River and Stream Water Quality Monitoring Report for Water Year 2004

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River and Stream Water Quality Monitoring Report for Water Year 2004

by
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Environmental Assessment Program
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Abstract

The Washington State Department of Ecology (Ecology) collected monthly water quality data at 82 stream monitoring stations during Water Year (WY) 2004 (October 1, 2003 through September 30, 2004). One stream reach was assessed for degradation due to turbidity. We also collected 30-minute interval temperature data at 52 sites from June through September 2004. The principal goals of this ongoing monitoring program are to characterize the rivers and streams of Washington State and to track changes in water quality.

This report is intended to document methods and data quality, and to present the data for WY 2004. A description of Ecology's long-term monitoring program and access to historical data can be found on Ecology's Internet web site at http://www.ecy.wa.gov by clicking on "Environmental Info" and then "River and Stream Water Quality" (under the "Watersheds" heading).

Acknowledgments

Many people contributed time, effort, and expertise to the Water Year 2004 program.

- Chris Coffin, George Onwumere, Rob Plotnikoff, Jim Ross, Bill Ward, and Chad Wiseman collected samples. Thanks for the long hours behind the wheel and a remarkable dedication to get the job done.
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Staff at Manchester Environmental Laboratory:

- Debi Case, Pam Covey, and Karin Feddersen did the sample tracking.
- Michelle Aylward, Heidi Chuhran, Kamilee Ginder, Randy Knox, Bridget Mason, and Aileen Richmond performed general chemistry analyses.
- Sally Cull and Nancy Jensen were responsible for the microbiology.
- Sally Cull, Meredith Jones, Dean Momohara, and Sara Sekerak worked on low-level metals.
- Will White was the sample courier.

Introduction

The Washington State Department of Ecology (Ecology) and its predecessor agency have operated a long-term ambient[1] water quality monitoring program since 1959. The current program consists of monthly water quality monitoring for conventional constituents at about 82 stations on rivers and streams within Washington State. (The actual number of stations varies slightly depending on funding and special projects.)

In addition, in 2004 we continued (1) a turbidity assessment at selected stream reaches, (2) collecting 30-minute interval temperature data at long-term stations from June through September, and (3) bi-monthly metals monitoring at a few selected stations.

The principal goals of the stream ambient monitoring program are to characterize water quality and to evaluate spatial and temporal changes in water quality (trends).

Within Ecology, data generated by the Freshwater Monitoring Unit (FMU) are used to:

- Determine if designated uses are supported (e.g., Ecology, 1998)
- Refine and verify Total Maximum Daily Load (TMDL) models
- Develop water quality based permits
- Prepare 305(b), 303(d), and other management reports
- Provide water quality information necessary to prioritize grant awards
- Conduct miscellaneous site-specific evaluations

Our data are provided free to the public and are widely used by academics, consultants, local government entities, schools, and others interested in the quality of Washington's flowing waters.

The purpose of this report is to describe the Water Year (WY) 2004 monitoring program, discuss data quality, and present results. More detailed analyses and interpretations of ambient monitoring data are reported elsewhere. The FMU analyzes results at specific stations in response to specific needs (e.g., Hallock, 2004a).

A generalized assessment of water quality at particular stations is provided online (http://www.ecy.wa.gov/programs/eap/fw_riv/rv_main.html) in the form of a water quality index (WQI; Hallock, 2002a). The WQI and trends at long-term stations are reported in *Washington State Water Quality Conditions in 2004 based on Data from the Freshwater Monitoring Unit* (Hallock, 2005).

Other programs conduct some analyses of their own; for example, Ecology's Water Quality Program applies its own data reduction procedures prior to producing Washington State's Water Quality Assessment [303(d) & 305(b) Report] (http://www.ecy.wa.gov/programs/wq/303d/2002/2002-index.html).

[1] Status and trends

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Methods

Sampling Network

The ambient monitoring network in WY 2004 consisted of monthly water collection at 62 long-term stations and 20 regional ("basin") stations. All stations were sampled year-round.

1. Long-term stations are monitored every year to track water quality changes over time (trends), assess inter-annual variability, and collect current water quality information. These stations are generally located near the mouths of major rivers, below major population centers, upstream from most anthropogenic (human-caused) sources of water quality problems, or where major streams enter the state.

2. Basin stations are generally monitored for one year only (although they may be re-visited every five years) to collect current water quality information. These stations are selected to support the waste discharge permitting process, TMDL assessments, site-specific needs, and to allow expanded coverage over a long-term network. Basin station sampling was focused (but not necessarily exclusively) in the following basins during WY 2004: Spokane, Lower Yakima, Cedar/Green, and Eastern Olympics. Some basin stations are selected to target known problems and may not necessarily reflect conditions representative of the basin.

The locations of ambient stations monitored during WY 2004 are presented in Table 1. Appendix A lists current and historical monitoring locations and the years they were monitored by Ecology and its predecessor agency. Historical data for these stations are available from the FMU on request. Also, a description of our long-term monitoring program, access to historical data, and previous annual reports can be found on Ecology's internet web site at http://www.ecy.wa.gov/ under "Environmental Info." and "River and Stream Water Quality."

Sample Collection and Analysis

The majority of water samples were collected as single, near-surface grab samples from highway bridges. Twelve water quality constituents were monitored at all stations monthly in WY 2004:

1. conductivity
2. oxygen, dissolved
3. pH
4. temperature
5. suspended solids, total
6. turbidity
7. fecal coliform bacteria
8. phosphorus, soluble reactive
9. phosphorus, total
10. ammonia, total
11. nitrate + nitrite, total
12. nitrogen, total

Table 1. Ecology stream ambient monitoring stations for Water Year 2004.

Station		Status		Station		Status
01A050	Nooksack R @ Brennan	L		27D090	EF Lewis R nr Dollar Corner	L
01A120	Nooksack R @ No Cedarville	L		28C070	Burnt Br Cr @ mouth	B
03A060	Skagit R nr Mount Vernon	L		31A070	Columbia R @ Umatilla	L
03B050	Samish R nr Burlington	L		32A070	Walla Walla R nr Touchet	L
04A100	Skagit R @ Marblemount	L		33A050	Snake R nr Pasco	L
05A070	Stillaguamish R nr Silvana	L		34A070	Palouse R @ Hooper	L
05A090	SF Stillaguamish @ Arlington	L		34A170	Palouse R @ Palouse	L
05A110	SF Stillaguamish nr Granite Falls	L		34B110	SF Palouse R @ Pullman	L
05B070	NF Stillaguamish @ Cicero	L		34F090	Pine Cr @ Rosalia	B
05B110	NF Stillaguamish nr Darrington	L		35A150	Snake R @ Interstate Br	L
07A090	Snohomish R @ Snohomish	L		35B060	Tucannon R @ Powers	L
07C070	Skykomish R @ Monroe	L		36A070	Columbia R nr Vernita	L
07D050	Snoqualmie R nr Monroe	L		37A090	Yakima R @ Kiona	L
07D130	Snoqualmie R @ Snoqualmie	L		37A205	Yakima R @ Nob Hill	L
08C070	Cedar R @ Logan St/Renton	L		39A090	Yakima R nr Cle Elum	L
08C110	Cedar R nr Landsburg	L		41A070	Crab Cr nr Beverly	L
08L070	Laughing Jacobs Cr nr mouth	B		45A070	Wenatchee R @ Wenatchee	L
08M070	SF Thornton Cr @ 107th Ave NE	B		45A110	Wenatchee R nr Leavenworth	L
09A080	Green R @ Tukwila	L		45C060	Chumstick Cr nr mouth	B
09A190	Green R @ Kanaskat	L		45D070	Brender Cr nr Cashmere	B
09C070	Des Moines Cr nr mouth	B		45E070	Mission Cr nr Cashmere	B
09D070	Miller Cr nr mouth	B		45Q060	Eagle Cr nr mouth	B
09J090	Longfellow Cr abv 24-25th St juctn	B		45R050	Noname Cr nr Cashmere	B
10A070	Puyallup R @ Meridian St	L		46A070	Entiat R nr Entiat	L
10A080	Puyallup R nr Sumner	B		48A070	Methow R nr Pateros	L
10C095	White R @ R Street	B		48A140	Methow R @ Twisp	L
11A070	Nisqually R @ Nisqually	L		49A070	Okanogan R @ Malott	L
13A060	Deschutes R @ E St Bridge	L		49A190	Okanogan R @ Oroville	L
16A070	Skokomish R nr Potlatch	L		49B070	Similkameen R @ Oroville	L
16C090	Duckabush R nr Brinnon	L		53A070	Columbia R @ Grand Coulee	L
18A050	Dungeness R nr mouth	B		54A120	Spokane R @ Riverside State Pk	L
18B070	Elwha R nr Port Angeles	L		55B070	Little Spokane R nr mouth	L
20B070	Hoh R @ DNR Campground	L		55B300	Little Spokane R @ Scotia	B
22A070	Humptulips R nr Humptulips	L		55C070	Peone (Deadman) Cr abv L Deep Cr	B
23A070	Chehalis R @ Porter	L		55C200	Deadman Cr @ Holcomb Rd	B
23A100	Chehalis R @ Prather Rd	B		56A070	Hangman Cr @ mouth	L
23A160	Chehalis R @ Dryad	L		57A150	Spokane R @ Stateline Br	L
24B090	Willapa R nr Willapa	L		60A070	Kettle R nr Barstow	L
24F070	Naselle R nr Naselle	L		61A070	Columbia R @ Northport	L
26B070	Cowlitz R @ Kelso	L		62A090	Pend Oreille R @ Metaline Falls	B
27B070	Kalama R nr Kalama	L		62A150	Pend Oreille R @ Newport	L

L = long-term
B = basin

We also record barometric pressure. Stream height measurements, where necessary, enable flow determination for most long-term stations. Sample collection and analytical methods are described an earlier annual reports (Hallock et al., 1998), our field monitoring protocols (Ward et al., 2001), the FMU quality assurance documents (Hallock and Ehinger, 2003 and Hopkins, 1996), and Manchester Environmental *Laboratory User's Manual* (Ecology, 2005).

