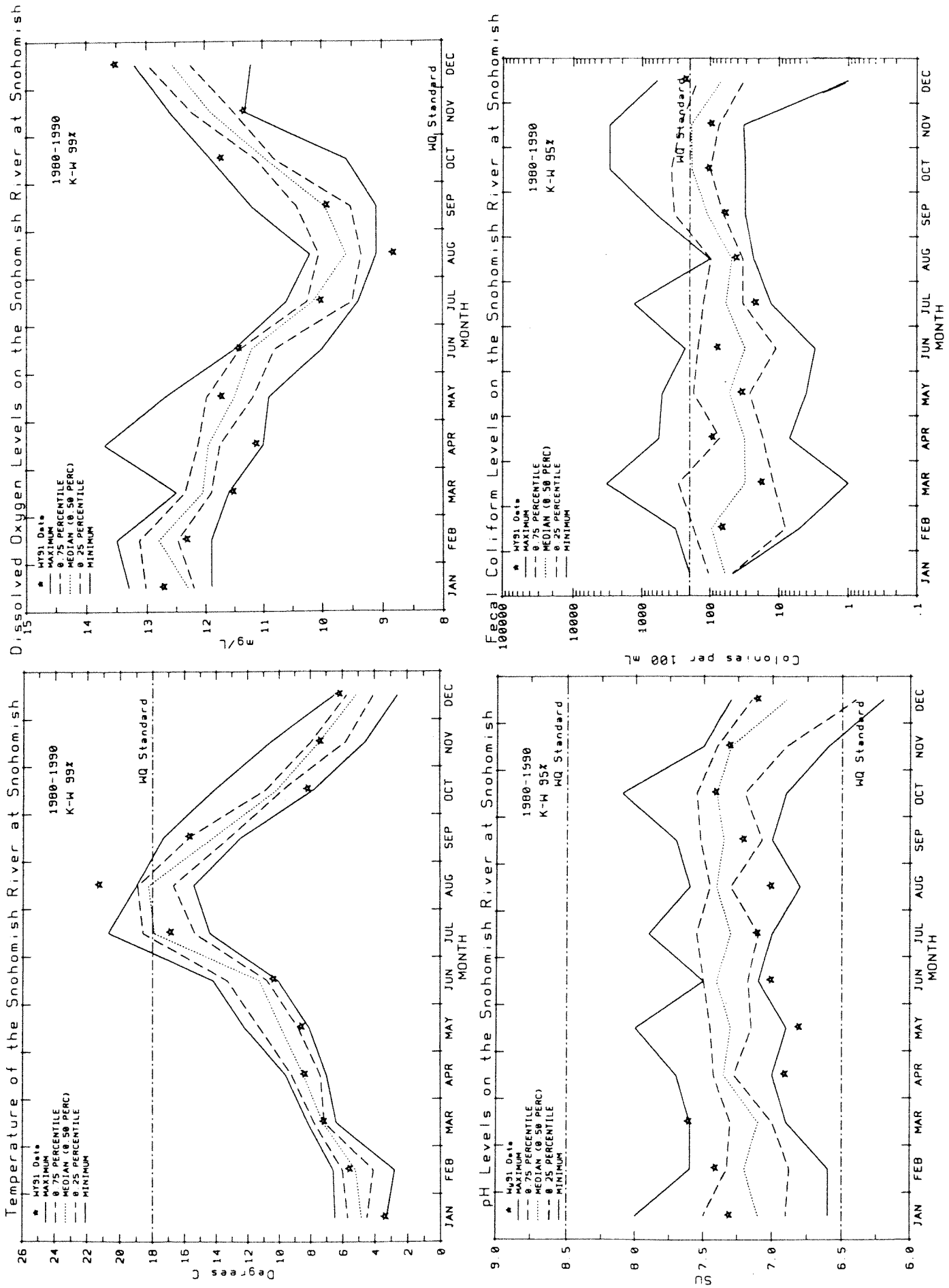


Figure 22. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Snohomish River at Snohomish. (Water quality standard included.)

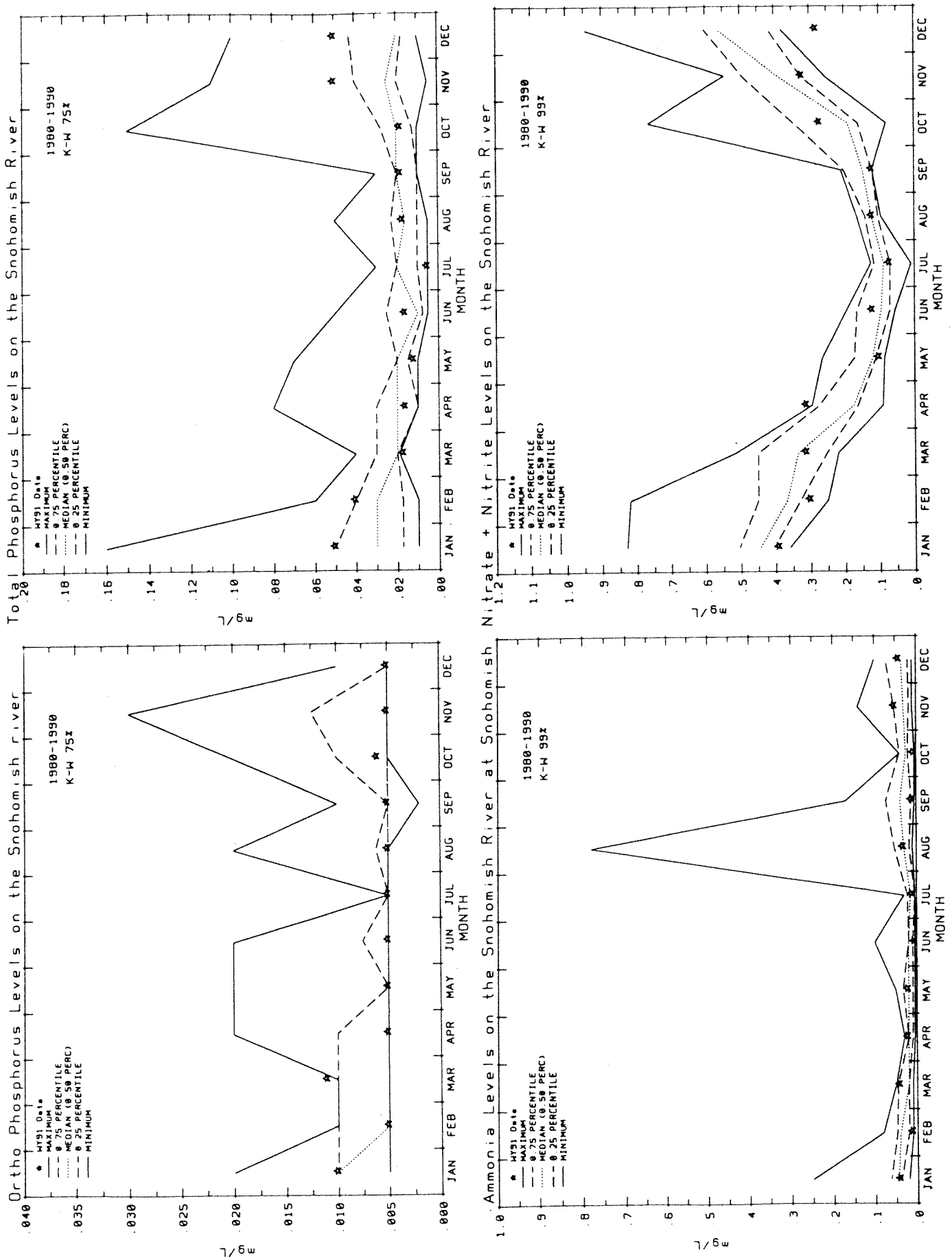


Figure 23. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Snohomish River at Snohomish.

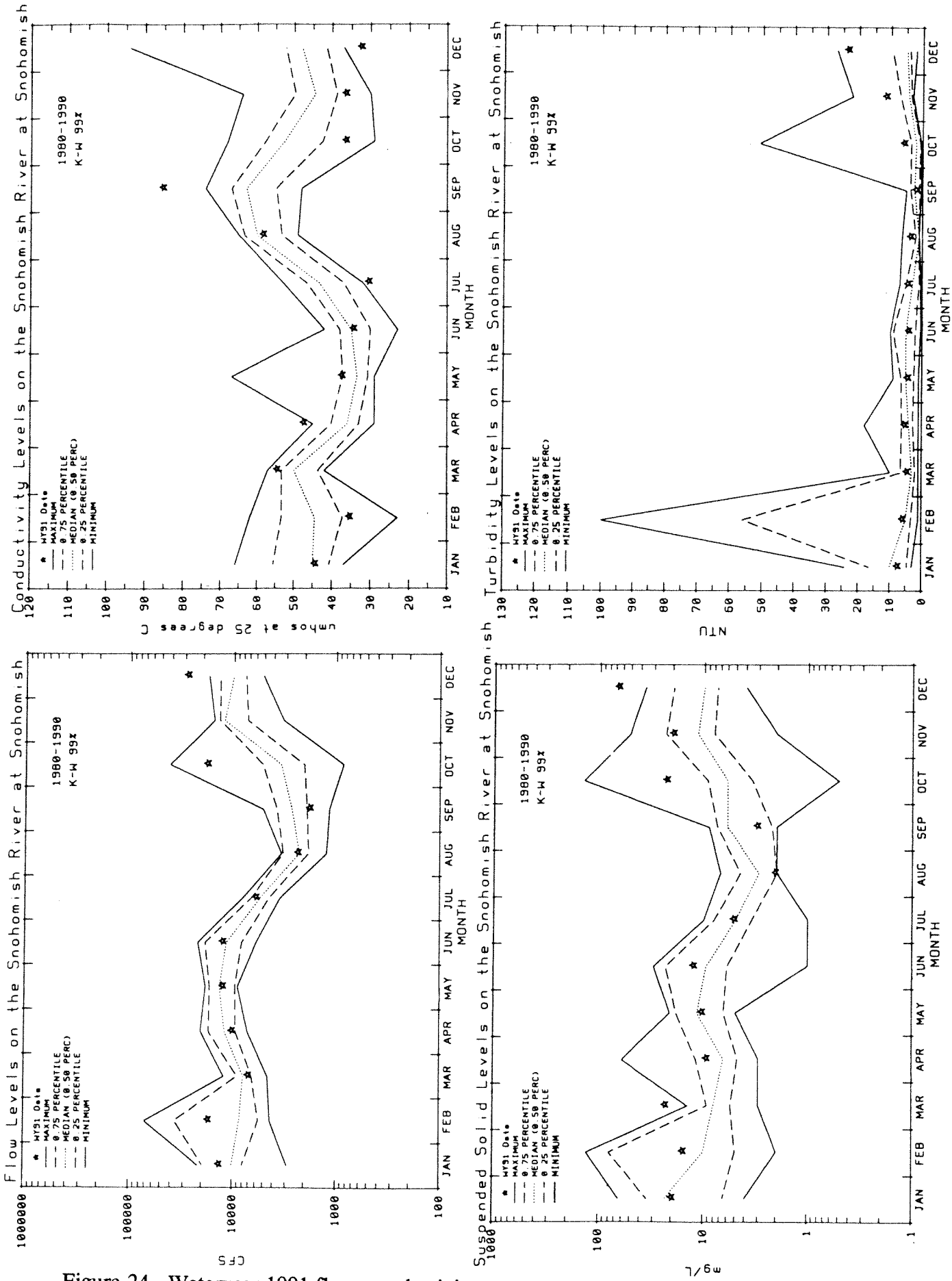


Figure 24. Wateryear 1991 flow, conductivity, suspended solids, and turbidity levels compared to the last 10 years of data on the Snohomish River at Snohomish.

Table 10. Seasonal Kendall Trend information on the Snohomish River at Snohomish (1979–1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Flow Adjusted Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperature	-0.06688	0.0364*	-0.0669	0.0611	99.0000	0.3175	3.9094	7.0000	-0.0402	0.2616	8.9	9.9731	Y		
Conductivity	0.0000	0.5905			NS 80	0.5836	7.4612	5.0000	0.0069	0.9668	45	46.1103	Y		
Dissolved Oxygen	0.0000	0.8241	0.0000	0.8559	99.0000	0.3428	0.9990	7.0000	-0.0025	0.7686	11.5	11.4306	Y		
pH	0.0000	0.1391	0.0000	0.3847	99.0000	<.1					7.3	7.237	Y		
Suspended Solids	0.2498	0.0398*			NS 80	0.8255	8.9241	11.0000	0.2086	0.0707	8	14.3116	Y	1.75(2)	X
Turbidity	-0.1001	0.0967	-0.1001	0.4415	99.0000	0.8872	4.2781	11.0000	-0.1726 a) -0.1726	0.0022** 0.1299	4	6.8015	N		
Fecal Coliform	-3.4562	0.0277*			NS 80	<.1					65	213.2158	Y	-1.62 (2)	X
Ammonia	-0.0014	0.0007**	-0.0014	0.0598	90.0000	<.1					0.02	0.0381	Y		
Phosphorus Total	0.0000	0.2684	0.0000	0.2731	99.0000	0.1646	0.0218	11.0000	-0.0003	0.2217	0.02	0.026	N		
Phosphorus Ortho	0.0000	0.2491			NS 80	<.1					0.005	0.0071	N		
Nitrate + Nitrite	-0.0050	0.0006**	-0.0050	0.0425*	80.0000	<.1					0.235	0.2722	Y	-1.84 (4)	X
Flow	38.0168	0.5743			NS 80	NA					8215	9853.6643	Y		

* Significant at 95%

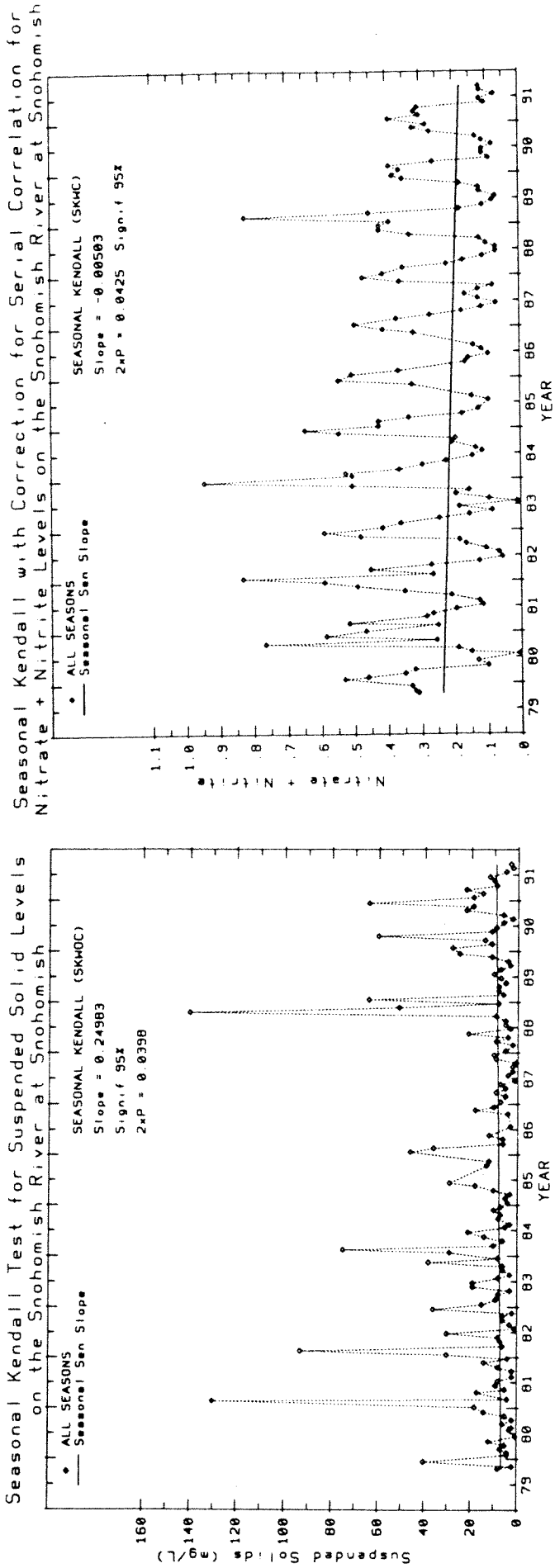
** Siginificant at 99%

Uncorrected - Uncorrected for Serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text

a) Flow Adjusted Seasonal Kendall Trend results with Correction for Serial Correlation



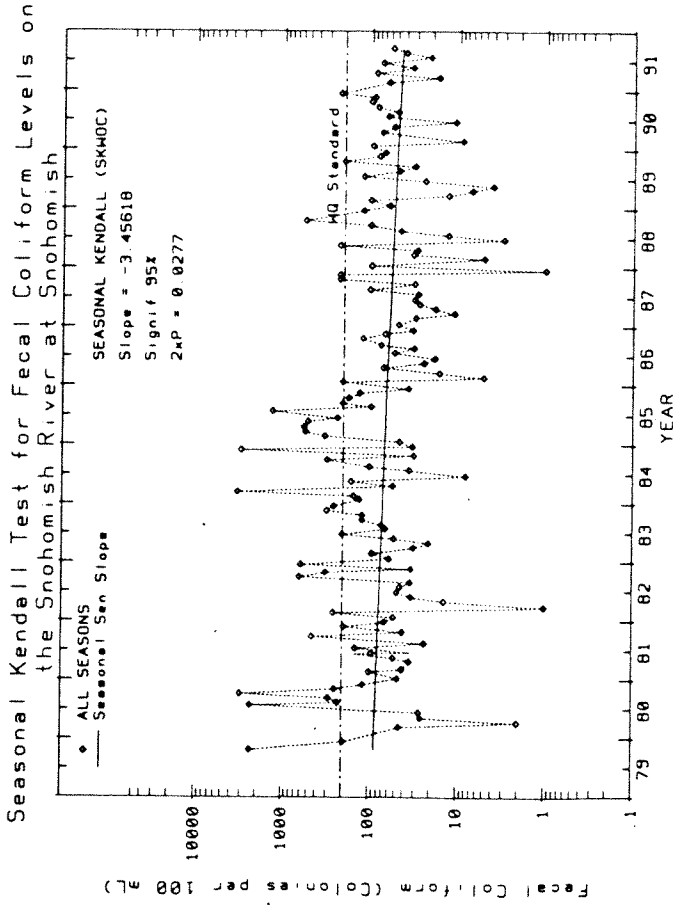


Figure 25. Significant trend graphs for the Snohomish River at Snohomish.

SAMMAMISH RIVER AT BOTHELL

Wateryear 1991

Wateryear 1991 data are compared to the last 10 years of data in Figures 26, 27, and 28. As these figures show, WY 1991 was not a typical year for conventional parameters on the Sammamish River at Bothell. Turbidity, fecal coliform, total and ortho-phosphorous, ammonia, D.O., and suspended solids were generally below, and nitrate+nitrite, flow, pH, conductivity, and temperature were above historical median levels. For WY 1991, the Sammamish River had the worst water quality of the core stations inside of the Puget Sound Basin. This station not only had the highest number of water quality violations with nine, but also had 60% of the parameters ranked in the top one or two when comparing six-year quarterly mean at core stations (see Appendix 7).

Trends in Conventional Water Quality (10/79 - 09/91)

Significant SK Trends were detected for 5 of the 12 parameters tested (see Table 11). Turbidity (-8.66% per year), fecal coliform bacteria (-2.2%), and ammonia (-6.25%) levels are decreasing. Conductivity and pH levels showed an increasing trend with a 0.9 and 0.15% change per year (see Figures 29 and 30).

Overall Water Quality

The major concerns at this station are fecal coliform levels and elevated summer temperatures. Fecal coliform levels for WY 1991, though generally below historical median levels, still had 50% of the sample exceeded the 200 organism per 100 mL water quality standard. A significant declining trend for fecal coliform was detected at the 99% levels, however, as Figure 29 shows, fecal coliform levels will continue to be a problem. As for temperature, July (20.8°C) and August (20.2°C) were elevated, but not atypical (see Figure 26) and in violation of water quality standards. These violations, combined with the lack of a significant temperature trends, indicate temperature will also continue to be a problem. It should be noted in the discussion of elevated summer temperature on the Sammamish River, however, that the primary source of water to the river is from Lake Sammamish and therefore a significant portion of the elevated temperatures may not be directly related to in-stream conditions.

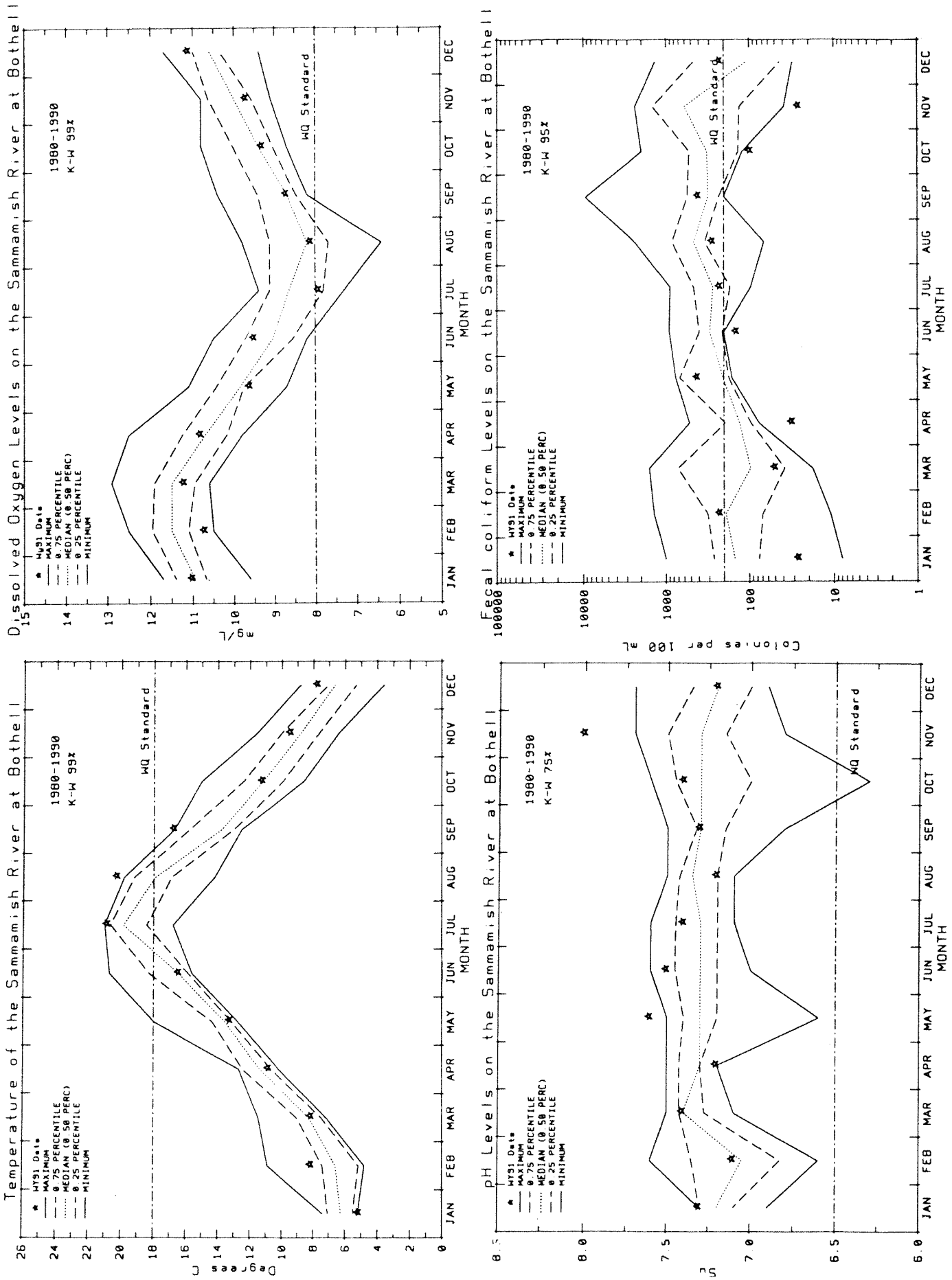


Figure 26. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Sammamish River at Bothell. (Water quality standard included).

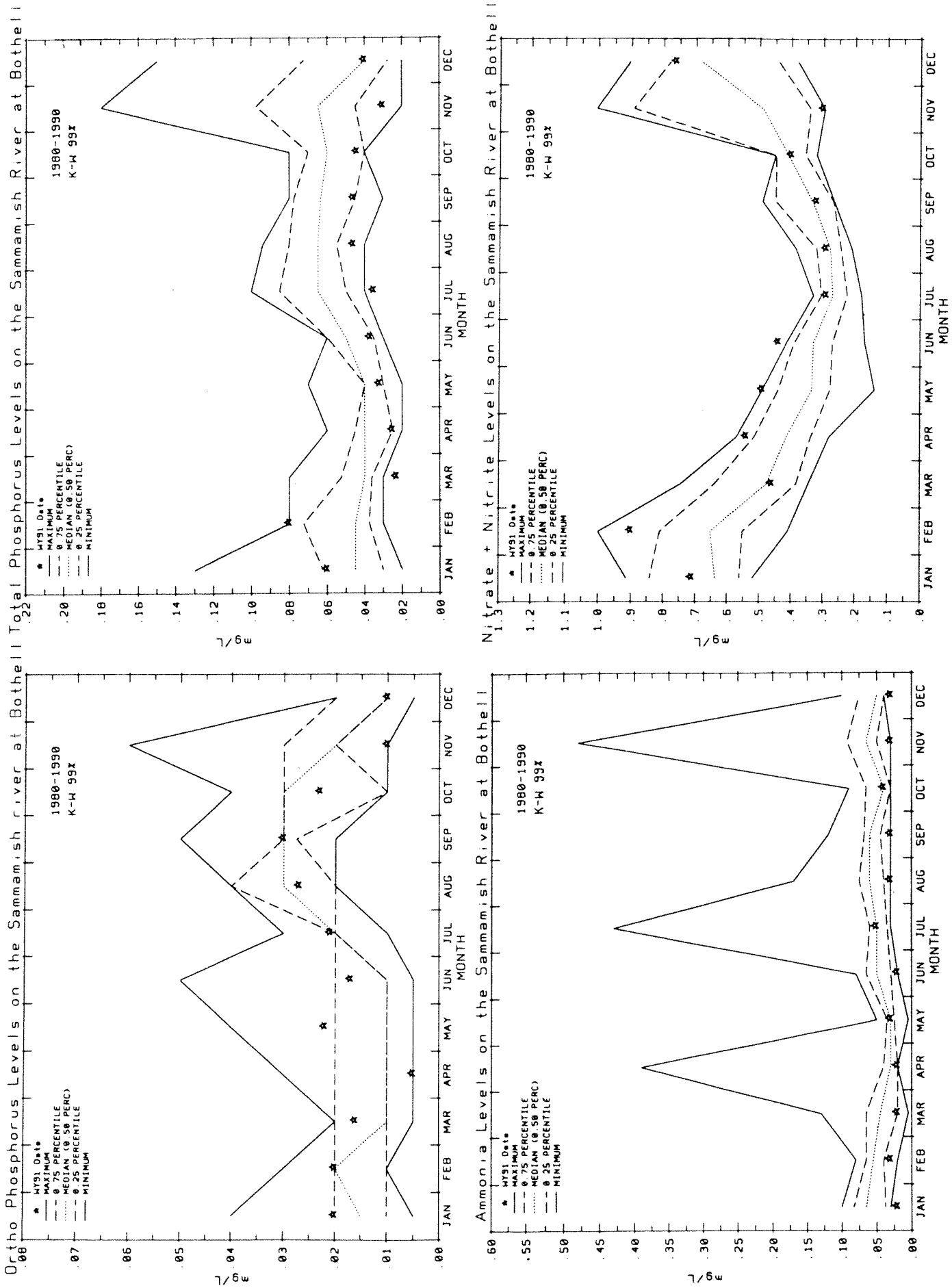


Figure 27. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels, compared to the last 10 years of data on the Sammamish River at Bothell.

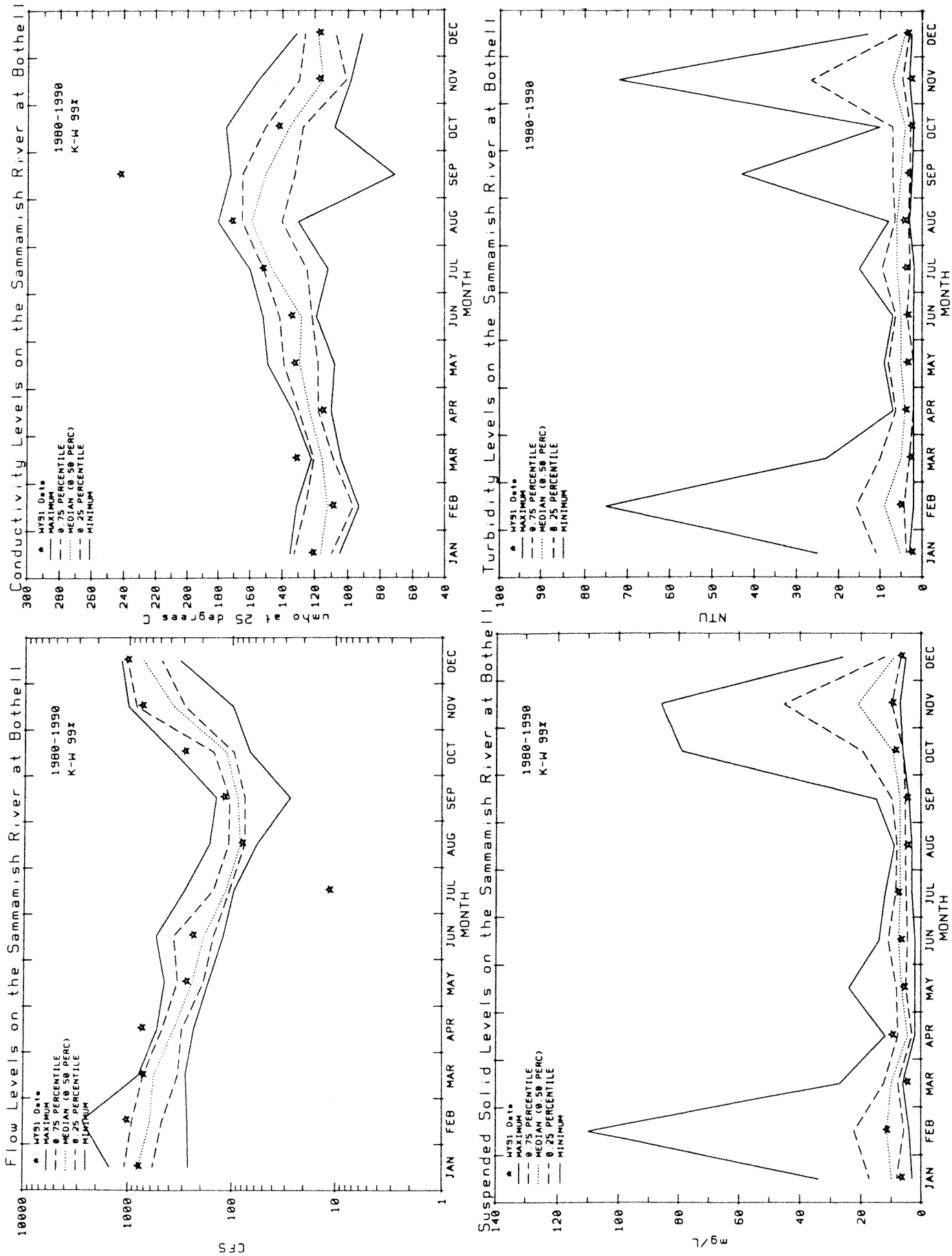


Figure 28. Wateryear 1991 flow, conductivity, suspended solids, and turbidity levels compared to the last 10 years of data on the Sammamish River at Bothell.

Table 11. Seasonal Kendall Trend information on the Sammamish River at Bothell (1979-1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Flow Adjusted Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperature	0.0000	0.8581	0.0000	0.8943	99.0000	0.5415	3.2842	12.0000	-0.0065	0.9526	11.3	11.8278	Y		
Conductivity	1.4903	5.7E-7**	1.49032	0.0128*	99.0000	0.4893	15.3169	5.0000	1.1667	6.7E-7**	128	129.4444	Y	0.9 (10)	X
Dissolved Oxygen	-0.0199	0.1684	-0.0199	0.2771	99.0000	0.4641	0.9427	11.0000	-0.0232	0.2272	9.9	9.9493	Y		
pH	0.0111	0.0132*			NS 80	<.1					7.3	7.2679	Y	.15 (2)	X
Suspended Solids	-0.1667	0.2496			NS 80	0.0931	13.8751	11.0000	-0.1408	0.2813	8	11.8777	N		
Turbidity	-0.4329	1.2E-10**	-0.4329	0.0109*	99.0000	<.1					7.1612	5	Y	-8.66 (4)	X
Fecal Coliform	-10.1017	0.0039**			NS 80	<.1					230	454.1986	Y	-2.2 (2)	X
Ammonia	-0.0038	1.5E-10**	-0.0038	0.0010**	80.0000	<.1					0.05	0.0603	N	-6.25 (4)	X
Phosphorus Total	0.0000	0.2555	0.0000	0.3460	99.0000	<.1					0.05	0.0551	N		
Phosphorus Ortho	0.0000	0.7213	0.0000	0.6775	99.0000	0.2066	0.0094	7.0000	-0.0001	0.1110	0.02	0.0193	N		
Nitrate + Nitrite	-0.0075	0.0211*	-0.0075	0.1910	99.0000	0.6545	0.1167	11.0000	-0.0054	0.0647	0.41	0.4616	Y		
Flow	-1.9867	0.3936	-1.9867	0.2271	99.0000	NA							NA		

* Significant at 95%

** Siginificant at 99%

Uncorrected - Uncorrected for Serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text

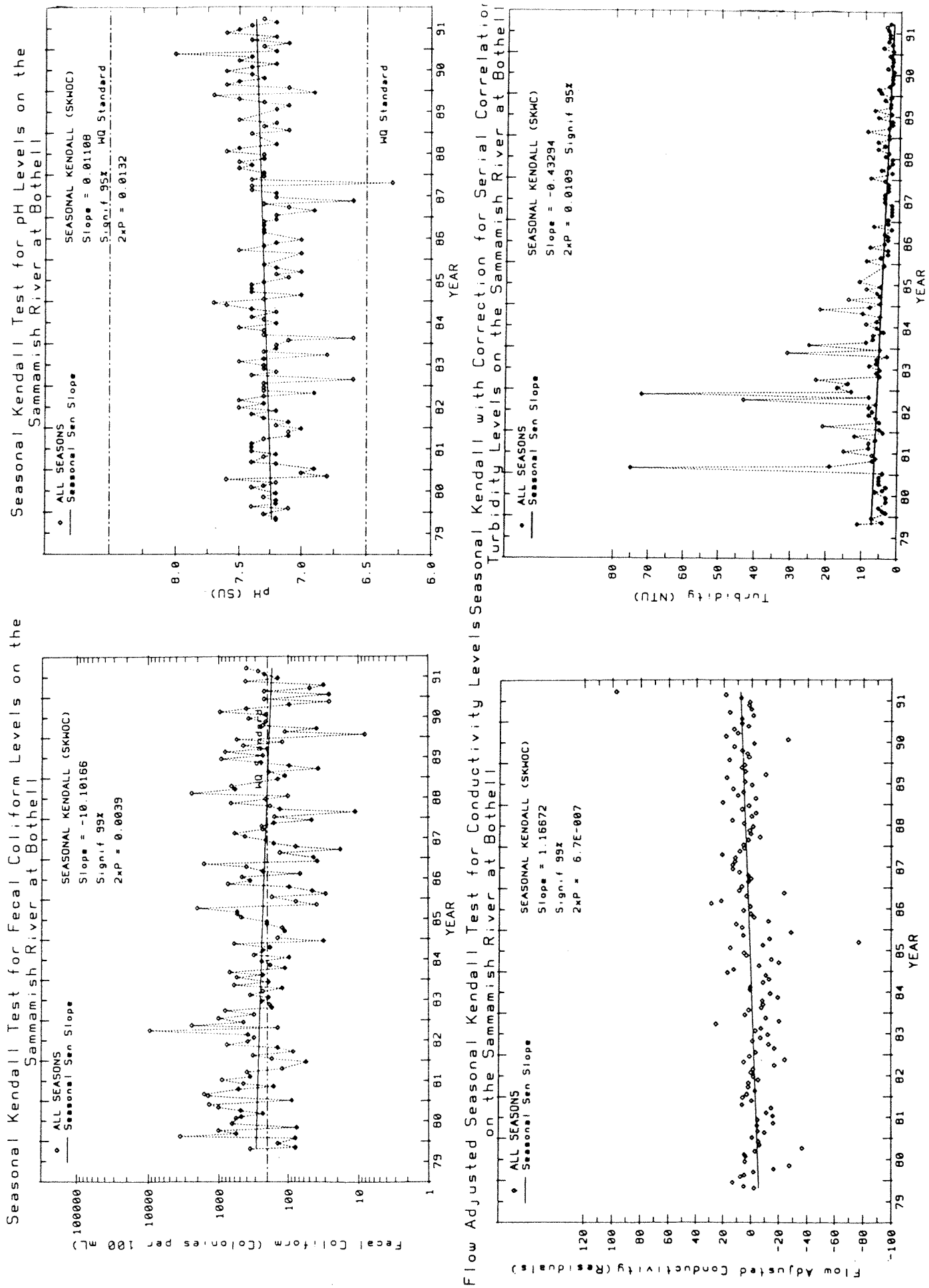


Figure 29. Significant trend graphs for the Sammamish River at Bothell.

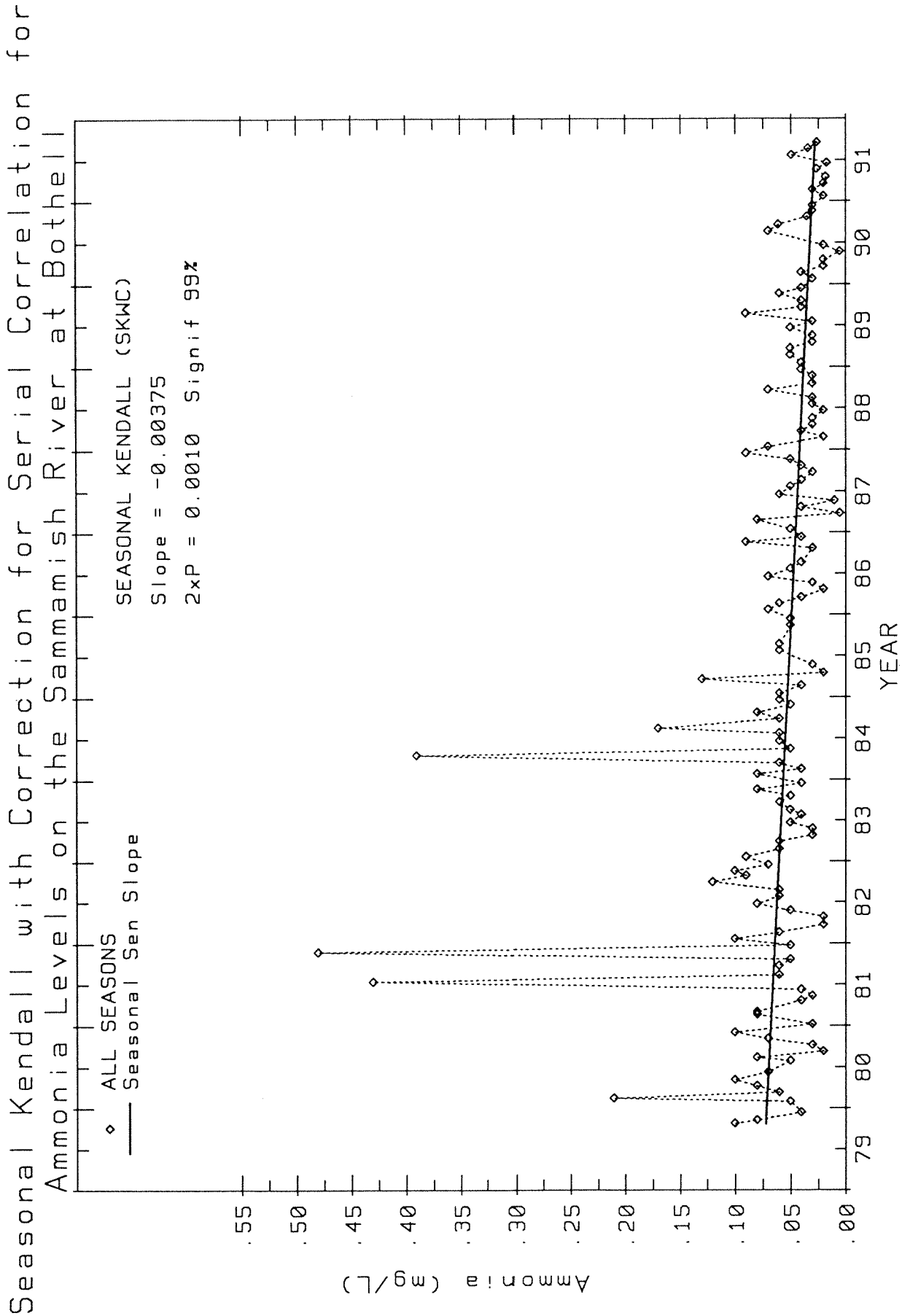


Figure 30. Significant trend graph for the Sammamish River at Bothell.

CEDAR RIVER AT RENTON

Wateryear 1991

Wateryear 1991 data are compared to the last 10 years of data in Figures 31, 32, and 33. As these figures show, levels for WY 1991 conventional parameters were generally within the expected historical ranges. Flow and nitrate+nitrite were sightly above, with the remaining parameters average to slightly below historical median levels. This station did not violate water quality standards in WY 1991.

Trends in Conventional Water Quality (10/79 - 09/91)

Significant SK Trends were detected for temperature, conductivity, turbidity, total phosphorus, and ammonia (see Table 12). Temperature, turbidity, and total phosphorus, however, showed serial correlation and the corresponding corrected trends were not significant. Conductivity showed an increasing flow adjusted trend with a 0.43% change per year. Ammonia levels express a declining trend with a 7.84% change per year (see Figure 34).

Overall Water Quality

The Cedar River Station appears to have some of the better water quality of the core stations inside of the Puget Sound Basin. This station has occasionally violated water quality standards over the last 10 years but most of these violations were 10-year maxima. The only exception is fecal coliform bacteria, where 25% of the samples exceeded standards from August through October.

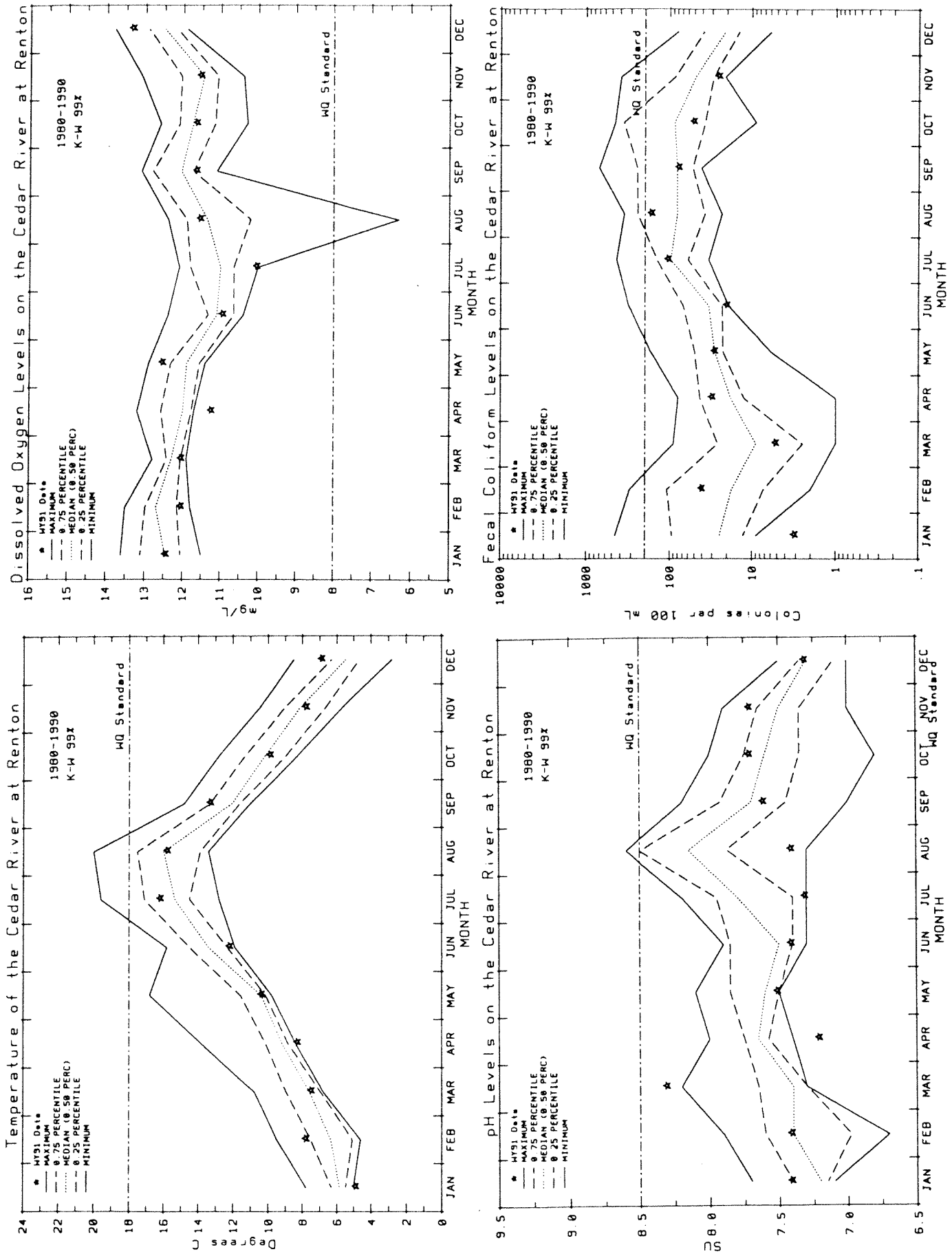


Figure 31. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Cedar River at Renton. (Water quality standard included.)

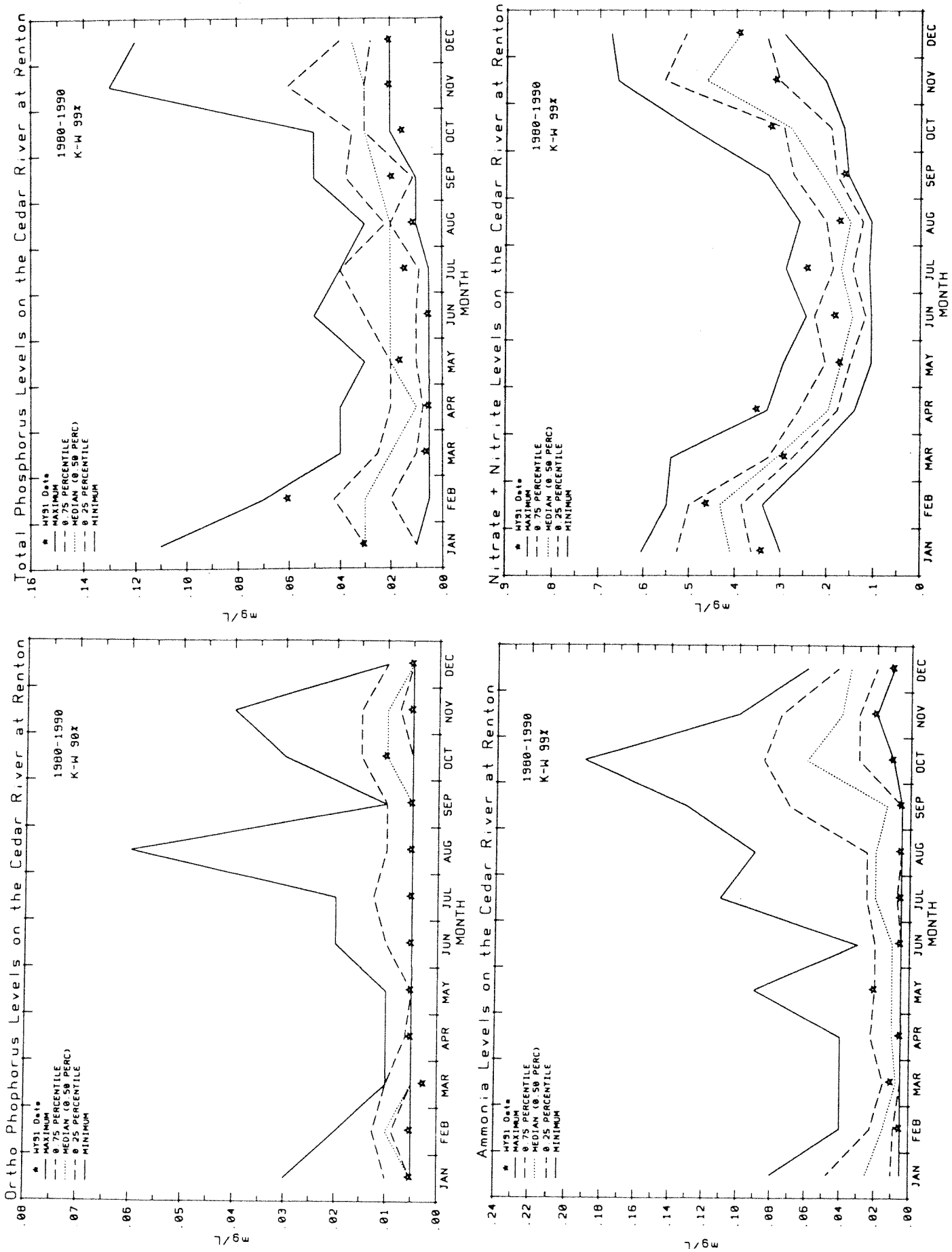


Figure 32. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Cedar River at Renton.

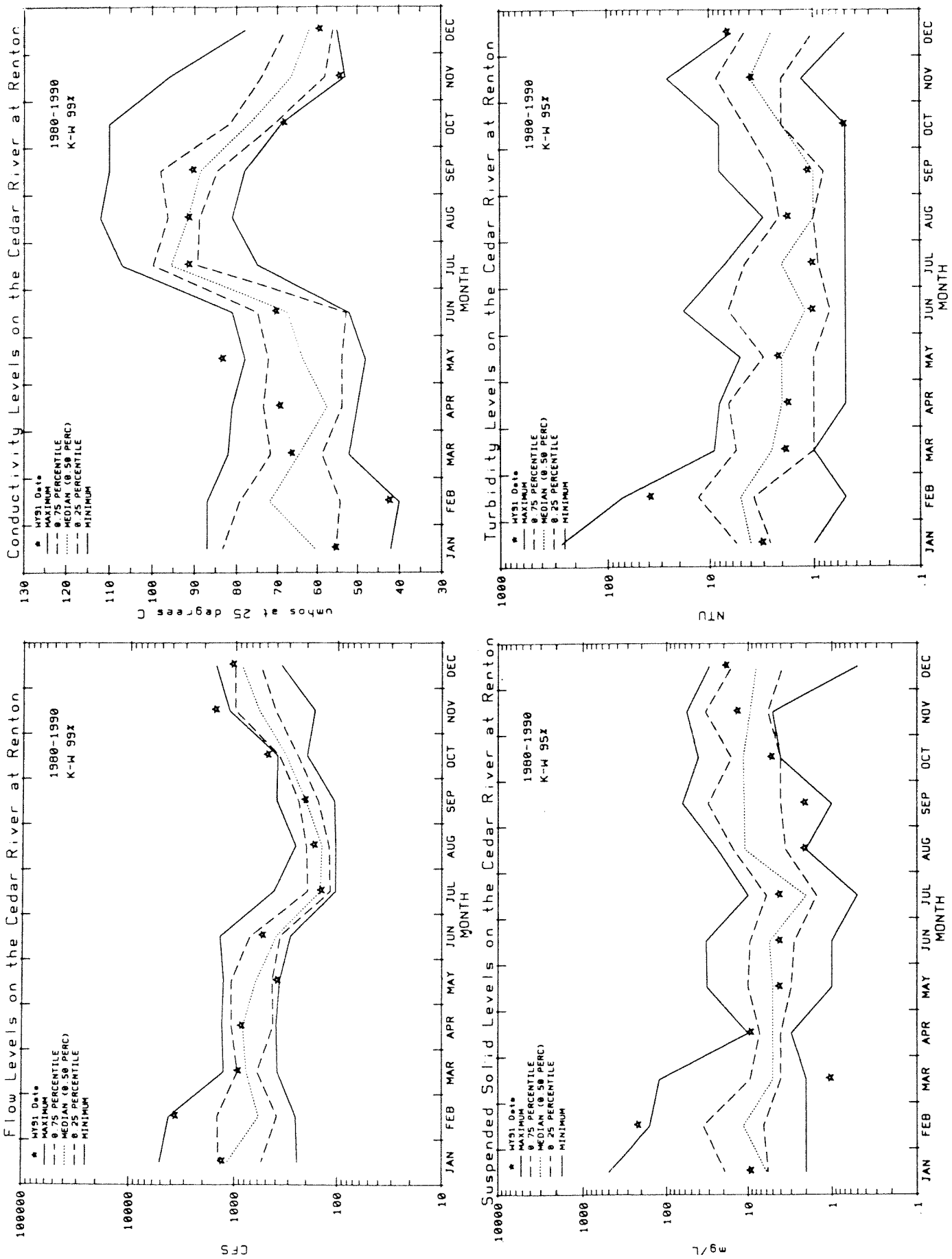


Figure 33. Wateryear 1991 flow, conductivity, suspended solids, and turbidity levels compared to the last 10 years of data on the Cedar River at Renton.

Table 12. Seasonal Kendall Trend information on the Cedar River at Renton (1979-1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Flow Adjusted Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperature	-0.0984	0.0492*	-0.0983	0.1477	99.0000	0.4663	2.8003	7.0000	-0.0625	0.0850	9.95	10.1771	Y		
Conductivity	0.0000	0.9209	0.0000	0.9350	90.0000	0.8385	6.4172	5.0000	0.3142	0.0377*	72	73.3194	Y	0.43 (10)	X
Dissolved Oxygen	-0.0191	0.2225	-0.0919	0.3642	80.0000	0.1765	0.8593	12.0000	-0.0179	0.3032	12	11.8549	Y		
pH	0.0000	0.7945	0.0000	0.7891	90.0000	0.2263	0.3107	12.0000	0.0015	0.8319	7.5	7.5781	Y		
Suspended Solids	0.1664	0.0934	0.1664	0.0995	90.0000	0.8718	17.6076	11.0000	0.1797	0.0566	6	16.9417	Y		
Turbidity	-0.0555	0.0217*	-0.0555	0.2261	95.0000	0.9575	4.9740	11.0000	-0.1143	0.0645	2	5.979	N		
Fecal Coliform	-0.4968	0.5407			NS 80	<.1					37	85.0709	Y		
Ammonia	-0.0021	6.8E-9**	-0.0021	0.0016**	95.0000	<.1					0.02	0.0268	Y	-7.84 (4)	X
Phosphorus Total	0.0000	0.0208*	0.0000	0.1729	95.0000	<.1					0.02	0.0262	Y		
Phosphorus Ortho	0.0000	0.1471	0.0000	0.3780	99.0000	<.1					0.005	0.0088	N		
Nitrate + Nitrite	-0.0020	0.4243	-0.0020	0.6014	80.0000	0.1532	0.1325	2.0000	-0.0023	0.1607	0.2775	0.2942	Y		
Flow	3.6419	0.1844	3.6419	0.4066	99.0000	NA					432.5	641.833	Y		

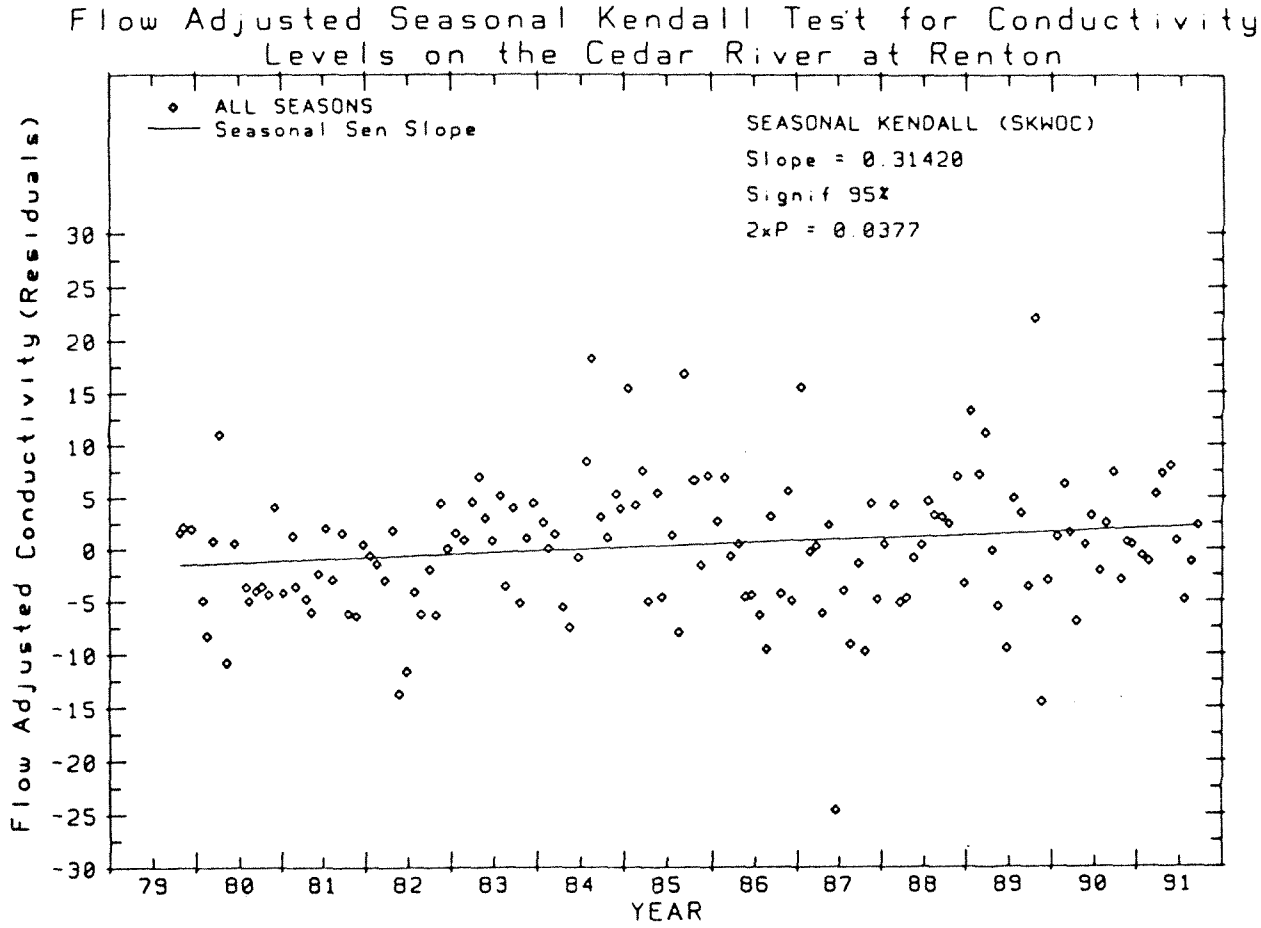
* Significant at 95%

** Siginificant at 99%

Uncorrected - Uncorrected for serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text



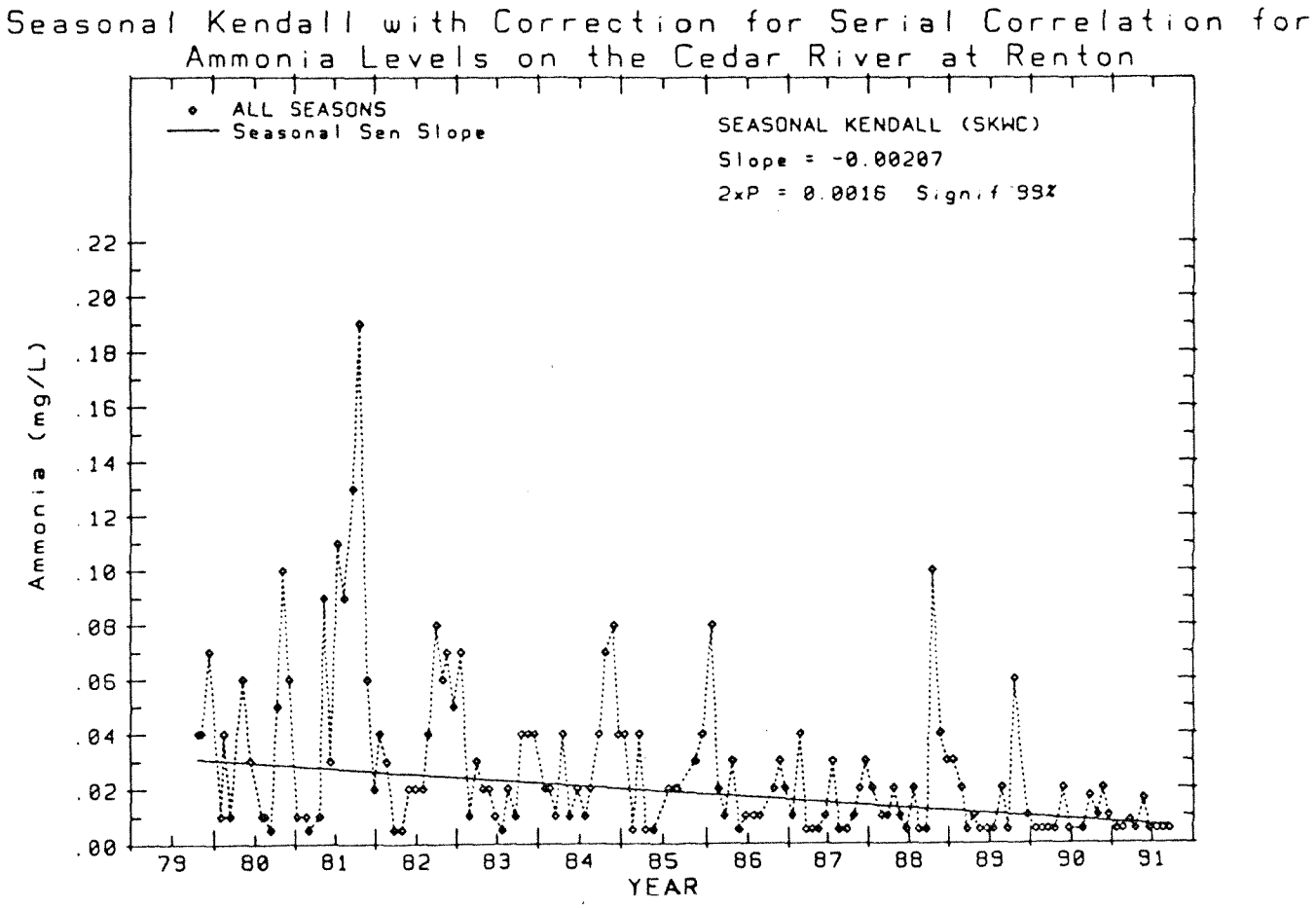


Figure 34. Significant trend graphs for the Cedar River at Renton.

GREEN RIVER AT TUKWILA

Wateryear 1991

In December 1990, the lower Green River core station was moved from river mile (RM) 8.3 (Green/Duwamish at Allentown) to RM 12.4 (Green River at Tukwila) in order to reduce tidal influence. This move was facilitated by the removal of the Renton Treatment Plant outfall from the Green River in 1987, one of the primary reasons for locating the station at RM 8.3. In WY 1991, the Green River at Tukwila violated water quality standards three times; twice for temperature (July, 18.7°C; and August, 19.9°C), and once for fecal coliform (February, 820 organisms per 100 mL).

Trends in Conventional Water Quality (10/79 - 09/91)

The removal of the Renton Treatment Plant outfall from the Green River in May of 1987, represents an appropriate situation to test for the presence of a step trend. The Wilcoxon-Mann-Whitney Test for step trends was used in place of the SK Trend analysis. The new core station on the Green River does not have the required data set for trend analysis, therefore, analysis will be completed on the station at RM 8.3. Table 13 shows the results of this analysis. Most parameters showed improvement after the removal of the outfall with the most significant change in nutrients levels. The corresponding trend plots for nutrients are included in Figure 35.

Overall Water Quality

The Green River at Allentown had some of the worst water quality as reflected in the six-year summaries in Appendix 7. When comparing the highest quarterly mean levels in Appendix 7, this station ranked in the top two in all but three of the conventional parameters. It should be pointed out that the six-year data summaries still reflect discharge by the Renton Treatment Plant. The presence of significant step trends with relatively large percent change for most of the parameters suggest that in-stream conditions have improved.

Table 13. Wilcoxon-Mann-Whitney Step Trend Test on the Green/Duwamish River at Allentown Bridge with the step based on the removal of the Renton Treatment Plant outfall (May 1987).

Parameter	Significance	▵ Y	Mean BR	% change
Temperature	95%	-0.50	11.4	-4.4
Conductivity	<80%			
Dissolved Oxygen	99%	0.60	9.6	6.3
pH	99%	0.10	7.2	1.4
Suspended Solids	<80%			
Turbidity	99%	-2.00	15.1	-13.3
Fecal Coliform	80%	-30.00	352.6	-8.5
Ammonia	99%	-0.50	0.655	-76.3
Total Phosphorus	99%	-0.090	0.186	-48.4
Ortho-phosphorus	99%	-0.070	0.122	-57.4
Nitrate+nitrite	99%	-0.065	0.468	-13.9
Flow	<80%	Limited data after removal		

▵ Y = Difference between mean before and after.

Mean BR = Mean before removal.

% change = ▵ Y/Mean BR x100 or % change due to removal of outfall.

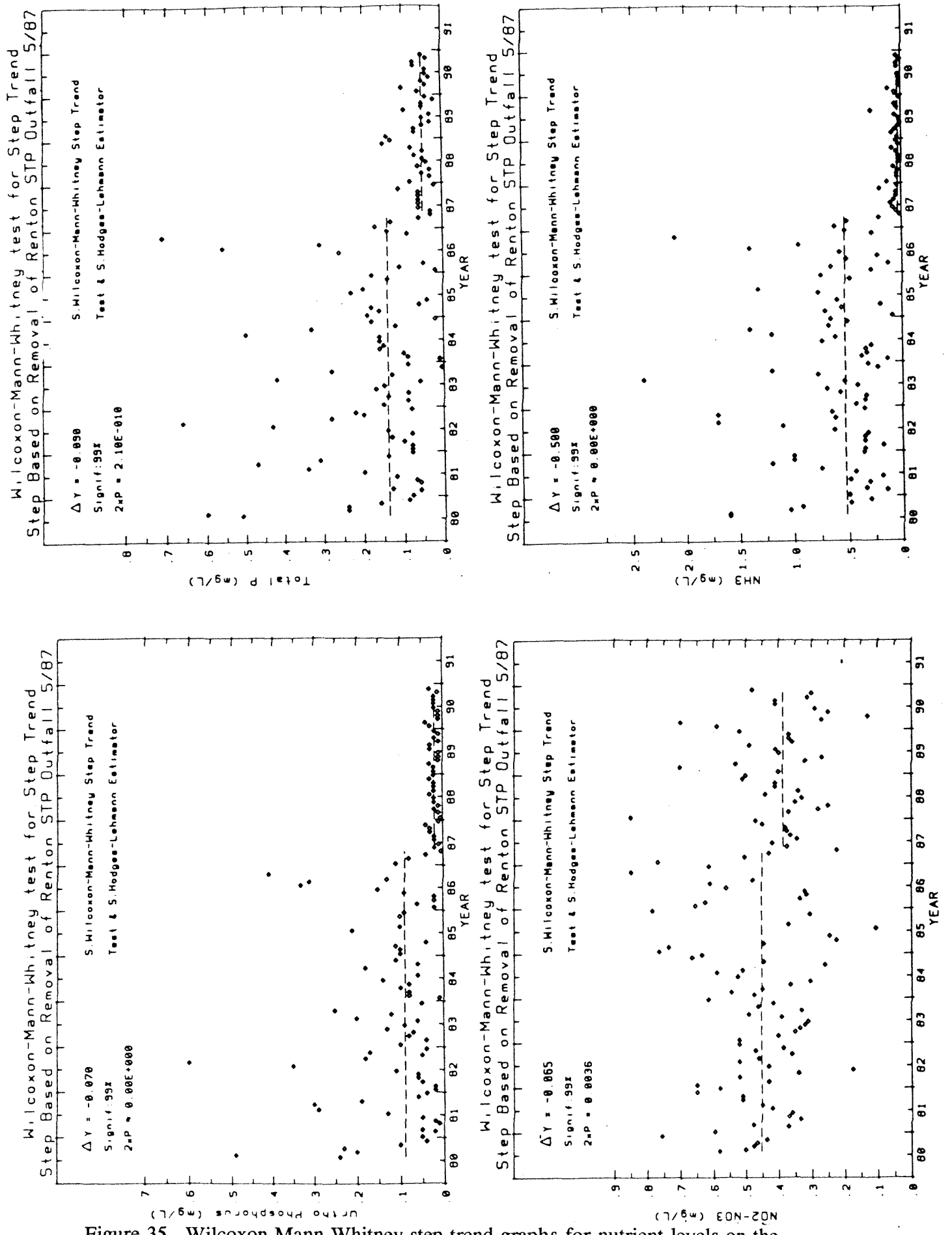


Figure 35. Wilcoxon-Mann-Whitney step trend graphs for nutrient levels on the Green/Duwamish River at Allentown.

GREEN RIVER NEAR KANASKAT

Wateryear 1991

This station is the second of two bench mark stations monitored inside of the Puget Sound Basin. Similar to the other bench mark station, Skagit River at Marblemount, most of the data except for temperature, D.O., pH, and nitrate+nitrite generated at this station were near the lower range of data found in the Puget Sound Basin. Wateryear 1991 data are compared to the last 10 years of data in Figures 36, 37, and 38.

Trends in Conventional Water Quality (10/79 - 09/91)

Seasonal Kendall Trend information is presented in Table 14. Significant decreasing trends were detected for turbidity and ammonia, however, both had median values fall below the working quantitation limit of the test.

Overall Water Quality

The Green River near Kanaskat Station has very good water quality with only occasional water quality violations over the last 10 years.

Upstream/Downstream Comparison

The removal of the Renton Sewage Treatment Plant (STP) outfall from the Green River make upstream/downstream comparisons over the entire data set difficult. Therefore, data at both stations were compared before (10/80 to 9/86) and after (5/87 to 12/90) the removal of the outfall. Table 15 presents results of the statistical analysis of the before and after paired water quality information. The individual data pairs for each parameter are presented graphically in Appendix 10.

The results of the Klotz's Statistical Test indicate (see Table 15) all parameters have significant (<95%) difference distribution and therefore only the Anderson-Darling Test was used for further statistical analysis (Wilcoxon-Mann-Whitney requires populations of similar shapes). The Anderson-Darling Test and the Anderson-Darling corrected for central tendency showed all of the parameters were statistically different at the $\geq$95% confidence level before the removal of the outfall. The after-paired data sets, with the exception of temperature, and the median corrected Anderson-Darling nitrate+nitrite were still statistically different. However, as presented graphically in Appendix 10, differences between mean concentration at Allentown Bridge and Kanaskat has decreased with the removal of the Renton STP outfall, especially for ammonia, total and ortho-phosphorus, fecal coliform, D.O., and percent saturation.

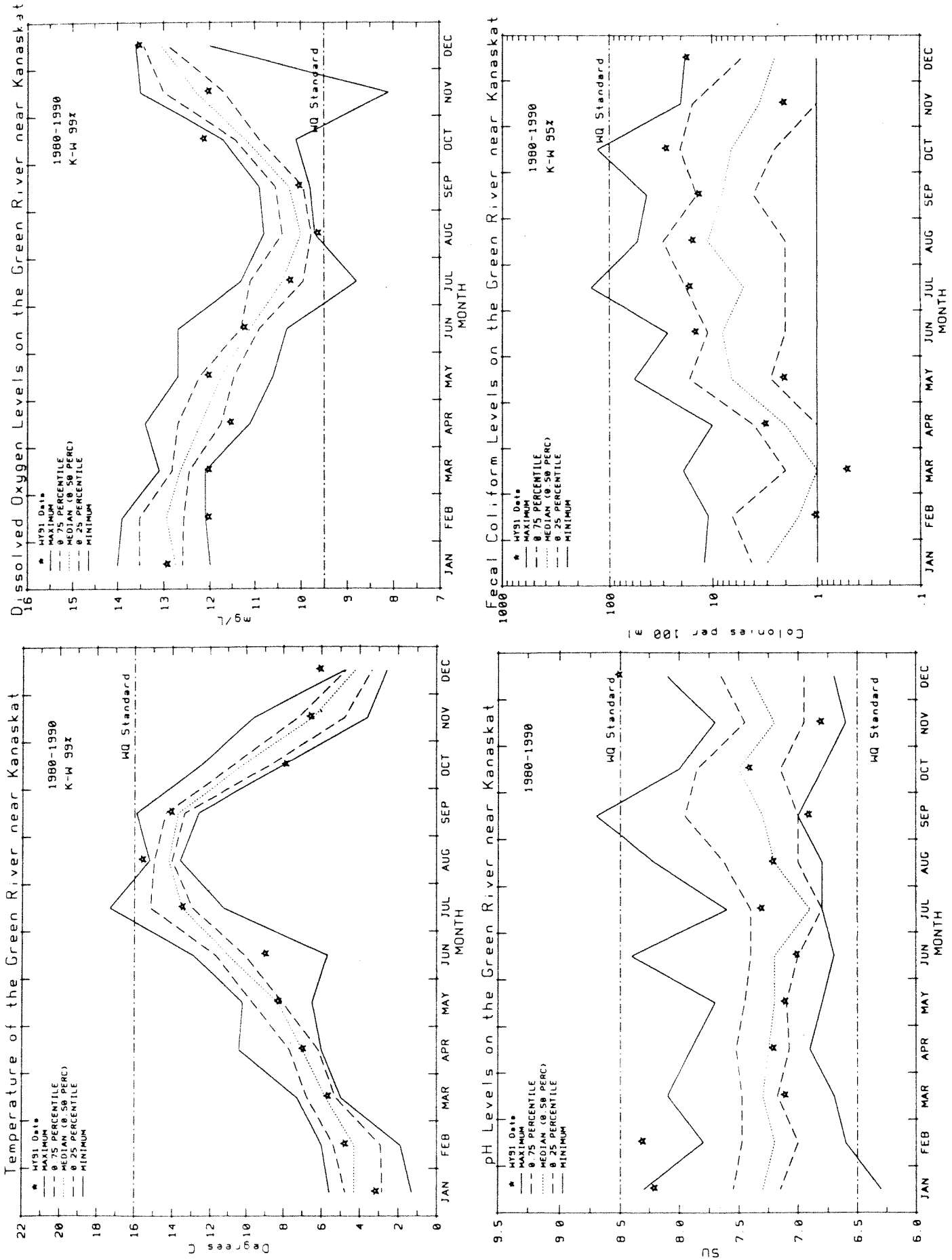


Figure 36. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Green River near Kanaskat. (Water quality standard included.)

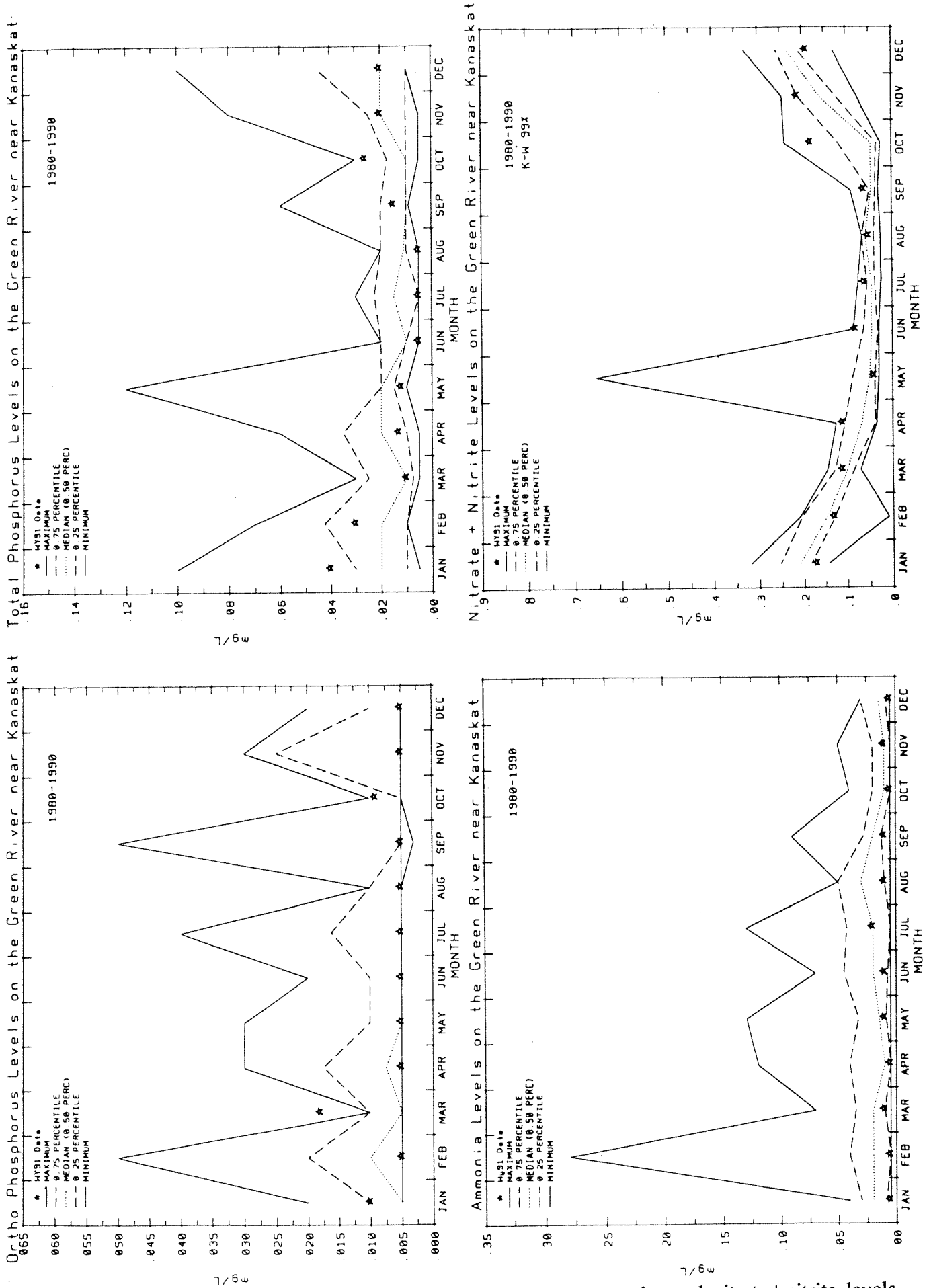


Figure 37. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Green River near Kanaskat.

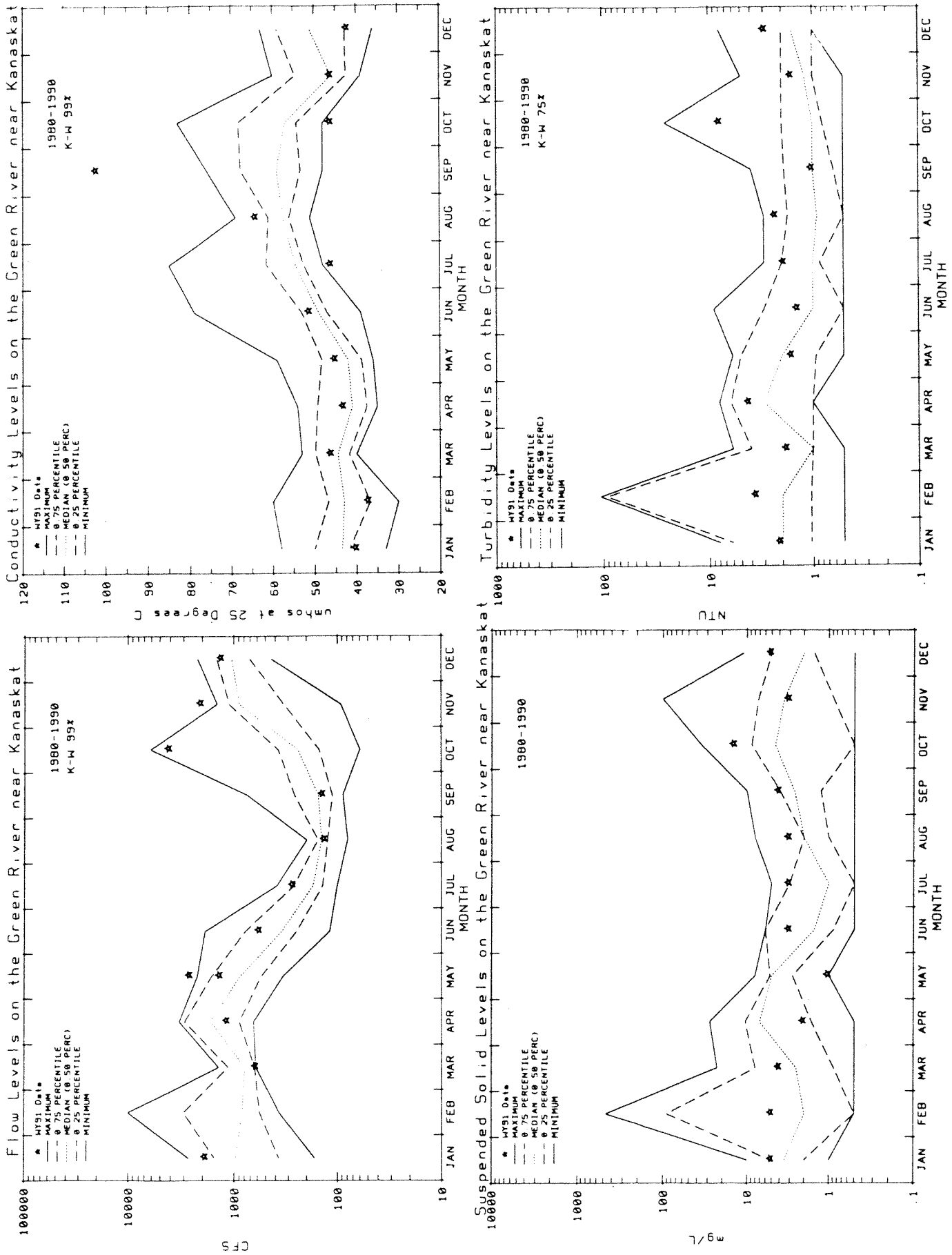


Figure 38. Wateryear 1991 flow, conductivity, suspended solids, and turbidity levels compared to the last 10 years of data on the Green River near Kanaskat.

Table 14. Seasonal Kendall Trend information on the Green River near Kanaskat (1979-1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Trend Probability	Median	Mean	Median Above Quanitation
	2	3	4	5	6	7	8	9	10	11	12	13	14
Temperature	0.0000	0.8882	0.0000	0.912	95.0000	0.4834	2.8831	12.0000	0.0539	0.3375	8.05	8.5743	Y
Conductivity	0.0000	0.9682			NS 80	0.4166	8.4712	7.0000	0.0026	0.9842	49	50.8759	Y
Dissolved Oxygen	-0.0055	0.5368	-0.0050	0.5632	99.0000	0.2953	1.2371	7.0000	-0.0166	0.3947	11.8	11.76	Y
pH	-0.0125	0.1598	-0.0125	0.2319	80.0000	<.1					7.3	7.3187	Y
Suspended Solids	0.0000	0.7620	0.0000	0.8031	90.0000	0.2352	41.7533	3.0000	-0.0619	0.3199	3	9.5312	Y
Turbidity	-0.0499	0.0087**			NS 80	0.6682	8.2888	8.0000	-0.1210	1.3E-5**	1.6	4.5075	N
Fecal Coliform	0.0000	0.9316	0.0000	0.9436	80.0000	0.1854	16.9756	11.0000	-0.0628	0.5894	4	9.6714	N
Ammonia	-0.0025	1.5E-11**	-0.0025	0.0036**	99.0000	<.1					0.013	0.0235	N
Phosphorus Total	0.0000	0.1285	0.0000	0.2612	99.0000	0.0956	0.0191	11.0000	-0.0004	0.2185	0.02	0.0209	Y
Phosphorus Ortho	0.0000	0.1675			NS 80	<.1					0.005	0.0095	N
Nitrate + Nitrite	-0.0013	0.0579	-0.0013	0.1056	95.0000	0.2025	0.0806	2.0000	-0.0017	0.0656	0.08	0.1142	N
Flow	0.6671	0.8275			NS 80	NA					612	936.2352	Y

* Significant at 95%

** Siginificant at 99%

Uncorrected - Uncorrected for Serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text

Table 15. Statistical analysis of before and after the removal of the Renton Treatment Plant Outfall from the Green River.

Parameter	Klotz Before	Klotz After	A-D L & S/R Before	A-D L & S/R After	A-D S/R only Before	A-D S/R only After
Temperature	99%	95%	99%	NS 99%	99%	NS 99%
Conductivity	99%	99%	99%	99%	99%	99%
Dissolved Oxygen	99%	99%	99%	99%	95%	95%
Percent Saturation	99%	99%	99%	99%	99%	95%
pH	95%	99%	99%	95%	95%	95%
Suspended Solids	99%	99%	99%	99%	99%	99%
Ammonia	99%	99%	99%	99%	99%	99%
Total Phosphorus	99%	99%	99%	99%	99%	95%
Ortho-phosphorus	99%	99%	99%	99%	99%	95%
Turbidity	99%	99%	99%	99%	99%	95%
Fecal Coliform	99%	99%	99%	99%	99%	95%
Nitrate+Nitrite	99%	99%	99%	99%	99%	NS 80%
Flow	99%	--	99%	--	99%	--

Klotz - Nonparametric test of equality of variances/spread (populations of equal shape. significant results indicate data set do not have equal variance and A-D should be used.

Paired Wilcoxon - Nonparametric test for difference between means (assumes populations of equal shape). Significant test indicated the mean are different.

Anderson-Darling - Nonparametric test for difference between distributions (does not assume populations of equal shape).

L & S/R - Compares Central tendencies and spread/variance between stations.

S/R only - Tests scale and range (spread/variance) only by normalizing the data by subtracting the median (removes central tendencies) and retesting the new data set. Compares spread/variance only.

NS - Not significant.

PUYALLUP RIVER AT MERIDIAN STREET BRIDGE

Wateryear 1991

Wateryear 1991 data are compared to the last 10 years of data in Figures 39, 40, and 41. As these figures show, WY 1991 was a highly variable year for most of the parameters. Fecal coliform, turbidity, pH, suspended solids, conductivity, and nutrients all ranged from lower to higher than normal historical median levels. Flow was the only remaining parameter to be above historical median levels; the rest were near or sightly below historical median levels. This station had five water quality violations in WY 1991, all of which were fecal coliform.

Trends in Conventional Water Quality (10/79 - 09/91)

Seasonal Kendall Trend information is provided in Table 16. Significant trends were detected for temperature, conductivity, nitrate+nitrite, turbidity, pH, and ammonia. Temperature, turbidity and ammonia show declining trends of -1.41, -1.39 and -4.17% per year. The ammonia trend, however, may reflect the reduction of noise in the method of analysis, especially near detection limits, and not reflect in-stream changes. Conductivity and nitrate+nitrite are increasing at about 0.87% and 7.74% per year, respectively (Figures 42 and 43). Trends for the remaining conventional parameters are limited by serial correlation or were not significant when flow adjusted concentrations were analyzed.

Overall Water Quality

The Puyallup River had some of the poorer water quality of core stations inside of Puget Sound. This station had some of the highest quarter mean concentrations for fecal coliform, suspended solids, total phosphorus, ortho-phosphorus, and turbidity levels for stations inside of the Puget Sound Basin over the last six years (Appendix 7). Elevated suspended solids and turbidity can be largely attributed to glacial till, a natural condition on the Puyallup River. Of the remaining parameters, elevated fecal coliform levels appear to be of the greatest concern. Fecal coliform levels will probably continue to be a problem at this station due to: 1) the absence of declining trend in the long- term data set; 2) the high number of fecal coliform violations over the last 10 years, and 3) the continuing high number of fecal coliform violations (five) in WY 1991.

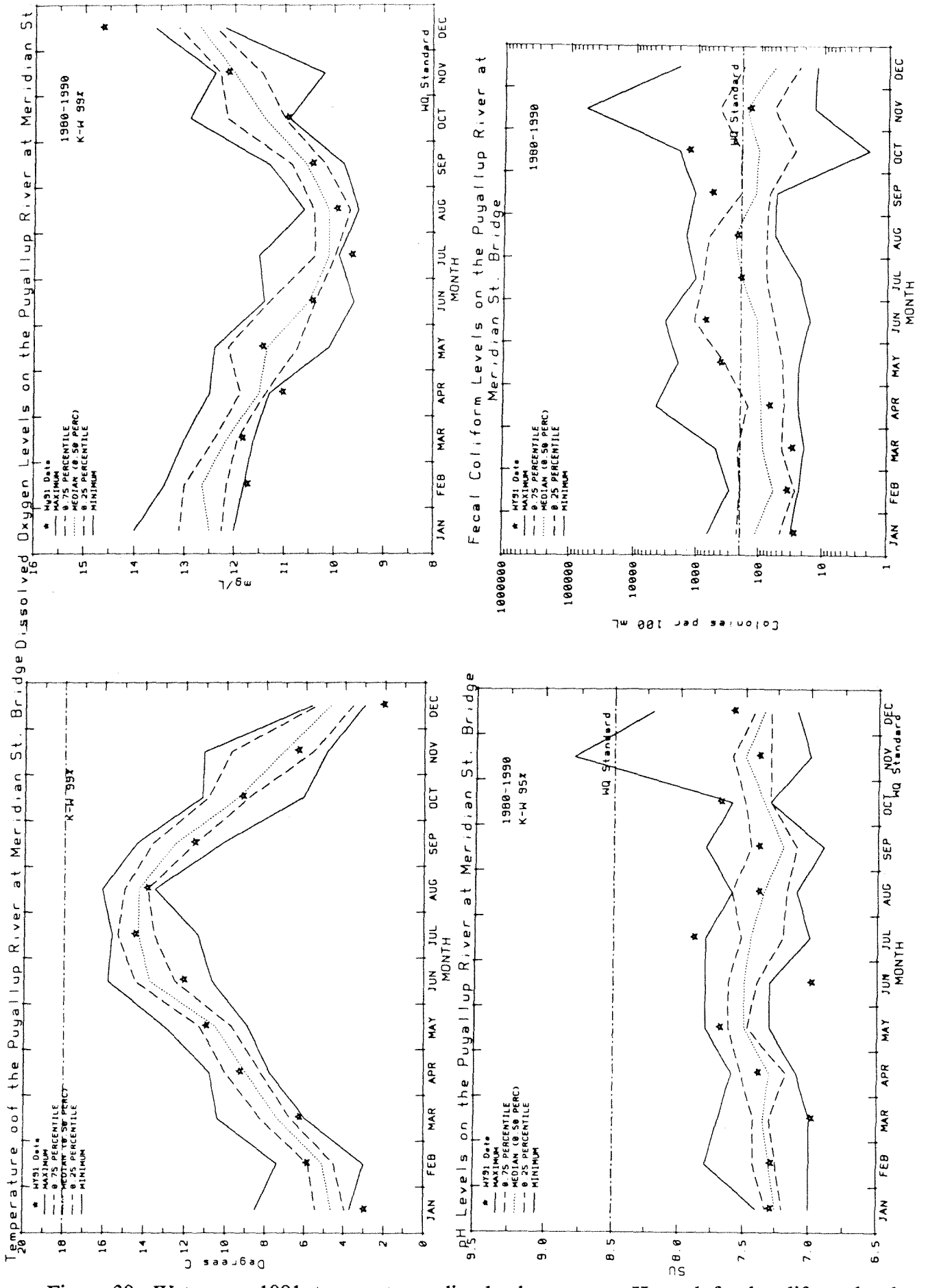


Figure 39. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Puyallup River at Meridian Street Bridge. (Water quality standard included.)

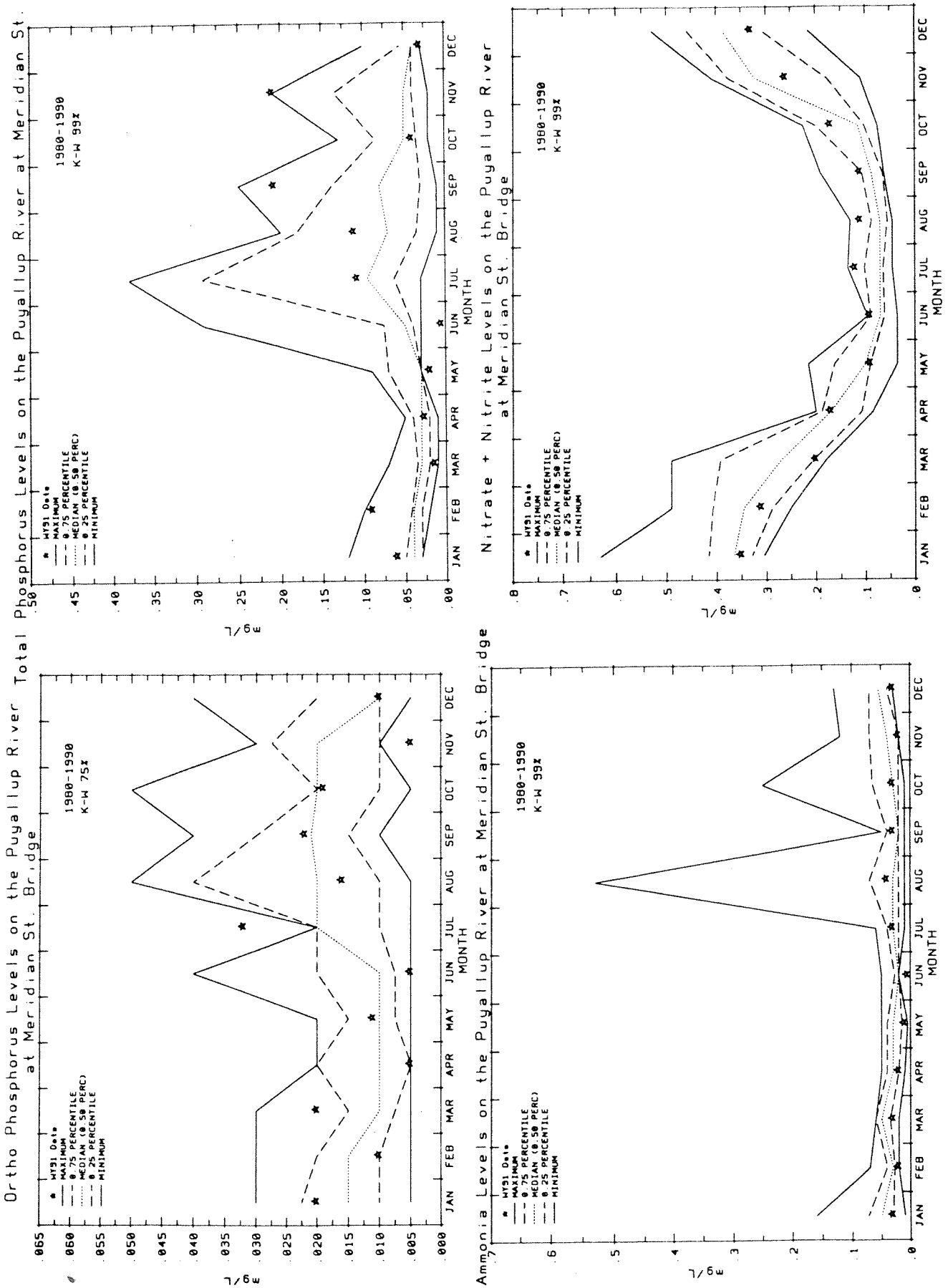


Figure 40. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Puyallup River at Meridian Street Bridge.

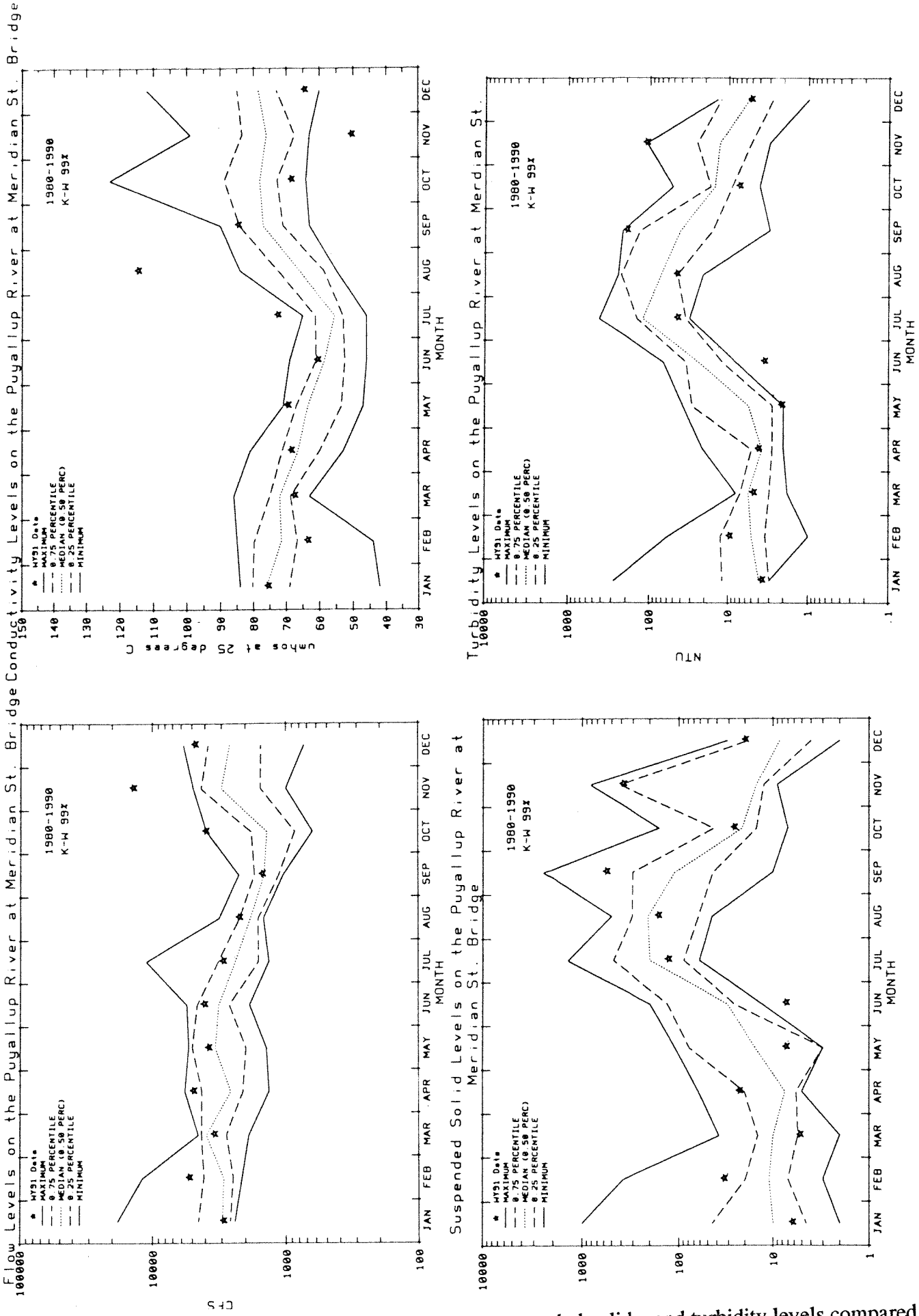


Figure 41. Wateryear 1991 flow, conductivity, suspended solids, and turbidity levels compared to the last 10 years of data on the Puyallup River at Meridian Street Bridge.

Table 16. Seasonal Kendall Trend information on the Puyallup River at Meridian Street Bridge (1979-1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Flow Adjusted Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperature	-0.1333	0.0002**	-0.1333	0.0328*	90.0000	<.1					9.5	9.4769	Y	-1.41 (4)	X
Conductivity	0.5996	.0032**			NS 80	0.5026	9.0871	13.0000	0.6086	0.0001**	70	69.8182	Y	0.87 (10)	X
Dissolved Oxygen	-0.0125	0.2136	-0.0125	0.4881	99.0000	<.1					11.5	11.4923	Y		
pH	0.0000	0.0301*			NS 80	<.1					7.4	7.3916	Y		X
Suspended Solids	0.1242	0.6764	0.1242	0.7342	90.0000	0.1649	256.8731	12.0000	0.4990	0.3716	20	112.2734	Y		
Turbidity	-0.4926	1.8E-5**	-0.4926	0.0240*	95.0000	0.2401	56.8608	12.0000	-0.3908 a) -0.3908	0.0605 0.1408	9	35.4691	Y	-1.39 (4)	X
Fecal Coliform	-3.4837	0.1459			NS 80	<.1					115	740.4225	Y		
Ammonia	-0.0018	3.5E-6**	-0.0018	0.0082**	80.0000	<.1					0.03	0.0432	Y	-4.17 (2)	X
Phosphorus Total	0.0014	0.0133*	0.0014	0.1065	80.0000	<.1					0.04	0.067	Y		
Phosphorus Ortho	0.0006	2.0E-5**	0.0006	0.0285*	99.0000	<.1					0.01	0.0161	N		
Nitrate + Nitrite	0.0036	0.0046**	0.0036	0.0084**	80.0000	<.1					0.17	0.2067	Y	1.74 (4)	X
Flow	-3.8245	0.8996			NS 80	NA					2695	3139.2101	Y		

* Significant at 95%

** Siginificant at 99%

Uncorrected - Uncorrected for Serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text

a) Flow Adjusted Seasonal Kendall Trend Results with Correction for Serial Correlation

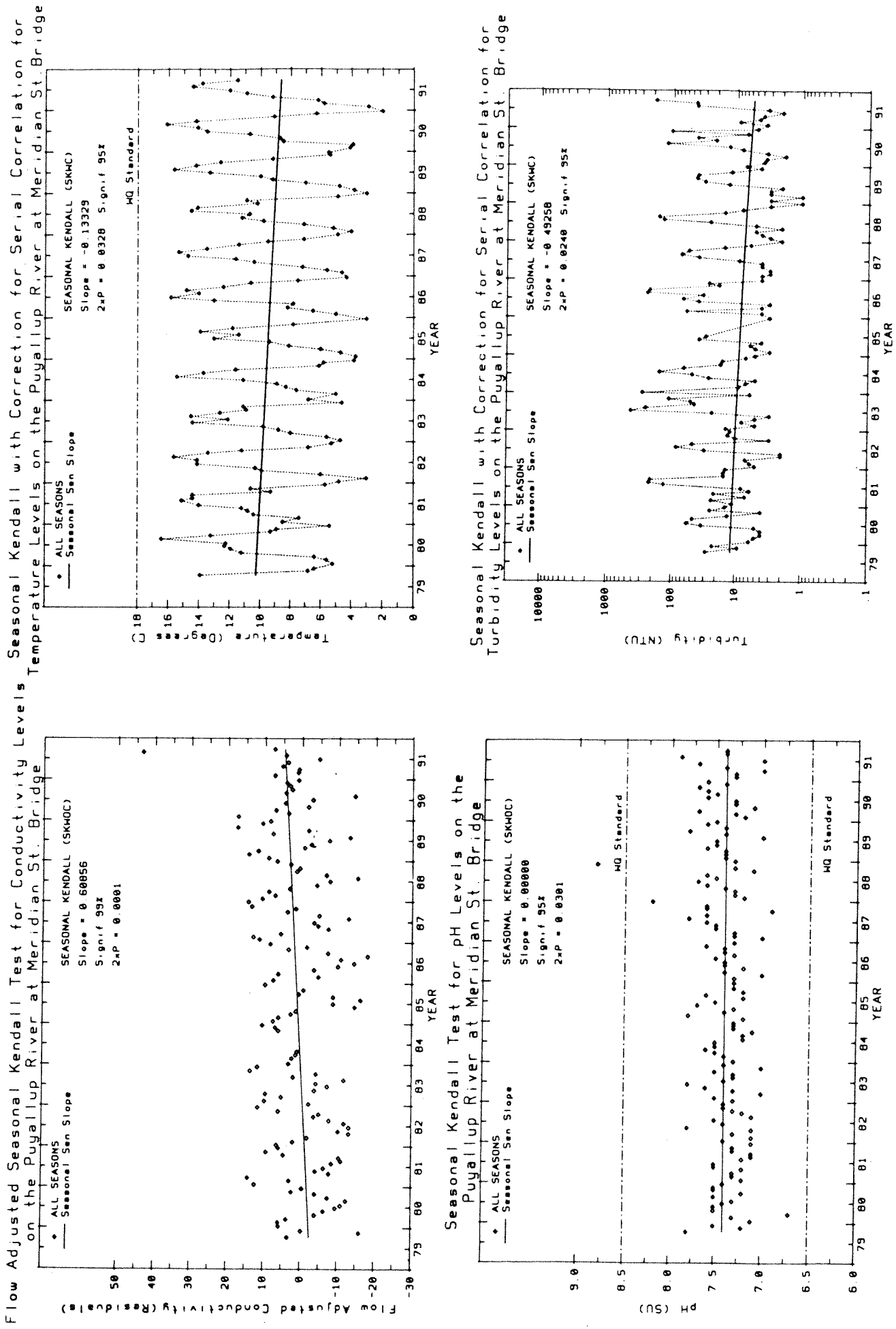
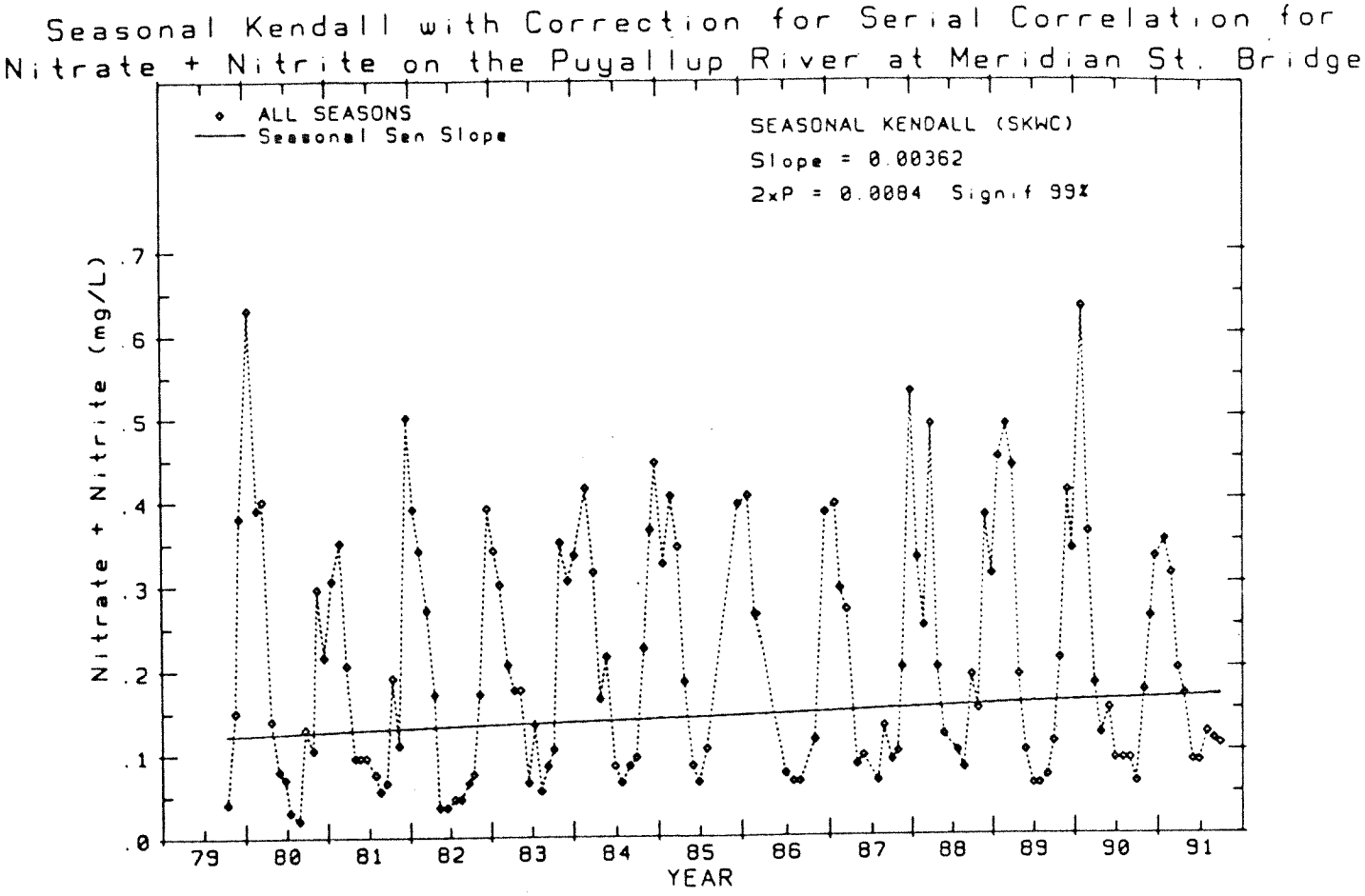


Figure 42. Significant trend graphs or the Puyallup River at Meridian Street Bridge.



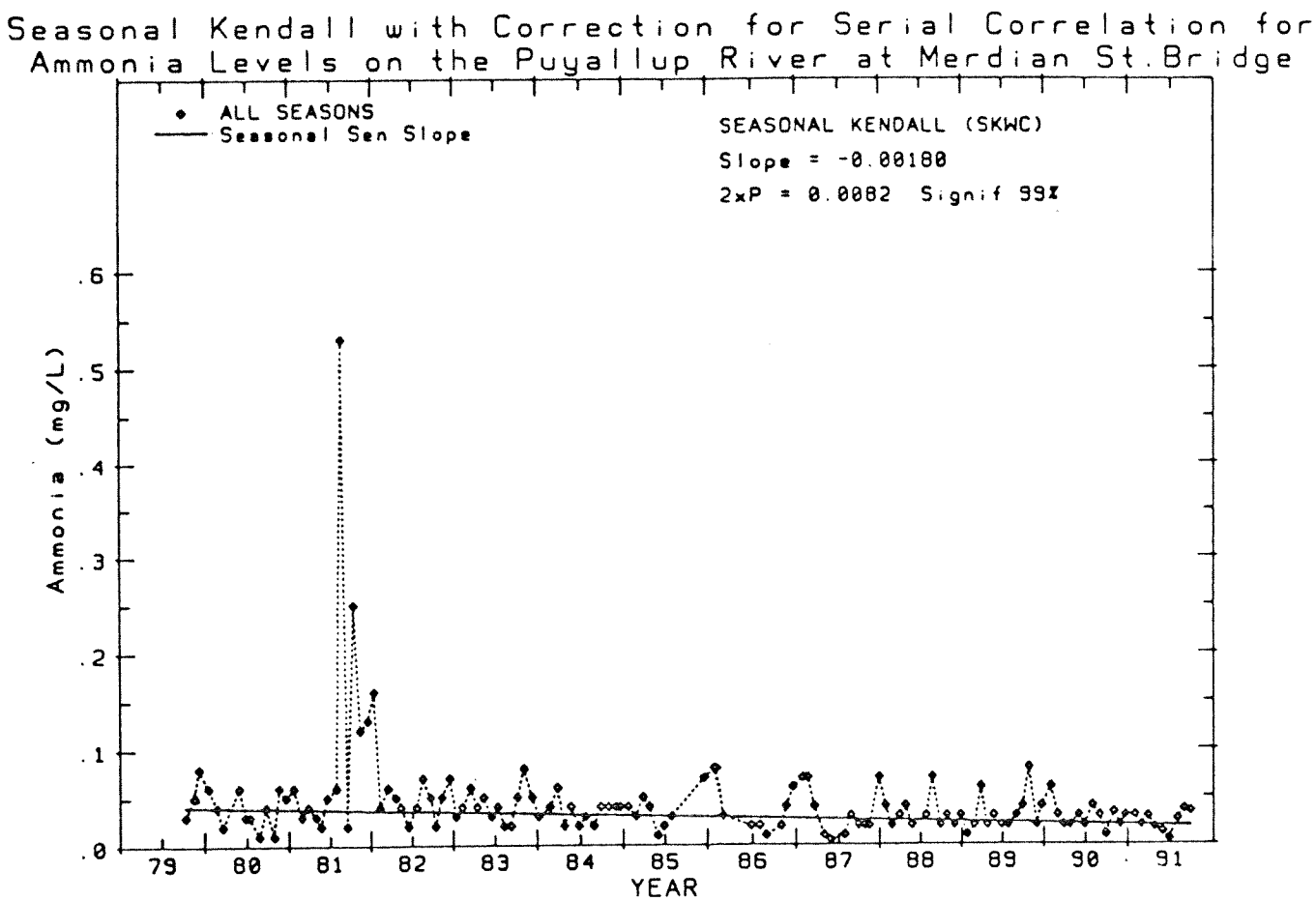


Figure 43. Significant trend graphs for the Puyallup River at Meridian Street Bridge.

NISQUALLY RIVER AT NISQUALLY

Wateryear 1991

Wateryear 1991 data are compared to the last 10 years of data in Figures 44, 45, and 46. As these figures show, levels for most conventional parameters were generally within the expected historical ranges with the exception of nitrate+nitrite levels. Nitrate+nitrite levels for WY 1991 were all at or above the historical median levels. Suspended solids, turbidity, conductivity, and pH were variable, ranging from sightly above to slightly below historical median levels. This station did not violate water quality standards in WY 1991.

Trends in Conventional Water Quality (10/79 - 09/91)

Table 17 presents SK Trend information for the Nisqually River at Nisqually. Significant trends were expressed in 6 of the 12 parameters tested. Conductivity and pH showed increasing trends of 0.82, and 0.41% change per year, respectively. Turbidity, fecal coliform, and ammonia, are declining at -1.76, -0.12 and -4.93% change per year. Nitrate+nitrite showed a strong serial correlation and also was correlated to stream flow (R^2 = 0.5433). The flow adjusted SK with correction for serial correlation indicated nitrate+nitrite levels are increasing at 2.03% per year (see Figures 47 and 48).

Overall Water Quality

The Nisqually River has some of the best water quality of the core stations inside of Puget Sound, with only occasional water quality violations over the last 10 years, most of which were also monthly maxima or minima. However, nitrate+nitrite levels do appear to be increasing.

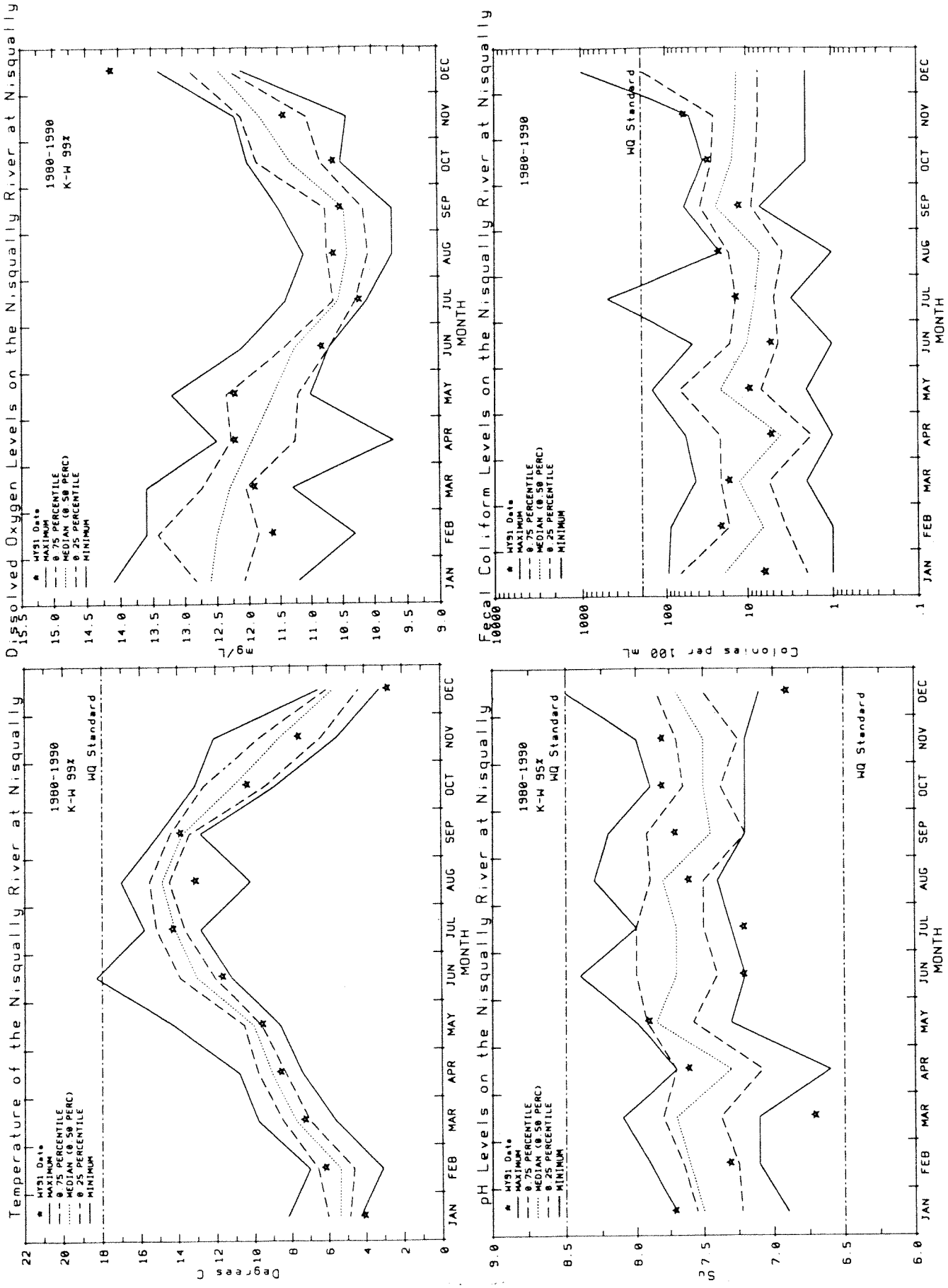


Figure 44. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Nisqually River at Nisqually. (Water quality standard included).

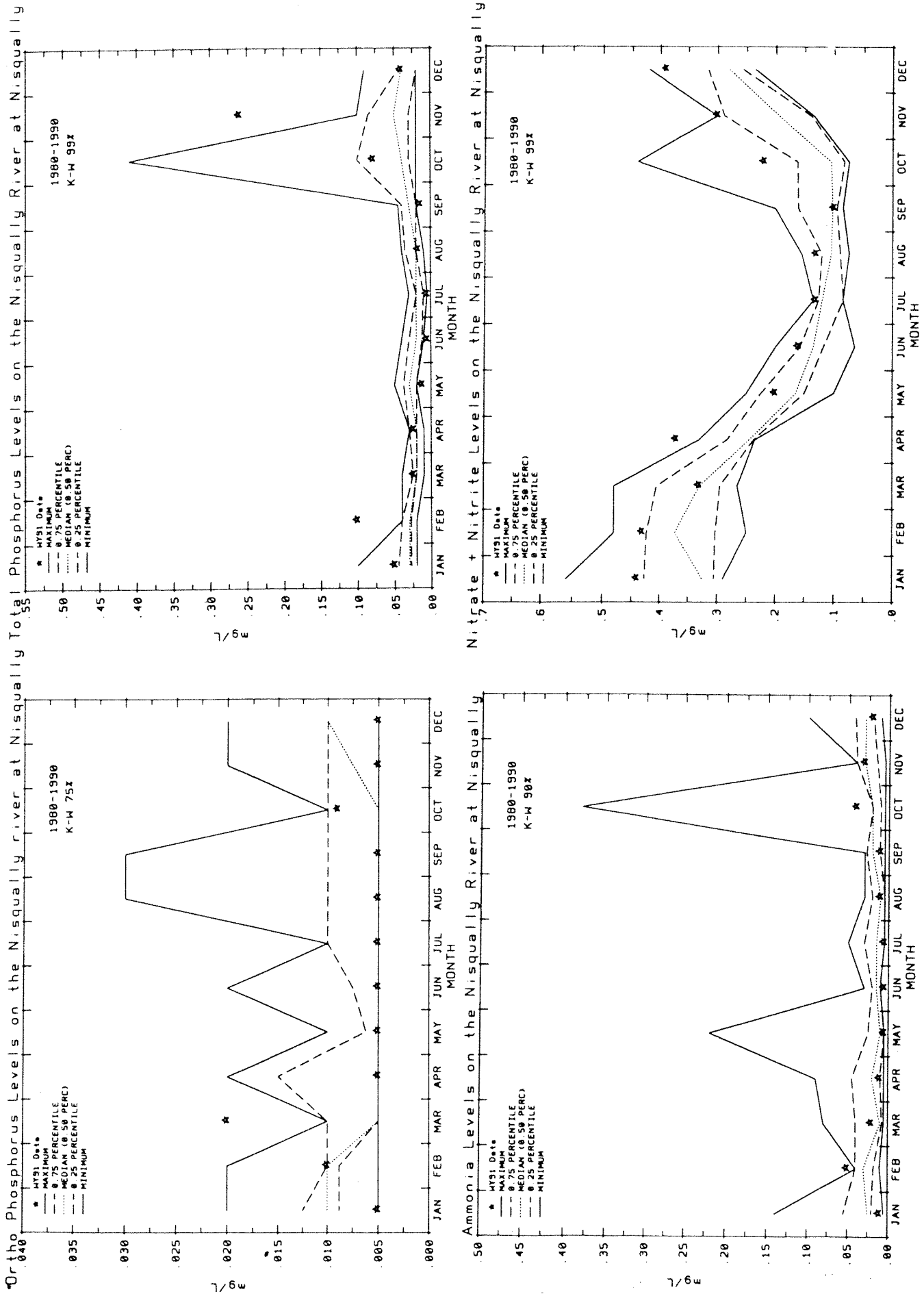


Figure 45. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Nisqually River at Nisqually.

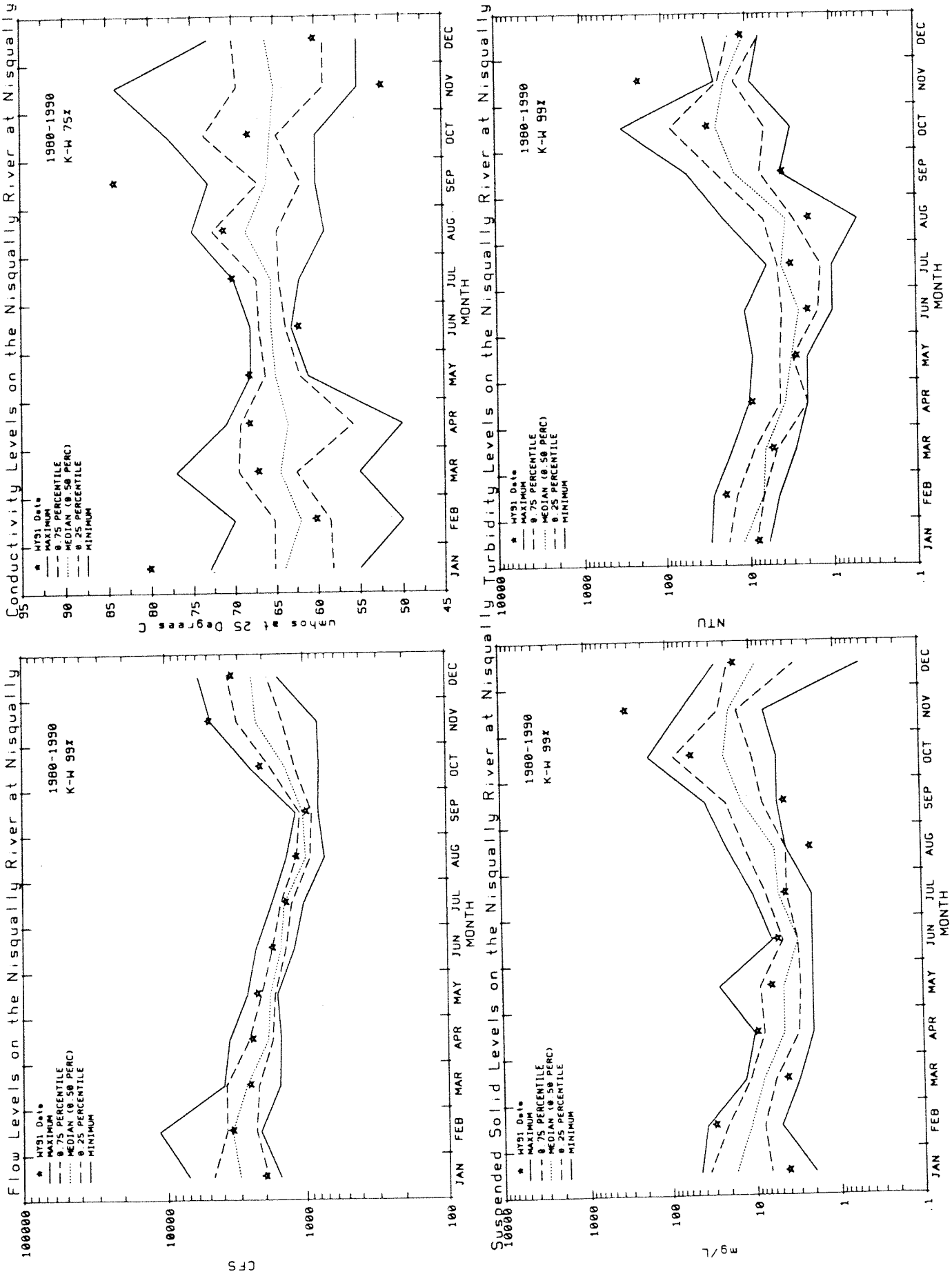


Figure 46. Wateryear 1991 flow, conductivity, suspended solid, and turbidity levels compared to the last 10 years of data on the Nisqually River at Nisqually.

Table 17. Seasonal Kendall Trend information on the Nisqually River at Nisqually (1979-1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Flow Adjusted Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperature	-0.0142	0.7036	-0.0142	0.8137	95.0000	0.5919	2.3529	11.0000	-0.0077	0.8173	9.8	9.8413	Y		
Conductivity	0.5672	2.1E-6**			NS 80	0.2981	4.9867	7.0000	0.5337	3.1E-6**	65	64.916	Y	0.82 (10)	X
Dissolved Oxygen	0.0166	0.2718	0.0166	0.5570	99.0000	0.3742	0.7982	11.0000	0.0221	0.2344	11.5	11.56	Y		
pH	0.0331	0.0001**			NS 80	0.1000	0.3205	7.0000	0.0309	0.0001**	7.6	7.558	Y	0.41 (10)	X
Suspended Solids	0.0000	0.5676	0.0000	0.5944	90.0000	0.1608	33.3583	13.0000	0.1774	NS 80	8	16.589	Y		
Turbidity	-0.2486	0.0003**	-0.2486	0.0164*	95.0000	<.1					7	14.110	Y	-1.76 (4)	X
Fecal Coliform	-0.7297	0.0414*			NS 80	<.1					12	33.574	Y	-0.12 (2)	X
Ammonia	-0.0014	1.5E-6**			NS 80	<.1					0.02	0.0284	Y	-4.93 (2)	X
Phosphorus Total	0.0000	0.3465	0.0000	0.4996	99.0000	<.1					0.03	0.04	Y		
Phosphorus Ortho	0.0000	0.1040	0.0000	0.3467	95.0000	<.1					0.005	0.0092	N		
Nitrate + Nitrite	0.0036	0.0004**	0.0036	0.0512	90.0000	0.5433	0.0815	12.0000	0.0046 a) 0.0046	0.0014 ** 0.0153*	0.225	0.2269	Y	2.03 (10*)	X
Flow	-1.4987	0.8333			NS 80	NA					1775	2202.3	Y		

* Significant at 95%

** Siginificant at 99%

Uncorrected - Uncorrected for Serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text

a) Flow Adjusted Seasonal Kendall Trend Results with Correction for Serial Correlation

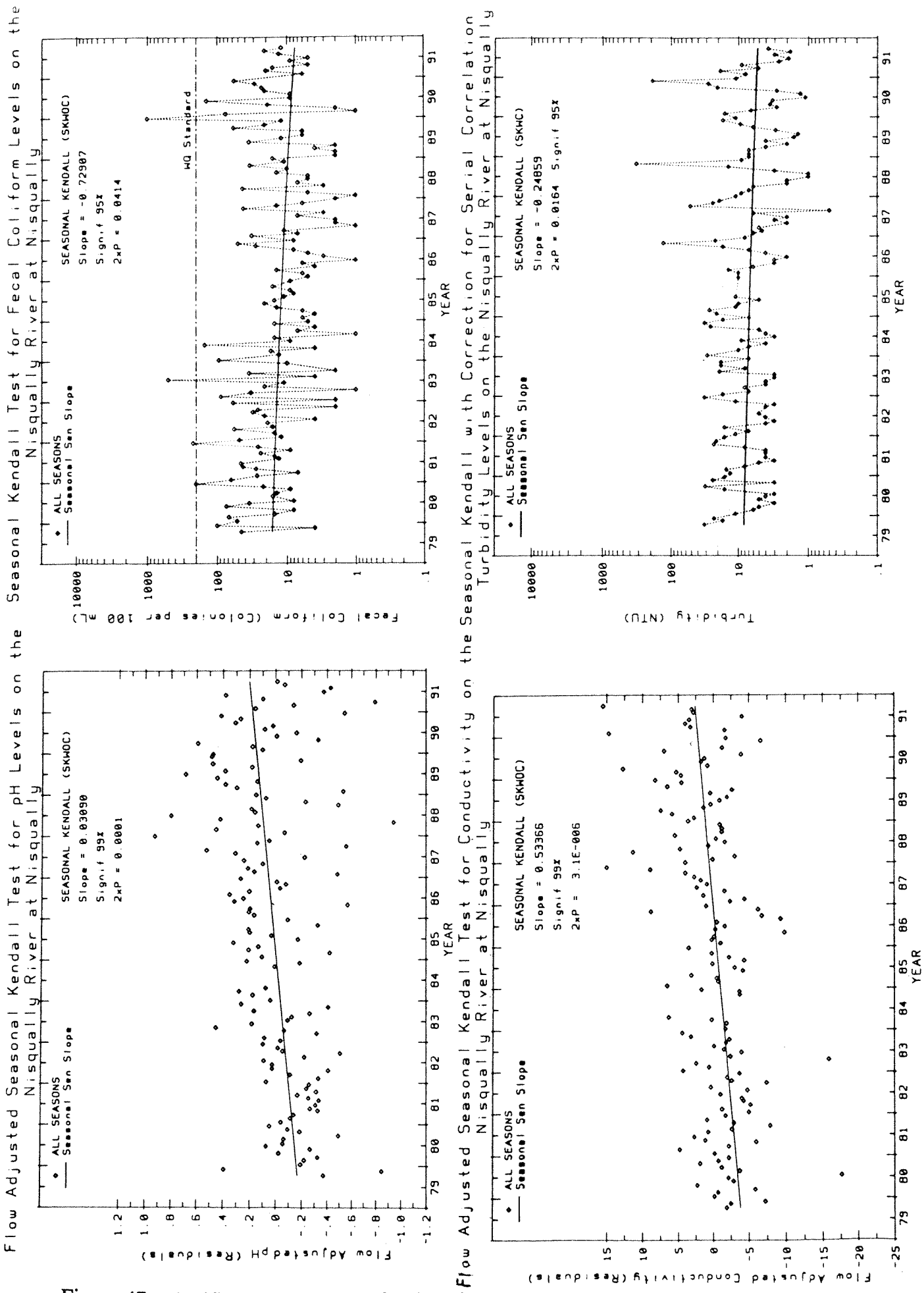
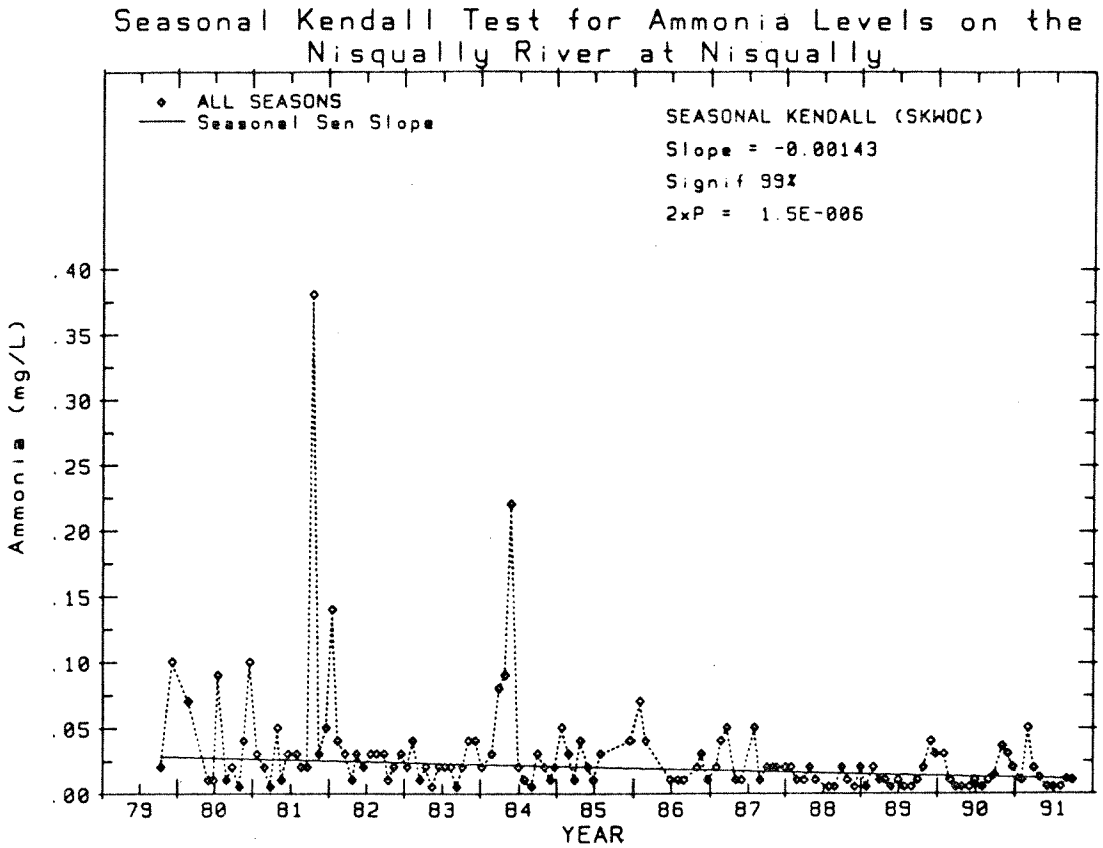


Figure 47. Significant trend graphs for the Nisqually River at Nisqually.



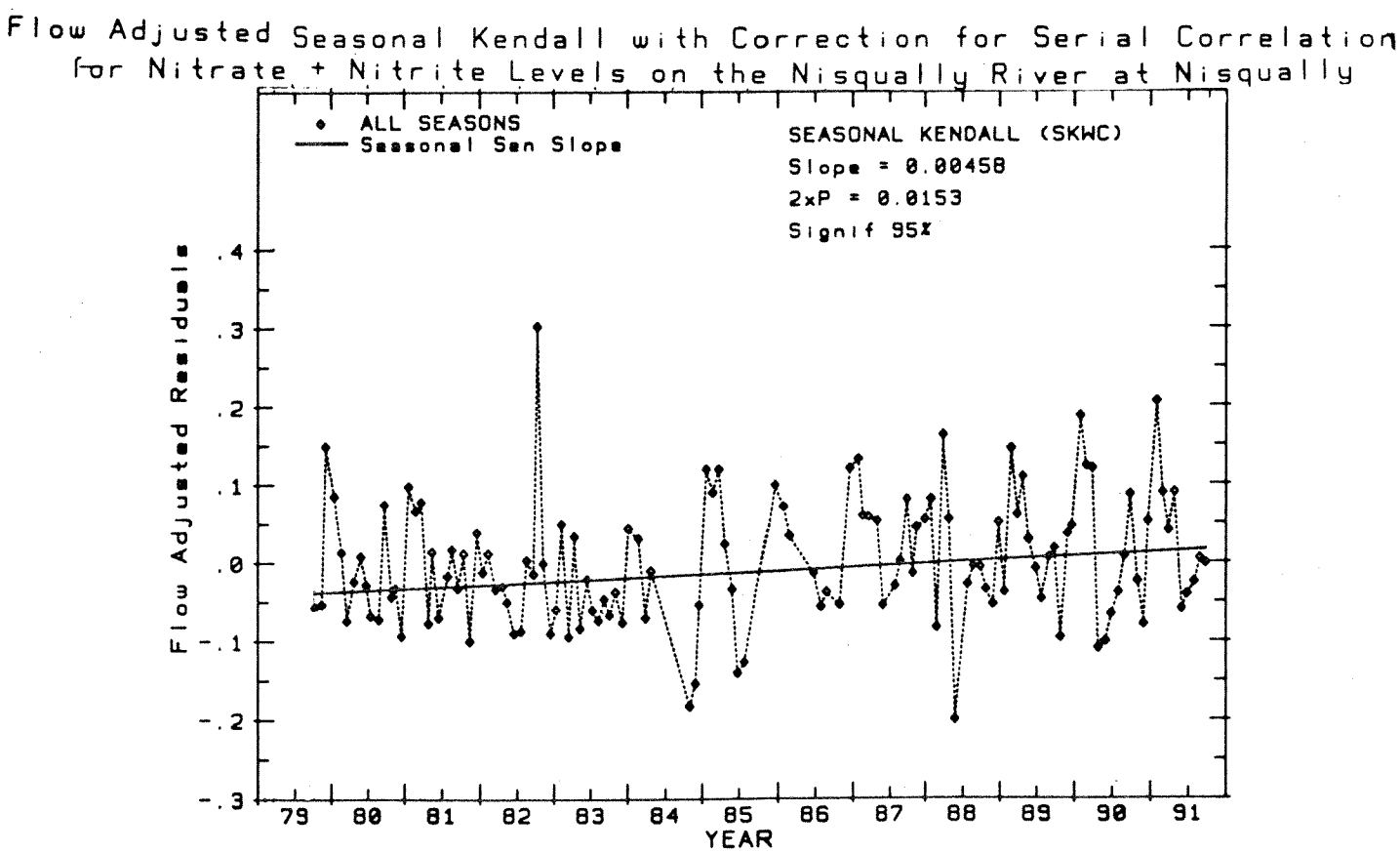


Figure 48. Significant trend graphs for the Nisqually River at Nisqually.

SKOKOMISH RIVER NEAR POTLATCH

Wateryear 1991

Wateryear 1991 data are compared to the last 10 years of data in Figures 49, 50, and 51. For WY 1991 fecal coliform, flow, pH, conductivity, and D.O. levels were variable. Nitrate+nitrite levels for June, July, and August set three new 10-year monthly maximums and nine of the 12 samples for WY 1991 were above historical median levels. Temperature, turbidity, ammonia, and suspended solids were at to slightly above historical median levels when compared to the last 10 years of data. Total and ortho-phosphorus were the only parameters below normal. In WY 1991, this station had only one pH value in violation of state water quality standards.

Trends in Conventional Water Quality (10/79 - 09/91)

Table 18 presents SK Trend information for the Skokomish River. Conductivity, fecal coliform, ammonia, total and ortho-phosphorus, and nitrate+nitrite all expressed significant trends, however, all except conductivity had medians below the working quantitation limit or were not significant when flow adjusted. Flow adjusted conductivity is increasing at 0.78% per year (see Figure 52).

Overall Water Quality

The Skokomish River is among the core stations that had the best water quality inside of Puget Sound. This river has only occasionally violated water quality standards over the past 10 years.

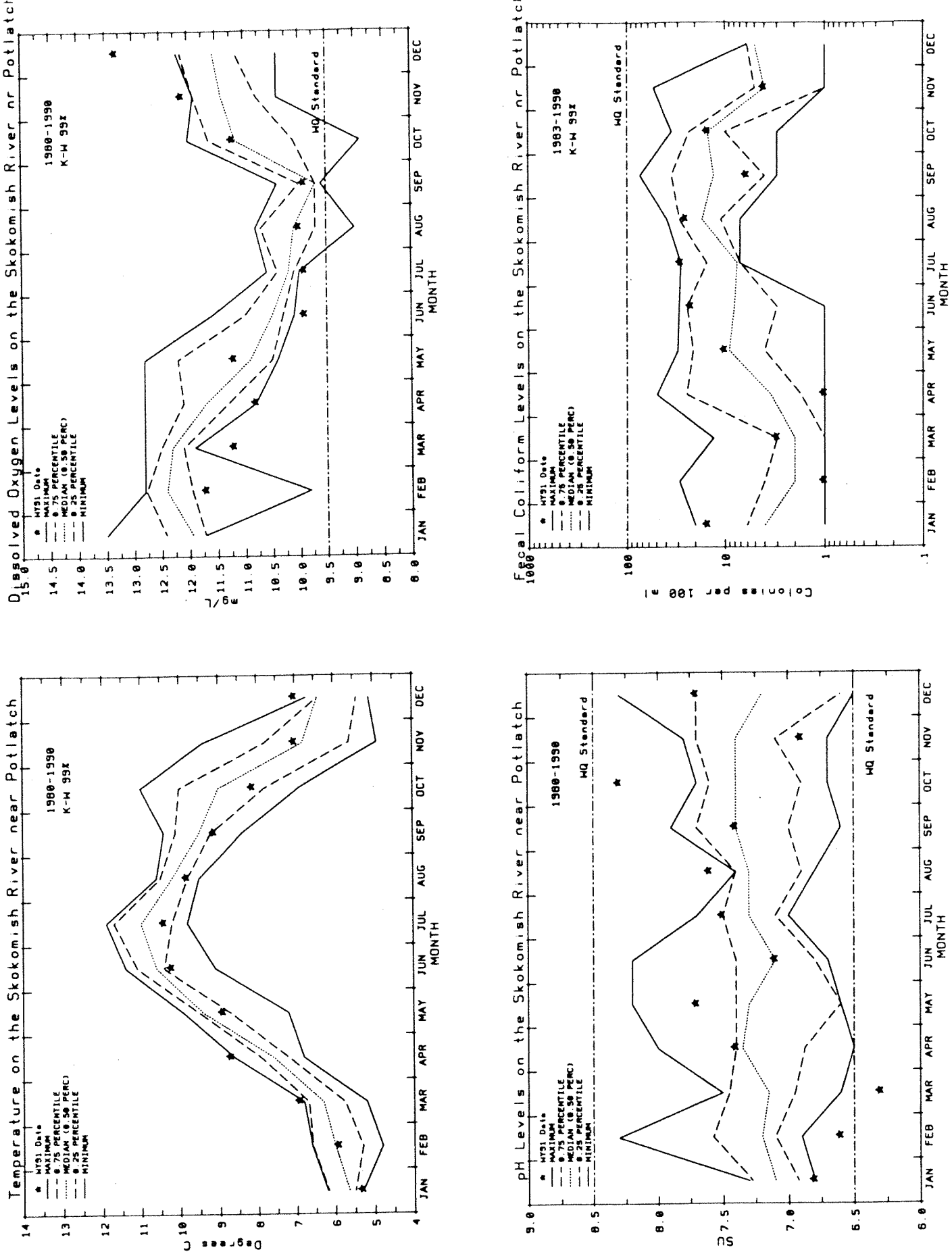


Figure 49. Wateryear 1991 temperature, dissolved oxygen, pH, and fecal coliform levels compared to the last 10 years of data on the Skokomish River near Potlatch. (Water quality standard included.)

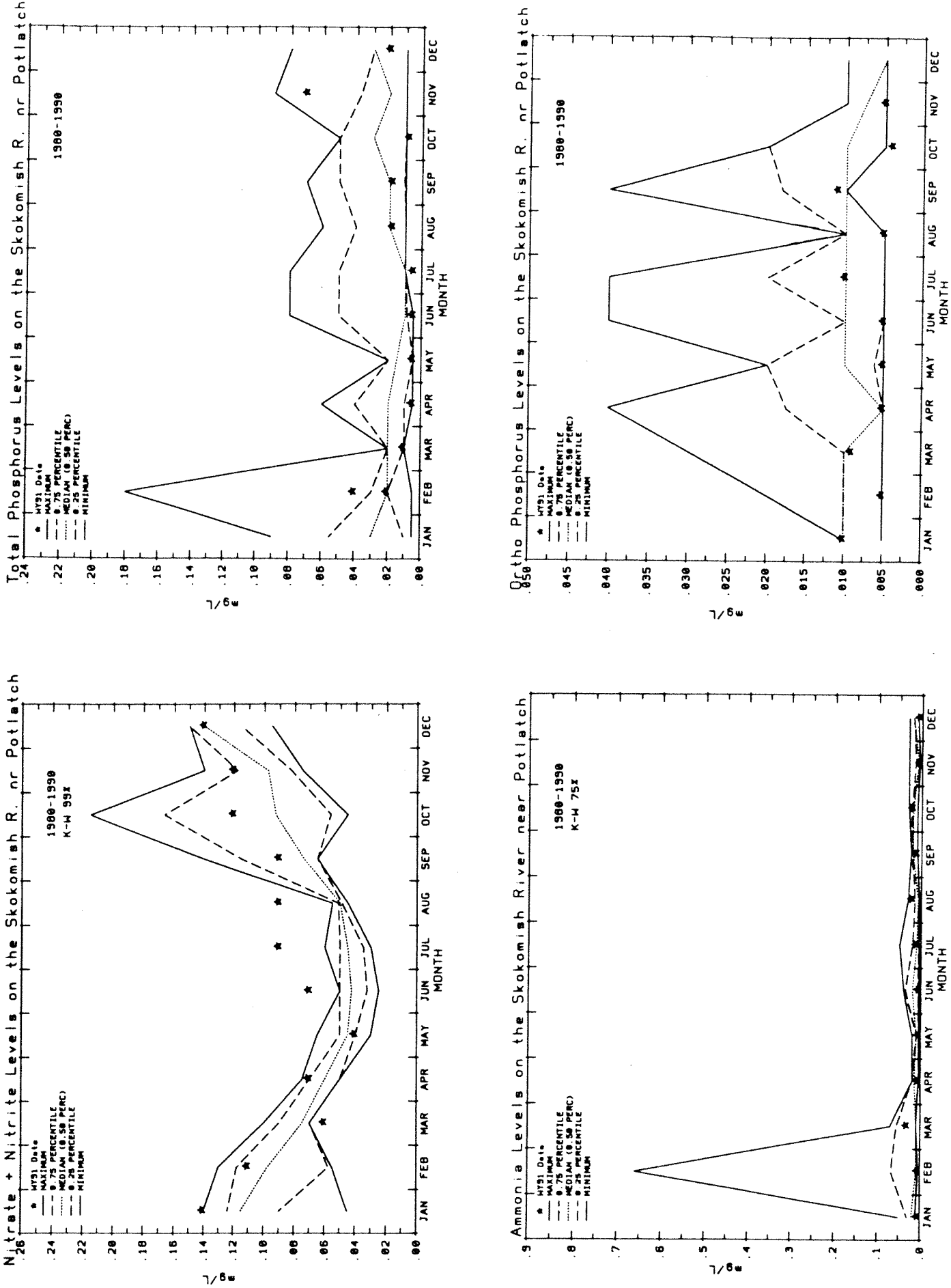


Figure 50. Wateryear 1991 total and ortho-phosphorus, ammonia, and nitrate+nitrite levels compared to the last 10 years of data on the Skokomish River near Potlatch.

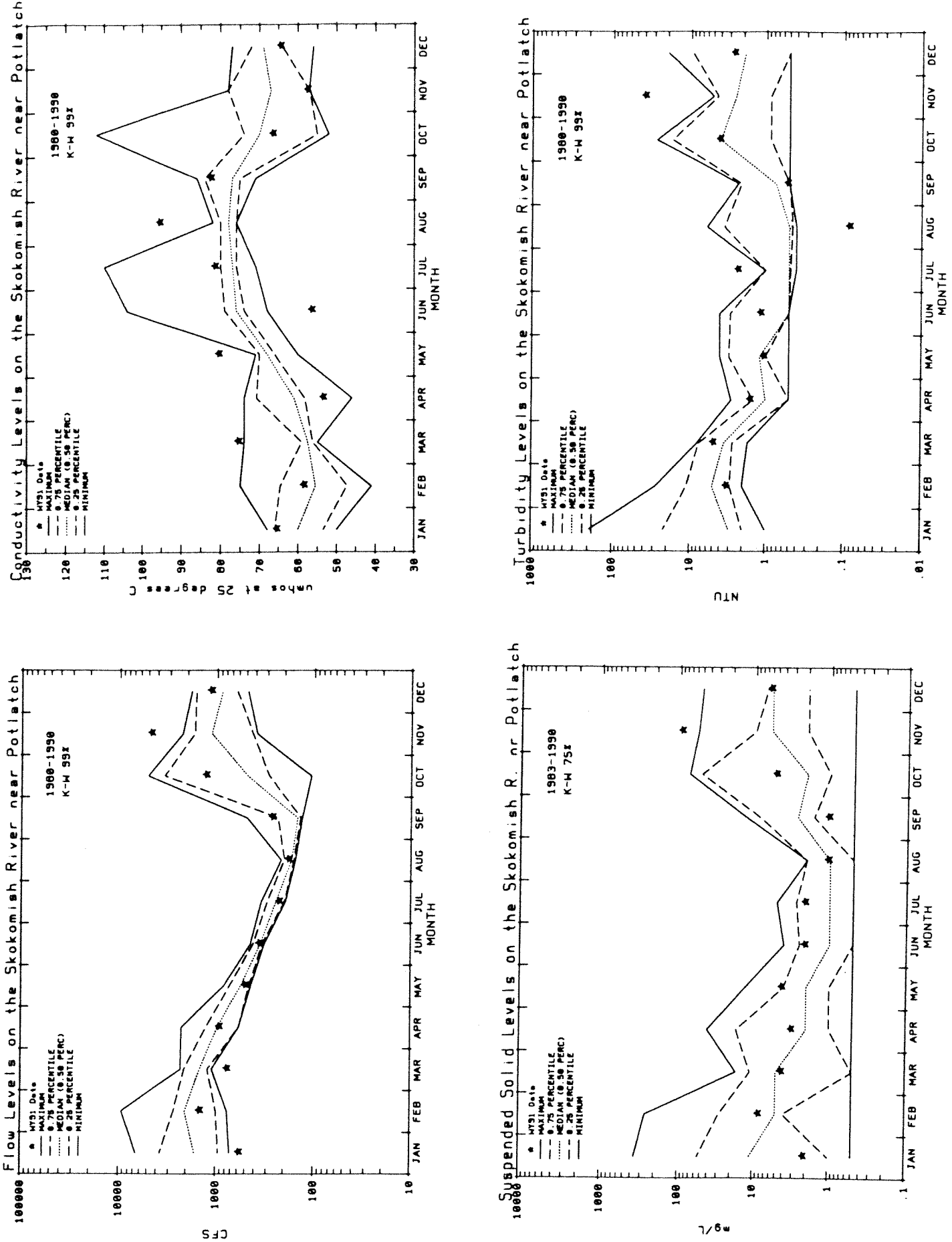


Figure 51. Wateryear 1991 flow, conductivity, suspended solids, and turbidity levels compared to the last 10 years of data on the Skokomish River near Potlatch.

Table 18. Seasonal Kendall Trend information on the Skokomish River near Potlatch (1979–1991).

Parameter	Uncorrected Slope	Uncorrected Trend Probability	Corrected Slope	Corrected Trend Probability	Serial Correlation	Flow Regression R2	SE	Eq	Flow Adjusted Slope	Flow Adjusted Trend Probability	Median	Mean	Median Above Quanitation	% Change per year (Column used)	Graph
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperature	0.0000	0.8209	Insufficiant Data			0.5361	1.3263	13.0000	0.0144	0.5745	7.8	8.065	Y		
Conductivity	0.5672	2.1E-6**				0.2981	4.9867	7.0000	0.5337	3.1E-6**	68	68.6117	Y	0.78 (10)	X
Dissolved Oxygen	0.0000	0.6963				0.6429	0.6173	12.0000	-0.0184	0.5868	11.2	11.1608	Y		
pH	0.0000	0.7693				<.1					7.2	7.2388	Y		
Suspended Solids	0.1837	0.0763				0.7594	24.6944	12.0000	0.1928	0.7067	2.5	15.2109	N		
Turbidity	0.0000	0.8297				0.9654	4.1669	11.0000	-0.1082	0.1047	1.9	5.9965	N		
Fecal Coliform	0.4969	0.0401*				0.1298	12.0209	12.0000	0.5624	0.0942	6	11.4731	N		
Ammonia	-0.0008	0.0003**				<.1					0.01	0.0235	N		
Phosphorus Total	0.0000 v	0.0312*				0.4977	0.0188	8.0000	-0.0002	0.1964	0.02	0.0258	Y		
Phosphorus Ortho	0.0000 v	0.0050**				0.1288	0.0060	9.0000	-0.0001	0.1078	0.01	0.0104	N		
Nitrate + Nitrite	0.0018	0.0031**				0.2550	0.0333	12.0000	0.0019	0.0090**	0.07	0.0821	N		
Flow	2.4225	0.5517				NA					628	1108.0693	Y		

* Significant at 95%

** Siginificant at 99%

Uncorrected - Uncorrected for Serial Correlation

Corrected - Corrected for Serial Correlation

Eq (column 9) see Table 3 text

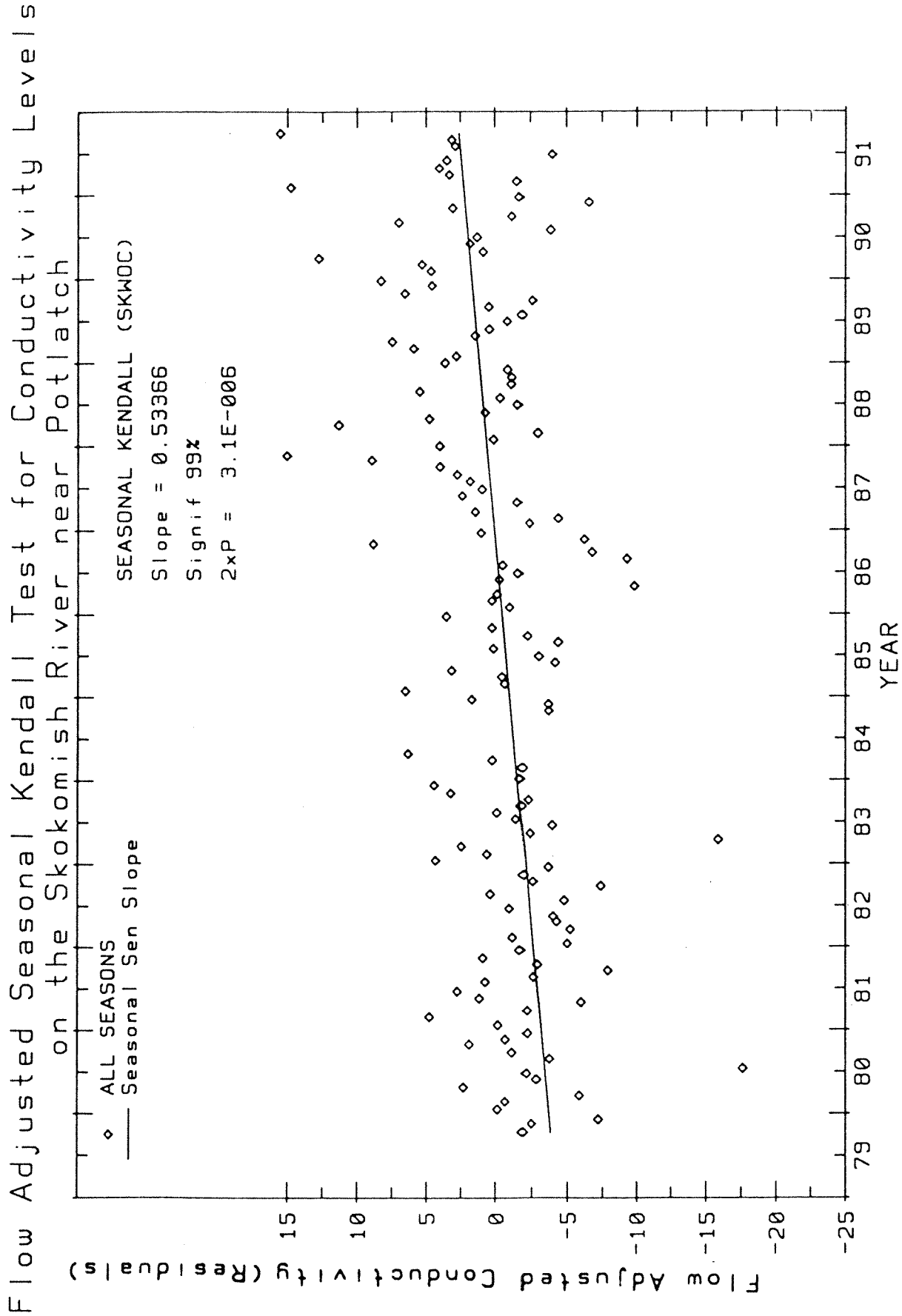


Figure 52. Significant trend graph for the Skokomish River near Potlatch.

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APPENDIX 1

Station Description and Period of Record for EILS Freshwater Monitoring Program

Appendix 1. Station Description and Period of Record for EILS Freshwater Monitoring Program.

Stn. Number	Station Name	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
FRESHWATER STATIONS																																		
01A050	Nooksack R @ Brennan													X		X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
01A070	Nooksack R @ Ferndale				X	X	X	X	X	X	X	X	X	X			X			X														
01A090	Nooksack R nr Lynden													X			X			X														
01A120	Nooksack R @ No Cedarville	X	X	X	X	X	X	X	X	X		X	X	X			X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
01D070	Sumas R nr Huntingdon BC													X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
01D090	Sumas R @ Sumas													X			X																	
01E050	Whatcom Cr @ Bellingham															X				X														
01E070	Whatcom Cr @ Lake Outlet															X																		
01E090	Whatcom Lake nr Bellingham							X	X	X		X	X																					
03A050	Skagit R @ Conway													X			X																	
03A060	Skagit R nr Mount Vernon	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
03A070	Skagit R nr Sedro Woolley													X			X			X														
03B050	Samish R nr Burlington	X	X	X	X	X	X	X	X	X		X	X	X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
03B070	Samish R nr Hoogdal													X																				
03C060	Friday Cr Blw Hatchery																X																	
03C080	Friday Cr at Alger																X																	
04A060	Skagit R @ Concrete													X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
04A100	Skagit R @ Marblemount	X	X	X	X	X	X	X	X	X		X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X
04A140	Skagit R @ Newhalem																X			X														
04B070	Baker R @ Concrete				X	X	X	X												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
04B150	Baker Lake @ Boulder Cr																	X	X	X	X	X	X											
04C070	Sauk R nr Rockport																			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
04C110	Sauk R @ Darrington	X	X	X																														
05A050	Stillaguamish R @ Stanwood													X																				
05A055	Hat Slough nr Stanwood																			X														
05A070	Stillaguamish R nr Silvana	X	X	X	X	X	X	X	X	X	X	X	X	X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
05A090	SF Stilly R @ Arlington													X			X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
05A110	SF Stilly nr Granite Falls	X	X	X	X	X	X	X	X								X																	
05B070	NF Stillaguamish @ Cicero				X	X	X	X	X	X	X	X	X	X			X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
05B090	NF Stillaguamish R @ Oso																X																	
05B110	NF Stilly nr Darrington																X																	
07A090	Snohomish R @ Snohomish	X	X	X	X	X	X	X	X	X		X	X	X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
07A109	Snohomish R nr Monroe NE													X																				
07A110	Snohomish R nr Monroe SW													X																				
07A111	Snohomish R nr Monroe (USGS)																		X	X			X	X	X	X	X	X	X					
07B055	Pilchuck R @ Snohomish													X			X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
07B090	Pilchuck R nr Lake Stevens																			X														
07C070	Skykomish R @ Monroe													X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
07C090	Skykomish R @ Sultan													X			X																	
07C120	Skykomish R nr Gold Bar	X	X	X	X	X	X	X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X
07C170	Skykomish R nr Miller R																			X														

Appendix 1. Continued.

Stn. Number	Station Name	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
FRESHWATER STATIONS - Continued																																		
07D050	Snoqualmie R nr Monroe																			X														
07D070	Snoqualmie R nr Carnation													X		X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
07D130	Snoqualmie R @ Snoqualmie	X	X	X	X	X	X	X	X	X	X	X	X							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
07D150	MF Snoqualmie R nr Ellisville																																	XF
07E055	Sultan R @ Sultan		X	X	X	X	X	X	X	X		X	X	X			X																	
07F055	Woods Cr @ Monroe													X			X																	
07G070	Tolt R nr Carnation		X	X	X	X	X	X	X	X	X	X	X																					
07M070	SF Snoqualmie R @ North Bend																																	XF
07N070	NF Snoqualmie R nr Ellisville																																	XF
08A070	McAleer Cr nr Mouth														X																			
08A090	Upper McAleer Cr														X																			
08B070	Sammamish R @ Bothell	X	X	X	X	X	X	X	X	X	X	X	X	X			X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
08B110	Sammamish R @ Redmond																		X															
08B130	Issaquah Cr nr Issaquah							X	X	X		X	X	X			X		X															
08C070	Cedar R @ Logan St/Renton	X	X	X	X	X	X	X	X					X		X			X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
08C090	Cedar R @ Maple Valley															X																		
08C110	Cedar R nr Landsburg	X	X	X	X											X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
08D070	Mercer Slough nr Bellevue														X																			
08E090	Kelsey Cr @ Monitor Site														X																			
08E110	Upper Kelsey Cr														X																			
08F070	May Cr nr Mouth														X																			
08G070	Valley Cr nr Mouth														X																			
08H070	Thornton Cr nr Mouth														X																			
08H100	North Branch Thornton Cr														X																			
08J070	West Branch Thornton Cr														X																			
09A060	Duwamish R @ Allentown Br																						X	X	X	X	X	X	X	X	X	X	X	
09A070	Duwamish R @ Foster	X	X	X	X	X	X	X	X	X																								
09A080	Green R @ Tukwila																																	X
09A090	Green R @ 212th St nr Kent													X				X	X				X	X	X	X	X	X	X	X	X	X	X	X
09A110	Green R @ Auburn					X	X	X	X	X		X	X	X																				
09A130	Green Abv Big Soos/Auburn	X	X	X	X	X	X	X	X	X	X	X	X																					
09A150	Green R nr Auburn														X																			
09A170	Green R nr Black Diamond																		X															
09A190	Green R @ Kanaskat	X	X	X															X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
09B070	Big Soos Cr blw Hatchery														X				X															
09B090	Big Soos Cr nr Auburn					X	X	X	X					X	X																			
09C070	Des Moines Cr nr Mouth														X																			
09C090	Des Moines Cr @ So 200th														X																			
09D070	Miller Cr nr Mouth														X																			
09D090	Miller Cr @ Ambaum Blvd SW															X																		
09E070	Mill Cr (Kent) @ Orillia																											X	X	X	X	X		

Appendix 1. Continued.

Stn. Number	Station Name	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
FRESHWATER STATIONS - Continued																																		
09E090	Mill Cr (Kent) on W Valley Hwy																												X	X	X	X		
10A050	Puyallup R @ Puyallup (USGS)		X	X	X	X	X	X	X	X	X		X	X	X	X			X	X	X	X	X	X	X	X	X	X	X					
10A070	Puyallup R @ Meridian St													X				X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
10A090	Puyallup R @ McMillin													X					X															
10A110	Puyallup R @ Orting	X	X	X	X		X	X	X	X	X	X	X	X	X				X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
10B070	Carbon R nr Orting						X	X						X	X																			
10B090	Carbon R @ Fairfax																		X															
10C070	White R @ Sumner													X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X
10C085	White R nr Sumner											X	X					X																
10C090	White R @ Auburn				X	X	X	X	X					X		X																		
10C110	White R blw Buckley															X																		
10C140	White R nr Buckley															X																		
10C150	White R nr Greenwater															X																		
10D070	Boise Cr @ Buckley					X	X	X								X																		
10D090	Boise Cr nr Enumclaw					X	X	X																										
10E070	Salmon Cr @ Sumner													X																				
10F070	So Prairie Cr nr Crocker																		X															
11A070	Nisqually R @ Nisqually															X			X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
11A080	Nisqually R @ McKenna	X	X	X	X	X	X	X	X	X	X	X	X																					X
11A090	Nisqually R abv Powell Cr															X					X	X	X	X	X	X	X	X	X	X	X	X		
11A110	Nisqually R @ LaGrande															X																		
11A140	Nisqually R @ Elbe															X			X		X	X	X	?										
12A070	Chambers Cr nr Steilacoom					X	X	X	X	X					X	X			X								X	X	X	X	X	X	X	X
12A100	Chambers Cr blw Steilacoom Lk						X	X												X														
12A110	Clover Cr abv Steilacoom Lk					X	X	X											X															
12A130	Clover Cr nr Parkland					X	X																											
12B070	Leach Cr nr Steilacoom					X	X	X											X															
12C070	Flett Cr @ Custer Rd					X	X	X											X															
13A050	Deschutes R @ Tumwater					X	X	X	X	X		X	X							X														
13A060	Deschutes R @ E St Bridge																				X	X	X	X	X	X	X	X	X	X	X	X	X	X
13A080	Deschutes R nr Olympia														X			X		X														
13A150	Deschutes R nr Rainier	X	X	X	X										X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
14A070	Goldsborough Cr nr Shelton							X	X	X		X	X																					
15A070	Dewatto R nr Dewatto														X	X	X																	
15B070	Chico Cr nr Bremerton							X	X	X	X	X	X																					
16A070	Skokomish R nr Potlatch		X	X	X	X	X	X	X	X		X	X		X	X	X				X	X	X				X	X	X	X	X	X	X	X
16B070	Hamma Hamma R nr Mouth				X	X	X	X	X	X		X	X		X																			
16B110	Hamma Hamma R nr Eldon															X	X																	
16C070	Duckabush R @ Mouth		X	X	X	X	X	X	X	X		X	X			X																		
16C090	Duckabush R nr Brinnon														X	X	X																	
16D070	Dosewallips R @ Brinnon	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X																	

Appendix 1. Continued.

Stn. Number	Station Name	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
FRESHWATER STATIONS - Continued																																		
17A070	Big Quilcene R nr Quilcene	X	X	X	X	X	X	X	X						X	X	X																	
17B090	Chimacum Cr @ Hadlock															X																		
17B110	Chimacum Cr nr Chimacum															X																		
18A070	Dungeness R nr Sequim	X	X	X	X	X	X	X	X						X	X	X																	
18B070	Elwha R nr Port Angeles	X	X	X	X	X	X	X	X			X			X	X	X																	
18B090	Elwha R @ McDonald Br (USGS)																	X	X	X	X	X	X	X	X	X	X	X						
19A070	Pysht R nr Pysht														X	X	X																	
19B070	Hoko R nr Mouth														X																			
19B090	Hoko R nr Sekiu															X	X																	
20A090	Soleduck R nr Forks														X	X	X																	
20A130	Soleduck R nr Fairholm		X	X	X	X	X	X	X	X		X	X																					
20B070	Hoh R @ DNR Campground		X	X	X	X	X	X	X	X	X	X	X		X	X	X				X	X	X											
20C070	Ozette R @ Ozette	X	X	X																														
21A070	Queets R @ Queets		X	X	X	X	X	X	X	X	X	X	X		X																			
21A080	Queets R nr Clearwater (USGS)																					X	X	X	X	X	X	X	X					
21A090	Queets R abv Clearwater															X	X																	
21B090	Quinault R @ Lake Quinault	X	X				X	X	X	X	X	X	X		X	X	X				X	X	X											
21C070	Clearwater R nr Queets															X	X																	
21D070	NF Quinault R nr Amanda Pk (USGS)														X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
22A070	Humptulips R nr Humptulips	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
22B070	WF Hoquiam R nr Hoquiam					X	X	X	X	X						X	X																	
22C050	Chehalis R nr Montesano													X							X	X	X	X	X	X	X	X	X	X	X	X	X	X
22C070	Chehalis R nr Fuller													X				X																
22D070	Wishkah R nr Wishkah					X	X	X	X	X						X	X			X														
22F090	Wynoochee R nr Montesano	X	X	X	X	X	X	X	X	X		X	X			X	X			X														
22G070	Satsop R nr Satsop		X	X	X	X	X	X	X	X	X	X	X	X				X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22H070	Cloquallum Cr nr Elma				X	X	X	X							X			X		X														
22J070	Wildcat Cr nr McCleary													X																				
23A070	Chehalis R @ Porter	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23A110	Chehalis R @ Galvin														X			X		X														
23A120	Chehalis R @ Centralia																				X	X	X	X	X	X	X	X	X	X	X	X	X	X
23A140	Chehalis R @ Adna														X			X		X														
23A160	Chehalis R @ Dryad	X	X	X	X	X	X	X	X												X	X	X	X	X	X	X	X	X	X	X	X	X	X
23B070	Newaukum R nr Chehalis		X	X	X	X	X	X	X	X						X		X		X														
23B090	SF Newaukum R @ Forest																	X																
23C070	NF Newaukum R @ Forest																	X																
23E070	Black R @ Moon Road Bridge																																	XF
24B090	Willapa R nr Willapa								X	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24B130	Willapa R @ Lebam	X	X	X								X									X	X	X	X	X	X	X	X	X	X	X	X	X	X
24C070	SF Willapa R @ South Bend															X																		
24D070	North R nr Raymond															X			X	X														

Appendix 1. Continued.

Stn. Number	Station Name	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
FRESHWATER STATIONS - Continued																																		
24E070	North Nemah R @ Nemah															X				X														
24F040	Naselle R @ Mouth															X																		
24F055	Naselle R @ Naselle									X																								
24F070	Naselle R nr Naselle								X	X		X	X			X			X	X	X	X	X											
24G070	Bear Branch nr Naselle								X											X														
24H070	Middle Nemah R nr Nemah																			X														
24J070	South Namah R nr Nemah																			X														
25A070	Columbia R @ Cathlamet										X	X	X						X															
25A075	Columbia R @ Bradwood																X	X	X	X	X	X												
25A110	Columbia R @ Fisher Is Lt					X	X	X	X	X																								
25A115	Columbia R nr Longview										X	X	X						X															
25A150	Columbia R blw Longview Br										X				X																			
25B070	Grays R nr Grays River															X			X	X														
25C070	Elochoman R nr Cathlamet	X														X			X	X														
26B070	Cowlitz R @ Kelso		X	X	X	X	X	X	X						X	X		X			X	X	X		X	X	X	X	X	X	X	X	X	X
26B100	Cowlitz R @ Castle Rock (USGS)									X	X	X	X					X	X	X	X													
26B150	Cowlitz R @ Toledo				X	X	X	X	X						X			X			X	X	X											
26B180	Cowlitz nr Kosmos B Cispus	X	X	X	X	X	X	X	X	X																								
26B190	Cowlitz R nr Randle											X	X					X																
26B200	Cowlitz R nr Kosmos														X																			
26C070	Coweman R @ Kelso				X	X	X	X	X					X	X			X									X	X	X	X	X	X	X	X
26C090	Coweman R nr Rose Valley													X				X																
26D070	Toutle R nr Castle Rock		X	X	X	X	X	X	X	X		X	X		X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
26E070	Cispus R nr Kosmos														X								X	X	X									
27A070	Columbia R @ Kalama										X	X	X						X	X														
27B070	Kalama R nr Kalama		X	X	X	X	X	X	X	X	X	X	X		X	X			X	X			X	X	X	X	X	X	X	X	X	X	X	X
27B090	Kalama R @ Upper Hatchery															X																		
27B110	Kalama R @ Pigeon Springs															X																		
27C070	Lewis R @ Woodland @ I-5					X	X	X	X	X		X	X		X	X																		
27C110	Lewis R @ Ariel (USGS)		X	X																X	X	X	X					X						
27D090	EF Lewis R nr Dollar Corner																			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28A090	Columbia blw Vancouver WA										X	X	X																					
28A091	Columbia blw Vancouver OR										X	X	X																					
28A165	Columbia R @ Warrendale															X	X	X	X	X	X	X												
28A170	Columbia R blw Bonneville										X	X								X														
28A175	Columbia R @ Bonneville Dam											X	X	X						X														
28B070	Washougal R @ Washougal											X	X		X	X			X	X														
28B090	Washougal R nr Washougal				X	X	X	X	X	X	X	X	X																					
28C070	Burnt Br Cr @ Mouth															X																		
28C110	Burnt Br Cr @ Vancouver															X																		
28D070	Salmon Cr @ Salmon Creek															X																		

Appendix 1. Continued.

Stn. Number	Station Name	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
FRESHWATER STATIONS - Continued																																		
28D110	Salmon Cr nr Battle Ground															X																		
28E070	Weaver Cr nr Battle Ground															X																		
29B070	White Salmon R nr Underwood			X	X	X	X	X	X	X	X	X	X	X		X	X			X	X	X	X	X	X	X	X							
29C070	Wind R nr Carson															X			X	X	X	X	X	X	X	X								
30A070	Columbia R @ The Dalles										X	X		X	X	X	X	X	X	X	X													
30A090	Columbia R @ The Dalles Dam											X																						
30B070	Klickitat R nr Pitt (USGS)									X	X	X	X			X	X	X	X	X	X	X	X											
30C070	Little Klickitat nr Wahkiacus																			X														
31A070	Columbia R @ Umatilla										X							X	X	X	X	X												X
31A090	Columbia R @ McNary Dam	X	X	X	X	X	X	X	X	X	X	X																						
31A130	Columbia R nr Yakima R Mouth											X																						
32A070	Walla Walla R nr Touchet	X	X	X	X	X	X	X	X					X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
32A090	Walla Walla R nr Lowden													X	X																			
32A110	Walla Walla R @ College Pl													X	X		X	X																
32B070	Touchet R @ Touchet														X		X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
32B100	Touchet R @ Bolles																X	X																
32B120	Touchet R nr Dayton																X	X																
32B130	Touchet R @ Dayton	X	X																															X
32C070	Mill Cr @ Mission St														X		X	X																
32C110	Mill Cr @ Tausick Way														X		X																	
33A010	Snake R nr Mouth										X																							
33A050	Snake R @ Burbank		X	X	X	X	X	X	X		X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
33A070	Snake R blw Ice Harbor Dam											X			X																			
34A070	Palouse R @ Hooper	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
34A090	Palouse R nr Diamond													X			X																	
34A110	Palouse R abv Buck Canyon													X			X	X																
34A170	Palouse R @ Palouse																	X																
34B070	SF Palouse R nr Colfax													X			X	X																
34B090	SF Palouse R nr Pullman													X			X																	
34B110	SF Palouse R @ Pullman													X			X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
34B130	SF Palouse R blw Sunshine																	X																
34C070	Paradise Cr nr Pullman																	X																
34D070	SF Palouse Trib Whitman Fm																	X																
35A100	Snake R blw Lwr Granite Dam																					X												
35A150	Snake R @ Interstate Br				X	X	X	X	X		X	X																					X	X
35A200	Snake R nr Anatone														X	X	X	X	X	X	X	X												
35B060	Tucannon R @ Powers																X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
35B110	Tucannon R nr Delaney	X	X																															
35C070	Grande Ronde R nr Anatone																			X			X	X	X									
35D070	Asotin Cr @ Asotin																			X														
36A055	Columbia R @ Port of Pasco														X																			

Appendix 1. Continued.

Stn. Number	Station Name	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
FRESHWATER STATIONS - Continued																																		
36A060	Columbia R @ Pasco										X	X																						
36A065	Columbia R @ Richland																					X												
36A070	Columbia R nr Vernita				X	X					X	X	X		X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
37A060	Yakima R @ VanGiesen Br														X		X	X																
37A070	Yakima R nr Richland													X																				
37A090	Yakima R @ Kiona	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
37A110	Yakima R @ Prosser													X			X	X																
37A130	Yakima R @ Mabton													X			X	X																
37A149	Yakima R @ Granger No Side														X																			
37A150	Yakima R @ Granger So Side													X																				
37A170	Yakima R nr Toppenish													X			X	X																
37A190	Yakima R @ Parker													X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
37A200	Yakima R abv Ahtanum Cr (USGS)																		X	X			X	X	X									
37A210	Yakima R nr Terrace Height													X	X		X	X																
37B070	Satus Cr @ Satus																X	X																
37C070	Toppenish Cr nr Satus																X	X																
37D080	Marion Drin nr Granger																X	X																
37E070	Wide Hollow Cr @ Union Gap														X			X																
37E090	Wide Hollow Cr @ Goodman													X			X																	
38A050	Naches R @ Yakima @ US 97			X	X	X	X	X	X	X																								
38A070	Naches R @ Yakima															X		X																
38A110	Naches R @ Naches	X	X															X																
38A130	Naches R nr Naches					X	X	X	X																									
38B070	Tieton R @ Oak Creek					X	X	X	X																									
38C070	Rattlesnake Cr nr Nile					X	X																											
38D070	Bumping R @ American R					X	X																											
38E070	American R @ American R					X	X																											
38F070	Little Naches nr Cliffdell					X	X	X																										
39A070	Yakima R nr Thorp														X			X																
39A080	Yakima R @ Cle Elum	X	X	X	X	X	X	X	X	X	X	X	X																					
39A090	Yakima R nr Cle Elum														X			X																X
39B070	Cle Elum R nr Cle Elum														X			X																
39C070	Wilson Cr @ Thrall								X	X	X	X	X			X		X																
39D070	Teanaway R nr Cle Elum				X	X	X	X	X																									
41A070	Crab Cr nr Beverly	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
41A075	Crab Cr nr Smyrna					X	X	X																										
41A090	Crab Cr nr Othello													X																				
41A110	Grab Cr nr Moses Lake				X																		X	X	X	X								
43A070	Crab Cr @ Irby				X																													
44A070	Columbia R blw Rock Is Dam														X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
45A070	Wenatchee R @ Wenatchee		X	X	X	X	X	X	X	X		X	X		X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X

Appendix 1. Continued.

Stn. Number	Station Name	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
FRESHWATER STATIONS - Continued																																		
45A085	Wenatchee R nr Dryden																		X															
45A100	Wenatchee R @ Leavenworth																		X															
45A110	Wenatchee R nr Leavenworth																				X	X	X	X	X	X	X	X	X	X	X	X	X	X
45B070	Icicle Cr nr Leavenworth																		X															
46A070	Entiat R nr Entiat	X	X	X	X	X	X	X	X	X					X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
47A070	Chelan R @ Chelan		X	X	X	X	X	X	X	X		X	X		X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
47B070	Columbia River @ Chelan Station																															X		
48A070	Methow R nr Pateros	X	X	X	X	X	X	X	X						X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
48A130	Methow R nr Twisp																		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
48A170	Methow R @ Weeman Br																		X															
48A190	Methow R blw Gate Cr																		X		X	X	X											
48B070	Chewack R @ Winthrop																		X															
48C070	Andrews Cr nr Mazama (USGS)															X	X	X	X	X	X	X	X	X	X	X	X	X	X					
49A050	Okanogan R nr Brewster	X	X	X	X	X	X	X	X	X	X																							
49A070	Okanogan R @ Malott									X	X	X	X		X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
49A090	Okanogan R @ Okanogan																		X		X	X	X	X	X	X	X	X	X	X	X	X		
49A170	Okanogan R @ Janis																		X															
49A190	Okanogan R @ Oroville		X	X	X	X	X	X	X									X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
49B070	Similkameen R @ Oroville		X	X	X	X	X	X	X									X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
50A070	Columbia R nr Brewster										X																							
51A070	Nespelem R @ Nespelem																						X	X	X	X	X	X	X	X	X	X	X	X
52A070	Sanpoil R @ Keller		X	X	X	X	X	X	X						X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
52A170	Sanpoil R blw Republic																		X															
52A190	Sanpoil R abv Republic																		X															
52B070	Lake Roosevelt from Keller Ferry																																	XF
53A070	Columbia R @ Grand Coulee														X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	
54A050	Spokane R @ Mouth																																	X
54A070	Spokane R @ Long Lake (USGS)	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
54A089	Spokane R 2 mi blw Ninemile dam													X	X																			
54A090	Spokane R @ Ninemile Br													X		X																		
54A120	Spokane R @ Riverside State Pk															X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
54A130	Spokane R @ Fort Wright Br													X		X																		
55B070	Little Spokane R nr Mouth													X		X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
55B080	Little Spokane R nr Griffith Springs																																	XF
55B082	Little Spokane R above Dartford Ck																																	XF
55B085	Little Spokane nr Dartford		X	X	X	X	X	X	X																									
55B090	Little Spokane R abv Wandermere															X																		
55B100	Little Spokane R above Peone Ck																																	XF
55C070	Peone (Deadman) Ck above Little Deep Ck																																	XF
56A070	Hangman Cr @ Mouth															X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Appendix 1. Continued.

Stn. Number	Station Name	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
FRESHWATER STATIONS - Continued																																		
57A120	Spokane R @ Spokane															X																		
57A130	Spokane R @ Mission St Br													X		X																		
57A145	Spokane R @ Trent Br															X																		
57A150	Spokane R @ Stateline Br	X	X	X	X	X	X	X				X	X	X		X				X													X	X
57A190	Spokane R nr Post Falls, ID.															X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
59A070	Colville R @ Kettle Falls		X	X	X	X	X	X	X	X	X	X	X		X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
59A110	Colville R @ Blue Creek																		X															
59A130	Colville R @ Chewelah																		X															
60A050	Kettle R @ Hedlund Bridge										X																							
60A070	Kettle R nr Barstow		X	X	X	X	X	X	X			X	X		X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
61A070	Columbia R @ Northport (USGS)	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
61A070	Columbia R @ Northport (Ecology)																																	X
62A070	Pend Oreille R @ Waneta, BC (USGS)					X	X	X																										
62A080	Pend Oreille R @ Int Bndry (USGS)																	X	X	X	X	X	X	X	X	X	X	X	X					
62A090	Pend Oreille @ Metaline Falls	X	X	X	X																													
62A150	Pend Oreille R @ Newport	X	X	X	X	X	X	X	X										X		X	X	X	X	X	X	X	X	X	X	X	X	X	X

X = Sampled
XF = Sampled (Floating Stations)

APPENDIX 2

Washington State Department of Ecology Ambient Monitoring Station Locations

Appendix 2. Washington State Department of Ecology Ambient Monitoring Station Locations

Core Stations

1. Nooksack River at Brennan
2. Skagit River near Mount Vernon
3. Stillaguamish River near Silvana
4. Snohomish River at Snohomish
5. Sammamish River at Bothell
6. Cedar River at Renton
7. Green River at Tukwila
8. Puyallup River at Meridian St. Bridge
9. Nisqually River at Nisqually
10. Skokomish River near Potlatch
11. Chehalis River at Porter
12. Cowlitz River at Kelso
13. Humptulips River at Humptulips
14. Columbia River at Umatilla
15. Yakima River at Kiona
16. Wenatchee River at Wenatchee
17. Methow River near Pateros
18. Okanogan River @ Malott
19. Similkameen River at Oroville
20. Walla Walla River near Touchet
21. Snake River at Pasco
22. Palouse River at Hooper
23. Snake River at Interstate Bridge
24. Spokane River at Mouth
25. Spokane River at Riverside State Park
26. Spokane River at Stateline Bridge
27. Columbia River at Northport
28. Pend Oreille River at Newport

Bench Mark Stations

1. Skagit River at Marblemount
2. Green River at Kanaskat
3. Chehalis River near Dryad
4. Wenatchee River near Leavenworth
5. Palouse River at Palouse

Appendix 2. Continued.

Rotating Stations

1. Nooksack River @ North Cedarville
2. Sumas River near Huntingdon B.C.
3. Whatcom Creek @ Bellingham
4. Samish River near Burlington
5. Friday Creek below Hatchery
6. Skagit River at Concrete
7. Baker River at Concrete
8. Sauk River near Rockport
9. S.F. Stillaguamish River @ Arlington
10. S.F. Stillaguamish River near Granite Falls
11. N.F. Stillaguamish River near Cicero
12. N.F. Stillaguamish River near Darrington
13. Pilchuck River @ Snohomish
14. Skykomish River @ Monroe
15. Skykomish River near Gold Bar
16. Snoqualmie River near Monroe
17. Snoqualmie River near Carnation
18. Snoqualmie River @ Snoqualmie
19. Sultan River @ Sultan
20. Wood Creek @ Monroe
21. Tolt River near Carnation
22. Sammamish River @ Redmond
23. Issaquah Creek near Issaquah
24. Cedar River @ Maple Valley
25. Cedar River near Landsburg
26. Ship Canal @ Fremont
27. Green River @ 212th Street near Kent
28. Green River near Black Diamond
29. Big Soos Creek near Auburn
30. Mill Creek near Kent on W. Valley Highway
31. Puyallup River at Orting
32. Carbon River near Orting
33. White River @ Sumner
34. White River near Buckley
35. Nisqually River @ McKenna
36. Chamber Creek near Steilacoom
37. Deschutes River @ E Street Bridge
38. Deschutes River near Rainier
39. Goldsborough Creek near Shelton
40. Hamma Hamma near Eldon
41. Duckabush River near Brinnon
42. Dosewallips River @ Brinnon
43. Big Quilcene River near Quilcene
44. Dungeness River near Sequim
45. Elwha River near Port Angeles
46. Soleduck River near Forks
47. Hoh River at DNR Campgrounds
48. Queets River at Queets
49. Quinault River at Lake Quinault
50. WF Hoquiam River near Hoquiam
51. Satsop River near Satsop
52. Newaukum River near Chehalis
53. Skookumchuck River at Chehalis
54. Black River at Moon Road Bridge
55. Chehalis River a Montesano
56. North River near Raymond on Highway 101
57. Willapa River near Willapa
58. Willapa River at Lebam
59. Naselle River near Naselle
60. Cowlitz River at Toledo
61. Toutle River near Castle Rock
62. Coweeman River at Kelso
63. Kalama River near Kalama
64. Lewis River at County Road 16
65. EF Lewis River near Dollar Corner
66. Washougal River at Washougal
67. Yakima River at Parker
68. Naches River at Yakima on US97
69. Tieton River at Oak Creek
70. Cle Elum River near Roslyn
71. Teanaway River near Cle Elum
72. Icicle Creek near Leavenworth
73. Columbia River at Chelan Station
74. Methow River at Twisp
75. Okanogan River at Oroville
76. Nespelem River at Nespelem
77. Klickitat River near Lyle
78. Klickitat River near Pitt
79. Columbia River near Vernita

Appendix 2. Continued.

Rotating Stations (Cont.)

80. Entiat River near Entiat
81. Chelan River at Chelan
82. Touchet River at Touchet
83. Touchet River near Dayton
84. Palouse River near Diamond
85. SF Palouse River at Pullman
86. Rock Creek near Revere
87. Tucannon River at Powers
88. Grande Ronde River near Anatone
89. Asotin Creek at Asotin
90. Sanpoil River at Keller
91. Sanpoil River above Republic
92. Columbia River at Grand Coulee
93. Hangman Creek at Mouth
94. Crab Creek near Beverly
95. Crab Creek near Moses Lake
96. Little Spokane River near Mouth
97. Colville River at Kettle Falls
98. Kettle River near Barstow
99. Pend Oreille River at Metaline Falls

Floating Stations

Numbers depend on budget remaining after factoring in monitoring cost for core/bench mark and rotating stations.

APPENDIX 3

Current Laboratory Methods for the Department of Ecology's Freshwater Ambient Monitoring Program

Appendix 3. Current laboratory methods for the Department of Ecology's Freshwater Ambient Monitoring Program.

1. Fecal coliform:

Bottle type	-	Glass
Sample volume	-	200 mL
Preservative	-	Store at 4°C
Holding Time	-	30 hours
Analytical Method	-	Standard Methods for the Examination of Water and Wastewater, 16th Ed., No. 214A, Standard Methods, 16th Ed., No. 909c, "Fecal Coliform Membrane Filter Procedure," pp. 896

2. Conductivity: Field

Bottle type	-	Polyethylene
Sample volume	-	200 mL
Preservative	-	None
Holding Time	-	NA
Analytical Method	-	Modification of Standard Methods for the Examination of Water and Wastewater, 16th Ed., No. 205, "Conductivity," pp. 76-80.

3. Total Hardness:

Bottle type	-	Polyethylene
Sample volume	-	500 mL
Preservative	-	Store at 4°C
Holding Time	-	6 Months
Analytical Method	-	Standard Methods for the Examination of Water and Wastewater, 16th Ed., No. 1348, "EDTA Titrimetric Method," pp. 210-14.

4. Ammonia Nitrogen:

Bottle type	-	Polyethylene
Sample volume	-	125 mL
Preservative	-	Sulfuric Acid, at 4°C
Holding Time	-	28 Days
Analytical Method	-	EPA Method 350.1, automated Phenate.

5. Nitrate+Nitrate Nitrogen:

Bottle type	-	Polyethylene
Sample volume	-	125 mL
Preservative	-	Sulfuric Acid, 4°C
Holding Time	-	28 Days
Analytical Method	-	EPA Method 353.2, Colorimetric, Automated, Cadmium Reduction.

Appendix 3. Continued.

6. Nitrite Nitrogen:

Bottle type	-	Polyethylene
Sample volume	-	125 mL
Preservative	-	Amber Bottle, 4°C
Holding Time	-	48 Hours
Analytical Method	-	Adaptation of EPA Method 353.2, Colorimetric, Automated, Cadmium Reduction.

7. pH: Field

Bottle type	-	Polyethylene
Sample volume	-	200 mL
Preservative	-	None
Holding Time	-	NA
Analytical Method	-	Modification of Standard Methods for the Examination of Water and Wastewater, 16th Ed., No. 423, "pH Value," pp. 429-37.

8. Ortho-phosphorus:

Bottle type	-	Polyethylene
Sample volume	-	125 mL
Preservative	-	Filter, Amber Bottle, 4°C
Holding Time	-	48 Hours
Analytical Method	-	EPA Method 365.1, Colorimetric, Automated Ascorbic Acid.

9. Total Phosphorus:

Bottle type	-	Polyethylene
Sample volume	-	125 mL
Preservative	-	H_2SO_4, Store at 4°C
Holding Time	-	28 Days
Analytical Method	-	EPA Method 365.1, Colorimetric, Automated, Ascorbic Acid

10. Total Suspended Solids:

Bottle type	-	Polyethylene
Sample volume	-	1000 mL
Preservative	-	Store at 4°C
Holding Time	-	7 Days
Analytical Method	-	Standard Methods, 16th Ed., No. 209c, "Total Suspended Solids Dried at 103-105oC." p. 96-97.

Appendix 3. Continued.

11. Turbidity

Bottle type	-	Polyethylene
Sample volume	-	500 mL
Preservative	-	Store at 4°C
Holding Time	-	48 hours
Analytical Method	-	Standard Methods for the Examination of Water and Wastewater, 16th Ed., No. 214A, "Nephelometric Method-Nephelometric Turbidity Units," pp. 134-36.

12. Mercury (Cold Vapor AA)

Bottle type	-	Polyethylene (Cubitainer) with Teflon Lid
Sample volume	-	1 L
Preservative	-	Store at 4°C
Holding Time	-	28 days
Analytical Method	-	EPA 600/4-79-020,4.1.1. SW846, Volume 1, Section A. EP1-245.1

13. Cadmium (Total Recoverable/AA)

Bottle type	-	Polyethylene (Cubitainer) with Teflon Lid
Sample volume	-	1 L
Preservative	-	Store at 4°C
Holding Time	-	6 months
Analytical Method	-	EPA 600/4-79-020,4.1.1. SW846, Volume 1, Section A. EP1-213.R

14. Chromium (Total Recoverable/AA)

Bottle type	-	Polyethylene (Cubitainer) with Teflon Lid
Sample volume	-	1 L
Preservative	-	Store at 4°C
Holding Time	-	6 months
Analytical Method	-	EPA 600/4-79-020,4.1.1. SW846, Volume 1, Section A. EP1-218.R

15. Lead (Total Recoverable/AA)

Bottle type	-	Polyethylene (Cubitainer) with Teflon Lid
Sample volume	-	1 L
Preservative	-	Store at 4°C
Holding Time	-	6 months
Analytical Method	-	EPA 600/4-79-020,4.1.1. SW846, Volume 1, Section A. EP1-239.R

Appendix 3. Continued.

16. Zinc (Total Recoverable/ICP)

Bottle type	-	Polyethylene (Cubitainer) with Teflon Lid
Sample volume	-	1 L
Preservative	-	Store at 4°C
Holding Time	-	6 months
Analytical Method	-	EPA 600/4-79-020,4.1.1. SW846, Volume 1, Section A. EP1-200.7

17. Copper (Total Recoverable/ICP)

Bottle type	-	Polyethylene (Cubitainer) with Teflon Lid
Sample volume	-	1 L
Preservative	-	Store at 4°C
Holding Time	-	6 months
Analytical Method	-	EPA 600/4-79-020,4.1.1. SW846, Volume 1, Section A. EP1-200.7

APPENDIX 4

Wateryear 1991 Raw Data and Six-Year Summary Statistics for the Department of Ecology's Freshwater Ambient Monitoring Program

01A050 7301A050 12213140
NOOKSACK RIVER AT BRENNAN
48 49 10.0 122 34 43.0 2F 0 Elev= 0 ft
53073 Washington Whatcom Co. PACIFIC NORTHWEST
PUGET SOUND (Nooksack-01) 131101
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 01-01-04 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311022
MILES 0003.40 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	1415		2920.0	8.9	11.3	96.8	763.5	7.7	108	31	12.0	40S
90/11/19	1410		6310.0	6.0	11.6	93.8	753.4	8.1	115	129	37.0	120
90/12/11	1415		9330.0	5.5	13.0	101.2	772.7	7.3	92	212	56.0	180S
91/01/22	1420		4250.0	3.0	12.4	90.4	773.4	7.6	115	48	12.5	31
91/02/19	1510		10800.0	7.5	11.7	96.6	765.6	7.7	78	642	113.0	800L
91/03/19	1415		2390.0	8.1	11.0	94.0	750.8	7.3	139	16	18.0	110
91/04/16	1520		3180.0	10.2	10.9	96.4	762.0	7.4	117	29	10.0	19
91/05/21	1440		5100.0	9.3	10.3	88.5	767.8	7.3	87	85	2.0	39
91/06/18	1520		4000.0J	11.1	10.9	98.2	763.3	7.4	80	54	17.0	88
91/07/23	1450		3850.0	15.3	10.2	101.4	757.9	7.2	74	54	24.0	73
91/08/20	1455		2510.0	16.6	10.5	106.3	764.5	7.2	83	72	33.0	65
91/09/17	1500		1700.0	15.4	10.1	99.8	764.0	7.4	122	26	11.3	220

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	1415		0.34	0.00K	0.01	0.011	0.028	436067	44
90/11/19	1410		0.54	0.01K	0.10	0.010	0.100	476067	47
90/12/11	1415		0.58	0.01K	0.07	0.010	0.110	506068	37
91/01/22	1420		0.65	0.01K	0.09	0.010	0.060	46068	48
91/02/19	1510		0.32	0.01K	0.06	0.010K	0.200	86068	34
91/03/19	1415		0.48	0.01K	0.05	0.005K	0.020	126068	56
91/04/16	1520		0.40	0.01K	0.03	0.010K	0.028	166068	48
91/05/21	1440		0.17	0.01K	0.04	0.010K	0.050	216068	35
91/06/18	1520		0.18	0.01K	0.01K	0.010K	0.044	256068	34
91/07/23	1450		0.09	0.01K	0.02	0.010K	0.035	306068	33
91/08/20	1455		0.11	0.01K	0.01K	0.010K	0.068	346068	17
91/09/17	1500		0.21	0.01K	0.03	0.012	0.039	386068	51

01A120 7301A120 12210700 541033
NOOKSACK R AT NORTH CEDARVILLE
48 50 30.0 122 17 35.0 2F 0 Elev= 0 ft
53073 Washington Whatcom Co. PACIFIC NORTHWEST
PUGET SOUND (Nooksack-01) 131101
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 01-01-04 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311022
MILES 0030.80 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	1215		2850.0	8.6	11.5	97.9	762.3	7.3	93	16	7.8	11
90/11/19	1215		5110.0	5.7	11.8	95.1	750.3	7.9	105	117	37.0	7
90/12/11	1220		6940.0	5.4	13.6	106.3	767.6	7.4	75	178	49.0	11
91/01/22	1225		3200.0J	2.9	12.6	91.8	771.7	7.5	91	28	11.0	2
91/02/19	1305		8600.0	5.4	12.1	95.2	762.5	7.4	50	2080J	290.0J	21S
91/03/19	1220		2100.0J	6.3	11.6	95.2	748.0	7.0	105	9	5.7	9
91/04/16	1300		3410.0	8.6	11.4	97.4	760.2	7.6	91	23	11.0	1K
91/05/21	1235		4610.0	8.2	11.6	97.5	764.8	7.4	60	52	2.0	5
91/06/18	1310		4030.0	10.9	11.3	101.6	761.7	7.4	70	29	8.4	15
91/07/23	1255		3250.0	13.4	10.7	102.4	756.4	7.1	67	63	28.0	7
91/08/20	1255		2400.0	13.8	11.1	106.3	762.5	7.3	74	59	27.0	9
91/09/17	1255		1280.0J	12.4	11.0	102.2	762.5	7.3	101	22	12.8	3

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	1215		0.26	0.00K	0.01K	0.005	0.018	436065	
90/11/19	1215		0.25	0.01K	0.07	0.010K	0.080	476065	
90/12/11	1220		0.23	0.01K	0.02	0.010K	0.070	506066	
91/01/22	1225		0.27	0.01K	0.04	0.010K	0.050	46066	
91/02/19	1305		0.17	0.01K	0.03	0.010K	0.620	86066	
91/03/19	1220		0.15	0.01K	0.00K	0.027	0.006	126066	
91/04/16	1300		0.15	0.01K	0.02	0.010K	0.021	166066	
91/05/21	1235		0.08	0.01K	0.03	0.010K	0.039	216066	
91/06/18	1310		0.07	0.01K	0.01K	0.010K	0.021	256066	
91/07/23	1255		0.05	0.01K	0.02	0.010K	0.037	306066	
91/08/20	1255		0.06	0.01K	0.02	0.010K	0.045	346066	
91/09/17	1255		0.08	0.01K	0.01K	0.010K	0.030	386066	

01D070 7301D070 12215100
SUMAS RIVER NEAR HUNTINGDON B C
49 00 09.0 122 13 50.0 2F 0 Elev= 0 ft
53073 Washington Whatcom Co. PACIFIC NORTHWEST
PUGET SOUND (Nooksack-01) 131101
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 01-01-06 Class= (A) Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311000
MILES 0011.90 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	1310		60.0	9.9	7.7	67.5	764.5	7.5	321	7	5.2	1000S
90/11/19	1310		240.0	7.7	7.4	62.5	753.4	7.6	315	9	10.0	270S
90/12/11	1310		640.0	6.2	9.5	75.4	771.7	7.4	202	14	13.0	450S
91/01/22	1320		230.0	3.2	9.1	66.7	773.4	7.5	250	4	5.0	46
91/02/19	1410		350.0	7.8	7.0	58.3	765.6	7.1	244	24	16.0	800L
91/03/19	1310		120.0	9.0	8.3	72.5	751.3	7.5	281	4	22.0	390
91/04/16	1400		125.0	12.2	8.9	82.4	762.0	7.6	282	9	7.1	91
91/05/21	1340		76.0	12.5	8.5	78.6	768.1	7.5	290	7	6.0	420
91/06/18	1355		68.0	14.1	9.6	92.4	764.0	7.7	288	5	6.0	520
91/07/23	1340		52.0	17.4	10.1	104.8	758.7	7.6	291	5	6.4	1300
91/08/20	1350		35.0	17.6	10.5	108.5	764.8	8.0	291	9	8.1	250
91/09/17	1350		26.0	14.0	9.4	90.2	764.8	7.6	306	4	5.7	140

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	1310		3.41	0.09	0.47	0.073	0.148	436066	
90/11/19	1310		4.09	0.06	0.24	0.120	0.190	476066	
90/12/11	1310		2.58	0.03	0.17	0.100	0.160	506067	
91/01/22	1320		3.05	0.03	0.33	0.070	0.160	46067	
91/02/19	1410		3.90	0.06	0.60	0.170	0.370	86067	
91/03/19	1310		3.01	0.03	0.29	0.059	0.114	126067	
91/04/16	1400		2.90	0.02	0.06	0.039	0.100	166067	
91/05/21	1340		2.68	0.02	0.08	0.048	0.097	216067	
91/06/18	1355		3.07	0.02	0.04	0.044	0.089	256067	
91/07/23	1340		2.50	0.02	0.05	0.042	0.056	306067	
91/08/20	1350		2.39	0.02	0.04	0.054	0.107	346067	
91/09/17	1350		2.36	0.01	0.03	0.051	0.091	386067	

03A060 5703A060 12200500 541035
SKAGIT RIVER NEAR MOUNT VERNON
48 26 42.0 122 20 03.0 2F 0 Elev= 0 ft
53057 Washington Skagit Co. PACIFIC NORTHWEST
PUGET SOUND (Lower Skagit-03) 131103
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 02-03-06 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311082
MILES 0015.90 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/24	0835		16700.0	10.1	11.1	98.6	757.2	7.3	64	17	3.8	3
90/11/19	1535		34300.0	7.1	11.7	97.2	753.4	7.7	69	78	16.0	15S
90/12/12	0835		27000.0	5.4	13.5	105.3	769.4	7.2	55	66	21.0	49
91/01/23	0900		18900.0	3.6	12.5	92.4	774.7	7.3	65	22	7.3	3
91/02/20	0850		46400.0	4.8	12.5	95.9	770.4	7.2	44	186	57.0	43
91/03/20	0845		12700.0J	6.3	11.0	89.5	754.9	8.0	79	21	4.3	80
91/04/17	0835		15900.0	7.9	11.3	93.7	769.9	7.3	89	10	2.6	29
91/05/22	0830		24100.0	9.1	11.3	95.7	775.0	7.5	49	19	6.5	5
91/06/19	0750		18800.0	11.1	10.8	97.3	763.0	7.1	49	8	2.2	5
91/07/24	0735		28600.0	12.4	10.7	99.5	761.7	7.5	41	20	7.2	24
91/08/21	0830		16100.0	13.9	10.9	103.6	769.6	6.9	46	10	7.5	1
91/09/18	0820		8400.0J	13.3	10.2	95.8	768.6	7.0	55	10	3.3	19

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/24	0835		0.14	0.00K	0.01K	0.003	0.023	436069	
90/11/19	1535		0.14	0.01K	0.02	0.010K	0.050	476069	
90/12/12	0835		0.15	0.01K	0.03	0.010K	0.030	506071	
91/01/23	0900		0.15	0.01K	0.01	0.010K	0.040	46071	
91/02/20	0850		0.12	0.01K	0.01	0.010K	0.140	86071	
91/03/20	0845		0.09	0.01	0.03	0.005K	0.011	126071	
91/04/17	0835		0.09	0.01K	0.01K	0.010K	0.010K	166071	
91/05/22	0830		0.07	0.01K	0.01	0.010K	0.016	216071	
91/06/19	0750		0.06	0.01K	0.01K	0.010K	0.010K	256071	
91/07/24	0735		0.04	0.01K	0.01K	0.010K	0.013	306071	
91/08/21	0830		0.03	0.01K	0.01K	0.011	0.013	346071	
91/09/18	0820		0.04	0.01K	0.01K	0.010K	0.016	386071	

03B050 5703B050 12201500 541034
SAMISH RIVER NEAR BURLINGTON
48 32 46.0 122 20 13.0 2F 0 Elev= 0 ft
53057 Washington Skagit Co. PACIFIC NORTHWEST
PUGET SOUND (Lower Skagit-03) 131103
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 02-03-10 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311044
MILES 0010.40 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/24	0755		125.0	10.7	10.2	91.7	757.9	7.8	100	5	1.9	74
90/11/19	1500			7.7	11.6	97.8	753.6	7.3	85	47	15.0	43
90/12/12	0805			5.7	13.5	106.2	768.4	7.8	62	55	16.0	27
91/01/23	0830		570.0	3.6	12.8	94.7	774.2	7.8	66	22	6.3	21
91/02/20	0815			7.0	11.7	94.9	770.1	6.9	49	128	28.0	110S
91/03/20	0810		290.0	6.8	11.5	94.7	754.6	6.4	79	10	5.3	14
91/04/17	0800		230.0	8.9	11.0	93.6	768.6	7.2	80	9	4.9	51
91/05/22	0730		145.0	11.0	10.6	93.9	774.7	7.5	91	5	4.4	240
91/06/19	0720		135.0	12.1	10.0	92.2	763.0	7.3	86	10	5.3	210
91/07/24	0705		32.0	15.8	9.1	91.0	761.7	7.5	120	3	2.0	340
91/08/21	0740		26.0	14.6	9.8	94.5	769.9	7.1	121	4	2.4	79
91/09/18	0745		19.0	12.9	10.0	93.2	768.4	7.4	120	3	1.7	100

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/24	0755		0.74	0.00K	0.01K	0.009	0.018	436068	
90/11/19	1500		0.78	0.01K	0.05	0.010K	0.050	476068	
90/12/12	0805		0.77	0.01K	0.04	0.010K	0.050	506070	
91/01/23	0830		0.75	0.01K	0.02	0.010	0.030	46070	
91/02/20	0815		0.92	0.01K	0.02	0.010K	0.120	86070	
91/03/20	0810		0.52	0.01	0.02	0.010	0.019	126070	
91/04/17	0800		0.59	0.01K	0.01	0.010K	0.019	166070	
91/05/22	0730		0.53	0.01K	0.03	0.015	0.026	216070	
91/06/19	0720		0.51	0.01	0.01	0.010K	0.026	256070	
91/07/24	0705		0.63	0.01K	0.02	0.010K	0.013	306070	
91/08/21	0740		0.63	0.01K	0.01	0.010K	0.014	346070	
91/09/18	0745		0.55	0.01K	0.01K	0.010K	0.019	386070	

04A060 5704A060 12194000
SKAGIT RIVER AT CONCRETE
48 31 32.0 121 46 13.0 2F 0 Elev= 0 ft
53057 Washington Skagit Co. PACIFIC NORTHWEST
PUGET SOUND (Upper Skagit-04) 131104
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 02-04-07 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311082
MILES 0054.10 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	1055		14300.0	9.0	11.6	99.6	763.5	7.0	57	11	3.2	3
90/11/19	1055		32000.0	7.2	12.1	101.1	751.3	7.7	57	67	11.0	3
90/12/11	1100		25000.0	5.4	13.7	107.3	766.3	7.2	48	50	18.0	4
91/01/22	1105		18700.0	3.3	12.8	94.4	770.4	7.1	59	11	6.9	2
91/02/19	1150		36400.0	4.6	12.7	97.8	763.5	7.1	50	214	54.0	4
91/03/19	1100		10000.0J	5.3	11.9	95.4	747.0	7.4	69	6	1.2	1
91/04/16	1130		13000.0	6.2	11.9	96.1	757.9	7.2	69	3	2.5	1K
91/05/21	1115		24200.0	7.4	11.9	98.4	762.8	7.1	50	17	4.5	19
91/06/18	1135		16900.0	9.1	11.7	100.9	761.5	7.2	48	4	1.9	1
91/07/23	1135		25800.0	10.9	11.2	101.6	754.9	6.8	46	16	8.7	6
91/08/20	1130		15500.0	12.6	11.2	104.8	760.0	7.2	44	13	6.0	1
91/09/17	1140		7600.0J	12.5	10.8	100.6	761.7	7.2	74	3	3.0	3

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	1055		0.12	0.00K	0.01	0.004	0.005	436064	
90/11/19	1055		0.10	0.01K	0.02	0.010K	0.030	476064	
90/12/11	1100		0.12	0.01K	0.02	0.010K	0.030	506065	
91/01/22	1105		0.11	0.01K	0.01	0.010K	0.060	46065	
91/02/19	1150		0.09	0.01K	0.01K	0.010K	0.120	86065	
91/03/19	1100		0.05	0.01K	0.00K	0.005K	0.005	126065	
91/04/16	1130		0.08	0.01K	0.01K	0.010K	0.010K	166065	
91/05/21	1115		0.07	0.01K	0.01	0.010K	0.014	216065	
91/06/18	1135		0.05	0.01K	0.01K	0.010K	0.010K	256065	
91/07/23	1135		0.03	0.01K	0.01	0.010K	0.012	306065	
91/08/20	1130		0.02	0.01K	0.01K	0.010K	0.010	346065	
91/09/17	1140		0.04	0.01K	0.01K	0.010K	0.015	386065	

04A100 5704A100 12181000 541038
SKAGIT RIVER AT MARBLEMOUNT
48 31 35.0 121 25 40.0 2F 0 Elev= 0 ft
53057 Washington Skagit Co. PACIFIC NORTHWEST
PUGET SOUND (Upper Skagit-04) 131104
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 02-04-07 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311082
MILES 0078.20 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	1000		6330.0	8.6	11.6	98.9	761.0	7.2	55	3	1.5	1
90/11/19	0940		18900.0	8.0	11.9	101.6	749.3	7.6	69	5	2.7	1K
90/12/11	1000		8970.0	5.5	13.6	107.2	763.0	7.3	48	4	2.3	1
91/01/22	1000		8970.0	3.3	12.8	94.8	767.3	7.6	64	1	1.0	1
91/02/19	1040		17600.0	4.2	13.0	99.5	760.2	7.0	49	24	3.9	1
91/03/19	0945		4520.0	4.1	12.5	97.5	744.2	7.5	69	1U	2.3	2
91/04/16	1010		7650.0	5.2	12.4	98.1	755.1	7.4	71	1	1.3	2
91/05/21	0950		8860.0	7.1	12.1	99.7	760.0	7.2	47	1	1.5	3
91/06/18	1005		5400.0	8.1	11.9	100.4	760.0	7.2	47	5	1.4	1K
91/07/23	1010		12500.0	9.8	11.7	103.5	754.6	6.9	45	2	2.4	1
91/08/20	0940		7550.0	10.7	11.6	103.9	761.0	7.0	45	3	3.7	2
91/09/17	1015		4050.0	10.6	11.2	100.1	760.5	7.1	55	1	1.5	2

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	1000		0.04	0.00K	0.01K	0.004	0.002K	436062	
90/11/19	0940		0.06	0.01K	0.01K	0.010K	0.010	476062	
90/12/11	1000		0.07	0.01K	0.01K	0.010K	0.010K	506063	
91/01/22	1000		0.06	0.01K	0.01K	0.010K	0.020	46063	
91/02/19	1040		0.06	0.01K	0.02	0.010K	0.030	86063	
91/03/19	0945		0.04	0.01K	0.00K	0.006	0.005K	126063	
91/04/16	1010		0.06	0.01K	0.01K	0.010K	0.010K	166063	
91/05/21	0950		0.06	0.01K	0.01K	0.010K	0.010K	216063	
91/06/18	1005		0.06	0.01K	0.01K	0.010K	0.010K	256063	
91/07/23	1010		0.04	0.01K	0.01	0.010K	0.010K	306063	
91/08/20	0940		0.03	0.01K	0.01K	0.010K	0.010K	346063	
91/09/17	1015		0.05	0.01K	0.01K	0.010K	0.012	386063	

04B070 5704B070 12193500 541036
BAKER RIVER AT CONCRETE
48 32 26.0 121 44 35.0 2F 0 Elev= 0 ft
53057 Washington Skagit Co. PACIFIC NORTHWEST
PUGET SOUND (Upper Skagit-04) 131104
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 02-04-07 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311082 000530
MILES 0056.50 0000.60 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	1035		4000.0	11.8	10.7	98.0	762.5	6.9	48	4	4.2	1K
90/11/19	1025		5430.0	8.4	12.4	106.7	750.8	7.8	48	18	19.0	5
90/12/11	1040		3720.0	5.9	13.9	110.7	763.3	7.3	42	26	36.0	1
91/01/22	1045		3800.0	3.3	12.4	91.3	767.3	7.4	47	16	18.0	2
91/02/19	1125		3880.0	4.0	12.4	94.1	762.5	7.1	48	12	17.0	1K
91/03/19	1035		112.0	4.4	12.3	96.5	746.0	7.6	54	30	43.0	2
91/04/16	1055		122.0	5.5	12.1	96.1	757.7	7.2	60	8	13.0	1K
91/05/21	1045		3800.0	7.7	11.8	98.3	762.5	7.0	61	3	5.5	70
91/06/18	1105		3930.0	10.2	11.5	101.8	761.5	7.4	51	2	1.3	3J
91/07/23	1110		4040.0	11.7	11.3	104.3	755.1	6.6	42	2	3.1	1K
91/08/20	1110		3000.0	13:0	10.9	102.9	760.0	7.0	38	1	2.5	1
91/09/17	1105		6040.0	13.8	10.4	99.6	762.3	6.9	43	2	4.3	1K