All long-term monitoring programs experience changes in sampling or analytical procedures that can potentially affect results. Normally, changes will result in improved precision or reduced bias. Most changes will have only a minor affect on a synoptic analysis of the data, but even minor improvements in procedures should be considered when evaluating long-term trends. With one exception, we made no substantive changes to collection or analytical procedures in WY 2004. The exception was to change the total phosphorus (TP) analytical method from SM 4500PI (APHA, 2000) using an in-line digestion to EPA 200.8M (EPA, 1983), which uses ICP/MS. The high bias in TP measurements, which prompted this change and which was first reported in our WY 2002 annual report (Hallock, 2003), is investigated further in this report (see *Data Quality Issues – Total Phosphorus*). All known and suspected changes to methods and procedures during the history of the stream monitoring program, as well as large-scale environmental changes that may affect a trend analysis, are documented in Appendix B.

Continuous Temperature Monitoring

Ecology's Environmental Monitoring and Trends Section collects temperature data at 30-minute intervals at most of our long-term ambient monitoring stations as well as at some basin stations. Temperature loggers were deployed at 62 sites in 2004, and data were successfully retrieved from 53 sites. The purpose of this monitoring effort is to collect season-long, diel (24-hour) temperature data that may be used for trend analyses and to determine compliance with water quality standards.

Two Onset Stow Away TidbiT® temperature loggers were deployed at each site, one in water and one in air. All loggers were shaded with a PVC pipe and installed in a location representative of the surrounding environment. Stream temperature loggers were installed about six inches off the stream bottom to minimize potential influence from groundwater inflow. Loggers were placed in a free flowing location at a depth to avoid exposure to air resulting from low flows.

We deployed the loggers in June and July and retrieved most of them in September. Detailed protocols are found in Ward (2003) and quality control requirements in Ward (2005).

Metals Monitoring

Metals monitoring continued in WY 2004 at 13 stations (Table 2). Metals samples were collected every other month beginning in October. Samples were analyzed for hardness, total mercury, and total recoverable and dissolved arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc. Collection and analytical methods are discussed in more detail in Hopkins (1996).

Table 2. Stations where metals were monitored bi-monthly in WY 2004.

Station	Name		Station	Name
08M070	SF Thornton Cr @ 107th Ave NE		34F090	Pine Cr @ Rosalia
09D070	Miller Cr nr mouth		37A090	Yakima R @ Kiona
09J090	Longfellow Cr abv 24-25th St junction		45A070	Wenatchee R @ Wenatchee
13A060	Deschutes R @ E St Bridge		49A070	Okanogan R @ Malott
18A050	Dungeness R nr mouth		57A150	Spokane R @ Stateline Bridge
28C070	Burnt Br Cr @ mouth		61A070	Columbia R @ Northport

Turbidity Assessment

Washington's turbidity criteria state "turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU" for Class AA and A waters (WAC 173-201A-030). The criteria for Class B are 10 NTU over background or 20 percent when turbidity is 50 NTU or less. "Background" is defined as conditions "up-gradient or outside the area of influence of the discharge" (WAC 173-201A-020). Background turbidity is seldom known for our ambient stations.

Hallock (2002b) evaluated turbidities at monitoring stations where upstream turbidity data were available within 60 river miles using the upstream results as "background." Four of these stations were subsequently listed on the most recent 303(d) list: http://www.ecy.wa.gov/programs/wq/303d/2002/2002-index.html. More information was required for several stream reaches, however.

One of these reaches, the Palouse River, was sampled twice for turbidity in March 2004 (Table 3 and Figure 1). Turbidity samples were collected using the same techniques described in Ward et al. (2002) and analyzed on-site using a Hach 2100P portable turbidimeter, calibrated according to the manufacturer's instructions.

Table 3. Stations sampled for turbidity in WY 2004 (RM=river mile).

Station		RM		Station		RM
34A070	Palouse R @ Hooper	19.5		34J050	Union Flat Cr nr mouth	0.5
34A075	Palouse River @ Hwy 26	25.7		34J070	Union Flat Cr @ Winona Rd [a]	8.9
34A080	Palouse River above Rebel Flat	49.4		34J090	Union Flat Cr @ Hwy 26	28.1
34A085	Palouse R @ Shields Rd Bridge	77.8		34J120	Union Flat Cr @ Almota Rd	
34A109	Palouse River blw Colfax	94.6		34K050	Rebel Flat Cr @ mouth	0.3
34A120	Palouse R at Colfax	90.2		34K080	Rebel Flat Cr @ Repp Rd	
34A170	Palouse R @ Palouse [a]	121.2		34K120	Rebel Flat Cr @ Fairgrounds	
34B075	SF Palouse R @ Shawnee Rd			34L050	Cow Cr @ mouth [a]	0.7
34B110	SF Palouse R @ Pullman	22.2				

[a] These stations were sampled once; the rest were sampled twice.

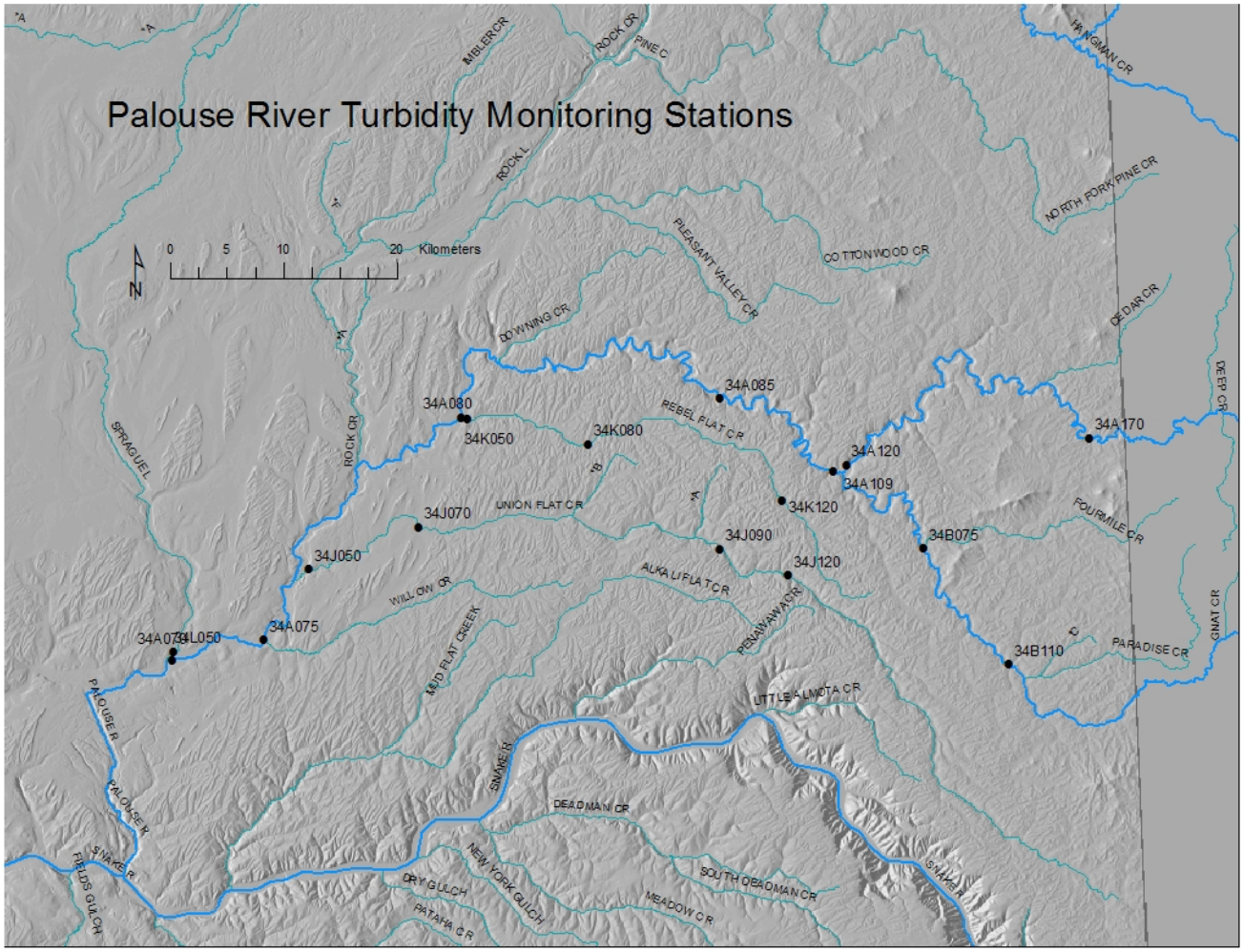

Figure 1. Palouse River and tributary stations monitored for turbidity in March 2004.

Quality Assurance

Ecology's Manchester Environmental Laboratory (MEL) Quality Assurance (QA) Program includes the use of quality control charts, check standards, in-house matrix spikes, and laboratory blanks, along with performance evaluation samples. For a more complete discussion of laboratory quality assurance, see MEL's *Quality Assurance Manual* (Ecology, 2001) and the *Lab User's Manual* (Ecology, 2005).

The QA program for field sampling consisted of three parts: (1) adherence to a procedures manual for sample/data collection and periodic evaluation of sampling personnel, (2) instrument calibration methods and schedules, and (3) the collection of a field quality control (QC) sample twice during each sampling run. Our QA program is described in detail in Hallock and Ehinger (2003).

Three types of field QC samples were collected.

1. *Duplicate (Sequential) Field Samples* - These consisted of an additional sample collection made approximately 15-20 minutes after the initial collection at a station. These samples represent the total variability due to short-term, instream dynamics, sample collection and processing, and laboratory analysis.

2. *Duplicate (Split) Field Samples* - These consisted of one sample (usually the duplicate sequential sample) split into two containers that are processed as individual samples. This eliminates the instream variability and isolates the variability due to field processing and laboratory analysis.

3. *Field Blank Samples* - These consisted of the submission and analysis of deionized water. These are field process blanks: the blank water was poured into cleaned sample collection equipment to simulate collecting a water sample. The expected value for each analysis is the reporting limit for that analysis. Significantly higher results would indicate that sample contamination had occurred during field processing or during laboratory analysis.

QC samples were submitted semi-blind to the laboratory; they were identified as QC samples, but sample type (duplicate, split, or blank) and station were not identified.

Eighty-eight field QC samples were processed: 8 field blanks, 40 field duplicate (sequential), and 40 field split samples. In addition, the laboratory conducted their own splits of some field QC samples. The central tendency of the variance of pairs of split field samples was summarized by calculating the square root of the mean of the sample-pair variances (root-mean-square - RMS). These figures provide an unbiased (and higher) estimate than other commonly used statistics (for example, mean or median of the standard deviations).

A two-tiered system was used to evaluate data quality of individual results. The first tier consisted of four automated checks: holding time, variability in field duplicates, reasonableness of the result, and stoichiometric balance of nutrient species. Results exceeding pre-set limits were flagged. The second tier QC evaluation was a manual review of the data flagged in the first tier. Data were then coded from 1 through 9 (1 = data meets all QA requirements, 9 = data are unusable). Data with quality codes greater than 4 are not routinely used or distributed.

The quality of the continuous temperature data was assessed by calibration checks using a certified reference thermometer before and after a deployment. If a pre-survey calibration check indicated a logger's accuracy was not within the required limits (either 0.2 °C for water or 0.4 °C for air) when compared to a certified reference thermometer, then the logger was rejected and not deployed. If a logger failed a post-survey calibration check, then the results may be rejected or, if the bias is small and consistent, results may be adjusted. In addition, the data were compared to field temperature measurements taken at deployment and retrieved with a calibrated alcohol thermometer. Results were also compared to the monthly measurements collected during normal monitoring surveys. All data were reviewed graphically, and anomalies were deleted prior to recording results in the database.

Results and Discussion

The primary purpose of this report is to present the results of Ecology's stream monitoring in WY 2004. Appendix C contains results for each station monitored in WY 2004. Raw data are available in computer formats on request and are posted on Ecology's World Wide Web pages (http://www.ecy.wa.gov/). Unpublished data are also available online but are considered "preliminary."

Monthly Ambient Monitoring

A station-by-station data analysis is not within the scope of this report. Individual results exceeding the 1997 water quality criteria in Washington's Water Quality Standards (Washington Administrative Code, Chapter 173-201A) are identified in reports on our web site (http://www.ecy.wa.gov/apps/watersheds/riv/exceed/). The numeric criteria from the 1997 Water Quality Standards are presented in Table 4.

Table 4. Water quality criteria used to evaluate monitoring results. Results outside the ranges indicated are considered to exceed the criterion.

Class	Temperature	Oxygen	pH	Fecal Coliform	
				10 Percent	Geometric mean
AA	<=16°C	>9.5 mg/L	6.5<=pH<=8.5	<=100	<=50
A	<=18°C	>8.0 mg/L	6.5<=pH<=8.5	<=200	<=100
B	<=21°C	>6.5 mg/L	6.5<=pH<=8.5	<=400	<=200

WAC 173-201A-130 (1997) identifies exceptions to the standard criteria for some stream segments. Metals criteria, most of which are a function of hardness, are not listed here.

Of the nearly 12,000 possible standard water quality results in WY 2004, 267 results (2.3 percent) were missed. Reasons for missing results include station frozen (84 results), dry (72 results), or inaccessible for various reasons (60 results). Other reasons for missed results include sampler error (2), samples received over holding time (25), flooding (12), and equipment problems (12). Appendix D gives more detailed explanations for each of these conditions.

Instantaneous discharge was recorded at 60 of the 62 long-term stations. Flow data were not available for the South Fork Stillaguamish River at Arlington and the South Fork Stillaguamish River near Granite Falls. Flows for two additional stations, Nisqually River at Nisqually and East Fork Lewis River near Dollar Corner, are coded as estimates because the nearest gage was a considerable distance upstream. Flow results from these stations should be used with caution. Discharge was recorded at 14 of the 20 basin stations.

Continuous Temperature Monitoring

Three QC results for temperature loggers approached the specified limits for calibration checks; however, all calibration checks were off in the same direction by approximately the same amount. Data from the affected loggers were adjusted for bias. Water level changes at a few stations exposed the steam temperature logger to air. This problem was readily apparent during a graphical review of the data, and affected results were removed prior to loading the data into the database.

Fifty-three stations were successfully monitored in 2004, though the logger from the Cowlitz River at Kelso was retrieved later and the data have not yet been processed (Table 5). Nine loggers were missing, mostly due to presumed vandalism.

The seasonal maximum at most stations (46 stations; 88 percent) exceeded (failed to meet) 1997 water quality criteria. Forty-seven stations (90 percent) exceeded the 16˚C maximum seven-day average of daily maxima. This is the proposed criterion for most streams in Washington currently under review by EPA.

Five stations had maximum temperatures exceeding 28°C: Walla Walla River (station 32A070, 28.9 ºC), Crab Creek (station 41A070, 29.8 ºC), Palouse River @ Palouse (station 34A170, 28.8 ºC), Okanogan River @ Oroville (station 49A190, 28.7 ºC), and Hangman Creek @ mouth (station 56A070, 26.5° C).

Four more stations, three west of the Cascades, exceeded 25°C: SF Stillaguamish River @ Arlington (station 05A90, 25.3 ºC), Chehalis River @ Dryad (station 23A160, 25.4 ºC), EF Lewis River near Dollar Corner (station 27D090, 25.9 ºC), and Tucannon River @ Powers (station 35B060, 26.8°C).

Table 5. Temperature monitoring summary for WY 2004 based on 30-minute interval measurements (°C; refer to Table 1 for station names).

Station	Criterion	Deployment Maximum		Max 7-day Mean [a]		Deploy	Retrieve
		Max	Date/Time [b]	Max	Date [b, c]		
01A050	18	19.1	18:00 10-Aug	18.6	12-Aug	23-Jun	27-Sep
01A120	18	19.2	19:30 24-Jul	18.5	25-Jul	23-Jun	27-Sep
01T050	16	20.6	16:30 01-Aug	17.2	04-Aug	21-Jul	27-Sep
03A060	18	18.2	19:30 23-Jul	17.6	26-Jul	22-Jun	27-Sep
03B050	18	19.7	19:00 24-Jul	18.8	21-Jul	22-Jun	27-Sep
04A100	16	14.5	19:00 01-Aug	14.0	30-Jul	23-Jun	27-Sep
05A070	18	23.6	19:30 29-Jul	23.0	16-Aug	29-Jul	27-Sep
05A090	18	25.3	18:30 29-Jul	24.5	16-Aug	29-Jul	27-Sep
05A110	16	22.8	15:30 24-Jul	21.8	17-Aug	22-Jun	27-Sep
05B070	18	22.5	18:30 15-Aug	22.1	12-Aug	29-Jul	27-Sep
05B110	18	20.0	17:30 24-Jul	19.3	14-Aug	23-Jun	27-Sep
07C070	18	21.3	19:00 19-Aug	21.1	16-Aug	13-Jul	06-Oct
07D050	18	22.9	19:30 24-Jul	22.3	17-Aug	22-Jun	06-Oct
07D130	18	21.2	22:00 24-Jul	20.3	26-Jul	21-Jun	06-Oct
08C070	18	21.9	18:30 24-Jul	20.7	26-Jul	21-Jun	06-Oct
08C110	16	14.7	18:00 31-Aug	14.2	29-Aug	21-Jun	20-Sep
08M070	16	19.4	18:30 24-Jul	18.5	26-Jul	22-Jun	21-Sep
09A190	16	20.5	18:00 19-Aug	20.0	12-Aug	21-Jun	20-Sep
09C070	16	20.2	16:30 24-Jul	19.3	24-Jul	21-Jun	20-Sep
09D070	18	20.0	18:00 24-Jul	18.8	25-Jul	21-Jun	20-Sep
09J090	18	18.7	20:00 06-Aug	17.4	23-Aug	21-Jun	20-Sep
11A070	18	18.1	17:00 24-Jul	17.4	26-Jul	15-Jul	07-Oct
13A060	18	21.3	18:30 24-Jul	20.5	26-Jul	01-Jul	07-Oct
16A070	16	15.2	17:30 24-Jul	14.7	23-Jul	01-Jul	29-Sep
16C090	16	15.2	18:00 29-Jul	15.0	30-Jul	27-Jul	29-Sep
18A050	18	19.0	17:00 19-Aug	18.6	30-Jul	27-Jul	29-Sep
18B070	16	19.5	17:30 31-Jul	18.6	31-Jul	22-Jul	29-Sep
22A070	18	22.4	19:30 27-Jul	21.2	12-Aug	27-Jul	29-Sep
23A070	18	24.9	18:00 27-Jul	23.7	14-Aug	27-Jul	29-Sep
23A160	18	25.4	18:30 24-Jul	24.3	26-Jul	14-Jul	30-Sep
24F070	18	22.9	16:00 24-Jul	21.7	26-Jul	14-Jul	30-Sep
27D090	18	25.9	17:30 24-Jul	25.1	14-Aug	14-Jul	07-Oct
32A070	21	28.9	16:30 29-Jul	27.8	30-Jul	08-Jul	23-Sep
34A170	20	28.8	17:30 16-Jul	27.3	22-Jul	08-Jul	23-Sep
34B110	18	22.2	19:30 15-Jul	21.1	17-Jul	08-Jul	23-Sep
34F090	16	23.5	18:00 02-Aug	22.7	23-Jul	07-Jul	23-Sep
35B060	18	26.8	18:00 24-Jul	25.6	26-Jul	08-Jul	23-Sep
39A090	16	22.9	18:00 13-Aug	21.9	15-Aug	23-Jun	21-Dec
41A070	21	29.8	19:30 25-Jun	28.1	25-Jun	01-Jun	01-Nov
45A110	16	24.1	18:00 17-Aug	23.5	14-Aug	01-Jun	06-Dec
45C060	18	16.0	15:00 20-Aug	15.2	17-Aug	01-Jun	01-Nov
45D070	18	19.5	16:00 20-Aug	19.1	18-Aug	01-Jun	01-Nov
45E070	18	24.1	18:30 13-Aug	23.5	16-Aug	01-Jun	01-Nov
45R050	18	20.1	17:00 25-Jul	19.6	17-Aug	01-Jun	01-Nov
46A070	18	24.4	16:30 13-Aug	23.8	14-Aug	12-Jul	01-Nov
48A070	18	24.4	16:30 16-Aug	23.6	15-Aug	13-Jul	17-Nov
48A140	18	21.5	18:00 15-Aug	20.3	13-Aug	13-Jul	17-Nov
49A190	18	28.7	21:30 16-Aug	28.2	16-Aug	01-Jun	17-Nov
55B070	18	18.0	19:30 25-Jul	17.7	23-Jul	07-Jul	24-Sep
55C070	18	18.5	17:00 16-Jul	18.0	22-Jul	07-Jul	24-Sep
55C200	18	20.6	18:00 18-Aug	20.0	17-Aug	07-Jul	24-Sep
56A070	18	26.5	20:00 16-Jul	25.3	23-Jul	07-Jul	24-Sep

[a] This is the seven-day period with the highest average of daily maximum temperatures.
[b] There may be other dates or other seven-day periods with the same maximum.
[c] Date shown is middle of seven-day period.