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	1035		0.08	0.00K	0.01K	0.003	0.006	436063	
90/11/19	1025		0.11	0.01K	0.03	0.010K	0.030	476063	
90/12/11	1040		0.12	0.01K	0.06	0.010K	0.040	506064	
91/01/22	1045		0.13	0.01K	0.03	0.010K	0.050	46064	
91/02/19	1125		0.12	0.01K	0.01K	0.010K	0.030	86064	
91/03/19	1035		0.09	0.01K	0.00K	0.009	0.029	126064	
91/04/16	1055		0.12	0.01K	0.04	0.010K	0.024	166064	
91/05/21	1045		0.08	0.01K	0.02	0.010K	0.012	216064	
91/06/18	1105		0.05	0.01K	0.01K	0.010K	0.010K	256064	
91/07/23	1110		0.03	0.01K	0.01K	0.010K	0.010K	306064	
91/08/20	1110		0.01	0.01K	0.01K	0.010K	0.010K	346064	
91/09/17	1105		0.02	0.01K	0.01K	0.010K	0.016	386064	

04C070 5704C070 12189498
SAUK RIVER NEAR ROCKPORT
48 24 24.0 121 33 27.0 2F 0 Elev= 0 ft
53057 Washington Skagit Co. PACIFIC NORTHWEST
PUGET SOUND (Upper Skagit-04) 131104
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 02-04-07 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311082 000660
MILES 0067.20 0007.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	0925		4330.0	6.7	12.0	97.8	761.0	7.3	51	27J	2.4	2
90/11/19	0900		5500.0	4.8	12.5	98.6	749.6	7.7	51	22	6.5	2
90/12/11	0920		8940.0	4.8	14.0	108.5	762.5	7.4	44	57	14.0	2
91/01/22	0920		3960.0	3.1	12.9	95.0	767.8	7.7	55	7	3.0	3
91/02/19	0945		13000.0	4.9	12.5	97.5	759.5	6.9	35	364	55.5	8
91/03/19	0910		2430.0	5.5	12.1	97.6	746.3	7.4	64	4	2.4	1K
91/04/16	0930		3060.0	6.8	11.7	96.2	755.7	7.4	60	3	2.0	1
91/05/21	0910		7840.0	6.8	12.0	98.1	760.0	7.0	46	32	8.5	13
91/06/18	0920		5060.0	8.2	11.6	98.1	760.2	7.0	41	7	1.6	1K
91/07/23	0920		7060.0	10.5	11.1	99.7	755.4	6.8	30	37	11.0	7
91/08/20	0900		3650.0	13.0	10.4	98.1	760.2	7.0	39	52	15.0	3
91/09/17	0935		1560.0	11.3	11.0	99.9	761.0	7.2	62	17	9.3	6

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	0925		0.10	0.00K	0.01K	0.006	0.006	436061	
90/11/19	0900		0.11	0.01K	0.01	0.010K	0.020	476061	
90/12/11	0920		0.09	0.01K	0.02	0.010K	0.030	506062	
91/01/22	0920		0.11	0.01K	0.01K	0.010K	0.030	46062	
91/02/19	0945		0.07	0.01K	0.01K	0.010K	0.140	86062	
91/03/19	0910		0.02	0.01K	0.00K	0.008	0.005K	126062	
91/04/16	0930		0.06	0.01K	0.01K	0.010K	0.010K	166062	
91/05/21	0910		0.06	0.01K	0.01	0.010K	0.018	216062	
91/06/18	0920		0.03	0.01K	0.01K	0.010K	0.010K	256062	
91/07/23	0920		0.02	0.01K	0.01K	0.010K	0.019	306062	
91/08/20	0900		0.01	0.01K	0.01	0.010K	0.035	346062	
91/09/17	0935		0.02	0.01K	0.01K	0.010K	0.026	386062	

05A070 6105A070 12167700 541039
STILLAGUAMISH RIVER NEAR SILVANA
48 11 50.0 122 12 34.0 2F 0 Elev= 0 ft
53061 Washington Snohomish Co. PACIFIC NORTHWEST
PUGET SOUND (Stillaguamish-05) 131105
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 03-05-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311106
MILES 0011.10 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	0720		3300.0	8.0	11.6	96.8	767.1	6.8	50	10	5.0J	29
90/11/19	0650		5390.0	5.8	12.2	97.4	759.2	6.6	70	47	17.0	92S
90/12/11	0705		12900.0	5.3	13.7	106.3	771.4	7.8	39	208	54.0	340
91/01/22	0720		4000.0	2.9	12.7	92.1	775.7	7.4	57	26	12.0	20
91/02/19	0730		18600.0	6.3	12.2	97.7	766.3	7.3	40	1100	156.0	230S
91/03/19	0700		2400.0	6.8	11.4	94.0	754.1	7.2	68	10	3.8	9
91/04/16	0725		3600.0	8.2	11.0	92.2	767.3	7.1	48	20	11.0	11
91/05/21	0705		3140.0	9.6	10.8	92.7	773.7	7.0	57	10	4.0	15
91/06/18	0710		4280.0	9.7	10.9	94.3	769.9	6.9	40	38	9.0	51
91/07/23	0715		850.0	18.9	8.5	90.2	764.0	7.2	69	4	2.9	69
91/08/20	0650		440.0	20.8	8.1	88.7	768.4	7.2	85	2	3.0	180
91/09/17	0715		430.0	15.7	9.3	92.0	767.8	7.0	95	4	1.5	680

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	0720		0.23	0.00K	0.01K	0.007	0.012	436058	
90/11/19	0650		0.35	0.01K	0.03	0.010K	0.040	476058	
90/12/11	0705		0.28	0.01K	0.08	0.010K	0.120	506059	
91/01/22	0720		0.37	0.01K	0.02	0.010K	0.050	46059	
91/02/19	0730		0.23	0.01K	0.02	0.010K	0.110	86059	
91/03/19	0700		0.26	0.01K	0.01	0.010	0.010	126059	
91/04/16	0725		0.22	0.01K	0.02	0.010K	0.024	166059	
91/05/21	0705		0.11	0.01K	0.02	0.010K	0.015	216059	
91/06/18	0710		0.15	0.01K	0.01K	0.010K	0.027	256059	
91/07/23	0715		0.08	0.01K	0.02	0.010K	0.010K	306059	
91/08/20	0650		0.10	0.01K	0.02	0.010K	0.014	346059	
91/09/17	0715		0.08	0.01K	0.01	0.015	0.039	386059	

05A090 6105A090 12164510
SF STILLAGUAMISH R AT ARLINGTON
48 12 03.0 122 07 04.0 2F 0 Elev= 0 ft
53061 Washington Snohomish Co. PACIFIC NORTHWEST
PUGET SOUND (Stillaguamish-05) 131105
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 03-05-05 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311106
MILES 0018.20 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	0800		1300.0	7.9	11.8	98.2	766.6	6.7	49	5	3.2	3
90/11/19	0735		3100.0	5.6	12.3	97.8	758.7	7.6	53	16	7.8	14
90/12/11	0735		6400.0	5.2	14.1	109.0	772.2	6.4	34	73	32.0	400P
91/01/22	0755		1760.0	2.8	13.2	95.5	775.0	7.4	55	10	6.3	6
91/02/19	0815		20000.0J	6.0	12.9	102.6	765.6	7.3	27	2700J	560.0J	350
91/03/19	0725		930.0	6.0	11.7	94.6	753.9	7.6	56	8	8.3	20
91/04/16	0755		1530.0	7.8	11.2	93.1	766.3	7.2	43	11	9.0	10
91/05/21	0740		1490.0	9.0	11.2	95.5	768.6	6.8	46	6	4.8	7
91/06/18	0755		2100.0	9.2	11.1	95.0	768.9	7.1	36	23	6.4	26
91/07/23	0750		560.0	17.5	9.2	95.1	763.0	7.0	54	8	8.6	35
91/08/20	0720		230.0	19.9	8.4	90.4	767.8	7.2	74	7	6.9	56
91/09/17	0810		255.0	14.5	9.6	92.7	767.6	7.2	83	2	2.6	40

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	0800		0.19	0.00K	0.01K	0.005	0.008	436059	
90/11/19	0735		0.31	0.01K	0.02	0.010K	0.020	476059	
90/12/11	0735		0.27	0.01K	0.05	0.010K	0.050	506060	
91/01/22	0755		0.35	0.01K	0.02	0.010K	0.040	46060	
91/02/19	0815		0.14	0.01K	0.03	0.010K	0.370	86060	
91/03/19	0725		0.27	0.01	0.01	0.009	0.008	126060	
91/04/16	0755		0.20	0.01K	0.01	0.010K	0.016	166060	
91/05/21	0740		0.10	0.01K	0.01	0.010K	0.012	216060	
91/06/18	0755		0.13	0.01K	0.01K	0.010K	0.017	256060	
91/07/23	0750		0.09	0.01K	0.01	0.010K	0.010K	306060	
91/08/20	0720		0.10	0.01K	0.01K	0.010K	0.011	346060	
91/09/17	0810		0.09	0.01K	0.01K	0.010K	0.015	386060	

05B070 6105B070 12166900 541040
NF STILLAGUAMISH RIVER AT CICERO
48 16 05.0 122 00 44.0 2F 0 Elev= 0 ft
53061 Washington Snohomish Co. PACIFIC NORTHWEST
PUGET SOUND (Stillaguamish-05) 131105
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 03-05-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311106 000290
MILES 0017.80 0009.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/23	0825		1530.0	7.6	11.8	97.7	765.3	7.3	59	12	5.5	15
90/11/19	0805		2540.0	5.5	12.2	97.0	756.9	7.5	57	57	21.0	10
90/12/11	0820		4960.0	4.8	13.8	106.0	769.4	7.2	41	259	67.0	47
91/01/22	0820		2060.0	3.1	12.9	94.3	773.2	7.4	56	42	14.5	3
91/02/19	0845		18500.0	5.8	12.5	99.1	764.3	7.1	26	3600J	480.0J	86
91/03/19	0805		1140.0	5.9	11.7	94.7	751.3	7.5	74	19	15.0	9
91/04/16	0825		1650.0	6.5	11.6	93.7	763.5	7.1	49	22	11.0	21
91/05/21	0805		1300.0	8.5	11.3	95.5	766.1	7.2	48	14	7.8	10
91/06/18	0825		1590.0	8.4	11.4	96.1	766.1	7.2	47	35	14.0	18
91/07/23	0820		451.0	15.7	9.9	99.0	760.2	7.2	72	6	3.4	32J
91/08/20	0745		309.0	17.1	9.2	93.9	766.3	7.3	86	5	2.6	160
91/09/17	0840		309.0	13.3	10.3	97.2	765.0	7.4	94	2	1.5	14

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/23	0825		0.23	0.00K	0.01K	0.008	0.013	436060	
90/11/19	0805		0.28	0.01K	0.04	0.010K	0.050	476060	
90/12/11	0820		0.25	0.01K	0.08	0.010K	0.100	506061	
91/01/22	0820		0.27	0.01K	0.02	0.030	0.060	46061	
91/02/19	0845		0.15	0.01K	0.03	0.010K	1.230	86061	
91/03/19	0805		0.17	0.01K	0.00K	0.006	0.016	126061	
91/04/16	0825		0.15	0.01K	0.02	0.010K	0.027	166061	
91/05/21	0805		0.09	0.01K	0.02	0.010K	0.018	216061	
91/06/18	0825		0.13	0.01K	0.01K	0.010K	0.025	256061	
91/07/23	0820		0.06	0.01K	0.01	0.010K	0.010K	306061	
91/08/20	0745		0.06	0.01K	0.01K	0.010K	0.014	346061	
91/09/17	0840		0.04	0.01K	0.01K	0.010K	0.018	386061	

07A090 6107A090 12155500 541042
SNOHOMISH RIVER AT SNOHOMISH
47 54 38.0 122 05 52.0 2F 0 Elev= 0 ft
53061 Washington Snohomish Co. PACIFIC NORTHWEST
PUGET SOUND (Snohomish-07) 131107
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 03-07-10 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311116
MILES 0012.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/22	1410		17400.0	8.1	11.7	97.8	767.1	7.4	36	22	5.3	100S
90/11/18	1435			7.3	11.3	92.4	769.6	7.3	36	19	11.0	92S
90/12/10	1345		27380.0	6.1	13.5	107.8	764.5	7.1	32	64	23.0	220S
91/01/21	1330		13000.0	3.3	12.7	93.1	775.5	7.3	44	19	7.0	
91/02/18	1340		16600.0	5.5	12.3	96.1	769.6	7.4	35	15	5.4	63
91/03/18	1420		6780.0	7.1	11.5	95.2	756.7	7.6	54	22	4.1	17
91/04/15	1420		9860.0	8.3	11.1	93.4	765.6	6.9	47	9	4.8	88S
91/05/20	1530		12100.0	8.5	11.7	98.8	767.1	6.8	37	10	3.9	33
91/06/17	1540		12100.0	10.3	11.4	99.9	770.6	7.0	34	12	3.7	74
91/07/22	1530		5750.0	16.8	10.0	101.8	763.8	7.1	30	5	3.9	21
91/08/19	1455		2240.0	21.2	8.8	97.8	762.8	7.0	58	2	3.1	40
91/09/16	1555		1730.0	15.6	9.9	98.1	765.0	7.2	85	3	1.5	57J

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/22	1410		0.27	0.00K	0.01K	0.006	0.018	436057	12
90/11/18	1435		0.32	0.01K	0.05	0.010K	0.050	476057	14
90/12/10	1345		0.28	0.01K	0.04	0.010K	0.050	506057	11
91/01/21	1330		0.39	0.01K	0.04	0.010	0.050	46057	16
91/02/18	1340		0.30	0.01K	0.01	0.010K	0.040	86057	13
91/03/18	1420		0.31	0.01K	0.04	0.011	0.017	126057	19
91/04/15	1420		0.31	0.01K	0.02	0.010K	0.016	166057	17
91/05/20	1530		0.10	0.01K	0.02	0.010K	0.012	216057	12
91/06/17	1540		0.12	0.01K	0.01K	0.010K	0.016	256057	12
91/07/22	1530		0.07	0.01K	0.01	0.010K	0.010K	306057	17
91/08/19	1455		0.12	0.01K	0.03	0.010K	0.017	346057	25
91/09/16	1555		0.12	0.01K	0.01	0.010K	0.018	386057	23

07B055 6107B055 12155400
PILCHUCK RIVER AT SNOHOMISH
47 54 47.0 122 04 56.0 2F 0 Elev= 0 ft
53061 Washington Snohomish Co. PACIFIC NORTHWEST
PUGET SOUND (Snohomish-07) 131107
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 03-07-19 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311116 000070
MILES 0013.40 0001.90 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/22	1350		390.0	8.9	11.5	98.0	767.1	7.3	66	11	2.7	23
90/11/18	1400			7.3	11.6	94.9	768.6	7.1	63	41	7.2	20
90/12/10	1330		1800.0	7.0	13.0	106.3	764.0	6.8	44	65	20.0	110S
91/01/21	1300		660.0	3.3	12.8	93.8	775.5	7.1	60	23	2.8	
91/02/18	1325		880.0	6.3	12.0	95.7	769.4	7.2	48	17	9.2	28S
91/03/18	1350		500.0	7.6	12.0	100.5	756.9	7.4	68	5	2.3	4
91/04/15	1355		570.0	9.5	11.2	97.1	765.0	7.0	82	9	3.5	39
91/05/20	1450		380.0	11.9	11.7	106.9	766.6	7.2	68	2	1.6	17
91/06/17	1515		600.0	12.8	11.7	108.4	770.4	7.1	46	13	2.0	41
91/07/22	1510		72.0	20.8	9.5	104.6	764.0	7.4	91	8	1.9	24
91/08/19	1435		40.0	21.8	9.8	110.1	762.8	7.4	99	2	2.6	28
91/09/16	1535		78.0	16.9	11.0	112.0	764.8	7.7	94	1	1.0K	13

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/22	1350		0.42	0.00K	0.01K	0.006	0.014	436056	
90/11/18	1400		0.59	0.01K	0.02	0.010K	0.030	476056	
90/12/10	1330		0.63	0.01K	0.03	0.010K	0.040	506056	
91/01/21	1300		0.78	0.01K	0.01K	0.010K	0.030	46056	
91/02/18	1325		0.52	0.01K	0.02	0.010K	0.040	86056	
91/03/18	1350		0.45	0.01K	0.00K	0.010	0.011	126056	
91/04/15	1355		0.47	0.01K	0.01K	0.010K	0.013	166056	
91/05/20	1450		0.21	0.01K	0.01	0.010K	0.014	216056	
91/06/17	1515		0.22	0.01K	0.01K	0.010K	0.017	256056	
91/07/22	1510		0.29	0.01K	0.01	0.010K	0.010K	306056	
91/08/19	1435		0.24	0.01K	0.01	0.010K	0.027	346056	
91/09/16	1535		0.17	0.01K	0.01K	0.010K	0.014	386056	

07C070 6107C070 12141100
SKYKOMISH RIVER AT MONROE
47 51 08.0 121 57 29.0 2F 0 Elev= 0 ft
53061 Washington Snohomish Co. PACIFIC NORTHWEST
PUGET SOUND (Snohomish-07) 131107
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 03-07-11 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311116
MILES 0025.60 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
91/03/18	1215		3470.0	5.7	12.2	97.3	758.4	6.6	43	3	3.1	1
91/04/15	1200		4990.0	6.9	11.7	95.2	765.6	6.8	38	7	6.6	12
91/05/20	1220		7310.0	7.5	12.1	99.6	768.1	6.7	28	10	4.5	4
91/06/17	1345		6560.0	8.8	11.8	99.8	770.6	6.9	30	8	2.5	7
91/07/22	1330		3000.0	15.3	10.9	107.4	765.0	6.9	34	4	6.1	2
91/08/19	1250		1520.0	18.7	9.8	103.7	762.8	6.9	43	4	3.2	7J
91/09/16	1350		880.0	15.6	10.8	107.0	765.3	7.3	48	2	1.3	2

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
91/03/18	1215		0.12	0.01K	0.00	0.005K	0.006	126054	
91/04/15	1200		0.14	0.01K	0.01K	0.010K	0.010K	166054	
91/05/20	1220		0.06	0.01K	0.01	0.010K	0.013	216054	
91/06/17	1345		0.05	0.01K	0.01K	0.010K	0.010K	256054	
91/07/22	1330		0.02	0.01K	0.02	0.010K	0.010K	306054	
91/08/19	1250		0.03	0.01K	0.01K	0.010K	0.010K	346054	
91/09/16	1350		0.05	0.01K	0.01K	0.010K	0.012	386054	

07C120 6107C120 12134500 541046
SKYKOMISH RIVER NEAR GOLD BAR
47 50 15.0 121 39 25.0 2F 0 Elev= 0 ft
53061 Washington Snohomish Co. PACIFIC NORTHWEST
PUGET SOUND (Snohomish-07) 131107
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 03-07-12 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311116
MILES 0043.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/22	1300		5970.0	7.1	12.5	102.6	763.0	7.3	40	5	1.7	1
90/11/18	1315		5300.0	6.0	12.7	101.3	763.5	7.1	42	7	3.8	2
90/12/10	1235		9750.0	5.6	13.6	108.2	758.4	7.0	29	34	12.0	1K
91/01/21	1210		3510.0	3.2	13.3	97.8	770.4	7.2	34	10	2.8	
91/02/18	1225		5190.0	4.6	12.9	99.2	764.5	7.2	29	6	2.5	1K
91/03/18	1250		1810.0	5.8	12.2	98.4	751.8	7.6	40	1	1.4	1K
91/04/15	1305		3190.0	6.8	12.0	98.1	760.0	7.0	46	3	3.1	2
91/05/20	1350		6040.0	6.9	12.1	99.0	761.7	6.8	27	8	2.6	40
91/06/17	1425		4980.0	8.5	11.8	99.8	765.6	7.0	28	3	1.5	3
91/07/22	1415		2670.0	14.4	10.8	105.1	759.7	7.2	30	1	2.4	1
91/08/19	1340		1060.0	19.0	9.7	104.1	756.7	7.1	40	2	2.1	2
91/09/16	1450		593.0	15.7	10.6	106.0	760.0	7.3	52	2	1.0K	1K

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/22	1300		0.16	0.00K	0.01K	0.002	0.003	436055	
90/11/18	1315		0.12	0.01K	0.01K	0.010K	0.010	476055	
90/12/10	1235		0.19	0.01K	0.01	0.010K	0.020	506055	
91/01/21	1210		0.13	0.01K	0.01K	0.010K	0.020	46055	
91/02/18	1225		0.10	0.01K	0.01K	0.010K	0.010	86055	
91/03/18	1250		0.08	0.01K	0.00K	0.008	0.005K	126055	
91/04/15	1305		0.09	0.01K	0.01K	0.010K	0.010K	166055	
91/05/20	1350		0.05	0.01K	0.01	0.010K	0.012	216055	
91/06/17	1425		0.04	0.01K	0.01K	0.010K	0.010K	256055	
91/07/22	1415		0.02	0.01K	0.01	0.010K	0.010K	306055	
91/08/19	1340		0.03	0.01K	0.01K	0.010K	0.010K	346055	
91/09/16	1450		0.06	0.01K	0.01K	0.010K	0.014	386055	

07D070 3307D070 12149000
SNOQUALMIE RIVER NEAR CARNATION
47 39 58.0 121 55 27.0 2F 0 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Snohomish-07) 131107
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 03-07-13 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311116 000120
MILES 0020.70 0023.01 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/22	1145		5310.0	7.9	11.7	97.0	769.6	7.1	45	14	4.3	17
90/11/18	1140		5830.0	6.9	12.1	97.7	771.7	6.8	43	20	5.4	59
91/02/18	1100		5150.0	5.2	12.4	96.1	770.6	6.9	34	9	4.3	23
91/03/18	1120		2420.0	6.7	11.5	93.7	760.5	7.3	55	3	2.5	8
91/04/15	1105		3860.0	7.7	11.2	92.9	765.6	6.9	47	8	5.8	22
91/05/20	1125		3890.0	8.8	11.5	97.6	768.1	7.1	37	5	3.0	30S
91/06/17	1230		5310.0	9.4	11.3	97.0	770.4	6.9	35	21	6.5	35
91/07/22	1230		1550.0	16.0	10.0	99.9	765.3	6.9	49	2	2.5	12
91/08/19	1200		904.0	20.0	9.3	101.0	763.0	7.0	59	2	2.0	28
91/09/16	1255		686.0	14.7	10.8	105.0	765.6	7.3	70	1	1.0K	6J

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/22	1145		0.29	0.00K	0.01K	0.006	0.017	436053	
90/11/18	1140		0.30	0.01K	0.02	0.010K	0.020	476053	
91/02/18	1100		0.28	0.01K	0.01K	0.010K	0.040	86053	
91/03/18	1120		0.29	0.01K	0.01	0.011	0.007	126053	
91/04/15	1105		0.31	0.01K	0.01K	0.010K	0.010	166053	
91/05/20	1125		0.14	0.01K	0.01	0.010K	0.011	216053	
91/06/17	1230		0.15	0.01K	0.01K	0.010K	0.015	256053	
91/07/22	1230		0.12	0.01K	0.01	0.010K	0.010K	306053	
91/08/19	1200		0.15	0.01K	0.01K	0.010K	0.010K	346053	
91/09/16	1255		0.17	0.01K	0.01K	0.010K	0.015	386053	

07D130 3307D130 12144400 541044
SNOQUALMIE RIVER AT SNOQUALMIE
47 31 40.0 121 48 40.0 2F 0 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Snohomish-07) 131107
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 03-07-13 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311116 000120
MILES 0020.50 0042.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/22	1050		4110.0	7.3	11.7	97.0	759.0	7.7	40	18	3.1	17
90/11/18	1100		4010.0	6.2	12.2	98.3	760.0	7.4	55	16	4.2	3
90/12/10	1100		6190.0	5.6	13.8	110.6	752.3	7.5	26	32	13.0	9
91/01/21	1035		2760.0	2.9	12.8	93.8	767.1	8.0	38	12	3.2	
91/02/18	1025		3680.0	4.6	12.4	96.0	759.7	6.9	29	13	4.1	1K
91/03/18	1030		1560.0	5.5	11.7	94.1	748.5	7.5	46	4	1.2	1
91/04/15	1025		2750.0	6.5	11.5	94.1	753.9	6.9	56	9	5.5	4
91/05/20	1045		3290.0	7.3	11.6	96.4	756.9	7.2	30	7	3.5	9
91/06/17	1150		4000.0	8.5	11.9	101.3	760.5	6.9	24	12	3.5	15
91/07/22	1145		1390.0	14.0	10.2	99.0	755.1	7.0	31	2	3.0	7
91/08/19	1125		637.0	16.6	9.2	94.6	752.9	6.8	51	3	2.8	27
91/09/16	1225		415.0	12.4	10.2	95.7	755.1	7.1	60	2	1.1	12

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/22	1050		0.21	0.00K	0.01K	0.004	0.011	436052	
90/11/18	1100		0.21	0.01K	0.01	0.010K	0.010	476052	
90/12/10	1100		0.16	0.01K	0.01	0.010K	0.020	506052	
91/01/21	1035		0.25	0.01K	0.01K	0.010K	0.030	46052	
91/02/18	1025		0.20	0.01K	0.01K	0.010K	0.040	86052	
91/03/18	1030		0.20	0.01K	0.01	0.010	0.008	126052	
91/04/15	1025		0.22	0.01K	0.01K	0.010K	0.010K	166052	
91/05/20	1045		0.10	0.01K	0.01	0.010K	0.012	216052	
91/06/17	1150		0.11	0.01K	0.01K	0.010K	0.013	256052	
91/07/22	1145		0.09	0.01K	0.01	0.011	0.010K	306052	
91/08/19	1125		0.14	0.01K	0.01K	0.010K	0.010K	346052	
91/09/16	1225		0.17	0.01K	0.01	0.010K	0.016	386052	

07D150 3307D150
MF SNOQUALMIE RIVER NEAR ELLISVILLE
47 07 06.0 121 06 46.0 2F000 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Snohomish-07) 131107
21540000 Reach=17110010000 0.000 Drg= 0 sqmi
AMBNT/STREAM/RMP

INDEX 1311116 000120
MILES 0020.50 0045.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
91/06/17	1045		2160.0	7.5	11.9	98.8	761.7	6.8	19	25	12.0	12
91/07/22	1050		1200.0	13.9	10.4	100.6	755.9	6.7	22	4	3.9	6J
91/08/19	1035		400.0	17.7	9.4	98.8	753.6	6.6	33	9	2.8	22
91/09/16	1140		195.0	12.8	10.3	97.4	755.4	6.4	46	5	1.6	100

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
91/06/17	1045		0.07	0.01K	0.01K	0.010K	0.017	256078	6
91/07/22	1050		0.03	0.01K	0.01K	0.010K	0.010K	306078	8
91/08/19	1035		0.05	0.01K	0.01K	0.010K	0.010K	346078	12
91/09/16	1140		0.06	0.01K	0.01K	0.010K	0.014	386078	13

07M070 3307M070
SF SNOQUALMIE RIVER AT NORTH BEND
47 33 12.0 121 47 23.0 2F000 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Snohomish-07) 131107
21540000 Reach=17110010000 0.000 Drg= 0 sqmi
AMBNT/STREAM/RMP

INDEX 1311116 000120 00620
MILES 0020.50 0044.40 002.01 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
91/06/17	1110		889.0	8.5	11.9	101.4	760.2	7.1	35	3	1.0	11
91/07/22	1125		268.0	13.8	10.5	101.5	754.9	7.6	60	2	2.1	12
91/08/19	1100		162.0	14.7	10.2	100.8	753.4	7.2	72	3	1.5	15
91/09/16	1200		129.0	12.4	10.4	97.5	755.4	7.3	83	1	1.0K	8

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
91/06/17	1110		0.15	0.01K	0.01K	0.010K	0.010K	256079	14
91/07/22	1125		0.22	0.01K	0.01K	0.010K	0.010K	306079	25
91/08/19	1100		0.23	0.01K	0.01K	0.010K	0.010K	346079	35
91/09/16	1200		0.30	0.01K	0.01	0.010K	0.017	386079	36

07N070 3307N070
NF SNOQUALMIE RIVER NEAR ELLISVILLE
46 59 43.0 121 46 07.0 2F000 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Snohomish-07) 131107
21540000 Reach=17110010000 0.000 Drg= 0 sqmi
AMBNT/STREAM/RMP

INDEX 1311116 000120 00650
MILES 0020.50 0044.90 000.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
91/06/17	1020		980.0	8.1	11.7	98.5	762.0	6.9	26	3	1.2	6
91/07/22	1025		205.0	14.2	10.2	99.2	756.7	6.9	40	2	3.3	5
91/08/19	1015		75.0	16.2	8.9	90.6	754.1	7.1	62	3	1.6	5
91/09/16	1055		80.0	12.0	9.9	91.9	755.9	6.5	91	1	1.0K	3

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
91/06/17	1020		0.11	0.01K	0.01K	0.010K	0.011	256077	9
91/07/22	1025		0.14	0.01K	0.01	0.010K	0.010K	306077	16
91/08/19	1015		0.31	0.01K	0.01K	0.010K	0.010K	346077	25
91/09/16	1055		0.22	0.01K	0.01K	0.010K	0.011	386077	23

08B070 3308B070 12126500 541049
SAMMAMISH RIVER AT BOTHELL
47 45 32.0 122 12 09.0 2F 0 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Cedar-08) 131108
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 04-08-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311141
MILES 0020.40 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/24	1010		279.0	11.2	9.3	84.5	759.0	7.4	141	8	2.1	96S
90/11/19	1000		720.0	9.4	9.7	84.8	756.9	8.0	116	9	2.2	26
90/12/12	1000		1000.0	7.7	11.1	92.5	762.0	7.2	116	6	3.0	220
91/01/23	1045		761.0	5.1	11.0	84.6	774.2	7.3	120	6	2.0	26
91/02/20	0955		990.0	8.1	10.7	89.1	770.6	7.1	108	11	4.7	220
91/03/20	1010		691.0	8.1	11.2	95.3	754.1	7.4	130	4	2.3	49
91/04/17	1000		717.0	10.8	10.8	95.9	769.1	7.2	114	9	3.4	31
91/05/22	0955		268.0	13.2	9.6	89.3	774.7	7.6	131	5	3.0	410S
91/06/19	0920		231.0	16.4	9.5	96.1	762.5	7.5	133	6	3.0	140
91/07/24	0905		118.0	20.8	7.9	87.1	762.8	7.4	151	7	3.4	220
91/08/21	0940		77.0	20.2	8.1	87.6	769.1	7.2	170	4	3.9	270
91/09/18	0945		116.0	16.7	8.7	87.9	768.1	7.3	241	4	2.8	400

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/24	1010		0.40	0.01	0.04	0.023	0.044	436070	
90/11/19	1000		0.30	0.01K	0.03	0.010	0.030	476070	
90/12/12	1000		0.76	0.01K	0.03	0.010	0.040	506072	
91/01/23	1045		0.71	0.01K	0.02	0.020	0.060	46072	
91/02/20	0955		0.90	0.01K	0.03	0.020	0.080	86072	
91/03/20	1010		0.46	0.01	0.02	0.016	0.023	126072	
91/04/17	1000		0.54	0.01K	0.02	0.010K	0.025	166072	
91/05/22	0955		0.49	0.01K	0.03	0.022	0.032	216072	
91/06/19	0920		0.44	0.01K	0.02	0.017	0.037	256072	
91/07/24	0905		0.29	0.01K	0.05	0.021	0.035	306072	
91/08/21	0940		0.29	0.01K	0.03	0.027	0.046	346072	
91/09/18	0945		0.32	0.01K	0.03	0.030	0.046	386072	

08C070 3308C070 12119007 541047
CEDAR R AT LOGAN ST BR AT RENTON
47 29 09.0 122 12 28.0 2F 0 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Cedar-08) 131108
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 04-08-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311141 000040 00100
MILES 0009.35 0011.50 001.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/24	1105		478.0	9.8	11.6	102.0	759.0	7.7	68	5	1.0K	49
90/11/19	1055		1520.0	7.7	11.5	96.7	755.9	7.7	54	13	3.8	24
90/12/12	1045		1040.0	6.8	13.3	107.5	768.9	7.3	59	18	6.4	
91/01/23	1135		1280.0	4.8	12.4	94.7	773.9	7.4	55	9	3.0	3
91/02/20	1055		3570.0	7.7	12.0	98.8	771.1	7.4	42	213	37.5	39
91/03/20	1115		898.0	7.4	12.0	100.5	753.4	8.3	66	1	1.8	5
91/04/17	1100		838.0	8.2	11.2	93.7	768.6	7.2	69	9	1.7	29
91/05/22	1045		381.0	10.3	12.5	109.0	774.7	7.5	83	4	2.1	27
91/06/19	1000		529.0	12.1	10.9	100.6	762.0	7.4	70	4	1.0	19
91/07/24	0955		141.0	16.1	10.0	100.4	763.0	7.3	91	4	1.0	100
91/08/21	1025		165.0	15.7	11.5	113.7	768.6	7.4	91	2	1.7	160
91/09/18	1025		202.0	13.2	11.6	109.0	766.6	7.6	90	2	1.1	75

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/24	1105		0.32	0.00K	0.01	0.010	0.015	436071	
90/11/19	1055		0.31	0.01K	0.02	0.010K	0.020	476071	
90/12/12	1045		0.39	0.01K	0.01	0.010K	0.020	506073	
91/01/23	1135		0.34	0.01K	0.01K	0.010K	0.030	46073	
91/02/20	1055		0.46	0.01K	0.01K	0.010K	0.060	86073	
91/03/20	1115		0.29	0.01	0.01	0.005K	0.006	126073	
91/04/17	1100		0.35	0.01K	0.01K	0.010K	0.010K	166073	
91/05/22	1045		0.17	0.01K	0.02	0.010K	0.016	216073	
91/06/19	1000		0.18	0.01K	0.01K	0.010K	0.010K	256073	
91/07/24	0955		0.24	0.01K	0.01K	0.010K	0.014	306073	
91/08/21	1025		0.17	0.01K	0.01K	0.010K	0.011	346073	
91/09/18	1025		0.16	0.01K	0.01K	0.010K	0.019	386073	

08C110 3308C110 12117490
CEDAR RIVER NEAR LANDSBURG
47 23 28.0 121 55 08.0 2F 0 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Cedar-08) 131108
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 04-08-03 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311141 000040 00100
MILES 0009.35 0011.50 025.10 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/22	1005		438.0	8.4	11.6	99.5	753.4	7.5	74	2	1.0K	4
90/11/18	1015		1690.0	7.4	11.9	99.5	754.1	7.4	44	6	1.0	3
90/12/10	1000		1740.0	6.8	13.2	109.8	747.3	7.7	39	9	4.5	7
91/01/21	0945		1260.0	4.1	12.6	96.0	761.5	7.6	43	2	1.6	
91/02/18	0930		1560.0	5.1	12.3	97.2	753.9	6.9	40	5	1.3	2
91/03/18	0945		844.0	6.4	11.7	96.9	743.2	8.4	51	3	3.6	1K
91/04/15	0930		1250.0	7.2	11.6	97.4	747.5	7.1	63	2	2.0	1K
91/05/20	0955		527.0	9.0	11.1	97.0	750.3	7.2	60	2	1.1	2
91/06/17	0920		664.0	9.9	11.1	98.3	755.7	7.2	53	1	1.0	9
91/07/22	0920		376.0	10.7	10.9	98.7	752.6	7.3	68	1K	1.0	4
91/08/19	0900		323.0	11.2	10.6	97.5	749.8	7.1	75	1	3.4	3
91/09/16	1000		297.0	10.2	11.0	98.6	752.1	6.9	73	1K	1.0K	5

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/22	1005		0.29	0.00K	0.01K	0.006	0.005	436051	
90/11/18	1015		0.16	0.01K	0.01K	0.010K	0.010K	476051	
90/12/10	1000		0.16	0.01K	0.01K	0.010K	0.010	506051	
91/01/21	0945		0.18	0.01K	0.01K	0.010K	0.030	46051	
91/02/18	0930		0.18	0.01K	0.01K	0.010K	0.040	86051	
91/03/18	0945		0.13	0.01K	0.00K	0.013	0.005	126051	
91/04/15	0930		0.15	0.01K	0.01K	0.010K	0.010K	166051	
91/05/20	0955		0.17	0.01K	0.01	0.010K	0.013	216051	
91/06/17	0920		0.15	0.01K	0.01K	0.010K	0.010K	256051	
91/07/22	0920		0.16	0.01K	0.01	0.010K	0.010K	306051	
91/08/19	0900		0.19	0.01K	0.01K	0.010K	0.010K	346051	
91/09/16	1000		0.17	0.01K	0.01	0.010K	0.017	386051	

09A060 3309A060
DUWAMISH RIVER AT ALLENTOWN BRIDGE
47 29 27.0 122 16 44.0 2F 0 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Duwamish/Green-09) 131109
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 04-09-09 Class= B Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311143
MILES 0008.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/24	1145			8.6	11.1	94.9	759.0	7.5	49	24	7.1	54
90/11/19	1130			7.0	11.0	91.0	755.4	7.5	76	17	4.2	88

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/24	1145		0.30	0.00K	0.01K	0.011	0.037	436072	17
90/11/19	1130		0.48	0.01K	0.04	0.030	0.050	476072	26

09A080 3309A080
GREEN RIVER AT TUKWILA
47 27 52.0 122 14 49.0 2F000 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Duwamish/Green-09) 131109
21540000 Reach=17110013000 0.000 Drg= 0 sqmi
AMBNT/STREAM/RMP

INDEX 1311143
MILES 0012.40 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/12/12	1110			6.1	13.2	104.7	769.6	7.3	62	65	12.0H	92S
91/01/23	1205			4.3	12.1	91.2	773.9	6.8	75	23	4.5	34
91/02/20	1125			8.2	11.7	97.5	771.1	6.9	41	326	94.5	870
91/03/20	1150			7.7	11.5	97.1	752.9	7.5	87	18	3.5	3
91/04/17	1225			9.6	10.2	88.3	767.8	7.2	82	25	6.0	31
91/05/22	1130			10.5	9.9	86.7	774.4	7.0	110	10	2.8	24
91/06/19	1045			15.6	9.0	89.7	761.2	7.4	105	10	2.4	84
91/07/24	1025			18.7	8.1	85.8	762.5	7.0	148	10	3.5	120
91/08/21	1050			19.9	8.5	91.5	767.8	7.2	162	7	4.0	160
91/09/18	1055			16.3	8.8	88.4	765.8	7.1	161	8	2.7	100

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/12/12	1110		0.44	0.01K	0.03	0.020	0.050	506074	22
91/01/23	1205		0.51	0.01K	0.02	0.020	0.060	46074	26
91/02/20	1125		0.42	0.01K	0.04	0.020	0.100	86074	15
91/03/20	1150		0.37	0.01	0.02	0.005K	0.025	126074	27
91/04/17	1225		0.43	0.01K	0.02	0.016	0.035	166074	29
91/05/22	1130		0.32	0.01K	0.03	0.016	0.031	216074	34
91/06/19	1045		0.37	0.01K	0.01K	0.014	0.035	256074	35
91/07/24	1025		0.37	0.01K	0.05	0.022	0.037	306074	62
91/08/21	1050		0.31	0.01K	0.05	0.023	0.046	346074	52
91/09/18	1055		0.32	0.01K	0.04	0.022	0.048	386074	53

09A090 3309A090 12113340
GREEN R AT 212TH STREET NR KENT
47 24 45.0 122 15 49.0 2F 0 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Duwamish/Green-09) 131109
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 04-09-06 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311143
MILES 0018.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/24	1215		3620.0	8.4	11.4	97.0	759.0	7.3	55	28	5.6	21S
90/11/19	1200		2670.0	6.8	11.3	93.8	755.4		162	16	3.7	25S
90/12/12	1135		3720.0	5.9	13.4	105.8	769.6	7.4	71	49	10.0H	96S
91/01/23	1230		2250.0	4.3	12.1	91.2	773.7	7.1	70	20	4.5	180
91/02/20	1150		10100.0	7.5	11.8	96.7	771.1	7.1	41	314	96.0	660
91/03/20	1225		1830.0	7.4	11.2	93.9	752.1	7.3	83	13	2.3	
91/04/17	1315		1950.0	8.9	10.6	90.2	768.1	7.4	82	24	5.1	20
91/05/22	1215		1080.0	10.6	10.1	88.8	773.7	7.0	111	7	2.6	43
91/06/19	1115		723.0	14.7	9.7	95.0	760.0	7.4	96	7	2.4	100
91/07/24	1100		363.0	19.5	8.2	88.3	762.0	7.0	131	7	2.7	88
91/08/21	1135		240.0	20.0	9.1	98.3	766.8	7.2	134	5	2.5	96
91/09/18	1130		232.0	16.7	9.4	95.4	765.0	7.3	235	4	1.7	36

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/24	1215		0.30	0.00K	0.01K	0.009	0.019	436073	17
90/11/19	1200		0.46	0.01K	0.04	0.030	0.050	476073	24
90/12/12	1135		0.43	0.01K	0.03	0.020	0.050	506075	22
91/01/23	1230		0.50	0.01K	0.03	0.020	0.060	46075	25
91/02/20	1150		0.41	0.01K	0.04	0.010	0.260	86075	15
91/03/20	1225		0.37	0.01	0.03	0.023	0.026	126075	26
91/04/17	1315		0.43	0.01K	0.03	0.015	0.036	166075	30
91/05/22	1215		0.31	0.01K	0.04	0.017	0.032	216075	34
91/06/19	1115		0.36	0.01K	0.01K	0.015	0.035	256075	33
91/07/24	1100		0.37	0.01K	0.05	0.025	0.035	306075	48
91/08/21	1135		0.28	0.01K	0.03	0.020	0.035	346075	47
91/09/18	1130		0.31	0.01K	0.02	0.020	0.041	386075	46

09A190 3309A190 12107000 541110
GREEN RIVER AT KANASKAT
47 19 10.0 121 53 33.0 2F 0 Elev= 0 ft
53033 Washington King Co. PACIFIC NORTHWEST
PUGET SOUND (Duwamish/Green-09) 131109
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 04-09-07 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311143
MILES 0057.60 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/22	0925		4040.0	7.8	12.1	103.0	748.3	7.4	46	14	7.8	27
90/11/18	0925		2030.0	6.5	12.0	98.9	748.8	6.8	46	3	1.6	2
90/12/10	0910		1300.0	6.0	13.5	110.2	746.3	8.5	42	5	2.9	17
91/01/21	0845		1860.0	3.1	12.9	96.6	754.9	8.2	40	5	2.1	
91/02/18	0850		2590.0	4.7	12.0	94.5	748.8	8.3	37	5	3.6	1
91/03/18	0850		613.0	5.6	12.0	97.8	740.2	7.1	46	4	1.8	1K
91/04/15	0840		1150.0	6.9	11.5	96.7	741.2	7.2	43	2	4.2	3
91/05/20	0905		1340.0	8.2	12.0	103.6	745.2	7.1	45	1	1.6	2
91/06/17	0830		565.0	8.9	11.2	97.6	750.6	7.0	51	3	1.4	14
91/07/22	0835		267.0	13.4	10.2	98.7	748.0	7.3	46	3	1.9	16
91/08/19	0810		131.0	15.5	9.6	97.6	744.7	7.2	64	3	2.3	15
91/09/16	0905		137.0	14.0	10.0	98.1	747.3	6.9	102	4	1.0	13

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/22	0925		0.18	0.00K	0.01K	0.009	0.026	436050	
90/11/18	0925		0.21	0.01K	0.01	0.010K	0.020	476050	
90/12/10	0910		0.19	0.01K	0.01K	0.010K	0.020	506050	
91/01/21	0845		0.17	0.01K	0.01K	0.010	0.040	46050	
91/02/18	0850		0.13	0.01K	0.01K	0.010K	0.030	86050	
91/03/18	0850		0.11	0.01K	0.01	0.018	0.010	126050	
91/04/15	0840		0.11	0.01K	0.01K	0.010K	0.013	166050	
91/05/20	0905		0.04	0.01K	0.01	0.010K	0.012	216050	
91/06/17	0830		0.08	0.01K	0.01	0.010K	0.010K	256050	
91/07/22	0835		0.06	0.01K	0.02	0.010K	0.010K	306050	
91/08/19	0810		0.05	0.01K	0.01	0.010K	0.010K	346050	
91/09/16	0905		0.06	0.01K	0.01	0.010K	0.015	386050	

10A070 5310A070 12101475
PUYALLUP R AT MERIDIAN ST BRIDGE
47 12 10.0 122 17 33.0 2F 0 Elev= 0 ft
53053 Washington Pierce Co. PACIFIC NORTHWEST
PUGET SOUND (Puyallup/White-10) 131110
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 05-10-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311160
MILES 0008.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/31	1325		3810.0	9.1	10.9	93.6	764.5	7.7	68	25	6.9	1300
90/11/28	1350		13500.0	6.3	12.1	96.0	773.4	7.4	50	367	105.0	140
90/12/19	1325		4590.0	2.0	14.6	104.9	763.8	7.6	64	19	4.9	
91/01/30	1330		2840.0	2.9			766.3	7.3	75	6	3.5	26
91/02/27	1035		5100.0	5.8	11.7	94.1	754.1	7.3	63	32	9.1	33
91/03/27	1055		3310.0	6.2	11.8	93.8	769.9	7.0	67	5	4.5	28
91/04/24	1105		4730.0	9.2	11.0	95.2	761.0	7.4	68	22	3.9	64
91/05/29	1215		3640.0	10.9	11.4	102.7	759.7	7.7	69	7	2.0	400
91/06/26	1025		3920.0	12.0	10.4	95.4	764.8	7.0	60	7	3.3	690
91/07/31	1010		2830.0	14.4	9.6	93.0	763.0	7.9	72	123	42.0	190
91/08/28	1055		2140.0	13.8	9.9	95.1	760.0	7.4	114	156	43.0	220
91/09/25	1040		1440.0	11.5	10.4	94.6	762.8	7.4	84	540	186.0	550

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/31	1325		0.17	0.00	0.03	0.019	0.040	446119	
90/11/28	1350		0.26	0.01K	0.02	0.010K	0.210	486119	
90/12/19	1325		0.33	0.01K	0.03	0.010	0.030	516121	
91/01/30	1330		0.35	0.01	0.03	0.020	0.060	56121	
91/02/27	1035		0.31	0.01K	0.02	0.010	0.090	96121	
91/03/27	1055		0.20	0.01K	0.03	0.020	0.014	136121	
91/04/24	1105		0.17	0.01K	0.02	0.010K	0.026	176121	
91/05/29	1215		0.09	0.01K	0.01	0.011	0.019	226121	
91/06/26	1025		0.09	0.01K	0.01K	0.010K	0.010K	266121	
91/07/31	1010		0.12	0.01	0.03	0.032	0.107	316121	
91/08/28	1055		0.11	0.01K	0.04	0.016	0.111	356121	
91/09/25	1040		0.11	0.01K	0.03	0.022	0.208	396121	

10A110 5310A110 12093510 541058
PUYALLUP RIVER AT ORTING
47 05 21.0 122 12 44.0 2F 0 Elev= 0 ft
53053 Washington Pierce Co. PACIFIC NORTHWEST
PUGET SOUND (Puyallup/White-10) 131110
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 05-10-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311160
MILES 0022.20 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/31	1115		751.0	7.6	11.5	95.9	759.7	7.6	60	19	4.2	32
90/11/28	1220		2410.0	6.8	12.3	99.3	769.4	7.3	54	40	7.7	4
90/12/19	1215		1430.0	1.4	15.5	110.5	757.7	7.6	53	10	1.6	
91/01/30	1120		1000.0	1.4			764.0	7.2	65	1	1.2	5
91/02/27	0900		886.0	4.5	12.3	96.1	750.8	7.3	52	7	2.1	1
91/03/27	0920		482.0	4.6	12.8	98.4	765.0	7.2	60	2	2.1	7
91/04/24	1000		802.0	7.8	11.6	97.6	756.7	7.4	53	43	3.4	21
91/05/29	1030		723.0	9.2	12.6	109.6	756.7	7.8	63	8	2.1	9
91/06/26	0915		829.0	9.3	11.4	98.9	761.0	6.8	50	10	4.4	12
91/07/31	0905		839.0	10.0	11.4	100.5	760.5	7.0	53	372J	170.0	9
91/08/28	0950		642.0	9.9	11.2	99.2	755.7	7.5	57	394	114.0	27
91/09/25	0940		562.0	8.3	11.5	97.7	758.7	7.3	53	862	275.0	9

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/31	1115		0.17	0.00	0.04	0.004	0.035	446117	
90/11/28	1220		0.30	0.01K	0.01	0.010K	0.060	486117	
90/12/19	1215		0.23	0.01K	0.01K	0.010K	0.020	516119	
91/01/30	1120		0.19	0.01K	0.01K	0.010K	0.030	56119	
91/02/27	0900		0.23	0.01K	0.01K	0.010	0.050	96119	
91/03/27	0920		0.12	0.01K	0.01	0.015	0.005K	136119	
91/04/24	1000		0.06	0.01K	0.01	0.010K	0.023	176119	
91/05/29	1030		0.01K	0.01K	0.01	0.010K	0.015	226119	
91/06/26	0915		0.03	0.01K	0.01K	0.010K	0.010K	266119	
91/07/31	0905		0.02	0.01	0.01K	0.019	0.141	316119	
91/08/28	0950		0.05	0.01K	0.01K	0.010K	0.206	356119	
91/09/25	0940		0.03	0.01K	0.02	0.010K	0.239	396119	

10C070 5310C070 12101110
WHITE RIVER AT SUMNER
47 12 14.0 122 14 41.0 2F 0 Elev= 0 ft
53053 Washington Pierce Co. PACIFIC NORTHWEST
PUGET SOUND (Puyallup/White-10) 131110
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 05-10-05 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311160 000070
MILES 0009.60 0000.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/31	1245		1630.0	9.8	10.0	87.4	764.0	7.6	75	11	11.0	930
90/11/28	1315		10500.0	6.2	12.1	95.8	773.2	7.6	49	453	128.0	180
90/12/19	1250		2650.0	2.8	14.3	105.2	762.5	7.7	58	22	7.4	
91/01/30	1155		1650.0	3.0			766.8	7.1	68	8	3.9	20
91/02/27	0955		3050.0	5.9	11.6	93.5	753.9	7.6	60	59	11.5	29S
91/03/27	1010		1980.0	6.5	11.4	91.4	769.4	6.6	67	5	5.0	35
91/04/24	1040		2470.0	9.8	10.9	95.6	761.0	7.4	66	17	4.8	63
91/05/29	1135		1900.0	11.8	10.5	96.5	760.0	7.7	64	7	2.0	320
91/06/26	1000		2000.0	13.4	9.8	92.8	764.0	7.0	58	3	3.2	1200J
91/07/31	0940		1430.0	16.2	9.0	90.5	763.5	7.2	63	15	17.0	66
91/08/28	1020		1060.0	16.2	8.8	89.0	759.5	7.5	71	26	15.0	140
91/09/25	1015		580.0	12.9	9.7	91.1	762.3	7.4	105	17	26.5	1000J

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/31	1245		0.14	0.00	0.03	0.017	0.038	446118	
90/11/28	1315		0.21	0.01K	0.02	0.010	0.240	486118	
90/12/19	1250		0.28	0.01K	0.02	0.010	0.030	516120	
91/01/30	1155		0.29	0.01K	0.03	0.020	0.040	56120	
91/02/27	0955		0.25	0.01K	0.03	0.020	0.100	96120	
91/03/27	1010		0.15	0.01K	0.02	0.016	0.005K	136120	
91/04/24	1040		0.12	0.01K	0.02	0.010K	0.025	176120	
91/05/29	1135		0.06	0.01K	0.02	0.011	0.018	226120	
91/06/26	1000		0.03	0.01K	0.01K	0.010K	0.010K	266120	
91/07/31	0940		0.03	0.01	0.01	0.019	0.035	316120	
91/08/28	1020		0.09	0.01K	0.03	0.016	0.054	356120	
91/09/25	1015		0.05	0.01K	0.05	0.033	0.067	396120	

11A070 6711A070 12090240
NISQUALLY RIVER AT NISQUALLY
47 03 43.0 122 41 42.0 2F 0 Elev= 0 ft
53067 Washington Thurston Co. PACIFIC NORTHWEST
PUGET SOUND (Nisqually-11) 131111
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 06-11-01 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311161 000170
MILES 0020.60 0003.40 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/31	1600		2050.0	10.3	10.6	93.5	765.8	7.8	68	50	28.0	29
90/11/28	1615		4750.0	7.5	11.4	93.2	772.9	7.8	52	312	190.0	57
90/12/19	1510		3280.0	2.7	14.1	102.9	766.1	6.9	60	15	11.0	
91/01/30	1530		1950.0	4.0			766.8	7.7	80	4	7.8	6
91/02/27	1215		3350.0	6.1	11.6	94.0	753.4	7.3	60	29	18.5	20
91/03/27	1300		2500.0	7.2	11.9	97.0	770.1	6.7	67	4	5.1	16
91/04/24	1300		2400.0	8.5	12.2	103.6	762.8	7.6	68	9	8.9	5
91/05/29	1525		2200.0	9.5	12.2	106.5	759.7	7.9	68	6	2.6	9
91/06/26	1200		1700.0	11.6	10.8	98.2	765.0	7.2	62	5	1.9	5
91/07/31	1140		1340.0	14.2	10.2	98.4	763.0	7.2	70	4	3.0	13
91/08/28	1245		1120.0	13.0	10.6	99.9	761.2	7.6	71	2	1.8	21
91/09/25	1225		945.0	13.8	10.5	100.7	761.5	7.7	84	4	3.7	12

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/31	1600		0.22	0.00	0.04	0.009	0.078	446121	22
90/11/28	1615		0.30	0.01K	0.03	0.010K	0.260	486121	21
90/12/19	1510		0.39	0.01K	0.02	0.010K	0.040	516123	
91/01/30	1530		0.44	0.01K	0.01	0.010K	0.050	56123	25
91/02/27	1215		0.43	0.01K	0.05	0.010	0.100	96123	22
91/03/27	1300		0.33	0.01K	0.02	0.020	0.024	136123	22
91/04/24	1300		0.37	0.01K	0.01	0.010K	0.024	176123	23
91/05/29	1525		0.20	0.01K	0.01K	0.010K	0.012	226123	38
91/06/26	1200		0.16	0.01K	0.01K	0.010K	0.010K	266123	24
91/07/31	1140		0.13	0.01K	0.01K	0.010K	0.010K	316123	25
91/08/28	1245		0.13	0.01K	0.01	0.010K	0.017	356123	25
91/09/25	1225		0.10	0.01K	0.01	0.010K	0.014	396123	25

11A080 5311A080 12089500 541065
NISQUALLY RIVER AT MCKENNA
46 56 00.0 122 33 35.0 2F 0 Elev= 0 ft
53053 Washington Pierce Co. PACIFIC NORTHWEST
PUGET SOUND (Nisqually-11) 131111
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 06-11-01 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM

INDEX 1311161 000170
MILES 0020.60 0021.80 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/31	1010		1040.0	10.0	10.6	94.2	755.1	7.9	60	52	27.5	31S
90/11/28	1120		2740.0	7.0	11.6	94.6	766.1	7.5	48	300	205.0	100
90/12/19	1100		1720.0	4.0	14.1	108.3	753.4	7.7	55	15	13.0	
91/01/30	1010		728.0	2.7			761.0	7.0	65	5	8.6	13
91/02/27	0810		1840.0	4.9	11.7	92.6	748.5	7.4	53	30	22.0	61
91/03/27	0820		1140.0	5.2	12.1	94.8	761.7	6.7	59	3	5.9	20
91/04/24	0850		1020.0	7.2	11.5	95.7	754.4	7.5	54	9	9.1	6
91/05/29	0920		957.0	8.2	12.2	104.0	754.1	7.7	60	6	3.0	9
91/06/26	0820		593.0	10.1	10.9	96.7	757.9	7.1	58	3	2.4	10
91/07/31	0755		501.0	11.3	10.7	97.4	759.0	7.0	58	3	3.2	12
91/08/28	0855		464.0	12.4	10.5	98.8	752.9	7.7	58	1	1.6	12
91/09/25	0845		404.0	12.5	10.2	95.8	755.4	7.5	52	2	4.7	5

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/31	1010		0.19	0.00	0.03	0.007	0.075	446116	
90/11/28	1120		0.29	0.01K	0.06	0.010K	0.250	486116	
90/12/19	1100		0.33	0.01K	0.04	0.010K	0.030	516118	
91/01/30	1010		0.33	0.01K	0.02	0.010K	0.050	56118	
91/02/27	0810		0.37	0.01K	0.06	0.010	0.110	96118	
91/03/27	0820		0.29	0.01K	0.02	0.019	0.012	136118	
91/04/24	0850		0.27	0.01K	0.02	0.010K	0.024	176118	
91/05/29	0920		0.20	0.01K	0.01	0.010K	0.011	226118	
91/06/26	0820		0.12	0.01K	0.01K	0.010K	0.010K	266118	
91/07/31	0755		0.06	0.01	0.01K	0.010K	0.010K	316118	
91/08/28	0855		0.05	0.01K	0.01K	0.010K	0.014	356118	
91/09/25	0845		0.04	0.01K	0.01	0.011	0.012	396118	

12A070 5312A070 12091600 541059
CHAMBERS CREEK NEAR STEILACOOM
47 11 32.0 122 34 20.0 2F 0 Elev= 0 ft
53053 Washington Pierce Co. PACIFIC NORTHWEST
PUGET SOUND (Chambers/Clover-12) 131112
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 05-12-07 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311161 000090
MILES 0012.80 0000.90 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/31	1500		150.0	11.0	10.0	89.7	764.8	7.6	125	7	4.7	770
90/11/28	1530		255.0	9.1	11.0	93.5	772.7	7.4	128	11	2.8	140
90/12/19	1430		210.0	5.0	13.6	105.5	765.8	7.7	148	10	1.1	
91/01/30	1450		186.0	6.0			766.6	7.7	170	7	2.1	7100J
91/02/27	1130		218.0	8.9	11.0	95.4	753.9	7.5	141	11	2.8	3K
91/03/27	1220		190.0	9.8	11.1	96.2	770.6	7.1	150	9	2.6	7
91/04/24	1220		124.0	12.4	10.4	96.7	761.7	7.6	148	11	3.6	51
91/05/29	1415		77.0	14.1	10.3	99.7	759.5	7.8	170	8	1.2	51
91/06/26	1130		77.0	15.5	9.5	94.0	765.3	7.3	159	8	1.8	37
91/07/31	1105		57.0	16.5	9.0	90.9	765.0	7.5	174	3	1.4	360
91/08/28	1155		52.0	14.3	8.6	83.4	761.2	7.5	187	2	1.8	750
91/09/25	1145		51.0	12.5	9.2	85.6	762.8	7.7	221	2	1.0K	80

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/31	1500		0.64	0.01	0.03	0.043	0.070	446120	
90/11/28	1530		0.94	0.01K	0.03	0.030	0.070	486120	
90/12/19	1430		1.53	0.01K	0.03	0.030	0.050	516122	
91/01/30	1450		1.67	0.01	0.13	0.040	0.090	56122	
91/02/27	1130		1.32	0.01K	0.02	0.010K	0.080	96122	
91/03/27	1220		1.13	0.01K	0.03	0.017	0.013	136122	
91/04/24	1220		1.33	0.01K	0.03	0.010K	0.028	176122	
91/05/29	1415		1.13	0.01K	0.03	0.013	0.030	226122	
91/06/26	1130		1.06	0.01K	0.01	0.010K	0.010K	266122	
91/07/31	1105		1.09	0.03	0.03	0.033	0.036	316122	
91/08/28	1155		1.20	0.01K	0.05	0.035	0.061	356122	
91/09/25	1145		1.27	0.01	0.03	0.047	0.059	396122	

13A060 6713A060 12080010
DESCHUTES R AT E STREET BRIDGE
47 00 43.0 122 54 07.0 2F 0 Elev= 0 ft
53067 Washington Thurston Co. PACIFIC NORTHWEST
PUGET SOUND (Deschutes-13) 131113
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 06-13-04 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311161 000250 00070 0080
MILES 0029.00 0005.00 008.80 000.60 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/30	1505		370.0	9.8	10.3	90.9	756.9	7.5	101	49	5.1J	
90/11/27	1640		1100.0	7.4	10.8	88.2	771.9	7.0	75	46	15.5	430
90/12/18	1410		529.0	6.2	12.7	103.2	753.6	7.3	89	17		
91/01/29	1710		311.0	4.6			768.4	7.8	101	5	2.9	14
91/02/26	1345		494.0	7.9	11.5	97.1	756.4	7.2	90	8	4.3	14S
91/03/26	1455		507.0	8.1	11.5	97.1	760.0	7.0	87	8	5.5	74S
91/04/23	1415		426.0	9.9	10.4	91.7	758.7	7.1	103	11	3.6	27S
91/05/28	1555		297.0	12.6	11.9	110.3	767.1	7.7	110	6	1.6	4
91/06/25	1340		222.0	14.0	10.3	98.9	763.8	7.2	110	5	1.7	17
91/07/30	1320		137.0	17.1	9.9	101.2	765.3	7.3	129	2	2.0	
91/08/27	1545		125.0	14.4	11.4	111.4	756.9	8.0	125	5		310J
91/09/24	1420		86.0	13.0	12.0	113.1	761.2	8.0	160	2	1.3	92

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/30	1505		0.32	0.01	0.03	0.014	0.055	446115	37
90/11/27	1640		0.59	0.01K	0.02	0.010	0.070	486115	25
90/12/18	1410		0.63		0.01K		0.030	516115	
91/01/29	1710		0.81	0.01K	0.01K	0.020	0.050	56115	36
91/02/26	1345		0.68	0.01K	0.01	0.010	0.080	96115	32
91/03/26	1455		0.42	0.01K	0.02	0.021	0.026	136115	29
91/04/23	1415		0.65	0.01K	0.02	0.010K	0.027	176115	35
91/05/28	1555		0.47	0.01K	0.01	0.010K	0.013	226115	27
91/06/25	1340		0.55	0.01K	0.01K	0.010K	0.010K	266115	42
91/07/30	1320		0.75	0.01K	0.01K	0.017	0.019	316115	48
91/08/27	1545		0.63	0.01K	0.02	0.014	0.029	356115	44
91/09/24	1420		0.69	0.01K	0.01	0.014	0.024	396115	46

13A150 6713A150 12079004 541067
DESCHUTES RIVER NEAR RAINIER
46 52 23.0 122 43 46.0 2F 0 Elev= 0 ft
53067 Washington Thurston Co. PACIFIC NORTHWEST
PUGET SOUND (Deschutes-13) 131113
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 06-13-04 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311161 000250 00070 0080
MILES 0029.00 0005.00 008.80 021.61 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/31	0925		410.0	9.2	10.4	90.7	755.4	8.0	82	11	3.0	51
90/11/28	0925		590.0	6.9	11.5	93.2	768.9	7.4	70	21	7.1	22S
90/12/19	1020		380.0	2.7	14.3	106.2	753.6	8.1	71	3	3.9	
91/01/30	0915		160.0	3.1			761.0	6.7	114	4	2.6	6
91/02/27	0735		280.0	6.1	11.5	93.8	749.3	7.0	81	6	3.8	16
91/03/27	0740		360.0	5.8	11.5	91.5	761.7	6.6	76	4	8.0	9
91/04/24	0740		240.0	9.3	10.4	91.0	754.4	7.3	79	5	3.2	76
91/05/29	0840		160.0	11.3	10.6	97.0	754.9	7.7	100	4	2.5	17
91/06/26	0740		120.0	12.8	9.6	90.5	757.9	7.2	99	3	3.5	58
91/07/31	0700		51.0	15.8	8.6	86.3	759.0	7.3	122	3	3.7	14
91/08/28	0820		42.0	14.1	9.9	96.6	753.1	7.8	157	1	3.3	64
91/09/25	0805		37.0	11.5	9.5	87.1	756.9	7.4	141	2	1.3	65

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/31	0925		0.33	0.00	0.04	0.007	0.028	446108	
90/11/28	0925		0.50	0.01K	0.01	0.020	0.040	486108	
90/12/19	1020		0.45	0.01K	0.01K	0.010	0.020	516117	
91/01/30	0915		0.57	0.01K	0.01	0.020	0.050	56117	
91/02/27	0735		0.53	0.01K	0.01	0.020	0.080	96117	
91/03/27	0740		0.32	0.01K	0.02	0.023	0.012	136117	
91/04/24	0740		0.45	0.01K	0.02	0.010K	0.023	176117	
91/05/29	0840		0.25	0.01K	0.01	0.010K	0.017	226117	
91/06/26	0740		0.30	0.01K	0.01K	0.010K	0.010K	266117	
91/07/31	0700		0.48	0.01K	0.02	0.017	0.014	316117	
91/08/28	0820		0.49	0.01K	0.01	0.010K	0.026	356117	
91/09/25	0805		0.51	0.01K	0.01K	0.012	0.018	396117	

16A070 4516A070 12061500 541074
SKOKOMISH RIVER NEAR POTLATCH
47 18 36.0 123 10 33.0 2F 0 Elev= 0 ft
53045 Washington Mason Co. PACIFIC NORTHWEST
PUGET SOUND (Skokomisk/Dosewallips-16) 131116
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 25-16-99 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1311211 001260
MILES 0050.80 0005.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/29	0950		1240.0	8.1	11.2	94.1	763.8	8.3	66	5	3.9	15
90/11/26	0915		4500.0J	7.0	12.1	98.2	769.6	6.9	57	90	37.5	4
90/12/17	0800		1110.0	7.0	13.3	107.7	771.1	7.7	64	6	2.5	
91/01/28	0730		551.0	5.3			770.6	6.8	65	2		15
91/02/25	0810		1390.0	5.9	11.7	91.7	775.0	6.6	58	8	3.1	1
91/03/25	0820		738.0	6.9	11.2	92.3	755.7	6.3	75	4	4.6	3
91/04/22	0800		888.0	8.7	10.8	91.4	768.6	7.4	53	3	1.5	1K
91/05/27	0810		485.0	8.9	11.2	94.9	771.1	7.7	80	4	1.0	10
91/06/24	0805		346.0	10.2	9.9	87.1	766.1	7.1	56	2	1.1	22
91/07/29	0735		216.0	10.4	9.9	87.0	770.1	7.5	81	2	2.2	28
91/08/26	0820		174.0	9.8	10.0	87.1	766.6	7.6	95	1	0.8	25
91/09/23	0830		256.0	9.1	9.9	83.7	777.0	7.4	82	1	1.0K	6

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/29	0950		0.12	0.01K	0.02	0.004	0.008	446100	
90/11/26	0915		0.12	0.01K	0.01K	0.010K	0.070	486100	
90/12/17	0800		0.14		0.01K		0.020	516100	
91/01/28	0730		0.14	0.01K	0.01K	0.010	0.020	56100	
91/02/25	0810		0.11	0.01K	0.01K	0.010K	0.040	96100	
91/03/25	0820		0.06	0.01K	0.03	0.009	0.010	136100	
91/04/22	0800		0.07	0.01K	0.01K	0.010K	0.010K	176100	
91/05/27	0810		0.04	0.01K	0.01K	0.010K	0.010K	226100	
91/06/24	0805		0.07	0.01K	0.01K	0.010K	0.010K	266100	
91/07/29	0735		0.09	0.01K	0.01	0.010	0.010K	316100	
91/08/26	0820		0.09	0.01K	0.02	0.010K	0.018	356100	
91/09/23	0830		0.09	0.01K	0.01	0.011	0.018	396100	

22A070 2722A070 12039003 541082
HUMPTULIPS RIVER NEAR HUMPTULIPS
47 13 48.0 123 57 38.0 2F 0 Elev= 0 ft
53027 Washington Grays Harbor Co. PACIFIC NORTHWEST
COASTAL (Lower Chehalis-22) 131222
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 10-22-05 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1312093
MILES 0023.60 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/29	1400		1690.0	8.8	11.0	95.4	752.3	7.7	59	5	2.8	180
90/11/26	1345		4200.0	7.2	11.9	97.7	764.3	7.1	52	106	47.0	23
90/12/17	1135		1720.0	6.4	13.6	109.2	766.3	7.1	52	9	4.2	
91/01/28	1145		990.0	4.5			769.1	6.8	51	1K		1
91/02/25	1145		1750.0	6.6	11.7	94.5	765.6	7.1	57	8	4.2	2
91/03/25	1250		1070.0	7.6J	11.8	99.7	750.3	7.5	75	1	1.2	1K
91/04/22	1155		830.0	9.2	11.5	98.9	765.3	7.5	58	1	1.1	2
91/05/27	1130		490.0	10.0	12.8	111.8	767.6	7.9	61	3	0.3	1K
91/06/24	1130		510.0	12.9	10.6	99.3	764.3	7.0	60	1	1.0	10
91/07/29	1130		170.0	17.2	10.1	103.4	765.3	7.3	72	1	0.3	8
91/08/26	1235		140.0	14.2	10.6	102.8	759.2	7.5	86	1	0.4	13
91/09/23	1220		295.0	11.6	11.9	107.6	769.4	7.6	83	1	1.0K	7

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/29	1400		0.24	0.00	0.03	0.002	0.011	446104	
90/11/26	1345		0.22	0.01K	0.01	0.010K	0.070	486104	
90/12/17	1135		0.19		0.01K		0.010	516104	
91/01/28	1145		0.20	0.01K	0.01K	0.010K	0.020	56104	
91/02/25	1145		0.18	0.01K	0.01K	0.010K	0.040	96104	
91/03/25	1250		0.06	0.01K	0.02	0.006	0.011	136104	
91/04/22	1155		0.08	0.01K	0.01K	0.010K	0.010K	176104	
91/05/27	1130		0.01	0.01K	0.01K	0.010K	0.010K	226104	
91/06/24	1130		0.05	0.01K	0.01K	0.010K	0.010K	266104	
91/07/29	1130		0.03	0.01K	0.01K	0.010K	0.010K	316104	
91/08/26	1235		0.03	0.01K	0.01	0.010K	0.012	356104	
91/09/23	1220		0.03	0.01K	0.01K	0.010K	0.013	396104	

22C050 2722C050 12035100
CHEHALIS RIVER NEAR MONTESANO
46 57 45.0 123 36 12.0 2F 0 Elev= 0 ft
53027 Washington Grays Harbor Co. PACIFIC NORTHWEST
COASTAL (Lower Chehalis-22) 131222
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 10-22-12 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1312099
MILES 0013.15 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/29	1225			9.5	10.2	89.1	758.7	7.5	81	12	2.4	230
90/11/26	1200			8.5	9.4	79.1	769.1	7.2	55	131	47.5	790S
90/12/17	1025			6.3	12.7	101.2	770.6	7.1	70	12	4.7	
91/01/28	1035			4.1			772.2	7.4	85	5		110
91/02/25	1025			7.0	11.1	89.8	772.2	7.0	66	18	6.2	11
91/03/25	1045			8.4J	10.7	91.8	753.4	7.3	71	6	4.1	31S
91/04/22	1030			12.0	9.8	89.5	768.4	7.2	80	6	4.9	85
91/05/27	1020			12.4	10.6	97.4	770.6	7.4	86	7	2.4	17
91/06/24	1020			15.3	9.0	88.5	766.6	7.2	83	5	4.0	33
91/07/29	1000			19.0	8.8	92.9	769.1	7.2	94	6	1.5	57J
91/08/26	1045			17.2	8.7	89.2	764.5	7.4	118	5	2.1	29
91/09/23	1105			13.8	9.3	87.6	775.0	7.4	107	6	2.2	84

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/29	1225		0.51	0.00	0.03	0.016	0.035	446103	
90/11/26	1200		0.93	0.01K	0.05	0.010	0.170	486103	
90/12/17	1025		0.65		0.02		0.030	516103	
91/01/28	1035		0.76	0.01K	0.04	0.020	0.060	56103	
91/02/25	1025		0.71	0.01K	0.02	0.010	0.080	96103	
91/03/25	1045		0.44	0.01K	0.04	0.017	0.021	136103	
91/04/22	1030		0.58	0.01K	0.02	0.013	0.031	176103	
91/05/27	1020		0.29	0.01K	0.01	0.010K	0.014	226103	
91/06/24	1020		0.34	0.01K	0.01	0.010	0.010K	266103	
91/07/29	1000		0.34	0.01K	0.01	0.014	0.019	316103	
91/08/26	1045		0.18	0.01K	0.02	0.010K	0.025	356103	
91/09/23	1105		0.20	0.01K	0.01	0.013	0.023	396103	

22G070 2722G070 12035000 541086
SATSOP RIVER NEAR SATSOP
47 00 07.0 123 29 37.0 2F 0 Elev= 0 ft
53027 Washington Grays Harbor Co. PACIFIC NORTHWEST
COASTAL (Lower Chehalis-22) 131222
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 10-22-09 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1312099 000250
MILES 0022.90 0002.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/29	1155		2030.0	8.7	11.1	95.1	759.5	7.7	62	8	2.0	46S
90/11/26	1115		9200.0	7.5	11.6	95.3	769.4	7.0	49	109	42.0	34
90/12/17	0940		2550.0	6.8	13.2	106.4	771.1	7.3	54	9	2.0	
91/01/28	1000		1650.0	4.9			771.1	7.2	63	1		4
91/02/25	1000		2790.0	6.5	11.6	92.7	771.7	7.2	56	10	2.1	2
91/03/25	1005		1520.0	7.4	11.4	95.5	753.1	6.6	65	1	1.2	9
91/04/22	0950		1320.0	9.8	10.9	94.7	768.1	7.4	62	2	2.0	5
91/05/27	0950		772.0	10.3	12.1	106.2	769.6	7.6	67	4	1.0	9
91/06/24	0955		965.0	12.5	10.4	96.3	766.1	7.1	65	3	1.0	20
91/07/29	0930		339.0	15.2	9.9	96.8	769.1	7.2	76	1	1.0	62
91/08/26	1015		271.0	13.4	10.5	99.4	764.5	7.6	90	1	1.1	20
91/09/23	1030		364.0	10.9	11.6	102.4	775.5	7.6	70	1	1.0K	7

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/29	1155		0.41	0.00	0.02	0.003	0.010	446102	
90/11/26	1115		0.41	0.01K	0.01	0.010K	0.110	486102	
90/12/17	0940		0.17		0.01K		0.020	516102	
91/01/28	1000		0.33	0.01K	0.01K	0.010K	0.030	56102	
91/02/25	1000		0.33	0.01K	0.01K	0.010K	0.080	96102	
91/03/25	1005		0.15	0.01K	0.01	0.008	0.011	136102	
91/04/22	0950		0.19	0.01K	0.01	0.010K	0.012	176102	
91/05/27	0950		0.09	0.01K	0.01K	0.010K	0.010K	226102	
91/06/24	0955		0.11	0.01K	0.01K	0.010K	0.010K	266102	
91/07/29	0930		0.12	0.01K	0.01K	0.011	0.010K	316102	
91/08/26	1015		0.11	0.01K	0.01	0.010K	0.018	356102	
91/09/23	1030		0.05	0.01K	0.01K	0.010K	0.011	396102	

23A070 2723A070 12031000 541088
CHEHALIS RIVER AT PORTER
46 56 17.0 123 18 45.0 2F 0 Elev= 0 ft
53027 Washington Grays Harbor Co. PACIFIC NORTHWEST
COASTAL (Upper Chehalis-23) 131223
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 10-23-18 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1312099
MILES 0033.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/29	1110		1360.0	9.9	10.4	91.7	759.2	7.7	100	5	1.9	17
90/11/26	1030		42000.0	8.6	9.8	82.7	768.9	7.0	58	88	60.5	1300S
90/12/17	0905		5040.0	6.6	12.6	101.0	771.1	7.4	78	13	5.6	
91/01/28	0915		3390.0	3.8			770.9	7.3	83	4		170
91/02/25	0915		6700.0	6.7	10.8	86.7	772.4	6.9	70	23	7.0	14
91/03/25	0925		4490.0	8.1	10.6	90.2	753.9	6.7	81	15	6.5	57
91/04/22	0910		2980.0	12.5	10.0	92.4	767.8	7.3	80	8	5.4	6
91/05/27	0910		1590.0	12.6	10.7	98.8	770.1	7.4	93	11	3.1	29
91/06/24	0915		1380.0	15.3	9.2	90.5	765.8	7.4	96	15	7.8	64
91/07/29	0855		488.0	20.2	8.1	87.6	769.1	7.3	105	4	1.9	35
91/08/26	0925		333.0	17.7	9.0	93.1	765.6	7.7	101	1	1.5	17
91/09/23	0955		355.0	14.1	9.3	88.0	776.0	7.5	107	3	1.3	25S

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/29	1110		0.67	0.01	0.02	0.035	0.058	446101	
90/11/26	1030		1.04	0.01K	0.02	0.020	0.190	486101	
90/12/17	0905		2.13		0.04		0.120	516101	
91/01/28	0915		0.94	0.01K	0.05	0.030	0.070	56101	
91/02/25	0915		0.89	0.01K	0.02	0.010	0.070	96101	
91/03/25	0925		0.54	0.01K	0.06	0.023	0.026	136101	
91/04/22	0910		0.74	0.01K	0.03	0.013	0.033	176101	
91/05/27	0910		0.43	0.01K	0.02	0.014	0.026	226101	
91/06/24	0915		0.52	0.01K	0.03	0.019	0.010K	266101	
91/07/29	0855		0.47	0.01K	0.01	0.023	0.042	316101	
91/08/26	0925		0.32	0.01K	0.03	0.013	0.032	356101	
91/09/23	0955		0.43	0.01K	0.02	0.030	0.049	396101	

23A120 4123A120 12025500
CHEHALIS RIVER AT CENTRALIA
46 42 45.0 122 58 39.0 2F 0 Elev= 0 ft
53041 Washington Lewis Co. PACIFIC NORTHWEST
COASTAL (Upper Chehalis-23) 131223
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 10-23-13 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1312099
MILES 0067.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/30	1555		1720.0	9.6	10.1	89.1	753.1	7.8	82	14	3.7	140S
90/11/27	1550		16800.0	7.7	10.1	83.5	768.4	6.3	58	83	35.5	410S
90/12/18	1330		3120.0	6.2	13.0	105.8	752.6	7.6	66	42		
91/01/29	1620		1310.0	3.2			766.1	8.3	82	10	13.5	17
91/02/26	1310		2650.0	7.0	11.3	93.5	755.1	7.1	70	10	5.9	35
91/03/26	1330		2780.0	6.5	11.2	91.2	757.7	6.7	64	13	10.0	61
91/04/23	1330		1210.0	12.5	9.6	90.1	755.9	7.1	87	5	4.8	13
91/05/28	1515		770.0	12.5	10.4	96.5	764.8	7.4	84	9	6.8	29
91/06/25	1300		600.0	15.6	8.6	85.5	762.8	6.8	75	5	4.5	100
91/07/30	1240		154.0	20.9	8.5	94.1	761.2	7.1	109	1	2.5	49
91/08/27	1505		98.0	20.3	5.4	59.7	754.6	7.4	150	2	2.4	81
91/09/24	1340		92.0	17.3	6.9	71.5	758.2	7.2	138	2	1.7	3

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/30	1555		0.38	0.01	0.03	0.020	0.041	446114	
90/11/27	1550		1.04	0.01K	0.04	0.010	0.130	486114	
90/12/18	1330		0.79		0.03		0.050	516114	
91/01/29	1620		0.84	0.01K	0.04	0.020	0.070	56114	
91/02/26	1310		0.82	0.01K	0.02	0.010	0.070	96114	
91/03/26	1330		0.51	0.01K	0.04	0.018	0.024	136114	
91/04/23	1330		0.57	0.01K	0.04	0.018	0.033	176114	
91/05/28	1515		0.20	0.01K	0.05	0.023	0.029	226114	
91/06/25	1300		0.25	0.01K	0.09	0.033	0.010K	266114	
91/07/30	1240		0.28	0.01	0.02	0.089	0.117	316114	
91/08/27	1505		0.29	0.02	0.58	0.337	0.379	356114	
91/09/24	1340		0.21	0.01	0.07	0.153	0.160O	396114	

23A160 4123A160 12020565
CHEHALIS RIVER AT DRYAD
46 37 54.0 123 14 51.0 2F 0 Elev= 0 ft
53041 Washington Lewis Co. PACIFIC NORTHWEST
COASTAL (Upper Chehalis-23) 131223
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 10-23-15 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1312099
MILES 0101.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/29	1715		690.0	9.2	10.9	96.0	747.8	7.9	84	6	1.4	88
90/11/26	1640		3060.0	7.8	12.1	101.6	758.2	7.7	60	87	21.5	52
90/12/17	1405		812.0	6.5	13.7	111.5	757.7	7.5	64	5	1.6	
91/01/28	1530		568.0	4.5			765.0	7.3	64	2		5
91/02/25	1430		990.0	7.0	12.1	99.8	756.9	7.2	61	6	1.8	2
91/03/25	1550		1040.0	6.8J	12.1	100.9	745.2	7.3	60	2	3.2	20
91/04/22	1430		528.0	11.8	11.0	101.3	758.4	7.4	68	3	1.9	2
91/05/27	1425		276.0	11.8	13.3	120.5	771.1	8.7		5	0.7	3
91/06/24	1430		264.0	14.0	11.3	109.3	757.9	7.2	67	3	1.8	27
91/07/29	1400		75.0	19.7	9.9	107.3	760.0	7.4	80	3	1.5	31
91/08/26	1530		48.0	17.2	10.5	109.4	752.3	8.0	96	1	1.7	16
91/09/23	1510		40.0	13.5	10.9	103.9	761.0	7.7	88	1	1.3	15

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/29	1715		0.48	0.00	0.03	0.002	0.011	446107	
90/11/26	1640		0.87	0.01K	0.01	0.010K	0.090	486107	
90/12/17	1405		0.59		0.01K		0.020	516106	
91/01/28	1530		0.56	0.01K	0.01K	0.010K	0.030	56106	
91/02/25	1430		0.57	0.01K	0.01K	0.010K	0.050	96106	
91/03/25	1550		0.40	0.01K	0.02	0.014	0.019	136106	
91/04/22	1430		0.40	0.01K	0.01	0.010K	0.015	176106	
91/05/27	1425		0.12	0.01K	0.01K	0.010K	0.010K	226106	
91/06/24	1430		0.17	0.01K	0.01K	0.010K	0.010K	266106	
91/07/29	1400		0.10	0.01K	0.01K	0.010K	0.012	316106	
91/08/26	1530		0.04	0.01K	0.01	0.010K	0.019	356106	
91/09/23	1510		0.03	0.01K	0.01K	0.010K	0.014	396106	

23E070 6723E070
BLACK RIVER AT MOON ROAD BRIDGE
46 50 21.0 123 06 43.0 2F000 Elev= 0 ft
53067 Washington Thurston Co. PACIFIC NORTHWEST
COASTAL (Upper Chehalis-23) 131223
21540000 Reach=17100103050 0.000 Drg= 0 sqmi
TYPEA/AMBNT/STREAM

INDEX 1312099 000530
MILES 0050.00 0007.10 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/30	0920			9.7	6.7	58.7	760.2	7.3	117	4	1.8	
90/11/27	0935			8.1	7.6	63.3	769.9	6.5	57	9	13.0	540
90/12/18	0815			5.8	10.2	81.3	760.7	7.5	75	3		
91/01/29	0910			3.3			771.1	7.7	80	1	1.8	1200J
91/02/26	0745			6.7	8.8	71.3	765.0	6.7	65	5	2.0	23
91/03/26	0745			7.4	9.0	74.5	762.3	7.4	72	3	2.3	520J
91/04/23	0800			12.1	8.2	75.7	761.5	7.0	79	3	2.1	9
91/05/28	0820			12.4	8.8	80.9	770.6	7.2	103	9	2.6	41
91/06/25	0740			14.5	7.5	72.6	765.3	6.8	91	4	2.7	33
91/07/30	0715			17.7	7.7	79.4	767.6	7.2	108	1K	1.5	17
91/08/27	0830			16.3	7.3	74.2	756.9	7.3	107	1	1.0	520J
91/09/24	0800			13.7	7.4	70.1	768.4	7.2	115	1	1.0K	26

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/30	0920		0.90	0.04	0.11	0.108	0.168	446125	38
90/11/27	0935		0.78	0.01K	0.04	0.030	0.090	486125	15
90/12/18	0815		0.75		0.08		0.080	516108	
91/01/29	0910		0.98	0.01K	0.14	0.060	0.100	56108	29
91/02/26	0745		0.70	0.01K	0.04	0.030	0.100	96108	23
91/03/26	0745		0.58	0.01	0.08	0.040	0.041	136108	28
91/04/23	0800		0.69	0.01K	0.04	0.017	0.040	176108	29
91/05/28	0820		0.80	0.01K	0.02	0.020	0.030	226108	34
91/06/25	0740		0.72	0.01K	0.01K	0.021	0.010K	266108	37
91/07/30	0715		0.67	0.01K	0.01K	0.016	0.026	316108	51
91/08/27	0830		0.78	0.01K	0.01	0.024	0.042	356108	42
91/09/24	0800		0.94	0.01K	0.01	0.031	0.040	396108	43

24B090 4924B090 12013500 541104
WILLAPA RIVER NEAR WILLAPA
46 39 00.0 123 39 10.0 2F 0 Elev= 0 ft
53049 Washington Pacific Co. PACIFIC NORTHWEST
COASTAL (Willapa-24) 131224
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 11-24-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1312137
MILES 0017.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
91/01/28	1430		377.0	5.1			772.2	7.7	57	2		10
91/02/25	1325		701.0	7.8	11.7	97.1	767.1	6.9	60	12	2.3	10S
91/03/25	1450		640.0	7.4J	11.6	97.1	753.4	7.6	60	5	2.5	98
91/04/22	1335		446.0	10.8	11.5	102.4	767.3	7.4	63	3	2.2	29
91/05/27	1330		198.0	11.9	12.6	114.2	772.2	7.7	65	3	0.8	70
91/06/24	1345		173.0	13.5	11.0	104.2	765.6	7.0	66	3	1.7	120
91/07/29	1340		52.0	19.9	9.5	102.2	768.1	7.2	76	4	2.0	140
91/08/26	1430		26.0	17.7	9.8	101.9	761.2	7.4	111	2	1.8	220
91/09/23	1410		36.0	14.6	10.1	97.4	769.9	7.4	79	3	2.0	240

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
91/01/28	1430		0.93	0.01K	0.01K	0.010K	0.020	56105	
91/02/25	1325		0.98	0.01K	0.01	0.010K	0.060	96105	
91/03/25	1450		0.71	0.01K	0.03	0.007	0.013	136105	
91/04/22	1335		0.67	0.01K	0.02	0.010K	0.017	176105	
91/05/27	1330		0.32	0.01K	0.01	0.010K	0.011	226105	
91/06/24	1345		0.28	0.01K	0.01K	0.010K	0.010K	266105	
91/07/29	1340		0.28	0.01K	0.01	0.010K	0.016	316105	
91/08/26	1430		0.23	0.01K	0.03	0.010K	0.026	356105	
91/09/23	1410		0.24	0.01K	0.02	0.010K	0.024	396105	

24B130 4924B130 12011500 541092
WILLAPA RIVER AT LABAM
46 33 48.0 123 33 40.0 2F 0 Elev= 0 ft
53049 Washington Pacific Co. PACIFIC NORTHWEST
COASTAL (Willapa-24) 131224
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 11-24-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1312137
MILES 0034.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/29	1630		129.0	9.9	10.4	92.7	750.6	7.8	80	5	2.0	530
90/11/26	1600		748.0	8.7	11.2	95.6	762.3	7.4	58	60	12.5	130

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/29	1630		0.88	0.00	0.03	0.007	0.031	446106	
90/11/26	1600		1.30	0.01K	0.02	0.010K	0.060	486106	

26B070 1526B070 14244200 541001
COWLITZ RIVER AT KELSO
46 08 44.0 122 54 47.0 3F 0 Elev= 0 ft
53015 Washington COWLITZ CO. PACIFIC NORTHWEST
LOWER COLUMBIA (Cowlitz-26) 131026
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 12-26-04 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 000850
MILES 0068.00 0004.90 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/30	1100		950.0	10.4	10.6	94.2	761.5	7.5	108	64	10.0	61
90/11/27	1110		32600.0	8.5	11.9	99.7	772.9	6.9	60	261	73.0	51S
90/12/18	0945			7.3	13.2	108.8	763.5	7.1	91	75		
91/01/29	1040		6870.0	3.8			773.2	7.8	101	56	15.5	4
91/02/26	0910			6.1	11.5	91.8	765.3	7.3	98	102	28.0	10
91/03/26	0915			6.3	11.6	93.3	763.5	6.7	99	40	13.0	6
91/04/23	0930		8720.0	8.9	11.1	95.1	762.8	7.2	97	160	31.0	6
91/05/28	0945			9.5	11.8	101.3	772.2	7.4	102	35	11.0	14
91/06/25	0915			10.6	11.1	98.4	767.1	7.0	90	17	5.3	19
91/07/30	0855			14.6	10.2	98.5	768.6	7.3	118	9	4.0	15
91/08/27	1005			14.2	9.9	95.9	760.2	7.5	171	7	2.5	20
91/09/24	0925			12.0	10.4	94.9	769.4	7.6	130	6	2.3	15

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/30	1100		0.12	0.00	0.04	0.004	0.026	446109	
90/11/27	1110		0.31	0.01K	0.01	0.010K	0.180	486109	
90/12/18	0945		0.22		0.02		0.060	516109	
91/01/29	1040		0.26	0.01K	0.02	0.010K	0.060	56109	
91/02/26	0910		0.27	0.01K	0.03	0.010K	0.110	96109	
91/03/26	0915		0.23	0.01K	0.04	0.011	0.032	136109	
91/04/23	0930		0.18	0.01K	0.03	0.010K	0.078	176109	
91/05/28	0945		0.10	0.01K	0.02	0.010K	0.019	226109	
91/06/25	0915		0.09	0.01K	0.01K	0.010K	0.010K	266109	
91/07/30	0855		0.07	0.01K	0.01K	0.010K	0.010K	316109	
91/08/27	1005		0.05	0.01K	0.01	0.010K	0.023	356109	
91/09/24	0925		0.05	0.01K	0.01K	0.010K	0.013	396109	

26C070 1526C070 14245100 541000
COWEMAN RIVER AT KELSO
46 08 18.0 122 53 47.0 2F 0 Elev= 0 ft
53015 Washington COWLITZ CO. PACIFIC NORTHWEST
LOWER COLUMBIA (Cowlitz-26) 131026
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 12-26-05 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 000850 00020
MILES 0068.00 0001.30 002.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/30	1145			10.0	10.2	89.8	761.7	8.7	97	4	3.7	140
90/11/27	1140			8.2	11.8	98.1	773.4	7.3	48	25	8.8	60
90/12/18	1000			6.6	13.3	107.6	764.0	7.4	55	19		
91/01/29	1215			2.7			771.1	7.7	75	2	7.0	14
91/02/26	0930			6.5	11.6	93.6	764.8	7.3	57	6	4.0	6
91/03/26	0940			5.8	11.8	93.7	763.3	7.4	55	5	3.7	6
91/04/23	0955			10.6	10.3	91.8	762.8	7.2	60	4	3.0	26
91/05/28	1010			10.5	10.6	93.2	771.9	7.4	59	5	2.0	7
91/06/25	0945			13.7	9.3	88.4	766.3	7.1	78	6	3.0	46
91/07/30	0915			21.4	7.7	88.3	742.7	7.2	80	3	2.8	120
91/08/27	1025			17.9	8.4	87.8	760.5	7.5	103	3		92
91/09/24	0940			14.1	9.2	88.0	768.4	7.5	101	2	1.9	120

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/30	1145		0.66	0.00	0.04	0.003	0.015	446110	
90/11/27	1140		1.08	0.01K	0.01K	0.010K	0.050	486110	
90/12/18	1000		0.98		0.01K		0.030	516110	
91/01/29	1215		0.84	0.01K	0.06	0.010K	0.040	56110	
91/02/26	0930		0.96	0.01K	0.01K	0.010	0.050	96110	
91/03/26	0940		0.78	0.01K	0.02	0.014	0.017	136110	
91/04/23	0955		0.60	0.01K	0.02	0.010K	0.014	176110	
91/05/28	1010		0.43	0.01K	0.01	0.010K	0.010K	226110	
91/06/25	0945		0.34	0.01K	0.02	0.010K	0.010K	266110	
91/07/30	0915		0.21	0.01K	0.04	0.010K	0.012	316110	
91/08/27	1025		0.05	0.01K	0.03	0.010K	0.021	356110	
91/09/24	0940		0.08	0.01K	0.03	0.010K	0.014	396110	

26D070 1526D070 14242700 541131
TOUTLE RIVER NEAR CASTLE ROCK
46 18 50.0 122 54 30.0 2F 0 Elev= 0 ft
53015 Washington COWLITZ CO. PACIFIC NORTHWEST
LOWER COLUMBIA (Cowlitz-26) 131026
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 12-26-04 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 000850 00240
MILES 0068.00 0020.00 001.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/30	1500		2700.0	10.1	11.0	97.8	756.9	8.0	210	610	45.0	40S
90/11/27	1450		7400.0	7.3	12.1	98.5	772.9	7.4	132	777	200.0	14
90/12/18	1255		2700.0	5.8	13.9	111.2	758.4	7.4	178	276		
91/01/29	1520		1060.0	2.7			769.1	7.9	277	252	66.0	3
91/02/26	1220		2400.0	7.1	12.2	100.7	759.2	7.1	196	378	90.0	7
91/03/26	1235		1600.0	7.6	11.8	98.4	760.5	6.7	225	151	37.0	2
91/04/23	1235		1875.0	9.7	10.9	95.6	759.7	7.4	238	912	119.0	8
91/05/28	1430		2000.0	11.6	11.6	105.1	768.1	7.5	248	114	26.0	6
91/06/25	1210		1530.0	14.5	10.4	100.8	765.0	7.2	269	47	17.0	9
91/07/30	1145		565.0	20.6	9.3	102.0	764.8	7.6	480	67	20.0	29
91/08/27	1420		360.0	16.8	9.6	98.7	757.7	8.1	595	34	18.0	12
91/09/24	1245		275.0	15.5	10.7	106.4	762.3	8.1	610	18	11.0	5

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/30	1500		0.07	0.00	0.03	0.005	0.142	446113	
90/11/27	1450		0.26	0.01K	0.02	0.010K	0.250	486113	
90/12/18	1255		0.19		0.07		0.150	516113	
91/01/29	1520		0.16	0.01K	0.02	0.010K	0.140	56113	
91/02/26	1220		0.20	0.01K	0.03	0.010K	0.220	96113	
91/03/26	1235		0.15	0.01K	0.02	0.013	0.105	136113	
91/04/23	1235		0.08	0.01K	0.04	0.010K	0.090	176113	
91/05/28	1430		0.06	0.01K	0.05	0.010K	0.047	226113	
91/06/25	1210		0.02	0.01K	0.01K	0.010K	0.010K	266113	
91/07/30	1145		0.01K	0.01K	0.01K	0.010K	0.047	316113	
91/08/27	1420		0.01K	0.01K	0.01	0.010K	0.043	356113	
91/09/24	1245		0.01K	0.01K	0.01	0.010K	0.022	396113	

27B070 1527B070 14223600
KALAMA RIVER NEAR KALAMA
46 02 52.0 122 50 11.0 2F 0 Elev= 0 ft
53015 Washington COWLITZ CO. PACIFIC NORTHWEST
LOWER COLUMBIA (Lewis-27) 131027
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 13-27-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 000870
MILES 0073.10 0002.80 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/30	1400			9.7	11.1	97.5	758.4	7.8	49	4	1.9	25
90/11/27	1340			7.2	12.6	102.2	773.9	7.4	40	31	6.0	15
90/12/18	1150			6.3	14.0	112.7	762.5	7.2	41	10		
91/01/29	1430			3.4			770.6	7.9	55	1	1.2	2
91/02/26	1140			6.8	12.1	98.9	760.2	7.0	46	6	2.2	5
91/03/26	1135			6.1	12.4	99.4	762.0	6.7	47	1	2.2	3
91/04/23	1135			8.8	11.4	97.7	761.2	7.3	54	3	1.5	14
91/05/28	1340			10.0	13.1	114.1	769.9	8.4	47	5	1.1	2
91/06/25	1125			12.0	11.5	105.4	765.6	7.1	45	3	1.2	13
91/07/30	1100			16.6	10.0	100.9	767.1	7.3	62	2	1.3	17
91/08/27	1325			13.9	10.2	98.2	760.0	7.6	94	1	0.5	33
91/09/24	1145			11.6	10.8	98.3	763.8	7.5	68	1	1.0K	9

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/30	1400		0.19	0.00	0.03	0.005	0.010	446112	
90/11/27	1340		0.46	0.01K	0.01K	0.010K	0.030	486112	
90/12/18	1150		0.43		0.01K		0.020	516112	0
91/01/29	1430		0.35	0.01K	0.01K	0.010	0.030	56112	
91/02/26	1140		0.38	0.01K	0.01	0.010	0.050	96112	
91/03/26	1135		0.35	0.01K	0.02	0.016	0.012	136112	
91/04/23	1135		0.23	0.01K	0.01	0.010K	0.014	176112	
91/05/28	1340		0.08	0.01K	0.01K	0.010K	0.010K	226112	
91/06/25	1125		0.06	0.01K	0.01K	0.010K	0.010K	266112	
91/07/30	1100		0.05	0.01K	0.01K	0.010K	0.010K	316112	
91/08/27	1325		0.04	0.01K	0.01	0.011	0.021	356112	
91/09/24	1145		0.05	0.01K	0.02	0.011	0.020	396112	

27D090 1127D090 14222550
EF LEWIS RIVER NR DOLLAR CORNER
45 48 53.0 122 35 26.0 2F 0 Elev= 0 ft
53011 Washington CLARK CO. PACIFIC NORTHWEST
LOWER COLUMBIA (Lewis-27) 131027
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 13-27-01 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 001050 00060
MILES 0087.00 0003.50 010.20 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/30	1300		50.0	10.0	11.0	97.4	757.4	8.6	40	4	1.5	72
90/11/27	1240		1930.0	7.5	12.2	100.1	770.4	7.4	33	5	1.7	9
90/12/18	1105			6.2	13.8	111.0	761.2	7.5	32	8		
91/01/29	1345		402.0	3.2			769.1	7.8	42	1	1.0K	1K
91/02/26	1045			7.4	11.9	98.7	760.0	7.0	56	2	1.5	4
91/03/26	1040		1600.0	6.2	12.4	99.8	760.5	7.3	36	2	2.1	1
91/04/23	1050		548.0	9.2	11.2	96.9	761.0	7.2	30	2	1.1	9
91/05/28	1140			9.7	12.1	104.8	769.1	7.4	41	4	1.5	12
91/06/25	1040		399.0	11.0	11.0	98.7	765.0	6.7	40	2	1.9	21
91/07/30	1010		96.0	19.2	9.5	101.3	764.8	7.2	57	1K	1.2	11
91/08/27	1130			16.0	10.0	100.7	759.5	7.6	95	1	0.4	8
91/09/24	1040			13.7	10.5	100.1	763.8	7.6	76	1	1.0K	10

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L
90/10/30	1300		0.48	0.00	0.02	0.001	0.005	446111	
90/11/27	1240		0.53	0.01K	0.01K	0.010K	0.010	486111	
90/12/18	1105		0.55		0.01K		0.020	516111	
91/01/29	1345		0.44	0.01K	0.01K	0.010K	0.020	56111	
91/02/26	1045		0.44	0.01K	0.01K	0.010K	0.050	96111	
91/03/26	1040		0.32	0.01K	0.01	0.008	0.007	136111	
91/04/23	1050		0.25	0.01K	0.01	0.010K	0.010K	176111	
91/05/28	1140		0.23	0.01K	0.01K	0.010K	0.010K	226111	
91/06/25	1040		0.25	0.01K	0.01K	0.010K	0.010K	266111	
91/07/30	1010		0.19	0.01K	0.01K	0.010K	0.010K	316111	
91/08/27	1130		0.12	0.01K	0.01	0.010K	0.013	356111	
91/09/24	1040		0.12	0.01K	0.01K	0.010K	0.010K	396111	

31A070 0531A070 COL045
COLUMBIA RIVER AT UMATILLA BR
45 55 53.0 119 19 24.0 2F 0 Elev= 0 ft
53005 Washington Benton Co. PACIFIC NORTHWEST
LOWER COLUMBIA (Rock/Glade-31) 131031
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 26-00-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM

INDEX 1310001
MILES 0290.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/12/03	1240		215000.0	8.2	11.6	97.7	763.5	7.7	152	8	6.9	190X
91/01/07	1240		225000.0	1.6	14.0	99.5	764.5	7.5	168	3	1.4	11
91/02/04	1230		174000.0	1.7	14.4	103.1	761.0	7.5	161	3	1.5	2
91/03/04	1200		211000.0	3.6	13.5	104.8	738.6	7.8	158	3	2.2	5
91/04/01	1215		193000.0	7.4	13.7	115.8	746.8	8.6	150	6	1.6	2X
91/05/06	1150		196000.0	10.8	12.6	113.5	758.7	8.3	165	8	3.7	7X
91/06/03	1145		300000.0	13.3	12.0	114.3	758.2	8.1	135	10	4.6	6X
91/07/08	1210		240000.0	16.2	10.7	109.4	751.3	7.9	127	11	3.7	280
91/08/05	1245		160000.0	20.1	10.1	111.8	750.3	7.5	130	9	2.1	1K
91/09/02	1220		98500.0	20.2	10.6	115.7	761.7	8.8	141	8	2.8	4

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/12/03	1240		0.18	0.01K	0.02	0.020	0.030	496152	61	
91/01/07	1240		0.21	0.01K	0.01	0.030	0.030	26152	72	
91/02/04	1230		0.16	0.01K	0.01	0.014	0.016	66152	74	
91/03/04	1200		0.23	0.01K	0.01K	0.010	0.030	106152	73	
91/04/01	1215		0.16	0.00	0.00	0.005	0.017	146152	67	
91/05/06	1150		0.13	0.01K	0.01K	0.010K	0.024	196152	68	
91/06/03	1145		0.10	0.01K	0.02	0.010K	0.026	236152	57	
91/07/08	1210		0.05	0.01K	0.01K	0.010K	0.022	286152	52	
91/08/05	1245		0.01K	0.01K	0.01	0.010K	0.027	326152	60	
91/09/02	1220		0.01K	0.01K	0.01K	0.010K	0.018	366152	63	

32A070 7132A070 14018600 541127
WALLA WALLA RIVER NEAR TOUCHET
46 02 16.0 118 45 55.0 2F 0 Elev= 0 ft
53071 Washington Walla Walla Co. PACIFIC NORTHWEST
LOWER COLUMBIA (Walla Walla-32) 131032
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 15-32-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 002700
MILES 0313.50 0015.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/08	1450		14.0	12.8	13.7	128.2	764.3	8.7	467	16	5.2	17J
90/11/05	1450		163.0	8.1	12.6	106.6	758.7	8.4	222	51	8.2	43
90/12/03	1435		392.0	4.4	12.8	98.7	759.2	7.6	139	46	24.0	57
91/01/07	1435		338.0	0.1	13.6	93.2	760.7	7.8	192	20	4.1	12
91/02/04	1430		502.0	7.7			755.9	7.9	168	59	9.7	35
91/03/04	1415		687.0	8.0	10.8	93.9	736.1	7.6	122	132	19.0	100S
91/04/01	1415		514.0	13.4	10.7	103.7	747.3	8.1	143	60	8.6	88
91/05/06	1400		463.0	13.8	9.8	94.9	753.9	7.9	148	21	4.9	280
91/06/03	1350		655.0	17.8	9.0	94.8	753.6	7.9	158	77	13.0	120
91/07/08	1410		54.0	23.5	10.3	122.3	745.7	8.4	320	23	4.2	130
91/08/05	1515		1.3	26.4	9.8	123.1	743.2	8.2	500	21	7.5	61
91/09/02	1415		18.0	21.9	13.1	148.9	756.9	8.8	595	35	12.0	73

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/08	1450		0.68	0.01	0.01K	0.050	0.095	416154		
90/11/05	1450		0.26	0.01K	0.02	0.040	0.090	456154		
90/12/03	1435		0.80	0.01K	0.06	0.100	0.140	496154		
91/01/07	1435		1.16	0.01K	0.08	0.120	0.180	26154		
91/02/04	1430		0.92	0.01K	0.06	0.109	0.132	66154		
91/03/04	1415		0.68	0.01K	0.03	0.070	0.190	106154		
91/04/01	1415		0.57	0.01	0.01	0.056	0.112	146154		
91/05/06	1400		0.34	0.01K	0.03	0.056	0.088	196154		
91/06/03	1350		0.75	0.01K	0.03	0.054	0.122	236154		
91/07/08	1410		0.27	0.01K	0.01K	0.060	0.117	286154		
91/08/05	1515		0.49	0.01K	0.02	0.084	0.130	326154		
91/09/02	1415		0.28	0.01K	0.04	0.025	0.117	366154		

32B070 7132B070 14017600
TOUCHET RIVER AT TOUCHET
46 02 29.0 118 40 59.0 2F 0 Elev= 0 ft
53071 Washington Walla Walla Co. PACIFIC NORTHWEST
LOWER COLUMBIA (Walla Walla-32) 131032
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 15-32-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 002700 00130
MILES 0313.50 0016.40 000.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/08	1510		13.6	11.7	11.4	104.3	762.0	8.3	165	10	3.9	160
90/11/05	1525		58.2	8.1	12.5	105.9	757.7	8.3	128	13	2.4	23

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/08	1510		0.05	0.01	0.01K	0.059	0.081	416155		
90/11/05	1525		0.02	0.01K	0.01	0.030	0.050	456155		

32B130 1332B130 14016750 541126
TOUCHET RIVER AT DAYTON
46 19 07.0 117 58 57.0 2F 0 Elev= 0 ft
53013 Washington COLUMBIA CO. PACIFIC NORTHWEST
LOWER COLUMBIA (Walla Walla-32) 131032
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 15-32-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM

INDEX 1310001 002700 00130
MILES 0313.50 0016.40 053.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/12/03	1600			6.0	11.7	98.1	726.7	7.5	85	3	1.8	24
91/01/07	1620		70.0	0.8	13.5	99.3	722.4	7.1	82	4	1.1	3
91/02/04	1605		100.0	7.1	11.0	95.4	722.1	7.7	84	4	2.9	7
91/03/04	1540		150.0	6.2	11.1	96.3	706.1	7.6	63	8	8.1	81
91/04/01	1645		115.0	13.0	10.3	103.2	716.8	8.6	70	14	3.8	45
91/05/06	1600		110.0	11.6	10.5	101.3	721.6	7.9	78	7	3.1	13
91/06/03	1525		106.0	15.0	9.8	101.8	721.6	8.0	73	5	2.9	17
91/07/08	1540		53.0	19.6	8.7	100.0	716.0	7.9	96	5	1.4	31
91/08/05	1740		28.5	20.9	8.5	100.6	713.2	7.4	87	7	1.9	62
91/09/02	1600		33.0	17.8	9.8	107.3	725.2	8.3	99	3	1.7	35

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/12/03	1600		0.17	0.01K	0.01	0.030	0.040	496155		
91/01/07	1620		0.23	0.01K	0.01K	0.030	0.060	26155		
91/02/04	1605		0.12	0.01K	0.01	0.043	0.033	66155		
91/03/04	1540		0.19	0.01K	0.01K	0.030	0.080	106155		
91/04/01	1645		0.02	0.01K	0.01	0.023	0.046	146155		
91/05/06	1600		0.05		0.01	0.019	0.037	196155		
91/06/03	1525		0.11	0.01K	0.01K	0.025	0.033	236155		
91/07/08	1540		0.11	0.01K	0.02	0.028	0.048	286155		
91/08/05	1740		0.15	0.01K	0.01	0.038	0.056	326155		
91/09/02	1600		0.13	0.01K	0.01	0.018	0.043	366155		

33A050 2133A050 541008
SNAKE RIVER NEAR PASCO
46 13 00.0 119 01 20.0 2F 0 Elev= 0 ft
53021 Washington FRANKLIN CO. PACIFIC NORTHWEST
LOWER SNAKE (Lower Snake-33) 130833
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 26-00-05 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 002740
MILES 0324.30 0002.20 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/12/03	1350		49200.0	8.3	11.1	94.4	759.0	8.0	311	5	1.7	5
91/01/07	1350		25000.0	1.6	13.1	93.7	759.7	7.7	238	3	2.2	1
91/02/04	1340		30000.0	2.7	12.5	92.7	755.4	7.8	283	6	3.6	2
91/03/04	1320		80000.0	4.7	12.0	96.3	735.1	8.0	291	6	8.5	1K
91/04/01	1325		44500.0	7.2	11.5	96.8	746.8	7.9	369	10	6.5	2
91/05/06	1300		50000.0	12.1	11.1	103.7	753.4	8.0	195	10	5.0	1K
91/06/03	1250		95000.0	13.8	10.4	100.8	753.4	7.6	96	8	6.3	4
91/07/08	1320		43300.0	16.9	9.7	101.3	746.3	7.6	115	7	3.7	2
91/08/05	1400		17500.0	21.7	7.5	86.2	744.7	7.1	137	5	4.3	96
91/09/02	1325		12000.0	22.6	7.9	90.9	756.7	7.9	190	3	3.5	24

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/12/03	1350		0.47	0.01K	0.02	0.040	0.060	496153		5K
91/01/07	1350		0.56	0.01K	0.01K	0.040	0.050	26153		29
91/02/04	1340		0.63	0.01K	0.04	0.037	0.037	66153		10K
91/03/04	1320		1.11	0.01K	0.02	0.050	0.070	106153		
91/04/01	1325		0.90	0.00	0.02	0.044	0.065	146153		10K
91/05/06	1300		0.28	0.01K	0.01	0.012	0.040	196153		11
91/06/03	1250		0.19	0.01K	0.03	0.022	0.036	236153		10K
91/07/08	1320		0.11	0.01K	0.01K	0.010K	0.029	286153		7
91/08/05	1400		0.08	0.01K	0.02	0.013	0.033	326153		14
91/09/02	1325		0.17	0.01K	0.01K	0.016	0.039	366153		14

33A070 2133A070 13353000
SNAKE RIVER BELOW ICE HARBOR DAM
46 15 02.0 118 52 55.0 2F 0 Elev= 0 ft
53021 Washington FRANKLIN CO. PACIFIC NORTHWEST
LOWER SNAKE (Lower Snake-33) 130833
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 26-00-05 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM

INDEX 1310001 002740
MILES 0324.30 0008.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/08	1340		27500.0	18.9	9.9	104.7	767.1	8.4	281	6	1.3	1
90/11/05	1345		34000.0	13.1	9.9	93.9	758.7	8.2	258	5	1.4	1

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/08	1340		0.27	0.01	0.01K	0.043	0.049	416153		5K
90/11/05	1345		0.31	0.02	0.02	0.040	0.050	456153		8

34A070 7534A070 13351000 541009
PALOUSE RIVER AT HOOPER
46 45 33.0 118 08 49.0 2F 0 Elev= 0 ft
53075 Washington Whitman Co. PACIFIC NORTHWEST
LOWER SNAKE (Palouse-34) 130834
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 16-34-01 Class= B Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 002740 00290
MILES 0324.30 0059.50 019.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	0905		48.0	9.1	10.8	95.5	744.2	8.8	375	26	6.9	120
90/11/06	0910		137.0	5.2	12.2	97.4	748.8	8.2	262	15	7.1	31
90/12/04	0940		282.0	2.4	13.0	98.8	730.8	8.1	176	20	35.0	
91/02/05	1000		721.0	3.4	12.4	95.4	741.4	8.0	220	187J	128.0	300X
91/03/05	0945		4510.0	4.3J	11.6	92.7	730.3	8.0	136	3410J	305.0	1100
91/04/02	0935		516.0	11.9	10.3	98.1	736.3	9.0	219	23	9.0	8K
91/05/07	0940		305.0	14.8	10.0	101.6	734.8	9.7	193	9	3.9H	
91/06/04	0930		332.0	16.3	9.1	94.8	739.1	8.1	188	78	27.0	41
91/07/09	0940		110.0	21.0	7.8	90.4	730.0	8.4	240	44	24.0	220
91/08/06	0930		48.0	22.9	7.7	92.4	730.0	8.4	299	36	13.0	280
91/09/03	1000		22.0	17.8	9.1	97.3	742.7	8.6	360	74	32.0	84

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	0905		0.19	0.01	0.01K	0.080	0.159	416157	132	18
90/11/06	0910		1.57	0.01K	0.02	0.290	0.320	456157	93	8
90/12/04	0940		1.80	0.01	0.06	0.150	0.190	496159	58	15
91/02/05	1000		2.72	0.01	0.20	0.150	0.605	66159	79	10K
91/03/05	0945		3.41J	0.02	0.08L	0.110	0.190	106159	52	29
91/04/02	0935		1.88	0.01	0.01	0.044	0.088	146159	78	10K
91/05/07	0940		0.13	0.01K	0.04	0.010K	0.045	196159	74	19
91/06/04	0930		0.96	0.01	0.05	0.112	0.033J	236159	69	15
91/07/09	0940		0.95	0.01K	0.33	0.158	0.220	286159	93	13
91/08/06	0930		0.02	0.01K	0.01	0.087	0.149	326159	117	9
91/09/03	1000		0.28	0.01K	0.07	0.065	0.163	366159	139	19

34B110 7534B110 13348000
SF PALOUSE RIVER AT PULLMAN
46 43 58.0 117 10 48.0 2F 0 Elev= 0 ft
53075 Washington Whitman Co. PACIFIC NORTHWEST
LOWER SNAKE (Palouse-34) 130834
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 16-34-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 002740 00290 0680
MILES 0324.30 0059.50 089.60 022.20 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	1035		4.0	8.6	11.3	103.5	711.2	8.2	650	7	3.2	5600J
90/11/06	1030		21.0	4.2	11.0	90.0	713.0	7.9	402	33	45.5	970
90/12/04	1100		24.0	3.5	11.1	90.7	701.0	7.9	465	15	19.0	680S
91/01/08	1140		16.0	1.6	12.8	98.7	705.9	7.7	497	8	6.0	6700P
91/02/05	1155		135.0	3.4	11.4	91.9	707.9	7.7	188	1050J	330.0	830
91/03/05	1125		210.0	3.6J	11.6	94.9	701.0	7.7	212	560J	195.0	300S
91/04/02	1100		26.0	10.4	12.5	120.1	705.9	8.8	340	25	13.0	500
91/05/07	1100		17.0	12.4	14.1	142.3	703.3	8.9	380	9	5.5H	
91/06/04	1055		18.0	14.1	10.3	107.3	706.9	8.2	340	44	24.0	380
91/07/09	1125		6.0	18.5	10.0	115.3	699.8	8.4	458	12	8.1	570
91/08/06	1135		3.0	21.4	9.1	111.0	700.3	8.2	501	14	7.2	4100J
91/09/03	1155		5.0	14.8	11.2	118.1	709.7	8.4	720	4	2.5	1900

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	1035		10.60	0.03	0.02	2.700	3.600	416158		
90/11/06	1030		4.61	0.10	0.17	1.010	1.170	456158		
90/12/04	1100		6.07	0.09	0.44	0.800	0.890	496160		
91/01/08	1140		6.22	0.04	0.14	1.000	1.410	26160		
91/02/05	1155		5.84	0.04	0.28	0.155	1.360	66160		
91/03/05	1125		7.59J	0.02	0.12L	0.170	0.230	106160		
91/04/02	1100		3.99	0.12	0.30	0.473	0.626	146160		
91/05/07	1100		3.42	0.17	0.22	0.959	0.822	196160		
91/06/04	1055		2.84	0.05	0.06	0.493	0.425	236160		
91/07/09	1125		2.90	0.03	0.03	0.967	1.082	286160		
91/08/06	1135		2.98	0.02	0.03	1.180	1.320	326160		
91/09/03	1155		7.58	0.02	0.05	2.380	2.370	366160		

35A150 0335A150 13335300 541132
SNAKE RIVER AT INTERSTATE BRIDGE
46 25 15.0 117 02 05.0 2F 0 Elev= 0 ft
53003 Washington Asotin Co. PACIFIC NORTHWEST
LOWER SNAKE (Middle Snake-35) 130835
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 26-00-05 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM

INDEX 1310001 002740
MILES 0324.30 0139.60 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/12/04	0705		18300.0	6.0	12.3	100.9	743.5	8.3	374	1	1.2	2
91/01/08	0710		17500.0	1.8	13.8	100.6	750.3	8.9	425	2	1.4	2
91/02/05	0700		15600.0	2.1	13.4	98.3	751.8	8.1	415	2	1.3	4
91/03/05	0640		29400.0	4.6J	11.8	93.2	745.2	8.1	288	6	5.3	14S
91/04/02	0645		16800.0	9.5	11.7	103.9	747.5	8.5	340	7	3.0	2
91/05/07	0615		30800.0	11.8	10.4	97.3	747.8	8.6	262	12	3.4H	
91/06/04	0610		66100.0	13.4	9.9	95.5	750.6	8.0	142	22	3.5	38
91/07/09	0645		30800.0	18.0	8.9	95.7	741.7	8.5	175	8	2.0	4
91/08/06	0635		16800.0	22.4	8.7	102.1	739.9	8.4	249	6	5.1	1
91/09/03	0645		22900.0	20.9	9.5	106.3	754.1	8.7	339	5	1.9	5

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/12/04	0705		0.76	0.01K	0.01K	0.040	0.060	496157		
91/01/08	0710		1.12	0.01	0.02	0.040	0.070	26157		
91/02/05	0700		1.04	0.01K	0.01	0.050	0.046	66157		
91/03/05	0640		0.86	0.01K	0.02	0.050	0.090	106157		
91/04/02	0645		0.79	0.00	0.01	0.036	0.062	146157		
91/05/07	0615		0.40	0.01K	0.01K	0.010K	0.035	196157		
91/06/04	0610		0.19	0.01K	0.01	0.018	0.036	236157		
91/07/09	0645		0.12	0.01K	0.01K	0.010K	0.029	286157		
91/08/06	0635		0.17	0.01K	0.01	0.013	0.034	326157		
91/09/03	0645		0.27	0.01K	0.01	0.021	0.039	366157		

35B060 1335B060 13344520
TUCANNON RIVER AT POWERS
46 32 18.0 118 09 18.0 2F 0 Elev= 0 ft
53013 Washington COLUMBIA CO. PACIFIC NORTHWEST
LOWER SNAKE (Middle Snake-35) 130835
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 17-35-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 002740 00320
MILES 0324.30 0062.50 002.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	0805		69.0	9.7	11.1	97.4	759.2	7.9	150	7	1.6	140
90/11/06	0800		101.0	6.0	12.2	97.4	763.3	8.1	139	17	1.8	46
90/12/04	0845		119.0	6.7	11.7	97.4	745.0	8.4	142	11	2.1	71
91/01/08	0905		87.0	1.5	13.8	98.9	756.4	7.8	161	20	2.2	100
91/02/05	0900		22.0	8.8	10.9	94.0	756.9	7.6	148	46	9.1	460
91/03/05	0820		258.0	5.6J	11.7	94.3	748.8	8.0	116	431	27.0	2400
91/04/02	0820		115.0	10.9	11.2	102.2	750.6	8.5	149	28	2.3	60
91/05/07	0840		149.0	12.0	10.7	100.2	749.6	8.2	122	51	3.9H	
91/06/04	0820		174.0	11.6	10.6	97.9	753.4	8.0	105	36	6.0	310
91/07/09	0830		76.0	16.4	9.1	94.4	743.5	8.3	140	38	3.4	160
91/08/06	0820		69.0	20.1	8.7	97.3	742.7	7.8	147	42	6.3	660
91/09/03	0845		54.0	14.1	10.4	101.0	756.9	8.2	163	14	2.9	96

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	0805		0.09	0.00	0.01K	0.031	0.042	416156		
90/11/06	0800		0.16	0.01K	0.01K	0.040	0.060	456156		
90/12/04	0845			0.01K		0.040		496158		
91/01/08	0905		0.45	0.01K	0.01	0.050	0.090	26158		
91/02/05	0900		0.34	0.01K	0.03	0.069	0.079	66158		
91/03/05	0820		0.43J	0.01K	0.03L	0.060	0.190	106158		
91/04/02	0820		0.01	0.00	0.00	0.006	0.049	146158		
91/05/07	0840		0.06	0.01K	0.01	0.024	0.065	196158		
91/06/04	0820		0.13	0.01K	0.01	0.037	0.059	236158		
91/07/09	0830		0.14	0.01K	0.02	0.044	0.078	286158		
91/08/06	0820		0.11	0.01K	0.01K	0.038	0.076	326158		
91/09/03	0845		0.11	0.01K	0.01K	0.020	0.053	366158		

36A070 0536A070 12472900 541118
COLUMBIA RIVER NEAR VERNITA
46 38 34.0 119 43 54.0 2F 0 Elev= 0 ft
53005 Washington Benton Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Esquatzel Coulee-36) 130536
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 26-00-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001
MILES 0388.10 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/08	1120		88600.0	16.4	10.0	100.7	765.8	7.6	135	3	1.0K	1K
90/11/05	1130		63400.0	13.2	10.3	98.2	755.7	8.1	142	2	1.0K	1

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/08	1120		0.09	0.00	0.01K	0.013	0.019	416151	64	6
90/11/05	1130		0.33	0.01K	0.02	0.010	0.030	456151	63	5K

37A090 0537A090 12510500
YAKIMA RIVER AT KIONA
46 15 13.0 119 28 37.0 2F 0 Elev= 0 ft
53005 Washington Benton Co. PACIFIC NORTHWEST
YAKIMA (Lower Yakima-37) 130437
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 18-37-01 Class= B Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 002750
MILES 0335.20 0029.80 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/08	1250		1460.0	13.1	12.4	116.8	764.0	8.4	299	9	2.7	21
90/11/05	1240		2430.0	8.6	13.2	113.6	754.9	8.6	257	8	1.7	8
90/12/03	1145		9850.0	4.4	12.8	98.7	758.4	7.4	109	90	21.0	100
91/01/07	1140		2880.0	0.1	14.3	98.5	757.2	7.5	199	12	3.7	26
91/02/04	1130		4030.0	4.8	12.2	95.7	753.6	7.5	152	20	4.1	46
91/03/04	1100		6500.0	5.3	11.7	95.6	733.0	7.7	134	46	11.5	39
91/04/01	1105		2780.0	11.9	13.3	124.8	746.8	8.9	192	21	4.0	6
91/05/06	1100		2440.0	14.3	10.7	104.9	752.9	8.4	190	23	5.2	22
91/06/03	1050		2220.0	18.5	10.4	111.3	752.3	8.3	236	19	4.4	57
91/07/08	1115		2190.0	19.9	9.8	108.6	747.0	8.1	203	23	7.9	57
91/08/05	1145		1410.0	23.8	8.9	106.3	745.2	7.9	263	28	9.4	100
91/09/02	1115		1590.0	19.6	9.8	106.5	756.7	8.3	239	20	7.0	83S

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/08	1250		1.08	0.01	0.01K	0.088	0.116	416152		5K
90/11/05	1240		1.04	0.01	0.02	0.070	0.080	456152		
90/12/03	1145		0.33	0.01K	0.05	0.030	0.070	496151		
91/01/07	1140		0.83	0.01	0.09	0.060	0.100	26151		
91/02/04	1130		0.36	0.01K	0.08	0.046	0.061	66151		
91/03/04	1100		0.35	0.01K	0.04	0.040	0.090	106151		
91/04/01	1105		0.35	0.01	0.01	0.024	0.069	146151		
91/05/06	1100		0.49	0.01K	0.02	0.027	0.061	196151		
91/06/03	1050		0.86	0.01	0.01	0.041	0.069	236151		
91/07/08	1115		0.73	0.01K	0.01K	0.043	0.074	286151		
91/08/05	1145		1.20	0.02	0.02	0.096	0.139	326151		
91/09/02	1115		1.21	0.01	0.02	0.080	0.136	366151		

37A190 7737A190 12503950
YAKIMA RIVER AT PARKER
46 30 22.0 120 27 07.0 2F 0 Elev= 0 ft
53077 Washington Yakima Co. PACIFIC NORTHWEST
YAKIMA (Lower Yakima-37) 130437
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 18-37-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 002750
MILES 0335.20 0104.60 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/08	1000		1320.0	10.0	11.8	105.5	750.8	6.8	171	10	4.2	180
90/11/05	1010		2260.0	6.1	12.6	103.6	743.2	7.7	142	11	2.0	34
90/12/03	1015		8680.0	4.0	13.1	101.5	747.0	7.1	66	36	15.0	85
91/02/04	1005		3720.0	3.9	12.9	100.6	740.4	7.2	93	6	4.2J	68
91/03/04	0940		5790.0	3.3	12.3	97.0	721.4	7.1	97	18	5.8	33
91/04/01	0945		1820.0	9.2	12.0	105.6	748.8	8.5	115	7	2.6	37
91/05/06	0930		2890.0	10.0	11.8	106.9	740.9	7.8	93	17	3.5	43
91/06/03	0940		2800.0	12.1	11.2	106.4	740.9	7.5	89	23	2.8	95
91/07/08	0940		1590.0	15.6	9.7	99.9	737.1	7.3	85	19	4.9	170
91/08/05	1000		1630.0	15.3	9.5	97.5	735.1	7.2	87	26	7.0	63
91/09/02	0950		1470.0	15.0	10.3	103.7	744.5	7.8	117	15	4.2	160

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/08	1000		0.20	0.02	0.04	0.042	0.072	416150		
90/11/05	1010		0.19	0.01	0.05	0.030	0.050	456150		
90/12/03	1015		0.12	0.01K	0.03	0.020	0.050	496150		
91/02/04	1005		0.10	0.01K	0.02	0.018	0.028	66150		
91/03/04	0940		0.10	0.01K	0.03	0.020	0.040	106150		
91/04/01	0945		0.04	0.00	0.02	0.012	0.034	146150		
91/05/06	0930		0.08	0.01K	0.02	0.011	0.043	196150		
91/06/03	0940		0.09	0.01K	0.01	0.020	0.040	236150		
91/07/08	0940		0.17	0.01K	0.02	0.028	0.060	286150		
91/08/05	1000		0.20	0.01K	0.04	0.025	0.052	326150		
91/09/02	0950		0.20	0.01K	0.04	0.016	0.042	366150		

39A090 3739A090 12477600
YAKIMA RIVER NEAR CLE ELUM
47 11 10.0 121 02 30.0 2F 0 Elev= 0 ft
53037 Washington Kittitas Co. PACIFIC NORTHWEST
YAKIMA (Upper Yakima-39) 130439
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 18-39-05 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM

INDEX 1310001 002750
MILES 0335.20 0191.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/15	0950		276.0	9.3	10.5	98.1	706.9		64	3	1.2	9
90/11/12	0850		1210.0	6.0	11.2	95.7	713.7	8.0	56	34	24.0	5
90/12/03	1030		4070.0	4.2	13.5	106.3	739.4	7.0	45	25	13.0	10
91/01/14	0950		787.0	2.1	12.2	94.3	712.7	8.0	50	24	10.0	8
91/02/11	0955		787.0	2.9	12.2	94.8	723.9	7.9	50	6	2.0	1K
91/03/11	0950		666.0	4.6	12.0	99.2	712.0	7.6	56	2	2.1	2
91/04/08	1015		860.0	4.5	11.8	97.0	714.0	7.8	66	13	11.0	1
91/05/13	0900		580.0	6.8	11.3	99.3	707.6	8.0	61	3	2.0	3
91/06/10	1015		188.0	9.8	10.4	97.8	710.9	7.2	58	3	1.0	2
91/07/15	0900		225.0	11.4	9.5	92.7	710.4	7.3	53	3	1.7	18
91/08/12	0925		196.0	12.8	9.2	91.7	717.0	6.9	51	2	2.6	6
91/09/09	0905		330.0	13.3	9.3	90.8	740.2	7.0	56	1	1.3	23

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/15	0950		0.01K	0.01K	0.02	0.010K	0.010	426002		
90/11/12	0850		0.05	0.01K	0.03	0.010K	0.060	466002		
90/12/03	1030		0.05	0.01K	0.02	0.010K	0.040	496000		
91/01/14	0950		0.07	0.01K	0.02	0.010K	0.050	36000		
91/02/11	0955		0.05	0.01K	0.01K	0.010K	0.010	116000		
91/03/11	0950		0.03	0.01K	0.01K	0.010K	0.020	116000		
91/04/08	1015		0.02	0.01K	0.01K	0.010K	0.019	156000		
91/05/13	0900		0.01K	0.01K	0.01	0.010K	0.010K	206000		
91/06/10	1015		0.01K	0.01K	0.01K	0.010K	0.010J	246000		
91/07/15	0900		0.01K	0.01K	0.01K	0.010K	0.010K	296000		
91/08/12	0925		0.01	0.01K	0.01	0.010K	0.011	336000		
91/09/09	0905		0.01K	0.01K	0.01K	0.010K	0.015	376000		

41A070 2541A070 12472600 541133
CRAB CREEK NEAR BEVERLY
46 49 53.0 119 48 54.0 2F 0 Elev= 0 ft
53025 Washington GRANT CO. PACIFIC NORTHWEST
UPPER COLUMBIA (Lower Crab-41) 130541
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 19-41-01 Class= B Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 003020
MILES 0410.80 0006.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/17	1205		329.0	9.3	10.5	92.2	753.6	8.1	599	7	2.2	73
90/11/14	1210		193.0	8.3	11.9	102.5	750.6	8.6	750	12	2.7	29
90/12/05	1330		177.0	5.4	14.5	114.4	762.8	8.5	799	16	3.5	16
91/01/15	1700		222.0	3.8	11.8	89.7	760.7	8.9	995	30	11.5	45
91/02/13	1400		173.0	6.3	11.7	94.8	759.5	8.6	805	22	8.5	15
91/03/13	1340		153.0	10.7	14.2	128.7	754.4	8.8	795	21	6.1	2
91/04/10	1415		233.0	10.4	13.0	117.3	752.1	9.1	645	38	6.1	23
91/05/15	1305		253.0	16.4	10.3	106.3	749.0	8.7	600	98	15.5	32J
91/06/12	1410		252.0	14.8	10.2	101.9	747.8	8.6	560	68	15.0	72
91/07/17	1210		244.0	19.2	10.2	111.4	748.5	8.2	525	94	18.0	200
91/08/14	1215		296.0	22.2	8.7	100.6	748.3	8.4	507	78	12.0	57
91/09/11	1225		2298.0	18.8	10.6	115.2	746.3	8.8	537	21	4.5	100

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/17	1205		1.53	0.01K	0.01	0.020	0.050	426014		
90/11/14	1210		2.66	0.01	0.01	0.050	0.080	466014		
90/12/05	1330		2.93	0.01	0.01	0.050	0.090	496015		
91/01/15	1700		2.91	0.02	0.12	0.140	0.230	36015		
91/02/13	1400		2.92	0.02	0.01	0.040	0.150	76015		
91/03/13	1340		2.59	0.01	0.01	0.020	0.120	116015		
91/04/10	1415		1.21	0.01K	0.01K	0.010K	0.081	156015		
91/05/15	1305		0.89	0.01K	0.02	0.016	0.081	206015		
91/06/12	1410		1.20	0.02	0.01K	0.016	0.089	246015		
91/07/17	1210		1.27	0.01	0.01K	0.010K	0.105	296015		
91/08/14	1215		1.13	0.01K	0.01	0.010K	0.072	336015		
91/09/11	1225		1.28	0.01	0.01K	0.010	0.043	376015		

44A070 1744A070 12462600
COLUMBIA R BELOW ROCK ISLAND DAM
47 18 40.0 120 05 02.0 2F 0 Elev= 0 ft
53017 Washington DOUGLAS CO. PACIFIC NORTHWEST
UPPER COLUMBIA (Moses Coulee-44) 130544
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 26-00-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001
MILES 0450.90 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/15	1350		106500.0	15.6	10.3	105.4	741.9	7.7	139	2	1.0K	18
90/11/12	1225		186900.0	12.3	10.6	100.1	748.5	8.0	112	10	1.8	384J

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/15	1350		0.14	0.01K	0.02	0.010	0.020	426013		
90/11/12	1225		0.09	0.01K	0.01K	0.010	0.030	466013		

45A070 0745A070 12462520 541017
WENATCHEE RIVER AT WENATCHEE
47 27 32.0 120 20 07.0 2F 0 Elev= 0 ft
53007 Washington Chelan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Wenatchee-45) 130545
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 21-45-01 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 003550
MILES 0468.40 0001.10 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/15	1155		1600.0	8.8	12.9	113.7	740.2	7.8	65	4	1.0	45
90/11/12	1135		22700.0	7.8	12.0	102.3	747.3	7.6	30	34	4.0	15
90/12/03	1400		5460.0	4.1	15.0	115.9	751.1	7.9	50	10	3.8	5
91/02/11	1330		2560.0	3.7	13.1	100.9	746.0	8.0	63	8	1.0	2
91/03/11	1325		2700.0	6.1	12.4	101.6	745.5	8.0	77	2	1.1	2
91/04/08	1345		4150.0	6.1	13.5	110.3	747.5	9.2	67	5	2.5	1
91/05/13	1200		6830.0	8.4	12.3	107.7	738.1	7.4	48	15	2.3	1K
91/06/10	1430		9080.0	9.9	11.7	106.1	738.4	7.6	38	15	1.9	5
91/07/15	1130		6780.0	12.5	10.1	96.8	740.9	7.2	36	4		6
91/08/12	1215		2250.0	15.9	9.8	100.1	747.5	6.9	46	4	2.3	13
91/09/09	1205		790.0	14.4	10.8	106.8	748.0	7.7	66	2	1.9	42

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/15	1155		0.07	0.01K	0.01K	0.010K	0.010	426012		7
90/11/12	1135		0.06	0.01K	0.01K	0.010K	0.020	466012		
90/12/03	1400		0.09	0.01K	0.01	0.010K	0.020	496002		
91/02/11	1330		0.07	0.01K	0.01K	0.010K	0.020	76002		
91/03/11	1325		0.07	0.01K	0.01	0.010K	0.020	116002		
91/04/08	1345		0.01K	0.01K	0.01K	0.010K	0.011	156002		
91/05/13	1200		0.03	0.01K	0.01	0.010K	0.011	206002		
91/06/10	1430		0.04	0.01K	0.01K	0.010K	0.010K	246002		
91/07/15	1130		0.04	0.01K	0.01	0.010K	0.010K	296002		
91/08/12	1215		0.08	0.01K	0.01K	0.010K	0.012	336002		
91/09/09	1205		0.20	0.01K	0.01K	0.010K	0.015	376002		

45A110 0745A110 12457800 541115
WENATCHEE RIVER NEAR LEAVENWORTH
47 40 35.0 120 44 00.0 2F 0 Elev= 0 ft
53007 Washington Chelan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Wenatchee-45) 130545
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 21-45-01 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 003550
MILES 0468.40 0035.60 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/15	1145		1250.0	8.0	11.3	101.2	715.0	7.2	38	4	1.1	8
90/11/12	1030		11300.0	7.5	10.9	95.6	720.9	7.6	30	16	1.8	6
90/12/03	1245		4010.0	3.9	14.3	114.3	722.4	7.7	37	7	3.4	1K
91/01/14	1155		2260.0	1.1	13.0	96.9	719.1	7.8	42	12	1.8	4
91/02/11	1210		2300.0	2.7	12.5	97.2	719.6	7.9	42	8	1.0	1
91/03/11	1215		2020.0	4.0	12.5	100.5	720.1	8.0	47	3	1.9	1
91/04/08	1230		3090.0	4.8	12.4	101.6	721.9	8.2	45	4	2.8	1K
91/05/13	1045		5470.0	6.6	11.4	98.8	714.2	6.9	50	8	2.1	11
91/06/10	1230		7350.0	7.8	11.5	102.4	715.8	7.6	30	9	1.6	1
91/07/15	1035		5720.0	10.9	9.8	93.7	716.5	7.6	28	2	1.8	1
91/08/12	1115		1700.0	13.7	9.5	95.7	723.6	6.7	30	3	2.2	2
91/09/09	1105		565.0	12.5	10.2	98.5	734.8	7.7	35	1	0.5	4

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/15	1145		0.01K	0.01K	0.01	0.010K	0.010K	426008		
90/11/12	1030		0.05	0.01K	0.01K	0.010K	0.010	466008		
90/12/03	1245		0.06	0.01K	0.01K	0.010K	0.020	496001		
91/01/14	1155		0.05	0.01K	0.02	0.010K	0.020	36001		
91/02/11	1210		0.04	0.01K	0.01K	0.010K	0.020	76001		
91/03/11	1215		0.03	0.01K	0.01K	0.010K	0.020	116001		
91/04/08	1230		0.03	0.01K	0.01K	0.010K	0.014	156001		
91/05/13	1045		0.06	0.01K	0.01	0.010K	0.010	206001		
91/06/10	1230		0.04	0.01K	0.01K	0.010K	0.010K	246001		
91/07/15	1035		0.03	0.01K	0.01K	0.010K	0.012	296001		
91/08/12	1115		0.01K	0.01K	0.01K	0.010K	0.010K	336001		
91/09/09	1105		0.01K	0.01K	0.01K	0.010K	0.016	376001		

46A070 0746A070 12452990 541018
ENTIAT RIVER NEAR ENTIAT
47 39 48.0 120 14 58.0 2F 0 Elev= 0 ft
53007 Washington Chelan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Entiat-46) 130546
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 21-46-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 004000
MILES 0483.70 0001.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/16	1250		117.0	7.6	12.3	104.7	745.0	7.7	94	2	1.0K	2
90/11/13	1225		459.0	6.2	12.3	102.3	736.1	7.8	48	9	1.0K	29
90/12/04	1530		510.0	3.4	14.1	108.8	738.9	7.9	56	4	1.0K	1K
91/01/15	1430		170.0	0.7	13.6	96.2	749.6	8.0	74	12	1.2	18
91/02/12	1550		195.0	3.8	12.6	97.0	748.0	8.1	80	3	1.0K	9
91/03/12	1430		293.0	5.2	11.5	92.3	744.5	8.1	84	2	0.8	4
91/04/09	1440		420.0	9.1	12.1	107.2	741.7	9.2	90	11	1.5	1K
91/05/14	1400		1220.0	8.9	11.3	100.3	736.9	7.5	58	35	2.6	18
91/06/11	1500		2590.0	9.0	11.3	100.3	738.6	8.0	37	24	2.1	5
91/07/16	1350		1160.0	12.0	10.5	99.3	742.2	7.2	40	6	1.9	1
91/08/13	1335		322.0	14.8	9.9	99.3	743.7	7.7	61	4	0.4	6
91/09/10	1440		180.0	19.4	10.0	111.2	736.9	8.1	97	1	0.3	3

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/16	1250		0.08	0.01K	0.01	0.010K	0.010K	426007		
90/11/13	1225		0.03	0.01K	0.01K	0.010K	0.010	466007		
90/12/04	1530		0.04	0.01K	0.01K	0.010K	0.010	496011		
91/01/15	1430		0.08	0.01K	0.01K	0.010K	0.020	36011		
91/02/12	1550		0.03	0.01K	0.01K	0.010K	0.020	76011		
91/03/12	1430		0.02	0.01K	0.01K	0.010K	0.020	116011		
91/04/09	1440		0.01	0.01K	0.01K	0.010K	0.012	156011		
91/05/14	1400		0.01	0.01K	0.01	0.010K	0.015	206011		
91/06/11	1500		0.01K	0.01K	0.01K	0.010K	0.012	246011		
91/07/16	1350		0.01	0.01K	0.01K	0.010K	0.010K	296011		
91/08/13	1335		0.03	0.01K	0.01K	0.010K	0.010K	336011		
91/09/10	1440		0.10	0.01K	0.01K	0.010K	0.013	376011		

47A070 0747A070 12452500 541019
CHELAN RIVER AT CHELAN
47 50 23.0 120 01 11.0 2F 0 Elev= 0 ft
53007 Washington Chelan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Chelan-47) 130547
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 21-47-101 Class= LC Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 004400
MILES 0503.30 0004.80 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/16	1200		1910.0	15.1	9.6	98.2	734.3	7.8	53	1	1.0K	1
90/11/13	1140		2210.0	11.8	10.4	100.2	725.9	8.0	52	1	1.0K	1
90/12/04	1440		2210.0	8.6	11.9	106.5	725.9	8.4	55	1	1.0K	3
91/01/15	1330		2210.0	3.8	12.0	93.5	739.1	8.4	65	1	1.0K	1K
91/02/12	1500		2210.0	5.1	11.5	92.8	737.9	8.0	54	1K	1.0K	1K
91/03/12	1340		2210.0	5.7	11.6	95.6	734.1	8.0	72	1K	0.5	1K
91/04/09	1350		2220.0	8.6	11.5	102.0	732.0	8.6	55	1K	0.2	1K
91/05/14	1315		2220.0	13.7	10.5	105.0	729.2	7.2	62	2	1.1	1K
91/06/11	1400		5120.0	14.7	10.3	105.4	727.5	8.2	55	1	1.0	8
91/07/16	1255		3040.0	18.0	9.0	97.9	732.8	7.7	54	1	0.4	11
91/08/13	1250		2220.0	20.6	8.8	100.4	735.3	7.7	54	3	0.6	1
91/09/10	1400		1220.0	21.2	8.9	103.6	729.2	8.0	55	1	0.3	1K

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/16	1200		0.01K	0.01K	0.01K	0.010K	0.010K	426006		5
90/11/13	1140		0.01	0.01K	0.01K	0.010K	0.010K	466006		
90/12/04	1440		0.02	0.01K	0.01K	0.010K	0.010K	496010		
91/01/15	1330		0.05	0.01K	0.01K	0.010K	0.010K	36010		
91/02/12	1500		0.07	0.01K	0.01K	0.010K	0.010K	76010		
91/03/12	1340		0.06	0.01K	0.01K	0.010K	0.010K	116010		
91/04/09	1350		0.05	0.01K	0.01K	0.010K	0.010K	156010		
91/05/14	1315		0.03	0.01K	0.01K	0.010K	0.010K	206010		
91/06/11	1400		0.03	0.01K	0.01K	0.010K	0.010K	246010		
91/07/16	1255		0.03	0.01K	0.01K	0.010K	0.010K	296010		
91/08/13	1250		0.01K	0.01K	0.01K	0.010K	0.010K	336010		
91/09/10	1400		0.01K	0.01K	0.01K	0.010K	0.010K	376010		

47B070 4748A140
COLUMBIA RIVER AT CHELAN STATION
47 48 55.0 119 58 50.0 2F000 Elev= 0 ft
53007 Washington Chelan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Chelan-47) 130547
21540000 Reach=17020005000 0.000 Drg= 0 sqmi
AMBNT/STREAM/RMP

INDEX 1310001
MILES 0504.10 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/12/04	1400		136000.0	9.7	11.8	107.3	733.3	8.2	150	3	1.0	4
91/01/15	1245		162000.0	3.1	12.9	97.5	748.0	8.6	150	2	1.0K	1K
91/02/12	1430		184000.0	2.4	13.3	98.8	747.0	8.4	145	2	1.0K	1K
91/03/12	1300		194000.0	6.7	13.3	110.9	744.0	8.3	149	3	1.5	1K
91/04/09	1310		173000.0	5.5	13.0	105.7	740.2	8.6	157	2	1.3	1K
91/05/14	1235		183000.0	9.8	12.0	108.6	738.1	7.8	140	7	4.2	4
91/06/11	1310		205000.0	11.4	11.9	112.1	735.8	8.1	129	8	2.6	3
91/07/16	1225		159000.0	14.3	10.1	100.4	742.7	7.7	129	3	1.4	1K
91/08/13	1225		170000.0	18.0	9.3	99.6	744.0	8.0	135	4	1.0	2
91/09/10	1330		81300.0	20.7	9.4	107.1	737.6	8.3	130	2	0.5	2

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/12/04	1400		0.11	0.01K	0.01K	0.020	0.020	496009		
91/01/15	1245		0.14	0.01K	0.02	0.010K	0.020	36009		
91/02/12	1430		0.15	0.01K	0.01K	0.010	0.030	76009		
91/03/12	1300		0.18	0.01K	0.02	0.010	0.030	116009		
91/04/09	1310		0.12	0.01K	0.01K	0.010K	0.014	156009		
91/05/14	1235		0.07	0.01K	0.03	0.010K	0.017	206009		
91/06/11	1310		0.05	0.01K	0.01K	0.010K	0.015	246009		
91/07/16	1225		0.04	0.01K	0.01	0.010K	0.015	296009		
91/08/13	1225		0.03	0.01K	0.01	0.010K	0.015	336009		
91/09/10	1330		0.06	0.01K	0.01K	0.014	0.022	376009		

48A070 4748A070 12449954 541020
METHOW RIVER NEAR PATEROS
48 04 29.0 119 57 20.0 2F 0 Elev= 0 ft
53047 Washington Okanogan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Methow-48) 130548
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 22-48-01 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 004810
MILES 0523.90 0005.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/16	1115		435.0	7.7	12.1	103.9	740.2	8.0	176	1	1.0K	2
90/11/13	1100		1730.0	5.4	12.2	100.3	730.5	8.0	99	5	1.0K	4
90/12/04	1305		1320.0	3.4	14.3	111.9	728.7	8.2	135	2	1.0K	1
91/02/12	1330		540.0	4.9	12.5	99.9	742.2	8.5	165	3	1.0K	2
91/03/12	1155		684.0	5.5	12.4	100.8	740.4	8.4	168	1	0.6	1K
91/04/09	1210		1180.0	7.8	11.6	100.4	736.1	8.1	165	5	1.3	1K
91/05/14	1145		4540.0	9.3	11.0	99.0	733.8	7.9	100	27	4.6	22
91/06/11	1220		8300.0	8.5	11.4	101.1	730.8	7.9	64	39	7.6	65
91/07/16	1140		3620.0	10.9	10.2	94.4	740.2	7.6	80	3	1.4	7
91/08/13	1125		1140.0	13.7	9.9	97.3	741.9	7.5	120	1	0.6	11
91/09/10	1230		395.0	16.7	10.0	105.6	735.3	8.6	171	1	0.3	4

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/16	1115		0.14	0.01K	0.01K	0.010K	0.010K	426005		
90/11/13	1100		0.09	0.01K	0.01K	0.010K	0.010K	466005		
90/12/04	1305		0.10	0.01K	0.01K	0.010K	0.010K	496008		
91/02/12	1330		0.08	0.01K	0.01K	0.010K	0.010	76008		
91/03/12	1155		0.09	0.01K	0.01K	0.010K	0.020	116008		
91/04/09	1210		0.06	0.01K	0.01K	0.010	0.010K	156008		
91/05/14	1145		0.04	0.01K	0.01	0.010K	0.014	206008		
91/06/11	1220		0.02	0.01K	0.01K	0.010K	0.017	246008		
91/07/16	1140		0.03	0.01K	0.01K	0.010K	0.010K	296008		
91/08/13	1125		0.05	0.01K	0.01K	0.010K	0.010K	336008		
91/09/10	1230		0.16	0.01K	0.01K	0.010K	0.012	376008		

48A140 4748A140 12449510-A
METHOW RIVER AT TWISP
48 21 35.0 120 06 47.0 2F000 Elev= 0 ft
53047 Washington Okanogan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Methow-48) 130548
21540000 Reach=17020008008 0.000 Drg= 0 sqmi
AMBNT/STREAM/RMP

INDEX 1310001 004810
MILES 0523.90 0039.40 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/16	1010		409.0	6.1	12.0	101.7	721.6	8.0	145	1	1.0K	1
90/11/13	1000		1740.0	5.3	12.1	101.4	715.0	7.8	89	2	1.0K	4
90/12/04	1200		1270.0	2.9	14.1	111.7	710.4	8.3	97	1	1.0K	1K
91/01/15	1050			3.1	12.7	98.9	726.4	8.6	137	2	1.0K	1K
91/02/12	1230		429.0	4.8	12.3	100.6	723.1	8.7	140	2	1.0K	2
91/03/12	1045		640.0	5.2	12.1	100.0	723.1	8.7	150	1	0.3	1
91/04/09	1050		1180.0	5.9	11.8	99.9	718.8	8.4	150	2	1.0	12
91/05/14	1040		4480.0	6.4	11.5	98.6	718.1	8.1	92	18	3.1	7
91/06/11	1105		7600.0	7.1	11.4	99.9	715.0	7.4	62	26	3.1	43
91/07/16	1035		3490.0	8.8	7.9	71.4	722.1	7.4	73	2	0.3	7
91/08/13	1015		1210.0	11.4	10.2	97.6	724.4	7.3	107	1	0.5	15
91/09/10	1130		381.0	14.4	10.5	108.0	719.6	8.1	140	1K	0.2	4

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/16	1010		0.10	0.01K	0.01	0.010K	0.010K	426004		
90/11/13	1000		0.07	0.01K	0.01K	0.010K	0.010K	466004		
90/12/04	1200		0.08	0.01K	0.01K	0.010K	0.010K	496007		
91/01/15	1050		0.09	0.01K	0.01K	0.010K	0.010K	36007		
91/02/12	1230		0.08	0.01K	0.01K	0.010K	0.010	76007		
91/03/12	1045		0.09	0.01K	0.01K	0.010K	0.010	116007		
91/04/09	1050		0.06	0.01K	0.01K	0.010K	0.010K	156007		
91/05/14	1040		0.04	0.01K	0.01	0.010K	0.012	206007		
91/06/11	1105		0.02	0.01K	0.01K	0.010K	0.010K	246007		
91/07/16	1035		0.02	0.01K	0.01K	0.010K	0.010K	296007		
91/08/13	1015		0.03	0.01K	0.01K	0.010K	0.010K	336007		
91/09/10	1130		0.13	0.01K	0.01K	0.010K	0.010K	376007		

49A070 4749A070 12447200
OKANOGAN RIVER AT MALOTT
48 16 53.0 119 42 12.0 2F 0 Elev= 0 ft
53047 Washington Okanogan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Okanogan-49) 130549
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 22-49-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 004930
MILES 0533.50 0017.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/16	0900		1470.0	8.6	10.7	93.6	742.4	7.9	221	3	1.0K	9
90/11/13	0910		9640.0	5.4	12.2	99.9	733.0	7.8	87	405	176.0	150
90/12/04	1030		3650.0	2.2	14.5	109.7	730.0	8.3	170	12	4.3	6S
91/02/12	1100		4860.0	0.0	13.2	92.2	745.0	8.5	209	33	4.1	4
91/03/12	0930		3680.0	4.1	12.4	96.9	743.5	8.8	269	9	1.6	1
91/04/09	0945		2500.0	8.1	10.9	94.7	739.4	8.4	229	20	7.5	29
91/05/14	0930		14200.0	9.3	11.0	98.3	738.9	8.1	137	260	48.0	140
91/06/11	0945		16800.0	10.8	10.8	100.7	733.0	8.0	117	89	21.0	37
91/07/16	0935		8380.0	15.2	10.7	108.8	740.2	7.1	110	44	3.9	25
91/08/13	0920		3630.0	19.1	8.3	90.7	745.7	8.1	203	14	2.4	65
91/09/10	0945		1180.0	18.5	8.6	93.6	740.4	8.2	258	3	1.6	9

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/16	0900		0.03	0.01K	0.02	0.010K	0.010	426003		
90/11/13	0910		0.05	0.01K	0.07	0.010K	0.230	466003		
90/12/04	1030		0.06	0.01K	0.01	0.010K	0.030	496006		
91/02/12	1100		0.07	0.01K	0.01K	0.010K	0.030	76006		
91/03/12	0930		0.02	0.01K	0.01K	0.010K	0.030	116006		
91/04/09	0945		0.01K	0.01K	0.01K	0.010K	0.019	156006		
91/05/14	0930		0.04	0.01K	0.05	0.010K	0.223	206006		
91/06/11	0945		0.01K	0.01K	0.01K	0.010K	0.057	246006		
91/07/16	0935		0.02	0.01K	0.01K	0.010K	0.030	296006		
91/08/13	0920		0.01K	0.01K	0.01K	0.010K	0.020	336006		
91/09/10	0945		0.04	0.01	0.01K	0.010K	0.019	376006		

49A190 4749A190 12439150 541023
OKANOGAN RIVER AT OROVILLE
48 56 20.0 119 25 36.0 2F 0 Elev= 0 ft
53047 Washington Okanogan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Okanogan-49) 130549
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 22-49-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 004930
MILES 0533.50 0078.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/16	0715		58.0	12.3	9.0	86.1	739.4	7.7	281	3	1.0K	9
90/11/13	0715		380.0	8.9	10.7	95.8	730.8	8.3	280	3	1.0	1
90/12/04	0800		200.0	5.0	12.5	102.1	728.5	9.4	340	4	1.3	25
91/01/15	0800		300.0	1.0	12.8	92.2	742.7	8.5	301	3	1.2	2
91/02/12	0815		1050.0	2.0	13.1	97.0	742.2	8.6	300	3	1.0K	1
91/03/12	0715		1820.0	3.3	14.4	110.6	740.9	8.8	272	3	1.1	
91/04/09	0710		215.0	6.7	12.8	107.7	737.6	8.7	300	6	1.6	5
91/05/14	0730		2020.0	13.6	10.6	104.6	737.9	8.8	301	4	1.8	4
91/06/11	0715		2060.0	15.5	9.7	100.6	731.0	8.2	281	2	1.1	1
91/07/16	0720		878.0	20.1	10.4	117.1	738.4	8.3	251	3	1.1	7
91/08/13	0710		1300.0	21.8	7.8	89.8	745.0	8.4	250	3	1.7	15
91/09/10	0720		190.0	18.1	8.7	93.9	740.7	8.3	260	5	3.0	9X

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/16	0715		0.01	0.01K	0.03	0.010K	0.040	426000		
90/11/13	0715		0.01K	0.01K	0.01K	0.010K	0.030	466000		
90/12/04	0800		0.01K	0.01K	0.01	0.010K	0.020	496004		
91/01/15	0800		0.05	0.01K	0.04	0.010K	0.020	36004		
91/02/12	0815		0.06	0.01K	0.01K	0.010K	0.020	76004		
91/03/12	0715		0.06	0.01K	0.01	0.010K	0.020	116004		
91/04/09	0710		0.01K	0.01K	0.01K	0.010K	0.012	156004		
91/05/14	0730		0.01K	0.01K	0.01	0.010K	0.012	206004		
91/06/11	0715		0.01K	0.01K	0.01K	0.010K	0.010K	246004		
91/07/16	0720		0.01K	0.01K	0.01K	0.010K	0.011	296004		
91/08/13	0710		0.01K	0.01K	0.01K	0.010K	0.014	336004		
91/09/10	0720		0.01K	0.01K	0.01K	0.010K	0.020	376004		

49B070 4749B070 12443600 541022
SIMILKAMEEN RIVER AT OROVILLE
48 56 05.0 119 26 27.0 2F 0 Elev= 0 ft
53047 Washington Okanogan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Okanogan-49) 130549
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 22-49-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 004930 00590
MILES 0533.50 0074.10 005.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/16	0740		1030.0	7.6	11.8	101.2	739.4	8.1	154	2	1.0K	4
90/11/13	0745		7100.0	5.2	13.5	110.4	730.5	8.2	85	208	74.0	28
90/12/04	0830		3050.0	2.2	15.1	114.5	728.5	9.0	110	10	3.7	2
91/01/15	0825			0.1	14.5	101.9	742.2	8.6	191	5	1.3	1K
91/02/12	0845		2260.0	0.2	14.1	99.4	742.2	8.6	159	33	8.0	1
91/03/12	0745		1650.0	4.2	12.9	101.5	740.4	8.8	205	3	1.5	1K
91/04/09	0745		2350.0	6.2	12.2	101.4	737.1	8.6	208	11	5.5	4
91/05/14	0750		12500.0	7.5	12.5	107.2	737.6	7.4	122	248	41.0	46
91/06/11	0745		8300.0	7.6	12.6	109.3	730.8	8.1	84	133	27.0	41
91/07/16	0740		7190.0	12.3	10.8	103.4	738.4	7.3	95	35	4.2	15
91/08/13	0730		2430.0	14.7	10.2	101.9	745.0	8.6	142	6	2.8	20
91/09/10	0745		811.0	15.2	9.9	100.6	740.4	8.2	191	3	2.0	6

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/16	0740		0.01K	0.01K	0.02	0.010K	0.010K	426001		
90/11/13	0745		0.04	0.01K	0.05	0.010K	0.180	466001		
90/12/04	0830		0.05	0.01K	0.01	0.010K	0.030	496005		
91/01/15	0825		0.07	0.01K	0.02	0.010K	0.010K	36005		
91/02/12	0845		0.05	0.01K	0.01K	0.010K	0.040	76005		
91/03/12	0745		0.01K	0.01K	0.01K	0.010K	0.020	116005		
91/04/09	0745		0.01K	0.01K	0.01K	0.010K	0.013	156005		
91/05/14	0750		0.04	0.01K	0.07	0.010K	0.118	206005		
91/06/11	0745		0.01K	0.01K	0.01K	0.010K	0.066	246005		
91/07/16	0740		0.01	0.01K	0.01K	0.010K	0.026	296005		
91/08/13	0730		0.01K	0.01K	0.01	0.010K	0.012	336005		
91/09/10	0745		0.01K	0.01K	0.01K	0.010	0.015	376005		

51A070 4751A070 12437505
NESPELEM RIVER AT NESPELEM
48 10 03.0 118 58 50.0 2F 0 Elev= 0 ft
53047 Washington Okanogan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Nespelem-51) 130551
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 22-51-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 005670
MILES 0582.10 0005.40 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/17	0920		9.0	6.3	10.6	90.5	720.1	7.8	242	3	1.0K	47
90/11/14	0905		12.0	5.3	11.3	94.4	717.8	8.3	228	2	1.0K	15
90/12/05	1015		12.0	3.5	13.2	105.6	715.0	8.2	230	2	1.0K	120
91/02/13	1030		16.0	4.4	11.3	91.5	723.1	8.1	200	5	1.1	27
91/03/13	0845		16.0	4.3	11.4	92.0	723.9	8.0	205	3	1.1	56
91/04/10	0845		35.0	5.2	11.1	92.5	717.0	8.3	150	2	1.1	7
91/05/15	0915		41.0	10.4	10.4	97.0	726.4	8.1	140	58	10.0	76J
91/06/12	0835		36.0	11.1	10.1	97.1	716.0	7.7	154	3	1.5	72
91/07/17	0735		24.0	12.4	8.9	87.9	717.6	7.3	171	1	2.0	190
91/08/14	0750		8.0	14.1	8.4	85.8	720.1	7.5	232	4	1.5	280
91/09/11	0755		4.0	10.4	9.0	85.0	717.6	7.7	250	3	1.6	20

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/17	0920		0.16	0.01K	0.01	0.020	0.040	426011		
90/11/14	0905		0.28	0.01K	0.01K	0.020	0.030	466011		
90/12/05	1015		0.28	0.01K	0.01K	0.020	0.030	496014		
91/02/13	1030		0.28	0.01K	0.01	0.020	0.060	76014		
91/03/13	0845		0.18	0.01K	0.01	0.020	0.050	116014		
91/04/10	0845		0.13	0.01K	0.01K	0.010K	0.019	156014		
91/05/15	0915		0.07	0.01K	0.03	0.010K	0.043	206014		
91/06/12	0835		0.07	0.01K	0.01K	0.024	0.032	246014		
91/07/17	0735		0.08	0.01K	0.01	0.016	0.032	296014		
91/08/14	0750		0.06	0.01K	0.01	0.021	0.027	336014		
91/09/11	0755		0.06	0.01K	0.01K	0.020	0.033	376014		

52A070 1952A070 12434590 541024
SANPOIL RIVER AT KELLER
48 05 04.0 118 41 25.0 2F 0 Elev= 0 ft
53019 Washington FERRY CO. PACIFIC NORTHWEST
UPPER COLUMBIA (Sanpoil-52) 130552
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 23-52-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 006230
MILES 0616.00 0011.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/17	0825		29.0	4.9	12.3	99.7	732.0	8.0	200	3	1.0K	7
90/11/14	0815		33.0	4.4	12.6	101.3	728.5	8.9	223	2	1.0K	11
90/12/05	0905		33.0	0.6	15.3	109.9	736.1	8.0	210	1	1.0K	8
91/02/13	0900		108.0	3.3	12.3	95.4	733.3	8.2	189	5	1.8	1K
91/03/13	0945		157.0	4.1	12.3	97.6	732.3	8.3	198	2	1.0	3
91/04/10	1010		360.0	4.6	12.0	97.2	726.4	8.3	148	17	3.9	1K
91/05/15	0825		350.0	10.5	9.8	92.8	717.0	8.0	139	31	8.9	11J
91/06/12	1005		292.0	12.5	10.0	98.1	724.2	8.2	162	12	3.4	32
91/07/17	0840		187.0	13.7	8.8	88.3	726.9	7.6	177	7	2.4	80
91/08/14	0840		92.0	16.7	9.2	98.1	728.5	8.2	205	4	1.2	28
91/09/11	0850		33.0	13.0	10.1	99.8	726.9	8.4	210	2	1.4	11

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/17	0825		0.01K	0.01K	0.01K	0.020	0.030	426010		
90/11/14	0815		0.01K	0.01K	0.01K	0.020	0.030	466010		
90/12/05	0905		0.01	0.01K	0.01K	0.020	0.030	496013		
91/02/13	0900		0.15	0.01K	0.01K	0.030	0.070	76013		
91/03/13	0945		0.01K	0.01K	0.01K	0.020	0.050	116013		
91/04/10	1010		0.09	0.01K	0.01K	0.022	0.044	156013		
91/05/15	0825		0.03	0.01K	0.01	0.019	0.050	206013		
91/06/12	1005		0.01K	0.01K	0.01K	0.030	0.048	246013		
91/07/17	0840		0.01K	0.01K	0.01K	0.028	0.043	296013		
91/08/14	0840		0.01K	0.01K	0.01K	0.023	0.034	336013		
91/09/11	0850		0.01K	0.01K	0.01K	0.015	0.028	376013		

52B070 4352B070
LAKE ROOSEVELT FROM KELLER FERRY
47 54 45.0 118 39 45.0 2F000 Elev= 0 ft
53043 Washington Lincoln Co. PACIFIC NORTHWEST
Columbia River below Yakima River 131052
21540000 Reach=17020001000 0.000 Drg= 2 sqmi
AMBNT/STREAM/RMP

INDEX 1310001
MILES 0614.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
91/04/10	1135			5.2				8.4	149		1.1	
91/05/15	1000			9.9			730.5	8.7	145		2.4	
91/06/12	1125			11.7			727.2	8.3	138		1.3	
91/07/17	0910			17.8	9.2	100.1	729.7	8.0	123		1.8	
91/08/14	0920			20.8	8.5	98.1	730.0	8.3	135		0.3	
91/09/11	0925			19.8	8.9	100.9	728.7	8.4	121		0.3	

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
91/04/10	1135		0.13	0.01K	0.01K	0.010K	0.011	156025		
91/05/15	1000		0.01K	0.01K	0.01K	0.010K	0.014	206025		
91/06/12	1125		0.02	0.01K	0.01K	0.010K	0.010K	246025		
91/07/17	0910		0.01K	0.01K	0.01K	0.010K	0.012	296025		
91/08/14	0920		0.01K	0.01K	0.03	0.010K	0.010K	336025		
91/09/11	0925		0.03	0.01K	0.01	0.010K	0.012	376025		

53A070 4753A070 12436500
COLUMBIA R AT GRAND COULEE DAM
47 57 56.0 118 58 54.0 2F 0 Elev= 0 ft
53047 Washington Okanogan Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Lower Lake Roosevelt-53) 130553
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 26-00-04 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001
MILES 0596.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/17	0725		133500.0	15.2	8.5	86.3	740.9	7.2	122	1	1.0K	1
90/11/14	0720		152000.0	13.4	9.6	94.5	735.8	7.9	139	1	1.0K	1K

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/17	0725		0.08	0.01K	0.01K	0.010	0.020	426009		
90/11/14	0720		0.09	0.01K	0.01K	0.020	0.020	466009		

54A050 6554A050
SPOKANE RIVER AT MOUTH
47 54 30.0 118 19 00.0 2F000 Elev= 0 ft
53065 Washington Stevens Co. PACIFIC NORTHWEST
SPOKANE (Lower Spokane-54) 130354
21540000 Reach=17010307000 0.000 Drg= 0 sqmi
AMBNT/STREAM/RMP

INDEX 1310001 006500
MILES 0638.90 0001.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/12/05	1330			7.7	11.3	97.4	737.9	7.8	177	3	1.1	1K
91/02/06	1410			2.6	13.0	98.5	736.6	7.9	123	4	5.4	1K
91/03/06	1305			5.2	13.5	110.7	728.7	7.3	87	5	7.9	5
91/04/03	1330			5.3	12.2	99.9	731.3	7.7	101	12	5.1	1
91/05/08	1350			9.2	11.9	108.6	721.6	7.9	78	9	4.5	1K
91/06/05	1305			14.7	11.2	114.7	727.2	7.9	96	3	1.5	2
91/07/10	1325			20.5	9.8	113.3	724.2	8.3	98	3	2.2	1K
91/08/07	1330			22.3	8.7	104.1	724.4	8.0	108	2	1.7	1K
91/09/04	1340			21.3	8.6	100.5	728.0	8.0	155	1K	0.9	2

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/12/05	1330		0.45	0.02	0.07	0.020	0.020	496172	74	
91/02/06	1410		0.43	0.01K	0.08	0.035	0.039	66172	50	
91/03/06	1305		0.31	0.01K	0.02	0.020	0.050	106172	35	
91/04/03	1330		0.43	0.00	0.02	0.013	0.030	146172	43	
91/05/08	1350		0.12	0.01K	0.01K	0.010K	0.018	196172	35	
91/06/05	1305		0.05	0.01K	0.01K	0.010K	0.015	236172	29	
91/07/10	1325		0.08	0.01K	0.01K	0.010K	0.015	286172	43	
91/08/07	1330		0.11	0.01K	0.02	0.010K	0.017	326172	49	
91/09/04	1340		0.23	0.01K	0.01K	0.010K	0.010K	366172	56	

54A120 6554A120 12424200 543108
SPOKANE R AT RIVERSIDE STATE PK
47 41 48.0 117 29 48.0 2F 0 Elev= 0 ft
53063 Washington Spokane Co. PACIFIC NORTHWEST
SPOKANE (Lower Spokane-54) 130354
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 24-54-01 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 006500
MILES 0643.00 0066.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	1300		1820.0	12.0	11.3	110.1	721.1	8.7	170	2	1.0K	3
90/11/06	1305		3480.0	9.0	12.2	109.5	730.8	8.3	122	1	1.0K	6
90/12/04	1320		16000.0	7.3	13.8	121.8	713.5	7.3	75	1	1.1	8
91/01/08	1355		4900.0	2.7	14.5	112.9	720.1	7.9	497	1K	1.2	8
91/02/05	1430		6410.0	3.4	14.2	111.8	723.9	7.7	98	9	6.5	14X
91/03/05	1345		19100.0	4.0J	14.7	118.8	716.5	7.2	82	270J	85.0	84S
91/04/02	1315		7250.0	5.9	13.6	115.1	718.8	8.2	95	5	2.3	4
91/05/07	1325		12900.0	9.4	12.7	117.2	717.3	8.0	78	4	1.9H	
91/06/04	1315		12900.0	13.4	11.8	118.7	719.8	8.2	71	4	2.0	19
91/07/09	1525		5280.0	18.0	9.9	111.1	710.9	7.9	102	2	0.8	5
91/08/06	1500		2360.0	19.2	9.6	110.3	711.5	7.9	165	2	2.5	7
91/09/03	1530		1680.0	14.8	10.6	109.6	722.6	8.3	295	2	1.0	3

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	1300		0.44	0.02	0.37	0.013	0.021	416160	73	6
90/11/06	1305		0.27	0.03	0.12	0.030	0.040	456160	51	5K
90/12/04	1320		0.09	0.01K	0.02	0.010	0.020	496162	29	10K
91/01/08	1355		0.31	0.01K	0.09	0.030	0.040	26162	45	29
91/02/05	1430		0.28	0.01K	0.11	0.032	0.054	66162	39	10K
91/03/05	1345		0.96J	0.01K	0.03L	0.020	0.100	106162	29	19
91/04/02	1315		0.27	0.00	0.05	0.024	0.035	146162	38	10K
91/05/07	1325		0.12	0.01K	0.05	0.010K	0.015	196162	31	10K
91/06/04	1315		0.14	0.01K	0.03	0.010K	0.015	236162	43	19
91/07/09	1525		0.28	0.01K	0.06	0.010K	0.019	286162	45	2K
91/08/06	1500		0.54	0.01K	0.12	0.010K	0.025	326162	72	5
91/09/03	1530		1.22	0.03	0.49	0.015	0.028	366162	121	3

55B070 6355B070 12431900
LITTLE SPOKANE RIVER NEAR MOUTH
47 47 00.0 117 31 43.0 2F 0 Elev= 0 ft
53063 Washington Spokane Co. PACIFIC NORTHWEST
SPOKANE (Little Spokane-55) 130355
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 24-55-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 006500 00510
MILES 0643.00 0056.30 001.10 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	1335		359.0	9.9	10.3	95.5	723.1	8.4	290	5	1.0K	14
90/11/06	1345		389.0	7.7	10.5	91.0	734.3	8.3	272	3	1.0K	4
90/12/04	1405		402.0	7.0	10.4	90.6	717.6	7.8	268	6	1.2	41
91/01/08	1440		376.0	5.7	10.8	90.3	723.9	8.1	271	15	2.3	75
91/02/05	1520		1040.0	3.5	10.9	85.6	728.0	7.7	174	600J	178.0	520
91/03/05	1415		871.0	6.2J	10.4	88.7	718.8	7.5	203	100	25.0	140
91/04/02	1350		587.0	10.3	9.5	88.9	722.9	8.2	230	22	3.0	23
91/05/07	1405		549.0	11.9	9.4	91.5	720.1	8.0	233	12	2.4H	
91/06/04	1400		497.0	14.1	9.6	97.8	722.6	8.3	255	12	2.2	16
91/07/09	1555		420.0	16.2	8.8	94.9	713.2	8.2	259	11	4.4	42
91/08/06	1525		357.0	15.8	9.3	99.3	714.8	7.5	279	7	4.2	49
91/09/03	1610		358.0	14.1	10.0	101.4	725.4	8.4	290	5	1.5	19

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	1335		1.07	0.01	0.01	0.012	0.020	416161	137	
90/11/06	1345		1.20	0.01K	0.01K	0.010	0.020	456161	136	
90/12/04	1405		1.21	0.01K	0.01	0.010	0.020	496163	131	
91/01/08	1440		1.36	0.01K	0.02	0.010	0.040	26163	134	
91/02/05	1520		0.77	0.01K	0.37	0.139	1.070	66163	71	
91/03/05	1415		0.95	0.01K	0.08	0.040	0.110	106163	92	
91/04/02	1350		0.89	0.00	0.01	0.013	0.035	146163	106	
91/05/07	1405		0.86	0.01K	0.01	0.010K	0.023	196163	108	
91/06/04	1400		0.89	0.01K	0.11	0.013	0.028	236163	126	
91/07/09	1555		1.04	0.01K	0.01K	0.010K	0.033	286163	123	
91/08/06	1525		1.10	0.01K	0.01K	0.010K	0.025	326163	133	
91/09/03	1610		1.12	0.01K	0.01K	0.010K	0.018	366163	139	

55B080 6355B080
LITTLE SPOKANE RIVER NEAR GRIFFITH SPRINGS
47 46 12.0 117 27 09.0 2F000 Elev= 0 ft
53063 Washington Spokane Co. PACIFIC NORTHWEST
SPOKANE (Little Spokane-55) 130355
21540000 Reach=17010308000 0.000 Drg= 0 sqmi
TYPEA/AMBNT/STREAM

INDEX 1310001 006500 00510
MILES 0643.00 0056.30 007.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	1410			10.2	9.9	92.4	722.9	8.5	280	3	1.0K	33
90/11/06	1420			7.7	10.3	89.3	733.8	8.4	262	3	1.0K	31
90/12/04	1430			7.0	10.0	87.2	717.6	8.0	259	3	1.0K	240
91/01/08	1510			5.7	10.3	86.2	723.6	8.2	275	8	1.6	280
91/02/05	1600			1.7	11.2	83.8	728.0	7.7	140	640J	220.0	700S
91/03/05	1450			5.4J	10.8	90.3	718.8	7.6	193	89	22.5	120
91/04/02	1420			10.4	9.6	90.1	721.9	8.3	219	19	3.1	53
91/05/07	1435			12.2	9.4	92.1	720.1	8.3	220	9	2.1H	
91/06/04	1440			14.4	9.3	95.4	722.1	8.3	230	11	1.6	23

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	1410		1.03	0.01K	0.01K	0.016	0.018	416169	138	
90/11/06	1420		1.10	0.01K	0.01K	0.010	0.020	456169	131	
90/12/04	1430		1.11	0.01K	0.02	0.010	0.020	496164	125	
91/01/08	1510		1.31	0.01K	0.02	0.010	0.030	26164	129	
91/02/05	1600		0.61	0.01K	0.42	0.157	1.060	66164	58	
91/03/05	1450		0.93	0.01K	0.07	0.040	0.110	106164	87	
91/04/02	1420		0.77	0.00	0.01	0.012	0.035	146164	99	
91/05/07	1435		0.75	0.01K	0.01	0.010K	0.024	196164	103	
91/06/04	1440		0.79	0.01K	0.01K	0.014	0.029	236164	109	

55B082 6355B082
LITTLE SPOKANE RIVER ABOVE DARTFORD CREEK
47 00 01.0 117 24 52.0 2F000 Elev= 0 ft
53063 Washington Spokane Co. PACIFIC NORTHWEST
SPOKANE (Little Spokane-55) 130355
21540000 Reach=17010308000 0.000 Drg= 0 sqmi
TYPEA/AMBNT/STREAM

INDEX 1310001 006500 00510
MILES 0643.00 0056.30 010.30 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	1435			9.2	12.0	109.5	722.4	8.7	256	6	1.2	63
90/11/06	1445			5.2	12.6	102.7	733.0	8.5	242	2	1.0K	24
90/12/04	1455			4.1	12.4	100.5	717.3	8.1	236	5	1.2	24
91/01/08	1535			1.3	13.0	97.0	722.9	8.3	243	8	1.4	10
91/02/05	1625			0.7	12.0	87.4	728.2	7.6	104	510J	185.0	1300S
91/03/05	1515			3.9J	11.8	94.9	718.8	7.7	175	103	24.5	77S
91/04/02	1440			10.0	10.5	97.8	720.9	8.1	183	26	3.5	210
91/05/07	1455			12.8	10.2	101.3	719.8	8.3	178	11	2.5H	
91/06/04	1500			16.2	10.2	108.7	721.4	8.4	189	16	2.5	49

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	1435		0.85	0.01K	0.01K	0.013	0.017	416170	121	
90/11/06	1445		0.91	0.01K	0.02	0.010	0.020	456170	116	
90/12/04	1455		0.99	0.01K	0.02	0.010	0.030	496165	111	
91/01/08	1535		1.24	0.01K	0.02	0.020	0.040	26165	115	
91/02/05	1625		0.48	0.01K	0.48	0.181	1.100	66165	39	
91/03/05	1515		0.78J	0.01K	0.05L	0.050	0.160	106165	72	
91/04/02	1440		0.55	0.00	0.01	0.015	0.042	146165	80	
91/05/07	1455		0.47	0.01K	0.01	0.010K	0.032	196165	82	
91/06/04	1500		0.47	0.01K	0.01	0.020	0.037	236165	88	

55B100 6355B100
LITTLE SPOKANE RIVER ABOVE PEONE CREEK
47 47 54.0 117 22 54.0 2F000 Elev= 0 ft
53063 Washington Spokane Co. PACIFIC NORTHWEST
SPOKANE (Little Spokane-55) 130355
21540000 Reach=17010308000 0.000 Drg= 0 sqmi
TYPEA/AMBNT/STREAM

INDEX 1310001 006500 00510
MILES 0643.00 0056.30 013.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	1455			8.6	12.3	110.8	721.6	8.3	251	2	1.0K	7
90/11/06	1510			4.4	13.0	103.9	732.8	8.5	232	2	1.0K	13
90/12/04	1530			3.3	12.7	100.7	717.6	8.1	229	4	1.0K	11
91/01/08	1600			0.1	13.1	94.6	722.4	8.3	230	13	2.3	11
91/02/05	1650			0.5	12.1	87.6	728.5	7.7	101	250J	103.0	2100S
91/03/05	1535			4.4J	11.9	97.0	718.1	7.5	173	38	12.0	230
91/04/02	1455			9.7	10.7	99.1	720.3	8.3	179	22	3.1	3
91/05/07	1520			13.0	10.2	101.9	718.8	8.2	178	9	2.1H	
91/06/04	1520			16.6	10.1	108.8	720.1	8.4	187	12	2.3	14

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	1455		0.87	0.01K	0.01K	0.010	0.013	416171	120	
90/11/06	1510		0.93	0.01K	0.01	0.010K	0.020	456171	116	
90/12/04	1530		1.01	0.01K	0.03	0.010	0.020	496166	107	
91/01/08	1600		1.27	0.01K	0.03	0.010	0.050	26166	108	
91/02/05	1650		0.45	0.01K	0.58	0.184	0.905	66166	32	
91/03/05	1535		0.77	0.01	0.09	0.050	0.120	106166	76	
91/04/02	1455		0.56	0.00	0.01	0.012	0.039	146166	78	
91/05/07	1520		0.47	0.01K	0.02	0.010K	0.032	196166	80	
91/06/04	1520		0.46	0.01K	0.01	0.014	0.033	236166	85	

55C070 7355C070
PEONE (DEADMAN) CREEK ABOVE LITTLE DEEP CREEK
47 47 37.0 117 22 33.0 2F000 Elev= 0 ft
53063 Washington Spokane Co. PACIFIC NORTHWEST
SPOKANE (Little Spokane-55) 130355
21540000 Reach=17010308003 0.000 Drg= 0 sqmi
TYPEA/AMBNT/STREAM

INDEX 1310001 006500 00510 0140
MILES 0643.00 0056.30 013.10 000.50 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	1515			13.2	10.0	100.1	721.1	8.6	300	9	1.0K	10
90/11/06	1530			8.8	11.1	99.0	732.3	8.4	262	4	1.1	3
90/12/04	1545			7.0	11.3	98.5	717.8	8.2	239	6	1.6	7
91/01/08	1620			5.9	11.6	97.8	722.1	8.4	268	14	3.6	27
91/03/05	1550			3.8J	11.9	95.5	718.1	7.7	135	373	53.0	14S
91/04/02	1510			10.7	10.3	97.5	721.1	8.2	168	33	5.2	5
91/05/07	1530			12.0	10.2	99.8	718.1	8.1	139	15	2.2H	
91/06/04	1545			15.6	9.5	100.2	719.8	8.3	170	15	2.1	31

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	1515		0.82	0.01	0.01K	0.034	0.037	416172	136	
90/11/06	1530		0.73	0.01K	0.02	0.030	0.040	456172	124	
90/12/04	1545		0.62	0.01	0.01K	0.030	0.050	496167	108	
91/01/08	1620		0.78	0.02	0.03	0.050	0.100	26167	125	
91/03/05	1550		0.88J	0.01K	0.04L	0.060	0.160	106167	58	
91/04/02	1510		0.26	0.00	0.01	0.024	0.055	146167	65	
91/05/07	1530		0.25	0.01K	0.01	0.024	0.049	196167	60	
91/06/04	1545		0.36	0.01K	0.01K	0.042	0.066	236167	77	

56A070 6356A070 12424003 543150
HANGMAN CR AT MOUTH AT SPOKANE
47 39 17.0 117 27 12.0 2F 0 Elev= 0 ft
53063 Washington Spokane Co. PACIFIC NORTHWEST
SPOKANE (Hangman-56) 130356
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 24-56-03 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 006500 00540
MILES 0643.00 0072.40 000.60 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/09	1225		8.0	10.1	14.9	139.1	721.6	8.8	400	9	2.6	11
90/11/06	1225		25.0	4.4	13.4	107.7	728.7	8.6	325	7	4.7	5
90/12/04	1245		72.0	2.0	12.7	98.2	711.2	7.8	222	13	38.0	75
91/02/05	1345		407.0	1.2	12.9	95.9	722.9	7.8	139	130	76.5	160
91/03/05	1310		2850.0	3.5J	11.8	94.5	714.0	7.2	125	1980J	395.0	350S
91/04/02	1245		131.0	11.5	10.3	99.7	717.6	8.6	187	14	14.0	3K
91/05/07	1250		42.0	13.6	10.9	110.8	716.0	8.8	231	4	2.6H	
91/06/04	1240		72.0	18.1	9.2	102.3	718.8	8.2	185	18	28.0	27
91/07/09	1455		18.0	22.8	10.8	133.1	710.2	8.4	290	2	2.0	32
91/08/06	1400		8.0	22.5	12.8	156.7	711.5	8.5	375	8	4.9	41
91/09/03	1455		5.0	20.1	12.7	146.3	722.1	8.7	412	5	2.1	10

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/09	1225		0.67	0.01	0.01K	0.042	0.047	416159		
90/11/06	1225		0.35	0.01K	0.02	0.030	0.050	456159		
90/12/04	1245		3.91	0.02	0.10	0.080	0.190	496161		
91/02/05	1345		1.94	0.01K	0.17	0.112	0.384	66161		
91/03/05	1310		5.80J	0.01K	0.15L	0.070	0.540	106161		
91/04/02	1245		1.66	0.00	0.01	0.032	0.082	146161		
91/05/07	1250		0.19	0.01K	0.01	0.010K	0.033	196161		
91/06/04	1240		0.55	0.01	0.05	0.056	0.089	236161		
91/07/09	1455		0.44	0.01K	0.01K	0.038	0.056	286161		
91/08/06	1400		0.91	0.01	0.02	0.033	0.063	326161		
91/09/03	1455		1.12	0.02	0.06	0.025	0.039	366161		

57A150 6357A150 12419495 541026
SPOKANE RIVER AT STATELINE BR
47 41 55.0 117 02 37.0 2F 0 Elev= 0 ft
53063 Washington Spokane Co. PACIFIC NORTHWEST
SPOKANE (Middle Spokane-57) 130357
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 24-57-04 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM

INDEX 1310001 006500
MILES 0643.00 0096.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/12/05	0720		15600.0	6.6	12.3	105.7	720.3	7.0	62	2	1.2	5
91/01/09	0730		4500.0	1.8	12.3	94.7	709.7	8.4	60	1	1.4	25
91/02/06	0710		5730.0	1.5	12.8	96.2	721.1	7.1	58	2	1.8	1K
91/03/06	0700		17100.0	2.5	13.2	103.2	711.7	6.9	54	2	3.8	3
91/04/03	0710		6840.0	3.8	12.1	97.3	716.8	7.9	64	4	2.5	4
91/05/08	0720		13000.0	9.1	11.3	105.6	703.6	7.3	53	3	2.1	1K
91/06/05	0645		13500.0	12.4	10.8	107.7	710.9	7.4	47	3	1.6	8
91/07/10	0700		4550.0	18.5	8.3	94.1	710.4	7.2	48	2	1.7	8
91/08/07	0645		1950.0	22.6	7.1	87.2	709.9	8.1	52	2	2.6	17
91/09/04	0705		749.0	19.3	7.6	87.0	714.8	7.4	59	3	1.7	630J

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/12/05	0720		0.03	0.01K	0.01	0.010	0.010	496169	24	
91/01/09	0730		0.05	0.01K	0.02	0.010K	0.010	26169	23	
91/02/06	0710		0.04	0.01K	0.04	0.013	0.008	66169	23	
91/03/06	0700		0.09	0.01K	0.01K	0.010K	0.020	106169	23	
91/04/03	0710		0.05	0.00	0.01	0.001	0.013	146169	23	
91/05/08	0720		0.02	0.01K	0.01K	0.010K	0.015	196169	22	
91/06/05	0645		0.01K	0.01K	0.01K	0.010K	0.014	236169	23	
91/07/10	0700		0.21	0.01K	0.01K	0.010K	0.010	286169	20	
91/08/07	0645		0.01	0.01K	0.03	0.010K	0.018	326169	20	
91/09/04	0705		0.04	0.01K	0.01K	0.010K	0.025	366169	21	

57A190
SPOKANE RIVER NEAR POST FALLS, IDAHO
47 42 10.0 116 58 40.0 2F 0 Elev= 0 ft
16055 Idaho Kootenai Co. PACIFIC NORTHWEST
SPOKANE (Middle Spokane-57) 130357
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 24-57-04 Class= (A) Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 006500
MILES 0643.00 0100.70 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/10	0725		1470.0	13.6	9.0	91.9	712.2	8.0	55	3	1.0	5
90/11/07	0720		2980.0	8.9	9.9	90.8	713.7	8.2	56	1	1.0K	2H

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/10	0725		0.01K	0.00K	0.01K	0.005	0.013	416162	23	
90/11/07	0720		0.01K	0.01K	0.01	0.010K	0.010	456162	23	

59A070 6559A070 12409000 541027
COLVILLE RIVER AT KETTLE FALLS
48 35 40.0 118 03 41.0 2F 0 Elev= 0 ft
53065 Washington Stevens Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Colville-59) 130559
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 23-59-02 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 007100
MILES 0695.00 0005.00 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/10	1105		54.0	7.9	11.5	100.8	729.5	8.5	341	8	2.1	33
90/11/07	1105		109.0	3.3	12.1	94.6	728.2	8.3	354	4	1.5	31

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/10	1105		0.16	0.00	0.01K	0.028	0.044	416164		
90/11/07	1105		0.35	0.01K	0.08	0.040	0.050	456164		

60A070 6560A070 12404900 541028
KETTLE RIVER NEAR BARSTOW
48 47 05.0 118 07 27.0 2F 0 Elev= 0 ft
53065 Washington Stevens Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Kettle-60) 130560
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 23-60-04 Class= A Miles= 0.00 to 0.00
AMBNT/STREAM/RMP

INDEX 1310001 007190
MILES 0706.40 0010.90 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/10	1140		464.0	8.5	11.6	102.8	731.5	8.5	220	2	1.0K	2
90/11/07	1200			3.2	13.1	101.8	730.3	8.3	201	2	1.0K	1K

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/10	1140		0.05	0.00	0.01K	0.006	0.008	416165		5K
90/11/07	1200		0.08	0.01K	0.01K	0.010K	0.010K	456165		5K

61A070 6561A070 12399500 541029
COLUMBIA R AT NORTHPORT
48 55 21.0 117 46 32.0 2F 0 Elev= 0 ft
53065 Washington Stevens Co. PACIFIC NORTHWEST
UPPER COLUMBIA (Upper Lake Roosevelt-61) 130561
21540000 Reach= 0.000 Drg= 0 sqmi
Seg ID= 26-00-04 Class= AA Miles= 0.00 to 0.00
AMBNT/STREAM/NASQAN

INDEX 1310001
MILES 0735.10 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/12/05	1135		108000.0	5.8	13.6	111.7	738.4	7.6	161	2	1.0K	7
91/02/06	1155		145000.0	2.2	13.3	99.7	737.1	7.2	152	1	1.0K	4
91/03/06	1105		95000.0	4.7	13.5	109.4	728.2	7.7	152	2	1.8	1K
91/04/03	1120		101000.0	3.7	12.5	98.3	731.0	8.2	152	7	1.0	1
91/05/08	1115		130000.0	7.5	12.4	109.2	718.8	7.9	148	3	1.6	4
91/06/05	1105		198000.0	11.4	12.6	120.1	727.2		160	5	2.0	7
91/07/10	1100		132000.0	15.5	10.9	114.2	723.4	8.0	138	3	2.1	1
91/08/07	1055		144000.0	16.4	10.8	115.1	724.4	7.8	121	2	2.0	18
91/09/04	1135		72100.0	17.9	10.2	111.2	729.7	8.3	142	2	1.4	10

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/12/05	1135		0.08	0.01K	0.02	0.010K	0.020	496171	71	
91/02/06	1155		0.09	0.01K	0.03	0.011	0.014	66171	24	
91/03/06	1105		0.10	0.01K	0.01	0.010	0.020	106171	76	
91/04/03	1120		0.11	0.00	0.01	0.005	0.013	146171	72	
91/05/08	1115		0.08	0.01K	0.03	0.010K	0.022	196171	69	
91/06/05	1105		0.05	0.01K	0.01K	0.010K	0.013	236171	65	
91/07/10	1100		0.04	0.01K	0.01K	0.056	0.069	286171	67	
91/08/07	1055		0.07	0.01K	0.03	0.010K	0.021	326171	63	
91/09/04	1135		0.06	0.01K	0.01K	0.017	0.015	366171	61	

62A150 5162A150 12395500 541031
PEND OREILLE RIVER AT NEWPORT
48 11 07.0 117 02 02.0 2F 0 Elev= 0 ft
53051 Washington Pend Oreille Co. PACIFIC NORTHWEST
CLARK FORK, PEND OREILLE (Pend Oreille-6 130262
21540000 Reach= 0.000 Drg= 0 sqmi
AMBNT/STREAM/RMP

INDEX 1310001 007520
MILES 0745.50 0088.20 . . . . . .

DATE FROM TO	TIME	DEPTH FEET	60 STREAM FLOW CFS	10 WATER TEMP CENT	300 DO MG/L	301 DO SATUR PERCENT	25 BAROMTRC PRESSURE MM OF HG	400 PH SU	95 CNDUCTVY LAB @ 25C UMHO	530 RESIDUE TOT-NFLT MG/L	82079 TURBIDTY LAB NTU	31616 FEC COLI MFM-FCBR /100ML
90/10/10	0830		22800.0	13.6	9.6	98.3	710.7	8.2	165	3	1.0K	1
90/11/07	0840		27400.0	8.1	10.8	97.5	711.2	8.1	164	2	1.0K	1K
90/12/05	0840		23600.0	4.4	11.6	94.4	719.3	7.9	176	5	1.8	3
91/01/09	0910		28400.0	0.2	12.5	92.3	708.7	7.7	175	1	1.3	4
91/02/06	0840		24000.0	2.0	12.3	93.9	720.1	7.6	166	5	1.5	3X
91/03/06	0815		28800.0	3.0	12.9	102.4	710.7	7.7	163	4	2.2	1K
91/04/03	0820		21100.0	5.2	12.2	102.0	714.8	8.3	162	5	1.6	1K
91/05/08	0830		3600.0	8.8	11.7	108.8	702.1	8.1	161	4	2.1	3
91/06/05	0755		73500.0	11.7	11.4	112.1	709.9		148	7	2.7	4
91/07/10	0810		51400.0	17.0	10.0	110.3	708.7	8.3	148	3	2.1	1
91/08/07	0800		12100.0	21.6	8.6	103.9	708.7	8.0	147	2	1.8	3
91/09/04	0830		15800.0	20.7	8.5	100.2	713.7	8.5	121	2	1.2	3

DATE FROM TO	TIME	DEPTH FEET	630 NO2+NO3 N-TOTAL MG/L	613 NO2-N DISS MG/L	610 NH3+NH4- N TOTAL MG/L	671 PHOS-DIS ORTHO MG/L P	665 PHOS-TOT MG/L P	8 LAB IDENT. NUMBER	900 TOT HARD CACO3 MG/L	340 COD HI LEVEL MG/L
90/10/10	0830		0.01K	0.00K	0.01K	0.003	0.006	416163		
90/11/07	0840		0.01K	0.01K	0.01K	0.010K	0.010K	456163		
90/12/05	0840		0.03	0.01K	0.01K	0.010K	0.010K	496170		
91/01/09	0910		0.07	0.01K	0.01K	0.010K	0.010K	26170		
91/02/06	0840		0.04	0.01K	0.00K	0.008	0.007	66170		
91/03/06	0815		0.06	0.01K	0.01K	0.010K	0.020	106170		
91/04/03	0820		0.02	0.00	0.00	0.002	0.010K	146170		
91/05/08	0830		0.01K	0.01K	0.01K	0.010K	0.011	196170		
91/06/05	0755		0.01K	0.01K	0.01K	0.010K	0.014	236170		
91/07/10	0810		0.01K	0.01K	0.01K	0.010K	0.014	286170		
91/08/07	0800		0.01K	0.01K	0.01	0.010K	0.015	326170		
91/09/04	0830		0.01K	0.01K	0.01K	0.010K	0.011	366170		

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 01A050 Name: NOOKSACK R @ BRENNAN

Class: A Elevation: 10 River Mile: 3.40

Location:
LOCATED ONE MILE WEST OF BRENNAN AT BRIDGE OVER NOOKSACK ON STATE HIGHWAY 540 (RURAL ROAD EXIT FROM I-5)

Water Years Sampled:

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5 6                 7                 8                 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X   X X     X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.552	2.798	21	5.289	2.261	18	9.789	2.147	18	15.233	1.308	18	17.400	0.100
CU	P1042	ug/L	9.155	13.239	11	5.733	6.177	9	4.000	3.416	12	6.433	8.497	9	42.400	1.000
ZN	P1092	ug/L	17.909	23.741	11	9.111	5.419	9	6.958	4.266	12	9.667	15.770	9	67.000	1.000
ZN	P1094	ug/L	17.133	20.273	15	11.667	12.449	12	7.214	4.282	14	8.750	13.552	12	0.000	0.000
CD	P1113	ug/L	0.265	0.305	14	0.247	0.159	12	0.259	0.247	15	0.244	0.323	14	1.300	0.100
PB	P1114	ug/L	2.720	1.638	15	2.600	3.604	12	2.638	3.182	13	2.129	1.889	14	405.000	1.000
CR	P1118	ug/L	2.864	2.346	11	3.362	3.641	11	3.136	2.076	14	2.152	1.803	13	10.600	0.370
CU	P1119	ug/L	8.767	11.227	15	7.675	8.533	12	4.320	2.899	15	6.092	7.276	12	0.000	0.000
PRESS	P25	mmHg	763.981	7.460	21	767.911	6.365	18	766.472	5.892	18	764.883	4.485	18	778.000	744.000
OXYGEN	P300	mg/L	11.943	0.974	21	12.111	0.646	18	11.178	0.753	18	10.267	0.445	18	14.100	9.500
PCTSAT	P301	Percent	96.238	5.566	21	94.194	3.334	18	97.100	6.650	17	100.918	4.035	17	112.800	81.100
FC	P31616	#/100ml	129.632	166.361	19	170.529	208.226	17	183.667	296.629	18	352.222	580.714	18	1900.000	1.000
PH	P400	units	7.544	0.335	18	7.465	0.308	17	7.538	0.305	16	7.612	0.252	17	8.300	6.700
SUSSOL	P530	mg/L	181.571	275.270	21	71.824	152.475	17	71.944	80.221	18	80.700	185.750	16	1000.000	1.000
FLOW	P60	CFS	4221.611	3066.668	18	4078.471	2677.154	17	4646.111	1873.120	18	2254.778	1287.471	18	11090.000	500.000
NH3_N	P610	mg/L	0.046	0.031	19	0.074	0.038	17	0.025	0.014	18	0.020	0.010	16	0.160	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	11	0.010	0.000	12	0.010	0.002	12	0.010	0.004
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	6	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.515	0.086	4	0.545	0.065	6	0.228	0.078	6	0.146	0.044	5	0.700	0.070
NO2_NO3	P630	mg/L	0.461	0.189	15	0.667	0.206	11	0.227	0.086	12	0.167	0.053	11	1.000	0.110
TP_P	P665	mg/L	0.075	0.045	19	0.073	0.111	17	0.049	0.031	16	0.089	0.195	15	0.790	0.020
OP_DIS	P671	mg/L	0.012	0.003	18	0.013	0.005	17	0.011	0.002	18	0.010	0.001	18	0.020	0.008
HG	P71901	ug/L	0.068	0.028	15	0.042	0.016	11	0.068	0.084	15	0.072	0.044	12	0.370	0.020
COLOR	P80	Pt-Co	33.500	21.486	4	283.000	465.174	3	14.667	23.671	3	2.000	1.732	3	820.000	1.000
TURB	P82079	NTU	35.768	47.729	19	18.676	27.131	17	19.617	19.452	18	23.961	40.680	18	180.000	1.000K
HARD	P900	mg/L	48.235	10.756	17	51.176	11.332	17	37.889	8.824	18	40.667	9.223	18	71.000	24.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

COND	P95	umhos	107.762	29.179	21	119.611	18.436	18	83.389	13.980	18	100.389	19.014	18	159.000	40.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 01A120 Name: NOOKSACK R @ NO CEDARVILLE

Class: A Elevation: 140 River Mile: 30.80

Location:
LOCATED ON HIGHWAY 542 (MOUNT BAKER HIGHWAY) AT BRIDGE OVER NOOKSACK RIVER BETWEEN CEDARVILLE AND NORTH CEDARVILLE APPROXIMATELY FOUR MILES WEST OF DEMING

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X   X X X     X       X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.067	2.255	18	4.750	1.756	18	8.433	1.758	18	13.011	1.304	18	16.200	0.300
PRESS	P25	mmHg	760.111	9.365	18	762.622	8.483	18	761.883	6.167	18	761.839	4.508	18	774.000	739.000
OXYGEN	P300	mg/L	12.422	0.766	18	12.656	0.674	18	11.700	0.699	18	10.939	0.387	18	14.100	10.200
PCTSAT	P301	Percent	99.517	3.197	18	97.794	3.200	18	99.041	5.795	17	103.182	3.280	17	111.600	87.900
FC	P31616	#/100ml	9.750	8.128	16	12.722	14.728	18	20.722	40.870	18	47.389	102.325	18	410.000	1.000
PH	P400	units	7.553	0.233	15	7.471	0.306	17	7.488	0.263	16	7.529	0.254	17	8.000	6.700
SUSSOL	P530	mg/L	87.722	125.911	18	139.944	484.779	18	65.944	93.965	18	67.200	115.542	16	430.000	1.000
FLOW	P60	CFS	3441.722	2265.270	18	3406.667	1984.857	18	4641.176	1985.494	17	1946.882	929.802	17	10410.000	563.000
NH3_N	P610	mg/L	0.025	0.029	17	0.019	0.011	18	0.020	0.014	18	0.014	0.005	17	0.120	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.000	12	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	6	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	11	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.262	0.095	5	0.232	0.049	6	0.107	0.040	6	0.056	0.021	5	0.380	0.020
NO2_NO3	P630	mg/L	0.253	0.099	12	0.269	0.081	12	0.102	0.038	12	0.069	0.023	12	0.420	0.040
TP_P	P665	mg/L	0.048	0.039	17	0.066	0.142	18	0.033	0.024	16	0.079	0.137	17	0.540	0.010K
OP_DIS	P671	mg/L	0.010	0.003	16	0.013	0.008	18	0.010	0.000	18	0.010	0.002	18	0.040	0.001
COLOR	P80	Pt-Co	18.875	14.991	4	152.667	248.967	3	28.000	8.888	3	2.500	2.121	2	440.000	1.000
TURB	P82079	NTU	18.675	25.649	16	26.039	66.321	18	18.661	19.401	18	29.763	42.022	16	150.000	1.000K
COND	P95	umhos	93.389	20.009	18	90.611	14.793	18	69.222	11.322	18	85.000	14.963	18	130.000	49.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 01D070 Name: SUMAS R NR HUNTINGDON BC

Class: A Elevation: 20 River Mile: 11.90

Location:
LOCATED 1.7 MILES EAST OF HUNTINGDON B. C. FOLLOWING SECOND STREET TO BRIDGE OVER SUMAS RIVER

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
												X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.119	2.804	21	6.100	2.458	19	12.511	2.252	18	15.441	1.854	17	17.500	0.600
PRESS	P25	mmHg	763.295	8.688	21	767.400	6.803	19	765.950	5.948	18	764.076	4.394	17	778.000	742.000
OXYGEN	P300	mg/L	8.914	1.576	21	9.700	1.199	19	8.633	0.851	18	8.871	0.995	17	12.100	6.200
PCTSAT	P301	Percent	72.452	8.527	21	76.942	7.989	19	79.894	7.371	17	87.400	10.701	16	97.700	58.500
FC	P31616	#/100ml	655.556	1014.151	18	431.444	364.943	18	2082.412	4616.703	17	864.813	1641.951	16	17000.000	39.000
PH	P400	units	7.467	0.301	18	7.411	0.232	18	7.488	0.332	16	7.700	0.163	16	8.400	6.800
SUSSOL	P530	mg/L	14.905	19.504	21	12.889	9.455	18	14.944	13.926	18	5.773	3.406	15	94.000	0.600
FLOW	P60	CFS	138.761	147.138	18	181.856	144.070	18	114.883	95.942	18	39.313	15.751	16	388.000	11.000
NH3_N	P610	mg/L	0.166	0.112	20	0.226	0.145	18	0.106	0.067	18	0.064	0.048	16	0.460	0.030
NO2_DIS	P613	mg/L	0.056	0.029	11	0.029	0.013	12	0.022	0.004	12	0.018	0.011	11	0.080	0.010K
NO2_N	P615	mg/L	0.021	0.010	8	0.013	0.005	6	0.020	0.015	6	0.015	0.005	6	0.050	0.010K
NH3_UN	P619	mg/L	0.000	0.001	11	0.001	0.001	12	0.001	0.000	12	0.002	0.001	8	0.004	0.000
NO3_N	P620	mg/L	2.360	0.428	5	2.255	0.959	6	1.988	1.229	6	2.180	0.526	5	3.900	0.030
NO2_NO3	P630	mg/L	3.154	0.870	13	3.031	0.717	12	2.729	0.364	11	2.362	0.286	9	4.090	1.200
TP_P	P665	mg/L	0.162	0.072	20	0.153	0.090	18	0.119	0.069	16	0.115	0.077	16	0.390	0.020
OP_DIS	P671	mg/L	0.085	0.040	18	0.068	0.041	18	0.060	0.044	18	0.059	0.036	17	0.190	0.010K
COLOR	P80	Pt-Co	82.750	39.811	4	91.000	77.544	3	74.333	13.429	3	2.500	2.121	2	180.000	1.000
TURB	P82079	NTU	7.611	5.152	19	10.278	6.341	18	9.178	8.464	18	5.053	2.493	15	35.000	1.000K
COND	P95	umhos	286.333	31.272	21	264.474	26.746	19	286.111	32.086	18	303.824	24.653	17	390.000	195.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 03A060 Name: SKAGIT R NR MOUNT VERNON

Class: A Elevation: 14 River Mile: 15.90

Location:
LOCATED ONE MILE NORTH OF MOUNT VERNON AT THE BRIDGE CROSSING THE SKAGIT RIVER ON OLD HIGHWAY 99 (.3 MILE EAST OF INTERSTATE 5)

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.543	2.350	21	4.979	1.102	19	8.700	1.182	18	13.278	1.049	18	16.200	2.600
PRESS	P25	mmHg	763.629	8.521	21	768.689	7.043	19	767.189	6.089	18	768.428	3.546	18	777.000	742.000
OXYGEN	P300	mg/L	11.781	0.827	21	12.505	0.541	19	11.611	0.595	18	10.444	0.326	18	13.500	9.700
PCTSAT	P301	Percent	97.367	3.762	21	96.526	3.396	19	98.347	4.154	17	98.024	3.304	17	109.400	85.800
FC	P31616	#/100ml	22.684	23.317	19	28.471	41.960	17	11.556	11.967	18	20.500	20.322	18	168.000	1.000
COD	P340	mg/L	6.231	2.743	13	7.231	3.632	13	11.571	18.760	14	5.077	1.320	13	76.000	4.000K
PH	P400	units	7.361	0.266	18	7.356	0.362	18	7.375	0.195	16	7.529	0.312	17	7.900	6.600
SUSSOL	P530	mg/L	34.571	36.226	21	27.056	43.494	18	15.889	12.820	18	21.850	32.310	16	130.000	1.000
FLOW	P60	CFS	17733.889	7995.018	18	18116.667	8902.807	18	19830.000	4357.331	18	12432.222	6123.142	18	28410.000	4750.000
NH3_N	P610	mg/L	0.018	0.010	20	0.018	0.011	18	0.014	0.006	18	0.011	0.003	16	0.050	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	12	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	6	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	11	0.000	0.000	12	0.000	0.000	12	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.136	0.058	5	0.135	0.032	6	0.083	0.020	6	0.040	0.010	5	0.230	0.030
NO2_NO3	P630	mg/L	0.142	0.065	15	0.145	0.038	12	0.112	0.094	12	0.043	0.015	12	0.400	0.020
TP_P	P665	mg/L	0.043	0.034	20	0.031	0.037	18	0.016	0.007	16	0.020	0.021	17	0.120	0.010K
OP_DIS	P671	mg/L	0.010	0.002	18	0.011	0.005	18	0.010	0.000	18	0.010	0.002	18	0.030	0.001
COLOR	P80	Pt-Co	22.000	19.916	4	99.333	156.666	3	21.333	18.771	3	22.667	34.962	3	280.000	1.000
TURB	P82079	NTU	9.447	9.111	19	9.367	13.033	18	4.550	3.055	18	5.450	6.098	18	28.000	1.000K
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	24.000	24.000
COND	P95	umhos	58.143	8.569	21	66.789	11.607	19	50.333	11.035	18	51.944	8.171	18	98.000	33.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 03B050 Name: SAMISH R NR BURLINGTON

Class: A Elevation: 38 River Mile: 10.40

Location:
LOCATED AT BRIDGE OVER SAMISH RIVER ON OLD HIGHWAY 99 APPROXIMATELY
MID WAY BETWEEN BURLINGTON AND ALGER

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
X	X	X	X	X	X	X	X	X		X	X	X			X			X		X	X	X	X	X	X	X	X	X	X	X	X				

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.028	2.584	18	5.539	1.441	18	10.522	1.416	18	13.100	1.713	18	15.300	2.600
PRESS	P25	mmHg	762.111	9.847	18	768.433	7.800	18	767.006	5.923	18	767.767	3.460	18	777.000	741.000
OXYGEN	P300	mg/L	11.839	1.204	18	12.389	0.601	18	10.978	0.732	18	10.072	0.597	18	13.900	9.000
PCTSAT	P301	Percent	96.650	6.227	18	96.983	2.820	18	97.059	5.389	17	94.000	4.847	17	107.900	79.000
FC	P31616	#/100ml	158.706	307.635	17	71.294	82.404	17	251.333	347.336	18	263.667	210.692	18	1600.000	2.000
PH	P400	units	7.447	0.417	15	7.335	0.460	17	7.388	0.167	16	7.582	0.319	17	8.400	6.600
SUSSOL	P530	mg/L	23.556	20.774	18	33.444	43.238	18	21.278	45.542	18	4.850	3.083	16	200.000	1.000
FLOW	P60	CFS	242.331	211.038	16	437.625	400.968	16	222.339	178.916	18	42.317	21.898	18	1680.000	19.200
NH3_N	P610	mg/L	0.033	0.016	16	0.027	0.015	17	0.021	0.013	18	0.017	0.010	16	0.080	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.001	12	0.010	0.000	12	0.009	0.002	12	0.010	0.003
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.020	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.840	0.117	4	0.842	0.144	5	0.662	0.086	6	0.714	0.079	5	1.050	0.550
NO2_NO3	P630	mg/L	0.857	0.181	12	0.954	0.367	12	0.660	0.144	12	0.725	0.113	12	1.200	0.470
TP_P	P665	mg/L	0.049	0.041	16	0.045	0.046	17	0.024	0.008	16	0.017	0.008	17	0.150	0.010K
OP_DIS	P671	mg/L	0.019	0.032	16	0.011	0.002	17	0.010	0.001	18	0.010	0.001	18	0.140	0.004
COLOR	P80	Pt-Co	34.250	11.927	4	59.000	72.125	2	62.667	21.939	3	2.000	1.732	3	110.000	1.000
TURB	P82079	NTU	6.194	5.390	16	9.922	9.206	18	6.318	8.438	17	1.647	0.962	17	57.000	0.800
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	30.000	30.000
COND	P95	umhos	91.611	21.810	18	73.444	12.244	18	84.944	15.307	18	118.833	10.274	18	134.000	54.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 04A060 Name: SKAGIT R @ CONCRETE

Class: AA Elevation: 135 River Mile: 54.10

Location:
LOCATED AT THE BRIDGE OVER THE SKAGIT RIVER ON THE SAUK VALLEY ROAD, ONE MILE SOUTHWEST OF CONCRETE

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X     X     X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.794	2.284	18	4.594	0.870	17	7.778	1.324	18	12.267	0.877	18	13.700	2.800
PRESS	P25	mmHg	760.339	8.351	18	763.488	6.304	17	761.200	5.503	18	759.661	4.183	18	773.000	740.000
OXYGEN	P300	mg/L	12.006	0.840	18	12.800	0.450	17	11.972	0.698	18	10.972	0.289	18	13.800	9.800
PCTSAT	P301	Percent	100.311	4.313	18	98.524	2.861	17	100.018	4.754	17	102.112	2.718	17	112.600	88.600
FC	P31616	#/100ml	2.875	2.705	16	1.824	2.243	17	5.611	6.156	18	10.222	25.696	18	110.000	1.000
COD	P340	mg/L	5.846	3.363	13	5.231	2.048	13	11.429	17.969	14	7.571	8.036	14	73.000	4.000K
PH	P400	units	7.313	0.302	15	7.256	0.206	16	7.344	0.266	16	7.271	0.214	17	8.100	6.800
SUSSOL	P530	mg/L	23.278	28.039	18	19.294	50.814	17	14.944	20.786	18	36.388	92.460	16	380.000	1.000
FLOW	P60	CFS	15076.667	7231.204	18	15243.529	7383.901	17	18405.000	4867.761	18	11894.333	5735.238	18	28920.000	4390.000
NH3_N	P610	mg/L	0.016	0.013	16	0.014	0.007	16	0.013	0.008	18	0.012	0.004	17	0.060	0.009
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.000	11	0.010	0.000	12	0.009	0.002	11	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.100	0.022	4	0.100	0.019	5	0.057	0.016	6	0.030	0.007	5	0.130	0.020
NO2_NO3	P630	mg/L	0.100	0.037	12	0.099	0.019	11	0.071	0.020	12	0.033	0.007	12	0.130	0.020
TP_P	P665	mg/L	0.035	0.037	16	0.026	0.037	16	0.015	0.010	16	0.021	0.040	17	0.175	0.002
OP_DIS	P671	mg/L	0.018	0.033	16	0.010	0.001	16	0.010	0.000	18	0.010	0.002	18	0.140	0.001
COLOR	P80	Pt-Co	7.375	5.154	4	60.500	84.146	2	17.333	18.877	3	13.000	18.248	3	120.000	1.000
TURB	P82079	NTU	5.363	5.811	16	6.724	12.509	17	3.978	3.432	18	5.300	8.462	17	37.000	1.000K
COND	P95	umhos	53.944	6.611	18	60.824	5.670	17	45.889	8.588	18	51.167	10.875	18	85.000	35.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 04A100 Name: SKAGIT R @ MARBLEMOUNT

Class: AA Elevation: 360 River Mile: 78.20

Location:
LOCATED AT THE BRIDGE ON THE CASCADE RIVER ROAD WHERE HIGHWAY 20 (NORTH CASCADES HIGHWAY) TURNS 90 DEGREES IN MARBLEMOUNT

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X   X X             X X X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.419	1.517	21	4.411	0.775	19	7.094	1.361	18	10.694	0.670	18	11.800	2.800
PRESS	P25	mmHg	746.133	49.583	21	757.821	10.854	19	757.494	5.821	18	757.600	3.976	18	770.000	532.000
OXYGEN	P300	mg/L	11.957	0.739	21	12.811	0.452	19	12.211	0.753	18	11.350	0.385	18	13.900	9.600
PCTSAT	P301	Percent	101.552	9.555	21	98.895	2.644	19	100.741	5.586	17	102.341	3.591	17	136.600	82.200
FC	P31616	#/100ml	2.900	4.364	20	1.111	0.323	18	2.000	1.188	18	11.353	26.325	17	110.000	1.000
PH	P400	units	7.450	0.333	18	7.417	0.300	18	7.313	0.287	16	7.382	0.323	17	8.100	6.600
SUSSOL	P530	mg/L	7.429	11.400	21	5.000	8.785	18	4.611	5.689	18	3.825	3.364	16	53.000	1.000
FLOW	P60	CFS	6503.333	3730.556	18	7553.056	3633.209	18	6468.889	2086.066	18	5377.500	2332.666	18	13900.000	2530.000
NH3_N	P610	mg/L	0.013	0.006	19	0.014	0.009	17	0.013	0.008	18	0.011	0.003	17	0.040	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	11	0.010	0.000	12	0.010	0.000	12	0.009	0.002	11	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.065	0.013	4	0.062	0.023	5	0.055	0.012	6	0.040	0.007	5	0.100	0.030
NO2_NO3	P630	mg/L	0.072	0.021	15	0.060	0.010	12	0.064	0.013	12	0.044	0.009	12	0.100	0.030
TP_P	P665	mg/L	0.026	0.042	19	0.018	0.020	16	0.010	0.000	16	0.011	0.005	17	0.170	0.002
OP_DIS	P671	mg/L	0.015	0.023	19	0.010	0.001	17	0.010	0.000	18	0.010	0.002	18	0.110	0.002
COLOR	P80	Pt-Co	5.125	3.614	4	10.000	5.196	3	22.667	24.987	3	6.000	6.245	3	50.000	1.000
TURB	P82079	NTU	1.721	1.049	19	1.678	0.946	18	1.828	1.068	18	1.406	0.740	17	7.000	0.700
COND	P95	umhos	53.714	10.584	21	63.105	5.374	19	44.889	9.248	18	50.333	6.444	18	69.000	33.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 04B070 Name: BAKER R @ CONCRETE