Metals Monitoring

During the WY, all of the 1,224 possible results were reported (12 stations x 6 months x 17 metals analytes). Of the dissolved metals and total mercury results, 10 (1.5 percent) exceeded 1997 Washington State water standards quality chronic criteria; seven of those were from the Spokane River at Stateline (Table 6).

Table 6. Metals results from WY 2004 exceeding water quality standards chronic criteria (1997).

Station	Name	Date	Metal	Criterion (µg/L)	Hardness (mg/L)	Result (µg/L)	Percent Over Criterion
08M070	SF Thornton Cr @ 107th	2003-10-20	Lead, Dissolved	0.794	35	0.83	5%
08M070	SF Thornton Cr @ 107th	2004-02-24	Mercury, Total	0.012	95	0.02	33%
18A050	Dungeness R nr mouth	2003-10-21	Mercury, Total	0.012	45	0.02	67%
57A150	Spokane R @ Stateline	2003-10-07	Zinc, Dissolved	28.972	22	34	17%
57A150	Spokane R @ Stateline	2003-12-09	Zinc, Dissolved	28.189	21	60.9	116%
57A150	Spokane R @ Stateline	2004-02-10	Zinc, Dissolved	30.084	23	63.7	112%
57A150	Spokane R @ Stateline	2004-04-13	Zinc, Dissolved	28.301	21	67.8	140%
57A150	Spokane R @ Stateline	2004-04-13	Lead, Dissolved	0.454	21	0.63	39%
57A150	Spokane R @ Stateline	2004-06-15	Zinc, Dissolved	26.044	19	51	96%
57A150	Spokane R @ Stateline	2004-08-03	Zinc, Dissolved	30.527	23	33	8%

Turbidity Assessment

Turbidity tends to increase in rivers from the headwaters to the mouth, even in pristine systems. The purpose of relating a water quality standard to "background" (natural) conditions is to avoid identifying water quality violations that may be due to natural increase in turbidity. Measuring turbidity increases from point (discrete) sources can be accomplished more easily than attributing turbidity increases from nonpoint (diffuse) sources of pollution. For nonpoint sources, deciding how much of an increase in a given reach is "natural" and expected and how much is due to cultural sources can be subjective. Factors that must be considered include geomorphology, distance between sample points, the effects of any tributaries between sample points, and the magnitude of the turbidity difference between upstream and downstream turbidities.

Palouse River

Turbidity monitoring in the Palouse River system in 2004 was inconclusive for several stations. We were only able to sample twice, and neither sample was collected during a large runoff event.

There were no large changes in turbidity between the mainstem Palouse stations on either sampling date, though turbidities were high even at the upstream-most station, Palouse River at Palouse (Table 7). Future turbidity evaluations should include sampling the Palouse River at Palouse and a new station near the Idaho border.

Table 7. Turbidity measured at various stations in the Palouse River basin. The criterion was exceeded if turbidity at the downstream station exceeded the upstream station by more than 5 NTU (10 NTU for mainstem Palouse River stations at and below Shields Road, which are Class B).

Station	Name	Turbidity (NTU)		Exceeds Criterion	Upstream Station	River Miles Apart
		March 3	March 24			
34L050	Cow Cr @ mouth	5.8	--	--	NA	NA
34A070	Palouse R @ Hooper	20.5	14.5	No	34A075	6.2
34A075	Palouse River @ Hwy 26	18.9	13.1	No	34A080	NA
34J050	Union Flat Cr nr mouth	35.8	11.4	Probably not	34J070	8.4
34J070	Union Flat Cr @ Winona Rd	--	9.1	Probably	34J090	19.2
34J090	Union Flat Cr @ Hwy 26	23.2	4.5	No	34J120	4.2
34J120	Union Flat Cr @Almota Rd	22.2	4.4	--	NA	NA
34K050	Rebel Flat Cr @ mouth	6.3	3.2	No	34K080	7.9
34K080	Rebel Flat Cr @ Repp Rd	7.2	6.9	No	34K120	14.1
34K120	Rebel Flat Cr @ Fairgrounds	4.0	3.7	--	NA	NA
34A080	Palouse R. above Rebel Flat	20.1	12.7	No	34A085	28.4
34A085	Palouse R @ Shields Rd	17.4	10.9	No	34A120	12.4
34A109	Palouse River blw Colfax	17.2	12.3	No	NA	NA
34A120	Palouse R at Colfax	17.3	12.6	No	34A109	4.4
34B075	SF Palouse R @ Shawnee	18.2	9.9	No	34B110	11.1
34B110	SF Palouse R @ Pullman	19.6	12.6	--	NA	NA
34A170	Palouse R @ Palouse	--	15.2	--	NA	NA

There are indications that turbidity increased substantially in Union Flat Creek between Winona Road and Highway 26; unfortunately, the Winona Road site was sampled only once so this is not conclusive. Future turbidity monitoring should sample Union Flat at Winona Road, Highway 26, Almota Road, and one or more upstream stations since turbidities were still high at Almota.

Turbidities were moderate at all Rebel Flat Creek stations with no large increases between stations.

Quality Assurance

In 2004 we collected more than 13,000 non-QC water quality results, including non-standard constituents.

- Sixteen results (0.1 percent) were coded "4" indicating that the datum is usable, but there were questions about the quality. Most of these were nutrient results where the total result was less than the dissolved result (this often occurs when results are near detection limits).
- Seventeen results (0.14 percent) were coded "5" or greater (indicating serious data quality questions; data will not be routinely used); 15 of these were analyzed past holding times.
- One orthophosphate result was much greater than its associated total phosphorus result, much higher than expected, and MEL reported matrix interference effects for this sample.
- One pH result was coded as being unusable due to contamination of the pH buffer used in calibration. Although results coded >4 are not normally used, they can be provided on request.

This practice gives us the opportunity to explain quality issues to prospective users.

MEL assigned a qualifier to about 16 percent of results. A total of 121 results (3.2 percent) were qualified as estimates ("J") and 1717 results (13.0 percent) as below the reporting limit ("U"). Eighty percent of all ammonia results were below the reporting limit, as were 24 percent of orthophosphate results (Table 8). MEL is currently investigating the possibility of lowering their reporting limit for orthophosphate.

Table 8. Results qualified by MEL as being below the reporting limit.

Constituent	Number of results coded U or UJ	Number of results recorded	Percent of results coded U or UJ
ammonia	733	912	80.4%
fecal coliform	103	892	11.5%
metals	469	1294	36.2%
nitrate+nitrite	83	903	9.2%
nitrogen, total	11	919	1.2%
organic carbon, total	12	75	16.0%
orthophosphate	200	826	24.2%
phosphorus, total	1	796	0.1%
suspended solids	61	895	6.8%
turbidity	44	912	4.8%

Comparison to Quality Control Requirements

RMS values for some constituents are presented according to concentration ranges (Table 9). In practice, estimates of variability are strongly influenced by extreme values, especially when the sample size is small. Also, because data below the reporting limit are censored and have a variance of zero for sample pairs below this limit, the variability estimate is skewed downward for the lowest concentration ranges.

Table 9. Root mean square (RMS) of the standard deviation of sequential samples, field splits, and laboratory splits.

Constituent (units)	Range	$s_{error\ (mp)}$ [a]	Field Sequential RMS	*n*	Field Split RMS	*n*	Lab Split RMS	*n*
Electrical conductivity (µS/cm)	≤50 >50-100 >100-150 >150	4.4 8.8 13.2 26.4	0.22 0.64 0.00 2.36	10 12 3 13	NA 0.50 NA 2.20	0 2 0 3	No lab splits	
Fecal col. bacteria (colonies /100 mL)	1-1000 >1000	88 176	15 NA	39 0	No field splits		25 NA	135 0
NH_3-N (µg N/L)	≤20 >20-100 >100	1.76 8.8 17.6	0.570 NA NA	40 0 0	1.71 NA NA	40 0 0	0.26 2.15 NA	53 4 0
Nitrogen, total (µg N/L)	≤100 >100-200 >200-500 >500	8.8 17.6 44 88	**13.7** 14.6 7.16 **428**	6 12 8 14	**12.8** 9.30 5.43 **171**	6 11 9 14	2.05 6.42 5.28 39.6	15 17 18 23
NO_3NO_2-N (µg N/L)	≤100 >100-200 >200-500 >500	8.8 17.6 44 88	1.65 2.51 3.82 **161**	15 7 8 10	0.98 0.60 1.44 **201**	15 7 8 10	0.74 0.66 0.82 2.95	20 14 12 12
Oxygen, dissolved (mg O_2 /L)	≤ 8 > 8-10 > 10-12 >12	0.70 0.88 1.06 2.11	0.11 0.07 0.08 0.06	2 7 19 13	0.05 0.04 0.06 0.06	2 8 17 10	No lab splits	
pH	All	0.66	0.09	40	0.03	5	No lab splits	
Phosphorus, soluble reactive (µg P/L^{-1})	≤50 >50-100 >100	4.4 8.8 17.6	0.55 2.53 3.54	36 2 2	0.70 2.90 3.04	37 1 2	0.20 0.27 NA	69 8 0
Phosphorus, total (µg P/L)	≤50 >50-100 >100	4.4 8.8 17.6	0.81 2.20 6.86	28 8 4	0.67 1.46 9.35	28 8 4	0.11 NA NA?	2 0 0
Solids, suspended (mg /L)	≤10 >10-20 >20-50 >50	0.88 1.76 4.4 8.8	**2.27** 0.94 1.50 **34**	26 4 4 5	No field splits		0.56 0.73 1.46 **14.6**	60 13 16 14
Temperature (ºC)	All	2.64	0.06	41	No field splits		No lab splits	
Turbidity (NTU)	≤10 >10-20 >20-50 >50	0.88 1.76 4.4 8.8	0.29 1.61 1.00 **13.3**	31 4 2 4	0.13 0.58 0.5 3.54	31 3 2 4	0.06 0.00 0.32 1.77	57 4 5 4

[a] Maximum permissible standard error to meet QAMP DQOs (Hallock and Ehinger, 2003).
n = number of sample pairs.
NA = not applicable.
Results exceeding QAMP DQO criteria (Hallock and Ehinger, 2003) are shown in **bold**.

In general, variability of QC types followed the expected pattern of field sequential samples > field split samples > lab split samples. In several cases, field sequential samples had less variability than the field splits. These cases were usually caused by a single field split pair with poor precision.

Variability between paired samples as measured by RMS was low and similar to that experienced in previous years for most constituents. However, precision was worse than last year for several constituents and concentration ranges. In most cases, this was due to the split pair with poor precision, discussed in the preceding paragraph. Two samples were responsible for poor precision in several of the constituents/concentration ranges. Samplers were reminded to ensure samples are well-mixed prior to withdrawing aliquots or splitting; if this problem continues, we may need to investigate more rigorous splitting techniques.

Three field split constituent/concentration ranges (out of 37) failed our Quality Assurance Monitoring Plan (QAMP) Data Quality Objectives (DQO) (Hallock and Ehinger, 2003), which specifies that DQOs be evaluated against field splits, where possible. Six field sequential constituent categories failed to meet the DQO criteria, but instream variability is included in these sample pairs so their variability is not a true measure of sampling plus analytical error.

Results of the analyses of the blank samples were 'below reporting limits' for all concentrations and turbidity, and less than three μS (micro Siemens) for specific conductivity (Table 10). Temperature, dissolved oxygen, pH, and fecal coliform were not measured on blanks.

Table 10. Results of blind field process blank (deionized water) samples.

Constituent	reporting limit	# above reporting limit (mean concentration)	sample size, *n*
Specific conductivity (μS)	NA	NA (mean: 1, std dev: 0.0)	2
Turbidity (NTU)	0.5	0 (<0.5)	5
Suspended solids (mg L^{-1})	1.0	0 (<1.0)	4
Total phosphorus (μg L^{-1})	10	0 (<10)	5
Soluble reactive P (μg L^{-1})	3	0 (<3)	5
Total Nitrogen (μg L^{-1})	25	0 (<25)	5
NO_3/NO_2-N (μg L^{-1})	10	0 (<10)	5
NH_3-N (μg L^{-1})	10	0 (<10)	5

Laboratory staff assessed the remaining elements of the laboratory QA program through a manual review of laboratory QC results including check standards, in-house matrix spikes, and laboratory blanks. Results were within acceptable ranges as defined by MEL's *Quality Assurance Manual* (Ecology, 2001) or were either re-run or coded as deemed appropriate by laboratory staff (e.g., as an estimate, "J").

Data Quality Issues – Total Phosphorus

As reported in our two previous annual reports, the TP method used by MEL from February 1999 through September 2003 (which used an auto-analyzer with an in-line digestion process) is presumed to have a high bias, probably related to matrix effects. MEL first noticed this bias during a methods study comparing the then-current, in-line method, the ICP-MS method, and a low-level method that uses a manual digestion. The latter two methods showed close agreement, while the in-line method produced results that were high by 5 to 10 ug/L (email from Stuart Magoon to Karol Erickson and Rob Plotnikoff, February 28, 2003; Figure 2).

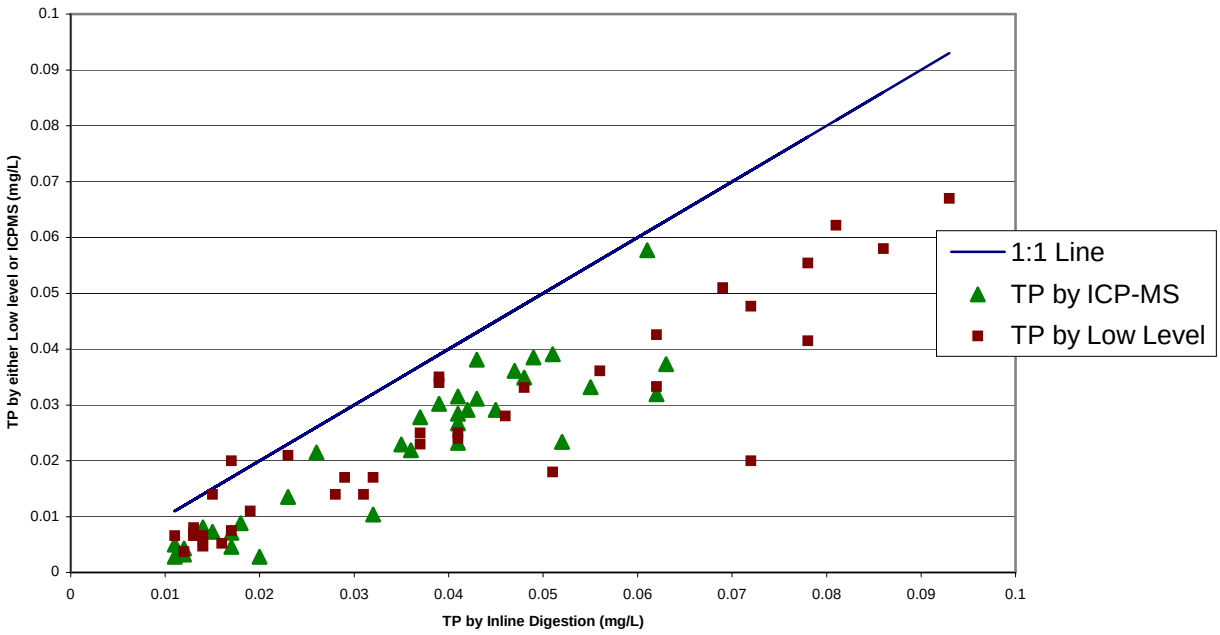

Figure 2. Total phosphorus results analyzed by in-line digestion (x-axis) and either ICP-MS or a low-level (manual) method (y-axis). Samples are from several stations in WRIA 45 (Wenatchee River basin).

As a consequence of this discovery by MEL, Stuart Lombard of Ecology's Quality Assurance section was asked to investigate the issue in more detail. Lombard concluded that there was a bias, that it was generally small (2 to 4 percent), but that from several waterbodies in WRIA 45, at least, the in-line auto-analyzer produced "significantly higher" results than did either of the low-level methods. Lombard also stated that the change from colorimetric methods, which we used until October 2003, to the ICP-MS method could have an effect on trend analysis (Lombard, 2005).

There is no indication in Freshwater Monitoring Unit (FMU) TP data of a step trend increase in February 1999 (Figure 3, top). There appears to be an anomaly from about December 1996 through June 1998 with more high concentrations than typical and fewer results at the reporting limit throughout the year. The bottom of Figure 3 shows residuals of a regression of TP vs. total

suspended solids (TSS) (r^2=0.33). (Data were logged and converted to standard normal form prior to performing the regression.) This procedure accounts for variability common to both TP and TSS. In this plot, data collected from WY 1997 through WY 2003 appear to have a slightly high bias compared to data collected before or after this period.

Figure 3 shows no obvious bias coincident with the in-line digestion, however, and no known laboratory changes occurred at the right times to explain the plot. It is possible that the bias attributed to the in-line digestion has actually been present since 1997; however, laboratory staff are convinced that the bias was caused by incomplete digestion during the in-line digestion. This interpretation is supported by the discovery that concentrations of 7.4 µg/L (± 2.8 µg/L std. dev., n=54) were recorded by the in-line method without the addition of the color-forming reagent. The presumption is that this "background" color would have been fully digested by a manual digestion.