Class: AA Elevation: 175 River Mile: 0.60

Location:
LOCATED AT THE BRIDGE ON OLD HIGHWAY 20 ON THE EAST OF CONCRETE .2 MILES ABOVE THE BURLINGTON NORTHERN RR TRESTLE

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
      X X X X                     X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	9.961	3.089	18	4.378	0.805	18	8.000	1.616	18	13.039	1.125	18	15.100	3.000
PRESS	P25	mmHg	759.383	8.701	18	761.856	7.201	18	760.811	5.028	18	759.972	4.170	18	774.000	740.000
OXYGEN	P300	mg/L	11.350	1.173	18	12.528	0.579	18	12.072	0.740	18	10.611	0.478	18	13.900	8.700
PCTSAT	P301	Percent	99.222	6.316	18	96.044	3.277	18	101.371	5.548	17	100.282	3.030	17	115.800	83.800
FC	P31616	#/100ml	3.000	3.361	18	1.444	0.705	18	5.333	16.205	18	1.833	2.256	18	15.000	1.000
PH	P400	units	7.293	0.373	15	7.406	0.313	17	7.263	0.245	16	7.218	0.274	17	8.200	6.700
SUSSOL	P530	mg/L	9.389	10.147	18	8.111	6.936	18	4.500	4.706	18	2.263	2.199	16	82.000	1.000
FLOW	P60	CFS	3728.889	633.003	18	2698.833	1466.755	18	2685.983	1689.280	18	3047.111	1303.278	18	4120.000	35.700
NH3_N	P610	mg/L	0.018	0.013	16	0.017	0.011	17	0.015	0.008	18	0.013	0.004	17	0.060	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.000	12	0.010	0.000	12	0.009	0.002	11	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.070	0.034	4	0.106	0.009	5	0.077	0.028	6	0.030	0.010	5	0.120	0.020
NO2_NO3	P630	mg/L	0.079	0.038	12	0.120	0.016	12	0.090	0.031	12	0.028	0.017	12	0.140	0.006
TP_P	P665	mg/L	0.030	0.026	16	0.024	0.024	17	0.012	0.005	16	0.010	0.003	17	0.090	0.002
OP_DIS	P671	mg/L	0.012	0.010	16	0.010	0.000	17	0.010	0.000	18	0.010	0.002	18	0.050	0.001
COLOR	P80	Pt-Co	20.250	11.983	4	80.500	112.430	2	35.333	46.307	3	7.333	8.505	3	160.000	1.000
TURB	P82079	NTU	8.156	10.302	16	9.050	9.766	18	4.156	3.496	18	1.671	1.008	17	36.000	0.800
COND	P95	umhos	50.667	4.923	18	55.611	5.054	18	56.111	7.873	18	44.944	9.346	18	74.000	33.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 04C070 Name: SAUK R NR ROCKPORT

Class: AA Elevation: 315 River Mile: 7.00

Location:
LOCATED APPROXIMATELY 12 MILES NORTH OF DARRINGTON AND FIVE MILES SOUTH OF ROCKPORT OFF THE SAUK RIVER ROAD ABOUT .3 MILE AT THE BRIDGE ON THE ROAD TO HIDDEN VALLEY RANCH AND CONCRETE, .8 MILE DOWNSTREAM FROM THE CONFLUENCE OF WHITE CREEK AND 1.6 MILES UPSTREAM OF THE GAGE

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
																				X	X	X	X	X	X	X	X	X	X	X	X				

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	5.017	1.829	18	4.017	1.207	18	7.150	1.332	18	11.744	1.314	18	14.100	0.500
PRESS	P25	mmHg	756.861	8.530	18	757.389	15.872	18	758.139	4.862	18	757.967	4.383	18	771.000	699.000
OXYGEN	P300	mg/L	12.711	0.794	18	12.917	0.516	18	12.056	0.746	18	10.794	0.344	18	14.500	10.000
PCTSAT	P301	Percent	99.683	4.706	18	98.733	2.863	18	99.424	4.815	17	99.363	2.524	16	112.600	86.800
FC	P31616	#/100ml	6.294	11.351	17	2.389	2.477	18	6.059	7.996	17	29.438	65.544	16	270.000	1.000
PH	P400	units	7.440	0.253	15	7.418	0.294	17	7.325	0.289	16	7.476	0.313	17	8.100	6.600
SUSSOL	P530	mg/L	31.444	51.657	18	30.556	84.484	18	28.222	41.306	18	165.088	330.931	16	1300.000	1.000
FLOW	P60	CFS	3959.063	2418.120	16	3658.824	2780.281	17	6175.500	2032.916	18	2998.000	1849.148	18	10500.000	657.000
NH3_N	P610	mg/L	0.013	0.005	16	0.016	0.010	17	0.012	0.005	18	0.011	0.003	16	0.040	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.000	12	0.010	0.000	12	0.009	0.002	11	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.120	0.020	4	0.098	0.039	5	0.040	0.015	6	0.016	0.009	5	0.170	0.010K
NO2_NO3	P630	mg/L	0.111	0.047	12	0.097	0.034	12	0.052	0.021	12	0.021	0.010	11	0.210	0.010K
TP_P	P665	mg/L	0.034	0.032	16	0.029	0.044	16	0.024	0.025	16	0.066	0.110	17	0.480	0.010K
OP_DIS	P671	mg/L	0.012	0.010	16	0.010	0.000	16	0.010	0.000	18	0.010	0.001	18	0.050	0.004
COLOR	P80	Pt-Co	8.250	3.686	4	350.500	494.268	2	27.000	32.187	3	37.000	31.177	3	700.000	1.000
TURB	P82079	NTU	4.494	5.383	16	7.033	12.914	18	5.572	5.001	18	17.035	20.369	17	88.000	1.000K
COND	P95	umhos	56.778	12.105	18	58.111	9.048	18	42.000	7.507	18	50.500	15.838	18	99.000	31.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 05A070 Name: STILLAGUAMISH R NR SILVANA

Class: A Elevation: 35 River Mile: 11.10

Location:
LOCATED ON THE INTERSTATE 5 BRIDGE JUST NORTH OF THE ARLINGTON-SILVANA EXIT (EXIT 208)

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X X     X     X X X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.057	2.387	21	4.568	1.440	19	9.844	2.329	18	16.128	2.212	18	18.200	1.000
PRESS	P25	mmHg	765.338	8.086	21	768.453	5.748	19	767.583	5.222	18	766.517	3.882	18	779.800	745.000
OXYGEN	P300	mg/L	12.057	0.954	21	12.579	0.546	19	10.994	1.061	18	9.139	0.635	18	13.800	8.300
PCTSAT	P301	Percent	95.833	4.909	21	96.053	2.513	19	95.365	6.800	17	90.900	2.882	17	107.900	77.500
FC	P31616	#/100ml	80.952	83.589	21	78.588	96.847	17	134.063	294.785	16	155.353	193.577	17	2200.000	1.000
PH	P400	units	7.250	0.730	18	7.233	0.506	18	7.269	0.439	16	7.259	0.378	17	9.700	6.000
SUSSOL	P530	mg/L	54.333	67.114	21	101.444	254.123	18	82.111	182.949	18	10.463	21.899	16	720.000	1.000
FLOW	P60	CFS	4241.889	3219.625	18	4885.556	4768.640	18	3961.889	2408.834	18	992.389	910.547	18	10500.000	284.000
NH3_N	P610	mg/L	0.031	0.023	19	0.053	0.055	17	0.015	0.006	18	0.016	0.009	17	0.240	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	12	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.060	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	8	0.001	0.000
NO3_N	P620	mg/L	0.380	0.065	4	0.258	0.102	5	0.143	0.037	6	0.132	0.028	5	0.480	0.100
NO2_NO3	P630	mg/L	0.321	0.112	15	0.319	0.104	12	0.136	0.045	12	0.122	0.057	12	0.480	0.060
TP_P	P665	mg/L	0.049	0.037	19	0.046	0.056	17	0.024	0.013	16	0.028	0.028	17	0.120	0.010K
OP_DIS	P671	mg/L	0.010	0.001	19	0.010	0.000	17	0.010	0.000	18	0.011	0.005	18	0.030	0.006
COLOR	P80	Pt-Co	38.500	14.526	4	295.500	416.486	2	30.667	9.815	3	10.000	13.077	3	590.000	1.000
TURB	P82079	NTU	16.105	17.525	19	22.628	34.816	18	15.172	22.758	18	3.182	4.559	17	400.000	0.800
COND	P95	umhos	63.714	23.251	21	55.737	12.041	19	47.389	11.073	18	78.389	20.044	18	127.000	24.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 05A090 Name: SF STILLAGUAMISH @ ARLINGTON

Class: A Elevation: 55 River Mile: 18.20

Location:
AT BRIDGE ON STATE HIGHWAY 530 IN ARLINGTON

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X     X       X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	5.561	2.381	18	4.189	1.476	18	9.311	2.239	18	15.306	2.253	18	18.800	0.800
PRESS	P25	mmHg	765.589	8.519	18	767.783	5.869	18	766.761	4.970	18	765.978	3.926	18	779.000	742.000
OXYGEN	P300	mg/L	12.461	0.982	18	12.933	0.586	18	11.283	1.030	18	9.550	0.619	18	14.300	8.400
PCTSAT	P301	Percent	97.839	5.501	18	97.856	2.674	18	96.876	5.838	17	93.718	2.989	17	110.100	80.300
FC	P31616	#/100ml	48.353	96.784	17	47.389	91.248	18	60.375	139.635	16	145.765	315.861	17	1200.000	1.000
PH	P400	units	7.167	0.435	15	7.347	0.334	17	7.256	0.301	16	7.382	0.298	17	8.100	6.400
SUSSOL	P530	mg/L	22.056	28.310	18	171.778	631.532	18	51.167	118.485	18	28.063	96.585	16	450.000	1.000
FLOW	P60	CFS	2145.176	1860.765	17	3113.750	4810.766	16	2101.529	1263.426	17	713.000	1359.296	16	5740.000	100.000
NH3_N	P610	mg/L	0.021	0.012	16	0.035	0.029	17	0.015	0.008	18	0.012	0.005	17	0.130	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.001	12	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.308	0.071	4	0.202	0.126	5	0.137	0.071	6	0.108	0.008	5	0.430	0.010K
NO2_NO3	P630	mg/L	0.274	0.090	12	0.287	0.104	12	0.114	0.043	12	0.126	0.064	12	0.440	0.060
TP_P	P665	mg/L	0.032	0.029	16	0.051	0.091	17	0.016	0.006	16	0.025	0.057	17	0.245	0.002
OP_DIS	P671	mg/L	0.010	0.003	16	0.010	0.000	17	0.010	0.000	18	0.010	0.002	18	0.020	0.002
COLOR	P80	Pt-Co	31.250	8.098	4	206.500	273.650	2	37.667	10.970	3	2.000	1.732	3	400.000	1.000
TURB	P82079	NTU	7.556	8.053	16	41.128	129.811	18	11.244	19.965	18	5.994	14.647	17	160.000	0.400
COND	P95	umhos	52.278	15.803	18	48.722	10.442	18	40.556	8.038	18	65.444	17.130	18	95.000	28.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 05B070 Name: NF STILLAGUAMISH @ CICERO

Class: A Elevation: 110 River Mile: 9.50

Location:
LOCATED AT BRIDGE ON STATE HIGHWAY 530 7.2 MILES NORTHEAST OF ARLINGTON AT CICERO

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
		X	X	X	X	X	X	X	X	X				X			X	X	X	X	X	X	X	X	X	X	X	X	X					

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	5.444	2.105	18	4.211	1.292	18	8.267	2.061	18	14.006	1.669	18	17.000	0.800
PRESS	P25	mmHg	762.933	9.176	18	765.950	6.331	18	763.833	5.885	18	764.028	3.759	18	776.700	736.000
OXYGEN	P300	mg/L	12.253	0.946	17	12.767	0.499	18	11.633	0.828	18	10.006	0.475	18	14.300	8.900
PCTSAT	P301	Percent	96.865	5.197	17	96.939	2.344	18	97.944	5.056	16	95.912	2.958	17	109.300	81.300
FC	P31616	#/100ml	18.882	18.871	17	33.833	31.714	18	27.533	32.872	15	98.176	196.093	17	830.000	3.000
PH	P400	units	7.300	0.285	15	7.335	0.252	17	7.294	0.277	16	7.606	0.388	17	8.800	6.500
SUSSOL	P530	mg/L	51.778	64.674	18	268.722	835.215	18	57.111	104.413	18	10.656	24.132	16	550.000	0.500
FLOW	P60	CFS	2154.118	1548.338	17	3141.647	4326.137	17	1916.000	961.866	18	510.056	448.284	18	4750.000	168.000
NH3_N	P610	mg/L	0.026	0.020	16	0.033	0.040	17	0.019	0.013	18	0.014	0.010	16	0.080	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.000	12	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.323	0.062	4	0.232	0.053	5	0.108	0.019	6	0.078	0.029	5	0.400	0.020
NO2_NO3	P630	mg/L	0.266	0.101	12	0.249	0.083	12	0.109	0.027	12	0.091	0.072	12	0.440	0.020
TP_P	P665	mg/L	0.053	0.038	16	0.125	0.291	17	0.034	0.023	16	0.020	0.021	17	0.130	0.006
OP_DIS	P671	mg/L	0.016	0.025	16	0.012	0.005	17	0.010	0.000	18	0.010	0.001	18	0.110	0.006
COLOR	P80	Pt-Co	34.500	10.472	4	330.500	465.983	2	36.667	2.309	3	2.000	1.732	3	660.000	1.000
TURB	P82079	NTU	14.994	17.104	16	45.861	108.824	18	15.322	18.855	18	2.418	4.349	17	270.000	0.500
COND	P95	umhos	62.667	20.062	18	55.722	13.611	18	47.722	7.976	18	84.667	18.026	18	118.000	30.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 07A090 Name: SNOHOMISH R @ SNOHOMISH

Class: A Elevation: 8 River Mile: 12.70

Location:
LOCATED AT BRIDGE ON AVENUE D IN SNOHOMISH, TWO BLOCKS SOUTH OF 2ND STREET (OLD HIGHWAY 2)

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X   X X X     X     X X X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.381	2.473	21	5.432	1.459	19	10.128	2.255	18	16.772	1.965	18	20.700	2.600
CU	P1042	ug/L	7.373	7.011	11	3.582	4.264	11	2.083	1.440	12	2.900	1.441	9	20.000	1.000
ZN	P1092	ug/L	6.250	7.506	10	5.273	3.495	11	8.708	7.919	12	4.611	3.560	9	28.000	1.000
ZN	P1094	ug/L	7.357	6.160	14	5.571	3.458	14	9.857	8.556	14	5.417	3.370	12	0.000	0.000
CD	P1113	ug/L	0.240	0.184	15	0.188	0.050	14	0.191	0.111	15	0.164	0.093	14	0.700	0.100
PB	P1114	ug/L	2.236	1.623	14	1.386	1.073	14	1.736	1.456	14	2.093	1.586	14	5.000	1.000
CR	P1118	ug/L	2.242	1.952	15	1.527	1.464	14	1.004	0.290	14	1.620	1.688	14	7.000	0.200
CU	P1119	ug/L	7.187	5.772	15	3.814	3.631	14	2.987	1.754	15	3.258	1.490	12	0.000	0.000
PRESS	P25	mmHg	769.005	5.071	21	767.021	6.262	19	764.722	6.086	18	763.739	5.720	18	781.000	748.800
OXYGEN	P300	mg/L	11.752	0.935	21	12.353	0.495	19	11.472	0.848	18	9.761	0.439	18	13.700	9.100
PCTSAT	P301	Percent	96.014	4.617	21	96.637	2.482	19	100.629	4.776	17	99.218	3.278	17	111.700	83.600
FC	P31616	#/100ml	135.200	116.714	20	50.125	52.417	16	45.056	51.016	18	54.944	30.128	18	3000.000	1.000
COD	P340	mg/L	8.615	4.350	13	7.500	2.682	14	10.929	17.517	14	8.357	7.841	14	71.000	4.000K
PH	P400	units	7.167	0.479	18	7.194	0.271	18	7.331	0.239	16	7.324	0.280	17	8.100	6.200
SUSSOL	P530	mg/L	25.450	32.144	20	17.333	16.578	18	11.176	13.376	17	4.625	2.500	16	140.000	1.000
FLOW	P60	CFS	11870.824	10335.295	17	9981.765	5153.892	17	11768.278	4084.340	18	3073.125	1763.439	16	41800.000	850.000
NH3_N	P610	mg/L	0.030	0.017	19	0.039	0.020	17	0.014	0.005	18	0.022	0.016	17	0.140	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	12	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.393	0.106	4	0.394	0.101	5	0.123	0.044	6	0.128	0.019	5	0.640	0.060
NO2_NO3	P630	mg/L	0.308	0.112	15	0.388	0.151	12	0.130	0.064	12	0.102	0.023	12	0.820	0.070
TP_P	P665	mg/L	0.042	0.038	19	0.034	0.035	17	0.015	0.008	16	0.016	0.010	17	0.150	0.010K
OP_DIS	P671	mg/L	0.011	0.005	19	0.010	0.000	17	0.010	0.000	18	0.010	0.002	18	0.030	0.002
HG	P71901	ug/L	0.064	0.020	14	0.046	0.011	12	0.050	0.017	15	0.080	0.071	12	0.300	0.020
COLOR	P80	Pt-Co	28.000	13.229	3	21.000	4.000	3	18.000	12.124	3	16.286	11.116	7	38.000	1.000
TURB	P82079	NTU	9.011	11.997	18	4.513	3.244	15	3.511	3.847	18	2.013	1.527	15	51.000	1.000K

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

HARD	P900	mg/L	20.235	6.978	17	24.611	9.153	18	20.500	8.992	18	24.889	5.561	18	45.000	10.000
COND	P95	umhos	45.333	11.753	21	46.947	8.052	19	35.000	4.703	18	55.556	14.674	18	74.000	29.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 07B055 Name: PILCHUCK R @ SNOHOMISH

Class: A Elevation: 25 River Mile: 1.90

Location:
LOCATED AT BRIDGE ON US HIGHWAY 2 AT EAST CITY LIMITS OF SNOHOMISH

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X   X     X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.486	2.319	21	5.737	1.719	19	13.144	2.555	18	17.928	2.150	18	21.200	2.600
PRESS	P25	mmHg	768.243	5.279	21	766.205	6.316	19	764.217	6.131	18	762.094	8.347	18	780.000	737.000
OXYGEN	P300	mg/L	11.895	0.782	21	12.337	0.571	19	11.044	0.718	18	10.289	0.703	18	13.600	9.200
PCTSAT	P301	Percent	97.671	5.268	21	97.321	3.060	19	103.494	5.525	17	107.694	4.641	17	116.700	91.400
FC	P31616	#/100ml	74.579	104.094	19	35.563	47.378	16	44.944	80.005	18	142.118	404.524	17	1700.000	1.000
PH	P400	units	7.233	0.369	18	7.156	0.115	18	7.188	0.167	16	7.500	0.306	17	8.100	6.500
SUSSOL	P530	mg/L	31.750	47.866	20	47.389	124.545	18	6.471	5.591	17	41.500	143.715	16	580.000	1.000
FLOW	P60	CFS	648.950	499.330	16	739.235	657.884	17	359.889	166.032	18	120.813	107.291	16	1740.000	47.800
NH3_N	P610	mg/L	0.016	0.009	19	0.022	0.016	17	0.015	0.009	18	0.018	0.014	17	0.060	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	12	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.585	0.172	4	0.636	0.164	5	0.283	0.057	6	0.242	0.081	5	0.920	0.130
NO2_NO3	P630	mg/L	0.502	0.208	15	0.582	0.192	12	0.291	0.122	12	0.211	0.052	12	0.990	0.090
TP_P	P665	mg/L	0.037	0.031	19	0.049	0.081	17	0.017	0.007	16	0.027	0.060	17	0.258	0.002
OP_DIS	P671	mg/L	0.010	0.001	19	0.010	0.000	17	0.010	0.000	18	0.010	0.002	18	0.010	0.002
COLOR	P80	Pt-Co	40.333	20.306	3	26.333	6.110	3	29.333	4.509	3	23.857	16.456	7	54.000	13.000
TURB	P82079	NTU	7.133	7.525	18	8.373	14.708	15	2.261	1.940	18	4.420	11.003	15	57.000	0.900
COND	P95	umhos	63.524	21.182	21	59.684	9.967	19	65.944	12.240	18	88.833	13.237	18	117.000	31.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 07C070 Name: SKYKOMISH R @ MONROE

Class: A Elevation: 43 River Mile: 25.60

Location:
LOCATED AT THE RAILROAD TRESTLE .5 MILES EAST OF MONROE IN MONROE PARK

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X   X   X X X X X X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.518	2.649	17	4.456	1.658	18	8.683	1.880	18	15.678	1.833	18	19.200	2.000
PRESS	P25	mmHg	768.671	6.621	17	766.000	5.772	17	763.433	6.782	18	766.889	13.751	18	817.900	750.600
OXYGEN	P300	mg/L	12.171	0.823	17	12.865	0.501	17	12.056	0.847	18	10.594	0.386	18	14.300	10.000
PCTSAT	P301	Percent	99.865	4.058	17	98.925	2.955	16	102.529	5.295	17	105.529	3.168	17	114.100	88.400
FC	P31616	#/100ml	14.000	11.619	17	5.133	7.386	15	7.167	5.565	18	29.389	47.882	18	160.000	1.000
PH	P400	units	7.279	0.360	14	7.113	0.273	16	7.131	0.236	16	7.506	0.524	17	8.500	6.600
SUSSOL	P530	mg/L	11.813	21.392	16	8.250	11.162	16	8.765	11.138	17	3.787	3.153	15	76.000	1.000
FLOW	P60	CFS	4912.857	3837.528	14	5244.118	3305.600	17	7080.000	2179.830	18	2022.500	1321.527	18	15000.000	490.000
NH3_N	P610	mg/L	0.016	0.013	15	0.020	0.019	15	0.015	0.011	18	0.012	0.005	17	0.060	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	8	0.010	0.000	10	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.220	0.065	4	0.170	0.045	5	0.058	0.025	6	0.050	0.007	5	0.300	0.030
NO2_NO3	P630	mg/L	0.182	0.079	11	0.183	0.046	10	0.070	0.031	12	0.039	0.016	12	0.280	0.010K
TP_P	P665	mg/L	0.028	0.030	15	0.020	0.028	15	0.012	0.005	16	0.012	0.006	17	0.100	0.006
OP_DIS	P671	mg/L	0.010	0.000	15	0.010	0.001	15	0.010	0.000	18	0.010	0.002	18	0.010	0.003
COLOR	P80	Pt-Co	15.333	6.658	3	13.000	0.000	3	15.667	2.309	3	13.429	7.208	7	21.000	1.000
TURB	P82079	NTU	5.179	7.276	14	3.354	3.553	13	3.067	2.729	18	1.887	1.374	15	26.000	1.000K
COND	P95	umhos	41.353	14.013	17	39.471	6.266	17	30.500	5.721	18	43.667	8.738	18	83.000	24.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 07C120 Name: SKYKOMISH R NR GOLD BAR

Class: AA Elevation: 210 River Mile: 43.70

Location:
LOCATED AT THE BRIDGE ON U S HIGHWAY 2, 3.1 MILES SOUTHEAST OF GOLD BAR
7 MILES UPSTREAM OF GAGE

Water Years Sampled:

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5 6                 7                 8                 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X X             X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.805	2.330	21	4.867	1.295	18	7.833	1.542	18	14.700	2.171	18	17.800	2.100
PRESS	P25	mmHg	762.176	5.512	21	760.517	6.448	18	757.978	6.159	18	758.594	5.160	18	774.000	744.700
OXYGEN	P300	mg/L	12.443	0.789	21	12.872	0.448	18	12.161	0.906	18	10.283	0.658	18	14.300	8.500
PCTSAT	P301	Percent	101.219	4.297	21	100.106	2.088	18	102.135	6.076	17	100.994	6.112	17	117.800	80.000
FC	P31616	#/100ml	83.550	356.959	20	3.333	5.314	15	4.167	9.051	18	18.167	45.651	18	170.000	1.000
PH	P400	units	7.178	0.367	18	7.212	0.218	17	7.131	0.252	16	7.288	0.344	17	7.900	6.200
SUSSOL	P530	mg/L	9.350	12.470	20	4.824	4.838	17	4.941	5.761	17	4.450	7.111	16	41.000	1.000
FLOW	P60	CFS	3693.833	2889.035	18	3295.000	2020.679	17	5575.778	2225.347	18	1361.667	880.973	18	11400.000	327.000
NH3_N	P610	mg/L	0.016	0.016	19	0.017	0.016	16	0.011	0.002	18	0.012	0.005	17	0.070	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	11	0.010	0.000	10	0.010	0.000	12	0.009	0.002	11	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	10	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.213	0.078	4	0.162	0.058	5	0.057	0.015	6	0.108	0.055	5	0.590	0.040
NO2_NO3	P630	mg/L	0.204	0.142	15	0.142	0.043	11	0.056	0.022	12	0.074	0.060	12	0.370	0.020
TP_P	P665	mg/L	0.023	0.027	19	0.017	0.023	15	0.011	0.003	16	0.023	0.048	17	0.207	0.010K
OP_DIS	P671	mg/L	0.010	0.002	19	0.009	0.003	14	0.010	0.000	18	0.010	0.002	18	0.010	0.003
COLOR	P80	Pt-Co	4.000	0.000	3	8.000	0.000	3	7.333	6.028	3	9.429	9.053	7	13.000	1.000
TURB	P82079	NTU	3.867	4.365	18	2.357	2.160	14	1.950	1.333	18	1.527	0.930	15	12.000	0.700
COND	P95	umhos	39.952	11.356	21	38.111	6.738	18	30.111	6.668	18	44.111	9.113	18	70.000	24.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 07D070 Name: SNOQUALMIE R NR CARNATION

Class: A Elevation: 50 River Mile: 23.01

Location:
LOCATED AT THE BRIDGE ON CARNATION FARM ROAD ONE MILE N.W. OF CARNATION

Water Years Sampled:

5	6							7								8								9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
												X		X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.911	2.153	18	5.372	1.415	18	9.928	2.340	18	15.594	2.014	18	18.600	2.600
PRESS	P25	mmHg	769.317	6.339	18	766.106	5.561	18	764.011	6.334	18	762.872	10.205	18	785.000	726.000
OXYGEN	P300	mg/L	11.922	0.781	18	12.289	0.555	18	11.239	0.960	18	10.139	0.525	18	13.700	9.100
PCTSAT	P301	Percent	96.394	4.788	18	96.078	2.485	18	98.376	5.315	17	101.171	3.914	17	111.600	87.800
FC	P31616	#/100ml	28.389	19.321	18	28.813	45.619	16	28.167	23.754	18	62.765	96.037	17	390.000	1.000
PH	P400	units	7.165	0.427	17	7.024	0.222	17	7.088	0.196	16	7.253	0.304	17	8.200	6.400
SUSSOL	P530	mg/L	11.294	10.042	17	13.647	20.488	17	13.941	17.541	17	7.550	13.558	16	87.000	1.000
FLOW	P60	CFS	3065.133	2027.024	15	3827.059	2137.194	17	4149.278	1686.635	18	1060.722	519.566	18	8820.000	415.000
NH3_N	P610	mg/L	0.017	0.010	16	0.017	0.009	16	0.013	0.004	18	0.013	0.008	17	0.050	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.000	11	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.338	0.109	4	0.328	0.080	5	0.152	0.039	6	0.154	0.013	5	0.450	0.100
NO2_NO3	P630	mg/L	0.291	0.093	12	0.330	0.064	11	0.156	0.057	12	0.151	0.026	12	0.450	0.110
TP_P	P665	mg/L	0.024	0.021	16	0.026	0.041	15	0.017	0.010	16	0.012	0.006	17	0.180	0.010K
OP_DIS	P671	mg/L	0.010	0.001	16	0.011	0.003	15	0.010	0.000	18	0.010	0.001	18	0.020	0.004
COLOR	P80	Pt-Co	23.667	6.110	3	17.000	4.000	3	25.333	11.150	3	15.714	6.701	7	38.000	4.000
TURB	P82079	NTU	3.820	3.348	15	4.571	5.572	14	4.172	4.162	18	2.087	1.779	15	23.000	1.000K
COND	P95	umhos	48.111	16.687	18	46.556	8.212	18	35.889	5.400	18	59.000	10.301	18	92.000	23.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 07D130 Name: SNOQUALMIE R @ SNOQUALMIE

Class: A Elevation: 400 River Mile: 42.30

Location:
LOCATED AT THE BRIDGE EAST OF SNOQUALMIE ON THE LUMBER MILL ROAD

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X                   X X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.376	2.043	21	4.542	1.445	19	8.361	2.322	18	13.639	1.515	18	15.700	2.000
PRESS	P25	mmHg	758.243	7.946	21	755.384	6.113	19	753.533	5.475	18	753.794	4.808	18	785.000	741.900
OXYGEN	P300	mg/L	11.886	1.111	21	12.526	0.448	19	11.639	0.877	18	9.811	0.416	18	13.800	9.000
PCTSAT	P301	Percent	96.119	6.486	21	97.305	3.363	19	99.559	4.678	17	94.724	3.285	17	110.600	76.000
FC	P31616	#/100ml	10.750	10.567	20	6.875	8.500	16	7.667	7.380	18	36.353	51.232	17	220.000	1.000
PH	P400	units	7.378	0.396	18	7.372	0.377	18	7.350	0.348	16	7.300	0.306	17	8.300	6.700
SUSSOL	P530	mg/L	20.900	25.786	20	13.722	22.326	18	12.471	12.248	17	4.288	2.213	16	110.000	1.000
FLOW	P60	CFS	2779.889	2075.829	18	2464.889	1470.725	18	3299.444	1317.178	18	822.333	489.887	18	8420.000	255.000
NH3_N	P610	mg/L	0.014	0.008	19	0.019	0.015	17	0.013	0.004	18	0.014	0.008	17	0.060	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	12	0.010	0.000	12	0.010	0.001	12	0.010	0.006
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	******.***	0.000
NO3_N	P620	mg/L	0.260	0.074	4	0.222	0.032	5	0.115	0.026	6	0.142	0.019	5	0.320	0.090
NO2_NO3	P630	mg/L	0.226	0.056	15	0.246	0.042	12	0.115	0.040	12	0.133	0.033	12	0.350	0.070
TP_P	P665	mg/L	0.025	0.026	19	0.025	0.040	16	0.012	0.005	16	0.011	0.003	16	0.100	0.009
OP_DIS	P671	mg/L	0.010	0.001	19	0.011	0.003	16	0.010	0.000	18	0.010	0.002	17	0.020	0.003
COLOR	P80	Pt-Co	17.000	4.000	3	13.000	0.000	3	18.333	6.110	3	14.714	8.281	7	25.000	1.000
TURB	P82079	NTU	5.344	6.150	18	5.247	6.535	15	3.661	2.739	18	1.780	0.892	15	28.000	0.800
COND	P95	umhos	42.810	13.295	21	39.368	9.708	19	29.778	7.773	18	48.556	12.543	18	80.000	20.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 07D150 Name: M F SNOQUALMIE R NEAR ELLISVILLE

Class: AA Elevation: 460 River Mile: 45.30

Location:

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                                                  X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	14.800	2.571	3	0.000	0.000
ZN	P1094	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	4.000	0.000	2	0.000	0.000
CD	P1113	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.100	0.000	2	0.000	0.000
PB	P1114	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	1.000	0.000	2	0.000	0.000
CR	P1118	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.415	0.163	2	0.000	0.000
CU	P1119	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	3.000	0.000	2	0.000	0.000
PRESS	P25	mmHg	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	754.967	1.210	3	0.000	0.000
OXYGEN	P300	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	10.033	0.551	3	0.000	0.000
PCTSAT	P301	Percent	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	98.933	1.604	3	0.000	0.000
FC	P31616	#/100ml	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	42.667	50.292	3	0.000	0.000
PH	P400	units	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	6.567	0.153	3	0.000	0.000
SUSSOL	P530	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	6.000	2.646	3	0.000	0.000
FLOW	P60	CFS	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	598.333	531.045	3	0.000	0.000
NH3_N	P610	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.010	0.000	3	0.000	0.000
NO2_DIS	P613	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.010	0.000	3	0.000	0.000
NO2_NO3	P630	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.048	0.018	3	0.000	0.000
TP_P	P665	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.011	0.002	3	0.000	0.000
OP_DIS	P671	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.010	0.000	3	0.000	0.000
TURB	P82079	NTU	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	2.767	1.150	3	0.000	0.000
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	11.000	2.646	3	0.000	0.000
COND	P95	umhos	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	33.667	12.014	3	0.000	0.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 07M070 Name: S F SNOQUALMIE R AT NORTH BEND

Class: AA Elevation: 435 River Mile: 2.01

Location:

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                                                  X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	13.633	1.159	3	0.000	0.000
ZN	P1094	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	4.000	0.000	2	0.000	0.000
CD	P1113	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.260	0.226	2	0.000	0.000
PB	P1114	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	1.000	0.000	2	0.000	0.000
CR	P1118	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.830	0.665	2	0.000	0.000
CU	P1119	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	3.000	0.000	2	0.000	0.000
PRESS	P25	mmHg	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	754.567	1.041	3	0.000	0.000
OXYGEN	P300	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	10.367	0.153	3	0.000	0.000
PCTSAT	P301	Percent	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	99.933	2.136	3	0.000	0.000
FC	P31616	#/100ml	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	11.667	3.512	3	0.000	0.000
PH	P400	units	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	7.367	0.208	3	0.000	0.000
SUSSOL	P530	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	2.000	1.000	3	0.000	0.000
FLOW	P60	CFS	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	186.333	72.625	3	0.000	0.000
NH3_N	P610	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.012	0.003	3	0.000	0.000
NO2_DIS	P613	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.010	0.000	3	0.000	0.000
NO2_NO3	P630	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.247	0.043	3	0.000	0.000
TP_P	P665	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.012	0.004	3	0.000	0.000
OP_DIS	P671	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.010	0.000	3	0.000	0.000
TURB	P82079	NTU	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	1.533	0.551	3	0.000	0.000
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	32.000	6.083	3	0.000	0.000
COND	P95	umhos	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	71.667	11.504	3	0.000	0.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 07N070 Name: N F SNOQUALMIE R NEAR ELLISVILLE Class: AA Elevation: 460 River Mile: 0.30

Location:

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                                                    X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	14.133	2.101	3	0.000	0.000
ZN	P1094	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	6.000	2.828	2	0.000	0.000
CD	P1113	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.115	0.021	2	0.000	0.000
PB	P1114	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	2.150	0.354	2	0.000	0.000
CR	P1118	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.430	0.184	2	0.000	0.000
CU	P1119	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	3.000	0.000	2	0.000	0.000
PRESS	P25	mmHg	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	755.567	1.332	3	0.000	0.000
OXYGEN	P300	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	9.667	0.681	3	0.000	0.000
PCTSAT	P301	Percent	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	93.900	4.636	3	0.000	0.000
FC	P31616	#/100ml	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	4.333	1.155	3	0.000	0.000
PH	P400	units	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	6.833	0.306	3	0.000	0.000
SUSSOL	P530	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	2.000	1.000	3	0.000	0.000
FLOW	P60	CFS	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	120.000	73.655	3	0.000	0.000
NH3_N	P610	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.010	0.001	3	0.000	0.000
NO2_DIS	P613	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.010	0.000	3	0.000	0.000
NO2_NO3	P630	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.225	0.086	3	0.000	0.000
TP_P	P665	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.010	0.001	3	0.000	0.000
OP_DIS	P671	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.010	0.000	3	0.000	0.000
TURB	P82079	NTU	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	1.967	1.193	3	0.000	0.000
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	21.333	4.726	3	0.000	0.000
COND	P95	umhos	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	64.333	25.580	3	0.000	0.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 08B070 Name: SAMMAMISH R @ BOTHELL

Class: A Elevation: 15 River Mile: 20.40

Location:
LOCATED IN BOTHELL AT 102ND STREET BRIDGE OVER SAMMAMISH RIVER

Water Years Sampled:

5	6										7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
X	X	X	X	X	X	X	X	X	X	X	X	X			X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.852	2.420	21	6.921	1.649	19	13.817	2.560	18	17.650	2.232	18	20.600	3.600
PRESS	P25	mmHg	763.767	8.227	21	767.958	7.052	19	767.272	5.906	18	767.978	3.117	18	777.700	743.000
OXYGEN	P300	mg/L	9.938	0.849	21	11.300	0.611	19	9.944	1.037	18	8.078	0.668	18	12.900	6.400
PCTSAT	P301	Percent	84.776	6.265	21	91.789	7.174	19	94.265	7.656	17	82.524	6.175	17	115.500	66.200
FC	P31616	#/100ml	372.100	522.511	20	84.500	67.911	18	259.000	194.100	17	486.500	532.105	18	2400.000	8.000
PH	P400	units	7.278	0.339	18	7.261	0.194	18	7.300	0.248	16	7.324	0.135	17	8.000	6.300
SUSSOL	P530	mg/L	16.667	17.568	21	9.500	4.805	18	7.722	4.944	18	6.688	2.892	16	79.000	2.000
FLOW	P60	CFS	384.250	271.620	18	657.333	308.396	18	315.556	143.134	18	96.200	25.789	18	1500.000	27.000
NH3_N	P610	mg/L	0.048	0.018	20	0.041	0.020	18	0.030	0.016	18	0.046	0.018	16	0.130	0.010K
NO2_DIS	P613	mg/L	0.010	0.001	12	0.010	0.001	12	0.010	0.000	12	0.010	0.001	12	0.010	0.007
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	6	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	11	0.000	0.000	12	0.000	0.000	12	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.436	0.101	5	0.557	0.212	6	0.313	0.057	6	0.304	0.048	5	0.960	0.220
NO2_NO3	P630	mg/L	0.479	0.155	15	0.617	0.189	12	0.352	0.120	12	0.279	0.077	12	1.000	0.140
TP_P	P665	mg/L	0.066	0.037	20	0.050	0.026	18	0.037	0.009	16	0.065	0.018	17	0.180	0.020
OP_DIS	P671	mg/L	0.022	0.009	18	0.015	0.005	18	0.013	0.006	18	0.026	0.007	18	0.040	0.010K
COLOR	P80	Pt-Co	68.250	30.358	4	69.000	61.652	3	39.333	23.029	3	17.000	25.159	3	140.000	1.000
TURB	P82079	NTU	3.663	1.514	19	4.294	2.383	18	3.100	1.613	18	3.544	1.273	18	22.000	1.800
HARD	P900	mg/L	66.500	19.092	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	80.000	53.000
COND	P95	umhos	128.286	19.751	21	120.474	9.512	19	131.778	10.219	18	161.889	23.763	18	180.000	71.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 08C070 Name: CEDAR R @ LOGAN ST/RENTON

Class: A Elevation: 15 River Mile: 1.00

Location:
LOCATED AT THE BRIDGE ON LOGAN STREET IN RENTON ADJACENT TO THE SOUTHEAST CORNER OF THE RENTON AIRPORT

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X       X   X     X   X X X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.867	2.127	21	6.574	1.446	19	10.883	1.892	18	14.356	1.569	18	19.600	2.800
PRESS	P25	mmHg	764.300	8.119	21	768.100	6.805	19	766.972	5.707	18	768.111	2.987	18	777.200	745.000
OXYGEN	P300	mg/L	11.952	0.794	21	12.416	0.495	19	11.650	0.665	18	11.272	0.813	18	13.800	10.000
PCTSAT	P301	Percent	99.600	5.272	21	99.837	3.698	19	103.694	4.832	17	108.571	8.425	17	124.100	91.100
FC	P31616	#/100ml	58.789	100.332	19	66.556	126.261	18	42.389	38.801	18	145.056	105.250	18	460.000	1.000
PH	P400	units	7.506	0.308	18	7.433	0.351	18	7.538	0.175	16	7.782	0.376	17	8.500	6.700
SUSSOL	P530	mg/L	13.190	13.010	21	29.444	53.655	18	6.944	6.881	18	11.150	15.787	16	122.000	1.000
FLOW	P60	CFS	652.611	397.045	18	924.000	764.976	18	623.500	292.177	18	159.667	42.637	18	1590.000	105.000
NH3_N	P610	mg/L	0.028	0.022	19	0.018	0.018	18	0.013	0.006	18	0.013	0.006	16	0.100	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	12	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	6	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	11	0.000	0.000	12	0.000	0.000	12	0.000	0.001	9	0.001	0.000
NO3_N	P620	mg/L	0.314	0.142	5	0.370	0.106	6	0.155	0.035	6	0.150	0.047	5	0.500	0.100
NO2_NO3	P630	mg/L	0.335	0.101	14	0.408	0.098	12	0.202	0.062	12	0.206	0.052	12	0.550	0.130
TP_P	P665	mg/L	0.038	0.033	18	0.027	0.025	18	0.014	0.005	16	0.020	0.010	17	0.130	0.010K
OP_DIS	P671	mg/L	0.012	0.005	17	0.011	0.005	18	0.010	0.000	18	0.010	0.003	18	0.030	0.005
COLOR	P80	Pt-Co	16.500	12.342	4	29.333	32.716	3	8.667	10.786	3	11.333	15.373	3	67.000	1.000
TURB	P82079	NTU	2.416	1.561	19	5.117	8.346	18	1.512	0.994	17	1.789	1.681	18	9.000	0.600
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	26.000	26.000
COND	P95	umhos	69.000	15.672	21	68.474	11.616	19	65.833	9.167	18	93.500	5.238	18	110.000	50.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 08C110 Name: CEDAR R NR LANDSBURG

Class: AA Elevation: 616 River Mile: 25.10

Location:
STATION LOCATED ON THE CEDAR RIVER 1 MILE SOUTH OF WALSH LAKE AND 2.25 MILES NORTHEAST OF LANDSBURG AT THE TRUDE ROAD CROSSING

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X                   X         X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.361	1.525	18	5.794	0.834	17	9.335	1.630	17	11.161	0.991	18	13.800	4.100
PRESS	P25	mmHg	753.439	9.294	18	748.847	6.610	17	747.435	5.582	17	747.811	5.738	18	785.000	736.600
OXYGEN	P300	mg/L	11.883	0.812	18	12.206	0.295	17	11.324	0.680	17	10.794	0.378	18	13.200	9.800
PCTSAT	P301	Percent	99.256	5.055	18	98.788	2.127	17	99.925	4.575	16	99.582	2.863	17	111.200	84.400
FC	P31616	#/100ml	4.444	5.261	18	1.733	1.387	15	3.765	4.221	17	6.833	7.876	18	35.000	1.000
COD	P340	mg/L	4.923	1.935	13	5.385	2.468	13	8.154	9.164	13	5.357	1.906	14	38.000	4.000K
PH	P400	units	7.453	0.307	15	7.419	0.429	16	7.373	0.205	15	7.500	0.330	17	8.300	6.600
SUSSOL	P530	mg/L	5.000	4.822	17	2.412	2.347	17	1.813	0.750	16	2.613	2.066	16	16.000	1.000
FLOW	P60	CFS	762.556	482.893	18	837.059	391.859	17	797.588	295.083	17	335.556	61.202	18	1510.000	201.000
NH3_N	P610	mg/L	0.013	0.008	16	0.018	0.022	16	0.011	0.003	17	0.012	0.007	16	0.090	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.000	11	0.010	0.000	11	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.168	0.062	4	0.134	0.063	5	0.115	0.014	6	0.136	0.030	5	0.250	0.050
NO2_NO3	P630	mg/L	0.210	0.119	12	0.175	0.031	11	0.133	0.021	11	0.148	0.021	12	0.560	0.090
TP_P	P665	mg/L	0.021	0.025	16	0.020	0.023	16	0.011	0.003	15	0.011	0.003	17	0.090	0.005
OP_DIS	P671	mg/L	0.010	0.001	16	0.011	0.003	16	0.010	0.000	17	0.010	0.001	18	0.020	0.005
COLOR	P80	Pt-Co	8.333	4.509	3	4.000	0.000	3	8.667	8.021	3	7.857	8.435	7	17.000	1.000
TURB	P82079	NTU	1.580	1.553	15	1.550	0.734	14	1.035	0.269	17	1.167	0.697	15	12.000	0.300
COND	P95	umhos	54.444	14.995	18	52.412	12.918	17	51.529	7.186	17	67.333	6.010	18	96.000	38.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

COND	P95	umhos	481.941	1253.266	17	154.800	234.027	15	109.933	49.161	15	346.643	288.223	14	5260.000	4.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 09A190 Name: GREEN R @ KANASKAT

Class: AA Elevation: 775 River Mile: 57.60

Location:
LOCATED AT THE CUMBERLAND-PALMER ROAD BRIDGE AT KANASKAT, 1.1 MILES ABOVE THE FISH HATCHERY AND 4.5 MILES BELOW THE GAGE NEAR BEAR CREEK

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X                           X   X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.929	2.557	21	4.374	1.544	19	9.089	1.955	18	14.206	1.008	18	17.300	1.300
PRESS	P25	mmHg	746.776	10.272	21	743.347	6.561	19	741.783	5.125	18	742.994	5.479	18	785.000	731.000
OXYGEN	P300	mg/L	12.076	1.048	21	12.800	0.608	19	11.528	0.839	18	10.211	0.443	18	14.000	8.800
PCTSAT	P301	Percent	100.481	5.546	21	100.558	3.622	19	101.765	4.715	17	101.206	3.926	17	112.300	85.900
FC	P31616	#/100ml	16.095	28.518	21	2.063	1.948	16	8.111	13.101	18	13.833	15.147	18	130.000	1.000
PH	P400	units	7.278	0.542	18	7.389	0.578	18	7.159	0.337	17	7.288	0.440	17	8.500	6.300
SUSSOL	P530	mg/L	11.550	22.277	20	2.500	1.505	18	2.765	2.223	17	2.175	0.949	16	100.000	1.000
FLOW	P60	CFS	1387.839	1554.704	18	1015.389	628.404	18	1077.222	767.491	18	144.278	49.542	18	6100.000	59.700
NH3_N	P610	mg/L	0.012	0.005	18	0.029	0.065	17	0.013	0.007	18	0.016	0.011	17	0.280	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	12	0.010	0.000	12	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	5	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	9	0.000	0.000	11	0.000	0.000	12	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.183	0.055	3	0.122	0.087	5	0.042	0.012	6	0.034	0.011	5	0.650	0.010K
NO2_NO3	P630	mg/L	0.165	0.083	15	0.153	0.047	12	0.058	0.027	12	0.048	0.010	12	0.330	0.030
TP_P	P665	mg/L	0.025	0.024	19	0.024	0.024	16	0.014	0.005	15	0.012	0.005	17	0.100	0.009
OP_DIS	P671	mg/L	0.012	0.006	18	0.014	0.010	17	0.010	0.000	17	0.010	0.003	18	0.050	0.003
COLOR	P80	Pt-Co	9.667	2.887	3	6.667	2.309	3	15.667	4.619	3	12.143	8.611	7	29.000	1.000
TURB	P82079	NTU	3.867	6.079	18	1.527	0.723	15	2.006	1.728	18	1.287	0.641	15	26.000	0.600
COND	P95	umhos	56.333	22.885	21	44.579	6.931	19	44.611	6.784	18	60.500	11.668	18	85.000	33.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 09A060 Name: DUWAMISH R @ ALLENTOWN BR

Class: B Elevation: 20 River Mile: 8.30

Location:
LOCATED AT THE BRIDGE ON 42ND AVENUE SOUTH AT THE INTERSECTION WITH INTERURBAN AVENUE AT ALLENTOWN

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                         X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.718	2.779	17	6.393	1.369	15	12.247	2.677	15	17.413	1.870	15	20.400	2.200
CU	P1042	ug/L	5.427	5.157	11	6.109	8.000	11	1.958	1.177	12	4.222	3.063	9	28.000	1.000
ZN	P1092	ug/L	7.000	5.153	11	16.545	25.295	11	9.625	18.053	12	6.389	3.080	9	91.000	1.000
ZN	P1094	ug/L	6.538	4.824	13	16.818	25.135	11	10.083	17.876	12	6.500	2.799	10	0.000	0.000
CD	P1113	ug/L	0.362	0.474	13	0.818	1.985	11	0.187	0.109	12	0.668	1.516	12	6.800	0.100
PB	P1114	ug/L	2.483	1.722	12	1.718	1.550	11	1.950	1.541	12	2.258	1.612	12	5.000	1.000
CR	P1118	ug/L	1.148	1.217	13	1.438	1.875	11	1.368	1.185	12	1.098	1.279	12	7.000	0.200
CU	P1119	ug/L	5.246	4.699	13	6.382	7.810	11	2.500	1.446	12	4.450	2.833	10	0.000	0.000
PRESS	P25	mmHg	764.488	8.940	17	768.373	5.935	15	766.727	5.955	15	768.453	2.711	15	777.700	744.000
OXYGEN	P300	mg/L	10.582	1.644	17	11.414	0.438	14	9.913	1.163	15	8.013	0.998	15	12.400	6.400
PCTSAT	P301	Percent	87.335	9.346	17	91.693	3.228	14	90.821	7.203	14	82.136	10.430	14	111.500	64.800
FC	P31616	#/100ml	187.563	225.545	16	161.933	224.939	15	118.643	90.300	14	437.800	518.331	15	5300.000	6.000
PH	P400	units	7.286	0.257	14	7.279	0.226	14	7.331	0.170	13	7.371	0.190	14	7.700	6.700
SUSSOL	P530	mg/L	18.063	17.961	16	17.600	14.040	15	15.867	16.578	15	9.908	5.435	13	69.000	1.000
FLOW	P60	CFS	1576.700	1051.958	6	1896.067	771.814	6	1304.267	580.490	6	584.867	203.652	6	3477.500	353.800
NH3_N	P610	mg/L	0.316	0.543	15	0.201	0.219	15	0.116	0.185	15	0.242	0.429	13	2.100	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	8	0.010	0.000	9	0.010	0.000	9	0.012	0.007	8	0.030	0.006
NO2_N	P615	mg/L	0.013	0.008	7	0.010	0.000	6	0.010	0.000	6	0.015	0.008	6	0.030	0.010K
NH3_UN	P619	mg/L	0.002	0.002	11	0.001	0.001	12	0.001	0.001	12	0.003	0.004	9	0.011	0.000
NO3_N	P620	mg/L	0.570	0.242	5	0.547	0.159	6	0.362	0.113	6	0.422	0.103	5	0.820	0.100
NO2_NO3	P630	mg/L	0.433	0.071	11	0.521	0.205	9	0.288	0.077	9	0.398	0.053	9	0.850	0.130
TP_P	P665	mg/L	0.125	0.164	16	0.079	0.043	15	0.058	0.062	13	0.113	0.146	14	0.710	0.020
OP_DIS	P671	mg/L	0.060	0.104	14	0.035	0.029	15	0.028	0.039	15	0.069	0.106	15	0.410	0.010K
HG	P71901	ug/L	0.061	0.010	13	0.044	0.016	11	0.060	0.033	11	0.082	0.045	11	0.200	0.020
COLOR	P80	Pt-Co	52.250	22.911	4	36.667	45.567	3	10.333	8.327	3	29.667	47.078	3	88.000	1.000
TURB	P82079	NTU	4.233	2.138	15	5.580	2.886	15	4.014	3.317	14	3.107	0.946	15	27.000	1.800
HARD	P900	mg/L	135.333	274.880	15	42.133	26.465	15	36.333	12.860	15	110.643	139.535	14	999.000	16.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 09A090 Name: GREEN R @ 212TH ST NR KENT

Class: A Elevation: 20 River Mile: 18.30

Location:
LOCATED AT THE O'BRIAN ROAD BRIDGE ON 212TH STREET, TWO MILES NORTHWEST OF KENT

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X     X X     X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.133	2.707	18	6.083	1.418	18	11.561	2.717	18	17.133	1.950	18	20.600	1.200
CU	P1042	ug/L	4.136	4.214	11	4.773	4.200	11	1.958	1.322	12	2.667	1.392	9	15.000	1.000
ZN	P1092	ug/L	4.136	2.730	11	7.818	9.532	11	3.917	3.274	12	4.111	2.408	9	33.000	1.000
ZN	P1094	ug/L	5.000	3.162	14	9.071	9.236	14	4.667	3.016	15	5.083	2.021	12	0.000	0.000
CD	P1113	ug/L	0.171	0.047	14	0.273	0.304	14	0.225	0.172	15	0.289	0.413	14	1.400	0.100
PB	P1114	ug/L	1.979	1.663	14	2.579	3.265	14	1.640	1.382	15	1.862	1.503	13	12.000	1.000
CR	P1118	ug/L	1.374	1.583	14	2.490	4.461	14	0.891	0.404	15	1.542	2.211	14	15.000	0.200
CU	P1119	ug/L	4.607	3.807	14	5.664	5.026	14	2.553	1.401	15	3.250	1.485	12	0.000	0.000
PRESS	P25	mmHg	764.367	8.380	18	767.300	6.438	18	766.000	5.706	18	767.061	3.118	18	776.700	745.000
OXYGEN	P300	mg/L	11.594	1.095	16	11.800	0.355	17	10.467	1.011	18	9.039	0.770	18	13.400	7.800
PCTSAT	P301	Percent	94.619	4.696	16	94.247	2.745	17	94.476	5.948	17	92.241	7.627	17	109.200	81.400
FC	P31616	#/100ml	85.765	98.765	17	153.588	187.258	17	126.278	209.030	18	316.706	556.064	17	2000.000	1.000
PH	P400	units	7.364	0.178	14	7.229	0.293	17	7.263	0.154	16	7.435	0.226	17	7.800	6.500
SUSSOL	P530	mg/L	17.059	15.510	17	32.111	71.377	18	12.778	12.168	18	8.550	4.979	16	54.000	1.000
FLOW	P60	CFS	1660.944	1235.265	18	2257.500	2172.354	18	1395.000	955.626	18	314.222	171.959	18	4390.000	155.000
NH3_N	P610	mg/L	0.053	0.040	16	0.058	0.029	18	0.055	0.087	18	0.050	0.052	16	0.850	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	9	0.010	0.001	12	0.010	0.000	12	0.010	0.001	12	0.010	0.005
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	6	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	11	0.000	0.000	12	0.000	0.000	12	0.000	0.001	9	0.001	0.000
NO3_N	P620	mg/L	0.450	0.228	5	0.513	0.146	6	0.315	0.077	6	0.330	0.037	5	0.790	0.140
NO2_NO3	P630	mg/L	0.412	0.068	12	0.489	0.168	12	0.302	0.076	12	0.363	0.069	12	0.770	0.120
TP_P	P665	mg/L	0.054	0.034	17	0.059	0.058	18	0.034	0.008	16	0.049	0.016	16	0.140	0.020
OP_DIS	P671	mg/L	0.019	0.006	15	0.020	0.009	18	0.014	0.005	18	0.020	0.005	17	0.050	0.010K
HG	P71901	ug/L	0.063	0.020	13	0.045	0.016	13	0.069	0.056	15	0.085	0.058	12	0.250	0.020
COLOR	P80	Pt-Co	31.500	21.749	4	29.667	36.679	3	7.333	8.505	3	2.000	1.732	3	71.000	1.000
TURB	P82079	NTU	3.613	2.605	16	9.233	21.745	18	3.271	3.480	17	2.361	0.853	18	18.000	1.000K
HARD	P900	mg/L	32.438	10.276	16	30.556	8.820	18	33.056	10.247	18	46.176	7.756	17	62.000	17.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

COND	P95	umhos	100.500	44.892	18	79.944	21.364	18	90.278	28.188	18	140.056	34.899	18	209.000	41.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 10A070 Name: PUYALLUP R @ MERIDIAN ST

Class: A Elevation: 30 River Mile: 8.30

Location:
LOCATED AT THE BRIDGE IMMEDIATELY NORTH OF PUYALLUP ON MERIDIAN STREET
(STATE HIGHWAY 161)

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X     X   X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.525	2.572	20	5.621	1.567	19	11.250	2.136	18	13.706	1.544	18	16.100	2.000
PRESS	P25	mmHg	768.085	7.009	20	766.911	7.798	19	764.972	4.402	18	765.039	6.822	18	781.000	746.000
OXYGEN	P300	mg/L	12.185	0.945	20	12.367	0.618	18	11.044	0.698	18	10.239	0.573	18	14.600	9.500
PCTSAT	P301	Percent	97.590	4.601	20	97.600	3.963	18	99.506	4.224	17	97.265	4.393	17	111.100	90.600
FC	P31616	#/100ml	398.053	655.398	19	128.556	180.900	18	424.500	837.758	18	328.222	409.501	18	3200.000	13.000
COD	P340	mg/L	7.000	1.949	11	10.600	9.280	15	8.500	5.019	14	8.692	6.316	13	41.000	4.000K
PH	P400	units	7.535	0.375	20	7.295	0.172	19	7.428	0.193	18	7.461	0.266	18	8.800	6.900
SUSSOL	P530	mg/L	85.450	152.397	20	32.667	87.261	18	43.000	60.105	18	348.765	555.884	17	2400.000	2.000
FLOW	P60	CFS	3073.235	3006.438	17	3842.778	2162.979	18	3373.444	1048.950	18	1845.000	559.414	18	11900.000	636.000
NH3_N	P610	mg/L	0.036	0.019	19	0.039	0.021	17	0.020	0.009	14	0.028	0.015	17	0.080	0.010K
NO2_DIS	P613	mg/L	0.010	0.002	13	0.010	0.000	12	0.010	0.000	11	0.010	0.003	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	5	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	14	0.000	0.000	10	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.300	0.130	4	0.320	0.070	5	0.080	0.010	3	0.076	0.026	5	0.440	0.060
NO2_NO3	P630	mg/L	0.273	0.120	15	0.373	0.133	12	0.125	0.046	11	0.099	0.035	12	0.630	0.060
TP_P	P665	mg/L	0.080	0.058	19	0.053	0.029	16	0.056	0.073	13	0.172	0.094	16	0.380	0.020
OP_DIS	P671	mg/L	0.020	0.010	17	0.018	0.008	16	0.014	0.005	16	0.023	0.010	18	0.050	0.010K
COLOR	P80	Pt-Co	37.667	8.505	3	47.667	26.858	3	25.333	7.506	3	486.667	326.548	3	690.000	17.000
TURB	P82079	NTU	14.753	23.790	19	6.789	13.132	18	11.600	16.710	18	85.278	72.504	18	240.000	1.000K
COND	P95	umhos	77.500	18.662	20	72.579	9.076	19	63.278	5.644	18	72.222	15.395	18	123.000	44.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 10C070 Name: WHITE R @ SUMNER

Class: A Elevation: 50 River Mile: 0.70

Location:
AT BRIDGE ON MAIN STREET IN SUMNER

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
												X	X							X	X	X	X	X	X	X	X	X	X	X	X				

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.141	3.176	17	5.544	1.607	18	12.178	2.334	18	15.039	3.071	18	18.200	2.300
PRESS	P25	mmHg	767.324	5.506	17	766.050	7.923	18	764.472	3.989	18	764.550	6.764	18	780.000	746.000
OXYGEN	P300	mg/L	11.741	1.076	17	12.265	0.690	17	10.644	0.797	18	9.556	0.683	18	14.300	8.600
PCTSAT	P301	Percent	95.406	4.557	17	96.688	3.844	17	97.906	4.564	17	93.324	6.938	17	108.900	74.300
FC	P31616	#/100ml	410.500	723.656	16	183.333	276.760	18	491.222	1139.137	18	296.222	570.995	18	9400.000	4.000
PH	P400	units	7.612	0.289	17	7.322	0.308	18	7.428	0.222	18	7.361	0.212	18	8.500	7.000
SUSSOL	P530	mg/L	62.500	132.486	16	35.944	101.640	18	30.444	53.215	18	62.176	95.496	17	453.000	1.000
FLOW	P60	CFS	1756.471	2379.515	17	2062.333	1443.164	18	1803.611	594.073	18	850.444	317.062	18	7500.000	191.000
NH3_N	P610	mg/L	0.038	0.025	16	0.052	0.041	17	0.019	0.010	14	0.028	0.014	17	0.160	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	10	0.010	0.000	12	0.010	0.000	11	0.010	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	5	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	14	0.000	0.000	10	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.255	0.161	4	0.208	0.113	5	0.050	0.020	3	0.046	0.033	5	0.420	0.010K
NO2_NO3	P630	mg/L	0.245	0.138	12	0.340	0.148	12	0.077	0.040	11	0.063	0.040	12	0.640	0.020
TP_P	P665	mg/L	0.069	0.055	15	0.051	0.028	16	0.030	0.017	13	0.081	0.066	16	0.290	0.020
OP_DIS	P671	mg/L	0.019	0.014	14	0.016	0.008	16	0.010	0.000	16	0.018	0.007	18	0.060	0.010K
COLOR	P80	Pt-Co	29.000	4.000	3	63.000	44.978	3	12.667	4.509	3	180.000	51.962	3	210.000	8.000
TURB	P82079	NTU	14.869	30.411	16	8.056	16.353	18	6.683	5.931	18	26.683	28.014	18	128.000	1.800
COND	P95	umhos	78.059	17.562	17	71.611	10.689	18	61.722	5.507	18	74.889	12.792	18	122.000	46.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 11A070 Name: NISQUALLY R @ NISQUALLY

Class: A Elevation: 20 River Mile: 3.40

Location:
LOCATED AT THE BRIDGE ON OLD PACIFIC HIGHWAY, .4 MILES DOWNSTREAM FROM THE GAGE

Water Years Sampled:

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5 6                 7                 8                 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                X     X   X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.810	2.807	20	6.205	1.336	19	11.183	2.580	18	14.672	1.018	18	18.300	2.700
CU	P1042	ug/L	11.945	21.610	11	2.833	2.718	12	2.850	1.980	12	4.938	3.343	8	73.900	1.000
ZN	P1092	ug/L	7.091	12.035	11	4.125	2.773	12	3.708	5.675	12	3.722	2.841	9	43.000	1.000
ZN	P1094	ug/L	7.643	10.952	14	4.333	2.320	15	4.467	4.955	15	4.846	3.602	13	0.000	0.000
CD	P1113	ug/L	0.404	0.634	12	0.193	0.070	15	0.263	0.251	15	0.538	1.180	13	4.400	0.100
PB	P1114	ug/L	2.442	2.831	12	2.357	2.124	14	1.627	1.416	15	1.350	0.773	12	24.000	1.000
CR	P1118	ug/L	1.105	1.322	11	1.001	1.157	15	0.999	0.931	15	1.829	1.866	13	5.000	0.200
CU	P1119	ug/L	3.650	1.892	10	3.027	2.336	15	3.107	1.673	15	4.855	2.726	11	0.000	0.000
PRESS	P25	mmHg	768.325	6.634	20	766.147	7.992	19	765.583	4.454	18	765.400	6.446	18	781.000	747.000
OXYGEN	P300	mg/L	11.790	0.945	20	12.367	0.878	18	11.667	0.670	18	10.517	0.384	18	14.100	10.000
PCTSAT	P301	Percent	97.380	5.022	20	99.039	5.784	18	104.724	4.900	17	102.224	4.667	17	116.500	90.300
FC	P31616	#/100ml	72.789	225.023	19	14.000	19.011	18	14.833	32.295	18	14.778	14.453	18	1000.000	1.000
COD	P340	mg/L	7.667	3.774	12	8.400	4.611	15	8.000	3.742	14	7.385	6.332	13	30.000	4.000K
PH	P400	units	7.630	0.344	20	7.511	0.360	19	7.628	0.457	18	7.778	0.321	18	8.500	6.600
SUSSOL	P530	mg/L	50.800	74.766	20	15.167	12.191	18	6.406	5.487	18	9.565	9.040	17	312.000	1.000
FLOW	P60	CFS	2105.294	996.827	17	3335.000	2138.111	18	1911.111	554.308	18	1055.278	205.129	18	11400.000	720.000
NH3_N	P610	mg/L	0.024	0.010	19	0.025	0.018	17	0.011	0.003	14	0.014	0.010	17	0.070	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	13	0.010	0.000	12	0.010	0.000	11	0.009	0.002	12	0.010	0.003
NO2_N	P615	mg/L	0.010	0.000	5	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	14	0.000	0.000	10	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.253	0.092	4	0.346	0.065	5	0.170	0.056	3	0.098	0.041	5	0.420	0.060
NO2_NO3	P630	mg/L	0.228	0.095	15	0.400	0.090	12	0.220	0.083	11	0.126	0.026	12	0.560	0.080
TP_P	P665	mg/L	0.087	0.097	19	0.040	0.025	17	0.021	0.012	13	0.020	0.010	16	0.410	0.010K
OP_DIS	P671	mg/L	0.011	0.003	17	0.011	0.003	17	0.010	0.000	16	0.010	0.000	18	0.020	0.009
HG	P71901	ug/L	0.068	0.028	14	0.089	0.118	15	0.059	0.026	13	0.053	0.024	12	0.500	0.020
COLOR	P80	Pt-Co	51.667	16.743	3	71.333	54.976	3	18.000	8.888	3	124.667	84.056	3	200.000	8.000
TURB	P82079	NTU	45.600	82.613	19	7.900	4.236	18	2.711	1.741	18	8.250	12.317	18	325.000	1.000K

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

HARD	P900	mg/L	27.400	4.641	15	24.944	3.918	18	32.278	14.228	18	30.667	15.522	18	92.000	20.000
COND	P95	umhos	67.700	7.616	20	64.947	7.106	19	65.556	3.148	18	68.944	5.651	18	84.000	50.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 11A080 Name: NISQUALLY R @ MCKENNA

Class: A Elevation: 290 River Mile: 21.80

Location:
LOCATED ON HIGHWAY 507 BRIDGE 1.5 MILES SOUTHEAST OF YELM JUST BEFORE ENTERING MCKENNA ON THE PIERCE-THURSTON COUNTY LINE

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X                                       X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.000	3.000	3	4.267	1.365	3	8.900	1.539	6	12.733	1.227	6	14.700	4.000
PRESS	P25	mmHg	758.200	6.894	3	757.067	7.427	3	755.517	1.955	6	757.683	3.222	6	766.100	753.400
OXYGEN	P300	mg/L	12.100	1.803	3	11.900	0.283	2	11.450	0.485	6	10.400	0.346	6	14.100	9.800
PCTSAT	P301	Percent	99.033	8.028	3	93.700	1.556	2	99.000	3.127	6	97.850	1.931	6	108.300	94.200
FC	P31616	#/100ml	65.500	48.790	2	31.333	25.929	3	128.500	284.975	6	17.333	11.343	6	710.000	9.000
PH	P400	units	7.700	0.200	3	7.033	0.351	3	7.367	0.308	6	7.483	0.279	6	7.900	7.000
SUSSOL	P530	mg/L	122.333	154.972	3	12.667	15.044	3	8.667	7.992	6	5.033	7.038	6	300.000	1.000
FLOW	P60	CFS	1833.333	855.648	3	1236.000	562.181	3	1104.167	527.735	6	469.333	60.258	6	1930.000	434.000
NH3_N	P610	mg/L	0.044	0.015	3	0.032	0.024	3	0.014	0.005	6	0.010	0.001	6	0.060	0.010K
NO2_DIS	P613	mg/L	0.008	0.004	3	0.010	0.000	3	0.010	0.000	6	0.009	0.004	6	0.010	0.001
NO2_NO3	P630	mg/L	0.270	0.072	3	0.331	0.039	3	0.167	0.070	6	0.061	0.018	6	0.330	0.060
TP_P	P665	mg/L	0.118	0.116	3	0.080	0.042	2	0.018	0.012	6	0.151	0.342	6	0.850	0.010K
OP_DIS	P671	mg/L	0.009	0.002	3	0.010	0.000	2	0.010	0.000	6	0.010	0.002	6	0.010	0.006
TURB	P82079	NTU	81.833	106.912	3	12.167	8.622	3	4.250	3.158	6	6.667	9.565	6	205.000	1.000K
COND	P95	umhos	54.333	6.028	3	59.000	6.000	3	59.167	3.545	6	58.500	4.722	6	66.000	48.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 12A070 Name: CHAMBERS CR NR STEILACOOM

Class: A Elevation: 40 River Mile: 0.90

Location:
LOCATED AT CHAMBERS CREEK ROAD BRIDGE, 1.5 MILES NORTHEAST OF STEILACOOM
AT THE HEAD OF CHAMBERS BAY, 2.2 MILES DOWNSTREAM OF GAGE

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
        X X X X X       X X     X               X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.965	2.255	17	8.861	1.926	18	14.656	1.973	18	14.511	1.699	18	18.600	4.200
PRESS	P25	mmHg	768.671	5.538	17	766.828	7.898	18	765.528	4.309	18	766.022	6.521	18	782.000	748.000
OXYGEN	P300	mg/L	11.218	1.079	17	11.494	0.573	17	10.039	0.671	18	9.261	0.586	18	13.600	8.600
PCTSAT	P301	Percent	95.171	5.531	17	98.206	4.559	17	97.329	4.919	17	89.053	6.966	17	108.300	77.200
FC	P31616	#/100ml	91.933	190.414	15	436.000	1664.266	18	98.167	224.932	18	153.889	217.523	18	970.000	2.000
PH	P400	units	7.600	0.245	17	7.561	0.397	18	7.583	0.264	18	7.589	0.263	18	8.900	6.900
SUSSOL	P530	mg/L	8.824	10.990	17	10.611	5.031	18	6.529	4.140	17	4.741	2.493	17	50.000	1.000
FLOW	P60	CFS	104.200	62.623	16	164.767	50.508	18	95.920	25.258	15	43.787	12.574	15	237.000	19.000
NH3_N	P610	mg/L	0.065	0.120	16	0.041	0.027	17	0.028	0.009	14	0.036	0.011	17	0.510	0.020
NO2_DIS	P613	mg/L	0.011	0.003	10	0.010	0.000	12	0.010	0.000	11	0.010	0.001	11	0.020	0.010K
NO2_N	P615	mg/L	0.010	0.000	5	0.010	0.000	5	0.010	0.000	5	0.012	0.004	6	0.020	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	14	0.000	0.000	10	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	1.320	0.486	4	1.460	0.336	5	1.300	0.361	3	1.420	0.217	5	2.000	0.660
NO2_NO3	P630	mg/L	1.031	0.286	12	1.356	0.240	11	1.162	0.164	11	1.260	0.156	11	1.780	0.500
TP_P	P665	mg/L	0.090	0.044	16	0.055	0.026	17	0.043	0.016	13	0.060	0.011	16	0.190	0.020
OP_DIS	P671	mg/L	0.041	0.034	14	0.017	0.009	16	0.016	0.007	16	0.036	0.013	18	0.150	0.010K
COLOR	P80	Pt-Co	30.667	10.599	3	30.667	17.243	3	9.000	6.928	3	71.000	70.873	3	150.000	1.000
TURB	P82079	NTU	1.731	0.971	16	2.300	1.309	18	1.617	0.886	18	4.222	9.650	18	42.000	0.700
COND	P95	umhos	163.529	22.162	17	152.000	12.414	18	167.389	13.030	18	186.333	19.296	18	205.000	103.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 13A060 Name: DESCHUTES R @ E ST BRIDGE

Class: A Elevation: 93 River Mile: 0.60

Location:
LOCATED AT THE BRIDGE ON E STREET, IMMEDIATELY SOUTH OF THE OLYMPIA BREWING COMPANY AND ADJACENT TO THE ENTRANCE OF THE TUMWATER VALLEY GOLF COURSE

Water Years Sampled:

5	6						7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
																					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.581	2.227	21	7.347	1.516	19	13.567	2.324	18	16.206	2.582	18	20.500	2.500
CU	P1042	ug/L	3.775	3.618	8	2.483	1.719	12	2.042	1.137	12	4.389	3.773	9	14.000	1.000
ZN	P1092	ug/L	3.438	2.884	8	3.458	2.147	12	3.292	3.545	12	3.100	3.471	10	13.000	1.000
ZN	P1094	ug/L	4.636	2.803	11	4.133	1.767	15	5.867	6.937	15	3.643	2.763	14	0.000	0.000
CD	P1113	ug/L	0.222	0.098	11	0.360	0.453	15	0.203	0.126	15	0.295	0.368	14	1.900	0.100
PB	P1114	ug/L	1.982	1.581	11	2.000	1.658	14	1.936	2.326	14	1.731	1.231	13	24.000	1.000
CR	P1118	ug/L	1.172	1.309	11	1.077	1.175	15	0.975	1.162	15	1.362	1.660	13	5.000	0.200
CU	P1119	ug/L	3.900	3.525	8	2.587	1.405	15	2.540	1.310	15	4.417	3.175	12	0.000	0.000
PRESS	P25	mmHg	764.781	8.264	21	762.932	6.924	19	762.267	5.283	18	760.494	7.448	18	780.000	740.000
OXYGEN	P300	mg/L	11.580	0.762	20	11.650	0.715	18	10.917	0.958	18	10.950	0.720	18	13.400	9.100
PCTSAT	P301	Percent	95.995	5.396	20	96.472	4.599	18	104.106	8.030	17	110.847	9.393	17	128.900	88.200
FC	P31616	#/100ml	51.944	101.934	18	33.444	34.156	18	18.056	25.192	18	52.529	75.840	17	430.000	1.000
COD	P340	mg/L	6.000	2.828	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PH	P400	units	7.495	0.492	21	7.153	0.295	19	7.483	0.281	18	7.889	0.398	18	9.400	6.600
SUSSOL	P530	mg/L	23.476	37.216	21	17.059	16.072	17	4.353	2.597	17	4.459	1.852	17	56.000	1.000
FLOW	P60	CFS	338.989	249.580	18	684.611	351.065	18	251.111	105.330	18	98.744	26.106	18	1880.000	46.000
NH3_N	P610	mg/L	0.015	0.006	19	0.024	0.019	17	0.016	0.008	14	0.012	0.004	17	0.080	0.009
NO2_DIS	P613	mg/L	0.010	0.001	12	0.010	0.000	12	0.010	0.000	12	0.010	0.001	12	0.010	0.007
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.001	13	0.000	0.000	13	0.000	0.000	10	0.001	0.003	9	0.010	0.000
NO3_N	P620	mg/L	0.508	0.042	4	0.520	0.058	5	0.470	0.089	3	0.494	0.070	5	0.610	0.280
NO2_NO3	P630	mg/L	0.528	0.133	15	0.573	0.106	12	0.505	0.100	11	0.600	0.214	12	0.804	0.010K
TP_P	P665	mg/L	0.052	0.039	19	0.046	0.024	17	0.025	0.012	13	0.028	0.006	16	0.170	0.020
OP_DIS	P671	mg/L	0.013	0.004	17	0.014	0.005	17	0.011	0.002	17	0.015	0.005	18	0.024	0.010K
HG	P71901	ug/L	0.054	0.012	13	0.085	0.123	14	0.050	0.017	13	0.054	0.024	12	0.500	0.020
COLOR	P80	Pt-Co	67.000	54.617	3	25.000	22.113	3	21.000	13.000	3	30.667	6.658	3	130.000	8.000
TURB	P82079	NTU	6.494	12.696	17	6.313	5.514	15	1.728	0.961	18	1.353	0.575	17	42.000	0.900

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

HARD	P900	mg/L	39.533	10.643	15	33.500	7.374	18	65.611	94.045	18	53.222	18.008	18	440.000	18.000
COND	P95	umhos	98.143	21.910	21	79.316	14.322	19	108.500	10.354	18	132.444	10.107	18	148.000	54.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 13A150 Name: DESCHUTES R NR RAINIER

Class: A Elevation: 370 River Mile: 21.61

Location:
LOCATED AT THE BRIDGE BETWEEN RAINIER AND TENINO ON STATE HIGHWAY 507

Water Years Sampled:

5	6							7								8								9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
													X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X				

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.467	2.529	18	5.728	1.364	18	11.611	2.153	18	13.944	1.995	18	17.200	2.700
PRESS	P25	mmHg	760.578	8.099	18	758.217	7.097	18	757.694	4.790	18	757.539	5.682	18	775.000	737.000
OXYGEN	P300	mg/L	11.769	1.080	16	11.871	0.654	17	10.511	0.977	18	9.567	0.481	18	14.300	8.800
PCTSAT	P301	Percent	94.750	4.610	16	95.018	3.740	17	96.306	6.670	17	92.124	4.094	17	111.100	86.200
FC	P31616	#/100ml	21.765	22.626	17	21.111	31.641	18	49.278	27.534	18	38.882	25.838	17	280.000	1.000
PH	P400	units	7.594	0.354	18	7.144	0.328	18	7.583	0.378	18	7.594	0.495	18	8.700	6.600
SUSSOL	P530	mg/L	4.889	5.257	18	10.647	10.422	17	2.765	1.348	17	2.760	2.166	15	40.000	1.000
FLOW	P60	CFS	240.028	177.837	18	537.667	349.978	18	141.556	85.120	18	44.250	13.532	18	1540.000	26.500
NH3_N	P610	mg/L	0.013	0.007	16	0.031	0.034	17	0.014	0.006	14	0.012	0.004	16	0.140	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	10	0.010	0.000	12	0.010	0.000	12	0.009	0.002	12	0.010	0.003
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.373	0.038	4	0.410	0.071	5	0.360	0.075	3	0.340	0.078	5	0.500	0.150
NO2_NO3	P630	mg/L	0.388	0.094	12	0.443	0.074	12	0.330	0.082	11	0.457	0.088	12	0.620	0.220
TP_P	P665	mg/L	0.030	0.025	16	0.051	0.042	16	0.021	0.007	13	0.024	0.010	15	0.180	0.010K
OP_DIS	P671	mg/L	0.012	0.004	15	0.014	0.006	16	0.014	0.012	17	0.011	0.002	17	0.060	0.010K
COLOR	P80	Pt-Co	61.667	42.099	3	31.000	21.633	3	32.333	6.658	3	32.000	12.767	3	110.000	13.000
TURB	P82079	NTU	2.953	1.785	15	5.853	4.595	15	2.083	1.074	18	1.450	0.823	18	35.000	0.700
COND	P95	umhos	88.667	20.234	18	72.722	15.465	18	100.667	15.135	18	131.611	18.360	18	147.000	48.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 16A070 Name: SKOKOMISH R NR POTLATCH

Class: AA Elevation: 60 River Mile: 5.30

Location:
LOCATED AT HIGHWAY 101 BRIDGE ON THE SKOKOMISH RIVER APPROXIMATELY EIGHT MILES NORTH OF SHELTON

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X X   X X   X X X       X X X       X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.243	1.406	21	6.074	0.701	19	9.272	1.300	18	10.222	0.870	18	11.900	4.800
PRESS	P25	mmHg	769.314	7.666	21	769.153	6.292	19	767.256	4.505	18	769.006	4.836	18	783.000	746.000
OXYGEN	P300	mg/L	11.495	0.844	19	11.900	0.676	18	11.089	0.835	18	10.122	0.347	18	13.300	8.900
PCTSAT	P301	Percent	93.863	6.700	19	94.489	4.608	18	95.353	5.434	17	88.594	4.243	17	108.100	74.300
FC	P31616	#/100ml	31.400	101.242	20	5.389	7.081	18	14.556	12.994	18	20.941	17.683	17	73.000	1.000
PH	P400	units	7.386	0.501	21	7.079	0.458	19	7.178	0.544	18	7.306	0.359	18	8.300	6.500
SUSSOL	P530	mg/L	36.905	80.554	21	24.000	60.081	18	5.722	9.815	18	1.847	1.491	17	260.000	1.000
FLOW	P60	CFS	1523.778	1428.587	18	2064.444	2003.462	18	639.944	293.213	18	217.556	86.521	18	9320.000	107.000
NH3_N	P610	mg/L	0.018	0.011	19	0.059	0.156	17	0.013	0.006	14	0.013	0.005	17	0.660	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	12	0.010	0.000	12	0.010	0.000	12	0.009	0.002	11	0.010	0.003
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.001	13	0.000	0.000	10	0.000	0.000	9	0.003	0.000
NO3_N	P620	mg/L	0.133	0.059	4	0.080	0.029	5	0.037	0.006	3	0.044	0.009	5	0.210	0.030
NO2_NO3	P630	mg/L	0.149	0.104	15	0.107	0.024	12	0.053	0.011	11	0.071	0.029	12	0.150	0.030
TP_P	P665	mg/L	0.034	0.029	18	0.034	0.042	17	0.012	0.004	13	0.019	0.015	15	0.180	0.010K
OP_DIS	P671	mg/L	0.011	0.004	16	0.012	0.005	17	0.012	0.004	17	0.012	0.007	17	0.040	0.010K
COLOR	P80	Pt-Co	15.333	12.662	3	5.333	2.309	3	12.500	12.021	2	8.333	4.509	3	29.000	4.000
TURB	P82079	NTU	12.183	21.429	18	5.550	5.488	14	1.569	0.953	16	1.035	0.507	17	37.500	0.400
COND	P95	umhos	67.190	13.121	21	59.947	9.021	19	68.778	8.207	18	80.722	9.099	18	112.000	41.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 22A070 Name: HUMPTULIPS R NR HUMPTULIPS

Class: A Elevation: 145 River Mile: 23.60

Location:
LOCATED AT THE BRIDGE ON HIGHWAY 101, JUST SOUTH OF HUMPTULIPS

Water Years Sampled:

5	6											7												8												9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4				
X	X	X	X	X	X	X	X	X	X	X	X		X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.519	2.199	21	6.453	1.086	19	11.789	2.282	18	15.639	2.709	18	21.000	4.800
PRESS	P25	mmHg	765.310	6.822	21	763.879	6.373	19	762.778	5.223	18	764.167	5.205	18	779.000	740.000
OXYGEN	P300	mg/L	12.016	0.840	19	12.361	0.574	18	11.444	0.962	18	10.406	0.558	18	13.600	9.300
PCTSAT	P301	Percent	98.374	5.467	19	99.950	3.498	18	104.665	6.722	17	102.994	3.167	17	117.100	92.700
FC	P31616	#/100ml	29.450	51.905	20	4.444	6.289	18	8.111	23.106	18	12.765	13.165	17	140.000	1.000
PH	P400	units	7.367	0.222	21	7.200	0.281	19	7.478	0.351	18	7.456	0.333	18	7.900	6.500
SUSSOL	P530	mg/L	15.905	24.831	21	26.778	68.144	18	2.471	1.625	17	1.635	1.066	17	290.000	0.800
FLOW	P60	CFS	1923.611	1595.370	18	2686.250	3690.821	16	746.833	526.166	18	241.833	172.406	18	16100.000	86.000
NH3_N	P610	mg/L	0.014	0.007	19	0.022	0.020	17	0.012	0.004	14	0.011	0.003	17	0.070	0.008
NO2_DIS	P613	mg/L	0.009	0.003	10	0.010	0.000	9	0.010	0.000	10	0.009	0.002	11	0.010	0.003
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.000	0.000
NO3_N	P620	mg/L	0.215	0.060	4	0.134	0.043	5	0.033	0.012	3	0.024	0.005	5	0.300	0.020
NO2_NO3	P630	mg/L	0.222	0.066	14	0.168	0.046	12	0.058	0.023	11	0.053	0.072	12	0.320	0.017
TP_P	P665	mg/L	0.032	0.035	19	0.025	0.025	17	0.012	0.004	13	0.011	0.004	16	0.130	0.004
OP_DIS	P671	mg/L	0.010	0.002	17	0.010	0.001	17	0.010	0.000	17	0.010	0.001	18	0.010	0.004
COLOR	P80	Pt-Co	29.667	14.434	3	6.667	2.309	3	14.500	14.849	2	22.333	17.616	3	42.000	4.000
TURB	P82079	NTU	7.972	11.884	18	5.879	9.008	14	1.456	1.227	16	0.871	0.416	17	47.000	0.300
COND	P95	umhos	56.143	9.398	21	52.684	9.316	19	59.278	5.200	18	73.556	7.617	18	85.000	35.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 22C050 Name: CHEHALIS R NR MONTESANO

Class: A Elevation: 30 River Mile: 13.15

Location:
LOCATED AT THE BRIDGE ON STATE HIGHWAY 107 1/2 MILE SOUTH OF MONTESANO

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
												X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.814	2.568	21	6.826	1.276	19	13.772	2.690	18	17.011	2.216	18	20.100	3.800
PRESS	P25	mmHg	769.410	6.844	21	768.237	6.402	19	765.689	6.734	18	767.739	5.169	18	782.000	744.000
OXYGEN	P300	mg/L	10.979	1.140	19	11.311	0.597	18	9.883	0.969	18	8.978	0.415	18	13.000	8.200
PCTSAT	P301	Percent	89.858	6.906	19	91.856	3.411	18	93.906	6.671	17	91.271	4.669	17	119.400	75.900
FC	P31616	#/100ml	268.947	215.783	19	118.611	105.614	18	100.389	142.614	18	95.059	68.156	17	790.000	8.000
PH	P400	units	7.257	0.218	21	7.147	0.225	19	7.378	0.290	18	7.367	0.252	18	8.000	6.700
SUSSOL	P530	mg/L	26.190	35.656	21	37.000	62.921	18	6.611	7.570	18	5.663	3.937	16	250.000	1.000
FLOW	P60	CFS	5046.667	3454.306	3	21770.000	18144.082	3	3873.333	2569.325	3	1293.333	215.019	3	0.000	0.000
NH3_N	P610	mg/L	0.032	0.019	19	0.037	0.031	17	0.018	0.007	14	0.015	0.005	17	0.150	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	11	0.010	0.000	9	0.010	0.000	10	0.010	0.001	12	0.010	0.005
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.000	0.000
NO3_N	P620	mg/L	0.640	0.165	4	0.558	0.196	5	0.237	0.035	3	0.222	0.071	5	0.810	0.010K
NO2_NO3	P630	mg/L	0.632	0.201	15	0.692	0.107	12	0.385	0.099	11	0.264	0.063	12	0.930	0.170
TP_P	P665	mg/L	0.055	0.039	19	0.054	0.033	17	0.027	0.011	13	0.033	0.007	16	0.410	0.010K
OP_DIS	P671	mg/L	0.016	0.005	16	0.013	0.005	17	0.014	0.005	17	0.014	0.005	18	0.020	0.010K
COLOR	P80	Pt-Co	54.333	11.150	3	39.333	17.156	3	21.000	5.657	2	22.333	8.327	3	67.000	13.000
TURB	P82079	NTU	8.822	12.168	18	8.150	8.678	14	2.250	1.319	16	1.641	0.748	17	47.500	1.000K
COND	P95	umhos	87.238	61.383	21	64.737	9.637	19	81.889	7.169	18	154.056	211.624	18	1000.000	40.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 22G070 Name: SATSOP R NR SATSOP

Class: A Elevation: 40 River Mile: 2.70

Location:
LOCATED AT THE BRIDGE ON OLD US HIGHWAY 12, ONE MILE WEST OF SATSOP

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X X X X X X       X   X X X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.661	2.090	18	6.511	0.936	18	11.561	1.938	18	14.100	1.873	18	17.900	4.900
PRESS	P25	mmHg	768.900	7.177	18	756.983	48.449	18	764.706	7.431	18	767.544	5.192	18	781.000	741.900
OXYGEN	P300	mg/L	11.775	0.769	16	12.059	0.570	17	11.450	0.958	18	10.411	0.554	18	13.600	9.600
PCTSAT	P301	Percent	96.913	4.364	16	99.053	8.086	17	104.206	6.651	17	99.476	4.690	17	119.700	88.800
FC	P31616	#/100ml	37.941	63.457	17	11.222	11.604	18	16.294	26.948	17	28.059	25.735	17	260.000	1.000
PH	P400	units	7.356	0.176	18	7.133	0.268	18	7.500	0.230	18	7.522	0.354	18	8.200	6.600
SUSSOL	P530	mg/L	33.778	51.152	18	42.556	111.078	18	4.111	2.763	18	2.353	3.904	17	460.000	1.000
FLOW	P60	CFS	2888.167	2640.801	18	4000.556	4030.277	18	989.278	475.119	18	338.556	165.823	18	18500.000	190.000
NH3_N	P610	mg/L	0.016	0.009	16	0.026	0.027	17	0.013	0.006	14	0.011	0.003	17	0.100	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	8	0.010	0.000	9	0.010	0.000	10	0.009	0.002	11	0.010	0.003
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.000	0.000
NO3_N	P620	mg/L	0.423	0.135	4	0.270	0.070	5	0.070	0.010	3	0.092	0.013	5	0.610	0.050
NO2_NO3	P630	mg/L	0.344	0.123	12	0.314	0.074	12	0.132	0.033	11	0.129	0.088	12	0.470	0.050
TP_P	P665	mg/L	0.042	0.038	16	0.035	0.034	17	0.012	0.004	13	0.011	0.005	15	0.110	0.010K
OP_DIS	P671	mg/L	0.010	0.003	14	0.010	0.000	17	0.011	0.003	17	0.010	0.001	18	0.020	0.010K
COLOR	P80	Pt-Co	29.333	7.506	3	12.667	4.509	3	16.500	12.021	2	12.667	4.509	3	38.000	8.000
TURB	P82079	NTU	9.120	13.708	15	5.421	10.416	14	1.275	0.772	16	1.194	1.019	17	42.000	0.400
COND	P95	umhos	60.111	9.615	18	50.222	9.632	18	64.389	4.474	18	76.500	5.721	18	86.000	35.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 23A070 Name: CHEHALIS R @ PORTER

Class: A Elevation: 40 River Mile: 33.30

Location:
LOCATED AT THE BRIDGE ON THE SIDE ROAD OFF US HIGHWAY 12 ON THE RIGHT
WHEN ENTERING PORTER FROM THE NORTHWEST

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X X X X X   X X X X X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.776	2.926	21	6.937	1.415	19	13.939	3.038	18	17.456	2.689	18	21.000	3.200
PRESS	P25	mmHg	768.943	6.856	21	767.947	6.398	19	766.189	4.799	18	767.828	4.863	18	782.000	744.000
OXYGEN	P300	mg/L	10.974	1.039	19	11.100	0.775	18	9.972	1.001	18	9.111	0.689	18	12.900	7.900
PCTSAT	P301	Percent	89.721	5.373	19	90.456	5.573	18	95.276	5.664	17	92.471	6.891	17	108.500	76.900
FC	P31616	#/100ml	154.000	305.972	19	112.167	133.011	18	39.556	50.846	18	24.235	12.448	17	1300.000	4.000
COD	P340	mg/L	11.385	4.718	13	7.929	3.174	14	9.786	3.286	14	9.385	3.203	13	30.000	4.000K
PH	P400	units	7.395	0.282	21	7.105	0.317	19	7.367	0.211	18	7.489	0.287	18	8.100	6.600
SUSSOL	P530	mg/L	14.571	21.325	21	24.722	32.329	18	8.056	9.327	18	3.671	2.229	17	130.000	1.000
FLOW	P60	CFS	5729.056	9595.510	18	7907.222	4918.613	18	1556.111	786.441	18	407.222	101.425	18	20600.000	219.000
NH3_N	P610	mg/L	0.031	0.013	19	0.055	0.049	17	0.021	0.011	14	0.020	0.010	17	0.220	0.010K
NO2_DIS	P613	mg/L	0.010	0.001	11	0.010	0.000	9	0.010	0.000	10	0.010	0.001	12	0.010	0.006
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.750	0.136	4	0.734	0.226	5	0.417	0.087	3	0.348	0.063	5	1.100	0.220
NO2_NO3	P630	mg/L	0.893	0.401	15	0.850	0.125	12	0.549	0.102	11	0.419	0.117	12	2.130	0.150
TP_P	P665	mg/L	0.081	0.040	19	0.056	0.028	17	0.042	0.011	12	0.058	0.017	16	0.190	0.020
OP_DIS	P671	mg/L	0.035	0.017	17	0.016	0.006	17	0.019	0.006	16	0.031	0.013	18	0.070	0.010K
COLOR	P80	Pt-Co	64.000	6.557	3	39.000	17.776	3	27.500	9.192	2	32.333	20.033	3	71.000	17.000
TURB	P82079	NTU	6.856	13.601	18	7.900	7.442	14	2.719	1.845	16	1.453	0.568	17	60.500	1.000K
COND	P95	umhos	92.429	18.132	21	72.842	8.700	19	90.444	10.037	18	112.167	8.155	18	127.000	51.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 23A120 Name: CHEHALIS R @ CENTRALIA

Class: A Elevation: 170 River Mile: 67.50

Location:
LOCATED AT THE BRIDGE ON MELLEN STREET, IMMEDIATELY WEST OF CENTRALIA,
6 MILE ABOVE THE CONFLUENCE WITH THE SKOOKUMCHUCK RIVER

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                        X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.511	2.919	18	6.467	1.526	18	14.894	3.547	18	19.172	2.482	18	22.700	3.200
PRESS	P25	mmHg	762.472	8.018	18	760.406	7.065	18	760.150	5.849	18	758.233	7.148	18	777.000	738.000
OXYGEN	P300	mg/L	10.829	1.441	17	11.571	0.714	17	9.483	1.131	18	7.583	1.595	18	13.000	3.600
PCTSAT	P301	Percent	89.582	7.656	17	94.159	4.184	17	92.653	6.745	17	84.041	16.375	17	127.300	70.100
FC	P31616	#/100ml	130.294	139.836	17	101.944	99.446	18	77.278	203.887	18	19.833	19.998	18	880.000	2.000
PH	P400	units	7.422	0.383	18	7.250	0.357	18	7.378	0.362	18	7.567	0.399	18	8.700	6.300
SUSSOL	P530	mg/L	19.556	25.883	18	21.529	16.700	17	5.059	4.562	17	3.063	1.731	16	89.000	1.000
FLOW	P60	CFS	2751.722	3800.136	18	4883.333	4923.718	18	739.833	511.853	18	139.611	73.838	18	19500.000	72.000
NH3_N	P610	mg/L	0.034	0.016	16	0.036	0.024	17	0.051	0.019	13	0.095	0.129	17	0.110	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	8	0.010	0.000	8	0.010	0.000	10	0.012	0.003	12	0.017	0.010K
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.013	0.005	6	0.020	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.001	0.002	9	0.007	0.000
NO3_N	P620	mg/L	0.715	0.151	4	0.740	0.129	5	0.173	0.081	3	0.132	0.033	5	0.940	0.080
NO2_NO3	P630	mg/L	0.627	0.364	12	0.749	0.138	12	0.304	0.123	11	0.191	0.079	12	1.070	0.040
TP_P	P665	mg/L	0.069	0.038	16	0.057	0.029	17	0.050	0.022	11	0.153	0.066	16	0.200	0.020
OP_DIS	P671	mg/L	0.026	0.028	13	0.013	0.005	17	0.027	0.016	15	0.111	0.064	18	0.150	0.010K
COLOR	P80	Pt-Co	67.000	23.259	3	34.667	6.658	3	25.000	0.000	3	63.000	19.313	3	92.000	25.000
TURB	P82079	NTU	5.707	8.710	14	8.920	8.162	15	2.833	2.053	18	1.561	0.711	18	41.000	1.000K
COND	P95	umhos	84.500	22.737	18	66.222	9.903	18	84.889	17.865	18	129.111	12.607	18	155.000	32.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 23A160 Name: CHEHALIS R @ DRYAD

Class: A Elevation: 288 River Mile: 101.70

Location:
LOCATED AT THE BRIDGE LEAVING DRYAD ON THE SOUTHEAST AND APPROXIMATELY
1.5 MILES EAST OF DOTY

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X                         X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.238	2.622	21	6.778	1.289	18	13.472	3.075	18	17.650	2.980	18	22.500	3.500
PRESS	P25	mmHg	759.757	7.264	21	758.989	6.779	18	757.400	5.525	18	757.122	4.737	18	775.000	736.000
OXYGEN	P300	mg/L	12.100	1.051	19	12.418	0.623	17	11.522	1.128	18	10.189	0.600	18	14.000	9.100
PCTSAT	P301	Percent	99.568	4.788	19	101.935	3.846	17	110.200	7.241	17	105.918	5.143	17	125.100	86.800
FC	P31616	#/100ml	56.500	76.769	20	44.765	57.671	17	26.278	33.863	18	47.941	86.569	17	380.000	1.000
PH	P400	units	7.386	0.267	21	7.150	0.294	18	7.789	0.504	18	7.644	0.358	18	8.500	6.400
SUSSOL	P530	mg/L	8.905	18.569	21	16.125	36.173	16	3.118	1.453	17	2.824	1.912	17	150.000	1.000
FLOW	P60	CFS	951.611	826.438	18	1710.333	1560.772	15	310.118	224.146	17	60.522	26.779	18	6100.000	17.000
NH3_N	P610	mg/L	0.012	0.005	19	0.021	0.019	17	0.014	0.009	14	0.011	0.003	17	0.070	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	10	0.010	0.000	9	0.010	0.000	10	0.009	0.002	11	0.010	0.003
NO2_N	P615	mg/L	0.010	0.000	6	0.028	0.040	5	0.010	0.000	5	0.010	0.000	6	0.100	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.555	0.161	4	0.490	0.141	5	0.127	0.021	3	0.042	0.025	5	0.720	0.020
NO2_NO3	P630	mg/L	0.476	0.277	15	0.516	0.110	12	0.209	0.080	11	0.071	0.051	12	0.870	0.010K
TP_P	P665	mg/L	0.029	0.028	19	0.037	0.031	17	0.017	0.007	13	0.021	0.005	16	0.130	0.010K
OP_DIS	P671	mg/L	0.010	0.003	17	0.010	0.001	17	0.011	0.002	17	0.010	0.002	18	0.020	0.008
COLOR	P80	Pt-Co	46.000	33.719	3	18.333	2.309	3	25.000	5.657	2	58.667	7.506	3	83.000	17.000
TURB	P82079	NTU	2.811	4.741	18	5.307	10.634	14	1.456	0.907	16	1.165	0.234	17	47.000	1.000K
COND	P95	umhos	68.714	9.850	21	60.333	7.063	18	69.706	7.139	17	84.833	5.823	18	94.000	50.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 23E070 Name: BLACK RIVER @ MOON ROAD BRIDGE Class: A Elevation: 90 River Mile: 7.10

Location:
LOCATED AT THE BRIDGE 6.7 MILES WEST OF I-5 (WEST OF ROCHESTER) AND .6 MILES NORTH ON MOON ROAD.