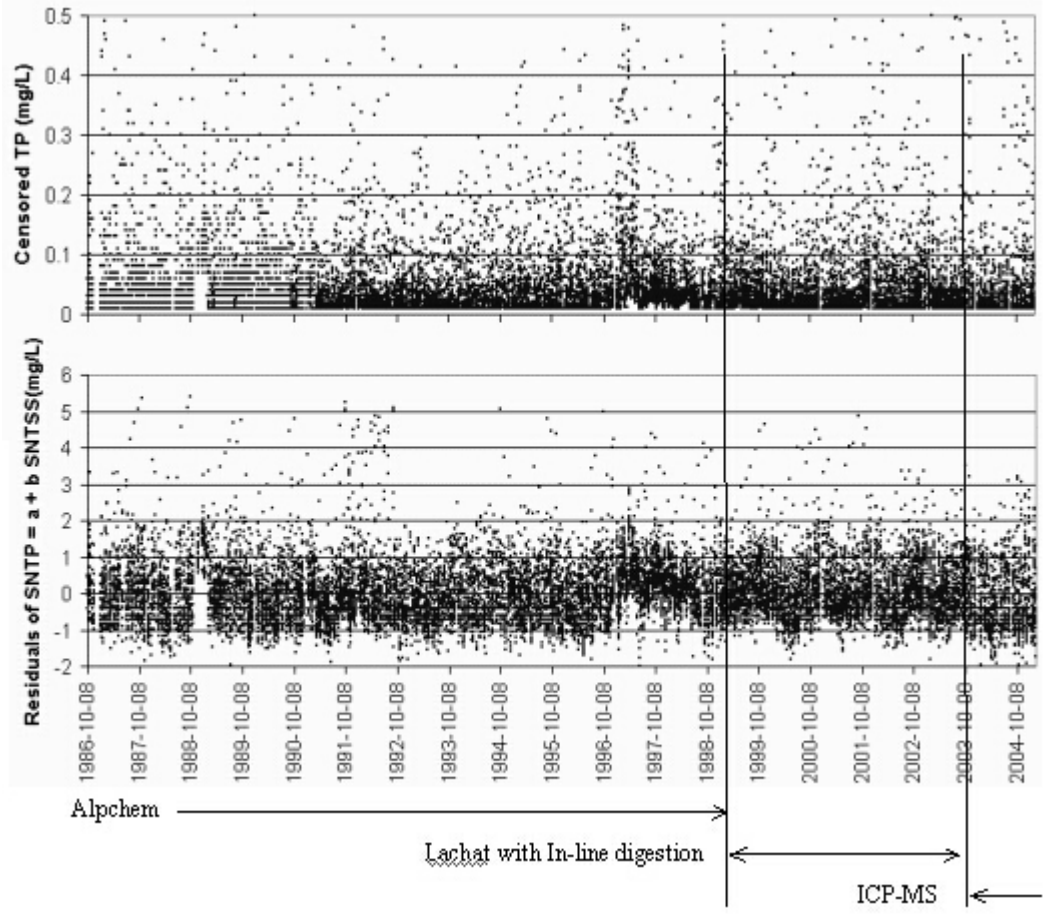

Figure 3. Time-series plots of FMU TP data (top) and residuals of a regression of logged, standard normal TP vs. logged, and standard normal TSS data (bottom; see text). For both plots, TP results less than 0.010 mg/L, the highest reporting limit during the period, were converted to 0.01.

ICP-MS results were very similar to colorimetric results using the same *Lachat* auto-analyzer as the in-line method but with manual digestion (Figure 4). However, the 95% confidence intervals about the intercept of a regression between log(*Lachat*) and log(ICP-MS) did not include 0 (0.081 to 0.168), nor did the 95% confidence interval about the slope include 1 (0.886 to 0.946). This indicates that results from the two methods were not identical. At low concentrations (10 µg/L), *Lachat* results were 10 percent higher than ICP-MS results; at high concentrations (100µg/L), *Lachat* results were 10 percent lower than ICP-MS results.

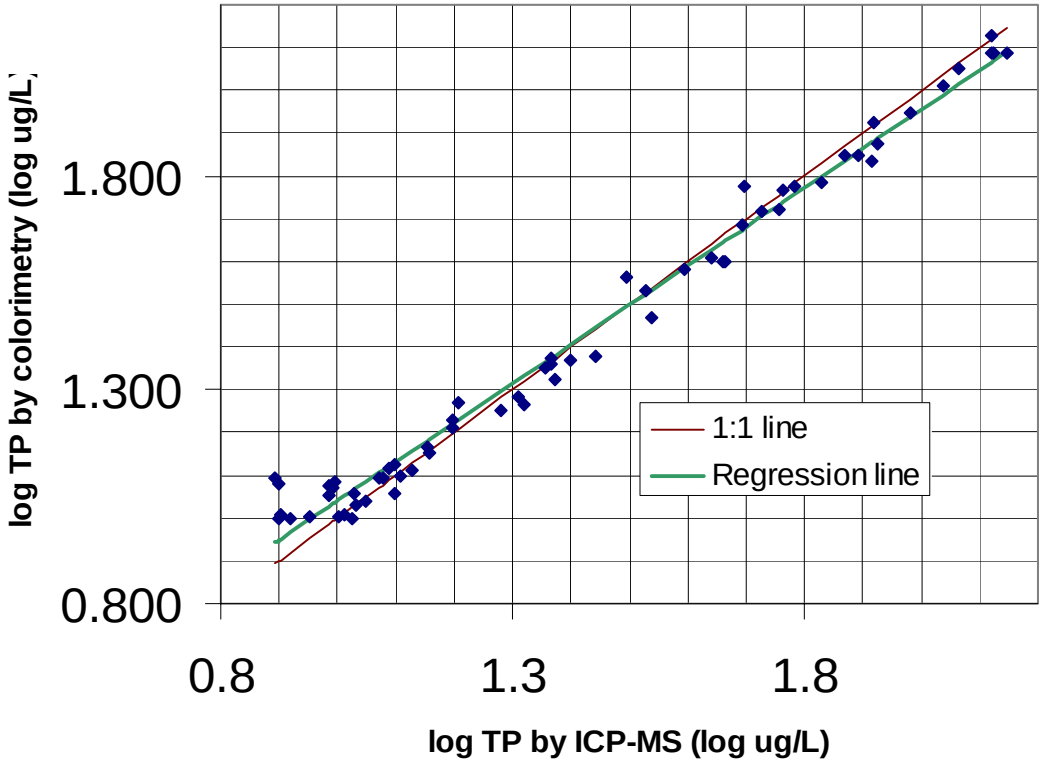

Figure 4. Field-split TP samples analyzed by ICP-MS and *Lachat* colorimetry in log-space. The regression equation is: log *Lachat* = 0.124 + 0.916 * log ICP-MS.

We continue to investigate this matter. We believe our historical data are usable for synoptic studies as qualified in our database, though consideration should be given to the impacts of a potential bias in data analyzed by in-line digestion. Trend analyses of TP data should be interpreted carefully whenever different analytical methods were used.

Continuous Temperature Monitoring

Post-deployment calibration checks against a certified reference thermometer were within criteria (Ward, 2005) for all instruments except one air and two water tidbits. For these, however, the differences between pre- and post-deployment calibrations were within criteria, and the data were adjusted by the average difference between the calibration checks and the reference temperatures.

In five instances, tidbit results were more than 1°C different that an associated instantaneous measurement using an alcohol thermometer or thermistor. Three of the five were from thermistor measurements collected during routine monthly monitoring. We have confidence that the tidbit results were accurate; it is possible, however, that a few tidbit locations were not logging stream temperatures that were representative of temperatures in the thalweg. (We will be investigating representativeness in the future.) The other two results were from temperature measurements during deployment and retrieval at station 34F090, Pine Creek at Rosalia. Also at Pine Creek, the tidbit designated for air deployment was accidentally deployed in the water. Air tidbits have less stringent QC criteria. For these reasons, water temperature data from Pine Creek were coded as estimates and given quality codes of "4," indicating that not all QC requirements were met.

Two data sets were edited based on a graphical review of the data. One air tidbit record was truncated because it had fallen onto the ground (station 34F090, Pine Creek at Rosalia), and one water tidbit record was truncated due to indications it had been moved by someone to a shallower location and subsequently exposed to air at lower flows (station 03A060, Skagit River near Mount Vernon).

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Appendix A

Station description and period of record

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Monitoring History for Environmental Assessment Program Ambient Monitoring Stations

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
01A050	Nooksack R @ Brennan	L		X XX XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
01A070	Nooksack R @ Ferndale	B	XXXXXXXX	XX X X			
01A090	Nooksack R nr Lynden	B		X X X			
01A100	Nooksack R @ Hannegan Road	B					
01A120	Nooksack R @ No Cedarville	L	X XXXXXXXX X	XX X XX	XXXXXXXXXX	XX X XXXXX	XXXXXX
01A140	Nooksack R above the MF	B				X	X
01B050	Silver Cr nr Brennan	B				XX	
01C070	Hutchinson Cr. nr Acme	B					
01D070	Sumas R nr Huntingdon BC	B		X X XXX	XXXXXXXXXX	XXX X	
01D080	Sumas R @ Jones Road	B					X
01D090	Sumas R @ Sumas	B		X X			
01D100	Sumas R. @ Telegraph Rd.	B					
01D120	Sumas R nr Nooksack	B				X	
01E050	Whatcom Cr @ Bellingham	B		X X		X	
01E070	Whatcom Cr @ Lake Outlet	B		X			
01E090	Whatcom Lake nr Bellingham	B	XXX X	X			
01F070	SF Nooksack @ Potter Rd	B				X	X
01G070	MF Nooksack R	B				X	X
01G100	M.F. Nooksack abv Clearwater Cr.	B					
01H070	Terrell Cr nr Jackson Rd.	B					X
01J060	Bar Cr. nr mouth	B					
01K050	Maple Cr. @ mouth	B					
01L050	Anderson Cr. @ mouth	B					
01M090	Kamm Slough @ Northwood Rd.	B					
01N060	Bertrand Cr. nr mouth	B					
01P080	Tenmile Cr. abv Barrett Lake	B					
01Q070	Dakota Cr. @ Giles Rd.	B					
01R090	California Cr. @ Valley View Rd.	B					

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
01S070	Squalicum Cr. @ West St.	B					
01T050	Anderson Cr @ South Bay Road	B					X
03A050	Skagit R @ Conway	B		X X			
03A060	Skagit R nr Mount Vernon	L	X XXXXXXXX X	X XXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
03A070	Skagit R nr Sedro Woolley	B		X X X			
03A080	Skagit R abv Sedro Woolley	B					X X
03B045	Samish R. nr Mouth	B				X	X
03B050	Samish R nr Burlington	L	X XXXXXXXX X	XX X XXX	XXXXXXXXXX	XX X XXXXX	XXXXXX
03B070	Samish R nr Hoogdal	B		X			
03B080	Samish R. nr Prairie	B				X	
03C060	Friday Cr Blw Hatchery	B		X		X X	
03C080	Friday Cr at Alger	B		X			
03D050	Nookachamp Ck nr Mouth	B				X	X
03E050	Joe Leary Slough nr Mouth	B					X
03F070	Hill Ditch @ Cedardale Rd	B					X
03G100	E.F. Nookachamps Cr. @ Beaver Lk. R	B					
03H090	Mannser Cr. Nr Hamilton	B					
03J100	Hansen Cr. nr Sedro Woolley	B					
03K070	Silver Cr. nr Alger	B					
04A060	Skagit R @ Concrete	B		X X XXX	XXXXXXXXXX	XX X	
04A100	Skagit R @ Marblemount	L	X XXXXXXXX X	X XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
04A140	Skagit R @ Newhalem	B		X X			
04B070	Baker R @ Concrete	B	XXXX	XXX	XXXXXXXXXX	XX X	
04B150	Baker Lake @ Boulder Cr	B		XXXXX	X		
04C070	Sauk R nr Rockport	B		XXX	XXXXXXXXXX	XX X	X
04C110	Sauk R @ Darrington	B	X XX				
04C120	Sauk R @ Backman Park	B					X
04E050	Finney Cr near Birdsview	B				X	
05A050	Stillaguamish R @ Stanwood	B		X			

Station Number	Name	Long-term or Basin	Water Year Sampled					
			<---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->	
05A055	Hat Slough nr Stanwood	B		X				
05A070	Stillaguamish R nr Silvana	L	X XXXXXXXXXX	XX X XXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX	
05A090	SF Stillaguamish @ Arlington	L		X X XX	XXXXXXXXXX	XX X XXXXX	XXXXXX	
05A100	S.F. Stillaguamish R. @ River Mdws	B						
05A105	S.F. Stillaguamish R. @ Jordan Rd.	B						
05A110	SF Stillaguamish nr Granite Falls	L	X XXXXXXX	X		X XXXXX	XXXXXX	
05A150	S.F. Stillaguamish R. @ Verlot	B						
05B070	NF Stillaguamish @ Cicero	L	XXXXXXXX	XX X XX	XXXXXXXXXX	XX X XXXXX	XXXXXX	
05B080	N.F. Stillaguamish R. abv Deer Cr.	B						
05B090	NF Stillaguamish R @ Oso	B		X				
05B110	NF Stillaguamish nr Darrington	L		X		X XXXXX	XXXXXX	
05B200	N.F. Stillaguamish R abv Crevice Cr	B						
05C070	Deer Cr. @ Oso	B						
05C090	Deer Cr. nr Oso	B						
05D070	Pilchuck Cr. @ Bridge 626	B						
05D150	Pilchuck Cr. abv Lake Cr.	B						
05E060	Armstrong Cr. nr Arlington	B						
05F080	Canyon Cr. nr Masonic Park	B						
05G070	Jim Cr. @ Whites Rd.	B						
05H070	Squire Cr. @ Squire Creek Park	B						
05J060	Boulder R. nr mouth	B						
05K060	Lake Cr. nr mouth	B						
05L070	Church Cr. nr Stanwood	B						
07A090	Snohomish R @ Snohomish	L	X XXXXXXXX X	XX X XXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX	
07A109	Snohomish R nr Monroe NE	B		X				
07A110	Snohomish R nr Monroe SW	B		X				
07A111	Snohomish R nr Monroe (USGS)	B		XX X	XX			
07B055	Pilchuck R @ Snohomish	B		X X XX	XXXXXXXXXX	XXX X		
07B090	Pilchuck R nr Lake Stevens	B		X				

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
07B120	Pilchuck R @ Robe-Menzel Rd.	B					
07B150	Pilchuck R @ Menzel Lake Rd.	B					
07C070	Skykomish R @ Monroe	L		X X XXX	XXXXXXXXXX	XXXX XXXXX	XXXXXX
07C090	Skykomish R @ Sultan	B		X X			
07C120	Skykomish R nr Gold Bar	B	X XXXXXXXXXX	X XX	XXXXXXXXXX	XXX	X
07C170	Skykomish R nr Miller R	B		X			
07D050	Snoqualmie R nr Monroe	L		X		XX XXXXX	XXXXXX
07D070	Snoqualmie R nr Carnation	B		X XX XXX	XXXXXXXXXX	XXX X	
07D100	Snoqualmie R abv Carnation	B					X
07D130	Snoqualmie R @ Snoqualmie	L	X XXXXXXXXXX	X XXX	XXXXXXXXXX	XXX XXXXX	XXXXXX
07D150	M F Snoqualmie R nr Ellisville	B				X	X
07E055	Sultan R @ Sultan	B	XXXXXXXX X	XX X		X	X
07F055	Woods Cr @ Monroe	B		X X		X X	
07G070	Tolt R nr Carnation	B	XXXXXXXXXX	X		X	
07M070	S F Snoqualmie R at North Bend	B				X	
07M120	SF Snoqualmie R @ 468th Ave. SE	B					
07N070	NF Snoqualmie R near Ellisville	B				X	
07P070	Patterson Ck nr Fall City	B				X X	
07Q070	Raging R @ Fall City	B				X	X
07R050	French Cr nr Mouth	B				X	
08A070	McAleer Cr nr Mouth	B		X			
08A090	Upper McAleer Cr	B		X			
08B070	Sammamish R @ Bothell	B	X XXXXXXXXXX	XX X X XX	XXXXXXXXXX	XXXXX X	
08B110	Sammamish R @ Redmond	B		X		X	
08B130	Issaquah Cr nr Issaquah	B	XXX X	XX X X		X	
08C070	Cedar R @ Logan St/Renton	L	X XXXXXXX	X X X XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
08C080	Cedar R @ Maplewood	B				X	
08C090	Cedar R @ Maple Valley	B		X		X	
08C110	Cedar R nr Landsburg	L	X XXX	X XX	XXXXXXXXXX	XX XXXXXX	XXXXXX

Station Number	Name	Long-term or Basin	Water Year Sampled				
			<---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
08D070	Mercer Slough nr Bellevue	B		X			
08E090	Kelsey Cr @ Monitor Site	B		X			
08E110	Upper Kelsey Cr	B		X			
08F070	May Cr nr Mouth	B		X			
08G070	Valley Cr nr Mouth	B		X			
08H070	Thornton Cr nr Mouth	B		X			
08H100	North Branch Thornton Cr	B		X			
08J070	West Branch Thornton Cr	B		X			
08J100	Swamp Creek abv Lynnwood	B				X	
08K070	Ship Canal @ Ballard	B					
08K071	Bear Cr. below Cottage Lake Cr.	B					
08K090	Ship Canal @ Freemont	B				X	
08K100	North Creek nr Everett	B				X	
08K110	Ship Canal @ University	B					
08K130	Ship Canal @ Montlake	B					
08L070	Laughing Jacobs Cr nr Mouth	B					X
08M070	SF Thornton Cr @ 107th Ave NE	B					X
09A060	Duwamish R @ Allentown Br	B			XXXXXXXXXX	XX	
09A070	Duwamish R @ Foster	B	X XXXXXXXX				
09A080	Green R @ Tukwila	L				XXXXXXXXX	XXXXXX
09A090	Green R @ 212th St nr Kent	B		X XX	XXXXXXXXXX	XX X	
09A110	Green R @ Auburn	B	XXXXX X	XX			
09A130	Green Abv Big Soos/Auburn	B	X XXXXXXXXXX	X		X	
09A150	Green R nr Auburn	B		X			
09A170	Green R nr Black Diamond	B		X			
09A190	Green R @ Kanaskat	L	X XX	X XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
09B070	Big Soos Cr blw Hatchery	B		X X			
09B090	Big Soos Cr nr Auburn	B	XXXX	XX		X X	
09C070	Des Moines Cr nr Mouth	B		X		X	X

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
09C090	Des Moines Cr @ So 200th	B		X			
09D070	Miller Cr nr Mouth	B		X			X
09D090	Miller Cr @ Ambaum Blvd SW	B		X			
09E070	Mill Creek @ Orillia	B			XXXXXX	X X	
09E090	Mill Creek - Kent on W Valley Hwy	B			XXXXXX	X	
09F071	Newaukum Cr nr Mouth	B					
09F150	Newaukum Creek nr Enumclaw	B				X	
09G071	Springbrook Cr. @ N. end Longacres	B					
09H090	Black R @ Renton	B				X	
09J090	Longfellow Cr abv 24-25th St juctn	B					XX
09K070	Fauntleroy Cr. nr Mouth	B					X
10A050	Puyallup R @ Puyallup	B	X XXXXXXXX X	XXX XXXXX	XXX		XXX
10A070	Puyallup R @ Meridian St	L		X X XX	XXXXXXXXX	XXXXXXXXX	XXXXXX
10A075	Puyallup R @ East Main St.	B					X
10A080	Puyallup R. nr Sumner	B					X
10A090	Puyallup R @ McMillin	B		X X			
10A110	Puyallup R @ Orting	B	X XXX XXXXXX	XXX X XX	XXXXXXXXX	XX X X	
10B070	Carbon R nr Orting	B	XX	XX		X	
10B090	Carbon R @ Fairfax	B		X			
10C070	White R @ Sumner	B		XX XX	XXXXXXXXX	XX X X	
10C085	White R nr Sumner	B	X	X X		X	
10C090	White R @ Auburn	B	XXXXX	X X			
10C091	White R @ Auburn - A	B					
10C095	White River @ R Street	B				X	XXXXXX
10C110	White R blw Buckley	B		X			
10C115	White River nr 274th Ave.	B					
10C130	White R @ Buckley	B				X	
10C135	White R. abv Raineer School WWTP	B					
10C140	White R nr Buckley	B		X			