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.867	1.960	3	5.800	2.193	3	13.000	1.308	3	16.667	2.093	6	19.700	5.800
CU	P1042	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	5.000	5.000
ZN	P1092	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	5.000	5.000
ZN	P1094	ug/L	5.333	0.577	3	6.333	4.041	3	0.000	0.000	0	6.500	4.359	4	0.000	0.000
CD	P1113	ug/L	0.000	0.000	0	0.110	0.017	3	0.100	0.000	3	0.110	0.020	4	0.100	0.100
PB	P1114	ug/L	0.000	0.000	0	1.150	0.212	2	1.000	0.000	2	1.000	0.000	4	1.000	1.000
CR	P1118	ug/L	0.000	0.000	0	0.663	0.006	3	0.635	0.007	2	0.805	0.813	4	0.600	0.600
CU	P1119	ug/L	0.000	0.000	0	2.767	1.328	3	3.000	0.000	3	3.500	1.000	4	0.000	0.000
PRESS	P25	mmHg	763.600	5.462	3	766.133	4.508	3	765.800	4.571	3	764.467	4.230	6	769.900	760.200
OXYGEN	P300	mg/L	8.167	1.818	3	8.900	0.141	2	8.167	0.651	3	7.250	0.288	6	10.200	6.700
PCTSAT	P301	Percent	67.767	11.944	3	72.900	2.263	2	76.400	4.194	3	73.483	3.772	6	81.300	58.700
FC	P31616	#/100ml	0.000	0.000	0	581.000	590.866	3	27.667	16.653	3	108.167	201.811	6	540.000	27.000
PH	P400	units	7.100	0.529	3	7.267	0.513	3	7.000	0.200	3	7.300	0.126	6	7.500	6.500
SUSSOL	P530	mg/L	5.333	3.215	3	3.000	2.000	3	5.333	3.215	3	1.567	0.898	6	9.000	1.000
NH3_N	P610	mg/L	0.077	0.036	3	0.085	0.051	3	0.024	0.017	3	0.017	0.007	6	0.080	0.017
NO2_DIS	P613	mg/L	0.026	0.022	2	0.011	0.001	3	0.010	0.000	3	0.009	0.003	6	0.010	0.003
NO2_NO3	P630	mg/L	0.809	0.078	3	0.753	0.206	3	0.738	0.057	3	0.762	0.150	6	0.910	0.540
TP_P	P665	mg/L	0.113	0.048	3	0.080	0.034	3	0.035	0.007	2	0.034	0.017	6	0.090	0.003
OP_DIS	P671	mg/L	0.069	0.055	2	0.043	0.015	3	0.019	0.002	2	0.018	0.009	6	0.030	0.010K
HG	P71901	ug/L	0.058	0.031	3	0.040	0.000	3	0.160	0.208	3	0.024	0.020	3	0.000	0.000
TURB	P82079	NTU	7.400	7.920	2	2.033	0.252	3	2.467	0.321	3	1.083	0.204	6	13.000	1.000K
HARD	P900	mg/L	26.500	16.263	2	26.667	3.215	3	33.333	4.041	3	43.400	4.393	5	41.000	15.000
COND	P95	umhos	83.000	30.790	3	72.333	7.506	3	91.000	12.000	3	112.333	6.861	6	125.000	57.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 24B090 Name: WILLAPA R NR WILLAPA

Class: A Elevation: 50 River Mile: 17.70

Location:
LOCATED AT THE BRIDGE ON BULLARD ROAD ABOUT ONE MILE NORTH OF STATE HIGHWAY 6 EAST OF RAYMOND

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
            X X   X X X X X X   X X X X X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.078	2.928	18	7.553	1.308	19	13.594	3.078	18	18.381	3.254	16	24.000	4.400
PRESS	P25	mmHg	768.767	6.954	18	766.737	6.557	19	766.194	4.462	18	766.131	5.149	16	782.000	745.000
OXYGEN	P300	mg/L	11.700	1.028	16	12.039	0.689	18	11.289	1.102	18	9.844	0.651	16	13.700	8.400
PCTSAT	P301	Percent	96.238	5.223	16	99.661	4.443	18	107.176	7.034	17	102.567	8.617	15	120.500	84.700
FC	P31616	#/100ml	129.235	212.920	17	264.889	933.495	18	105.438	72.444	16	277.733	429.122	15	4000.000	1.000
PH	P400	units	7.339	0.273	18	7.268	0.340	19	7.489	0.371	18	7.463	0.330	16	8.000	6.700
SUSSOL	P530	mg/L	7.722	8.910	18	15.588	30.218	17	30.611	107.435	18	4.133	2.850	15	460.000	1.000
FLOW	P60	CFS	620.520	674.467	15	1153.667	1041.653	18	257.433	176.432	18	43.069	22.631	16	4240.000	22.100
NH3_N	P610	mg/L	0.023	0.010	16	0.034	0.027	17	0.018	0.011	14	0.022	0.005	14	0.080	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	8	0.010	0.000	9	0.010	0.000	10	0.010	0.000	10	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.833	0.239	4	0.846	0.237	5	0.320	0.075	3	0.244	0.032	5	1.200	0.200
NO2_NO3	P630	mg/L	0.840	0.390	12	0.891	0.164	12	0.404	0.121	11	0.249	0.050	10	1.170	0.170
TP_P	P665	mg/L	0.039	0.028	16	0.035	0.031	17	0.021	0.011	13	0.030	0.016	13	0.120	0.010K
OP_DIS	P671	mg/L	0.011	0.004	15	0.010	0.001	17	0.010	0.000	17	0.010	0.000	16	0.020	0.010K
COLOR	P80	Pt-Co	52.667	30.436	3	19.667	2.309	3	25.000	0.000	2	47.667	33.858	3	87.000	17.000
TURB	P82079	NTU	2.247	1.356	15	4.193	5.830	14	1.600	1.000	16	1.607	0.453	15	50.000	1.000K
COND	P95	umhos	69.778	7.488	18	59.158	5.398	19	66.000	6.834	18	80.875	8.884	16	87.000	49.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 24B130 Name: WILLAPA R @ LEBAM

Class: A Elevation: 240 River Mile: 34.00

Location:
LOCATED AT THE BRIDGE ON STATE HIGHWAY 6, .4 MILES WEST OF LEBAM, .1 MILE UPSTREAM FROM THE USGS GAGING STATION

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X               X                   X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.865	2.546	20	7.881	1.325	16	12.547	2.396	15	15.893	2.074	15	19.600	4.600
PRESS	P25	mmHg	764.050	7.053	20	763.463	5.943	16	761.287	4.924	15	761.187	5.254	15	778.000	740.000
OXYGEN	P300	mg/L	11.372	1.054	18	11.825	0.707	16	11.067	1.139	15	9.380	0.760	15	13.400	8.200
PCTSAT	P301	Percent	93.778	5.344	18	98.725	4.520	16	103.557	7.450	14	94.121	6.242	14	119.700	78.300
FC	P31616	#/100ml	285.800	410.372	20	264.143	556.230	14	875.333	1594.198	15	985.385	1162.107	13	6500.000	7.000
PH	P400	units	7.240	0.258	20	7.088	0.280	16	7.380	0.373	15	7.420	0.204	15	7.800	6.500
SUSSOL	P530	mg/L	9.600	14.247	20	25.786	40.535	14	4.000	3.024	15	3.536	2.042	14	270.000	1.000
FLOW	P60	CFS	195.971	203.154	17	369.286	278.687	14	58.187	33.275	15	10.307	4.548	15	1530.000	3.500
NH3_N	P610	mg/L	0.021	0.011	18	0.041	0.035	14	0.018	0.014	11	0.020	0.009	14	0.110	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	10	0.010	0.000	6	0.010	0.000	7	0.010	0.001	9	0.010	0.007
NO2_N	P615	mg/L	0.010	0.000	6	0.028	0.040	5	0.010	0.000	5	0.010	0.000	6	0.100	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.000	0.000
NO3_N	P620	mg/L	0.985	0.327	4	0.874	0.216	5	0.317	0.051	3	0.320	0.073	5	1.400	0.240
NO2_NO3	P630	mg/L	0.912	0.465	14	0.852	0.203	9	0.393	0.066	8	0.311	0.071	9	1.360	0.187
TP_P	P665	mg/L	0.041	0.027	18	0.047	0.036	14	0.027	0.009	10	0.042	0.009	13	0.120	0.010K
OP_DIS	P671	mg/L	0.013	0.006	17	0.011	0.003	14	0.011	0.004	14	0.014	0.005	15	0.030	0.010K
COLOR	P80	Pt-Co	69.000	62.746	3	19.667	2.309	3	31.500	3.536	2	57.667	17.156	3	140.000	17.000
TURB	P82079	NTU	2.871	2.746	17	5.158	5.638	12	1.731	1.148	13	1.586	0.449	14	130.000	1.000K
COND	P95	umhos	68.950	8.929	20	57.375	3.879	16	63.733	5.216	15	74.467	4.240	15	87.000	53.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 26B070 Name: COWLITZ R @ KELSO

Class: A Elevation: 5 River Mile: 4.90

Location:
LOCATED IN KELSO AT THE ALLEN (MAIN) STREET BRIDGE CROSSING THE COWLITZ

Water Years Sampled:

```
5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X         X X   X     X X X   X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.367	1.953	21	6.258	1.372	19	10.956	2.001	18	13.917	1.886	18	17.600	4.400
PRESS	P25	mmHg	768.843	7.581	21	767.153	7.158	19	766.711	5.631	18	765.767	6.052	18	783.000	747.000
OXYGEN	P300	mg/L	11.595	0.731	19	11.850	0.617	18	11.211	0.697	18	10.283	0.434	18	13.200	9.000
PCTSAT	P301	Percent	97.032	4.783	19	95.028	4.303	18	100.076	4.725	17	98.241	2.835	17	110.800	81.600
FC	P31616	#/100ml	36.211	41.243	19	39.500	53.387	18	18.722	14.385	18	29.333	36.353	18	450.000	2.000
COD	P340	mg/L	8.385	4.788	13	8.600	5.396	15	7.357	2.872	14	7.308	2.529	13	41.000	4.000K
PH	P400	units	7.429	0.278	21	7.242	0.320	19	7.511	0.444	18	7.539	0.285	18	8.600	6.400
SUSSOL	P530	mg/L	109.524	135.688	21	180.778	284.429	18	63.500	68.126	18	14.859	15.280	17	2500.000	2.000
FLOW	P60	CFS	11733.636	8772.332	11	10493.571	3950.228	14	8281.667	2098.194	6	5786.667	4086.286	3	22500.000	950.000
NH3_N	P610	mg/L	0.017	0.009	19	0.032	0.023	17	0.017	0.008	14	0.012	0.004	17	0.090	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	11	0.010	0.000	9	0.010	0.000	10	0.009	0.002	12	0.010	0.003
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.000	0.000
NO3_N	P620	mg/L	0.188	0.049	4	0.332	0.090	5	0.070	0.020	3	0.038	0.015	5	0.490	0.020
NO2_NO3	P630	mg/L	0.159	0.099	15	0.290	0.081	12	0.110	0.038	11	0.047	0.013	12	0.480	0.020
TP_P	P665	mg/L	0.074	0.066	19	0.106	0.092	17	0.038	0.034	13	0.016	0.008	16	0.340	0.007
OP_DIS	P671	mg/L	0.010	0.001	17	0.010	0.000	17	0.011	0.002	17	0.010	0.001	18	0.020	0.005
COLOR	P80	Pt-Co	47.333	21.502	3	36.333	10.599	3	14.333	12.220	3	36.333	13.429	3	71.000	1.000
TURB	P82079	NTU	16.476	18.324	17	22.633	13.213	15	12.822	9.605	18	3.750	4.749	18	1210.000	1.000K
COND	P95	umhos	104.143	23.480	21	95.105	11.752	19	116.389	20.629	18	141.389	20.289	18	182.000	60.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 26C070 Name: COWEEMAN R @ KELSO

Class: A Elevation: 20 River Mile: 2.70

Location:
LOCATED AT THE OLD HIGHWAY 99 BRIDGE CROSSING THE COWEMAN RIVER AT KELSO

Water Years Sampled:

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5 6                 7                 8                 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
      X X X X X       X X     X               X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.857	2.874	21	5.958	1.669	19	13.383	3.666	18	18.056	2.881	18	22.600	2.100
PRESS	P25	mmHg	768.929	7.479	21	766.989	7.095	19	766.444	5.626	18	763.961	8.179	18	783.000	746.000
OXYGEN	P300	mg/L	11.905	1.167	19	12.156	0.743	18	10.006	1.188	18	8.539	0.779	18	14.200	6.700
PCTSAT	P301	Percent	95.595	4.796	19	96.761	3.621	18	94.047	6.442	17	89.312	7.182	17	107.600	71.300
FC	P31616	#/100ml	55.650	68.577	20	18.176	13.459	17	81.944	92.709	18	102.556	70.341	18	320.000	1.000
PH	P400	units	7.548	0.450	21	7.216	0.330	19	7.367	0.252	18	7.522	0.237	18	8.800	6.500
SUSSOL	P530	mg/L	10.048	9.025	21	14.667	15.181	18	5.000	3.087	18	4.129	2.537	17	80.000	1.000
FLOW	P60	CFS	1225.000	1378.858	2	1011.667	251.214	3	297.667	41.645	3	64.333	22.279	3	2200.000	250.000
NH3_N	P610	mg/L	0.016	0.008	19	0.028	0.025	17	0.026	0.015	14	0.033	0.011	17	0.100	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	11	0.010	0.000	9	0.010	0.000	10	0.010	0.001	12	0.010	0.007
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.001	9	0.003	0.000
NO3_N	P620	mg/L	0.753	0.084	4	0.924	0.288	5	0.283	0.025	3	0.054	0.038	5	1.400	0.010K
NO2_NO3	P630	mg/L	0.756	0.381	15	0.832	0.126	11	0.417	0.155	11	0.113	0.050	12	1.130	0.030
TP_P	P665	mg/L	0.028	0.026	19	0.032	0.020	17	0.023	0.012	13	0.021	0.005	16	0.100	0.010K
OP_DIS	P671	mg/L	0.010	0.003	17	0.010	0.001	17	0.010	0.000	17	0.010	0.000	18	0.020	0.009
COLOR	P80	Pt-Co	44.667	23.714	3	21.000	6.928	3	25.333	12.503	3	59.000	17.000	3	76.000	13.000
TURB	P82079	NTU	3.094	1.860	17	4.593	2.356	15	2.617	1.306	18	2.224	2.098	17	55.000	1.000K
COND	P95	umhos	65.667	16.515	21	53.895	6.385	19	66.222	9.897	18	94.556	10.907	18	122.000	43.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 26D070 Name: TOUTLE R NR CASTLE ROCK

Class: A Elevation: 47 River Mile: 1.00

Location:
LOCATED AT THE OLD HIGHWAY 99 BRIDGE, .5 MILE UPSTREAM FROM THE I-5
BRIDGE OFF PARK ROAD EXIT (EXIT 52)

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X X   X X   X     X     X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.086	2.869	21	6.647	1.939	19	14.083	3.550	18	18.956	3.163	18	23.300	2.600
PRESS	P25	mmHg	766.090	7.581	21	763.895	7.267	19	763.278	5.607	18	762.011	7.065	18	780.000	742.000
OXYGEN	P300	mg/L	12.325	1.102	20	12.339	0.870	18	10.706	0.887	18	9.806	0.612	18	14.500	7.800
PCTSAT	P301	Percent	100.550	5.379	20	100.406	4.811	18	102.665	5.987	17	104.406	5.133	17	117.100	69.600
FC	P31616	#/100ml	25.833	27.586	18	30.611	48.251	18	26.278	50.806	18	12.667	12.884	18	1200.000	1.000
PH	P400	units	7.533	0.267	21	7.232	0.362	19	7.628	0.297	18	7.933	0.217	18	8.300	6.700
SUSSOL	P530	mg/L	375.095	415.467	21	709.667	1339.403	18	316.667	381.679	18	46.882	55.932	17	5800.000	2.000
FLOW	P60	CFS	2011.400	1805.393	15	2872.500	2186.957	16	1545.176	708.705	17	407.500	90.012	16	10100.000	251.000
NH3_N	P610	mg/L	0.033	0.017	18	0.037	0.025	17	0.023	0.012	13	0.013	0.007	17	0.110	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	11	0.010	0.000	9	0.010	0.000	10	0.009	0.002	12	0.010	0.003
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.001	9	0.001	0.000
NO3_N	P620	mg/L	0.165	0.029	4	0.226	0.098	5	0.070	0.036	3	0.012	0.004	5	0.380	0.010K
NO2_NO3	P630	mg/L	0.132	0.082	15	0.184	0.069	12	0.060	0.046	11	0.058	0.161	12	0.570	0.010K
TP_P	P665	mg/L	0.145	0.101	19	0.180	0.136	17	0.157	0.263	13	0.043	0.037	15	1.000	0.010K
OP_DIS	P671	mg/L	0.011	0.004	16	0.010	0.001	17	0.010	0.000	17	0.010	0.000	18	0.020	0.010K
COLOR	P80	Pt-Co	118.667	19.630	3	82.333	8.505	3	11.667	10.066	3	96.000	91.307	3	200.000	1.000
TURB	P82079	NTU	50.047	57.210	17	66.333	64.207	15	46.628	35.431	18	12.378	12.835	18	3100.000	1.300
COND	P95	umhos	322.476	169.615	21	195.105	50.936	19	331.333	102.256	18	666.889	112.418	18	920.000	130.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 27B070 Name: KALAMA R NR KALAMA

Class: A Elevation: 40 River Mile: 2.80

Location:
LOCATED ON THE KALAMA RIVER 2.3 MILES NE OF KALAMA ON KALAMA RIVER ROAD

Water Years Sampled:

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5 6                 7                 8                 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X X X X   X X     X X     X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.929	2.249	21	6.189	1.306	19	11.756	2.737	18	15.044	2.419	18	18.500	3.400
PRESS	P25	mmHg	767.624	7.264	21	765.147	7.036	19	764.622	5.520	18	763.772	6.714	18	781.000	744.000
OXYGEN	P300	mg/L	12.560	0.829	20	12.722	0.625	18	11.833	0.865	18	10.550	0.436	18	14.300	9.400
PCTSAT	P301	Percent	102.035	5.055	20	102.117	3.791	18	107.735	6.369	17	103.271	5.297	17	122.300	91.600
FC	P31616	#/100ml	20.700	36.994	20	6.056	5.093	18	7.778	8.349	18	23.944	40.158	18	175.000	1.000
COD	P340	mg/L	17.333	31.052	9	5.778	2.587	9	5.444	1.740	9	16.100	30.278	10	102.000	4.000K
PH	P400	units	7.443	0.334	21	7.211	0.425	19	7.650	0.446	18	7.850	0.397	18	8.800	6.400
SUSSOL	P530	mg/L	8.190	7.580	21	12.444	19.245	18	3.611	2.304	18	3.118	2.667	17	80.000	1.000
FLOW	P60	CFS	876.667	254.231	3	2233.333	1709.776	3	837.500	493.854	4	186.667	23.094	3	4700.000	160.000
NH3_N	P610	mg/L	0.018	0.011	19	0.017	0.017	17	0.015	0.006	14	0.019	0.016	17	0.070	0.010K
NO2_DIS	P613	mg/L	0.010	0.002	11	0.010	0.000	9	0.010	0.000	10	0.009	0.002	12	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.001	9	0.002	0.000
NO3_N	P620	mg/L	0.263	0.057	4	0.292	0.153	5	0.067	0.015	3	0.028	0.008	5	0.540	0.020
NO2_NO3	P630	mg/L	0.307	0.159	15	0.396	0.175	12	0.106	0.051	11	0.050	0.018	12	0.890	0.030
TP_P	P665	mg/L	0.029	0.026	19	0.026	0.021	16	0.016	0.008	13	0.047	0.102	16	0.430	0.010K
OP_DIS	P671	mg/L	0.011	0.003	17	0.010	0.000	16	0.010	0.000	17	0.024	0.054	18	0.240	0.010K
COLOR	P80	Pt-Co	18.000	13.229	3	15.333	8.737	3	5.667	4.041	3	31.000	8.888	3	38.000	1.000
TURB	P82079	NTU	2.206	1.601	17	3.033	2.812	15	1.278	0.549	18	1.011	0.295	18	22.000	0.700
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000
COND	P95	umhos	49.000	8.888	21	42.421	5.430	19	49.722	6.027	18	71.778	9.397	18	84.000	32.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 27D090 Name: EF LEWIS R NR DOLLAR CORNER

Class: A Elevation: 68 River Mile: 10.20

Location:
LOCATED AT THE LEWIS RIVER BOTTOM ROAD BRIDGE, APPROXIMATELY THREE MILES NORTHWEST OF BATTLE GROUND, AND APPROXIMATELY 2.75 MILES NORTH AND EAST OF DOLLAR CORNER PAST KING CORNER, .6 MILE ABOVE MILL CREEK AT DAYBREAK COUNTY PARK

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X X X X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.967	2.582	21	6.284	1.562	19	12.661	3.624	18	17.833	3.025	18	22.700	1.900
PRESS	P25	mmHg	766.319	6.957	21	764.426	7.078	19	763.433	5.515	18	762.450	6.046	18	779.000	743.000
OXYGEN	P300	mg/L	12.465	0.918	20	12.628	0.704	18	11.100	0.986	18	10.061	0.639	18	14.400	8.300
PCTSAT	P301	Percent	101.370	4.708	20	101.700	3.751	18	102.947	5.427	17	104.476	5.610	17	115.700	92.500
FC	P31616	#/100ml	25.250	36.265	20	11.389	15.236	18	11.778	11.175	18	29.722	43.048	18	140.000	1.000
PH	P400	units	7.519	0.401	21	7.284	0.382	19	7.367	0.427	18	7.700	0.343	18	8.600	6.300
SUSSOL	P530	mg/L	5.667	6.621	21	5.444	6.644	18	3.056	2.485	18	2.765	2.611	17	52.000	1.000
FLOW	P60	CFS	732.500	623.326	8	2045.778	1858.684	9	585.286	358.350	7	74.000	20.510	4	6300.000	50.000
NH3_N	P610	mg/L	0.011	0.003	19	0.020	0.019	17	0.011	0.003	14	0.011	0.003	17	0.070	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	11	0.010	0.000	9	0.010	0.000	10	0.010	0.001	12	0.010	0.005
NO2_N	P615	mg/L	0.010	0.000	6	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.000	0.000	10	0.000	0.000	9	0.001	0.000
NO3_N	P620	mg/L	0.428	0.056	4	0.358	0.073	5	0.150	0.026	3	0.078	0.019	5	0.480	0.050
NO2_NO3	P630	mg/L	0.459	0.179	15	0.395	0.098	12	0.207	0.048	11	0.126	0.035	12	0.720	0.020
TP_P	P665	mg/L	0.020	0.023	19	0.019	0.021	16	0.011	0.003	13	0.010	0.003	16	0.090	0.010K
OP_DIS	P671	mg/L	0.009	0.002	16	0.010	0.000	17	0.010	0.000	17	0.010	0.001	18	0.010	0.005
COLOR	P80	Pt-Co	22.333	17.616	3	9.667	2.887	3	12.000	10.149	3	28.000	8.888	3	42.000	1.000
TURB	P82079	NTU	1.400	0.476	17	1.893	1.020	15	1.206	0.389	18	0.911	0.211	18	40.000	0.500
COND	P95	umhos	43.952	13.105	21	35.368	7.190	19	41.722	7.119	18	67.389	10.522	18	81.000	25.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 31A070 Name: COLUMBIA R @ UMATILLA

Class: A Elevation: 240 River Mile: 290.50

Location:
LOCATED BELOW MCNARY DAM UNDER THE UMATILLA INTERSTATE BRIDGE

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                    X           X X X X X                     X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	11.100	4.207	4	3.500	1.838	5	10.500	2.961	3	18.833	2.281	3	8.200	1.600
ZN	P1094	ug/L	0.000	0.000	0	6.667	1.155	3	7.000	2.646	3	5.667	2.082	3	0.000	0.000
CD	P1113	ug/L	0.000	0.000	0	0.100	0.000	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PB	P1114	ug/L	0.000	0.000	0	1.000	0.000	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000
CR	P1118	ug/L	0.000	0.000	0	0.265	0.092	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000
CU	P1119	ug/L	0.000	0.000	0	2.000	0.000	3	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PRESS	P25	mmHg	762.625	4.243	4	754.500	11.481	4	754.567	6.731	3	754.433	6.313	3	764.500	763.500
OXYGEN	P300	mg/L	10.675	0.885	4	13.340	0.981	5	12.767	0.862	3	10.467	0.321	3	14.000	11.600
PCTSAT	P301	Percent	95.825	2.981	4	100.900	3.680	5	114.533	1.168	3	112.300	3.180	3	99.500	97.700
FC	P31616	#/100ml	157.000	181.097	4	6.000	4.583	3	5.000	2.646	3	95.000	160.222	3	190.000	190.000
PH	P400	units	7.950	0.332	4	7.640	0.152	5	8.333	0.252	3	8.067	0.666	3	7.700	7.500
SUSSOL	P530	mg/L	5.500	1.732	4	3.000	0.000	3	8.000	2.000	3	9.333	1.528	3	8.000	8.000
FLOW	P60	CFS	161000.000	76367.532	2	203333.333	26350.206	3	229666.667	60928.920	3	166166.667	70951.274	3	0.000	0.000
NH3_N	P610	mg/L	0.016	0.003	4	0.009	0.002	3	0.012	0.009	3	0.010	0.001	3	0.020	0.020
NO2_DIS	P613	mg/L	0.010	0.000	4	0.010	0.000	3	0.007	0.005	3	0.010	0.000	3	0.010	0.010K
NO2_NO3	P630	mg/L	0.181	0.119	4	0.198	0.039	3	0.130	0.030	3	0.022	0.021	3	0.180	0.180
TP_P	P665	mg/L	0.027	0.007	3	0.025	0.008	3	0.022	0.005	3	0.022	0.005	3	0.030	0.030
OP_DIS	P671	mg/L	0.022	0.017	4	0.018	0.011	3	0.008	0.003	3	0.010	0.000	3	0.020	0.020
HG	P71901	ug/L	0.000	0.000	0	0.040	0.000	3	0.053	0.023	3	0.181	0.129	3	0.000	0.000
TURB	P82079	NTU	3.425	2.396	4	1.700	0.436	3	3.300	1.539	3	2.867	0.802	3	6.900	6.900
HARD	P900	mg/L	67.667	9.866	3	73.000	1.000	3	64.000	6.083	3	58.333	5.686	3	61.000	61.000
COND	P95	umhos	161.000	12.028	4	177.600	30.762	5	150.000	15.000	3	132.667	7.371	3	168.000	152.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 32A070 Name: WALLA WALLA R NR TOUCHET

Class: B Elevation: 370 River Mile: 15.30

Location:
LOCATED AT A PRIVATE BRIDGE THREE RIVER MILES UPSTREAM FROM US HIGHWAY 12 BRIDGE NEAR REESE

Water Years Sampled:

5	6						7								8								9				
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
X	X	X	X	X	X	X	X						X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	9.362	5.214	21	4.620	2.964	20	14.150	4.293	18	23.678	2.533	18	28.400	0.000
PRESS	P25	mmHg	757.971	5.781	21	754.979	8.720	19	754.561	5.525	18	751.659	5.490	17	774.000	737.000
OXYGEN	P300	mg/L	12.667	1.105	21	12.547	1.308	19	10.944	1.210	18	12.212	2.354	17	17.100	8.000
PCTSAT	P301	Percent	110.933	20.204	21	96.842	4.908	19	106.365	13.750	17	141.838	27.249	16	221.700	85.000
FC	P31616	#/100ml	36.263	30.364	19	134.611	174.477	18	204.833	152.662	18	59.059	58.597	17	830.000	2.000
COD	P340	mg/L	9.000	7.071	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PH	P400	units	8.205	0.314	21	7.621	0.310	19	7.944	0.430	18	8.611	0.451	18	9.300	7.000
SUSSOL	P530	mg/L	28.250	30.420	20	268.294	473.802	17	141.625	288.669	16	28.688	15.568	16	1800.000	4.000
FLOW	P60	CFS	147.700	176.172	19	821.000	461.963	18	633.778	437.026	18	22.200	20.680	18	1877.000	0.000
NH3_N	P610	mg/L	0.036	0.042	19	0.065	0.045	17	0.029	0.016	16	0.026	0.019	17	0.200	0.010K
NO2_DIS	P613	mg/L	0.012	0.006	12	0.010	0.000	9	0.010	0.001	9	0.013	0.007	8	0.030	0.010K
NO2_N	P615	mg/L	0.013	0.007	8	0.010	0.000	5	0.020	0.008	4	0.015	0.005	6	0.030	0.010K
NH3_UN	P619	mg/L	0.001	0.001	13	0.000	0.000	12	0.001	0.002	11	0.005	0.003	9	0.011	0.000
NO3_N	P620	mg/L	1.095	0.255	4	1.062	0.370	5	0.498	0.322	5	0.260	0.305	3	2.000	0.010K
NO2_NO3	P630	mg/L	0.701	0.412	12	1.012	0.381	9	0.515	0.229	9	0.285	0.365	10	1.800	0.010K
TP_P	P665	mg/L	0.122	0.056	16	0.195	0.104	17	0.139	0.048	16	0.143	0.047	17	0.500	0.010K
OP_DIS	P671	mg/L	0.058	0.035	18	0.101	0.026	16	0.069	0.013	16	0.040	0.038	17	0.160	0.010K
COLOR	P80	Pt-Co	30.429	9.554	7	32.333	26.858	3	44.714	47.923	7	31.167	5.879	6	63.000	4.000
TURB	P82079	NTU	6.144	6.024	18	30.336	47.793	14	11.000	7.151	15	8.383	8.193	12	3900.000	1.000K
COND	P95	umhos	311.524	168.674	21	148.000	26.390	20	160.611	59.816	18	535.222	156.381	18	825.000	90.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 32B070 Name: TOUCHET R @ TOUCHET

Class: A Elevation: 425 River Mile: 0.50

Location:
LOCATED AT THE BRIDGE ON HIGHWAY 410 AT TOUCHET

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
													X		X	X			X	X	X	X	X	X	X	X	X	X	X	X	X				

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.615	4.941	20	4.194	3.476	17	15.440	5.040	15	23.027	3.023	15	27.900	-0.100
PRESS	P25	mmHg	756.595	5.730	20	754.656	8.137	16	753.820	5.897	15	750.421	5.471	14	774.000	736.000
OXYGEN	P300	mg/L	12.670	1.372	20	12.865	1.530	17	10.940	1.112	15	12.787	4.180	15	21.800	8.500
PCTSAT	P301	Percent	108.525	16.145	20	98.529	6.432	17	108.929	6.262	14	148.979	42.594	14	221.000	81.700
FC	P31616	#/100ml	48.105	41.874	19	77.867	126.028	15	110.067	84.229	15	124.500	97.484	14	440.000	2.000
PH	P400	units	8.075	0.313	20	7.525	0.430	16	8.113	0.484	15	8.640	0.444	15	9.800	6.700
SUSSOL	P530	mg/L	12.105	14.059	19	2424.643	7987.076	14	142.538	322.185	13	12.308	5.907	13	30100.000	4.000
FLOW	P60	CFS	50.807	41.149	15	402.507	321.396	15	271.693	211.549	14	7.547	9.477	15	1150.000	0.500
NH3_N	P610	mg/L	0.018	0.022	18	0.057	0.059	14	0.031	0.016	13	0.016	0.006	14	0.240	0.010K
NO2_DIS	P613	mg/L	0.010	0.001	11	0.010	0.000	6	0.010	0.000	6	0.010	0.000	5	0.010	0.010K
NO2_N	P615	mg/L	0.011	0.004	8	0.010	0.000	5	0.018	0.010	4	0.010	0.000	6	0.030	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.001	13	0.001	0.002	11	0.004	0.002	9	0.009	0.000
NO3_N	P620	mg/L	0.523	0.327	4	0.804	0.282	5	0.204	0.180	5	0.167	0.142	3	2.320	0.010K
NO2_NO3	P630	mg/L	0.272	0.278	11	0.795	0.433	6	0.348	0.385	5	0.106	0.107	7	1.400	0.010K
TP_P	P665	mg/L	0.087	0.042	16	0.148	0.094	14	0.105	0.048	13	0.135	0.027	14	0.430	0.010K
OP_DIS	P671	mg/L	0.041	0.011	18	0.066	0.028	13	0.041	0.017	13	0.056	0.024	14	0.150	0.010K
COLOR	P80	Pt-Co	29.714	8.381	7	39.000	24.249	3	48.857	58.678	7	34.833	18.978	6	67.000	8.000
TURB	P82079	NTU	3.329	3.180	17	220.818	597.032	11	10.758	7.822	12	3.911	1.434	9	2000.000	1.000K
COND	P95	umhos	162.850	69.954	20	106.706	15.070	17	113.467	29.235	15	247.800	75.895	15	1653.000	78.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 32B130 Name: TOUCHET R @ DAYTON

Class: A Elevation: 1600 River Mile: 53.30

Location:
LOCATED AT THE BRIDGE ON US HIGHWAY 410 AT THE WEST END OF DAYTON

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X                                                           X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.550	3.104	4	4.550	2.798	4	13.200	1.709	3	19.433	1.557	3	6.000	0.800
PRESS	P25	mmHg	725.675	3.860	4	716.475	7.654	4	720.000	2.771	3	718.133	6.278	3	726.700	722.400
OXYGEN	P300	mg/L	11.200	1.003	4	11.875	1.156	4	10.200	0.361	3	9.000	0.700	3	13.500	11.700
PCTSAT	P301	Percent	97.275	1.950	4	96.900	1.679	4	102.100	0.985	3	102.633	4.053	3	99.300	98.100
FC	P31616	#/100ml	24.500	6.137	4	30.333	43.924	3	25.000	17.436	3	42.667	16.862	3	24.000	24.000
PH	P400	units	7.750	0.208	4	7.525	0.287	4	8.167	0.379	3	7.867	0.451	3	7.500	7.100
SUSSOL	P530	mg/L	3.000	0.816	4	5.333	2.309	3	8.667	4.726	3	5.000	2.000	3	3.000	3.000
FLOW	P60	CFS	0.000	0.000	0	106.667	40.415	3	110.333	4.509	3	38.167	13.042	3	0.000	0.000
NH3_N	P610	mg/L	0.010	0.000	4	0.009	0.002	3	0.010	0.000	3	0.013	0.004	3	0.010	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	4	0.010	0.000	3	0.006	0.006	2	0.010	0.000	3	0.010	0.010K
NO2_NO3	P630	mg/L	0.207	0.175	4	0.179	0.058	3	0.063	0.045	3	0.128	0.023	3	0.170	0.170
TP_P	P665	mg/L	0.043	0.004	3	0.070	0.014	2	0.039	0.007	3	0.049	0.007	3	0.040	0.040
OP_DIS	P671	mg/L	0.027	0.004	3	0.034	0.008	3	0.022	0.003	3	0.028	0.010	3	0.030	0.030
TURB	P82079	NTU	2.000	1.376	4	4.033	3.635	3	3.267	0.473	3	1.667	0.252	3	1.800	1.800
COND	P95	umhos	91.250	11.644	4	79.750	11.673	4	73.667	4.041	3	94.000	6.245	3	85.000	82.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 33A050 Name: SNAKE R NR PASCO

Class: A Elevation: 330 River Mile: 2.20

Location:
LOCATED AT THE BRIDGE ON US HIGHWAY 12/395 NEAR BURBANK AT HOOD PARK

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X   X         X                                 X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	11.225	4.127	4	3.350	1.462	4	11.033	3.427	3	20.400	3.064	3	8.300	1.600
PRESS	P25	mmHg	748.550	15.858	4	753.800	13.070	4	751.200	3.811	3	749.233	6.516	3	759.700	759.000
OXYGEN	P300	mg/L	9.950	1.480	4	12.425	0.499	4	11.000	0.557	3	8.367	1.172	3	13.100	11.100
PCTSAT	P301	Percent	90.975	6.879	4	93.825	1.723	4	100.433	3.465	3	92.800	7.727	3	94.400	93.700
FC	P31616	#/100ml	2.000	2.000	4	1.333	0.577	3	2.333	1.528	3	40.667	49.166	3	5.000	5.000
COD	P340	mg/L	9.143	5.543	21	19.500	13.435	2	10.500	0.707	2	11.667	4.041	3	0.000	0.000
PH	P400	units	8.025	0.050	4	7.875	0.150	4	7.833	0.208	3	7.533	0.404	3	8.000	7.700
SUSSOL	P530	mg/L	3.250	1.258	4	5.000	1.732	3	9.333	1.155	3	5.000	2.000	3	5.000	5.000
FLOW	P60	CFS	37100.000	17111.984	2	45000.000	30413.813	3	63166.667	27705.294	3	24266.667	16711.174	3	0.000	0.000
NH3_N	P610	mg/L	0.014	0.005	4	0.024	0.016	3	0.019	0.009	3	0.013	0.005	3	0.020	0.020
NO2_DIS	P613	mg/L	0.014	0.008	4	0.010	0.000	3	0.008	0.003	3	0.010	0.000	3	0.010	0.010K
NO2_N	P615	mg/L	0.012	0.004	17	0.013	0.007	14	0.010	0.000	12	0.010	0.000	13	0.000	0.000
NH3_UN	P619	mg/L	0.000	0.001	19	0.000	0.000	19	0.001	0.004	17	0.001	0.001	15	0.000	0.000
NO3_N	P620	mg/L	0.638	0.144	13	0.809	0.148	14	0.380	0.389	13	0.163	0.085	10	0.000	0.000
NO2_NO3	P630	mg/L	0.439	0.185	4	0.768	0.299	3	0.457	0.385	3	0.122	0.047	3	0.470	0.470
TP_P	P665	mg/L	0.056	0.011	4	0.052	0.017	3	0.047	0.016	3	0.034	0.005	3	0.060	0.060
OP_DIS	P671	mg/L	0.042	0.009	4	0.042	0.007	3	0.026	0.016	3	0.013	0.003	3	0.040	0.040
COLOR	P80	Pt-Co	21.571	6.294	7	37.667	17.507	9	36.000	23.551	7	22.333	2.066	6	0.000	0.000
TURB	P82079	NTU	1.850	0.238	4	4.767	3.308	3	5.933	0.814	3	3.833	0.416	3	1.700	1.700
COND	P95	umhos	311.500	63.574	4	258.000	34.438	4	220.000	138.206	3	147.333	38.553	3	311.000	238.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 33A070 Name: SNAKE R BLW ICE HARBOR DAM

Class: A Elevation: 340 River Mile: 8.50

Location:
LOCATED ON THE NORTH BANK OF THE SNAKE RIVER AT THE USGS GAGING STATION,
1 MILE BELOW ICE HARBOR DAM

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                    X     X   X X X X X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	12.918	4.502	17	3.973	1.822	15	12.007	2.711	15	21.067	2.343	15	23.500	1.300
PRESS	P25	mmHg	759.241	6.300	17	757.287	8.248	15	756.267	5.716	15	754.086	4.870	14	776.000	739.000
OXYGEN	P300	mg/L	10.147	1.031	17	13.140	0.910	15	11.587	1.112	15	9.027	0.885	15	15.500	7.500
PCTSAT	P301	Percent	95.012	5.540	17	100.540	9.991	15	107.764	8.856	14	100.979	9.268	14	132.300	81.400
FC	P31616	#/100ml	3.500	2.921	16	2.267	2.154	15	4.400	4.137	15	5.429	5.199	14	17.000	1.000
COD	P340	mg/L	8.571	3.610	14	10.333	4.821	15	12.600	4.808	15	10.200	3.005	15	25.000	4.000K
PH	P400	units	8.106	0.236	17	7.914	0.342	14	7.887	0.354	15	8.080	0.298	15	8.600	7.200
SUSSOL	P530	mg/L	4.844	1.841	16	12.143	18.080	14	10.077	2.957	13	7.231	4.106	13	65.000	1.000
FLOW	P60	CFS	35482.353	11523.521	17	51980.000	35662.950	15	83280.000	27219.405	15	35613.333	17748.717	15	166800.000	14800.000
NH3_N	P610	mg/L	0.023	0.018	15	0.034	0.021	14	0.053	0.086	13	0.020	0.007	14	0.330	0.010K
NO2_DIS	P613	mg/L	0.011	0.004	8	0.010	0.000	6	0.012	0.004	6	0.010	0.000	5	0.020	0.010K
NO2_N	P615	mg/L	0.011	0.004	8	0.010	0.000	5	0.010	0.000	4	0.010	0.000	6	0.020	0.010K
NH3_UN	P619	mg/L	0.001	0.001	13	0.000	0.000	13	0.002	0.005	11	0.001	0.001	9	0.016	0.000
NO3_N	P620	mg/L	0.683	0.074	4	0.754	0.149	5	0.238	0.319	5	0.123	0.047	3	1.400	0.010K
NO2_NO3	P630	mg/L	0.379	0.208	8	0.935	0.208	6	0.566	0.530	5	0.097	0.017	7	1.400	0.080
TP_P	P665	mg/L	0.068	0.034	13	0.066	0.033	14	0.057	0.026	13	0.036	0.008	14	0.150	0.010K
OP_DIS	P671	mg/L	0.044	0.007	15	0.051	0.012	13	0.025	0.018	13	0.016	0.007	14	0.070	0.010K
COLOR	P80	Pt-Co	0.000	0.000	0	25.333	11.150	3	0.000	0.000	0	0.000	0.000	0	38.000	1.000
TURB	P82079	NTU	1.600	0.471	14	6.545	10.178	11	6.042	2.913	12	2.711	0.569	9	34.000	1.000K
COND	P95	umhos	300.765	46.392	17	325.600	52.127	15	157.000	66.670	15	172.800	48.439	15	400.000	87.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 34A070 Name: PALOUSE R @ HOOPER

Class: B Elevation: 1060 River Mile: 19.50

Location:
LOCATED IN "DOWNTOWN" HOOPER NEAR TRAIN TRACKS AT BRIDGE ON OLD HIGHWAY 26

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X X     X X X X X X X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.895	3.957	19	3.175	2.305	16	13.328	4.289	18	19.894	2.669	18	24.300	0.000
CU	P1042	ug/L	23.700	50.108	10	45.200	98.311	9	5.142	4.930	12	4.020	2.731	10	303.000	1.000
ZN	P1092	ug/L	41.100	79.820	10	112.667	230.531	9	12.375	11.995	12	11.889	13.502	9	718.000	1.000
ZN	P1094	ug/L	36.417	72.989	12	106.636	206.985	11	13.133	12.894	15	10.923	11.154	13	0.000	0.000
CD	P1113	ug/L	0.173	0.047	11	0.529	0.723	10	0.334	0.326	13	0.164	0.056	13	1.300	0.100
PB	P1114	ug/L	1.527	1.205	11	21.150	45.106	10	1.867	1.628	12	1.915	1.362	13	20.200	1.000
CR	P1118	ug/L	1.408	1.289	10	6.101	5.653	9	3.889	4.163	13	1.998	1.851	13	19.000	0.200
CU	P1119	ug/L	21.167	45.694	12	42.909	88.171	11	5.077	4.665	13	4.567	2.400	12	0.000	0.000
PRESS	P25	mmHg	739.305	5.419	19	736.331	5.826	16	737.211	7.439	18	735.676	5.319	17	750.000	716.000
OXYGEN	P300	mg/L	11.532	1.568	19	12.213	1.944	16	10.306	1.112	18	8.500	0.854	18	15.500	6.500
PCTSAT	P301	Percent	96.221	7.131	19	93.725	13.163	16	100.147	6.856	17	94.935	5.898	17	115.700	48.400
FC	P31616	#/100ml	86.588	95.656	17	176.909	321.391	11	115.750	180.018	16	116.765	73.722	17	1400.000	4.000
COD	P340	mg/L	43.077	98.399	13	76.500	184.551	14	21.889	12.649	18	21.882	6.528	17	710.000	4.000K
PH	P400	units	8.384	0.418	19	7.787	0.348	15	8.333	0.579	18	8.739	0.365	18	9.400	7.100
SUSSOL	P530	mg/L	65.579	160.469	19	1412.077	3628.220	13	98.625	165.486	16	53.267	40.772	15	13100.000	7.000
FLOW	P60	CFS	110.875	69.812	16	1492.467	1501.730	15	643.000	623.825	18	51.059	29.192	17	5010.000	12.000
NH3_N	P610	mg/L	0.170	0.476	17	0.132	0.118	13	0.038	0.028	17	0.044	0.078	16	2.000	0.010K
NO2_DIS	P613	mg/L	0.013	0.009	12	0.019	0.006	7	0.013	0.005	9	0.015	0.014	8	0.050	0.010K
NO2_N	P615	mg/L	0.015	0.008	6	0.018	0.013	5	0.016	0.009	5	0.012	0.004	6	0.050	0.010K
NH3_UN	P619	mg/L	0.006	0.013	11	0.001	0.001	9	0.002	0.002	12	0.004	0.003	9	0.046	0.000
NO3_N	P620	mg/L	2.650	2.051	2	3.380	1.197	5	1.038	0.851	6	0.060	0.087	3	7.000	0.010K
NO2_NO3	P630	mg/L	1.485	1.153	12	3.607	0.964	7	1.282	0.992	9	0.470	0.683	10	5.040	0.010K
TP_P	P665	mg/L	0.221	0.095	14	0.285	0.183	14	0.190	0.125	17	0.204	0.062	17	0.670	0.010K
OP_DIS	P671	mg/L	0.187	0.099	16	0.149	0.066	13	0.101	0.050	17	0.096	0.064	18	0.330	0.010K
HG	P71901	ug/L	0.067	0.023	12	0.083	0.071	11	0.055	0.013	11	0.076	0.042	12	0.220	0.020
COLOR	P80	Pt-Co	73.286	48.462	7	104.500	106.773	2	26.333	4.619	3	130.000	0.000	2	180.000	21.000
TURB	P82079	NTU	28.622	62.688	18	260.182	422.967	11	17.272	15.396	18	17.369	16.653	16	3900.000	3.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

HARD	P900	mg/L	120.357	25.355	14	80.333	24.497	15	77.056	21.664	18	126.833	17.932	18	153.000	31.000
COND	P95	umhos	326.632	62.790	19	212.625	62.033	16	201.944	50.315	18	330.111	46.025	18	410.000	91.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 34B110 Name: SF PALOUSE R @ PULLMAN

Class: A Elevation: 2320 River Mile: 22.20

Location:
LOCATED AT THE BRIDGE ON STATE STREET ONE BLOCK NORTH OF US HIGHWAY 195 AT PULLMAN

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X   X     X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.419	3.491	21	2.916	2.184	19	12.267	4.255	18	17.633	2.281	18	20.600	0.000
PRESS	P25	mmHg	716.952	55.810	21	713.989	27.244	19	719.044	57.554	18	702.118	8.379	17	958.000	676.000
OXYGEN	P300	mg/L	11.119	1.477	21	11.947	1.254	19	11.689	1.408	18	10.717	1.306	18	14.300	8.300
PCTSAT	P301	Percent	95.605	13.197	21	94.142	8.942	19	115.165	15.105	17	119.353	13.115	17	147.400	65.000
FC	P31616	#/100ml	1404.286	1348.060	21	4307.059	8468.246	17	738.667	848.620	15	2561.176	1498.294	17	30000.000	140.000
PH	P400	units	7.995	0.299	21	7.694	0.298	18	8.283	0.394	18	8.389	0.197	18	8.800	7.100
SUSSOL	P530	mg/L	22.905	44.117	21	170.625	309.202	16	29.938	29.172	16	10.000	4.123	15	680.000	1.000
FLOW	P60	CFS	14.389	11.642	18	64.444	82.264	18	24.222	19.441	18	5.412	1.805	17	300.000	2.000
NH3_N	P610	mg/L	0.342	0.357	18	0.423	0.257	16	0.270	0.457	17	0.055	0.030	16	2.000	0.010K
NO2_DIS	P613	mg/L	0.080	0.040	11	0.045	0.032	9	0.106	0.059	9	0.040	0.016	8	0.180	0.010K
NO2_N	P615	mg/L	0.073	0.088	8	0.066	0.048	5	0.124	0.050	5	0.075	0.027	6	0.260	0.010K
NH3_UN	P619	mg/L	0.004	0.004	13	0.003	0.002	11	0.008	0.011	12	0.006	0.004	9	0.042	0.001
NO3_N	P620	mg/L	8.325	3.202	4	6.720	2.798	5	3.063	1.818	6	4.100	2.000	3	13.000	0.280
NO2_NO3	P630	mg/L	6.015	2.248	12	7.840	1.825	9	3.998	1.496	9	4.447	1.802	9	11.000	2.140
TP_P	P665	mg/L	2.740	1.401	15	0.825	0.539	17	0.865	0.426	15	2.091	0.957	16	4.600	0.010K
OP_DIS	P671	mg/L	2.583	1.418	18	0.600	0.496	16	0.830	0.451	16	2.354	0.790	17	5.200	0.070
COLOR	P80	Pt-Co	75.286	79.115	7	121.000	111.723	2	28.333	13.429	3	119.000	43.841	2	252.000	13.000
TURB	P82079	NTU	14.867	17.364	18	79.857	112.358	14	15.206	11.162	18	5.900	3.330	16	350.000	2.000
COND	P95	umhos	474.286	103.822	21	354.316	116.641	19	344.333	59.033	18	569.278	85.965	18	720.000	182.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 35A150 Name: SNAKE R @ INTERSTATE BR

Class: A Elevation: 705 River Mile: 139.60

Location:
LOCATED AT THE WASHINGTON-IDAHO INTERSTATE BRIDGE ON U S HIGHWAY 12 AT CLARKSTON

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
      X X X X X   X X                                         X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	9.100	4.743	4	3.150	1.406	4	11.567	1.960	3	20.433	2.237	3	6.000	1.800
PRESS	P25	mmHg	749.500	4.109	4	746.600	5.743	4	748.633	1.710	3	745.233	7.731	3	750.300	743.500
OXYGEN	P300	mg/L	11.100	1.402	4	12.825	0.932	4	10.667	0.929	3	9.033	0.416	3	13.800	12.300
PCTSAT	P301	Percent	96.450	3.210	4	97.200	3.110	4	98.900	4.423	3	101.367	5.338	3	100.900	100.600
FC	P31616	#/100ml	2.750	1.708	4	6.667	6.429	3	20.000	25.456	2	3.333	2.082	3	2.000	2.000
PH	P400	units	8.300	0.082	4	8.300	0.400	4	8.367	0.321	3	8.533	0.153	3	8.900	8.300
SUSSOL	P530	mg/L	2.250	1.258	4	3.333	2.309	3	13.667	7.638	3	6.333	1.528	3	1.000	1.000
FLOW	P60	CFS	0.000	0.000	0	20833.333	7479.528	3	37900.000	25405.314	3	23800.000	9899.495	2	0.000	0.000
NH3_N	P610	mg/L	0.010	0.000	4	0.017	0.005	3	0.010	0.004	3	0.013	0.003	3	0.010	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	4	0.010	0.000	3	0.008	0.003	3	0.010	0.000	3	0.010	0.010K
NO2_NO3	P630	mg/L	0.740	0.082	4	1.007	0.133	3	0.457	0.305	3	0.188	0.076	3	0.760	0.760
TP_P	P665	mg/L	0.071	0.011	4	0.080	0.014	2	0.044	0.015	3	0.034	0.005	3	0.060	0.060
OP_DIS	P671	mg/L	0.051	0.012	4	0.047	0.006	3	0.021	0.013	3	0.015	0.006	3	0.040	0.040
TURB	P82079	NTU	1.375	0.419	4	2.667	2.281	3	3.300	0.265	3	3.000	1.819	3	1.200	1.200
COND	P95	umhos	380.250	38.578	4	380.500	63.005	4	248.000	99.740	3	254.333	82.130	3	425.000	374.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 35B060 Name: TUCANNON R @ POWERS

Class: A Elevation: 600 River Mile: 2.30

Location:
LOCATED .2 MILES SOUTHEAST OF HIGHWAY 261, 1.5 MILES WEST OF STARBUCK

Water Years Sampled:

5	6							7								8								9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
																X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.857	2.980	21	5.105	2.690	19	11.456	3.025	18	16.772	1.996	18	20.000	-0.100
PRESS	P25	mmHg	754.119	5.977	21	752.742	6.840	19	751.500	6.436	18	749.882	5.317	17	770.000	730.000
OXYGEN	P300	mg/L	11.590	1.187	21	12.116	2.227	19	11.222	0.998	18	10.133	1.614	18	16.100	4.100
PCTSAT	P301	Percent	97.529	6.361	21	95.358	15.384	19	103.388	4.811	17	104.894	16.553	17	167.500	33.800
FC	P31616	#/100ml	98.333	105.969	21	321.571	653.716	14	109.067	87.832	15	172.600	148.402	15	990.000	10.000
COD	P340	mg/L	4.000	0.000	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PH	P400	units	7.795	0.347	21	7.647	0.330	17	7.794	0.362	18	8.000	0.200	18	8.400	6.900
SUSSOL	P530	mg/L	19.048	18.845	21	192.294	454.378	17	65.125	75.295	16	17.200	10.995	15	1900.000	2.000
FLOW	P60	CFS	85.379	18.443	19	136.133	74.368	18	204.287	79.953	15	56.500	12.614	18	389.000	33.400
NH3_N	P610	mg/L	0.020	0.012	18	0.044	0.039	17	0.018	0.016	17	0.014	0.005	17	0.140	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	9	0.009	0.003	9	0.010	0.000	9	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	12	0.000	0.000	12	0.001	0.001	9	0.003	0.000
NO3_N	P620	mg/L	0.303	0.099	4	0.448	0.217	5	0.073	0.060	6	0.137	0.046	3	0.760	0.010K
NO2_NO3	P630	mg/L	0.201	0.091	11	0.491	0.266	9	0.143	0.140	8	0.123	0.019	10	1.100	0.080
TP_P	P665	mg/L	0.076	0.031	15	0.114	0.069	17	0.093	0.059	17	0.065	0.014	17	0.270	0.010K
OP_DIS	P671	mg/L	0.041	0.014	18	0.056	0.019	16	0.033	0.015	17	0.035	0.009	18	0.100	0.010K
COLOR	P80	Pt-Co	14.571	5.287	7	15.333	8.737	3	11.667	10.066	3	72.000	53.740	2	110.000	1.000
TURB	P82079	NTU	2.761	2.176	18	31.793	68.360	14	7.233	6.338	18	2.444	1.322	16	480.000	1.000K
COND	P95	umhos	145.810	10.216	21	140.632	15.207	19	117.000	15.503	18	159.833	14.068	18	190.000	92.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 36A070 Name: COLUMBIA R NR VERNITA

Class: A Elevation: 380 River Mile: 388.10

Location:
LOCATED ON STATE HIGHWAY 24 AT THE VERNITA BRIDGE APPROXIMATELY FIVE MILES NORTHEAST OF VERNITA

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
      X X         X X X   X   X X X   X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	12.629	3.741	17	3.673	1.499	15	9.653	3.097	15	18.220	1.496	15	20.100	0.600
CU	P1042	ug/L	3.300	3.706	10	5.600	10.408	11	2.333	2.733	12	3.050	1.363	10	36.000	1.000
ZN	P1092	ug/L	4.950	4.663	10	15.227	24.133	11	11.833	4.448	12	6.000	6.220	9	86.000	1.000
ZN	P1094	ug/L	5.833	3.950	12	15.727	23.858	11	11.833	4.448	12	6.200	5.731	10	0.000	0.000
CD	P1113	ug/L	0.183	0.058	12	0.251	0.103	11	0.328	0.276	12	0.163	0.048	12	1.100	0.100
PB	P1114	ug/L	1.375	1.151	12	1.991	1.780	11	1.645	1.429	11	1.550	1.233	12	6.000	1.000
CR	P1118	ug/L	1.023	1.296	12	1.077	1.339	11	2.982	5.242	12	1.540	1.788	12	19.000	0.200
CU	P1119	ug/L	4.300	3.329	12	5.964	10.249	11	2.917	2.644	12	3.818	1.471	11	0.000	0.000
PRESS	P25	mmHg	757.018	6.674	17	754.627	8.822	15	754.120	5.493	15	749.043	15.923	14	776.000	696.000
OXYGEN	P300	mg/L	10.247	0.927	17	13.393	0.761	15	13.360	1.051	15	10.680	0.486	15	15.500	7.500
PCTSAT	P301	Percent	95.935	7.321	17	101.773	4.528	15	117.514	6.836	14	114.271	5.353	14	135.300	77.300
FC	P31616	#/100ml	1.438	1.263	16	1.200	0.775	15	1.400	1.121	15	2.643	4.749	14	19.000	1.000
COD	P340	mg/L	4.929	1.328	14	6.933	6.262	15	9.467	3.998	15	7.067	1.907	15	27.000	4.000K
PH	P400	units	7.700	0.316	17	7.664	0.310	14	7.927	0.587	15	8.127	0.287	15	8.600	6.500
SUSSOL	P530	mg/L	2.938	2.323	16	1.643	0.842	14	4.923	2.532	13	3.769	1.301	13	10.000	1.000
FLOW	P60	CFS	76394.118	27989.495	17	107992.857	22723.369	14	116526.667	28963.683	15	64533.333	41666.802	15	203000.000	40200.000
NH3_N	P610	mg/L	0.015	0.006	15	0.021	0.018	14	0.031	0.069	13	0.010	0.000	14	0.260	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	8	0.010	0.000	6	0.010	0.000	6	0.010	0.000	5	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	4	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	13	0.002	0.005	11	0.000	0.001	9	0.016	0.000
NO3_N	P620	mg/L	0.128	0.010	4	0.116	0.025	5	0.052	0.034	5	0.013	0.006	3	0.320	0.010K
NO2_NO3	P630	mg/L	0.124	0.086	8	0.140	0.009	6	0.118	0.104	5	0.030	0.027	7	0.330	0.010K
TP_P	P665	mg/L	0.040	0.039	14	0.033	0.028	14	0.028	0.011	13	0.021	0.007	14	0.130	0.010K
OP_DIS	P671	mg/L	0.016	0.007	15	0.018	0.014	13	0.011	0.003	13	0.010	0.000	14	0.060	0.010K
HG	P71901	ug/L	0.076	0.034	12	0.054	0.028	11	0.058	0.012	9	0.088	0.043	11	0.200	0.020
COLOR	P80	Pt-Co	8.857	3.185	7	9.667	2.887	3	12.714	7.847	7	13.667	1.633	6	13.000	1.000
TURB	P82079	NTU	1.157	0.388	14	0.991	0.430	11	1.867	0.976	12	1.056	0.073	9	6.000	0.100

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

HARD	P900	mg/L	66.667	6.020	15	73.867	4.422	15	73.214	11.254	14	66.867	6.833	15	95.000	42.000
COND	P95	umhos	138.000	8.761	17	152.267	11.158	15	138.467	15.964	15	133.667	8.432	15	178.000	102.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 37A090 Name: YAKIMA R @ KIONA

Class: A Elevation: 460 River Mile: 29.80

Location:
LOCATED .1 MILE NORTHWEST OF HIGHWAY 12 AND KIONA AND SOUTHEAST OF BENTON CITY

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X       X X X X X X X X X X X X X X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	9.124	4.501	21	4.389	2.235	19	14.589	3.512	18	21.517	2.261	18	25.400	0.000
PRESS	P25	mmHg	754.390	8.596	21	753.274	8.972	19	752.500	5.313	18	751.088	5.054	17	774.000	736.000
OXYGEN	P300	mg/L	11.986	1.397	21	13.463	1.516	19	11.283	1.292	18	10.089	0.553	18	16.800	7.100
PCTSAT	P301	Percent	103.576	8.208	21	104.121	8.440	19	110.600	9.443	17	114.747	8.262	17	131.500	77.200
FC	P31616	#/100ml	44.789	39.056	19	123.176	335.469	17	51.611	40.923	18	59.500	21.040	16	1400.000	1.000
COD	P340	mg/L	7.231	2.555	13	9.733	4.334	15	14.867	4.033	15	12.000	4.243	15	23.000	4.000K
PH	P400	units	8.090	0.346	21	7.872	0.420	18	8.250	0.371	18	8.328	0.174	18	9.000	7.100
SUSSOL	P530	mg/L	16.600	18.429	20	29.706	44.270	17	40.500	26.613	16	25.688	5.363	16	140.000	1.000
FLOW	P60	CFS	2378.316	1861.126	19	3588.889	2916.559	18	3040.000	1165.701	18	1505.556	328.476	18	13000.000	1030.000
NH3_N	P610	mg/L	0.037	0.026	19	0.061	0.030	17	0.026	0.029	16	0.020	0.009	17	0.140	0.010K
NO2_DIS	P613	mg/L	0.016	0.005	12	0.012	0.004	9	0.010	0.001	9	0.015	0.005	8	0.020	0.010K
NO2_N	P615	mg/L	0.018	0.009	8	0.010	0.000	5	0.015	0.010	4	0.018	0.004	6	0.030	0.010K
NH3_UN	P619	mg/L	0.001	0.001	13	0.001	0.001	12	0.001	0.002	11	0.002	0.001	9	0.004	0.000
NO3_N	P620	mg/L	1.230	0.212	4	0.844	0.501	5	0.546	0.384	5	1.300	0.100	3	1.500	0.020
NO2_NO3	P630	mg/L	1.236	0.332	12	0.820	0.328	9	0.537	0.175	9	1.043	0.166	10	1.600	0.330
TP_P	P665	mg/L	0.114	0.041	16	0.122	0.053	17	0.112	0.048	16	0.122	0.022	17	0.300	0.040
OP_DIS	P671	mg/L	0.076	0.015	18	0.065	0.022	16	0.045	0.011	16	0.066	0.014	17	0.120	0.030
COLOR	P80	Pt-Co	17.571	5.381	7	14.333	2.309	3	24.714	15.283	7	19.667	3.266	6	25.000	1.000
TURB	P82079	NTU	3.756	4.445	18	3.879	2.575	14	8.413	4.581	15	6.258	1.520	12	21.000	1.000K
COND	P95	umhos	276.000	50.179	21	220.421	50.054	19	195.000	37.106	18	279.667	29.023	18	350.000	109.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 37A190 Name: YAKIMA R @ PARKER

Class: A Elevation: 905 River Mile: 104.60

Location:
LOCATED ON PARKER BRIDGE ROAD 2/3 MILE EAST OF PARKER

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X   X X X X X X X X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.452	4.087	21	2.572	1.803	18	9.650	2.358	18	16.156	1.577	18	18.900	0.000
PRESS	P25	mmHg	742.005	7.583	21	739.989	9.354	18	741.689	6.133	18	740.094	4.949	17	761.000	721.000
OXYGEN	P300	mg/L	11.871	1.569	21	13.489	0.880	18	12.056	1.118	18	10.228	0.466	18	15.900	8.000
PCTSAT	P301	Percent	100.029	6.798	21	101.467	3.894	18	108.112	6.941	17	105.906	3.592	17	121.800	76.900
FC	P31616	#/100ml	96.800	57.667	20	92.000	92.478	17	63.778	32.746	18	97.412	49.024	17	320.000	6.000
PH	P400	units	7.590	0.397	21	7.494	0.391	17	7.667	0.368	18	7.628	0.336	18	8.300	6.800
SUSSOL	P530	mg/L	13.150	11.935	20	8.781	9.659	16	18.688	10.084	16	18.563	5.853	16	53.000	1.000
FLOW	P60	CFS	1875.111	1765.843	18	2663.765	2430.709	17	2823.333	1355.998	18	1498.889	205.337	18	10300.000	819.000
NH3_N	P610	mg/L	0.059	0.033	19	0.068	0.045	16	0.030	0.027	16	0.030	0.010	17	0.190	0.010K
NO2_DIS	P613	mg/L	0.011	0.002	12	0.010	0.000	8	0.009	0.003	9	0.010	0.000	8	0.010	0.010K
NO2_N	P615	mg/L	0.014	0.007	8	0.010	0.000	5	0.013	0.005	4	0.010	0.000	6	0.030	0.010K
NH3_UN	P619	mg/L	0.000	0.001	13	0.000	0.000	11	0.000	0.000	11	0.001	0.001	9	0.002	0.000
NO3_N	P620	mg/L	0.363	0.105	4	0.312	0.118	5	0.140	0.055	5	0.207	0.021	3	0.450	0.090
NO2_NO3	P630	mg/L	0.279	0.103	12	0.226	0.108	8	0.079	0.023	8	0.173	0.034	10	0.470	0.060
TP_P	P665	mg/L	0.090	0.041	16	0.069	0.024	16	0.056	0.013	16	0.063	0.013	17	0.170	0.030
OP_DIS	P671	mg/L	0.058	0.031	17	0.042	0.018	15	0.026	0.008	16	0.033	0.012	17	0.160	0.010K
COLOR	P80	Pt-Co	15.714	6.993	7	12.500	6.364	2	19.286	9.979	7	16.333	1.633	6	29.000	8.000
TURB	P82079	NTU	3.372	3.054	18	2.654	1.649	13	4.487	2.633	15	4.067	1.637	12	15.000	1.000K
COND	P95	umhos	152.429	31.062	21	141.722	27.899	18	107.278	12.695	18	110.500	13.391	18	215.000	66.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 39A090 Name: YAKIMA R NR CLE ELUM

Class: AA Elevation: 2022 River Mile: 191.00

Location:
LOCATED AT THE BRIDGE ON INTERSTATE 90, 4.5 MILES WEST OF CLE ELUM

Water Years Sampled:

5	6							7								8								9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
													X			X															X	X	X		

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	5.975	2.239	8	2.771	1.092	7	6.783	2.200	6	13.500	1.620	6	16.000	1.000
PRESS	P25	mmHg	718.600	10.720	8	714.171	5.308	7	712.200	3.040	6	716.267	12.058	6	739.400	706.900
OXYGEN	P300	mg/L	11.550	1.165	8	12.543	0.458	7	11.317	0.643	6	9.450	0.327	6	13.500	9.100
PCTSAT	P301	Percent	97.475	4.627	8	98.457	3.046	7	98.550	1.537	6	95.817	5.303	6	106.300	94.300
FC	P31616	#/100ml	7.625	4.033	8	3.333	2.733	6	5.000	7.314	5	18.833	17.244	6	51.000	1.000
PH	P400	units	7.443	0.544	7	7.786	0.398	7	7.633	0.493	6	7.400	0.400	6	8.400	7.000
SUSSOL	P530	mg/L	10.375	12.340	8	6.167	8.909	6	5.833	3.817	6	2.600	1.140	5	34.000	1.000
FLOW	P60	CFS	1316.600	1583.269	5	525.333	251.729	6	680.333	384.484	6	239.833	66.062	6	4070.000	166.000
NH3_N	P610	mg/L	0.016	0.007	8	0.012	0.004	6	0.012	0.004	6	0.013	0.005	6	0.030	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	7	0.010	0.000	6	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NO2_NO3	P630	mg/L	0.039	0.022	8	0.043	0.021	6	0.014	0.008	6	0.012	0.004	6	0.070	0.010K
TP_P	P665	mg/L	0.021	0.019	8	0.018	0.016	6	0.012	0.004	6	0.013	0.004	6	0.060	0.010K
OP_DIS	P671	mg/L	0.010	0.000	8	0.010	0.000	6	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
TURB	P82079	NTU	5.850	8.362	8	2.783	3.587	6	3.117	3.924	6	1.380	0.694	5	24.000	0.700
COND	P95	umhos	65.500	12.547	8	62.857	10.931	7	58.000	6.663	6	56.333	5.279	6	83.000	45.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 41A070 Name: CRAB CR NR BEVERLY

Class: B Elevation: 500 River Mile: 6.00

Location:
LOCATED 6 MILES FROM THE MOUTH OF CRAB CREEK AT THE BRIDGE ON LOWER CRAB CREEK ROAD, ABOUT 5.6 MILES FROM BEVERLY

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X X X X     X X   X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.318	3.539	17	5.828	2.937	18	16.000	4.120	18	20.139	2.341	18	24.100	0.100
PRESS	P25	mmHg	751.394	13.811	17	758.011	5.761	18	748.500	4.842	18	747.244	6.612	18	769.000	702.300
OXYGEN	P300	mg/L	11.618	1.828	17	13.172	1.653	18	10.367	1.115	18	9.772	1.254	18	15.800	6.700
PCTSAT	P301	Percent	98.824	11.044	17	105.678	16.564	18	105.476	13.194	17	108.412	13.689	17	136.800	70.800
FC	P31616	#/100ml	64.824	74.939	17	9.278	11.344	18	66.722	56.624	18	78.222	48.676	18	300.000	1.000
PH	P400	units	8.306	0.261	17	8.544	0.317	18	8.550	0.209	18	8.483	0.228	18	9.100	7.900
SUSSOL	P530	mg/L	12.412	4.691	17	24.278	7.668	18	94.667	36.215	18	46.125	33.526	16	195.000	3.000
FLOW	P60	CFS	247.235	61.543	17	176.222	30.027	18	228.278	29.235	18	375.722	480.804	18	343.000	0.000
NH3_N	P610	mg/L	0.021	0.014	16	0.046	0.048	17	0.023	0.010	15	0.021	0.011	18	0.180	0.010K
NO2_DIS	P613	mg/L	0.011	0.003	9	0.013	0.005	9	0.012	0.005	9	0.014	0.005	9	0.020	0.010K
NO2_N	P615	mg/L	0.014	0.005	7	0.014	0.005	5	0.023	0.005	4	0.012	0.004	6	0.030	0.010K
NH3_UN	P619	mg/L	0.001	0.000	13	0.002	0.001	12	0.003	0.001	10	0.002	0.002	10	0.007	0.000
NO3_N	P620	mg/L	2.750	0.806	4	3.180	0.507	5	1.325	0.450	4	1.378	0.425	5	3.800	0.690
NO2_NO3	P630	mg/L	2.367	1.076	9	3.013	0.306	9	1.189	0.224	9	1.263	0.115	9	3.630	0.150
TP_P	P665	mg/L	0.101	0.053	14	0.135	0.049	17	0.147	0.067	15	0.075	0.027	17	0.310	0.030
OP_DIS	P671	mg/L	0.063	0.033	15	0.068	0.041	17	0.038	0.030	16	0.015	0.007	18	0.160	0.010K
COLOR	P80	Pt-Co	25.000	5.657	2	107.500	74.246	2	19.667	6.110	3	43.333	19.035	3	160.000	13.000
TURB	P82079	NTU	3.360	1.707	15	5.982	2.905	17	15.756	5.621	18	9.306	6.156	18	77.000	0.800
COND	P95	umhos	728.882	89.128	17	827.944	56.943	18	606.000	68.939	18	555.235	28.424	17	995.000	495.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 44A070 Name: COLUMBIA R BLW ROCK IS DAM

Class: A Elevation: 560 River Mile: 450.90

Location:
LOCATED ON THE EAST BANK (SHORE SAMPLE), 2.3 MILES BELOW ROCK ISLAND DAM
TURN OFF HIGHWAY 28, 7.2 MILES NORTH OF CRESCENT BAR RECREATIONAL AREA
AT COLUMBIA RIVER ORCHARD FRUIT STAND, TURN LEFT FOR .45 MILE TURN RIGHT
TO GRAVEL ROAD 1.55 MILES TO "Y" IMMEDIATELY AFTER TRACKS, TAKE RIGHT
FORK FOR .1 MILE, WALK TO RIVER

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                        X     X X   X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	12.553	4.267	17	4.220	1.939	15	10.460	3.037	15	18.957	1.867	14	23.000	1.400
PRESS	P25	mmHg	749.418	6.369	17	748.280	17.452	15	746.593	4.575	15	742.993	6.847	14	764.000	693.000
OXYGEN	P300	mg/L	10.282	0.962	17	12.973	0.880	15	12.867	1.393	15	10.543	0.831	14	16.300	7.900
PCTSAT	P301	Percent	97.247	10.139	17	100.933	7.610	15	116.257	11.576	14	114.738	11.151	13	145.800	82.500
FC	P31616	#/100ml	43.125	101.117	16	8.200	13.975	15	40.429	96.698	14	116.286	221.630	14	820.000	1.000
PH	P400	units	7.882	0.517	17	7.940	0.448	15	8.007	0.531	15	8.193	0.416	14	9.200	6.700
SUSSOL	P530	mg/L	6.882	8.817	17	10.000	21.541	15	11.867	18.345	15	8.692	13.325	13	86.000	1.000
FLOW	P60	CFS	114600.000	37754.784	17	131193.333	44656.762	15	148926.667	35331.562	15	112100.000	42530.641	14	196400.000	13400.000
NH3_N	P610	mg/L	0.018	0.010	16	0.024	0.024	14	0.021	0.021	12	0.019	0.016	14	0.080	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	8	0.009	0.004	6	0.010	0.000	6	0.010	0.000	5	0.010	0.001
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	4	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.001	14	0.000	0.000	11	0.000	0.001	10	0.001	0.001	10	0.003	0.000
NO3_N	P620	mg/L	0.148	0.061	5	0.136	0.046	5	0.073	0.054	4	0.034	0.015	5	0.630	0.020
NO2_NO3	P630	mg/L	0.125	0.075	8	0.192	0.121	6	0.102	0.081	6	0.052	0.038	5	0.430	0.020
TP_P	P665	mg/L	0.039	0.037	14	0.037	0.027	14	0.035	0.017	12	0.023	0.018	13	0.140	0.010K
OP_DIS	P671	mg/L	0.015	0.008	15	0.019	0.008	14	0.011	0.003	13	0.010	0.000	13	0.040	0.010K
COLOR	P80	Pt-Co	10.000	5.196	3	11.000	14.142	2	11.000	5.196	3	20.000	17.059	3	34.000	1.000
TURB	P82079	NTU	2.120	2.401	15	1.986	2.669	14	2.673	2.455	15	1.136	0.539	14	10.000	0.600
COND	P95	umhos	145.294	16.680	17	150.400	18.723	15	142.600	21.580	15	130.214	12.033	14	202.000	95.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 45A070 Name: WENATCHEE R @ WENATCHEE

Class: A Elevation: 600 River Mile: 1.10

Location:
LOCATED 1.1 MILES FROM THE MOUTH OF THE WENATCHEE RIVER, 1.5 MILES NORTH OF WENATCHEE AT THE BRIDGE CROSSING HIGHWAYS 2-97

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X X   X X   X     X X   X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	7.485	3.902	20	3.494	2.141	16	9.018	2.038	17	17.594	2.841	18	22.800	0.000
PRESS	P25	mmHg	747.860	5.180	20	745.150	15.527	16	743.647	3.987	17	741.817	5.984	18	759.000	693.000
OXYGEN	P300	mg/L	13.180	1.054	20	14.275	1.356	16	12.800	1.114	17	10.678	0.613	18	17.000	8.700
PCTSAT	P301	Percent	111.015	9.336	20	109.188	7.976	16	112.800	9.866	16	114.182	9.297	17	134.500	91.200
FC	P31616	#/100ml	8.700	11.079	20	3.800	8.178	15	5.750	8.660	16	14.941	16.958	17	62.000	1.000
COD	P340	mg/L	7.214	3.641	14	7.538	5.093	13	7.929	3.362	14	5.857	1.875	14	22.000	4.000K
PH	P400	units	7.905	0.487	20	8.056	0.344	16	7.876	0.648	17	8.139	0.710	18	9.100	6.800
SUSSOL	P530	mg/L	10.500	21.855	20	8.533	9.296	15	8.706	9.366	17	3.800	1.740	15	98.000	1.000
FLOW	P60	CFS	3246.588	5343.497	17	1859.067	1201.591	15	6987.647	3600.624	17	1933.294	1853.233	17	22700.000	316.000
NH3_N	P610	mg/L	0.014	0.008	19	0.027	0.034	14	0.014	0.008	13	0.018	0.010	18	0.110	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	12	0.010	0.000	7	0.010	0.000	9	0.010	0.000	9	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	4	0.010	0.000	2	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.001	0.001	12	0.000	0.001	9	0.001	0.001	8	0.002	0.002	10	0.008	0.000
NO3_N	P620	mg/L	0.143	0.066	4	0.115	0.049	4	0.060	0.028	2	0.164	0.090	5	0.270	0.040
NO2_NO3	P630	mg/L	0.131	0.077	12	0.090	0.023	7	0.036	0.016	9	0.119	0.076	9	0.260	0.030
TP_P	P665	mg/L	0.023	0.025	17	0.025	0.020	14	0.014	0.006	13	0.012	0.003	18	0.090	0.010K
OP_DIS	P671	mg/L	0.010	0.000	18	0.011	0.003	14	0.010	0.000	14	0.010	0.000	18	0.020	0.010K
COLOR	P80	Pt-Co	14.000	4.041	7	14.500	14.849	2	15.000	19.799	2	12.000	19.053	3	34.000	1.000
TURB	P82079	NTU	3.433	8.431	18	1.786	2.144	14	1.676	0.877	17	1.180	0.493	15	37.000	0.600
COND	P95	umhos	74.100	27.321	20	74.063	11.440	16	48.765	12.843	17	64.389	18.548	18	135.000	30.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 45A110 Name: WENATCHEE R NR LEAVENWORTH

Class: AA Elevation: 1665 River Mile: 35.60

Location:
LOCATED AT THE UPPER END OF TUMWATER CANYON ON THE US HIGHWAY 2 BRIDGE
AT TUMWATER CAMPGROUND

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                        X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.543	3.334	21	2.458	1.655	19	7.528	2.034	18	15.328	2.691	18	20.200	0.000
PRESS	P25	mmHg	721.595	6.535	21	722.800	7.360	19	716.089	4.076	18	718.733	7.605	18	735.000	704.000
OXYGEN	P300	mg/L	11.719	1.230	21	13.263	0.690	19	11.956	0.877	18	9.817	0.481	18	15.100	8.600
PCTSAT	P301	Percent	99.857	7.318	21	101.916	4.086	19	105.500	6.753	17	103.012	5.122	17	120.800	74.100
FC	P31616	#/100ml	2.950	2.564	20	1.176	0.728	17	2.824	2.856	17	2.833	2.640	18	11.000	1.000
PH	P400	units	7.495	0.548	20	7.447	0.506	19	7.394	0.645	18	7.406	0.475	18	8.400	6.000
SUSSOL	P530	mg/L	4.895	6.437	19	4.111	4.213	18	7.889	7.529	18	2.625	1.500	16	29.000	1.000
FLOW	P60	CFS	2127.000	2729.382	18	1380.611	863.256	18	5832.778	3149.087	18	1661.000	1580.909	16	12500.000	248.000
NH3_N	P610	mg/L	0.013	0.006	19	0.014	0.007	17	0.010	0.001	13	0.016	0.011	18	0.050	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	11	0.009	0.003	9	0.010	0.000	9	0.010	0.000	9	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	3	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	12	0.000	0.000	12	0.000	0.000	8	0.000	0.001	10	0.003	0.000
NO3_N	P620	mg/L	0.045	0.029	4	0.054	0.017	5	0.045	0.007	2	0.012	0.004	5	0.100	0.010K
NO2_NO3	P630	mg/L	0.031	0.019	12	0.048	0.013	9	0.053	0.013	9	0.014	0.006	9	0.070	0.010K
TP_P	P665	mg/L	0.020	0.024	16	0.016	0.017	17	0.013	0.004	13	0.010	0.002	18	0.080	0.010K
OP_DIS	P671	mg/L	0.010	0.000	19	0.010	0.001	17	0.010	0.000	15	0.010	0.000	17	0.020	0.010K
COLOR	P80	Pt-Co	4.000	0.000	2	6.667	2.309	3	5.000	6.928	3	15.000	19.799	2	29.000	1.000
TURB	P82079	NTU	1.371	0.699	17	1.179	0.654	14	1.531	0.697	16	1.036	0.386	14	7.000	0.400
COND	P95	umhos	40.905	12.425	21	42.526	4.718	19	36.944	8.921	18	41.222	11.899	18	85.000	25.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 46A070 Name: ENTIAT R NR ENTIAT

Class: A Elevation: 660 River Mile: 1.50

Location:
LOCATED AT A PRIVATE BRIDGE 1.2 MILES FROM HIGHWAY 97 JUST OFF THE
ENTIAT RIVER ROAD APPROXIMATELY 1.5 MILES WEST OF ENTIAT

Water Years Sampled:

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5 6                 7                 8                 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X       X     X X   X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.028	4.018	18	3.350	2.636	18	9.317	1.679	18	17.044	2.871	18	21.600	0.000
PRESS	P25	mmHg	746.472	6.686	18	748.106	6.318	18	740.550	5.341	18	739.350	6.366	18	760.000	728.000
OXYGEN	P300	mg/L	12.778	1.120	18	13.572	1.298	18	12.061	0.669	18	10.139	0.572	18	16.800	9.200
PCTSAT	P301	Percent	103.689	4.776	18	102.850	6.005	18	107.647	7.812	17	107.518	7.171	17	125.800	94.000
FC	P31616	#/100ml	4.444	6.810	18	8.438	20.172	16	9.889	22.189	18	8.000	11.269	17	97.000	1.000
PH	P400	units	7.928	0.421	18	7.967	0.376	18	8.000	0.535	18	8.150	0.463	18	9.100	7.300
SUSSOL	P530	mg/L	7.412	14.182	17	4.000	3.447	18	13.056	12.923	18	3.438	1.548	16	61.000	1.000
FLOW	P60	CFS	213.722	188.005	18	162.444	80.497	18	1395.944	1017.245	18	356.000	333.293	17	3310.000	52.000
NH3_N	P610	mg/L	0.014	0.010	16	0.017	0.017	17	0.011	0.003	13	0.014	0.007	17	0.080	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	9	0.009	0.003	9	0.010	0.000	9	0.010	0.000	9	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	3	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.001	13	0.000	0.000	12	0.001	0.001	8	0.001	0.001	10	0.003	0.000
NO3_N	P620	mg/L	0.110	0.067	4	0.118	0.048	5	0.020	0.014	2	0.098	0.068	5	0.380	0.010K
NO2_NO3	P630	mg/L	0.080	0.054	9	0.100	0.047	9	0.018	0.011	9	0.064	0.042	9	0.180	0.010K
TP_P	P665	mg/L	0.024	0.031	14	0.020	0.022	17	0.015	0.007	13	0.011	0.003	17	0.110	0.010K
OP_DIS	P671	mg/L	0.010	0.000	16	0.010	0.002	16	0.010	0.000	15	0.010	0.000	18	0.010	0.010K
COLOR	P80	Pt-Co	8.000	0.000	2	12.333	11.150	3	3.333	4.041	3	11.000	14.142	2	25.000	1.000
TURB	P82079	NTU	1.507	1.161	14	0.979	0.137	14	1.731	1.211	16	0.981	0.356	16	5.000	0.700
COND	P95	umhos	89.222	26.559	18	94.389	12.834	18	56.500	22.041	18	74.778	18.606	18	155.000	30.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 47A070 Name: CHELAN R @ CHELAN

Class: LC Elevation: 660 River Mile: 4.80

Location:
LOCATED 4.8 MILES FROM THE MOUTH OF THE CHELAN RIVER AT THE OUTLET OF LAKE CHELAN FROM THE BRIDGE ON HIGHWAY 97

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X X   X X   X     X X   X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	11.594	3.923	18	5.044	1.398	18	14.261	3.594	18	21.050	1.775	18	24.000	0.400
PRESS	P25	mmHg	736.311	7.185	18	738.167	6.525	18	731.500	6.929	18	730.372	7.151	18	751.000	715.000
OXYGEN	P300	mg/L	10.517	0.833	18	12.072	0.513	18	10.729	0.878	17	9.189	0.456	18	13.500	8.600
PCTSAT	P301	Percent	98.972	5.732	18	97.250	4.302	18	107.706	4.800	16	106.576	6.437	17	124.500	88.100
FC	P31616	#/100ml	8.500	29.362	18	1.000	0.000	16	3.722	4.956	18	3.444	5.067	18	126.000	1.000
CHL	P32211	ug/L	0.664	0.743	11	1.594	2.114	8	0.392	0.275	9	0.275	0.282	11	5.100	0.010
PHEO	P32218	ug/L	2.327	5.253	11	1.461	2.197	8	0.386	0.398	9	0.175	0.104	11	18.000	0.010
COD	P340	mg/L	5.533	3.357	15	4.867	1.552	15	4.933	2.187	15	5.133	1.506	15	27.000	3.000
PH	P400	units	7.944	0.408	18	8.106	0.359	18	7.878	0.387	18	7.983	0.266	18	8.800	7.100
SUSSOL	P530	mg/L	2.353	1.455	17	1.611	0.916	18	2.389	1.787	18	1.941	1.560	17	7.000	1.000
FLOW	P60	CFS	2030.000	283.590	18	1987.833	585.767	18	2024.500	1551.730	18	1717.625	1039.811	16	6120.000	6.000
NH3_N	P610	mg/L	0.014	0.008	16	0.018	0.018	17	0.012	0.004	13	0.013	0.006	18	0.100	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	9	0.009	0.003	9	0.010	0.000	9	0.010	0.000	9	0.010	0.001
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	3	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.001	13	0.000	0.000	12	0.000	0.000	8	0.000	0.001	10	0.002	0.000
NO3_N	P620	mg/L	0.030	0.014	4	0.044	0.022	5	0.030	0.000	2	0.020	0.007	5	0.080	0.010K
NO2_NO3	P630	mg/L	0.018	0.008	9	0.054	0.009	9	0.044	0.010	9	0.019	0.009	9	0.060	0.010K
TP_P	P665	mg/L	0.022	0.024	14	0.021	0.031	17	0.012	0.004	13	0.010	0.001	18	0.080	0.010K
OP_DIS	P671	mg/L	0.010	0.000	16	0.010	0.002	16	0.010	0.000	15	0.010	0.000	18	0.010	0.010K
COLOR	P80	Pt-Co	6.000	2.828	2	4.000	0.000	3	2.000	1.732	3	11.000	14.142	2	21.000	1.000
TURB	P82079	NTU	0.886	0.228	14	0.943	0.427	14	0.925	0.232	16	0.788	0.302	17	4.000	0.200
COND	P95	umhos	59.278	15.013	18	57.667	7.029	18	56.833	7.509	18	62.944	28.598	18	176.000	47.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 47B070 Name: COLUMBIA R @ CHELAN STATION Class: A Elevation: 925 River Mile: 504.10

Location:
LOCATED ON THE US HIGHWAY 97 BRIDGE AT CHELAN STATION NEAR CHELAN FALLS ON THE CHELAN/DOUGLAS COUNTY LINE

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	0.000	0.000	0	4.067	2.307	3	8.900	3.051	3	17.667	3.213	3	9.700	3.100
PRESS	P25	mmHg	0.000	0.000	0	746.333	2.082	3	738.033	2.201	3	741.433	3.383	3	748.000	733.300
OXYGEN	P300	mg/L	0.000	0.000	0	13.167	0.231	3	12.300	0.608	3	9.600	0.436	3	12.900	11.800
PCTSAT	P301	Percent	0.000	0.000	0	102.400	7.390	3	108.800	3.205	3	102.367	4.119	3	107.300	97.500
FC	P31616	#/100ml	0.000	0.000	0	1.000	0.000	3	2.667	1.528	3	1.667	0.577	3	4.000	4.000
PH	P400	units	0.000	0.000	0	8.433	0.153	3	8.167	0.404	3	8.000	0.300	3	8.600	8.200
SUSSOL	P530	mg/L	0.000	0.000	0	2.333	0.577	3	5.667	3.215	3	3.000	1.000	3	3.000	3.000
FLOW	P60	CFS	0.000	0.000	0	180000.000	16370.706	3	187000.000	16370.706	3	164500.000	7778.175	2	0.000	0.000
NH3_N	P610	mg/L	0.000	0.000	0	0.017	0.006	3	0.018	0.013	3	0.013	0.003	3	0.010	0.010K
NO2_DIS	P613	mg/L	0.000	0.000	0	0.010	0.000	3	0.010	0.000	3	0.010	0.000	3	0.010	0.010K
NO2_NO3	P630	mg/L	0.000	0.000	0	0.157	0.021	3	0.081	0.036	3	0.044	0.017	3	0.110	0.110
TP_P	P665	mg/L	0.000	0.000	0	0.027	0.006	3	0.015	0.002	3	0.017	0.004	3	0.020	0.020
OP_DIS	P671	mg/L	0.000	0.000	0	0.010	0.000	3	0.010	0.000	3	0.011	0.002	3	0.020	0.020
TURB	P82079	NTU	0.000	0.000	0	1.167	0.289	3	2.700	1.453	3	0.967	0.451	3	1.000	1.000K
COND	P95	umhos	0.000	0.000	0	148.000	2.646	3	142.000	14.107	3	131.333	3.215	3	150.000	150.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 48A070 Name: METHOW R NR PATEROS

Class: A Elevation: 870 River Mile: 5.00

Location:
LOCATED 5 MILES FROM THE MOUTH OF THE METHOW RIVER, 3.6 MILES FROM THE JUNCTION OF HIGHWAYS 153 AND 97 AT THE BRIDGE ON HIGHWAY 153 NORTHWEST OF PATEROS

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X         X     X X   X X X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	5.695	3.730	21	3.224	2.799	17	10.011	1.875	18	16.756	2.754	18	21.600	-0.100
PRESS	P25	mmHg	741.233	7.816	21	744.594	6.710	17	736.550	6.643	18	736.222	6.915	18	756.000	720.000
OXYGEN	P300	mg/L	12.657	1.220	21	13.576	1.286	17	11.483	0.496	18	9.956	0.527	18	17.300	9.000
PCTSAT	P301	Percent	102.610	5.116	21	103.024	5.054	17	104.488	5.875	17	105.294	7.012	17	120.700	88.100
FC	P31616	#/100ml	1.619	1.117	21	1.067	0.258	15	14.333	17.740	18	6.667	7.562	18	43.000	1.000
PH	P400	units	8.086	0.276	21	8.265	0.434	17	7.950	0.281	18	8.328	0.417	18	9.500	7.100
SUSSOL	P530	mg/L	2.600	2.062	20	5.438	7.183	16	23.000	26.672	18	2.765	2.166	17	83.000	1.000
FLOW	P60	CFS	524.500	383.896	18	419.250	147.824	16	4074.278	3064.982	18	874.294	849.589	17	9700.000	232.000
NH3_N	P610	mg/L	0.012	0.007	19	0.021	0.021	15	0.012	0.004	13	0.012	0.006	17	0.090	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	12	0.009	0.003	8	0.010	0.000	9	0.010	0.000	9	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	3	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	12	0.001	0.001	9	0.000	0.001	8	0.001	0.000	10	0.003	0.000
NO3_N	P620	mg/L	0.230	0.065	4	0.214	0.025	5	0.065	0.049	2	0.188	0.088	5	0.390	0.030
NO2_NO3	P630	mg/L	0.170	0.054	12	0.179	0.073	8	0.047	0.022	9	0.113	0.069	9	0.270	0.030
TP_P	P665	mg/L	0.021	0.028	17	0.018	0.018	15	0.017	0.013	13	0.011	0.005	18	0.100	0.010K
OP_DIS	P671	mg/L	0.010	0.000	18	0.010	0.002	15	0.010	0.000	15	0.010	0.000	18	0.010	0.010K
COLOR	P80	Pt-Co	4.000	0.000	2	4.000	0.000	2	3.333	4.041	3	11.000	14.142	2	21.000	1.000
TURB	P82079	NTU	1.200	1.037	17	1.867	2.607	12	3.781	4.636	16	1.712	3.434	17	17.000	0.400
COND	P95	umhos	181.619	37.453	21	178.941	15.538	17	106.000	41.660	18	156.944	37.573	18	223.000	54.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 48A140 Name: METHOW R @ TWISP

Class: A Elevation: 1552 River Mile: 39.40

Location:
THE INTERSECTION WITH WAGNER RD (GAGE HOUSE .5 MILE UP WAGNER RD).
THIS STATION WAS ACTIVATED 881001 IN LIEU OF STATION 48A130. THIS SITE
WAS NOT USED PREVIOUSLY DUE TO A WARM OUTFALL FROM THE NOW DEFUNCT PINE
MILL APPROXIMATELY 100-150 FEET UPSTREAM.

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	4.744	2.115	9	2.900	2.038	9	6.678	1.132	9	12.456	1.938	9	15.500	0.000
PRESS	P25	mmHg	716.833	4.532	9	722.067	4.260	9	718.756	5.026	9	719.467	3.730	9	730.500	710.400
OXYGEN	P300	mg/L	12.578	0.824	9	12.867	0.616	9	11.644	0.422	9	9.911	0.790	9	14.100	9.700
PCTSAT	P301	Percent	103.367	4.899	9	100.156	3.599	9	99.913	2.589	8	97.913	11.248	8	111.700	91.900
FC	P31616	#/100ml	2.778	2.167	9	2.111	2.088	9	13.889	13.824	9	9.556	4.586	9	29.000	1.000
PH	P400	units	8.056	0.270	9	8.600	0.229	9	7.944	0.324	9	8.011	0.414	9	8.900	7.700
SUSSOL	P530	mg/L	2.222	1.787	9	1.556	0.726	9	12.222	12.843	9	2.000	1.323	9	39.000	1.000
FLOW	P60	CFS	636.667	522.402	9	343.250	133.396	8	4048.889	2512.108	9	1236.250	1091.221	8	7300.000	193.000
NH3_N	P610	mg/L	0.011	0.003	9	0.010	0.000	9	0.011	0.002	9	0.016	0.011	9	0.040	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	9	0.009	0.002	9	0.010	0.000	9	0.010	0.000	9	0.010	0.004
NH3_UN	P619	mg/L	0.000	0.000	3	0.000	0.000	0	0.000	0.000	2	0.000	0.000	0	0.001	0.000
NO2_NO3	P630	mg/L	0.113	0.040	9	0.114	0.024	9	0.046	0.029	9	0.094	0.063	9	0.210	0.020
TP_P	P665	mg/L	0.028	0.036	9	0.017	0.024	9	0.014	0.007	9	0.011	0.004	9	0.100	0.002
OP_DIS	P671	mg/L	0.010	0.000	9	0.009	0.003	9	0.010	0.000	9	0.010	0.000	9	0.010	0.002
TURB	P82079	NTU	0.944	0.219	9	1.222	1.151	9	2.500	2.951	9	0.678	0.370	9	10.000	0.300
COND	P95	umhos	132.222	27.050	9	146.111	5.776	9	95.556	37.243	9	129.333	27.695	9	175.000	60.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 49A070 Name: OKANOGAN R @ MALOTT

Class: A Elevation: 780 River Mile: 17.00

Location:
LOCATED AT THE MALOTT BRIDGE CROSSING THE OKANOGAN RIVER, JUST WEST OF HIGHWAY 97

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                    X X X X   X     X X   X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.765	4.312	20	2.823	2.514	13	11.989	2.856	18	20.206	2.431	18	24.900	-0.100
PRESS	P25	mmHg	744.055	7.705	20	745.992	4.823	13	740.122	6.060	18	740.450	5.872	18	756.000	725.000
OXYGEN	P300	mg/L	11.635	1.576	20	12.908	1.349	13	10.533	0.528	18	8.417	0.727	18	15.000	7.300
PCTSAT	P301	Percent	96.100	6.633	20	96.785	7.476	13	99.512	4.352	17	94.682	6.699	17	115.200	80.200
FC	P31616	#/100ml	23.632	33.553	19	3.800	3.190	10	60.556	58.894	18	30.611	18.959	18	250.000	1.000
PH	P400	units	8.025	0.257	20	8.308	0.278	13	8.011	0.276	18	8.167	0.368	18	8.800	7.400
SUSSOL	P530	mg/L	28.737	92.084	19	26.583	58.603	12	58.167	67.003	18	10.471	10.063	17	405.000	2.000
FLOW	P60	CFS	1915.118	2193.098	17	1791.833	1325.443	12	7857.222	6579.403	18	2257.000	2111.348	17	23500.000	348.000
NH3_N	P610	mg/L	0.017	0.014	18	0.026	0.028	11	0.015	0.012	13	0.016	0.010	18	0.080	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	12	0.010	0.000	6	0.010	0.000	9	0.010	0.000	9	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	4	0.010	0.000	3	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	12	0.001	0.001	6	0.000	0.001	8	0.001	0.000	10	0.002	0.000
NO3_N	P620	mg/L	0.027	0.021	3	0.063	0.042	4	0.030	0.014	2	0.022	0.013	5	0.160	0.010K
NO2_NO3	P630	mg/L	0.051	0.020	12	0.067	0.055	6	0.019	0.013	9	0.021	0.014	9	0.170	0.010K
TP_P	P665	mg/L	0.045	0.058	16	0.071	0.166	11	0.065	0.057	13	0.022	0.006	18	0.230	0.010K
OP_DIS	P671	mg/L	0.010	0.000	18	0.025	0.051	11	0.010	0.000	15	0.010	0.000	18	0.180	0.010K
COLOR	P80	Pt-Co	6.000	2.828	2	24.000	20.704	4	10.333	8.327	3	15.000	19.799	2	46.000	1.000
TURB	P82079	NTU	13.300	42.463	17	10.600	26.793	9	12.431	14.335	16	1.635	0.848	17	176.000	0.800
COND	P95	umhos	249.500	72.689	20	260.077	42.064	13	153.111	70.226	18	244.000	60.465	18	390.000	70.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 49A190 Name: OKANOGAN R @ OROVILLE

Class: A Elevation: 1040 River Mile: 78.00

Location:
LOCATED AT THE BRIDGE ON CHERRY (BRIDGE ST.) STREET ALSO KNOWN AS THE OROVILLE-CHESAW HIGHWAY

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
	X	X	X	X	X	X	X									X	X		X	X	X	X	X	X	X	X	X	X	X	X					

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	9.306	4.698	18	2.933	2.162	18	14.189	4.329	18	20.950	2.409	18	25.200	0.000
PRESS	P25	mmHg	741.811	7.281	18	744.928	5.935	18	737.883	5.824	18	738.767	6.127	18	756.000	722.000
OXYGEN	P300	mg/L	10.583	1.259	18	13.922	0.979	18	10.917	1.328	18	9.150	1.309	18	17.000	6.700
PCTSAT	P301	Percent	93.367	6.923	18	105.417	10.635	18	107.612	8.064	17	105.318	17.864	17	151.800	71.000
FC	P31616	#/100ml	4.313	6.300	16	2.615	3.015	13	8.375	9.465	16	14.429	17.064	14	58.000	1.000
PH	P400	units	8.150	0.427	18	8.422	0.276	18	8.406	0.470	18	8.422	0.453	18	9.400	7.000
SUSSOL	P530	mg/L	4.471	2.154	17	81.444	329.072	18	4.833	2.307	18	4.412	1.906	17	1400.000	1.000
FLOW	P60	CFS	320.222	137.309	18	446.444	426.682	18	869.222	951.270	18	742.235	604.279	17	3400.000	58.000
NH3_N	P610	mg/L	0.029	0.031	15	0.025	0.026	17	0.013	0.007	13	0.022	0.018	18	0.140	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	9	0.009	0.003	9	0.010	0.000	9	0.010	0.000	9	0.010	0.002
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.017	0.012	3	0.010	0.000	6	0.030	0.010K
NH3_UN	P619	mg/L	0.001	0.001	12	0.001	0.001	12	0.002	0.001	8	0.002	0.003	10	0.010	0.000
NO3_N	P620	mg/L	0.023	0.015	4	0.034	0.023	5	0.020	0.000	2	0.014	0.009	5	0.220	0.010K
NO2_NO3	P630	mg/L	0.046	0.042	8	0.068	0.027	9	0.011	0.003	9	0.010	0.000	9	0.110	0.010K
TP_P	P665	mg/L	0.038	0.028	13	0.021	0.020	17	0.023	0.024	13	0.018	0.007	18	0.110	0.002
OP_DIS	P671	mg/L	0.010	0.000	16	0.011	0.003	15	0.011	0.005	15	0.010	0.000	18	0.030	0.010K
COLOR	P80	Pt-Co	12.500	6.364	2	14.333	2.309	3	7.333	6.028	3	9.000	11.314	2	17.000	1.000
TURB	P82079	NTU	1.700	1.629	14	1.364	0.754	14	1.581	0.476	16	1.953	1.153	17	7.000	0.600
COND	P95	umhos	300.167	31.673	18	295.944	21.443	18	293.889	42.813	18	272.556	63.303	18	480.000	120.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 49B070 Name: SIMILKAMEEN R @ OROVILLE

Class: A Elevation: 960 River Mile: 5.00

Location:
LOCATED .2 MILES WEST OF HIGHWAY 97 AT THE BRIDGE ON 12TH AVENUE
(WANNACUT LAKE ROAD) IN OROVILLE

Water Years Sampled:

```
5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X               X X   X X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.145	4.228	20	3.206	3.463	16	10.078	2.803	18	17.583	3.303	18	22.500	-0.200
PRESS	P25	mmHg	741.305	7.197	20	743.425	6.015	16	737.828	5.833	18	738.594	6.182	18	757.000	722.000
OXYGEN	P300	mg/L	12.575	1.581	20	13.875	1.237	16	11.967	0.606	18	9.478	0.845	18	17.000	8.400
PCTSAT	P301	Percent	102.755	6.606	20	105.606	9.411	16	108.435	5.714	17	101.194	7.361	17	133.200	82.200
FC	P31616	#/100ml	4.118	6.790	17	1.769	1.964	13	21.000	21.193	17	8.333	6.241	15	71.000	1.000
PH	P400	units	8.060	0.449	20	8.431	0.487	16	8.133	0.472	18	8.289	0.369	18	9.100	6.800
SUSSOL	P530	mg/L	19.444	50.670	18	6.267	8.811	15	54.500	69.780	18	5.529	8.040	17	208.000	1.000
FLOW	P60	CFS	1523.824	1945.127	17	935.714	645.037	14	6826.111	6488.285	18	1563.824	1749.378	17	27500.000	145.000
NH3_N	P610	mg/L	0.014	0.010	18	0.019	0.021	14	0.017	0.018	13	0.019	0.022	18	0.100	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	12	0.010	0.000	8	0.010	0.000	9	0.010	0.000	9	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	4	0.010	0.000	3	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	12	0.001	0.001	7	0.001	0.001	8	0.001	0.001	10	0.003	0.000
NO3_N	P620	mg/L	0.023	0.015	3	0.015	0.010	4	0.025	0.007	2	0.010	0.000	5	0.040	0.010K
NO2_NO3	P630	mg/L	0.023	0.015	12	0.028	0.023	8	0.016	0.010	9	0.010	0.001	9	0.050	0.010K
TP_P	P665	mg/L	0.038	0.048	15	0.019	0.020	14	0.039	0.035	13	0.012	0.005	18	0.180	0.010K
OP_DIS	P671	mg/L	0.010	0.000	17	0.010	0.000	14	0.010	0.000	15	0.010	0.000	18	0.010	0.010K
COLOR	P80	Pt-Co	4.000	0.000	2	19.857	12.602	7	15.333	10.599	3	21.500	28.991	2	80.000	1.000
TURB	P82079	NTU	6.147	17.587	17	1.767	2.017	12	11.213	13.501	16	1.676	0.946	17	74.000	0.600
COND	P95	umhos	175.100	44.858	20	189.063	27.370	16	127.722	56.995	18	190.056	43.895	18	270.000	75.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 51A070 Name: NESPELEM R @ NESPELEM

Class: A Elevation: 1815 River Mile: 5.40

Location:
LOCATED AT THE BRIDGE ON STATE HIGHWAY 155, IMMEDIATELY WEST OF THE TOWN OF NESPELEM

Water Years Sampled:

```
5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                        X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	5.956	2.372	18	3.824	1.647	17	10.071	2.527	17	12.694	1.869	18	17.200	0.400
PRESS	P25	mmHg	721.172	8.670	18	723.159	5.992	17	716.929	7.380	17	713.506	8.852	18	737.000	698.000
OXYGEN	P300	mg/L	11.533	1.256	18	12.282	0.772	17	10.647	0.809	17	10.061	0.921	18	14.800	8.900
PCTSAT	P301	Percent	97.106	8.302	18	97.871	5.810	17	99.313	6.263	16	100.071	10.678	17	118.600	77.500
FC	P31616	#/100ml	58.167	69.190	18	39.313	41.282	16	38.313	35.143	16	110.167	122.103	18	350.000	1.000
PH	P400	units	7.944	0.289	18	8.029	0.295	17	7.900	0.232	17	8.050	0.441	18	9.200	7.300
SUSSOL	P530	mg/L	5.167	3.854	18	6.412	5.124	17	10.000	13.110	17	3.412	2.265	17	68.000	1.000
FLOW	P60	CFS	13.889	5.016	18	17.706	9.225	17	65.824	29.260	17	10.776	5.052	17	150.000	4.000
NH3_N	P610	mg/L	0.018	0.012	17	0.027	0.029	15	0.014	0.007	13	0.017	0.011	18	0.100	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	9	0.009	0.003	8	0.010	0.000	9	0.010	0.000	9	0.010	0.001
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	2	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	14	0.000	0.000	12	0.000	0.000	8	0.001	0.001	10	0.002	0.000
NO3_N	P620	mg/L	0.240	0.107	5	0.194	0.124	5	0.065	0.021	2	0.172	0.022	5	0.350	0.040
NO2_NO3	P630	mg/L	0.406	0.360	9	0.351	0.147	7	0.080	0.028	9	0.118	0.048	9	1.350	0.040
TP_P	P665	mg/L	0.050	0.033	14	0.046	0.029	15	0.027	0.009	13	0.030	0.009	18	0.140	0.010K
OP_DIS	P671	mg/L	0.023	0.009	16	0.020	0.008	16	0.012	0.004	14	0.017	0.007	18	0.040	0.010K
COLOR	P80	Pt-Co	13.000	0.000	3	19.000	2.828	2	25.500	12.021	2	17.333	28.290	3	50.000	1.000
TURB	P82079	NTU	1.456	0.723	16	1.573	0.767	15	2.129	2.114	17	1.256	0.405	18	47.000	0.700
COND	P95	umhos	221.722	31.841	18	197.588	38.596	17	134.118	18.052	17	227.941	21.356	17	265.000	98.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 52A070 Name: SANPOIL R @ KELLER

Class: A Elevation: 1360 River Mile: 11.70

Location:
LOCATED 11.7 MILES FROM THE MOUTH OF THE SANPOIL RIVER, .4 MILES ABOVE JACK CREEK AND .4 MILES NORTHWEST OF KELLER AT THE BRIDGE ON THE SILVER CREEK ROAD

Water Years Sampled:

5	6						7								8												9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
	X	X	X	X	X	X							X			X	X		X	X	X	X	X	X	X	X	X	X	X	X					

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	4.647	3.396	17	1.847	1.816	17	10.200	3.511	17	15.822	2.320	18	19.400	-0.100
PRESS	P25	mmHg	731.812	6.723	17	733.071	5.353	17	724.318	8.492	17	724.156	7.528	18	749.000	710.000
OXYGEN	P300	mg/L	12.529	1.278	17	13.329	1.043	17	10.853	1.075	17	9.794	0.581	18	15.500	8.900
PCTSAT	P301	Percent	100.288	6.238	17	99.347	5.463	17	100.331	5.470	16	103.135	6.896	17	114.100	84.500
FC	P31616	#/100ml	7.941	7.693	17	3.063	2.568	16	15.125	12.521	16	20.222	17.059	18	70.000	1.000
PH	P400	units	8.000	0.371	17	8.029	0.380	17	8.071	0.287	17	8.250	0.320	18	8.900	7.200
SUSSOL	P530	mg/L	2.824	1.704	17	6.059	8.948	17	16.412	16.386	17	3.412	1.805	17	160.000	1.000
FLOW	P60	CFS	72.118	81.296	17	192.438	124.014	16	373.412	182.145	17	63.941	54.590	17	880.000	11.000
NH3_N	P610	mg/L	0.013	0.006	16	0.024	0.025	16	0.013	0.006	13	0.017	0.011	18	0.100	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	9	0.009	0.003	8	0.010	0.000	9	0.010	0.000	9	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	7	0.010	0.000	5	0.010	0.000	2	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	13	0.000	0.000	12	0.001	0.001	8	0.001	0.001	10	0.002	0.000
NO3_N	P620	mg/L	0.033	0.045	4	0.058	0.044	5	0.050	0.057	2	0.010	0.000	5	0.280	0.010K
NO2_NO3	P630	mg/L	0.010	0.000	9	0.254	0.615	8	0.036	0.032	9	0.010	0.000	9	1.770	0.010K
TP_P	P665	mg/L	0.039	0.028	14	0.045	0.031	16	0.051	0.015	13	0.031	0.012	18	0.110	0.010K
OP_DIS	P671	mg/L	0.017	0.006	15	0.023	0.014	16	0.022	0.007	14	0.018	0.007	18	0.030	0.010K
COLOR	P80	Pt-Co	12.500	6.364	2	23.000	21.213	2	19.000	8.485	2	7.667	11.547	3	76.000	1.000
TURB	P82079	NTU	1.113	0.528	15	2.000	1.696	15	3.706	2.632	17	1.300	0.596	18	67.000	0.600
COND	P95	umhos	195.706	26.676	17	182.647	28.421	17	149.118	16.081	17	207.176	10.661	17	223.000	115.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 53A070 Name: COLUMBIA R @ GRAND COULEE

Class: A Elevation: 950 River Mile: 596.00

Location:
LOCATED AT THE COULEE DAM BRIDGE .5 MILES BELOW GRAND COULEE DAM

Water Years Sampled:

5	6									7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
													X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X				

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	12.924	3.526	17	3.193	1.212	15	8.857	2.737	14	17.387	1.392	15	19.300	1.000
PRESS	P25	mmHg	740.718	6.611	17	742.460	4.784	15	734.629	6.338	14	732.813	7.157	15	750.100	722.000
OXYGEN	P300	mg/L	9.429	0.920	17	12.840	0.697	15	12.157	0.956	14	9.233	0.716	15	14.900	7.600
PCTSAT	P301	Percent	90.676	4.543	17	98.020	5.747	15	107.415	5.488	13	98.850	5.830	14	117.100	81.000
FC	P31616	#/100ml	1.294	1.213	17	1.000	0.000	14	1.250	0.866	12	1.000	0.000	14	81.000	1.000
PH	P400	units	7.576	0.340	17	7.727	0.456	15	7.929	0.289	14	7.760	0.253	15	8.600	6.900
SUSSOL	P530	mg/L	2.882	2.643	17	3.133	3.962	15	2.357	1.646	14	1.538	0.776	13	16.000	1.000
FLOW	P60	CFS	133641.176	21511.859	17	142380.000	30314.617	15	151935.714	41995.084	14	127240.000	32346.203	15	218000.000	52000.000
NH3_N	P610	mg/L	0.016	0.014	16	0.024	0.027	14	0.019	0.007	10	0.021	0.013	15	0.110	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	8	0.009	0.004	6	0.010	0.000	6	0.010	0.000	6	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	2	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	14	0.000	0.000	12	0.000	0.001	8	0.000	0.000	10	0.001	0.000
NO3_N	P620	mg/L	0.098	0.011	5	0.106	0.029	5	0.075	0.049	2	0.054	0.024	5	0.180	0.010K
NO2_NO3	P630	mg/L	0.088	0.012	8	0.133	0.015	6	0.095	0.103	6	0.043	0.024	6	0.290	0.020
TP_P	P665	mg/L	0.038	0.039	14	0.037	0.033	13	0.025	0.013	10	0.013	0.005	14	0.140	0.010K
OP_DIS	P671	mg/L	0.017	0.007	15	0.036	0.060	14	0.012	0.004	11	0.011	0.004	15	0.240	0.010K
COLOR	P80	Pt-Co	5.333	2.309	3	9.000	11.314	2	9.000	11.314	2	13.333	21.362	3	38.000	1.000
TURB	P82079	NTU	1.073	0.571	15	1.354	0.685	13	1.436	0.738	14	0.987	0.327	15	7.000	0.400
COND	P95	umhos	142.882	29.073	17	145.067	11.799	15	146.143	24.523	14	129.214	5.294	14	248.000	112.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 54A050 Name: SPOKANE R @ MOUTH

Class: A Elevation: 129 River Mile: 1.70

Location:
LOCATED ON THE STATE HIGHWAY 25 BRIDGE AT THE MOUTH OF THE SPOKANE RIVER
ADJACENT TO FORT SPOKANE ON THE LINCOLN/STEVENS COUNTY LINE

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	10.825	4.157	4	4.400	1.562	3	9.733	4.723	3	21.367	0.902	3	7.700	7.700
ZN	P1094	ug/L	0.000	0.000	0	72.000	16.971	2	53.667	8.386	3	17.333	5.508	3	0.000	0.000
CR	P1118	ug/L	0.000	0.000	0	0.385	0.021	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PRESS	P25	mmHg	733.950	4.968	4	734.067	4.650	3	726.700	4.869	3	725.533	2.139	3	737.900	737.900
OXYGEN	P300	mg/L	9.475	1.573	4	12.633	1.097	3	11.767	0.513	3	9.033	0.666	3	11.300	11.300
PCTSAT	P301	Percent	87.425	7.499	4	100.700	9.102	3	107.733	7.438	3	105.967	6.601	3	97.400	97.400
FC	P31616	#/100ml	2.250	2.500	4	3.000	2.828	2	1.333	0.577	3	1.333	0.577	3	1.000	1.000
PH	P400	units	7.750	0.129	4	7.567	0.306	3	7.833	0.115	3	8.100	0.173	3	7.800	7.800
SUSSOL	P530	mg/L	2.000	1.155	4	4.500	0.707	2	8.000	4.583	3	2.000	1.000	3	3.000	3.000
NH3_N	P610	mg/L	0.028	0.028	4	0.052	0.045	2	0.013	0.005	3	0.014	0.006	3	0.070	0.070
NO2_DIS	P613	mg/L	0.018	0.006	4	0.010	0.000	2	0.008	0.004	3	0.010	0.000	3	0.020	0.020
NO2_NO3	P630	mg/L	0.387	0.105	4	0.369	0.083	2	0.198	0.201	3	0.139	0.081	3	0.450	0.450
TP_P	P665	mg/L	0.017	0.003	4	0.045	0.008	2	0.021	0.008	3	0.014	0.004	3	0.020	0.020
OP_DIS	P671	mg/L	0.013	0.005	4	0.028	0.011	2	0.011	0.002	3	0.010	0.000	3	0.020	0.020
HG	P71901	ug/L	0.000	0.000	0	0.040	0.000	2	0.040	0.000	3	0.184	0.125	3	0.000	0.000
TURB	P82079	NTU	1.025	0.050	4	6.650	1.768	2	3.700	1.929	3	1.600	0.656	3	1.100	1.100
HARD	P900	mg/L	0.000	0.000	0	42.500	10.607	2	35.667	7.024	3	49.333	6.506	3	74.000	74.000
COND	P95	umhos	166.000	20.183	4	123.667	37.005	3	91.667	12.097	3	120.333	30.436	3	177.000	177.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 54A120 Name: SPOKANE R @ RIVERSIDE STATE PK Class: A Elevation: 1640 River Mile: 66.00

Location:
LOCATED IN SPOKANE AT RIVERSIDE STATE PARK ON THE WOODEN, SWINGING, FOOT BRIDGE

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X X X X X X X X X X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	9.114	3.050	21	3.974	1.231	19	9.782	4.009	17	16.989	1.470	18	18.900	1.000
CU	P1042	ug/L	3.030	3.499	10	6.227	10.775	11	2.182	2.077	11	3.150	1.547	10	36.000	1.000
ZN	P1092	ug/L	63.100	37.817	10	87.091	29.545	11	91.636	32.666	11	29.667	9.798	9	143.000	9.000
ZN	P1094	ug/L	62.846	35.791	13	90.143	27.287	14	91.143	29.414	14	32.231	13.645	13	0.000	0.000
CD	P1113	ug/L	0.208	0.045	10	0.420	0.227	14	0.589	0.225	12	0.211	0.071	12	1.100	0.100
PB	P1114	ug/L	1.738	1.072	13	6.371	8.079	14	2.244	1.512	9	1.808	1.103	13	25.000	1.000
CR	P1118	ug/L	1.029	1.219	13	2.485	5.202	13	1.491	1.906	12	1.432	1.696	12	6.000	0.200
CU	P1119	ug/L	3.877	2.991	13	5.914	9.556	14	2.750	1.913	12	3.833	1.528	12	0.000	0.000
PRESS	P25	mmHg	719.310	9.041	21	718.800	7.964	19	717.406	9.114	17	716.559	9.672	17	797.000	692.400
OXYGEN	P300	mg/L	11.690	1.253	21	13.384	1.052	19	12.835	1.459	17	10.156	0.388	18	15.300	7.800
PCTSAT	P301	Percent	106.386	8.420	21	107.742	8.208	19	118.838	5.633	16	110.541	2.977	17	131.800	77.400
FC	P31616	#/100ml	142.250	351.919	20	166.118	375.303	17	17.533	24.715	15	10.647	11.576	17	1533.000	1.000
COD	P340	mg/L	11.533	22.891	15	13.353	19.840	17	9.353	4.122	17	7.188	3.371	16	94.000	1.000
PH	P400	units	8.071	0.416	21	7.511	0.351	18	7.706	0.457	16	8.267	0.259	18	8.700	6.800
SUSSOL	P530	mg/L	2.476	1.327	21	96.250	301.692	16	7.067	6.563	15	3.267	1.335	15	1200.000	1.000
FLOW	P60	CFS	3682.778	3346.705	18	7050.000	6137.050	18	12437.647	5104.801	17	1397.867	767.852	15	24100.000	302.000
NH3_N	P610	mg/L	0.125	0.127	19	0.087	0.049	16	0.041	0.020	16	0.129	0.131	16	0.700	0.020
NO2_DIS	P613	mg/L	0.023	0.034	12	0.010	0.000	9	0.009	0.003	9	0.012	0.006	8	0.130	0.010K
NO2_N	P615	mg/L	0.010	0.000	8	0.012	0.004	5	0.010	0.000	5	0.012	0.004	6	0.020	0.010K
NH3_UN	P619	mg/L	0.003	0.006	13	0.001	0.001	13	0.000	0.000	10	0.011	0.013	9	0.043	0.000
NO3_N	P620	mg/L	0.390	0.157	4	0.460	0.292	5	0.148	0.120	5	0.933	0.289	3	1.800	0.040
NO2_NO3	P630	mg/L	0.402	0.191	12	0.681	0.499	8	0.141	0.069	9	0.745	0.277	10	1.800	0.060
TP_P	P665	mg/L	0.065	0.050	16	0.087	0.053	17	0.030	0.017	16	0.035	0.013	17	0.200	0.010K
OP_DIS	P671	mg/L	0.040	0.028	18	0.059	0.037	16	0.014	0.006	17	0.019	0.008	18	0.130	0.010K
HG	P71901	ug/L	0.058	0.014	12	0.050	0.022	13	0.059	0.016	11	0.079	0.043	11	0.200	0.020
COLOR	P80	Pt-Co	10.143	5.581	7	22.000	24.249	3	7.667	11.547	3	27.000	2.828	2	50.000	1.000
TURB	P82079	NTU	1.678	2.826	18	29.107	58.403	14	2.476	2.093	17	1.200	0.456	16	210.000	0.800

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

HARD	P900	mg/L	58.063	14.982	16	48.944	12.412	18	35.706	8.695	17	90.778	22.360	18	120.000	22.000
COND	P95	umhos	123.286	34.412	21	131.632	92.225	19	76.765	13.098	17	199.611	45.557	18	497.000	59.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 55B070 Name: LITTLE SPOKANE R NR MOUTH

Class: A Elevation: 1525 River Mile: 1.10

Location:
LOCATED APPROXIMATELY 1.5 MILES UPSTREAM FROM CONFLUENCE WITH LONG LAKE
ON BRIDGE CROSSING THE LITTLE SPOKANE RIVER ON HIGHWAY 291 AT OLD FORT SPOKANE
HISTORICAL SITE

Water Years Sampled:

```
5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                      X   X       X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.189	2.163	18	5.844	1.199	18	12.144	2.544	18	14.761	1.188	18	17.200	3.600
CU	P1042	ug/L	6.350	10.604	10	2.718	4.797	11	1.750	1.340	12	3.650	1.901	10	35.000	1.000
ZN	P1092	ug/L	3.900	2.757	10	8.318	13.361	11	4.500	2.931	12	3.167	2.487	9	45.000	1.000
ZN	P1094	ug/L	4.308	2.562	13	12.643	17.372	14	4.571	2.623	14	4.308	2.496	13	0.000	0.000
CD	P1113	ug/L	0.169	0.048	13	0.634	1.661	14	******.********.***		13	0.154	0.052	13	6.400	0.100
PB	P1114	ug/L	1.315	1.107	13	2.854	3.873	13	1.455	1.206	11	1.546	1.175	13	14.800	1.000
CR	P1118	ug/L	1.230	1.157	13	1.679	2.098	13	1.492	1.240	13	1.472	1.586	13	7.450	0.330
CU	P1119	ug/L	5.985	9.138	13	4.179	5.704	14	2.531	1.548	13	4.250	1.658	12	0.000	0.000
PRESS	P25	mmHg	723.983	6.869	18	722.194	7.851	18	721.750	9.247	18	719.565	5.879	17	801.000	697.000
OXYGEN	P300	mg/L	10.367	0.762	18	10.700	0.674	18	10.011	0.878	18	9.611	0.661	18	12.300	7.700
PCTSAT	P301	Percent	91.994	6.586	18	89.917	4.989	18	97.176	8.111	17	99.253	6.023	17	121.000	72.200
FC	P31616	#/100ml	24.889	29.189	18	79.882	138.765	17	32.875	44.624	16	29.118	22.327	17	320.000	2.000
COD	P340	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	4.000	4.000K
PH	P400	units	8.039	0.336	18	7.759	0.355	17	7.994	0.288	18	8.289	0.247	18	8.700	7.000
SUSSOL	P530	mg/L	4.306	3.177	18	76.375	168.017	16	14.250	5.745	16	5.067	2.404	15	380.000	0.500
FLOW	P60	CFS	419.333	44.237	18	630.444	256.790	18	593.611	138.245	18	377.059	26.340	17	1110.000	321.000
NH3_N	P610	mg/L	0.022	0.023	16	0.068	0.094	16	0.023	0.024	17	0.013	0.005	16	0.200	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	9	0.010	0.000	9	0.009	0.003	9	0.010	0.000	8	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.050	0.010K
NH3_UN	P619	mg/L	0.000	0.001	13	0.000	0.000	13	0.000	0.000	12	0.001	0.001	9	0.003	0.000
NO3_N	P620	mg/L	1.165	0.406	4	1.008	0.383	5	0.798	0.275	6	1.100	0.000	3	1.400	0.250
NO2_NO3	P630	mg/L	1.198	0.078	9	1.110	0.208	9	0.794	0.133	8	1.099	0.098	10	1.400	0.500
TP_P	P665	mg/L	0.036	0.032	14	0.105	0.250	17	0.037	0.015	17	0.022	0.005	17	0.110	0.010K
OP_DIS	P671	mg/L	0.015	0.009	16	0.033	0.036	16	0.014	0.007	17	0.011	0.003	18	0.100	0.010K
HG	P71901	ug/L	0.066	0.020	12	0.060	0.035	14	0.058	0.016	10	0.073	0.019	12	0.110	0.020
COLOR	P80	Pt-Co	15.000	12.437	7	12.333	7.506	3	15.667	2.309	3	46.500	17.678	2	59.000	8.000
TURB	P82079	NTU	1.233	0.631	15	22.957	50.232	14	2.889	2.405	18	1.425	1.135	16	88.000	0.700

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

HARD	P900	mg/L	133.438	10.475	16	115.611	28.550	18	112.500	16.493	18	137.167	6.618	18	180.000	61.000
COND	P95	umhos	270.944	28.175	18	237.556	46.159	18	228.722	24.814	18	272.556	17.195	18	363.000	165.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 55B080 Name: LITTLE SPOKANE R NR GRIFFITH SPRING

Class: A Elevation: 1565 River Mile: 7.50

Location:
FOLLOW RUTTER PARKWAY 6 MILES FROM NINE MILE FALLS DAM TO SECOND BRIDGE CROSSING. STATION IS JUST BEFORE TURNOFF TO FISH HATCHERY

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.300	1.682	3	4.267	2.228	3	12.333	2.003	3	15.900	1.400	3	16.900	5.700
PRESS	P25	mmHg	724.767	8.260	3	723.467	4.601	3	721.367	1.102	3	720.033	3.011	3	733.800	717.600
OXYGEN	P300	mg/L	10.067	0.208	3	10.767	0.451	3	9.433	0.153	3	8.967	0.231	3	10.300	8.700
PCTSAT	P301	Percent	89.633	2.616	3	86.767	3.287	3	92.533	2.676	3	95.200	3.143	3	98.800	86.200
FC	P31616	#/100ml	101.333	120.093	3	366.667	299.555	3	38.000	21.213	2	68.333	45.960	3	240.000	31.000
PH	P400	units	8.300	0.265	3	7.833	0.321	3	8.300	0.000	3	8.433	0.058	3	8.500	8.000
SUSSOL	P530	mg/L	3.000	0.000	3	245.667	343.896	3	13.000	5.292	3	0.000	0.000	0	5.000	3.000
NH3_N	P610	mg/L	0.013	0.006	3	0.169	0.217	3	0.011	0.001	3	0.000	0.000	0	0.020	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	3	0.010	0.000	3	0.007	0.005	3	0.000	0.000	0	0.010	0.010K
NO2_NO3	P630	mg/L	1.079	0.045	3	0.951	0.348	3	0.771	0.019	3	0.963	0.071	3	1.110	0.900
TP_P	P665	mg/L	0.019	0.001	3	0.400	0.573	3	0.029	0.006	3	0.017	0.006	3	0.020	0.010K
OP_DIS	P671	mg/L	0.012	0.003	3	0.069	0.078	3	0.012	0.002	3	0.010	0.000	3	0.010	0.010K
HG	P71901	ug/L	0.001	0.000	3	0.100	0.169	3	0.003	0.002	3	0.001	0.000	3	0.000	0.000
TURB	P82079	NTU	1.000	0.000	3	81.367	120.514	3	2.267	0.764	3	1.000	0.000	3	1.000	1.000K
HARD	P900	mg/L	131.333	6.506	3	91.333	35.698	3	103.667	5.033	3	122.333	9.074	3	131.000	112.000
COND	P95	umhos	267.000	11.358	3	202.667	68.017	3	223.000	6.083	3	267.667	4.933	3	280.000	259.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 55B082 Name: LITTLE SPOKANE R ABV DARTFORD CREEK Class: A Elevation: 1578 River Mile: 10.30

Location:
STATION IS LOCATED AT BRIDGE WHERE DARTFORD DRIVE CROSSES LITTLE SPOKANE RIVER JUST UPSTREAM FROM MOUTH OF DARTFORD CREEK

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.167	2.684	3	1.967	1.701	3	13.000	3.105	3	19.867	2.050	3	21.100	1.300
PRESS	P25	mmHg	724.233	8.009	3	723.300	4.713	3	720.700	0.819	3	719.167	2.695	3	733.000	716.800
OXYGEN	P300	mg/L	12.333	0.306	3	12.267	0.643	3	10.300	0.173	3	9.500	0.529	3	13.000	9.100
PCTSAT	P301	Percent	104.233	4.692	3	93.100	5.047	3	102.600	5.565	3	109.200	1.682	3	110.500	97.000
FC	P31616	#/100ml	37.000	22.517	3	462.333	726.214	3	129.500	113.844	2	75.667	35.726	3	116.000	24.000
PH	P400	units	8.433	0.306	3	7.867	0.379	3	8.267	0.153	3	8.533	0.115	3	8.700	8.100
SUSSOL	P530	mg/L	4.333	2.082	3	207.000	266.670	3	17.667	7.638	3	0.000	0.000	0	7.000	2.000
NH3_N	P610	mg/L	0.017	0.006	3	0.184	0.259	3	0.013	0.002	3	0.000	0.000	0	0.020	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	3	0.010	0.000	3	0.007	0.005	3	0.000	0.000	0	0.010	0.010K
NO2_NO3	P630	mg/L	0.917	0.070	3	0.833	0.384	3	0.496	0.047	3	0.607	0.087	3	0.990	0.510
TP_P	P665	mg/L	0.022	0.007	3	0.433	0.580	3	0.037	0.005	3	0.033	0.012	3	0.040	0.020
OP_DIS	P671	mg/L	0.011	0.002	3	0.084	0.086	3	0.015	0.005	3	0.017	0.006	3	0.020	0.010K
HG	P71901	ug/L	0.001	0.001	3	0.009	0.010	3	0.002	0.001	3	0.001	0.000	3	0.000	0.000
TURB	P82079	NTU	1.133	0.115	3	70.300	100.002	3	2.833	0.577	3	1.133	0.115	3	1.200	1.000K
HARD	P900	mg/L	116.000	5.000	3	75.333	38.109	3	83.333	4.163	3	104.667	10.504	3	116.000	94.000
COND	P95	umhos	244.667	10.263	3	174.000	69.505	3	183.333	5.508	3	233.667	12.055	3	256.000	221.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 55B100 Name: LITTLE SPOKANE R ABV PEONE CREEK Class: A Elevation: 1615 River Mile: 13.50

Location:
STATION IS LOCATED AT FIRST BRIDGE CROSSING OF LITTLE SPOKANE DRIVE
UPSTREAM FROM MOUTH OF LITTLE DEEP CREEK AND PEONE (DEADMAN) CREEK.
JUST ABOVE WANDEMERE GOLF COURSE

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	5.433	2.797	3	1.667	2.376	3	13.100	3.451	3	20.400	2.254	3	21.800	0.100
PRESS	P25	mmHg	724.000	7.879	3	723.000	5.226	3	719.733	0.814	3	718.300	3.081	3	732.800	715.500
OXYGEN	P300	mg/L	12.667	0.351	3	12.367	0.643	3	10.333	0.321	3	9.733	0.493	3	13.100	9.400
PCTSAT	P301	Percent	105.133	5.162	3	93.067	4.884	3	103.267	4.992	3	113.200	0.624	3	113.700	94.600
FC	P31616	#/100ml	10.333	3.055	3	780.333	1148.099	3	8.500	7.778	2	45.333	8.327	3	52.000	11.000
PH	P400	units	8.300	0.200	3	7.833	0.416	3	8.300	0.100	3	8.467	0.058	3	8.500	8.100
SUSSOL	P530	mg/L	2.667	1.155	3	100.333	130.216	3	14.333	6.807	3	0.000	0.000	0	6.000	2.000
NH3_N	P610	mg/L	0.017	0.012	3	0.234	0.302	3	0.015	0.003	3	0.000	0.000	0	0.030	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	3	0.010	0.000	3	0.007	0.005	3	0.000	0.000	0	0.010	0.010K
NO2_NO3	P630	mg/L	0.935	0.073	3	0.829	0.415	3	0.495	0.058	3	0.553	0.083	3	1.010	0.460
TP_P	P665	mg/L	0.018	0.004	3	0.358	0.475	3	0.035	0.004	3	0.027	0.006	3	0.030	0.020
OP_DIS	P671	mg/L	0.010	0.000	3	0.081	0.091	3	0.012	0.002	3	0.013	0.006	3	0.020	0.010K
HG	P71901	ug/L	0.001	0.000	3	0.018	0.027	3	0.002	0.001	3	0.001	0.000	3	0.000	0.000
TURB	P82079	NTU	1.000	0.000	3	39.100	55.551	3	2.500	0.529	3	1.000	0.000	3	1.000	1.000K
HARD	P900	mg/L	114.333	6.658	3	72.000	38.158	3	81.000	3.606	3	102.333	11.590	3	116.000	90.000
COND	P95	umhos	237.333	11.930	3	168.000	64.645	3	181.333	4.933	3	247.333	45.004	3	298.000	212.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 55C070 Name: PEONE (DEADMAN) CREEK ABV L DEEP CR

Class: A Elevation: 1735 River Mile: 0.50

Location:
STATION IS LOCATED JUST ABOVE CONFLUENCE OF LITTLE DEEP CREEK AND PEONE (DEADMAN) CREEK AT BRIDGE ON SHADY SLOPE ROAD

Water Years Sampled:
5 6 7 8 9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	9.667	3.190	3	4.850	1.485	2	12.767	2.538	3	19.733	1.589	3	20.700	5.900
PRESS	P25	mmHg	723.733	7.600	3	720.100	2.828	2	719.667	1.504	3	717.900	2.563	3	732.300	715.500
OXYGEN	P300	mg/L	10.800	0.700	3	11.750	0.212	2	10.000	0.436	3	8.867	0.473	3	11.600	8.500
PCTSAT	P301	Percent	99.200	0.819	3	96.650	1.626	2	99.167	1.457	3	101.900	2.227	3	103.900	97.800
FC	P31616	#/100ml	6.667	3.512	3	20.500	9.192	2	18.000	18.385	2	73.667	32.747	3	100.000	3.000
PH	P400	units	8.400	0.200	3	8.050	0.495	2	8.200	0.100	3	8.567	0.153	3	8.700	8.200
SUSSOL	P530	mg/L	6.333	2.517	3	193.500	253.851	2	21.000	10.392	3	0.000	0.000	0	6.000	4.000
NH3_N	P610	mg/L	0.013	0.006	3	0.035	0.007	2	0.011	0.002	3	0.000	0.000	0	0.020	0.010K
NO2_DIS	P613	mg/L	0.011	0.002	3	0.015	0.007	2	0.008	0.004	3	0.000	0.000	0	0.010	0.010K
NO2_NO3	P630	mg/L	0.723	0.100	3	0.830	0.071	2	0.291	0.057	3	0.617	0.129	3	0.730	0.470
TP_P	P665	mg/L	0.042	0.007	3	0.130	0.042	2	0.057	0.009	3	0.103	0.078	3	0.190	0.040
OP_DIS	P671	mg/L	0.031	0.002	3	0.055	0.007	2	0.030	0.010	3	0.080	0.070	3	0.160	0.030
HG	P71901	ug/L	0.001	0.000	3	0.004	0.002	3	0.002	0.000	3	0.001	0.000	3	0.000	0.000
TURB	P82079	NTU	1.233	0.321	3	28.300	34.931	2	3.167	1.762	3	1.600	0.458	3	2.000	1.100
HARD	P900	mg/L	122.667	14.048	3	91.500	47.376	2	67.333	8.737	3	115.333	24.007	3	133.000	88.000
COND	P95	umhos	267.000	30.806	3	201.500	94.045	2	159.000	17.349	3	257.333	42.360	3	300.000	209.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 56A070 Name: HANGMAN CR @ MOUTH

Class: A Elevation: 1720 River Mile: 0.60

Location:
LOCATED AT THE MOUTH OF HANGMAN CREEK AT RIVERSIDE AVENUE BRIDGE IN SPOKANE

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                X       X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.367	4.733	18	2.700	2.598	16	14.444	4.724	18	20.556	2.318	18	24.800	-0.100
PRESS	P25	mmHg	719.011	7.465	18	716.038	8.289	16	716.883	10.009	18	715.671	6.375	17	794.000	690.000
OXYGEN	P300	mg/L	13.700	1.432	18	12.300	1.149	16	11.039	1.257	18	12.344	1.484	18	16.100	8.800
PCTSAT	P301	Percent	117.578	20.872	18	95.825	5.513	16	113.235	15.506	17	143.065	18.284	17	173.900	80.600
FC	P31616	#/100ml	78.778	142.529	18	163.857	196.062	14	59.938	89.507	16	110.706	163.228	17	730.000	1.000
PH	P400	units	8.378	0.429	18	7.500	0.372	15	8.324	0.434	17	8.667	0.200	18	9.200	7.000
SUSSOL	P530	mg/L	8.361	5.423	18	306.643	653.086	14	31.313	57.156	16	10.933	11.272	15	1700.000	1.000
FLOW	P60	CFS	23.717	16.989	18	622.188	893.708	16	161.389	181.596	18	10.094	5.637	16	1890.000	2.700
NH3_N	P610	mg/L	0.031	0.030	16	0.106	0.066	14	0.033	0.022	17	0.038	0.043	16	1.000	0.010K
NO2_DIS	P613	mg/L	0.011	0.003	9	0.019	0.008	8	0.010	0.002	9	0.019	0.011	8	0.040	0.010K
NO2_N	P615	mg/L	0.014	0.007	8	0.018	0.011	5	0.010	0.000	5	0.020	0.011	6	0.050	0.010K
NH3_UN	P619	mg/L	0.001	0.001	13	0.001	0.001	12	0.002	0.002	11	0.024	0.055	9	0.170	0.000
NO3_N	P620	mg/L	2.483	1.786	4	4.560	2.363	5	0.563	0.552	6	0.670	0.551	3	7.600	0.100
NO2_NO3	P630	mg/L	1.085	1.130	9	4.736	2.250	8	1.017	1.030	9	0.850	0.352	10	5.530	0.280
TP_P	P665	mg/L	0.071	0.047	14	0.225	0.156	15	0.089	0.046	17	0.106	0.121	17	0.490	0.010K
OP_DIS	P671	mg/L	0.040	0.020	16	0.088	0.026	14	0.036	0.021	17	0.036	0.026	18	0.150	0.010K
COLOR	P80	Pt-Co	86.714	73.086	7	82.000	84.870	3	22.333	15.044	3	56.500	9.192	2	180.000	8.000
TURB	P82079	NTU	6.107	9.646	15	112.708	126.708	12	12.350	12.648	18	9.431	18.967	16	760.000	0.800
COND	P95	umhos	327.778	47.688	18	187.750	66.700	16	211.056	52.813	18	369.778	37.787	18	445.000	90.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 57A150 Name: SPOKANE R @ STATELINE BR

Class: A Elevation: 1980 River Mile: 96.00

Location:
LOCATED AT THE BRIDGE ON STATELINE VILLAGE ROAD, .1 MILE WEST OF THE WASHINGTON-IDAHO BORDER, 0.1 MILE NORTH OF I-90.

Water Years Sampled:

5	6						7						8						9				
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
X	X	X	X	X	X	X				X	X	X		X			X							X	X

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.275	3.723	4	2.400	1.023	4	8.433	4.339	3	20.133	2.173	3	6.600	1.800
ZN	P1094	ug/L	0.000	0.000	0	116.000	7.810	3	115.000	20.518	3	68.333	2.082	3	0.000	0.000
CD	P1113	ug/L	0.000	0.000	0	0.473	0.243	3	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PB	P1114	ug/L	0.000	0.000	0	4.200	0.458	3	0.000	0.000	0	0.000	0.000	0	0.000	0.000
CR	P1118	ug/L	0.000	0.000	0	0.220	0.026	3	0.000	0.000	0	0.000	0.000	0	0.000	0.000
CU	P1119	ug/L	0.000	0.000	0	2.300	0.520	3	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PRESS	P25	mmHg	717.275	4.642	4	714.750	5.105	4	710.433	6.612	3	711.700	2.696	3	720.300	709.700
OXYGEN	P300	mg/L	10.425	1.652	4	12.450	0.733	4	11.400	0.656	3	7.667	0.603	3	12.300	12.300
PCTSAT	P301	Percent	92.875	9.163	4	96.650	4.623	4	103.533	5.499	3	89.433	4.043	3	105.700	94.700
FC	P31616	#/100ml	6.500	5.447	4	9.667	13.317	3	4.333	3.512	3	218.333	356.542	3	5.000	5.000
PH	P400	units	7.475	0.443	4	7.375	0.690	4	7.533	0.321	3	7.567	0.473	3	8.400	7.000
SUSSOL	P530	mg/L	1.250	0.500	4	1.667	0.577	3	3.333	0.577	3	2.333	0.577	3	2.000	2.000
FLOW	P60	CFS	0.000	0.000	0	9110.000	6946.819	3	11113.333	3709.250	3	0.000	0.000	0	0.000	0.000
NH3_N	P610	mg/L	0.018	0.008	4	0.024	0.016	3	0.010	0.000	3	0.015	0.009	3	0.010	0.010K
NO2_DIS	P613	mg/L	0.010	0.000	4	0.010	0.000	3	0.007	0.005	3	0.010	0.000	3	0.010	0.010K
NO2_NO3	P630	mg/L	0.024	0.009	4	0.059	0.028	3	0.027	0.022	3	0.087	0.108	3	0.030	0.030
TP_P	P665	mg/L	0.013	0.004	4	0.015	0.007	2	0.014	0.001	3	0.018	0.008	3	0.010	0.010K
OP_DIS	P671	mg/L	0.010	0.000	4	0.011	0.002	3	0.007	0.005	3	0.010	0.000	3	0.010	0.010K
HG	P71901	ug/L	0.000	0.000	0	0.040	0.000	3	0.063	0.040	3	0.182	0.128	3	0.000	0.000
TURB	P82079	NTU	1.050	0.100	4	2.333	1.286	3	2.067	0.451	3	2.000	0.520	3	1.200	1.200
HARD	P900	mg/L	21.667	2.082	3	23.000	0.000	3	22.667	0.577	3	20.333	0.577	3	24.000	24.000
COND	P95	umhos	61.000	10.893	4	56.750	2.754	4	54.667	8.622	3	53.000	5.568	3	62.000	60.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 57A190 Name: SPOKANE R NR POST FALLS

Class: A Elevation: 2050 River Mile: 100.70

Location:
LOCATED AT THE BANK APPROXIMATELY .75 MILE SOUTH OF INTERSTATE 90
OFF OF MCQUIRE ROAD AT THE SPORTSMAN'S ACCESS AND CABLEWAY

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
                                X X X X X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	9.571	3.831	17	2.500	1.372	15	9.243	4.819	14	20.380	1.616	15	23.300	0.300
CU	P1042	ug/L	3.280	4.095	10	1.355	1.001	11	1.750	1.340	12	3.600	1.761	10	14.000	1.000
ZN	P1092	ug/L	82.700	29.796	10	111.455	22.002	11	132.583	121.397	12	61.444	10.382	9	505.000	8.000
ZN	P1094	ug/L	75.083	34.429	12	111.455	22.002	11	132.583	121.397	12	60.400	10.330	10	0.000	0.000
CD	P1113	ug/L	0.318	0.155	12	0.425	0.196	11	0.726	0.491	11	0.212	0.053	9	1.800	0.100
PB	P1114	ug/L	1.858	1.637	12	4.018	3.857	11	2.180	1.512	10	1.925	1.146	12	14.000	1.000
CR	P1118	ug/L	0.998	1.294	12	1.048	1.358	11	1.158	1.240	12	1.898	3.146	12	11.000	0.200
CU	P1119	ug/L	3.833	3.493	12	1.900	0.922	11	2.333	1.435	12	4.091	1.640	11	0.000	0.000
PRESS	P25	mmHg	709.935	6.874	17	731.020	62.885	15	711.227	11.719	15	709.529	8.379	14	944.000	683.000
OXYGEN	P300	mg/L	9.853	1.368	17	12.753	0.938	15	12.340	1.761	15	8.260	0.636	15	15.100	6.200
PCTSAT	P301	Percent	91.435	8.570	17	97.307	6.640	15	113.469	7.876	13	96.807	6.868	14	125.300	65.800
FC	P31616	#/100ml	2.063	1.879	16	2.615	2.599	13	2.667	2.964	12	5.714	3.625	14	12.000	1.000
PH	P400	units	7.424	0.548	17	7.171	0.230	14	7.313	0.484	15	7.253	0.409	15	8.500	6.400
SUSSOL	P530	mg/L	3.176	2.325	17	2.846	2.703	13	2.800	1.897	15	2.154	1.068	13	10.000	1.000
FLOW	P60	CFS	2992.000	2412.900	17	5888.667	5858.492	15	12270.667	5731.744	15	1685.933	2836.372	15	24100.000	320.000
NH3_N	P610	mg/L	0.018	0.013	16	0.027	0.018	13	0.013	0.006	14	0.012	0.004	13	0.060	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	8	0.010	0.000	6	0.010	0.000	6	0.010	0.000	5	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	14	0.000	0.000	13	0.000	0.000	11	0.000	0.000	9	0.000	0.000
NO3_N	P620	mg/L	0.026	0.009	5	0.038	0.011	5	0.015	0.012	6	0.020	0.017	3	0.560	0.010K
NO2_NO3	P630	mg/L	0.019	0.011	8	0.048	0.029	6	0.027	0.031	6	0.016	0.008	7	0.090	0.010K
TP_P	P665	mg/L	0.025	0.020	14	0.021	0.021	14	0.016	0.006	14	0.025	0.005	14	0.150	0.010K
OP_DIS	P671	mg/L	0.012	0.006	15	0.012	0.004	13	0.010	0.000	14	0.011	0.003	15	0.120	0.010K
HG	P71901	ug/L	0.071	0.036	12	0.051	0.026	11	0.058	0.012	9	0.072	0.017	10	0.150	0.020
COLOR	P80	Pt-Co	9.429	4.237	7	2.500	2.121	2	8.667	8.021	3	21.333	25.541	3	50.000	1.000
TURB	P82079	NTU	1.014	0.218	14	1.364	0.665	14	1.487	0.649	15	1.187	0.396	15	7.000	0.500
HARD	P900	mg/L	27.714	7.610	14	29.733	7.066	15	26.786	7.577	14	29.000	6.118	15	51.000	15.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

COND	P95	umhos	55.176	3.729	17	57.800	12.497	15	55.333	8.789	15	59.867	9.935	15	87.000	23.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 59A070 Name: COLVILLE R @ KETTLE FALLS

Class: A Elevation: 1250 River Mile: 5.00

Location:
LOCATED 5 MILES FROM THE MOUTH OF THE COLVILLE RIVER .5 MILES SOUTH OF KETTLE FALLS AT THE USGS GAGING STATION JUST BELOW MEYERS FALLS AND THE POWER PLANT

Water Years Sampled:

5	6										7										8										9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
	X	X	X	X	X	X	X	X	X	X	X		X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.554	3.246	13	3.200	2.234	8	10.843	3.892	14	18.247	2.647	15	22.800	0.000
PRESS	P25	mmHg	727.738	4.709	13	723.750	9.053	8	723.353	14.845	15	726.486	6.347	14	740.000	678.000
OXYGEN	P300	mg/L	11.069	1.470	13	12.038	0.819	8	10.567	1.052	15	8.520	0.667	15	13.900	7.200
PCTSAT	P301	Percent	93.346	8.336	13	94.188	4.513	8	100.677	4.929	13	93.871	6.547	14	111.700	68.200
FC	P31616	#/100ml	74.231	104.047	13	83.625	76.914	8	106.200	174.097	15	120.133	101.421	15	650.000	4.000
PH	P400	units	8.123	0.259	13	7.763	0.378	8	8.047	0.316	15	8.313	0.168	15	8.600	7.100
SUSSOL	P530	mg/L	85.077	274.617	13	48.143	41.695	7	35.800	43.601	15	12.000	4.359	13	999.000	2.000
FLOW	P60	CFS	95.077	32.188	13	335.250	302.442	8	470.333	339.483	15	83.600	48.299	15	1580.000	28.000
NH3_N	P610	mg/L	0.063	0.046	12	0.186	0.147	7	0.030	0.017	14	0.028	0.016	13	0.490	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	8	0.013	0.006	3	0.012	0.004	6	0.010	0.000	5	0.020	0.010K
NO2_N	P615	mg/L	0.010	0.000	4	0.010	0.000	3	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.001	0.001	10	0.001	0.001	6	0.001	0.001	11	0.002	0.001	9	0.004	0.000
NO3_N	P620	mg/L	0.205	0.134	2	0.643	0.569	3	0.162	0.074	6	0.117	0.047	3	1.300	0.060
NO2_NO3	P630	mg/L	0.275	0.176	8	0.857	0.367	3	0.203	0.146	6	0.066	0.040	7	1.280	0.010K
TP_P	P665	mg/L	0.079	0.041	11	0.096	0.041	8	0.074	0.021	14	0.076	0.020	14	0.190	0.010K
OP_DIS	P671	mg/L	0.052	0.019	12	0.068	0.042	8	0.028	0.010	14	0.039	0.014	15	0.160	0.010K
COLOR	P80	Pt-Co	40.857	40.847	7	31.500	3.536	2	18.333	4.619	3	31.000	46.033	3	130.000	1.000
TURB	P82079	NTU	2.483	0.878	12	16.263	12.460	8	9.033	6.702	15	3.573	1.362	15	68.000	1.000K
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	200.000	200.000
COND	P95	umhos	346.077	29.190	13	346.375	76.904	8	264.267	38.134	15	348.733	19.590	15	455.000	200.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 60A070 Name: KETTLE R NR BARSTOW

Class: A Elevation: 1400 River Mile: 10.90

Location:
LOCATED 10.9 MILES FROM THE MOUTH OF THE KETTLE RIVER, .75 MILES EAST OF BARSTOW ON THE FERRY-STEVENS COUNTY LINE

Water Years Sampled:

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5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
  X X X X X X X     X X   X     X X   X X X X X X X X X X X X X X
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VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	6.179	4.135	14	3.117	1.924	6	9.100	2.656	14	18.413	2.360	15	22.100	0.000
PRESS	P25	mmHg	730.486	4.860	14	725.167	7.818	6	725.087	14.310	15	728.186	5.726	14	741.000	680.000
OXYGEN	P300	mg/L	12.236	1.732	14	13.267	0.557	6	12.020	1.026	15	9.473	0.456	15	14.900	7.900
PCTSAT	P301	Percent	101.429	7.719	14	103.417	3.528	6	109.200	7.802	13	104.543	2.191	14	125.500	75.600
FC	P31616	#/100ml	1.643	0.929	14	1.667	1.633	6	11.267	13.414	15	6.333	5.790	15	53.000	1.000
COD	P340	mg/L	6.455	2.296	11	9.200	4.868	5	16.733	5.444	15	8.929	4.233	14	27.000	4.000K
PH	P400	units	8.036	0.499	14	7.833	0.653	6	7.673	0.422	15	8.287	0.233	15	8.500	6.900
SUSSOL	P530	mg/L	2.607	1.778	14	3.600	2.608	5	17.600	14.662	15	3.231	3.086	13	49.000	0.500
FLOW	P60	CFS	652.385	387.625	13	1244.500	1154.362	6	8062.000	4811.585	15	1420.733	1442.780	15	20100.000	173.000
NH3_N	P610	mg/L	0.011	0.003	13	0.026	0.018	5	0.014	0.006	14	0.010	0.000	13	0.050	0.010K
NO2_DIS	P613	mg/L	0.009	0.003	8	0.010	0.000	2	0.010	0.000	6	0.010	0.000	4	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	5	0.010	0.000	3	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.000	0.000	10	0.000	0.000	5	0.000	0.000	11	0.001	0.001	9	0.001	0.000
NO3_N	P620	mg/L	0.090	0.078	3	0.070	0.020	3	0.020	0.011	6	0.030	0.035	3	0.180	0.010K
NO2_NO3	P630	mg/L	0.056	0.032	8	0.125	0.007	2	0.020	0.011	6	0.019	0.009	7	0.130	0.010K
TP_P	P665	mg/L	0.018	0.024	11	0.015	0.005	6	0.026	0.015	13	0.011	0.004	14	0.090	0.010K
OP_DIS	P671	mg/L	0.010	0.001	12	0.010	0.000	6	0.010	0.000	14	0.016	0.023	15	0.100	0.010K
COLOR	P80	Pt-Co	15.857	4.451	7	27.000	26.870	2	31.000	8.888	3	3.333	4.041	3	46.000	1.000
TURB	P82079	NTU	0.900	0.191	13	2.217	1.167	6	2.960	1.847	15	0.940	0.176	15	7.800	0.500
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	549.000	549.000
COND	P95	umhos	169.286	43.218	14	149.833	37.064	6	78.800	26.595	15	162.667	74.883	15	372.000	46.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 61A070 Name: COLUMBIA R @ NORTHPORT (USGS)

Class: AA Elevation: 1280 River Mile: 735.10

Location:
LOCATED AT THE BRIDGE CROSSING THE COLUMBIA RIVER ON STATE HIGHWAY 25,
IMMEDIATELY NORTHEAST OF NORTHPORT

Water Years Sampled:

```
5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X X X X X X X X X X X X X X X X X X X X X           X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.225	3.694	4	3.867	1.443	3	7.533	3.850	3	16.600	1.212	3	5.800	5.800
ZN	P1094	ug/L	0.000	0.000	0	13.000	1.414	2	36.000	39.598	2	11.500	2.121	2	0.000	0.000
CD	P1113	ug/L	0.000	0.000	0	0.110	0.014	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PB	P1114	ug/L	0.000	0.000	0	1.700	0.283	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000
CR	P1118	ug/L	0.000	0.000	0	0.355	0.021	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000
CU	P1119	ug/L	0.000	0.000	0	5.400	4.808	2	0.000	0.000	0	0.000	0.000	0	0.000	0.000
PRESS	P25	mmHg	734.050	5.416	4	733.633	4.765	3	725.667	6.243	3	725.833	3.386	3	738.400	738.400
OXYGEN	P300	mg/L	12.325	1.607	4	13.500	0.200	3	12.500	0.100	3	10.633	0.379	3	13.600	13.600
PCTSAT	P301	Percent	107.200	5.850	4	106.333	5.750	3	109.200	10.900	3	113.500	2.042	3	111.700	111.700
FC	P31616	#/100ml	5.000	1.414	4	2.500	2.121	2	4.000	3.000	3	9.667	8.505	3	7.000	7.000
CHL	P32211	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	1.033	0.114	3	0.000	0.000
PHEO	P32218	ug/L	0.000	0.000	0	0.000	0.000	0	0.000	0.000	0	1.590	0.807	3	0.000	0.000
PH	P400	units	7.775	0.222	4	7.533	0.289	3	8.050	0.212	2	8.033	0.252	3	7.600	7.600
SUSSOL	P530	mg/L	2.000	0.816	4	1.500	0.707	2	5.000	2.000	3	2.333	0.577	3	2.000	2.000
FLOW	P60	CFS	0.000	0.000	0	120000.000	35355.339	2	143000.000	49789.557	3	0.000	0.000	0	0.000	0.000
NH3_N	P610	mg/L	0.024	0.003	4	0.021	0.015	2	0.018	0.010	3	0.017	0.012	3	0.020	0.020
NO2_DIS	P613	mg/L	0.010	0.000	4	0.010	0.000	2	0.007	0.005	3	0.010	0.000	3	0.010	0.010K
NO2_NO3	P630	mg/L	0.074	0.020	4	0.096	0.006	2	0.079	0.028	3	0.059	0.014	3	0.080	0.080
TP_P	P665	mg/L	0.023	0.004	4	0.017	0.004	2	0.016	0.005	3	0.045	0.034	2	0.020	0.020
OP_DIS	P671	mg/L	0.016	0.007	4	0.011	0.001	2	0.008	0.003	3	0.028	0.025	3	0.010	0.010K
HG	P71901	ug/L	0.000	0.000	0	0.040	0.000	2	0.107	0.115	3	0.186	0.121	3	0.000	0.000
TURB	P82079	NTU	1.000	0.000	4	1.400	0.566	2	1.533	0.503	3	1.833	0.379	3	1.000	1.000K
HARD	P900	mg/L	70.333	0.577	3	50.000	36.770	2	68.667	3.512	3	63.667	3.055	3	71.000	71.000
COND	P95	umhos	144.500	11.030	4	152.000	0.000	3	153.333	6.110	3	133.667	11.150	3	161.000	161.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

REPORT CREATION DATE: 02/25/92

QUARTERLY DATA SUMMARY--SIX YEAR AVERAGE

Station Number: 62A150 Name: PEND OREILLE R @ NEWPORT

Class: A Elevation: 2030 River Mile: 88.20

Location:
LOCATED IN BONNER COUNTY, IDAHO AT THE BRIDGE ON U S HIGHWAY 2, JUST EAST OF NEWPORT

Water Years Sampled:

```
5 6                 7                   8                   9
9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
X X X X X X X X                 X   X X X X X X X X X X X X X X
```

VARIABLE	P-CODE	UNITS	---OCTOBER-DECEMBER---			-----JANUARY-MARCH----			------APRIL-JUNE------			----JULY-SEPTEMBER----			-----SIX YEAR------	
			MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MEAN	STD. DEV.	N	MAX	MIN
TEMP	P10	C	8.333	4.433	21	2.150	1.341	18	9.482	3.674	17	19.350	1.785	18	22.200	-0.100
PRESS	P25	mmHg	711.795	6.307	21	709.867	10.127	18	708.322	10.999	18	709.618	6.902	17	799.000	682.000
OXYGEN	P300	mg/L	10.533	1.300	21	12.733	0.732	18	11.644	0.933	18	8.967	0.455	18	15.500	6.800
PCTSAT	P301	Percent	94.562	6.143	21	98.939	5.343	18	108.556	6.412	16	103.476	4.836	17	119.800	71.900
FC	P31616	#/100ml	1.500	1.147	20	2.059	2.221	17	1.529	0.874	17	4.444	9.990	18	44.000	1.000
PH	P400	units	7.919	0.289	21	7.647	0.314	17	7.947	0.350	17	8.256	0.305	18	8.600	7.000
SUSSOL	P530	mg/L	3.286	2.849	21	6.250	7.271	16	5.222	2.777	18	3.125	2.363	16	26.000	1.000
FLOW	P60	CFS	22822.222	5644.316	18	18042.941	8254.814	17	34288.889	18820.511	18	16176.250	11068.954	16	75600.000	2980.000
NH3_N	P610	mg/L	0.013	0.010	19	0.022	0.026	15	0.011	0.004	17	0.011	0.003	16	1.000	0.010K
NO2_DIS	P613	mg/L	0.009	0.002	12	0.010	0.000	9	0.009	0.003	9	0.010	0.000	8	0.010	0.010K
NO2_N	P615	mg/L	0.010	0.000	8	0.010	0.000	5	0.010	0.000	5	0.010	0.000	6	0.010	0.010K
NH3_UN	P619	mg/L	0.001	0.003	14	0.000	0.000	12	0.000	0.000	11	0.001	0.001	9	0.011	0.000
NO3_N	P620	mg/L	0.094	0.166	5	0.030	0.012	5	0.012	0.004	6	0.010	0.000	3	0.390	0.010K
NO2_NO3	P630	mg/L	0.012	0.006	12	0.045	0.017	9	0.015	0.007	9	0.010	0.000	9	0.060	0.010K
TP_P	P665	mg/L	0.017	0.019	18	0.017	0.020	16	0.016	0.009	17	0.013	0.004	17	0.150	0.010K
OP_DIS	P671	mg/L	0.011	0.004	19	0.010	0.001	16	0.010	0.002	17	0.010	0.000	18	0.100	0.010K
COLOR	P80	Pt-Co	8.143	4.337	7	9.000	11.314	2	8.667	8.021	3	23.000	28.355	3	55.000	1.000
TURB	P82079	NTU	1.089	0.205	18	1.647	1.255	17	2.428	0.856	18	1.100	0.338	18	6.000	0.700
HARD	P900	mg/L	0.000	0.000	0	0.000	0.000	0	29.000	1.414	2	0.000	0.000	0	85.000	85.000
COND	P95	umhos	166.571	17.523	21	166.056	16.833	18	148.222	18.122	18	152.222	10.647	18	197.000	107.000

Summary statistics should be used with caution because variables may not be normally distributed. Values at the detection limit were replace with 1/2 the detection limit.

APPENDIX 5

Wateryear 1991 QA Tables

Total Phosphorus

QL= 0.02 mg/L

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	58.87	62
5-10	16.94	62
10-20	13.71	82
20-30	5.65	86
30-40	0.81	0
40-50	4.03	0
50-60	0	0
60-70	0	0
70-80	0	0
80-90	0	0
90-100	0	0
>100	0	0

N=124 Pooled SD = 0.07

Suspended Solids

QL= 3 mg/L

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	32.54	56
5-10	15.08	100
10-20	16.67	100
20-30	19.05	22
30-40	2.38	66
40-50	9.52	41
50-60	0.79	100
60-70	2.38	66
70-80	0.79	0
80-90	0	0
90-100	0	0
>100	0	0

N=126 Pooled SD = 7.67

Turbidity

QL = 2 NTU

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	42.97	43
5-10	25.78	67
10-20	19.51	76
20-30	7.03	33
30-40	4.69	50
40-50	0	0
50-60	0	0
60-70	0	0
70-80	0	0
80-90	0	0
90-100	0	0
>100	0	0

N=128 Pooled SD = 1.126

Barometric Pressure

QL= 0.03 mg/L

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	100	NA
5-10	0	
10-20	0	
20-30	0	
30-40	0	
40-50	0	
50-60	0	
60-70	0	
70-80	0	
80-90	0	
90-100	0	
>100	0	

N=129 Overall PSD= 1.84

pH

QL= NA

Range of Diff	Percent Within Range
0	31.75
0.1	38.1
0.2	15.08
0.3	8.73
0.4	2.38
0.5	3.17
0.06	0
0.7	0
0.8	0.79
0.9	0
1	0

N= 126 Pooled SD = 0.13

Dissolved Oxygen

QL= NA

Range of Diff	Percent Within Range
0	50.39
0.1	39.37
0.2	7.87
0.3	1.57
0.4	0.79
0.5	0

N=127 Pooled SD 0.07

Temperature

QL= NA

Range of Diff	Percent Within Range
0	72.66
0.1	19.53
0.2	4.69
0.3	0
0.4	0.78
0.5	0.78
0.06	0
0.7	0
0.8	0
0.9	0
1	0

N= 128 Pooled SD = 0.06

Coefficient of Variation for Field Replicates.

Conductivity

QL= 7

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	88.19	100
5-10	7.09	100
10-20	3.15	100
20-30	1.57	100
30-40	0	0
40-50	0	0
50-60	0	0
60-70	0	0
70-80	0	0
80-90	0	0
90-100	0	0
>100	0	0

N=129 Pooled SD = 5.89

Fecal Coliform

QL= 8 Colonies/100ml

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	19.05	50
5-10	11.9	100
10-20	18.25	74
20-30	15.08	58
30-40	9.52	75
40-50	14.29	33
50-60	2.38	33
60-70	2.38	0
70-80	3.17	0
80-90	1.59	50
90-100	2.38	33
>100	0	0

N=124 Pooled SD = 22.64

Ammonia

QL = 0.014 mg/L

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	60.77	100
5-10	10	92
10-20	6.15	75
20-30	10.77	100
30-40	5.38	57
40-50	6.15	62
50-60	0.76	100
60-70	0	0
70-80	0	0
80-90	0	0
90-100	0	0
>100	0.76	100

N=131 Pooled SD = 0.0076

Nitrite

QL= 0.02 mg/L

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	91.27	0
5-10	0	0
10-20	3.17	0
20-30	3.97	0
30-40	0	0
40-50	0	0
50-60	0	0
60-70	0	0
70-80	0	0
80-90	0	0
90-100	0	0
>100	0	0

N=128 Pooled SD = 0.0006

Nitrate + Nitrite

QL= 0.19 mg/L

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	81.68	55
5-10	9.92	31
10-20	5.34	14
20-30	2.29	33
30-40	0	0
40-50	0.76	0
50-60	0	0
60-70	0	0
70-80	0	0
80-90	0	0
90-100	0	0
>100	0.76	0

N=131 Pooled SD = 0.078

Ortho Phosphorus

QL = 0.02 mg/L

Range of % CV	Percent Within Range	% Above Quanitation Limit
< 5	79.2	14
5-10	6.4	25
10-20	7.2	33
20-30	4.8	33
30-40	0.8	0
40-50	1.6	50
50-60	0	0
60-70	0	0
70-80	0	0
80-90	0	0
90-100	0	0
>100	0	0

N=125 Pooled SD = 0.013

APPENDIX 6

Floating Stations Reports for WY 1991

1. Little Spokane River
2. Upper Snoqualmie River

CHRISTINE O. GREGOIRE
Director

Water Body No. WA-07-1110
WA-07-1130
WA-07-1140
WA-07-1150
Segment No. 03-07-13
03-07-15
03-07-16

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
7171 Cleanwater Lane, Building 8, LH-14 • Olympia, Washington 98504-6814

January 30, 1992

TO: Dave Wright

THROUGH: Dick Cunningham

FROM: Brad Hopkins

SUBJECT: Upper Snoqualmie River Special Study

At the request of the Northwest Regional Office (NWRO), the Ambient Monitoring Section collected water quality information during low flow conditions (June-September 1991) at three additional locations (see Figure 1) on the Snoqualmie River. They were as follows:

Station #	Description
1) 07N070	North Fork of the Snoqualmie River near Ellisville--River Mile 44.9, 0.3; Lat 46 59 43; Long 121 46 07
2) 07D150	Middle Fork of the Snoqualmie River near Ellisville--River Mile 45.3; Lat 47 07 06; Long 121 46 06
3) 07M070	South Fork of the Snoqualmie River at North Bend--River Mile 44.4, 2.01; Lat 47 33 12; Long 121 47 23

Water quality information generated at these locations will be used by the NWRO to evaluate possible outfall locations and to develop a water quality based permit for a planned WWTP expansion. Regional staff specifically expressed interest in background metals concentrations present during low flow conditions.

Attachment 1 and the enclosed floppy disk provide all of the current water quality information on the Snoqualmie River collected by our section from June-September 1991, including the two mainstem stations at the city of Snoqualmie and near Carnation. To compare data between stations, this same information is provided by date rather than by station in Table 1.

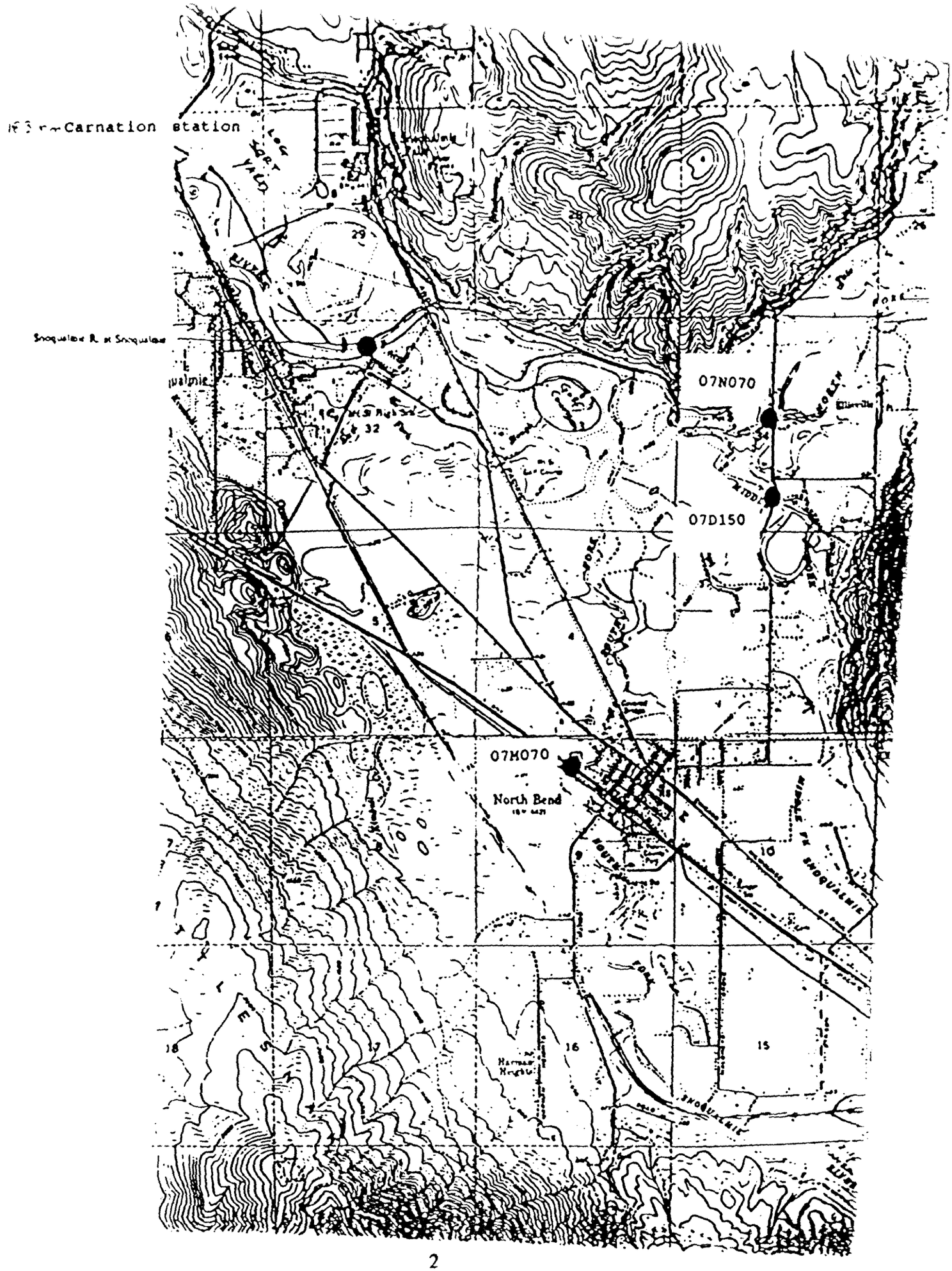
Carnation station
Snoqualmie R. at Snoqualmie
07N070
07D150
07H070
North Bend

Table 1. General Water Quality on the Snoqualmie River

Date 06/17/91

Station #	07N070	07D150	07M070	07D130	07D070
Classification	AA	AA	AA	A	A
Flow	980	2160	889	4000	5310
Water Temp	8.1	7.5	8.5	8.5	9.4
Conductivity	26	19	35	24	35
DO	11.7	11.9	11.9	11.9	11.3
DO Sat (%)	98.5	98.8	101.4	101.3	97.0
pH	6.9	6.8	7.1	6.9	6.9
Residue	3	25	3.0	12.0	21.0
NH3+NH4 -N	0.01K	0.01K	0.01K	0.01K	0.01K
NO2-N (Diss)	0.01K	0.01K	0.01K	0.01K	0.01K
NO2+NO3 -N	0.113	0.072	0.152	0.107	0.149
Phos-Tot	0.011	0.017	0.01K	0.013	0.015
Phos-Ortho	0.01K	0.01K	0.01K	0.01K	0.01K
Turb	1.2	12.0	1.0	3.5	6.5
F.Coliform	6	12	11	15	35

Date 07/22/91

Station #	07N070	07D150	07M070	07D130	07D070
Classification	AA	AA	AA	A	A
Flow	205	1200	268	1390	1550
Water Temp	14.2	13.9	13.8	14.0	16.0
Conductivity	40	22	60	31	49
DO	10.2	10.4	10.5	10.2	10.0
DO Sat (%)	99.2	100.6	101.5	99.0	99.9
pH	6.9	6.7	7.6	7.0	6.9
Residue	2.0	4.0	2.0	2.0	2.0
NH3+NH4 -N	0.011	0.01K	0.01K	0.01	0.015
NO2-N (Diss)	0.01K	0.01K	0.01K	0.01K	0.01K
NO2+NO3 -N	0.141	0.029	0.215	0.093	0.121
Phos-Tot	0.01K	0.017	0.01K	0.01K	0.01K
Phos-Ortho	0.01K	0.01K	0.01K	0.011	0.01K
Turb	3.3	3.9	2.1	3.0	2.5
F.Coliform	5	6J	12	7	12

Table 1. Continued.

Date 08/19/91

Station #	07N070	07D150	07M070	07D130	07D070
Classification	AA	AA	AA	A	A
Flow	75	400	162	637	904
Water Temp	16.2	17.7	14.7	16.6	20.0
Conductivity	62	33	72	51	59
DO	8.9	9.4	10.2	9.2	9.3
DO Sat (%)	90.6	98.8	100.8	94.6	101.0
pH	7.1	6.6	7.2	6.8	7.0
Residue	3.0	9	3.0	3.0	2.0
NH3+NH4 -N	0.01K	0.01K	0.01K	0.01K	0.01K
NO2-N (Diss)	0.01K	0.01K	0.01K	0.01K	0.01K
NO2+NO3 -N	0.313	0.049	0.229	0.139	0.154
Phos-Tot	0.01K	0.01K	0.01K	0.01K	0.01K
Phos-Ortho	0.01K	0.01K	0.01K	0.01K	0.01K
Turb	1.6	2.8	1.5	2.8	2.0
F.Coliform	5	22	15	27	28

Date 09/16/91

Station #	07N070	07D150	07M070	07D130	07D070
Classification	AA	AA	AA	A	A
Flow	80	195	129	415	686
Water Temp	12.0	12.8	12.4	12.4	14.7
Conductivity	91	46	83	60	70
DO	9.9	10.3	10.4	10.2	10.8
DO Sat (%)	91.9	97.4	97.5	95.7	105.0
pH	6.5	6.4	7.3	7.1	7.3
Residue	1.0	5	1.0	2.0	1.0
NH3+NH4 -N	0.01K	0.01K	0.015	0.01	0.01K
NO2-N (Diss)	0.01K	0.01K	0.01K	0.01K	0.01K
NO2+NO3 -N	0.222	0.065	0.296	0.174	0.167
Phos-Tot	0.011	0.014	0.017	0.016	0.015
Phos-Ortho	0.01K	0.01K	0.01K	0.01K	0.01K
Turb	1.0K	1.6	1.0K	1.1	1.0K
F.Coliform	3	100	8	12	6J

K = Less than
J = Estimated value
☐ = Exceeds Water Quality Criteria

General Water Quality

Upper River

The general water quality at all three locations was, for the most part, very good, with the majority of the parameters within the expected range of waters of high quality. The only exceptions were five violations of Washington State Water Quality Standards as highlighted in Table 1 (see Attachment 2 for specific standards). The August temperature violations of 17.7 and 16.2°C (Class AA Criteria < 16°C) on the Middle and North Forks are most likely the result of combined effects of reduced flow and high ambient temperatures--a natural condition. Dissolved oxygen violations for the same time period of 9.4 and 8.9 mg/L (Class AA Criteria > 9.5 mg/L), show a weakness in the water quality standards, and do not reflect instream conditions. This weakness becomes evident upon review of the percent saturation for dissolved oxygen, which show both stations are above 90% of saturation level with 90.6 and 98.9 percent. The remaining two violations, pH of 6.4 and fecal coliform of 100 colonies per 100 mL of sample, for September are at or near the water quality criteria (6.5-8.5 for pH and < 10% of the samples may exceed 100 organisms for fecal coliform).

Mainstem

The water quality for the mainstem Snoqualmie Stations, at Snoqualmie and Carnation, were all within Class A Water Quality Standard (see Attachment 2), with the exception of an August temperature violation at the Carnation stations of 20.0°C (Class A Criteria <18°C).

Metals

Metals concentrations at the three new locations and the corresponding water quality criteria are presented in Table 2. Most of these concentrations are at or near detection limits as denoted by the qualifier codes attached to the data. However, one cadmium value of 0.32 μg/L on the North Fork collected in June does exceed both the calculated acute (0.26 μg/L) and chronic (0.17 μg/L) criteria. This datum may be a laboratory artifact as an inordinately high number of detect were present for the June Northwest ambient monitoring samples. However, a review of the laboratory QA does not indicate a problem. Even if the datum is a valid concentration it should be noted that it is a total recoverable concentration, where as the standards are based on dissolved concentrations. This problem of different methods between water quality values and the standard to which they will be compared, will continue until EPA approves an acid-soluble (dissolved) method. In the interim, EPA recommends applying the criteria using the total recoverable method, even though these criteria may be overly protective.

Detection limits currently available for Hg, Cu, Pb, and Cd are in very close proximity to the chronic criteria, and may lead to overly restrictive permit conditions if the data provided in Table 2 is to be used in the WQBP-TOX.WK1 spreadsheet. It is my recommendation

Table 2. Metals Concentrations (ug/L) and Corresponding Water Quality Criteria on the Upper Snoqualmie River.

								Calculated Water Quality Criteria Based on Total Hardness											
	T-Hg	T-Cr	T-Cu	T-Pb	T-Zn	T-Cd	Hard	Acute Hg	Chronic Hg	Acute Cr	Chronic Cr	Acute Cu	Chronic Cu	Acute Pb	Chronic Pb	Acute Zn	Chronic Zn	Acute Cd	Chronic Cd
North Fork																			
6/17/91	0.04 k	0.4	3 k	1 k	6	0.32	9	2.4	0.012	241.66	28.80	1.83	1.51	3.81	0.15	15.21	13.78	0.26	0.17
7/22/91	NS																		
8/19/91	0.07 p	0.6 v	3 k	2.4 p	4 k	0.1 k	25	2.4	0.012	557.94	66.50	4.80	3.62	13.98	0.54	36.15	32.75	0.82	0.38
9/16/91	0.2 k	0.3 k	3 k	1.9 p	8 v	0.13 p	23	2.4	0.012	521.11	62.11	4.44	3.37	12.57	0.49	33.69	30.51	0.75	0.36
Middle Fork																			
6/17/91	0.04 k	2.3	3 p	1 k	7 v	0.11 p	6	2.4	0.012	173.37	20.67	1.25	1.07	2.27	0.09	10.79	9.77	0.16	0.12
7/22/91	NS																		
8/19/91	0.06 p	0.5 v	3 k	1 k	4 k	0.1 k	12	2.4	0.012	305.86	36.46	2.40	1.93	5.49	0.21	19.41	17.58	0.36	0.21
9/16/91	0.2 k	0.3 k	3 k	1 k	4 k	0.1 k	13	2.4	0.012	326.59	38.93	2.59	2.07	6.08	0.24	20.77	18.82	0.39	0.23
South Fork																			
6/17/91	0.04 k	0.4	3 p	1 k	6	0.1 k	14	2.4	0.012	347.02	41.36	2.78	2.20	6.68	0.26	22.12	20.03	0.43	0.24
7/22/91	NS																		
8/19/91	0.07 p	0.4 v	3 k	1 k	4 k	0.1 k	35	2.4	0.012	734.97	87.60	6.59	4.82	21.46	0.84	48.08	43.55	1.20	0.50
9/16/91	0.2 k	1.3	3 k	1 k	4 k	0.42 p	36	2.4	0.012	752.12	89.65	6.77	4.94	22.24	0.87	49.24	44.60	1.24	0.51

k = Less Than

p = Less Than Quanitation Limit

v = Also Detected in the Blank

NS = No Sample (Laboratory Misplaced Sample)

BOLD # = Exceeds Water Quality Criteria

CHRISTINE O. GREGOIRE
Director

Waterbody No. WA-55-1010
(Segment No. 24-55-02)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
7171 Cleanwater Lane, Building 8, LH-14 • Olympia, Washington 98504-6814

November 14, 1991

TO: Ken Merrill

FROM: David Hallock

SUBJECT: Little Spokane River Study -- Final Report

BACKGROUND

In March, 1989, Ecology included the Little Spokane River on Washington's 304(L) mini-list as water quality impaired due to toxics because of mercury and cyanide contamination. This assessment was based in part on Ambient Monitoring Section (AMS) mercury data for WY87 and WY88 which showed occasional mercury levels in excess of EPA's chronic criteria of 0.012 μg/L.

Because Manchester Lab's detection limit for mercury was 0.02 μg/L, above the chronic criteria level, a water quality standards violation was assumed any time mercury was detected in the monthly samples. However, not only is a fairly large amount of uncertainty associated with values below the quantitation limit (approximately 10 times the detection limit), but the standards specify a four-day average value.

The Eastern Regional Office (ERO) requested that AMS determine whether or not a mercury problem actually exists in the Little Spokane River; and if mercury contamination is found, to identify which general area within the basin is the source of the contamination. In addition, ERO requested we sample the usual suite of conventional constituents in order to further characterize general water quality in the basin.

METHODS

AMS and ERO identified four stations within the Little Spokane River drainage, in addition to AMS' routine ambient monitoring station near the mouth (Table 1).

These five stations were sampled monthly from July 1990 through June 1991. Conventional constituents were sampled at all stations and total metals (Hg, Cu, Pb, Cd, Cr, and Zn) were sampled at the Little Spokane near the mouth in accordance with AMS' standard protocols

(Hopkins, *et al.*, in press) and sent to Manchester Lab for analysis. In addition, the six metals listed above were sampled at the mouth, and mercury was sampled at the remaining four stations for analysis at Battelle Marine Research Laboratory in Sequim, Washington. All metals were collected directly into the sample containers by attaching the containers to a stainless steel holder and lowering the apparatus into the water via a rope. Battelle Lab's samples were collected in teflon bottles previously cleaned by heating in concentrated reagent grade HNO_3 for 48 hours at 90°C, then rinsed five times in deionized water and dried in a laminar flow clean-air bench. Acid preservative (8% HCl) was added in the field, and the bottles placed in zip-lock bags and shipped on ice to the Battelle Lab via Manchester.

Battelle Lab extracted metals with ammonium pyrrolidine dithiocarbamate for Cu, Pb, and Cd, followed by analysis by graphite furnace (Bloom and Crecelius, 1984). Cr and Zn were analyzed directly by graphite furnace. Mercury was analyzed by cold vapor AA (Bloom and Crecelius, 1983). Battelle's results were blank-corrected. Data analysis and graphics were done using WQHYDRO (Aroner, 1991).

DATA QUALITY

The quality of Manchester's data is evaluated through Manchester's continuing quality assurance/quality control (QA/QC) program which includes quality control charts, check standards, in-house matrix spikes, laboratory blanks and duplicates, and regular performance evaluation standards. In addition, AMS maintains its own QA/QC programs which includes standard sampling protocols, blind field duplicates, and blind field blanks. These QA/QC procedures and results are discussed in more detail in Hopkins, *et al.* (in press).

The quality of data from Battelle lab was generally good. The results of an analysis of a performance evaluation sample for Hg were good, although a little low. Where QC results were not within acceptable limits data are flagged with the appropriate remark code. Reviews of Battelle's data by Craig Smith are attached.

RESULTS AND DISCUSSION

Mercury Contamination

Manchester Lab reported results above detection limits for five of the 12 monthly mercury samples from the routine monitoring station near the mouth (Table 2). However, all five were flagged 'J' (estimate) or 'P' (below quantitation limits). (During the first part of the study 'P' was not used and Manchester flagged values below quantitation limits with 'J'.) A field ' ›licate was collected from the Little Spokane River near the mouth on June 4. Manchester .eported a mercury concentration of 0.14 μg/L for this sample; the original sample result was 0.04P μg/L. Manchester was unable to explain the differences between the two values, but given that the result from the first sample was flagged and Battelle's result was well below the criteria, I do not feel a violation of standards occurred.

With exception of one sample date, Battelle Lab's mercury results were approximately an order of magnitude below chronic criteria at all stations (Table 3). Three values in March were above chronic criteria for mercury. These results were from the Little Spokane River stations near Griffith Springs, above Dartford Creek, and above Peone Creek. The mercury concentration near Griffith Springs was two to three orders of magnitude greater than all other results and results from the two upper-most stations were one to two orders of magnitude greater. Battelle re-ran the Griffith Springs sample with nearly identical results. I am inclined to believe these results represent true environmental concentrations. Sample contamination would not explain violations at all three upstream stations: it is unlikely that three samples in March would be contaminated with no contamination problems encountered during the rest of the study. Batch contamination would not explain the low values near the mouth and in Peone Creek. The high mercury results were not correlated with suspended sediment or discharge; these were both greatest at all stations in February.

One explanation for these results is that a pulse of mercury originating upstream of our upper-most station was moving through the system. The pulse had not yet reached the mouth when we sampled, and had, for the most part, passed the upper two stations at the time of sampling. Because travel time between the upper and lower stations is only about six hours, water quality standards for the chronic criteria, which specify a four-day average, were not exceeded. EPA (1986) states that "freshwater aquatic organisms and their uses should not be affected unacceptably" if the four-day chronic criteria is not exceeded. All results were well below the acute criteria of 2.4 μg/L.

At the time the 304(L) list was prepared identifying the Little Spokane River as an area of concern, data between detection and quantitation limits were not qualified and residence time was not considered. Had they been, all the data except one result would have been qualified. That one result, 0.45 μg/L collected October 3, 1989, was verified with the lab at the time. It may have been sample contamination or it may have also been the result of a pulse.

Other Metals Results

Manchester Lab's results exceeded both the tenth percentile and the specific chronic criteria for copper and lead at the Little Spokane River near the mouth in February and March. Copper exceeded the tenth percentile for criteria in June, but the actual chronic criteria value for that date were not exceeded. No values exceeded drinking water criteria. The reasons for these exceedances are unknown. However, February and March were the two highest flow months indicating the source was probably not point-related. Because concentrations were high in both February and March, the four-day average probably exceeded the criteria and water quality standards were violated for Cu and Pb.

Battelle Lab's results for both copper and lead exceeded the tenth percentile in February, and lead exceeded the tenth percentile for the criteria in March (Table 2). The actual chronic criteria values for February (but not March) were also exceeded, based on hardness values for those dates.

Battelle Lab's results were almost always lower than Manchester Lab's, particularly where Manchester's was qualified "J" or "P". This is inevitable, given that most concentrations were below Manchester Lab's detection limits but above Battelle's. There were a number of samples which Manchester quantified as above detection limits but below quantitation limits and which were, therefore, qualified. The differences between the results from these two labs highlight both the difficulty in accurate analysis for whole-water metals, and the importance of interpreting results below the quantitation limit with great caution.

Conventional Water Quality

Conventional water quality was generally fair (Table 4). Individual results from all stations are attached. Figures 1 through 5 illustrate the distribution of oxygen, pH, temperature, fecal coliform bacteria, and total ammonia at each main stem Little Spokane station by river mile. Lines representing water quality standards are also plotted. These distribution plots should be considered conditional since they are based at most on only 12 samples at each station.

Several water quality standards were violated during the course of the study (Table 5) with the Little Spokane River above Dartford Creek displaying the most violations.

Upstream summer temperatures were dramatically higher than downstream temperatures between RM 7.5 and RM 10.3 (Figure 1). Temperatures at the two upper stations and Peone Creek may be expected to exceed (violate) state standards nearly 25% of the time. Temperatures at the lower two stations may be kept below standards by dilution with (presumably) cooler groundwater inflow and Waikiki Springs, although without knowing the temperature and flow of these sources, this is only conjecture.

Oxygen concentrations were above criteria at all stations (there were no violations) (Figure 2). The spread between maximum and minimum concentration increased as distance upstream increased. This is not surprising: the greater volume of water downstream than upstream would be more likely to buffer diurnal and seasonal changes in oxygen. Also, the mid-reach springs would likely have a stabilizing influence on water quality in general. Median oxygen concentrations were significantly ($p=0.004$) lower at the Griffith Springs station (RM 7.5) than at the station above Dartford Creek (RM 10.3). Percent saturation also increased with increasing river mile. The lower two stations were generally below saturation while the upper two were above saturation. This may indicate a decrease in the production:respiration ratio downstream relative to upstream, a lower downstream reaeration coefficient, or the influence of the springs.

Distributions of pH were similar at all stations with the exception of the station above Dartford Creek (RM 10.3) and the Peone Creek station which may both be expected to violate state standards more than 25% of the time (Figure 3 and Table 4).

All stations except Peone Creek exceeded (violated) fecal coliform bacteria standards (Table 4). That is, the 10th percentile was greater than 200 organisms/100 mL. In general, fecal coliform counts increased with increasing river mile (Figure 4). The uppermost station (above Peone Creek) had the lowest median value of all stations, but this station also had the highest single

value, 2100 organisms/100 mL on February 5, 1991. This is also the date where streamflow was highest near the mouth, indicating a nonpoint source. Based on one year of monitoring, fecal coliform bacteria are a nonpoint source problem in the Little Spokane drainage.

Although the maximum total ammonia concentrations exceeded the tenth percentile (based on up to 12 data points) for chronic criteria at every station except near the mouth and the Peone Creek station (Table 4 and Figure 5), no concentration exceeded the actual criteria calculated for that particular date. In other words, no ammonia water quality standards violations occurred during the study.

Total ammonia and total phosphorus concentrations were lower in the two downstream stations and higher in the two upstream stations while nitrate+nitrite nitrogen exhibited the opposite pattern. Peone Creek had consistently low nutrients. Median ammonia concentrations were low at all stations compared to ecoregion (Omernik and Gallant, 1986) averages, while nitrate+nitrite nitrogen was high and total phosphorus was similar to other stations in the same ecoregion.

CONCLUSIONS AND RECOMMENDATIONS

1. Water quality standards for mercury were probably not violated during the study. After one year of monthly sampling at five stations in the Little Spokane River basin, three stations had unqualified mercury results exceeding chronic criteria, all in March. However, the four-day average was probably well below the chronic criteria.

2. Water quality standards for copper and lead were probably violated in February and March at the Little Spokane near the mouth.

3. Water quality violations in conventional constituents occurred at all stations but were most likely to occur at the upper stations, especially the station above Dartford Creek. Water quality at the routine ambient monitoring station at the mouth is better than upstream water quality, possibly due to the influence of springs below the station above Dartford Creek and below the station near Griffith Springs.

4. Nonpoint sources of fecal coliform bacteria should be investigated, particularly upstream of the Little Spokane River above Peone Creek station.

cc: Dick Cunningham
Carl Nuechterlein
Steve Saunders
Steve Butkus

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Table 1. Stations in the Little Spokane system monitored during this study and other points of interest.

Station	Name	River Mile
55B070	Little Spokane R nr Mouth	1.1
	WDW Fish Hatchery	~6.5
55B080	Little Spokane R nr Griffith Spring	7.5
	Sewage Disposal Ponds	~9.3
	Waikiki Springs	~9.4
	Dartford Creek	10.2
55B082	Little Spokane R abv Dartford Cr	10.3
	Peone Creek	12.9
55C070	Peone (Deadman) Creek abv Little Deep Cr	0.5
55B100	Little Spokane R abv Peone Cr	13.5

Table 2. Metals results (μg/L) from the Little Spokane River near the mouth. Except for mercury, criteria, which are a function of hardness, are 10 percentiles for all stations and dates.

Date	Laboratory	Little Spokane near Mouth					
		Hg	Cu	Pb	Cd	Cr	Zn
7/10/90	Manchester	0.04K	5.0K	1.2J	0.10K	0.62J	5.0K
	Battelle	0.00036	0.517	0.17	0.013	0.48	0.59
8/07/90	Manchester	0.04K	5.0K	1.0K	0.10K	0.33K	5.0K
	Battelle	<0.001	0.66	0.23	0.004	0.55	0.95
9/04/90	Manchester	0.089J	2.0K	1.0K	0.10K	0.65B	2.0K
	Battelle	<0.00100	0.66	0.26	0.05	0.374	3.74
10/09/90	Manchester	0.085J	3.5B	1.0K	0.10K	0.43J	8.4B
	Battelle	<0.001	0.4	0.097	0.031	0.374	2.0N
11/06/90	Manchester	0.077J	2.3B	1.0K	0.10K	0.89J	2.7B
	Battelle	<0.00023	0.45	0.094	0.023	<0.325	1.54N
		<0.00012					1.46N
12/04/90	Manchester	0.04K	2.0K	1.0K	0.10K	1.0B	2.2J
	Battelle	<0.00013	1.05	0.27	0.013	0.374	3.17N
01/08/91	Manchester	0.04K	2.0K	1.0K	0.10K	0.30J	7.0J
	Battelle	0.00034B	0.487B	0.34	<0.002	0.64B	2.50B
02/05/91	Manchester	0.04K	18.	19.2	0.32J	9.91	57.7
	Battelle	0.00578B	20.6B	9.40	0.153	7.10B	47.6B
03/05/91	Manchester	0.04K	13.	7.2	0.12J	1.92	51.
	Battelle	0.00152B	3.61B	2.34	0.031	1.42B	12.2B
04/02/91	Manchester	0.04K	4.9J	1.4J	0.10K	0.71JV	4.0K
	Battelle	0.00359	0.93J	0.449J	0.004KJ	0.70J	3.14J
05/07/91	Manchester	0.10P	3.0K	1.0K	0.10K	0.44V	4.0K
	Battelle	0.00176	1.49J	0.479J	0.004KJ	0.62J	3.34J
06/04/91	Manchester	0.04P	8.6P	1.0K	0.2K	0.37V	5.5PB
		0.14	3.0K	1.2	0.2K	0.72V	9.8
	Battelle	0.00527	0.79	0.429	0.004K	0.57	2.76
Chronic Criteria		0.012	8.2	1.8	0.8	145	77
Acute Criteria 2.4		11.8	47.2	2.4	1220	81	
Drinking Water Standards*		2	1000+	50	10	?	5000+

K - Less Than
J - Estimated Value
B,V - Detected in the method blank
N - value not within control limits
P - Value is above method detection limit but below quantitation limit.
* - From Department of Health (1989) State Board of Health Drinking Water Regulations
+ - Secondary standard for taste and odor.

Table 3. Mercury results (μg/L) from the Little Spokane River stations.

Station		DATE Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
55B070	L. Sp. nr Mouth	.00036	<.00100	<.00100	<.001	<.00012 <.00023	<.00013	.00034B	.00578B	.00152B	.00359	.00176	.00527
55B080	L. Sp. nr Griffith	<.00010	<.00100	<.00100	<.001	<.00016	.00037	<.000136B	.00362B	.29590B	.00491	.00136	.00219
55B082	L. Sp. abv Dartford	.00083	.00136	.00133	<.001	.00161	.00011	.00016B	.00577B	.02139B	.00306	.00293	.00133
55B100	L. Sp. abv Peone	.00035	.00100	.00109	<.001	.00081	.00018 .00039	.00016B	.00379B	.04974B	.00209	.00133	.00161
55C070	Peone Cr.	.00130	<.00113	.00100	<.001	.00120	.00106	.00225B .00220B	.00437B	.00502B	.00237	.00241	.00167

Table 4. Distribution of selected constituents, Little Spokane River Basin, July 1990-July 1991. Values below detection limits were replaced with 1/2 the detection limit.

Station name	Number of samples	Minimum	10	25	50 (median)	75	90	Maximum
				PERCENTILES				
Temperature (°C)								
Little Spokane R nr Mouth	12	3.5	4.2	6.4	10.1	14.1	16.4	16.5
Little Spokane R nr Griffith Spr	12	1.7	2.8	6.0	10.3	14.4	16.8	16.9
Little Spokane abv Dartford Cr	12	0.7	0.9	4.0	9.6	17.2	21.1	21.1
Peone (Deadman)Cr abv Lt Deep Cr	11	3.8	4.2	7.0	12.0	17.9	20.7	20.7
Little Spokane R abv Peone Cr	12	0.1	0.2	3.6	9.2	17.5	21.7	21.8
Conductivity (μmhos/cm)								
Little Spokane R nr Mouth	12	174	183	231	262	279	289	290
Little Spokane R nr Griffith Spr	12	140	156	219	261	271	278	280
Little Spokane abv Dartford Cr	12	104	125	179	228	243	253	256
Peone (Deadman) Cr abv Lt Deep Cr	11	135	136	168	239	275	298	300
Little Spokane R abv Peone Cr	12	101	123	178	221	232	284	298
Oxygen concentration (mg/L)								
Little Spokane R nr Mouth	12	9.3	9.3	9.4	10.0	10.5	10.9	10.9
Little Spokane R nr Griffith Spr	12	8.7	8.8	9.2	9.8	10.3	11.1	11.2
Little Spokane abv Dartford Cr	12	9.1	9.2	10.1	11.2	12.3	12.9	13.0
Peone (Deadman) Cr abv Lt Deep Cr	11	8.5	8.5	9.4	10.2	11.3	11.8	11.9
Little Spokane R abv Peone Cr	12	9.4	9.4	10.1	11.3	12.6	13.1	13.1
Oxygen Percent Saturation (%)								
Little Spokane R nr Mouth	12	85.6	86.5	89.3	91.3	97.2	103.0	104.3
Little Spokane R nr Griffith Spr	12	83.8	84.5	87.7	91.2	93.6	97.8	98.8
Little Spokane abv Dartford Cr	12	87.4	89.7	97.2	102.0	109.3	110.3	110.5
Peone (Deadman) Cr abv Lt Deep Cr	11	95.5	95.9	97.8	99.5	100.2	103.6	103.9
Little Spokane R abv Peone Cr	12	87.6	89.7	97.5	102.9	112.1	113.6	113.7
pH								
Little Spokane R nr Mouth	12	7.5	7.6	7.9	8.3	8.3	8.4	8.4
Little Spokane R nr Griffith Spr	12	7.6	7.6	8.0	8.3	8.4	8.5	8.5
Little Spokane abv Dartford Cr	12	7.6	7.6	8.1	8.3	8.6	8.7	8.7
Peone (Deadman) Cr abv Lt Deep Cr	11	7.7	7.8	8.2	8.4	8.6	8.7	8.7
Little Spokane R abv Peone Cr	12	7.5	7.6	8.1	8.3	8.5	8.5	8.5
Total Suspended Sediment (mg/L)								
Little Spokane R nr Mouth	11	2	2	5	12	22	500	600
Little Spokane R nr Griffith Spr	9	3	3	4	9	54	640	640
Little Spokane abv Dartford Cr	9	2	2	6	11	65	510	510
Peone (Deadman) Cr abv Lt Deep Cr	8	4	4	5	15	29	379	373
Little Spokane R abv Peone Cr	9	2	2	5	12	30	250	250

Table 4. Continued.

Station name	Number of samples	Minimum	10	25	50 (median)	75	90	Maximum
				PERCENTILES				
Hardness (mg/L $CaCO_3$)								
Little Spokane R nr Mouth	12	71	77	107	130	136	137	137
Little Spokane R nr Griffith Spr	12	58	67	100	119	129	136	138
Little Spokane abv Dartford Cr	12	39	49	81	100	115	119	121
Peone (Deadman) Cr abv Lt Deep Cr	11	58	58	65	108	125	135	136
Little Spokane R abv Peone Cr	12	32	45	79	97	112	119	120
Turbidity (NTU)								
Little Spokane R nr Mouth	12	0.5	0.5	0.5	1.7	2.9	132.1	178.0
Little Spokane R nr Griffith Spr	12	0.5	0.5	0.5	1.3	2.8	160.7	220.0
Little Spokane abv Dartford Cr	12	0.5	0.7	1.2	1.3	3.3	136.8	185.0
Peone (Deadman) Cr abv Lt Deep Cr	11	0.5	0.6	1.1	2.0	3.6	43.4	53.0
Little Spokane R abv Peone Cr	12	0.5	0.5	0.5	1.5	2.9	75.7	103.0
Fecal Coliform Bacteria (Colonies/100ml)								
Little Spokane R nr Mouth	11	4	6	16	33	75	444	520
Little Spokane R nr Griffith Spr	11	23	25	32	53	240	616	700
Little Spokane abv Dartford Cr	11	10	13	24	63	116	1082	1300
Peone (Deadman) Cr abv Lt Deep Cr	10	3	3	7	21	49	98	100
Little Spokane R abv Peone Cr	11	3	4	11	14	52	1726	2100
Total Ammonia-nitrogen (mg/L)								
Little Spokane R nr Mouth	11	0.005	0.005	0.010	0.013	0.080	0.321	0.374
Little Spokane R nr Griffith Spr	9	0.005	0.005	0.005	0.012	0.045	0.418	0.418
Little Spokane abv Dartford Cr	8	0.010	0.009	0.012	0.017	0.020	0.469	0.482
Peone (Deadman) Cr abv Lt Deep Cr	7	0.005	0.004	0.005	0.010	0.020	0.106	0.030
Little Spokane R abv Peone Cr	9	0.010	0.010	0.011	0.018	0.060	0.581	0.581
Chronic Total Ammonia Criteria (mg/L Total NH3-N)								
Little Spokane R nr Mouth	12	0.414	0.429	0.521	0.653	1.506	1.975	1.995
Little Spokane R nr Griffith Spr	12	0.330	0.343	0.411	0.567	1.058	2.015	2.043
Little Spokane R abv Dartford Cr	12	0.201	0.213	0.263	0.493	0.941	2.045	2.070
Peone (Deadman) Cr abv Lt Deep Cr	11	0.200	0.201	0.297	0.477	0.739	1.768	1.988
Little Spokane R abv Peone Cr	12	0.236	0.251	0.324	0.580	0.900	2.045	2.078
Acute Total Ammonia Criteria (mg/L Total NH3-N)								
Little Spokane R nr Mouth	12	2.355	2.371	2.926	3.396	7.831	12.409	13.283
Little Spokane R nr Griffith Spr	12	1.905	1.913	2.357	2.949	5.500	11.394	11.727
Little Spokane R abv Dartford Cr	12	1.262	1.326	1.664	2.655	4.895	11.820	12.464
Peone (Deadman) Cr abv Lt Deep Cr	11	1.273	1.319	1.545	2.479	3.841	9.188	10.328
Little Spokane R abv Peone Cr	12	1.734	1.786	2.035	3.018	4.678	12.735	13.566

Table 4. Continued.

Station name	Number of samples	Minimum	10	25	50 (median)	75	90	Maximum
				PERCENTILES				
			Nitrate + nitrite-nitrogen (mg/L)					
Little Spokane R nr Mouth	12	0.774	0.800	0.891	0.995	1.183	1.315	1.360
Little Spokane R nr Griffith Spr	12	0.614	0.656	0.774	0.940	1.085	1.250	1.310
Little Spokane abv Dartford Cr	12	0.467	0.468	0.486	0.655	0.895	1.165	1.240
Peone (Deadman) Cr abv Lt Deep Cr	12	0.253	0.255	0.357	0.670	0.780	0.868	0.880
Little Spokane R abv Peone Cr	12	0.447	0.449	0.462	0.600	0.914	1.192	1.270
			Total Phosphorus (mg/L)					
Little Spokane R nr Mouth	12	0.010	0.013	0.020	0.021	0.039	0.782	1.070
Little Spokane R nr Griffith Spr	12	0.010	0.012	0.020	0.022	0.034	0.775	1.060
Little Spokane abv Dartford Cr	12	0.017	0.018	0.022	0.038	0.041	0.818	1.100
Peone (Deadman) Cr abv Lt Deep Cr	11	0.037	0.038	0.040	0.055	0.100	0.184	0.190
Little Spokane R abv Peone Cr	12	0.013	0.015	0.020	0.031	0.047	0.669	0.905
			Ortho-phosphorus (mg/L)					
Little Spokane R nr Mouth	12	0.005	0.005	0.006	0.010	0.013	0.109	0.139
Little Spokane R nr Griffith Spr	12	0.005	0.005	0.010	0.010	0.016	0.122	0.157
Little Spokane abv Dartford Cr	12	0.005	0.006	0.010	0.017	0.020	0.142	0.181
Peone (Deadman) Cr abv Lt Deep Cr	11	0.024	0.024	0.030	0.034	0.050	0.140	0.160
Little Spokane R abv Peone Cr	12	0.005	0.005	0.006	0.010	0.018	0.144	0.184
			Discharge (cfs)					
Little Spokane R nr Mouth	12	359	359	365	406	578	989	1040

Table 5. Water quality standards violations (and total non-qualified results available) at the Little Spokane River stations, July 1990 through June 1991.

Station	Temp.	Oxygen	FC	pH	Ammonia
55B070	0 (11)	0 (12)	1 (11)	0 (12)	0 (11)
55B080	0 (11)	0 (12)	3 (11)	0 (12)	0 (9)
55B082	2 (11)	0 (11)	2 (11)	3 (12)	0 (8)
55C070	2 (10)	0 (11)	0 (10)	3 (11)	0 (7)
55B100	2 (11)	0 (12)	2 (11)	0 (12)	0 (9)

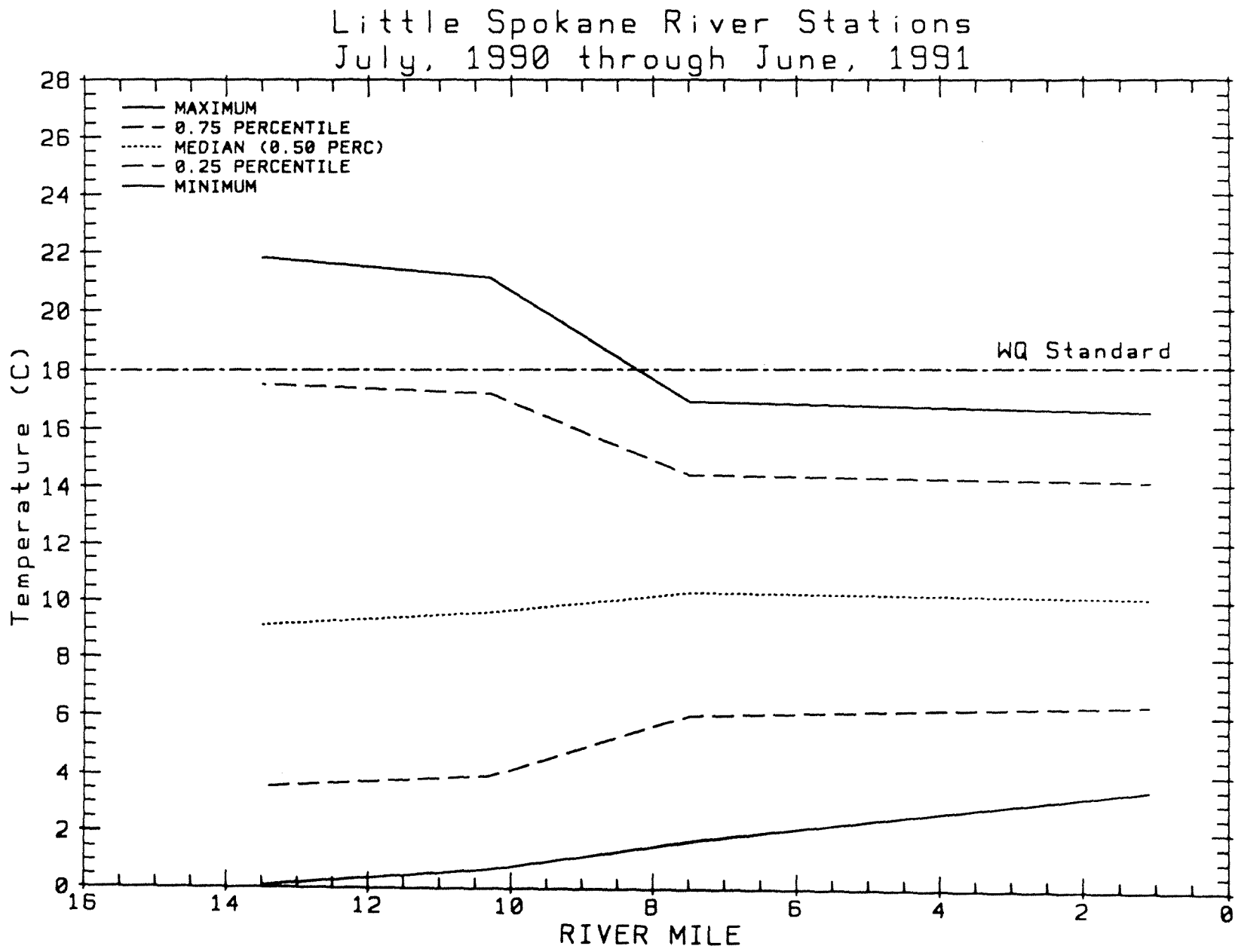


Figure 1. Little Spokane River Stations-Temperature (°C), July 1990 - June 1991.

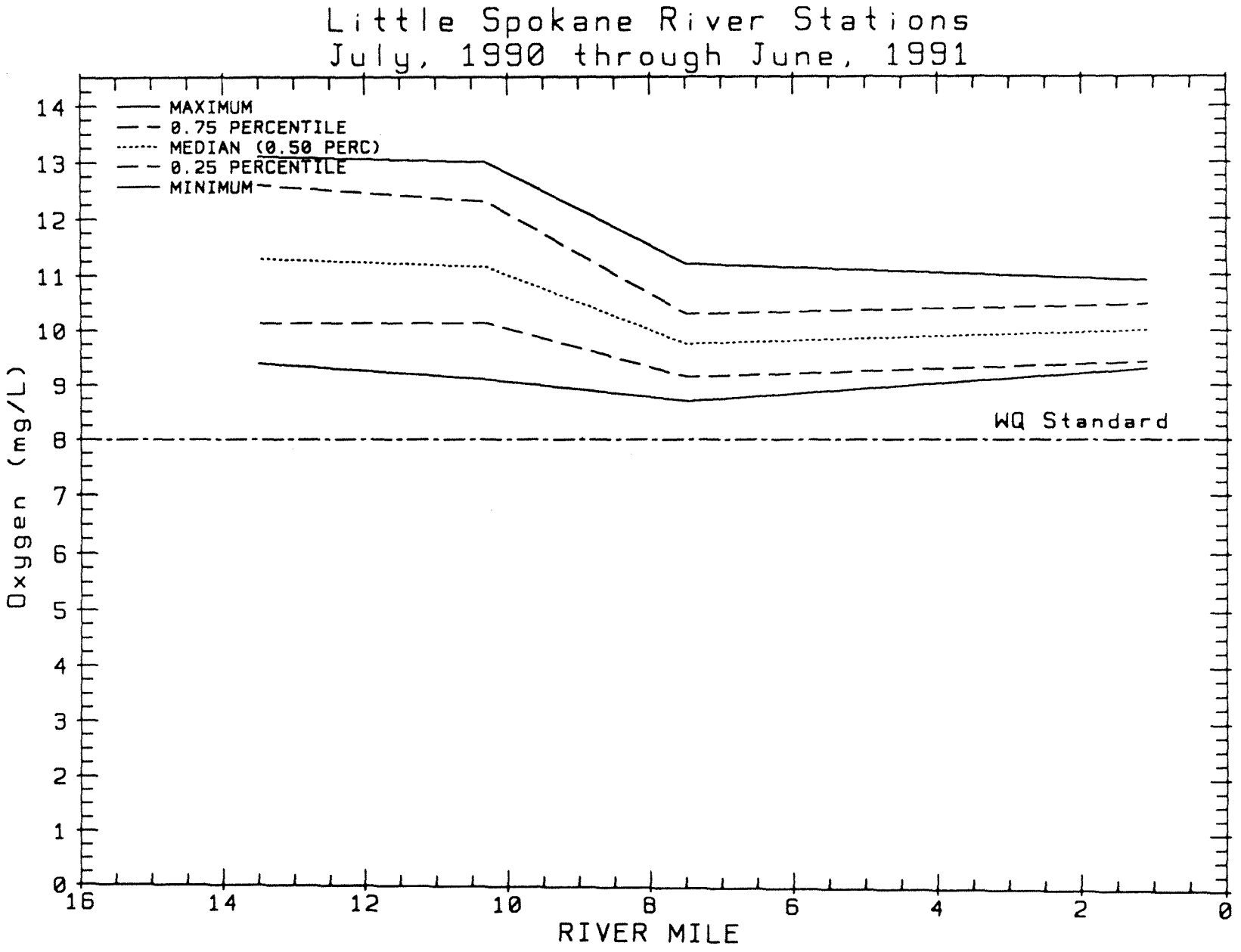


Figure 2. Little Spokane River Stations-Dissolved Oxygen (mg/L), July 1990 - June 1991.

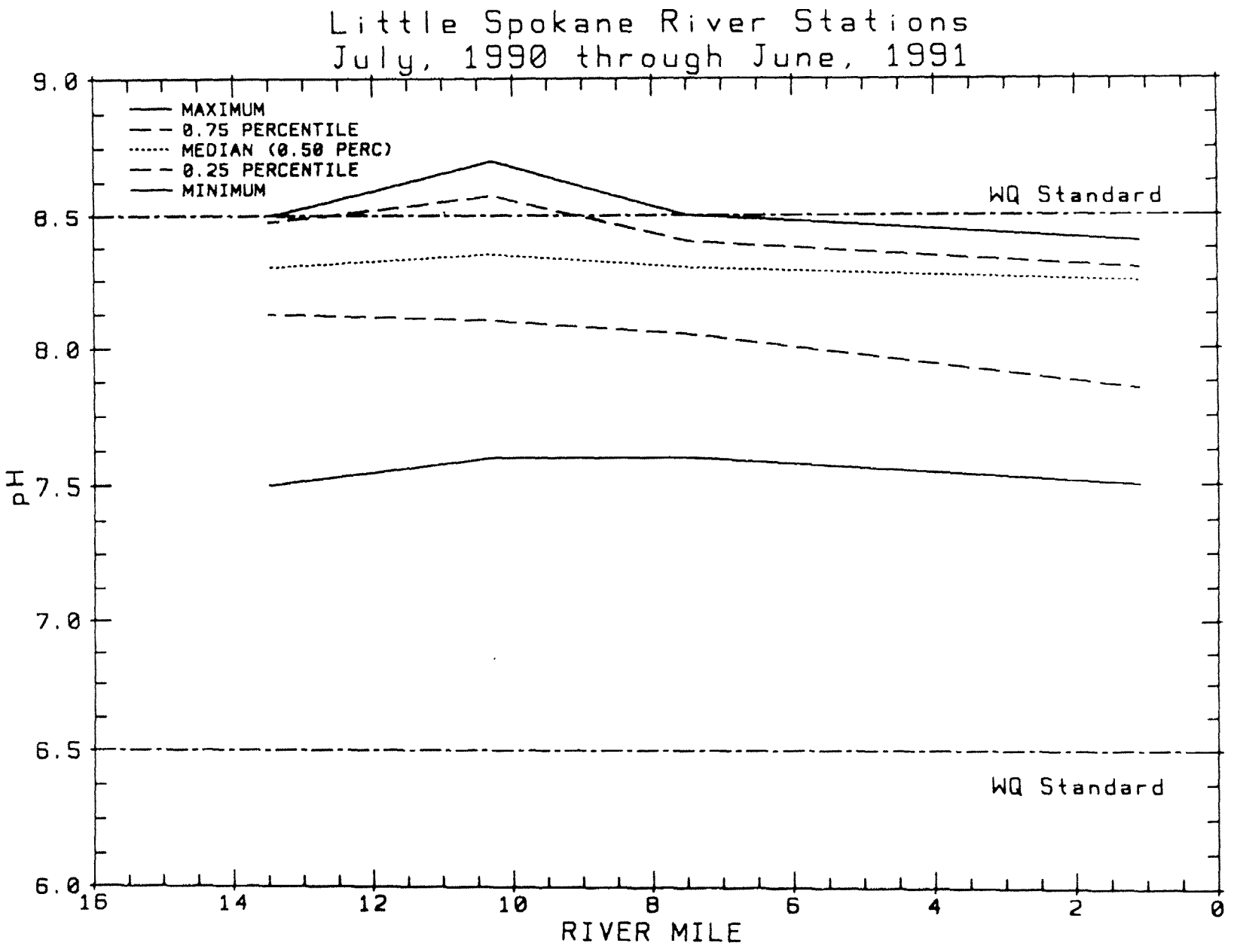


Figure 3. Little Spokane River-pH, July 1990 - June 1991.

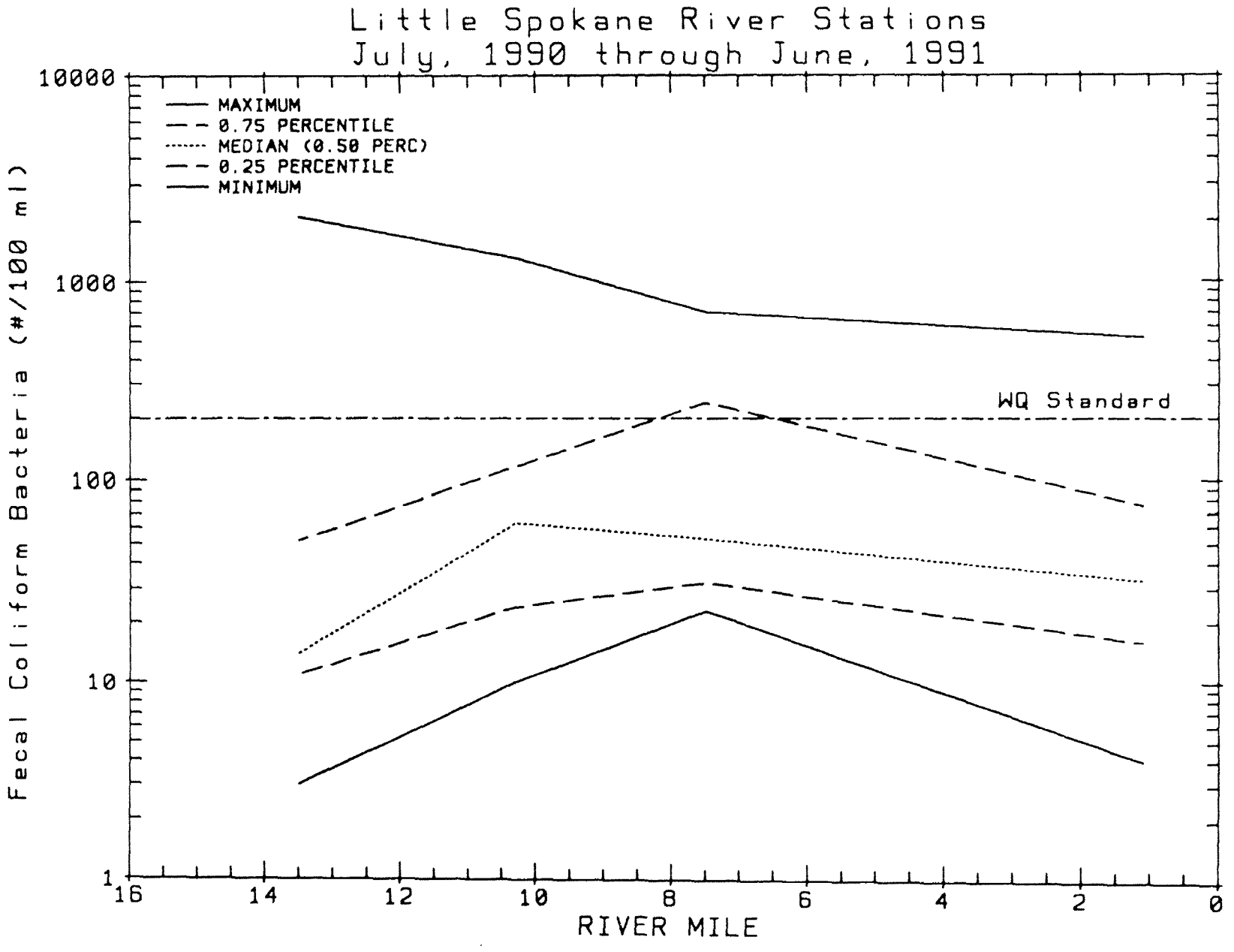


Figure 4. Little Spokane River-fecal coliform bacteria (#/100 mL), July 1990 - June 1991.

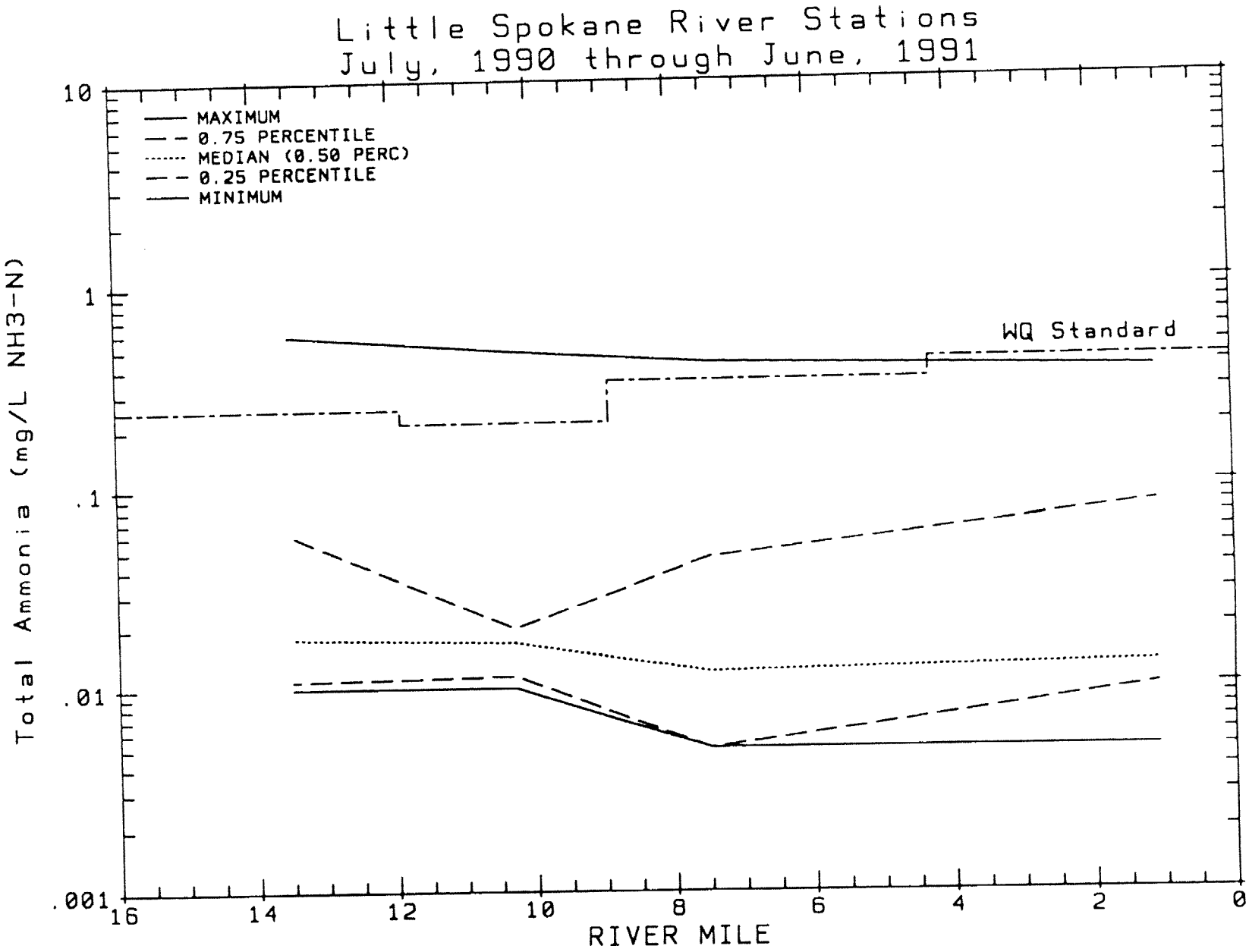


Figure 5. Little Spokane River-total ammonia (mg/L NH_3-N) July 1990 - June 1991.

WASHINGTON STATE DEPARTMENT OF ECOLOGY
MANCHESTER ENVIRONMENTAL LABORATORY
Manchester, Washington 98353

DATA REVIEW

By:	Craig Smith, Chemist		
PROJECT:	Eastern Routine Monitoring		
Lab Sample No:	Week #'s 28, 32, 36, 41, 45, 49 of 1990	**Report Date:**	03-19-91

Metals

Digestion: APDC Technique for extraction: Total Metals
Hg Analysis by Bloom and Crecilius(1983)

Turnaround Time: Six sample sets were received on March 5, 1991. Based upon contracted dates for deliverables, the following is a summary:

Sample Set:	
286161	169 days late
326161	155 days late
366161	123 days late
416161	104 days late
456161	96 days late
496163	48 days late

DELIVERABLES: One of the stipulated deliverables was all raw data. Raw data <u>was not</u> provided for Hg. TheY "discarded" the raw data.

All parameters requested were received except the following:
416161 separate Hg analysis
496167 separate Hg analysis

HOLDING TIME: With regard to holding time, analysis may or may not have been within the accepted criterion. No raw data was available for Hg.

REAGENT BLANK: Sample results were blank corrected by the laboratory.

MATRIX SPIKE: The targeted accuracy of matrix spikes is +/- 25% of the true value. All values were within the targeted limits.

SPIKE DUPLICATE: The target limits are +/- 20%, or +/- 1 detection limit for samples less than 5 times the detection limit. All values were within the targeted limits.

LABORATORY CONTROL SAMPLE The target is a +/- 20% recovery control limit. All values were within the targeted limits except for Zn on weeks 41, 45, and 49. The RPD was 90%. The Zn data for these three sets will receive an "N" qualifier.

SAMPLE DATA: The data may be used with the qualification attached.

N = value not within control limits.

WASHINGTON STATE DEPARTMENT OF ECOLOGY
MANCHESTER ENVIRONMENTAL LABORATORY
Manchester, Washington 98353

DATA REVIEW

By:	Craig Smith, Chemist		
PROJECT:	**ERM Metals**		
Lab Sample No:	026163 - 026167 066163 - 066167 106163 - 106167, 109999(PE Sample)	**Report Date:**	06-19-91

	Collected	To Manchester	Data Received
HOLDING TIME:	01-08	01-09	06-07-91
	02-05	02-06	06-07-91
	03-05	03-06	06-07-91

Metals
Digestion: Hg-Bloom and Crecelius Method. Totals by APDC technique

HOLDING TIME: Analyses for all parameters were performed within the holding time limits.

REAGENT BLANK: The method blank showed no analyte values above the reporting detection limit except for Cr, Cu, Hg, and Zn. See data summary for the actual values. See explanation below.*

MATRIX SPIKE: The targeted accuracy of matrix spikes is +/- 25% of the true value. All values were within the targeted limits.

SPIKE DUPLICATE: The target limits are +/- 20%, or +/- 1 detection limit for samples less than 5 times the detection limit.
All values were within the targeted limits.

LABORATORY CONTROL SAMPLE The target is a +/- 20% recovery control limit. All values were within the targeted limits.

*The blank gave values above the reporting detection limit for all three sets of analyses. As a result, the affected data will receive a "B" qualifier.
For sample sets 02, 06, and 10, the Cu contamination is very low. The net affect will be negligible.

For all other parameters, the net affect is appreciable.
On sample sets 02, 06, and 10, the Hg and Zn data are most affected. For Hg, the blank corrected values are also given. This was not done for Zn.

The data may be used with the attached qualifiers.

B = analyte found in blank as well as sample. Possible/probable blank contamination.

As we discussed earlier, a PE sample was included in one of the sample sets from week 10. I gave this PE Sample the number 109999.

I sent ORMS-1, a riverine water sample. A copy of the certified data is attached.

The results that Battelle obtained for this sample were not too bad. Their blank corrected value was 0.00502 ug/L. The certified value was 0.0068 +/- 0.0013 ug/L. If you apply the -0.0013 value you get 0.0055, close to their 0.00502 value. Battelles results are a little low.

APPENDIX 7

Ranking of Core Stations Inside of Puget Sound By Highest Quarterly Mean Value

Appendix 7. Ranking by parameter of highest quarterly mean at core stations inside of Puget Sound (except for D.O., where lowest quarterly mean are ranked).

Temperature*		Mean	Qtr
1.	Sammamish	17.65	J-S
2.	Green	17.4	J-S
3.	Snohomish	16.77	J-S
4.	Stillaguamish	16.13	J-S
5.	Nooksack	15.23	J-S
6.	Nisqually	14.67	J-S
7.	Cedar	14.35	J-S
8.	Puyallup	13.71	J-S
9.	Skagit	13.28	J-S
10.	Skokomish	10.22	J-S

* = °C
WQL= NA PSD= 0.06

Dissolved Oxygen*		Mean	Qtr
1.	Green	8.00	J-S
2.	Sammamish	8.08	J-S
3.	Stillaguamish	9.14	J-S
4.	Snohomish	9.80	J-S
5.	Skokomish	10.12	J-S
6.	Puyallup	10.24	J-S
7.	Nooksack	10.27	J-S
8.	Skagit	10.44	J-S
9.	Nisqually	10.5	J-S
10.	Cedar	11.2	J-S

* = mg/L
WQL= NA PSD= 0.07

Fecal Coliform*		Mean	Qtr
1.	Sammamish	486	J-S
2.	Green	437	J-S
3.	Puyallup	424	A-J
4.	Nooksack	352	J-S
5.	Stillaguamish	155	J-M
6.	Cedar	145	J-S
7.	Snohomish	135	O-D
8.	Nisqually	73	O-D
9.	Skokomish	31	O-D
10.	Skagit	28	J-M

* = colonies/100 mL
WQL= 10 PSD=22.6

Suspended Solids*		Mean	Qtr
1.	Puyallup	349	J-S
2.	Nooksack	182	O-D
3.	Stillaguamish	101	J-M
4.	Nisqually	51	O-D
5.	Skokomish	37	O-D
6.	Skagit	35	0-D
7.	Cedar	29	J-M
8.	Snohomish	25	O-D
9.	Green	18	O-D
10.	Sammamish	17	O-D

* = 1 mg/L
WQL= 3 PSD= 7.67

J-M = January-March A-J = April-June
J-S = July-September O-D = October-December

WQL = Working quantitation limit
PSD = Pooled standard deviations of all field replicate samples

Appendix 7. Continued.

Ammonia*		Mean	Qtr
1.	Green	0.316	O-D
2.	Nooksack	0.074	J-M
3.	Skokomish	0.059	J-M
4.	Stillaguamish	0.053	J-M
5.	Sammamish	0.048	O-D
6.	Puyallup	0.039	J-M
6.	Snohomish	0.039	J-M
7.	Cedar	0.028	O-D
8.	Nisqually	0.025	J-M
9.	Skagit	0.018	O-D

* = 1 mg/L
WQL= 0.02 PSD= .008

Nitrate+nitrite*		Mean	Qtr
1.	Nooksack	0.667	J-M
2.	Sammamish	0.617	J-M
3.	Green	0.521	J-M
4.	Cedar	0.408	J-M
5.	Nisqually	0.400	J-M
6.	Snohomish	0.388	J-M
7.	Puyallup	0.373	J-M
8.	Stillaguamish	0.321	J-M
9.	Skokomish	0.149	O-D
10.	Skagit	0.145	J-M

* = 1 mg/L
WQL= 0.19 PSD= 0.078

Total Phosphorus*		Mean	Qtr
1.	Puyallup	0.172	J-S
2.	Green	0.125	O-D
3.	Nooksack	0.089	J-S
4.	Nisqually	0.087	O-D
5.	Sammamish	0.066	O-D
6.	Stillaguamish	0.049	O-D
7.	Skagit	0.043	O-D
8.	Snohomish	0.042	O-D
9.	Cedar	0.038	O-D
10.	Skokomish	0.034	O-D

* = 1 mg/L
WQL= 0.02 PSD= 0.07

Ortho-phosphorus*		Mean	Qtr
1.	Green	0.069	J-S
2.	Sammamish	0.026	J-S
3.	Puyallup	0.023	J-S
4.	Nooksack	0.013	J-M
5.	Cedar	0.012	O-D
5.	Skokomish	0.012	J-M
6.	Skagit	0.011	J-M
6.	Snohomish	0.011	O-D
6.	Stillaguamish	0.011	J-S
6.	Nisqually	0.011	O-D

* = 1 mg/L
WQL= 0.11 PSD= 0.013

J-M = January-March A-J = April-June
J-S = July-September O-D = October-December

WQL = Working quantitation limit
PSD = Pooled standard deviations of all field replicate samples

Appendix 7. Continued.

Turbidity*		Mean	Qtr
1.	Puyallup	85	J-S
2.	Nisqually	46	O-D
3.	Nooksack	36	O-D
4.	Stillaguamish	22	J-M
5.	Skokomish	12	O-D
6.	Skagit	9	O-D
6.	Snohomish	9	O-D
7.	Green	6	J-M
8.	Cedar	5	J-M
9.	Sammamish	4	J-M

* = NTU
WQL= 2 PSD= 1.13

Conductivity*		Mean	Qtr
1.	Green	481	O-D
2.	Sammamish	162	J-S
3.	Nooksack	120	J-M
4.	Cedar	94	J-S
5.	Skokomish	81	J-S
6.	Stillaguamish	8	J-S
7.	Puyallup	78	O-D
8.	Nisqually	69	J-S
9.	Skagit	67	J-M
10.	Snohomish	56	J-S

* = μmhos/cm
WQL= 5 PSD= 5.89

J-M = January-March A-J = April-June
J-S = July-September O-D = October-December

WQL = Working Quantitation Limit
PSD = Pooled standard deviation of field replicate

APPENDIX 8

Summary of Trends

Appendix 8. Summary of the Seasonal Kendall Trends at core/bench mark stations inside of the Puget Sound Basin (if serial correlation is present the corrected data set is used).

	Temp	Cond	D.O.	pH	SS	Turb	FC	NH_3	T-P	O-P	NO_2+ NO_3	Flow
Nooksack @ Brennan	-	↑	-	-	-	↓	-	-	-	* ↓	-	-
Skagit @ Mt. Vernon	-	-	-	-	-	↓	-	↓	* ↓	* ↓	↓	-
Skagit @ Marblemount	-	-	-	-	-	↓	-	↓	-	* ↓	↓	-
Stillaguamish @ Silvana	-	-	-	-	-	- ↓	-	-	- ↑	-	-	-
Snohomish @ Snohomish	-	-	-	-	↑	-	↓	-	-	-	↓	-
Sammamish @ Bothell	-	↑	-	↑	-	↓	↓	↓	-	-	-	-
Cedar @ Renton	-	- ↑	-	-	-	-	-	↓	-	-	-	-
Green @ Allentown	↓	-	↑	↑	-	↓	↓	↓	↓	↓	↓	-
Green @ Kanakskat	-	-	-	-	-	↓	-	↓	-	-	-	-
Puyallup @ Meridian St.	↓	↑	-	* ↑	-	-	-	↓	-	↓	↑	-
Nisqually @ Nisqually	-	↑	-	↑	-	↓	↓	↓	-	-	- ↑	-
Skokomish @ Potlatch	-	↑	-	-	-	-	↑	↓	* ↓	* ↓	↑	-

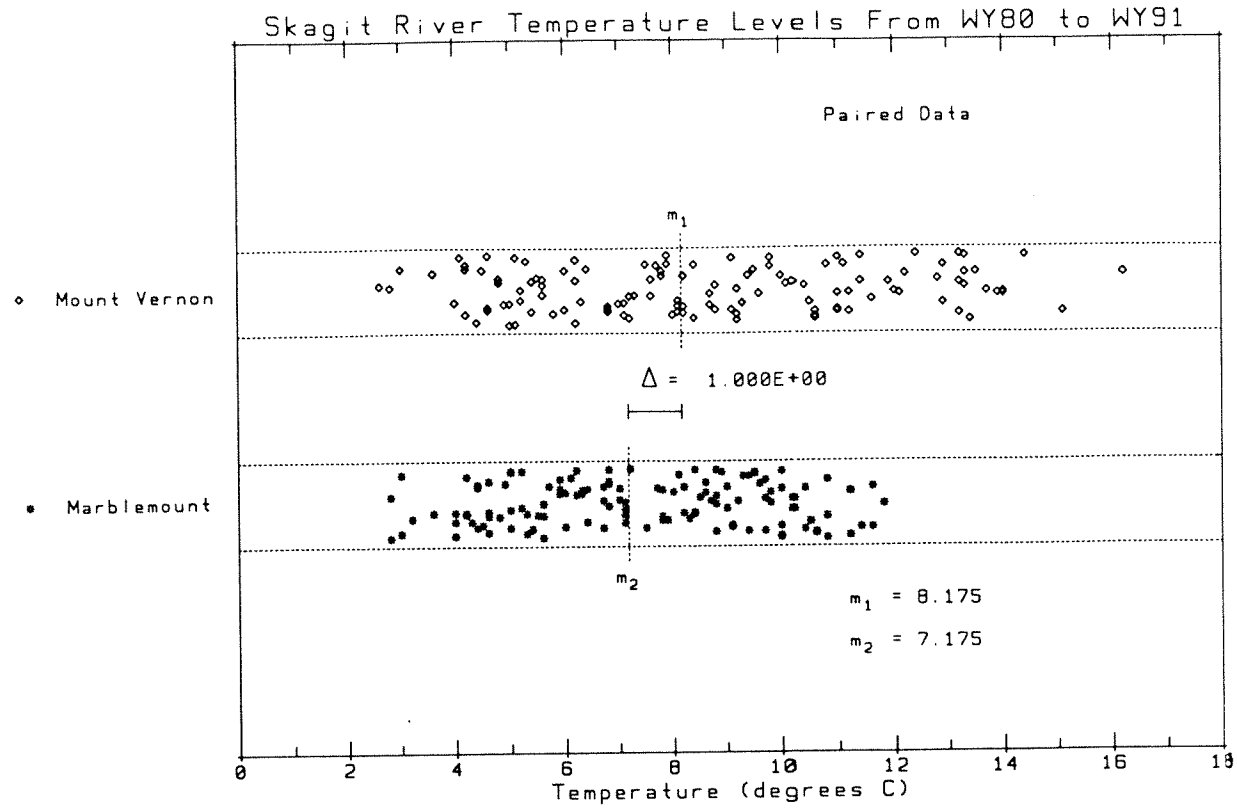
* = Slope is equal to 0.0000 (see discussion above)

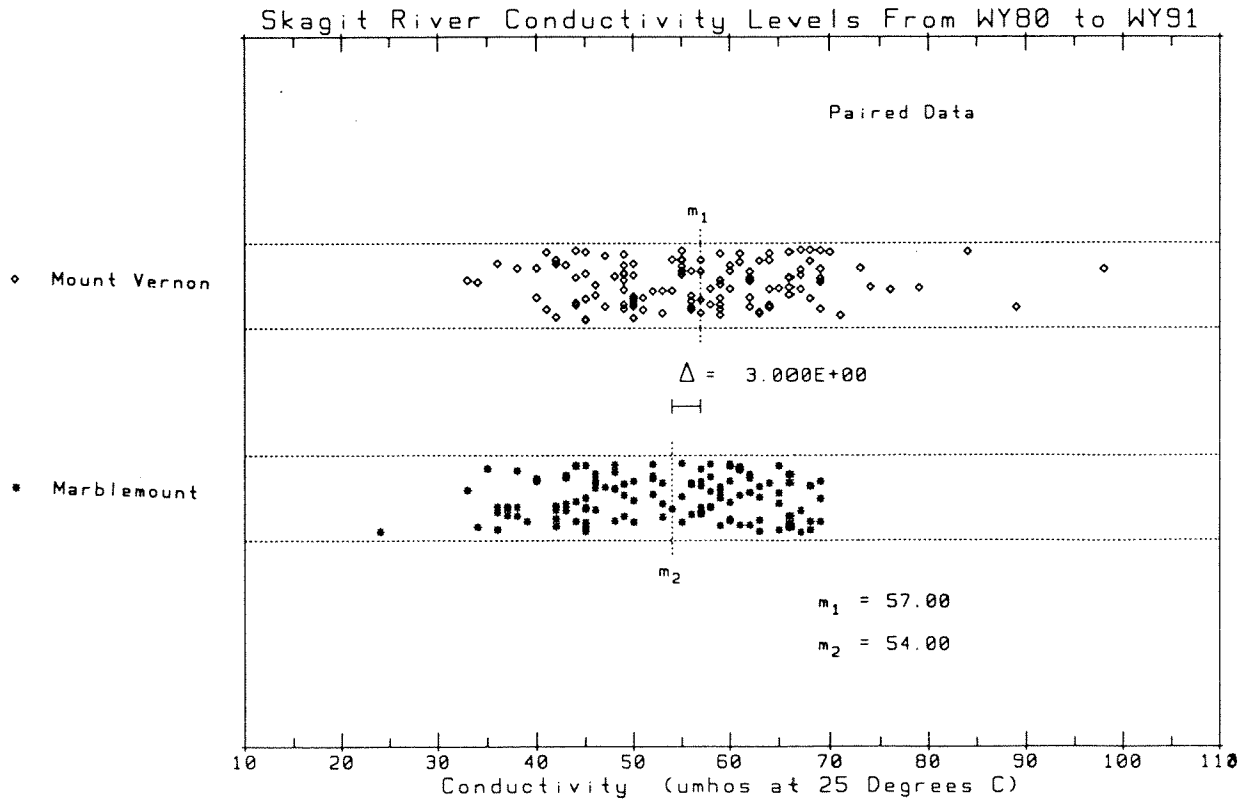
Underlined = Significant Trends also present using flow adjusted residuals. If - trend is present only in flow adjusted residuals and direction of trend is indicated below -.

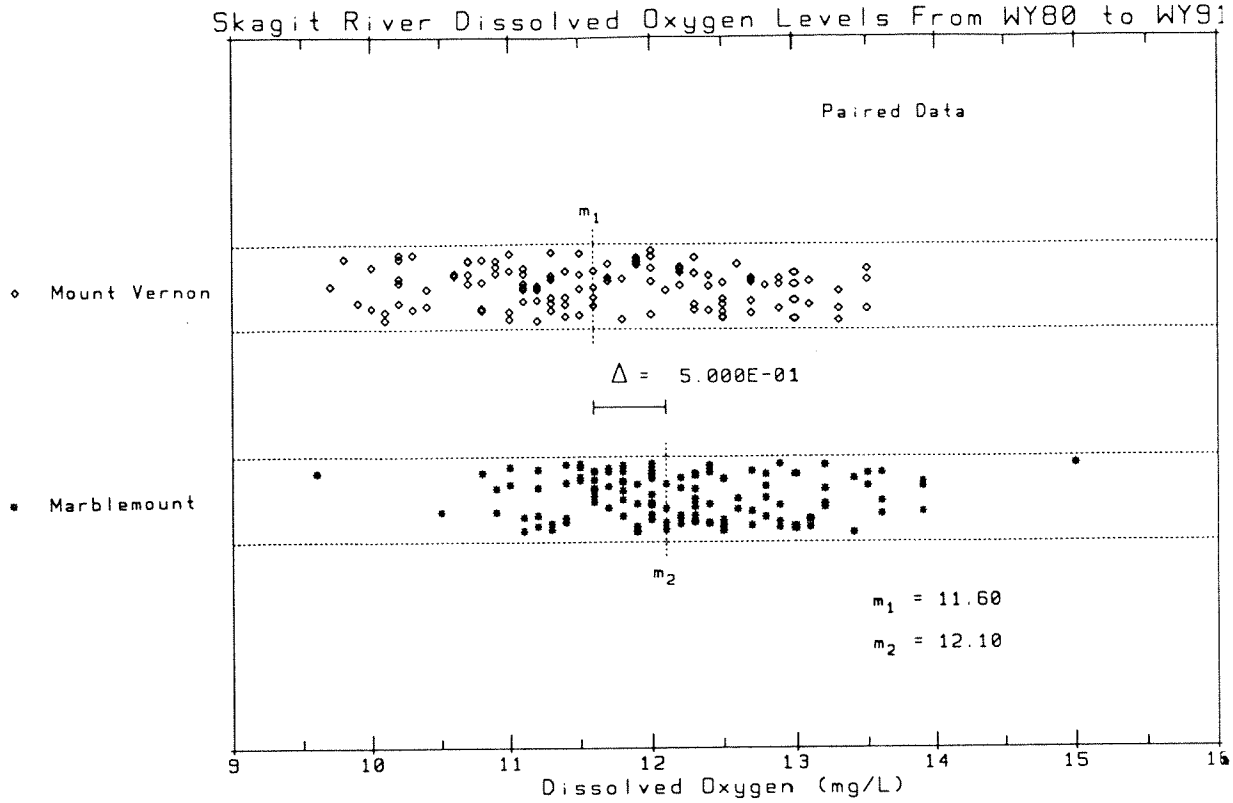
▒ = Trends where the historical median levels are above the working quantitation limits.

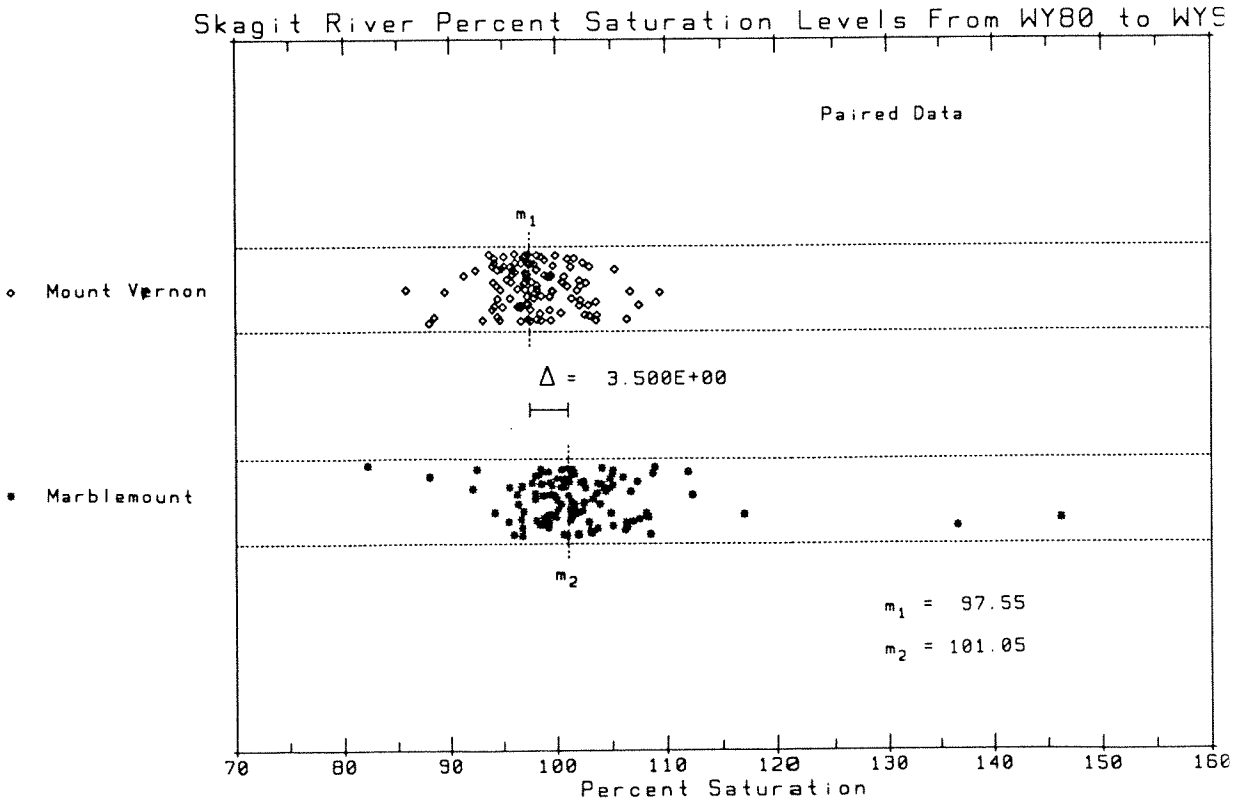
APPENDIX 9

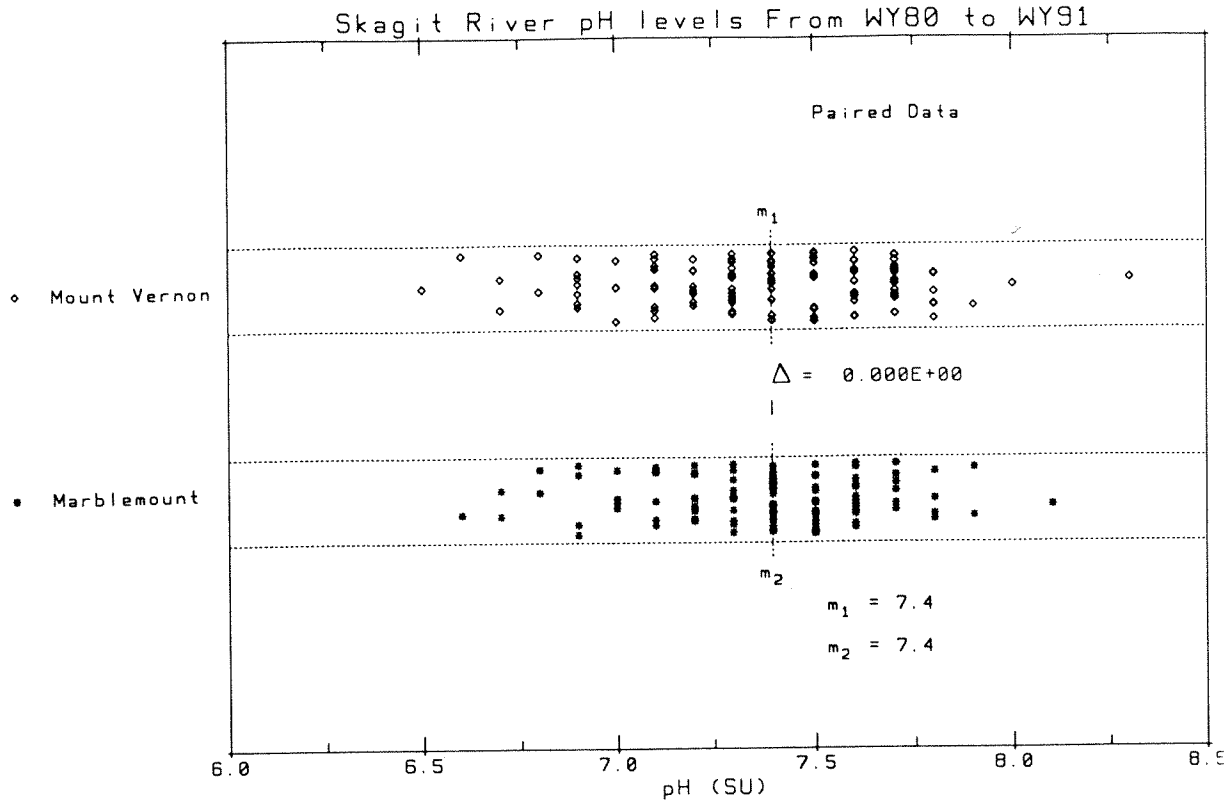
Upstream/Downstream Work on the Skagit River Water Quality at Mount Vernon vs. Marblemount

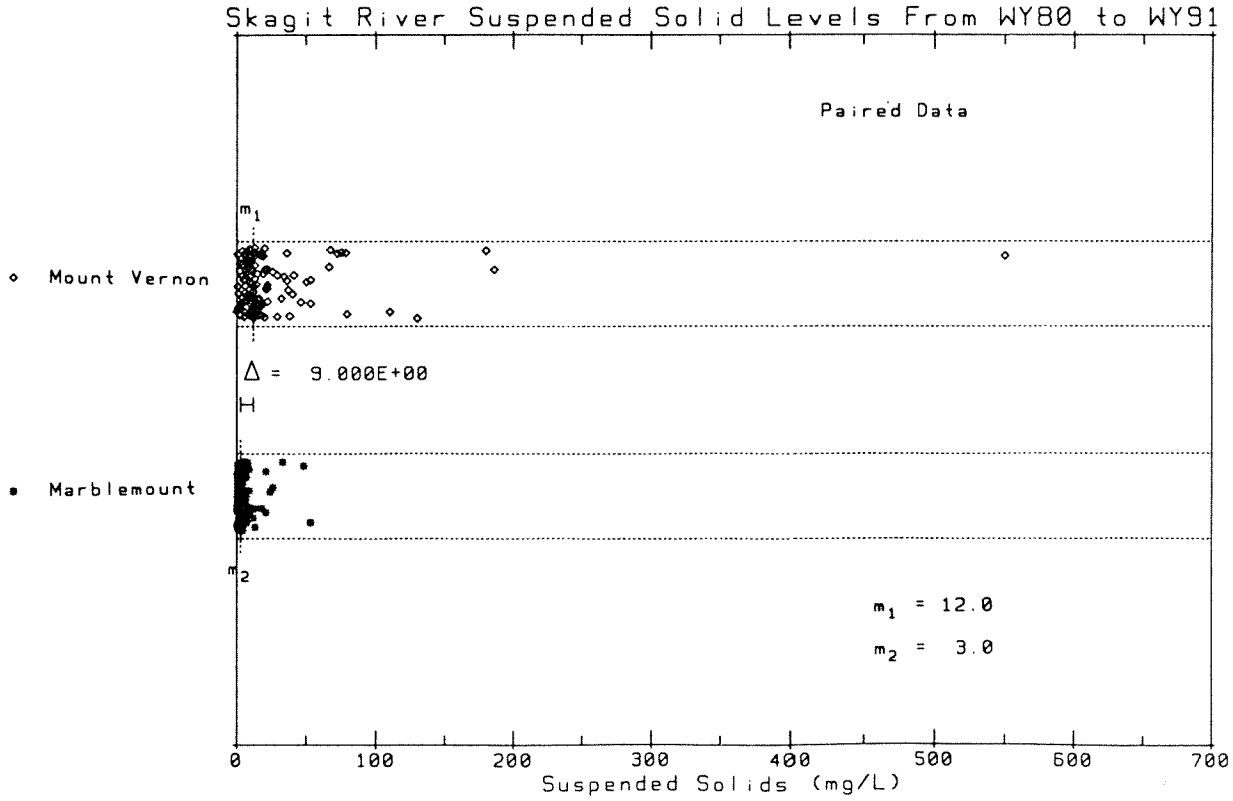

Skagit River Temperature Levels From WY80 to WY91
Paired Data
m1
Mount Vernon
Δ = 1.000E+00
Marblemount
m2
m1 = 8.175
m2 = 7.175
0
2
4
6
8
10
12
14
16
18
Temperature (degrees C)

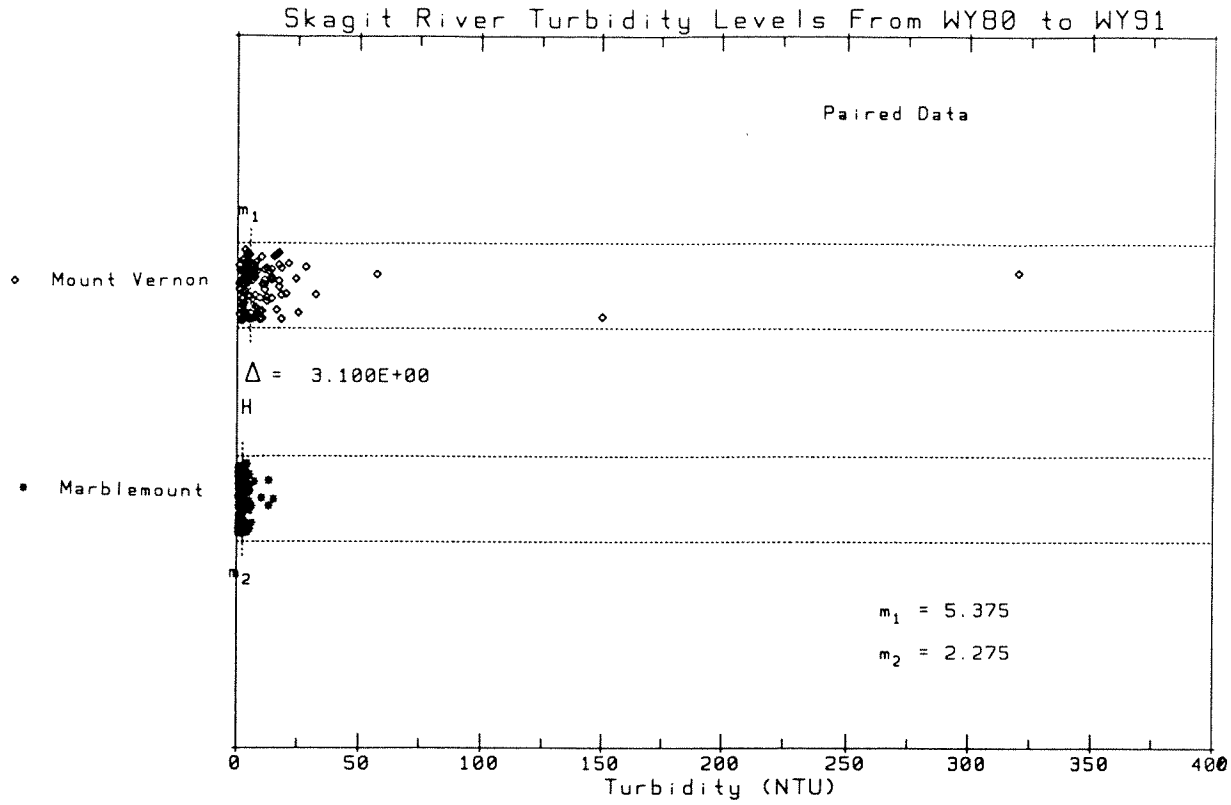

Skagit River Conductivity Levels From WY80 to WY91
Paired Data
m1
Mount Vernon
Δ = 3.000E+00
Marblemount
m2
m1 = 57.00
m2 = 54.00
10
20
30
40
50
60
70
80
90
100
110
Conductivity (umhos at 25 Degrees C)

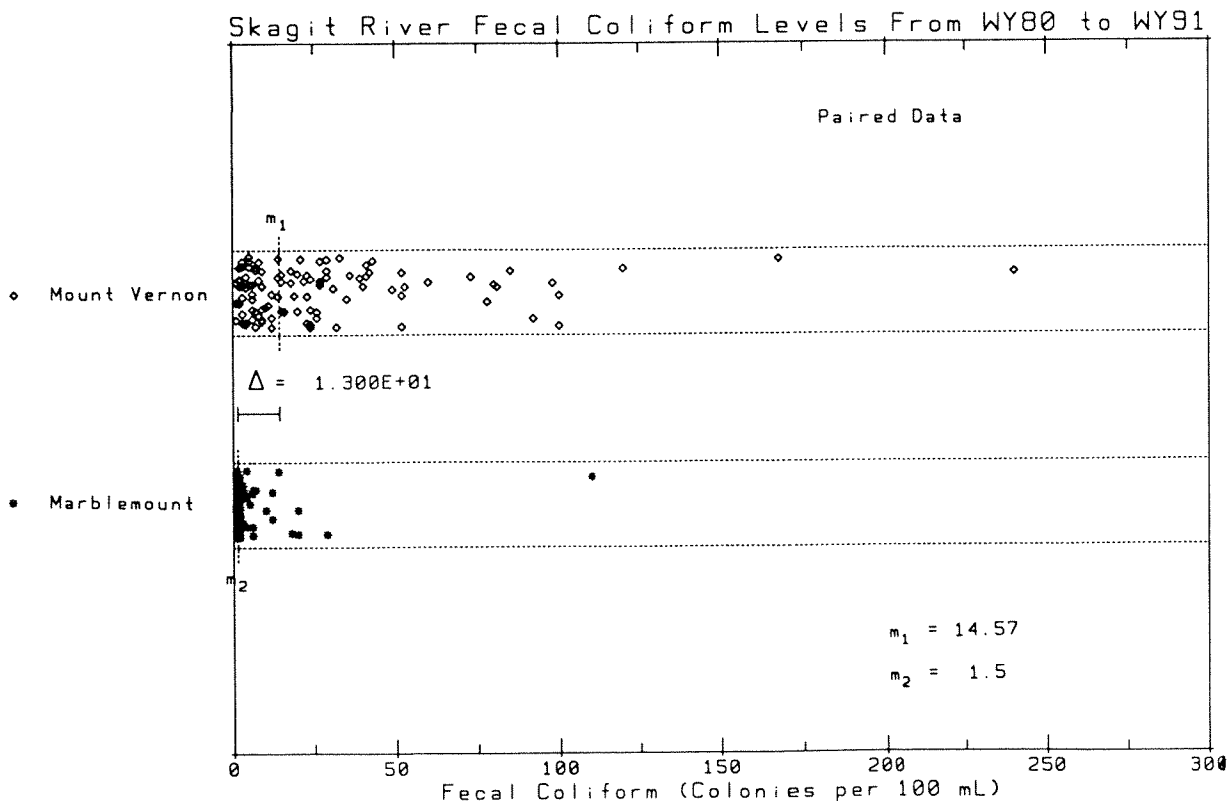

Skagit River Dissolved Oxygen Levels From WY80 to WY91
Paired Data
m1
Mount Vernon
Δ = 5.000E-01
Marblemount
m2
m1 = 11.60
m2 = 12.10
9
10
11
12
13
14
15
16
Dissolved Oxygen (mg/L)

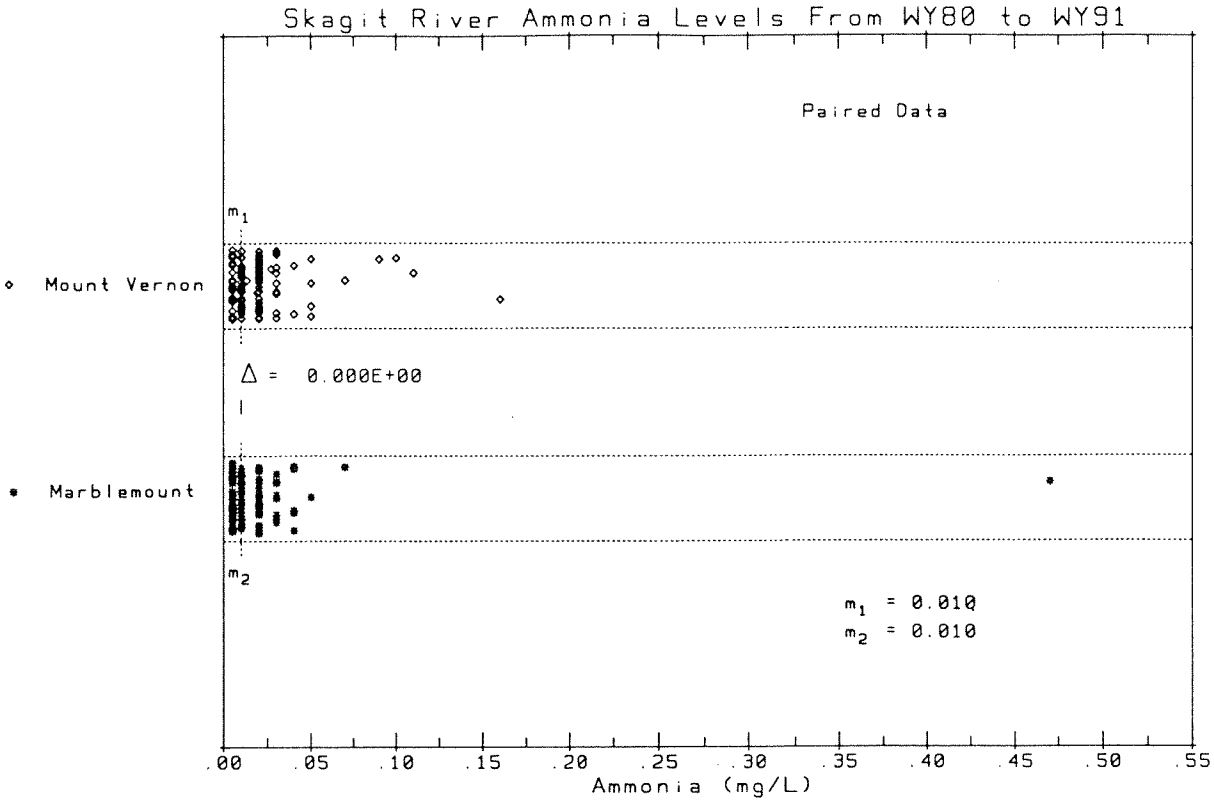

Skagit River Percent Saturation Levels From WY80 to WY9
Paired Data
m1
Mount Vernon
Δ = 3.500E+00
Marblemount
m2
m1 = 97.55
m2 = 101.05
70
80
90
100
110
120
130
140
150
160
Percent Saturation

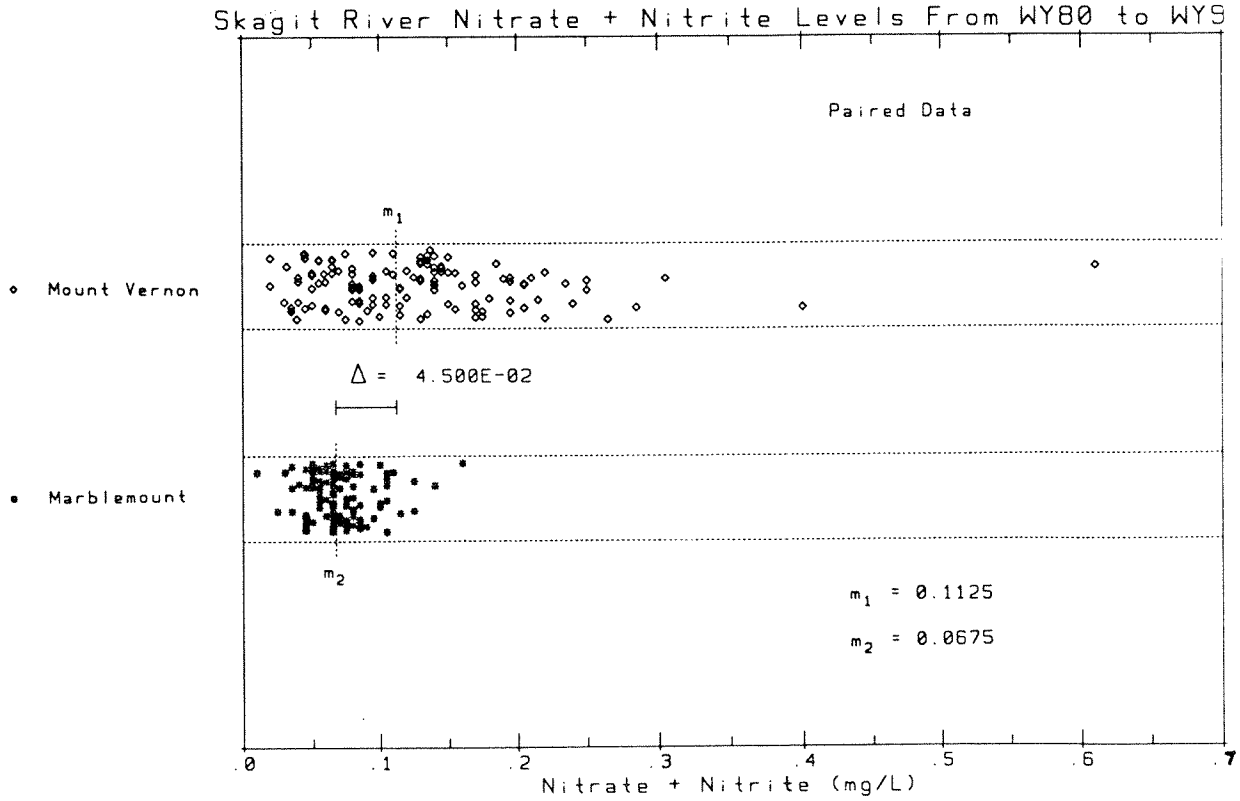

Skagit River pH levels From WY80 to WY91
Paired Data
Mount Vernon
Marblemount
m1
Δ = 0.000E+00
m2
m1 = 7.4
m2 = 7.4
6.0
6.5
7.0
7.5
8.0
pH (SU)

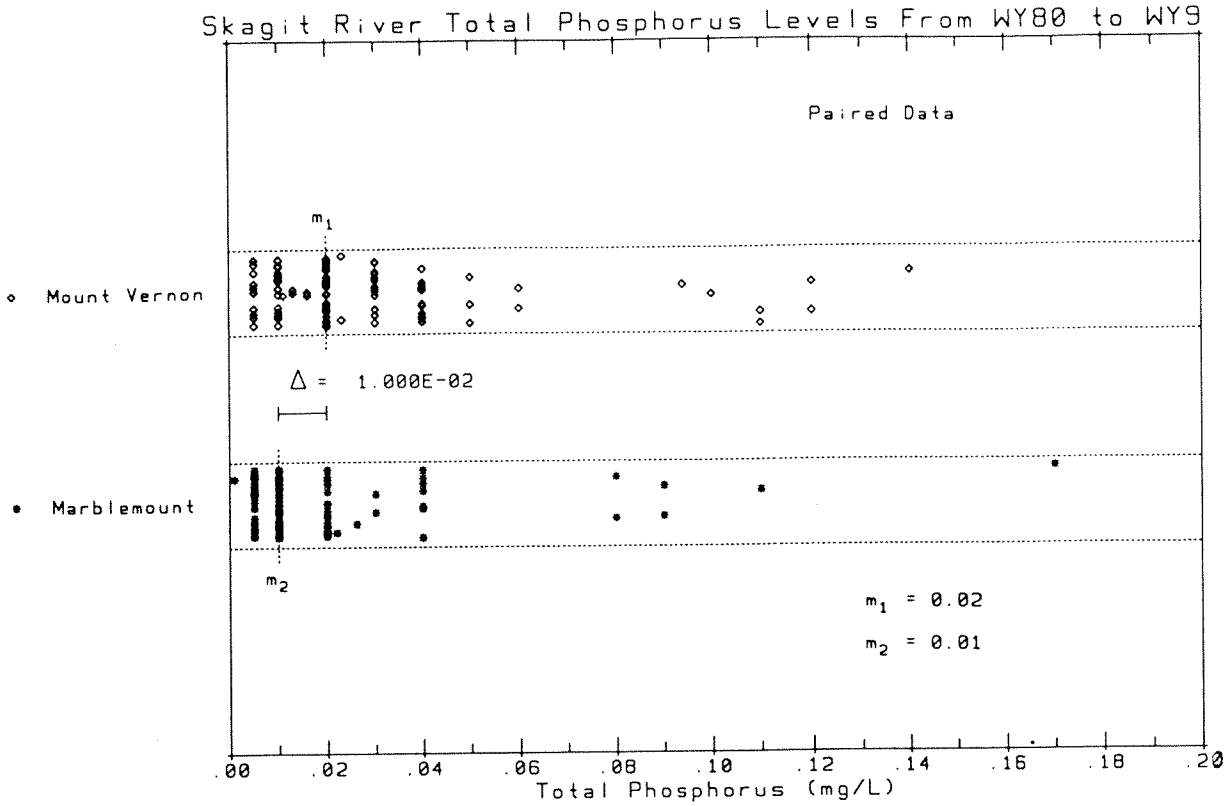

Skagit River Suspended Solid Levels From WY80 to WY91
Paired Data
Mount Vernon
Marblemount
m1
Δ = 9.000E+00
m2
m1 = 12.0
m2 = 3.0
0
100
200
300
400
500
600
700
Suspended Solids (mg/L)

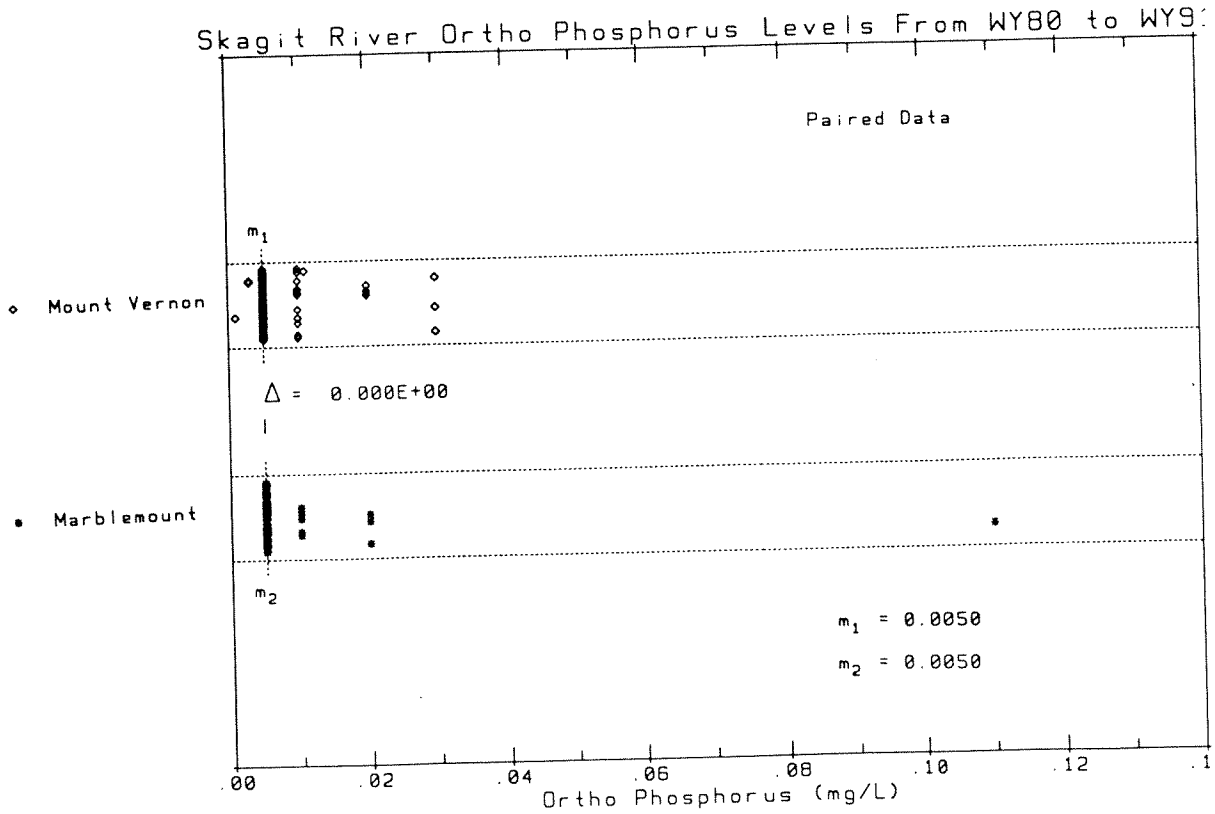

Skagit River Turbidity Levels From WY80 to WY91
Paired Data
Mount Vernon
Marblemount
m1
m2
Δ = 3.100E+00
H
m1 = 5.375
m2 = 2.275
0
50
100
150
200
250
300
350
400
Turbidity (NTU)

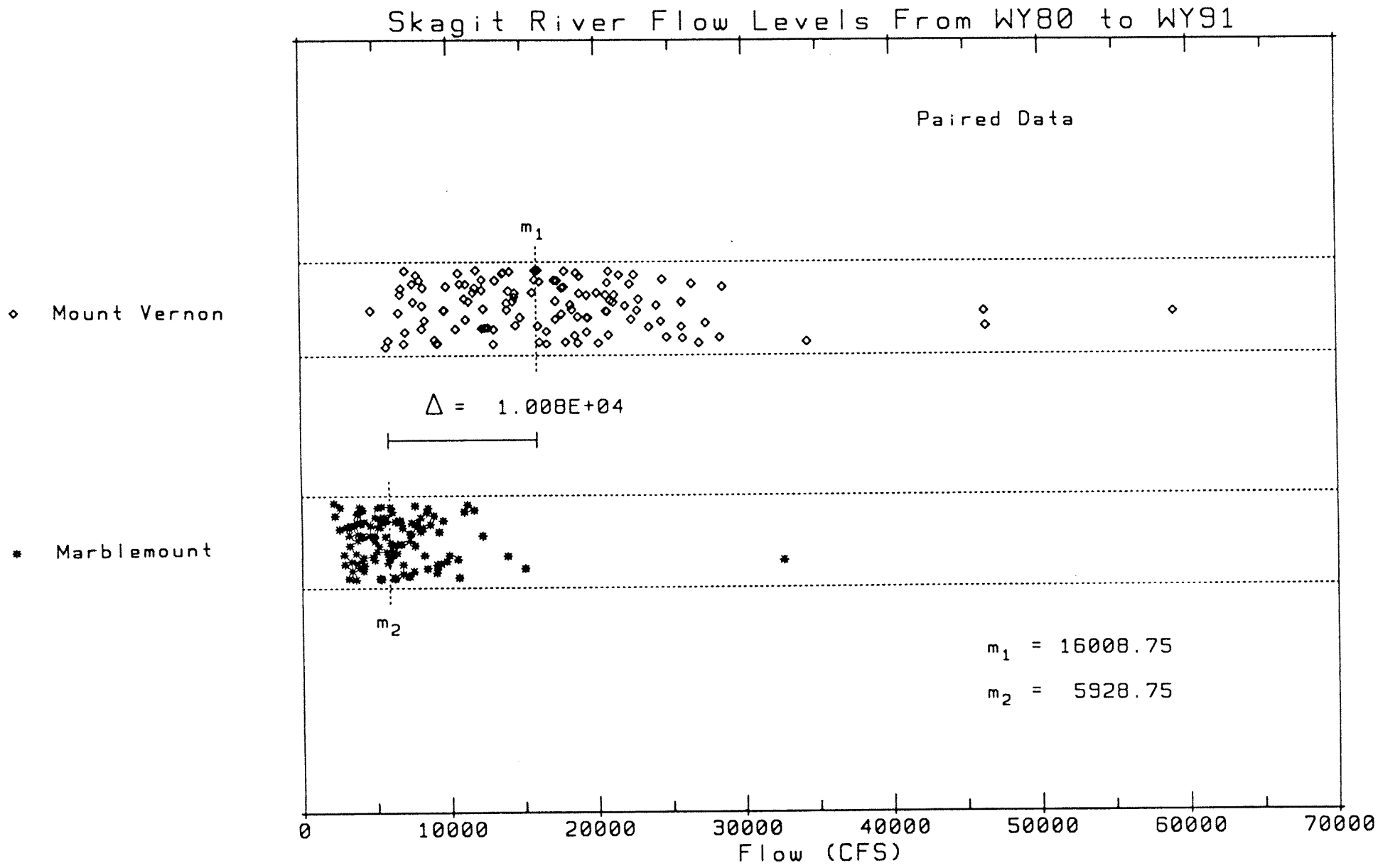

Skagit River Fecal Coliform Levels From WY80 to WY91
Paired Data
Mount Vernon
Marblemount
m1
m2
Δ = 1.300E+01
m1 = 14.57
m2 = 1.5
0
50
100
150
200
250
300
Fecal Coliform (Colonies per 100 mL)


Skagit River Ammonia Levels From WY80 to WY91
Paired Data
m1
Mount Vernon
Δ = 0.000E+00
Marblemount
m2
m1 = 0.010
m2 = 0.010
.00 .05 .10 .15 .20 .25 .30 .35 .40 .45 .50 .55
Ammonia (mg/L)


Skagit River Nitrate + Nitrite Levels From WY80 to WY9
Paired Data
m1
Mount Vernon
Δ = 4.500E-02
Marblemount
m2
m1 = 0.1125
m2 = 0.0675
.0 .1 .2 .3 .4 .5 .6 .7
Nitrate + Nitrite (mg/L)


Skagit River Total Phosphorus Levels From WY80 to WY9
Paired Data
m1
Mount Vernon
Δ = 1.000E-02
Marblemount
m2
m1 = 0.02
m2 = 0.01
.00
.02
.04
.06
.08
.10
.12
.14
.16
.18
.20
Total Phosphorus (mg/L)

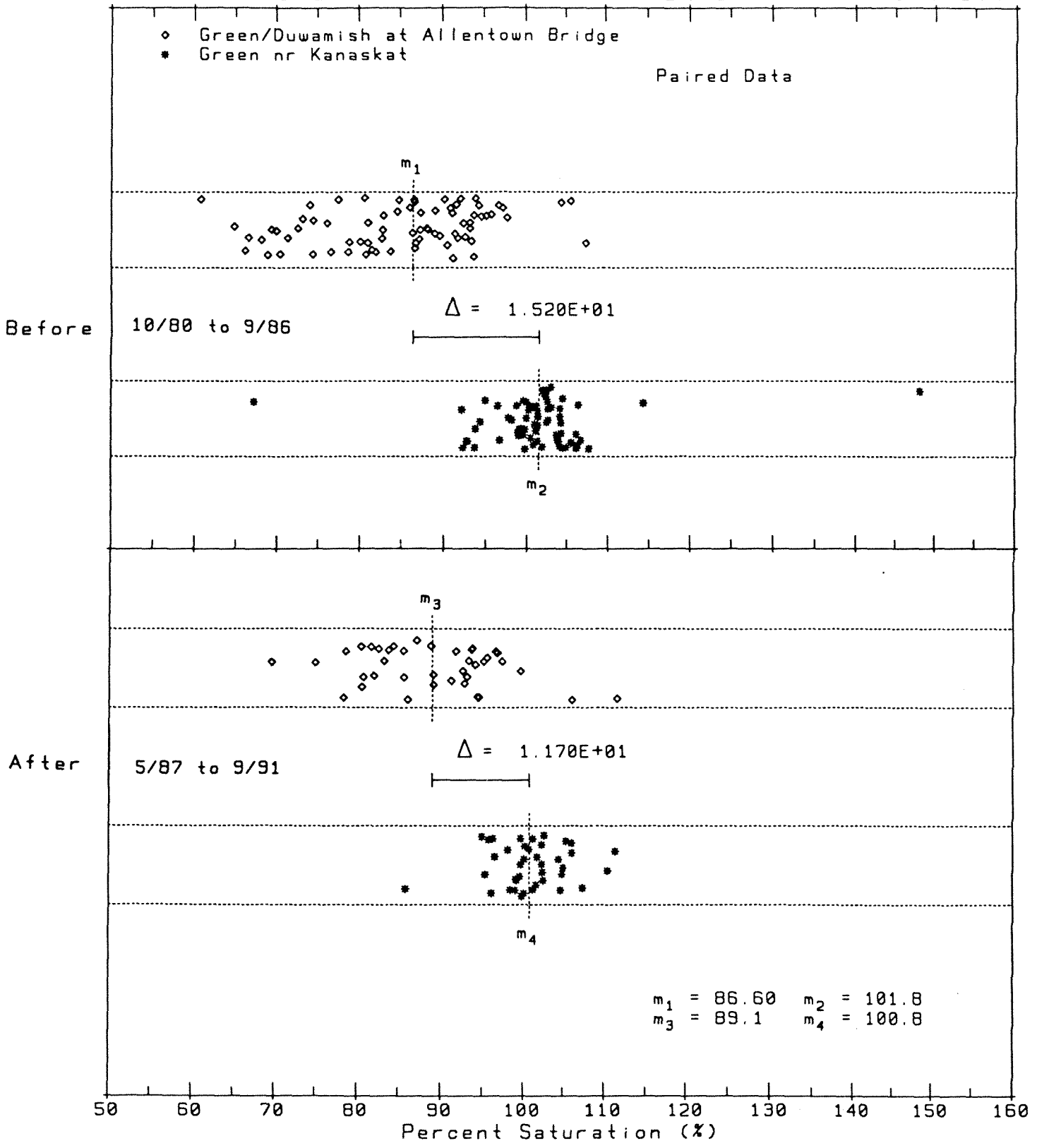

Skagit River Ortho Phosphorus Levels From WY80 to WY9
Paired Data
m1
Mount Vernon
Δ = 0.000E+00
Marblemount
m2
m1 = 0.0050
m2 = 0.0050
.00
.02
.04
.06
.08
.10
.12
Ortho Phosphorus (mg/L)


Skagit River Flow Levels From WY80 to WY91
Paired Data
m1
Mount Vernon
Δ = 1.008E+04
Marblemount
m2
m1 = 16008.75
m2 = 5928.75
0
10000
20000
30000
40000
50000
60000
70000
Flow (CFS)

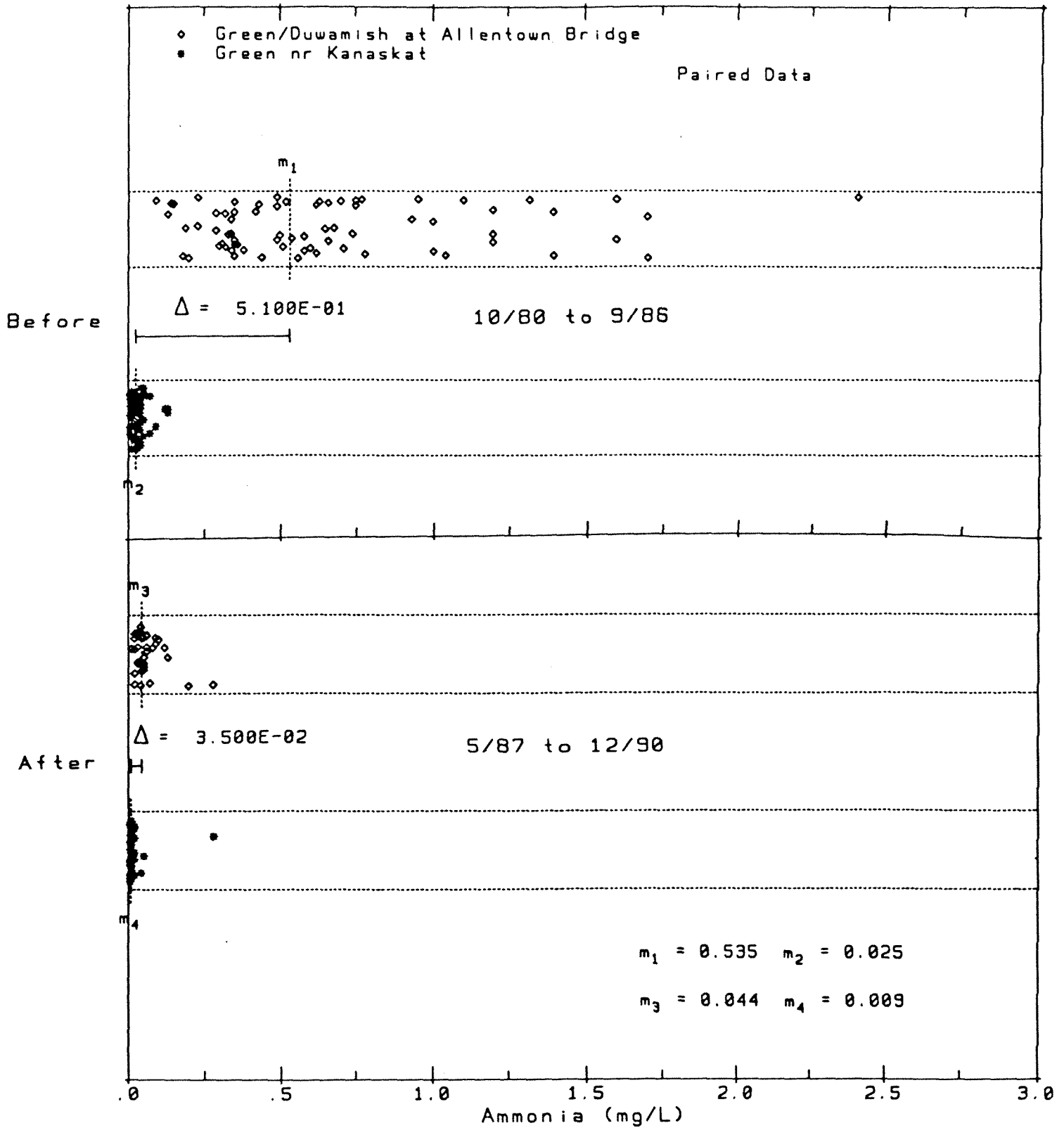
APPENDIX 10

Upstream/Downstream Work on the Green River Water Quality at Allentown Bridge vs. Kanaskat Before and After the Removal of the Renton STP Outfall

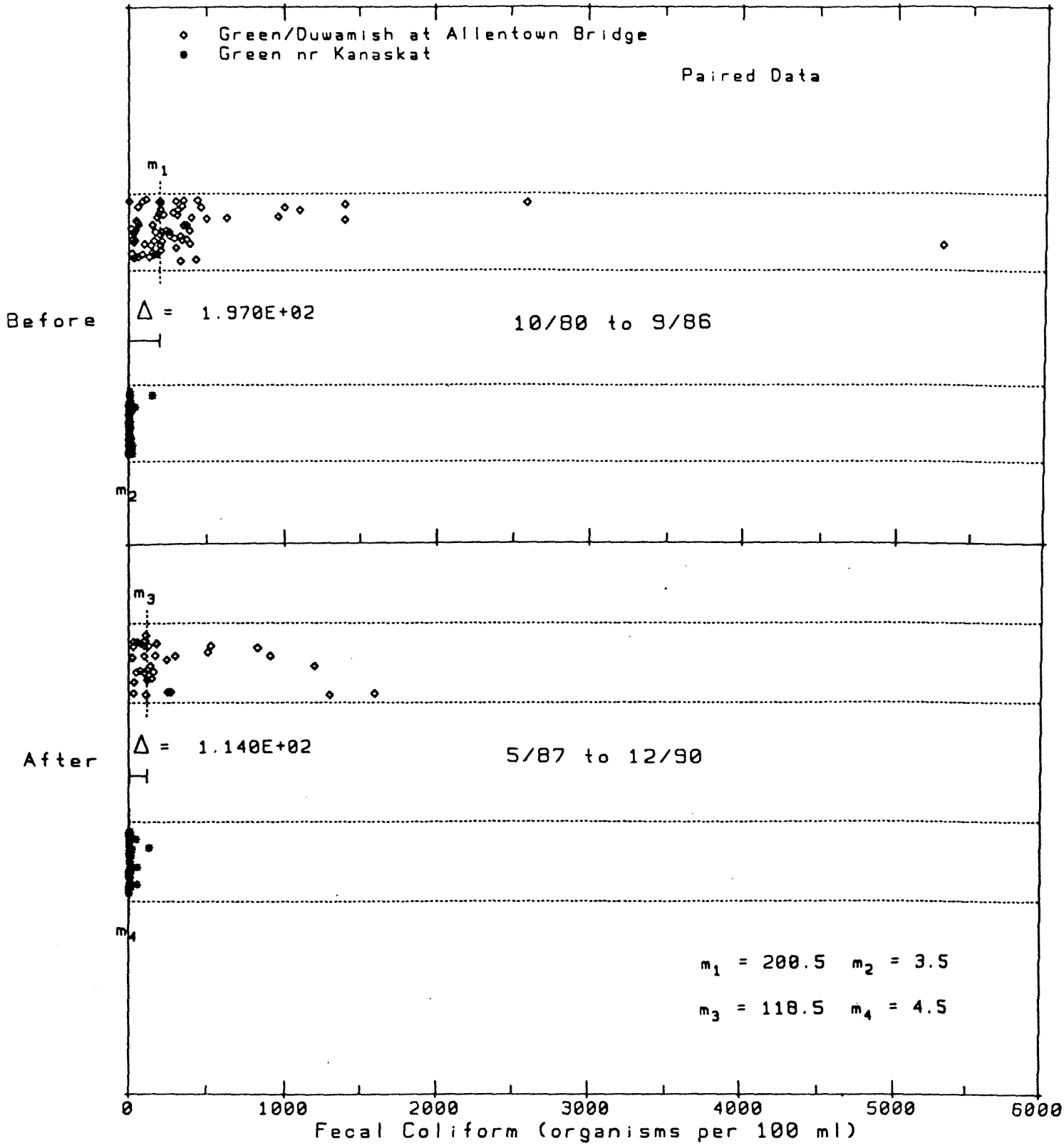
Green River Percent Saturation of Dissolved Oxygen Before and After Removal of the Renton Treatment Plant Outfall



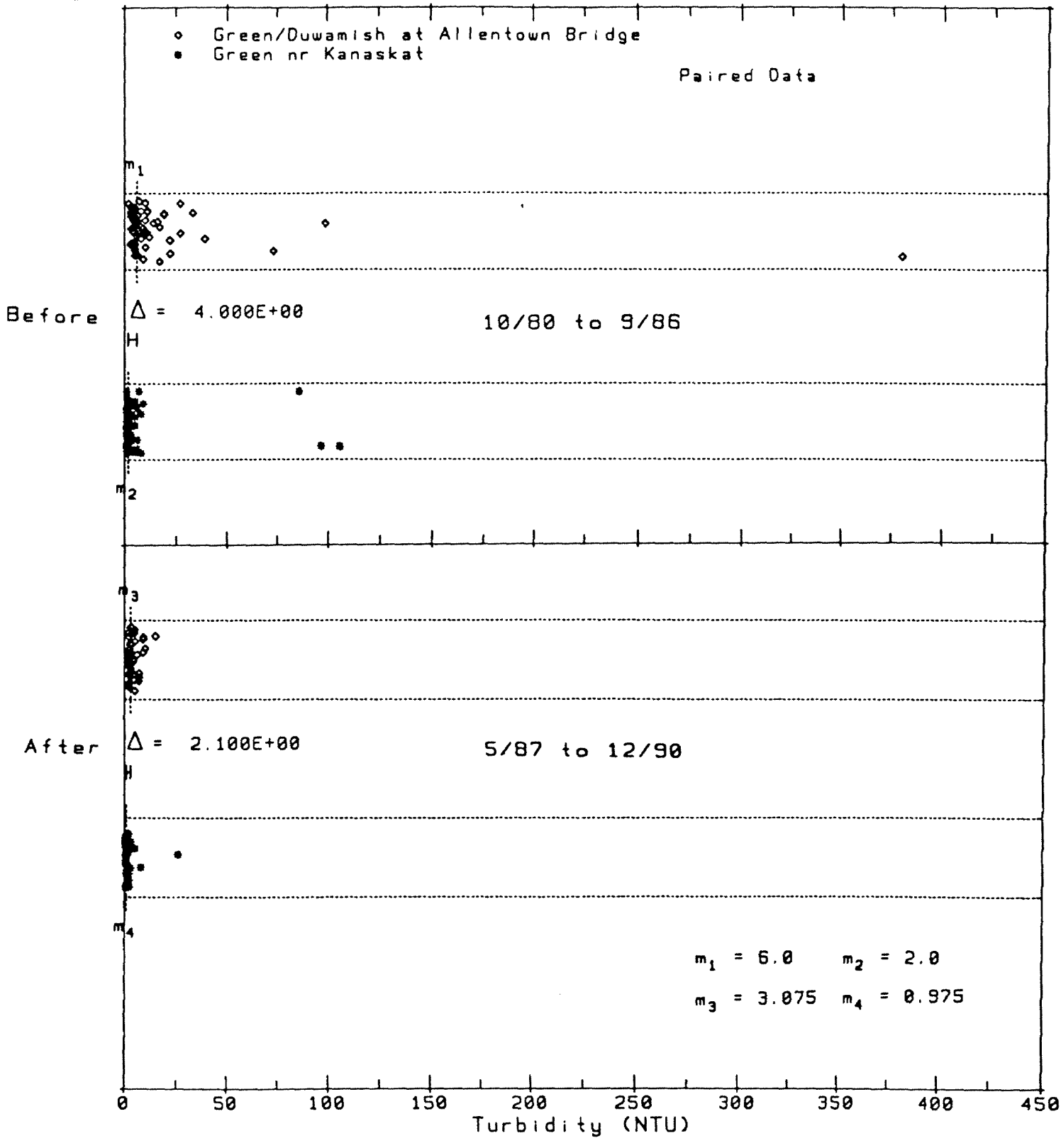
Green River Ammonia Levels Before and After Removal of the Renton Treatment Plant Outfall



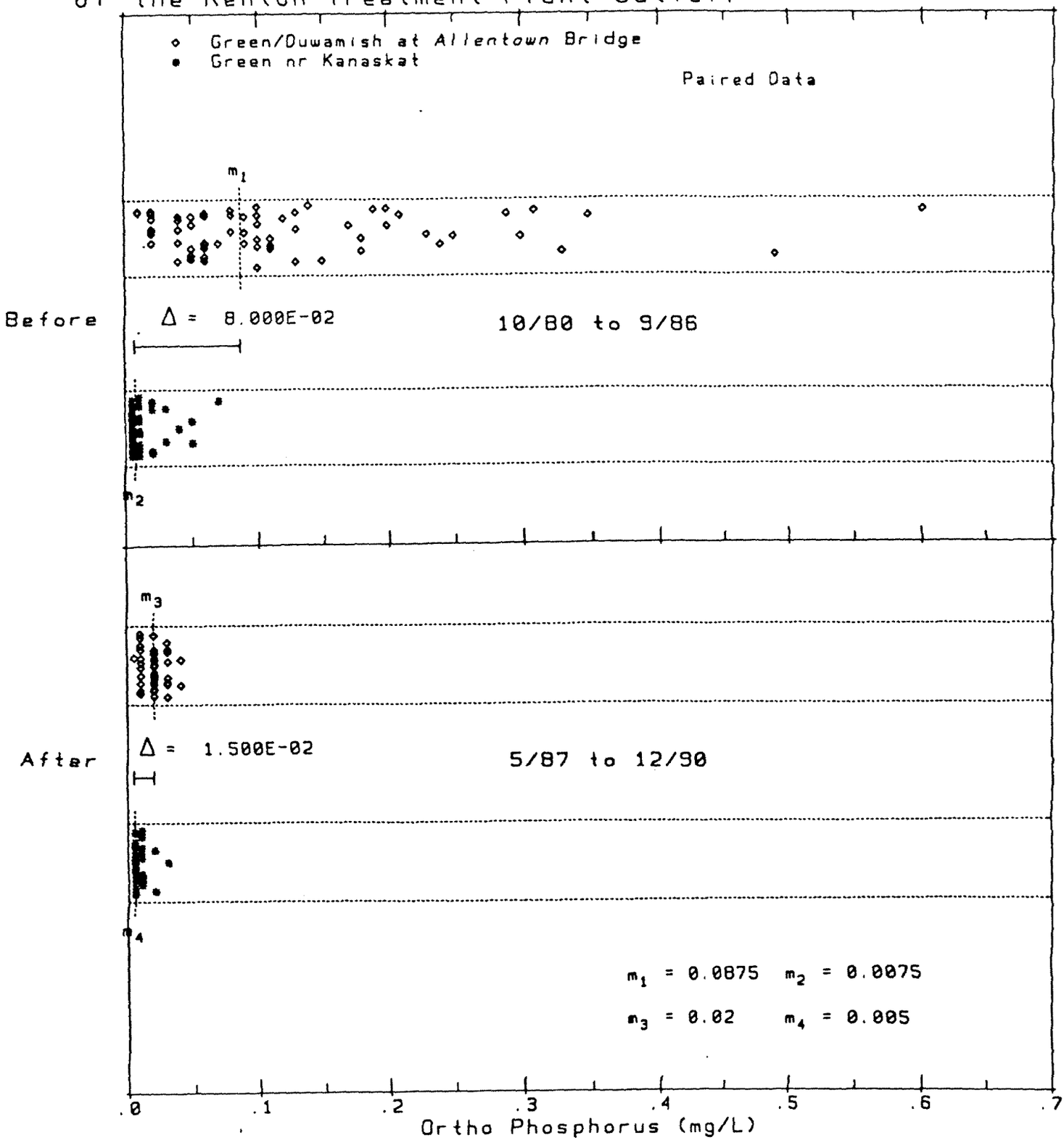
Green River Fecal Coliform Levels Before and After the Removal of the Renton Treatment Plant Outfall



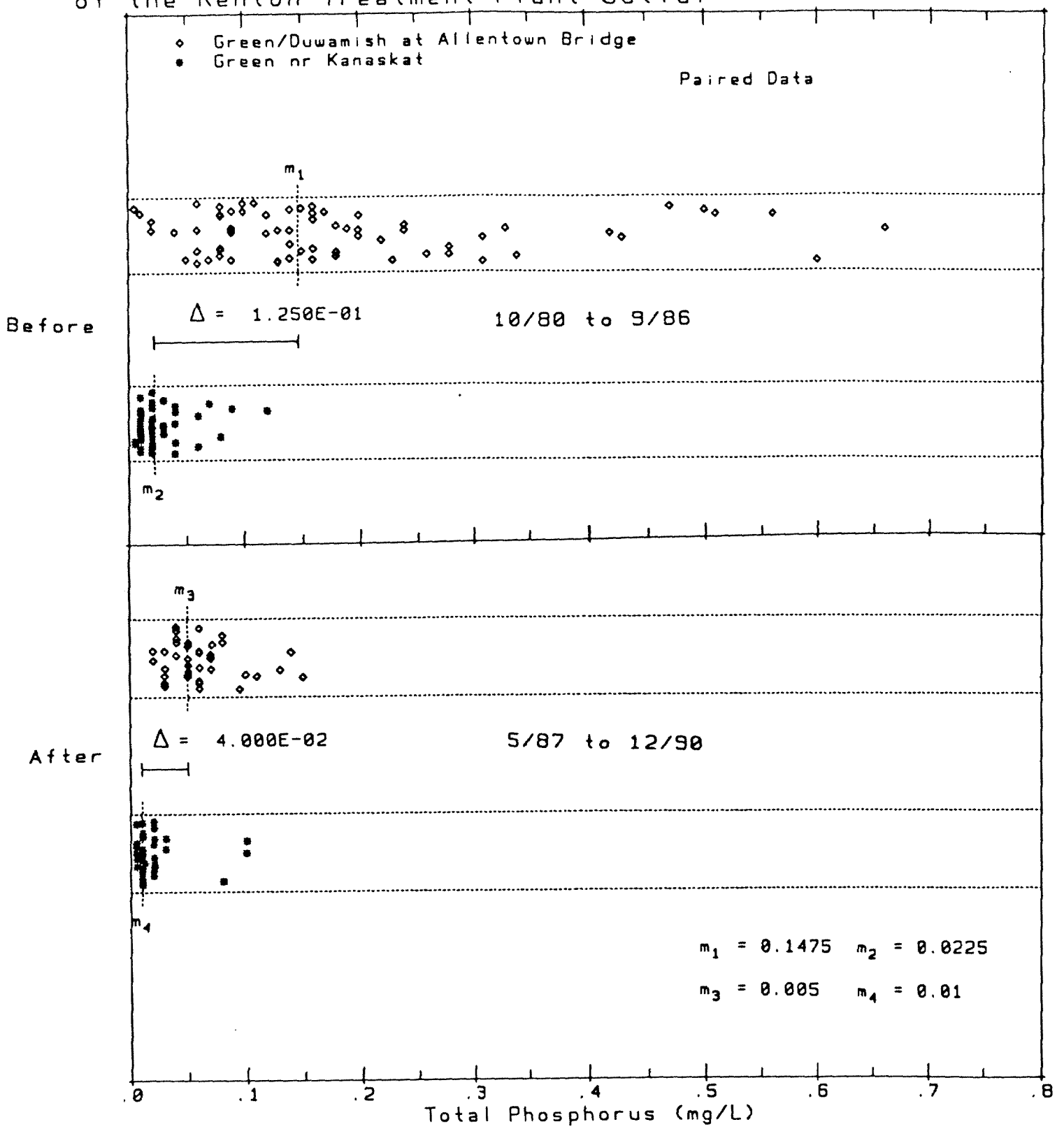
Green River Turbidity Levels Before and After the Removal of the Renton Treatment Plant Outfall



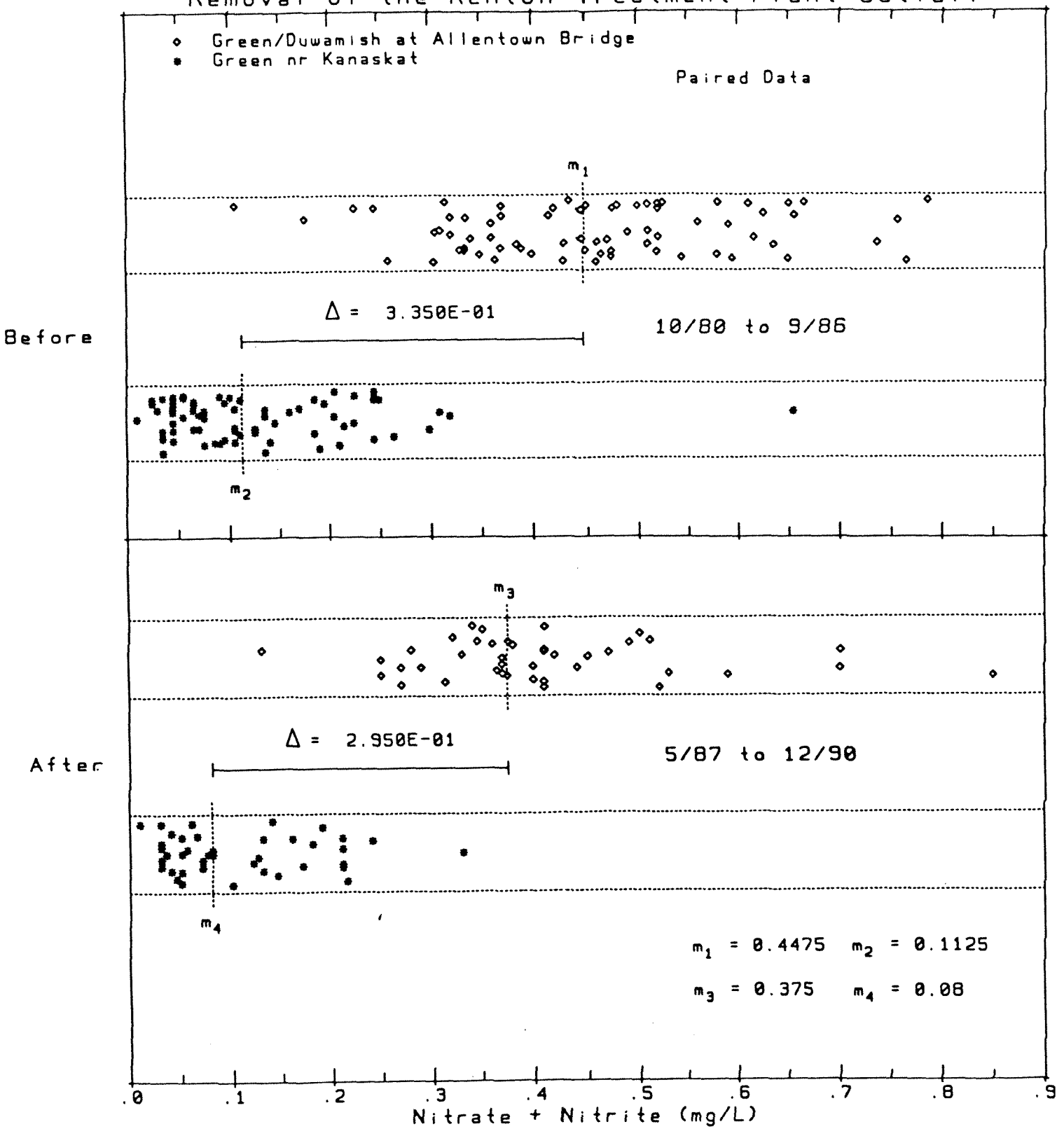
Green River Ortho Phosphorus Levels Before and After the Remov
of the Renton Treatment Plant Outfall

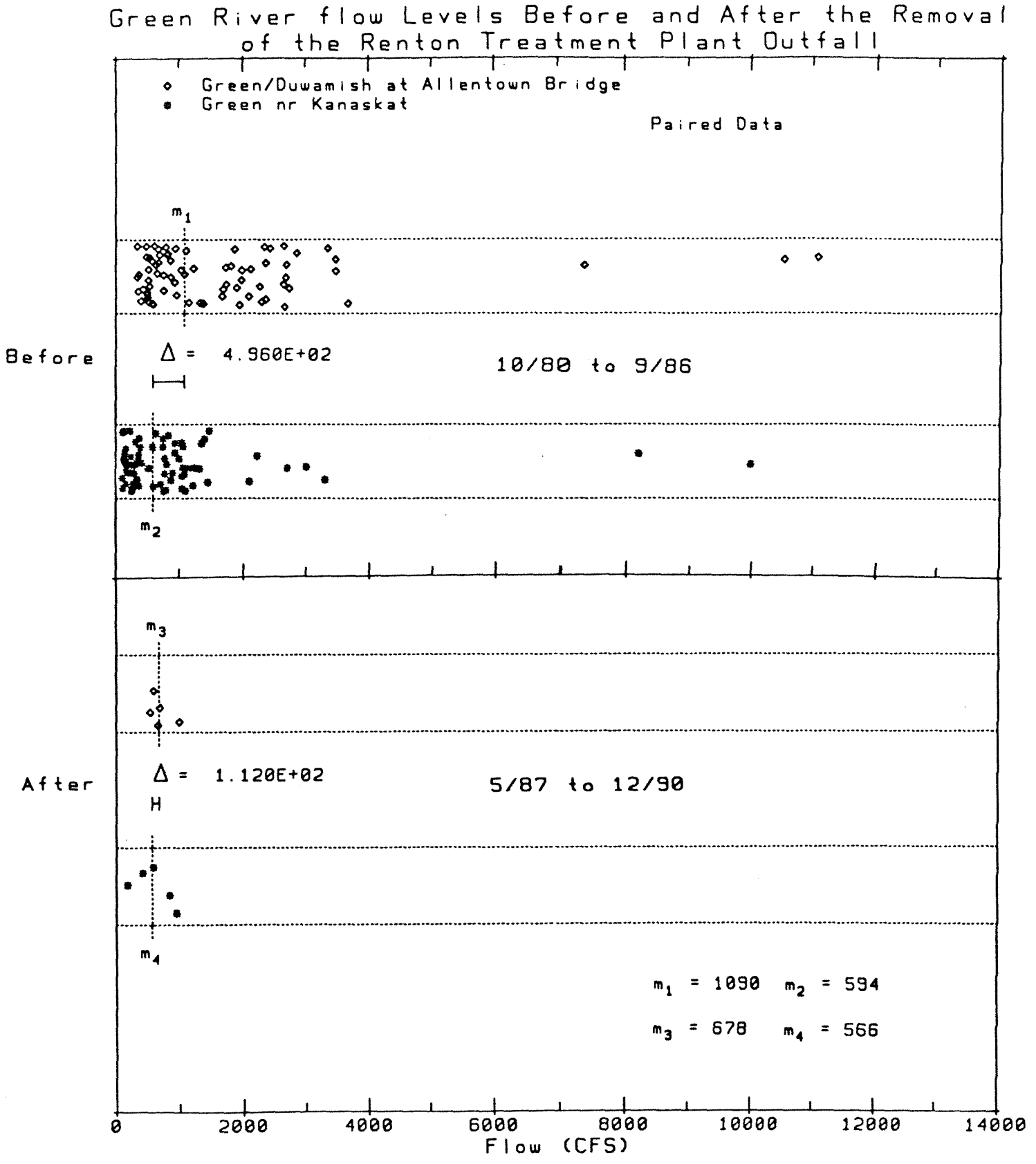


Green River Total Phosphorus Levels Before and After the Remov
of the Renton Treatment Plant Outfal

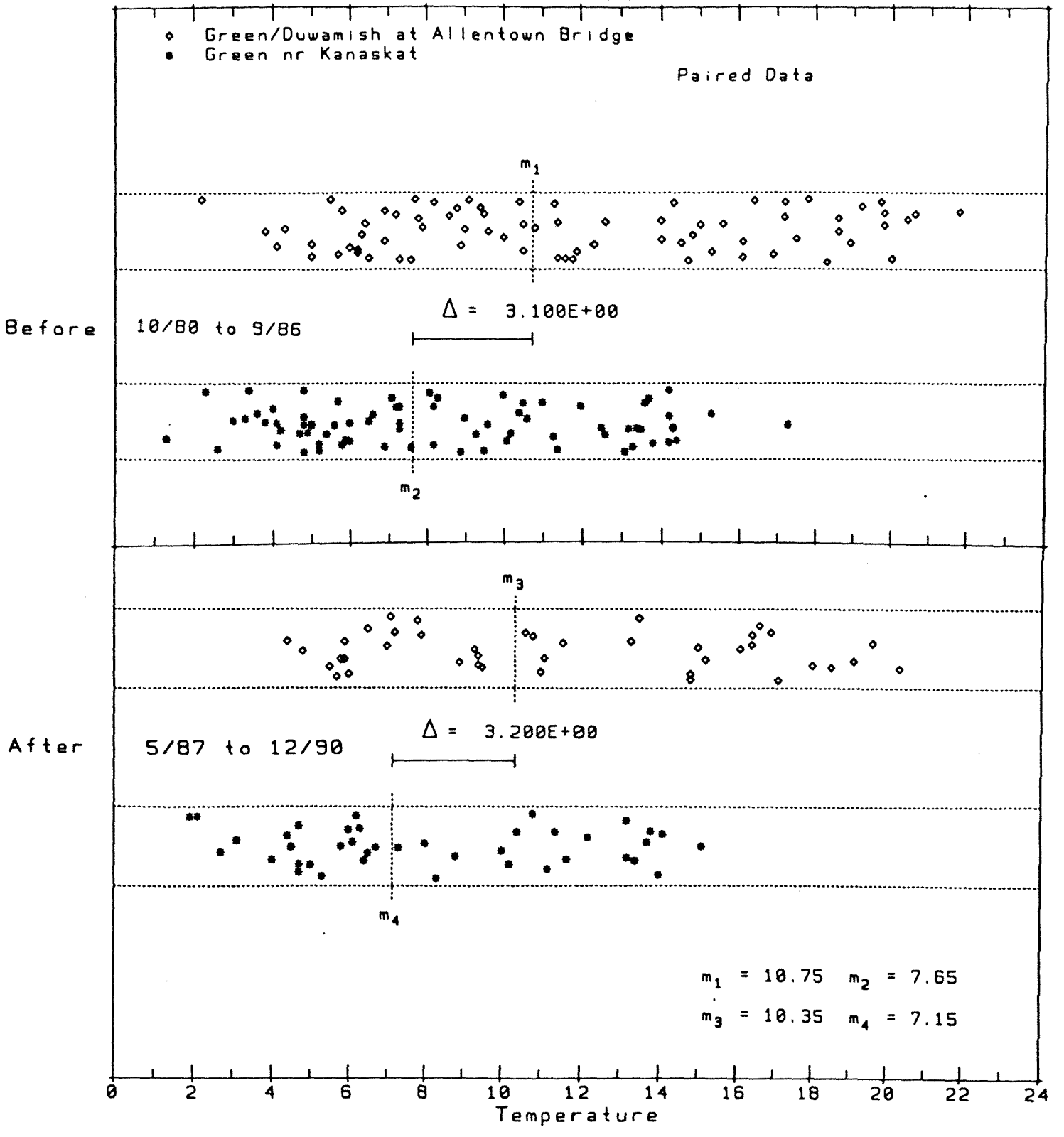


Green River Nitrate + Nitrite Levels Before and After the Removal of the Renton Treatment Plant Outfall

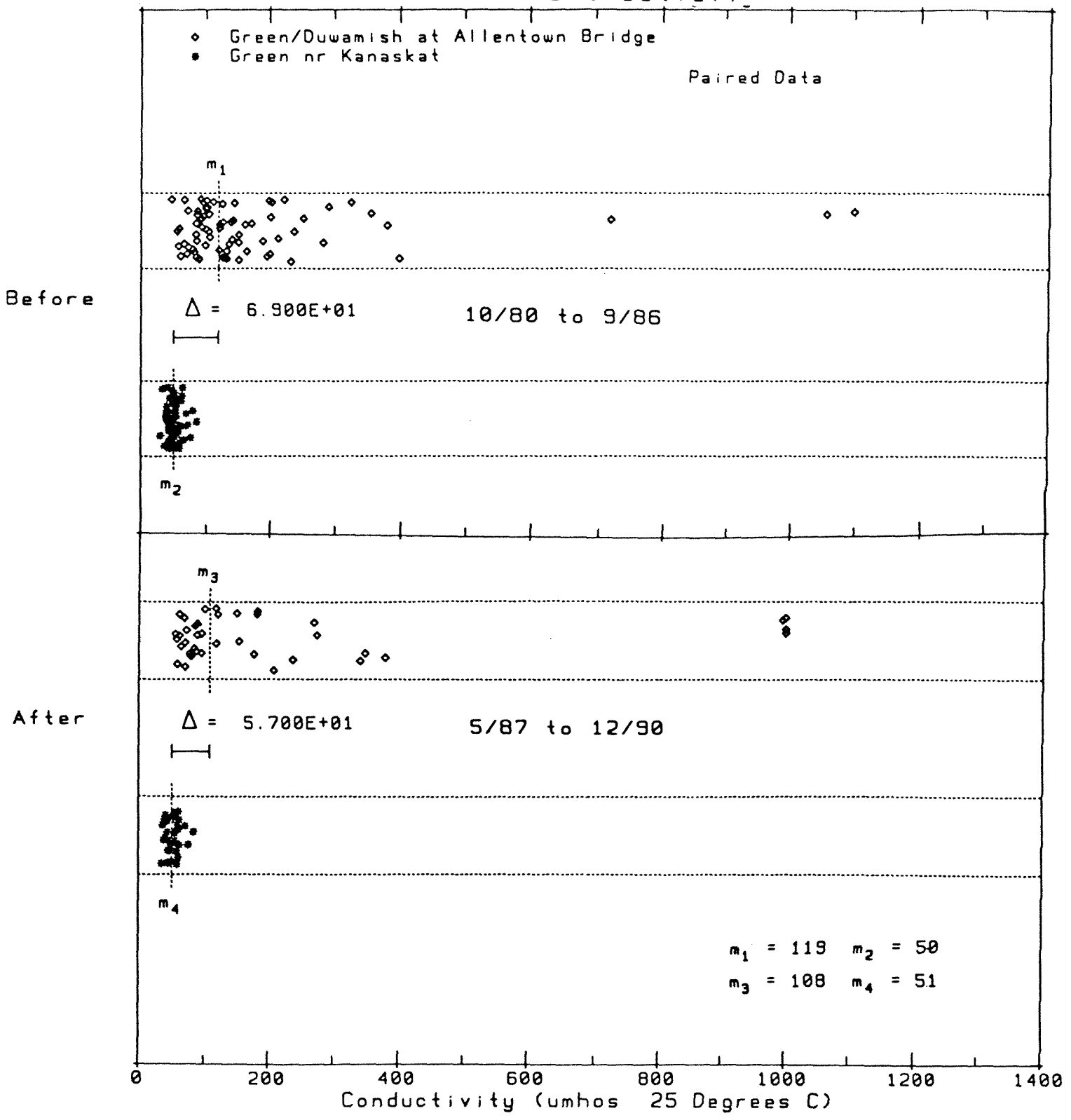



Green River flow Levels Before and After the Removal of the Renton Treatment Plant Outfall
Green/Duwamish at Allentown Bridge
Green nr Kanaskat
Paired Data
Before
After
Δ = 4.960E+02
10/80 to 9/86
Δ = 1.120E+02
5/87 to 12/90
m1 = 1090 m2 = 594
m3 = 678 m4 = 566
0
2000
4000
6000
8000
10000
12000
14000
Flow (CFS)

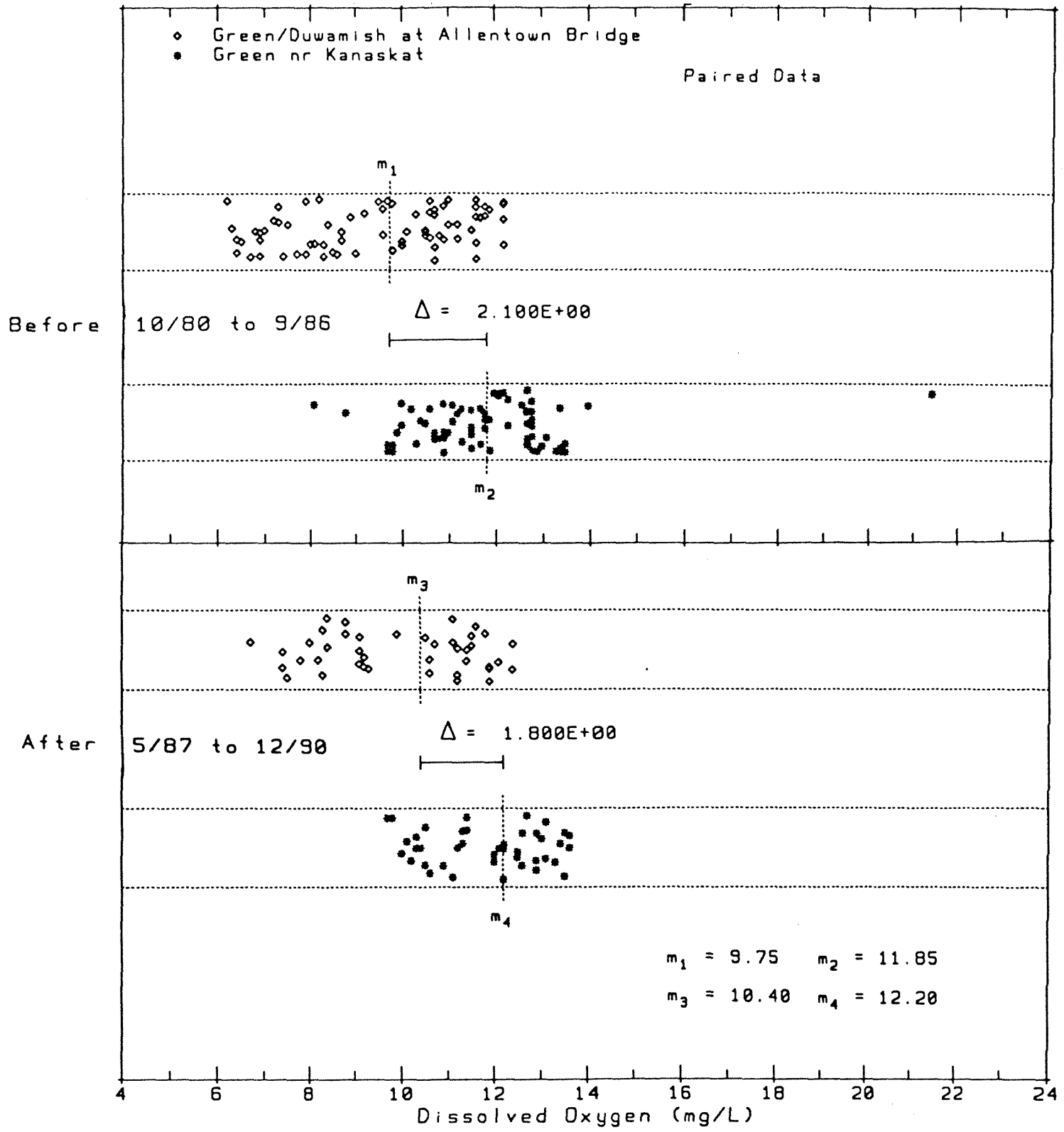
Green River Temperature Levels Before and After the Removal of the Renton Treatment Plant Outfall



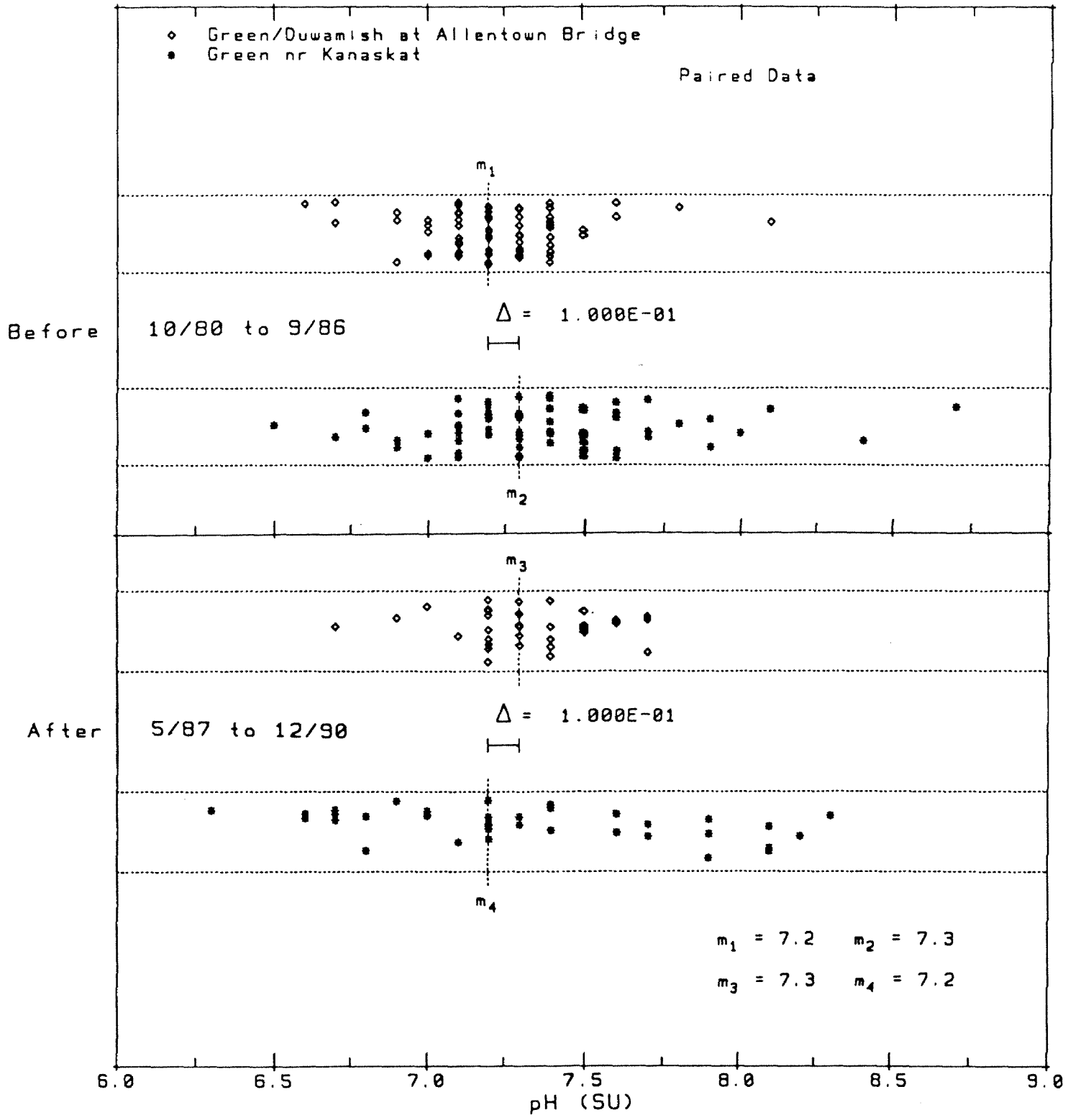
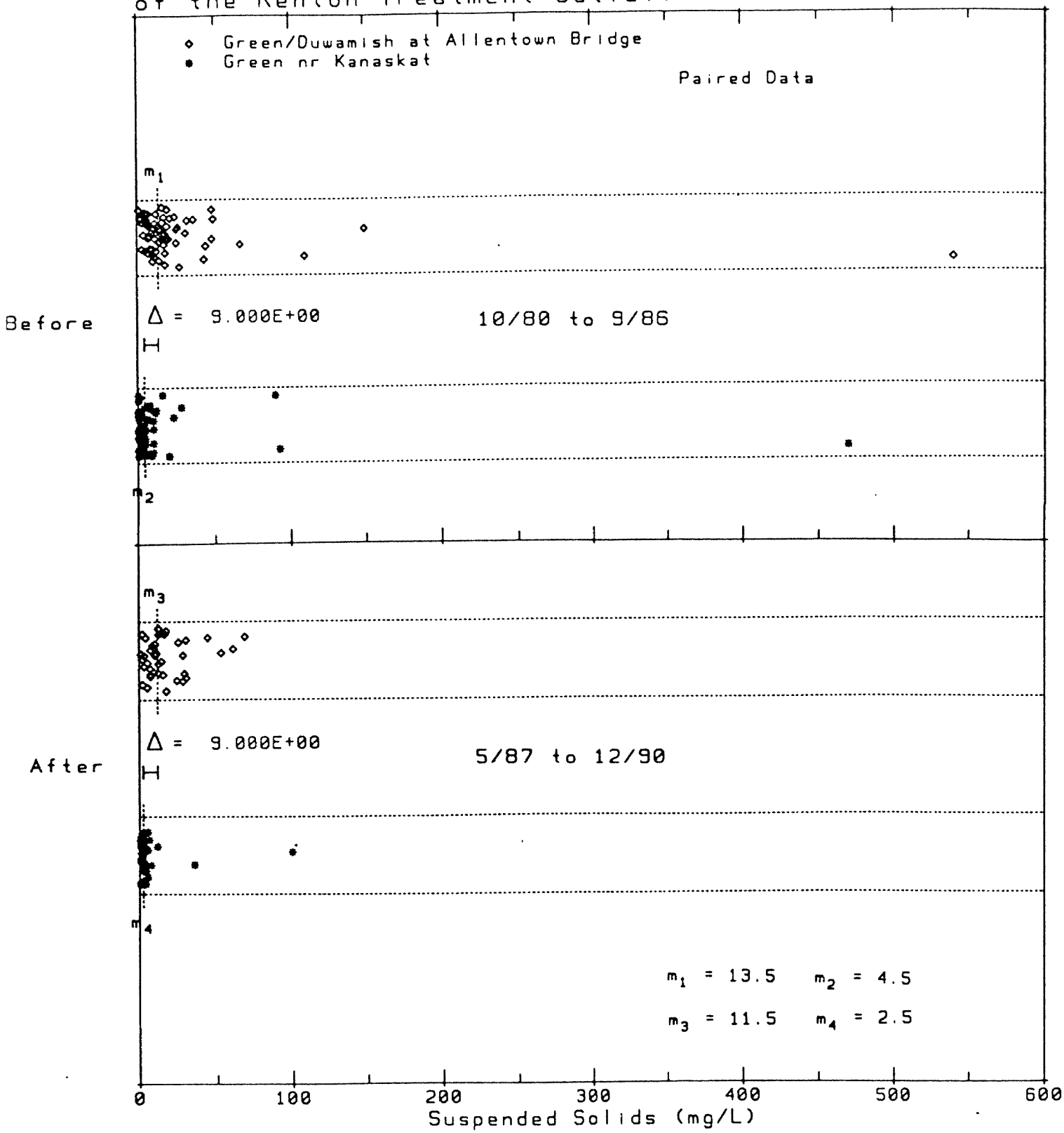
Green River Conductivity Levels Before and After the Remova
of the Renton Treatment Plant Outfall



Green River Dissolved Oxygen Levels Before and After the Remov
of the Renton Treatment Plant Outfall



Green River pH Levels Before and After Removal of the Renton Treatment Plant Outfall



Green River Suspended Solid Levels Before and After the Remova
of the Renton Treatment Outfall