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
10C150	White R nr Greenwater	B		X			
10D070	Boise Cr @ Buckley	B	XXX	X			X
10D090	Boise Cr nr Enumclaw	B	XXX				
10E050	Salmon Creek nr Mouth	B					
10E070	Salmon Cr @ Sumner	B		X			
10F070	So Prairie Cr nr Crocker	B		X			
10F090	South Prairie Ck nr S. Prairie	B				X	
10F110	South Prairie Cr. @ South Prairie	B					
10F150	South Prairie Cr. @ Burnette	B					
10G060	Hylebos Creek at Mouth	B					
11A070	Nisqually R @ Nisqually	L		X X XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
11A080	Nisqually R @ McKenna	B	X XXXXXXXXXX	X		XX X	
11A090	Nisqually R abv Powell Cr	B		X XX	XXXXXXXXXX	X	
11A110	Nisqually R @ LaGrande	B		X			
11A140	Nisqually R @ Elbe	B		X X XX	X		
12A070	Chambers Cr nr Steilacoom	B	XXXXX	XX X	XXXXXX	XX X X	
12A100	Chambers Cr blw Steilacoom Lk	B	XX	X		XXX	
12A110	Clover Cr abv Steilacoom Lk	B	XXX	X		XXXX	
12A130	Clover Cr nr Parkland	B	XX				
12A140	Clover Creek nr Waller Road	B					
12B070	Leach Cr nr Steilacoom	B	XXX	X			
12C070	Flett Cr @ Custer Rd	B	XXX	X			
12D050	Ponce de Leon Ck nr mouth	B				XXX	
13A050	Deschutes R @ Tumwater	B	XXXXX X	X X			
13A060	Deschutes R @ E St Bridge	L		XX	XXXXXXXXXX	XXXX XXXXX	XXXXXX
13A080	Deschutes R nr Olympia	B		X X X			
13A100	Deschutes R. @ Rich Rd.	B					
13A120	Deschutes R. @ Waldrick Rd.	B					
13A150	Deschutes R nr Rainier	B	X XXX	X X XX	XXXXXXXXXX	XX X	

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
13B170	Woodland Cr. nr Lacey	B					
14A060	Goldsborough Cr @ Shelton	B				X X	
14A070	Goldsborough Cr nr Shelton	B	XXX X	X			
15A070	Dewatto R nr Dewatto	B		XXX		X	
15B050	Chico Cr nr Chico	B				X	
15B070	Chico Cr nr Bremerton	B	XXXXX	X			
15C070	Clear Cr @ Silverdale	B				X	
15D090	Tahuya R nr Belfair	B				X	
15E070	Union R nr Belfair	B				X	X
15F050	Big Beef Cr @ Mouth	B					X
15F150	Big Beef Cr. @ Holly Rd.	B					
15G050	Little Mission Cr. @ Hwy 300	B					X
15H050	Stimson Creek @ Hwy 300	B					X
15J050	Big Mission Cr. @ Hwy 300	B					X
15K070	Olalla Cr. @ Forsman Rd.	B					X
15L050	Seabeck Cr. @ mouth	B					X
15M070	Llt Anderson Cr. @ Anderson Hill Rd	B					X
15N070	Stavis Cr. nr Mouth	B					X
16A070	Skokomish R nr Potlatch	L	XXXXXXXX X	X XXX XX	X XXXXXX	XXXXXXXXXX	XXXXXX
16B070	Hamma Hamma R nr Mouth	B	XXXXXX X	X X			
16B110	Hamma Hamma R nr Eldon	B		XX		X	
16B120	Hamma Hamma R above Cabin Creek	B					
16C070	Duckabush R @ Mouth	B	XXXXXXXX X	X X			
16C090	Duckabush R nr Brinnon	L		XXX		XXXXXX	XXXXXX
16D070	Dosewallips R @ Brinnon	B	X XXXXXXXXX	X XXX		X	
16E070	Finch Cr @ Hoodsport	B				X X	
17A060	Big Quilcene R nr mouth	B					XX
17A070	Big Quilcene R nr Quilcene	B	X XXXXXX	XXX		X X	
17B050	Chimacum Cr. @ mouth	B					

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
17B070	Chimacum Cr nr Irondale	B				X	
17B090	Chimacum Cr @ Hadlock	B		X			
17B100	Chimacum Cr @ Chimacum	B				X	
17B110	Chimacum Cr nr Chimacum	B		X			
17C070	Jimmycomelately Cr near Mouth	B					XX
17C075	Jimmycomelately Cr. @ Hwy 101	B					
17D060	Little Quilcene R. nr mouth	B					
17E060	Snow Cr. @ WDFW	B					
17F060	Salmon Cr. @ West Uncas Rd.	B					
17G060	Tarboo Cr. nr mouth	B					
17H060	Thorndyke Cr. nr mouth	B					
17J050	Pheasant Cr. @ mouth	B					
18A050	Dungeness R nr Mouth	B					XXXXX
18A070	Dungeness R nr Sequim	B	X XXXXXXX	XXX		X X	XX
18B070	Elwha R nr Port Angeles	L	X XXXXXXX X	XXX		XXXXXX	XXXXXX
18B080	Elwha R @ McDonald Br (USGS)	B		XXXXX	XX		
18C070	Morse Cr. @ Four Seasons Ranch	B					
18C150	Morse Cr. blw Aqueduct	B					
18D060	Matriotti Cr. @ Olympic Game Farm	B					
18E100	Meadowbrook Cr. nr Dungeness	B					
18F250	Agnew Irrigation Dt. nr Sequim	B					
18G250	CCD Irrigation Dt. nr Sequim	B					
18H250	Sequim/Prairie Irrig. Dt. nr Sequim	B					
18J250	Highland Irrigation Dt. nr Sequim	B					
18K250	Independent Irrig. Dt. nr Sequim	B					
18L060	Seibert Cr. @ Old Olympic Hwy.	B					
18M060	Ennis Cr. nr mouth	B					
18N050	Little R. @ mouth	B					
18P070	McDonald Cr. @ Hwy 101	B					

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
18Q050	Indian Cr. @ mouth	B					
18Q200	Indian Cr. nr Maple Grove	B					
18Q240	Indian Cr. blw Lake Sutherland	B					
18R250	McDonald Irrig. Dt. @ diversion	B					
19A070	Pysht R nr Pysht	B		XXX			
19B070	Hoko R nr Mouth	B		X			
19B090	Hoko R nr Sekiu	B		XX			
19C060	West Twin R. nr mouth	B					X
19D070	East Twin R. nr Mouth	B					X
19E060	Deep Cr. nr mouth	B					X
19F070	Salt Cr. nr Ramapo	B					
19G070	Lyre R. nr Shadow	B					
19H080	Clallam R. nr Clallam Bay	B					
19J060	Sekiu R. nr mouth	B					
20A070	Soleduck R. nr Quillayute	B					
20A090	Soleduck R nr Forks	B		XXX		X	
20A130	Soleduck R nr Fairholm	B	XXXXXXXX X	X			
20B070	Hoh R @ DNR Campground	L	XXXXXXXXXX	X XXX XX	X	XXXXXX	XXXXXX
20C070	Ozette R @ Ozette	B	X XX				
20D070	Dickey R nr La Push	B				X	
21A070	Queets R @ Queets	B	XXXXXXXXXX	X X		X	
21A080	Queets R nr Clearwater (USGS)	B		XX	XX		
21A090	Queets R abv Clearwater	B		XX			
21B090	Quinault R @ Lake Quinault	B	X X XXXXXX	X XXX XX	X	X	
21C070	Clearwater R nr Queets	B		XX			
21D070	NF Quinault R @ Amanda	B		XXXXXXXXX	XX		
22A070	Humptulips R nr Humptulips	L	X XXXXXXXXXX	X XXX XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
22B070	WF Hoquiam R nr Hoquiam	B	XXXXX	XX		X	
22C050	Chehalis R nr Montesano	B		XX XX	XXXXXXXXX	XXX	

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
22C070	Chehalis R nr Fuller	B		X X			
22D070	Wishkah R nr Wishkah	B	XXXXX	XX X			
22D110	Wishkah R. nr Nisson	B					
22F090	Wynoochee R nr Montesano	B	X XXXXXXXX X	X XX X			
22G070	Satsop R nr Satsop	B	XXXXXXXXXX	XX X XXX	XXXXXXXXXX	XX X	
22H070	Cloquallum Cr nr Elma	B	XXXX	X X X			
22J070	Wildcat Cr nr McCleary	B		X			
22K070	Bingham Cr. @ Hatchery	B					
22L070	Johns R. @ Western	B					
22M070	Newskah Cr. blw Falls Creek	B					
22N070	M.F. Hoquiam R. nr New London	B					
22P080	E.F. Hoquiam R. nr Nisson	B					
22Q060	E.F. Wishkah R. nr mouth	B					
22R050	M.F. Satsop R. @ mouth	B					
22S050	Decker Cr. @ mouth	B					
23A070	Chehalis R @ Porter	L	X XXXXXXXXXX	XXXX XXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
23A100	Chehalis R @ Prather Rd	B				XXX	XXXX
23A110	Chehalis R @ Galvin	B		X X X			
23A120	Chehalis R @ Centralia	B		XX	XXXXXXXXXX	XX X	
23A130	Chehalis R @ Claquato	B				X	
23A140	Chehalis R @ Adna	B		X X X			
23A160	Chehalis R @ Dryad	L	X XXXXXXX	XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
23B050	Newaukum @ Mouth	B				X	
23B070	Newaukum R nr Chehalis	B	XXXXXXXX	X X X		X	
23B090	SF Newaukum R @ Forest	B		X			
23C070	NF Newaukum R @ Forest	B		X			
23D055	Skookumchuck R @ Centralia	B				X X	
23D060	Skookumchuck R nr Frost Prairie	B					
23D070	Skookumchuck R nr Centralia	B	X X				

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
23E060	Black R. @ Hwy. 12	B					
23E070	Black River @ Moon Road Bridge	B				XX X XXX	
23F070	Mill Ck nr Bordeaux	B				X	
23G060	S.F. Chehalis R. nr mouth	B					
23G070	SF Chehalis R @ Curtis	B				X	
23H070	Cedar Cr. @ Hwy. 12	B					
24B090	Willapa R nr Willapa	L	XX X	XXXXX XXXX	XX XXXXXX	XXX XXXXX	XXXXXX
24B095	Willapa R nr Menlo	B					
24B100	Willapa R. @ Oxbow	B					
24B130	Willapa R @ Lebam	B	X XX X	XX	XXXXXXXXXX	XXX	
24B150	Willapa R @ Swiss Picnic Rd	B					
24C060	SF Willapa R @ Fuller St	B					
24C065	S.F. Willapa R. @ South Fork WTP	B					
24C070	SF Willapa R @ South Bend	B		X			
24D070	North R nr Raymond	B		X XX			XX
24D090	North R @ Artic	B				X	
24E070	North Nemah R @ Nemah	B		X X			
24F040	Naselle R @ Mouth	B		X			
24F055	Naselle R @ Naselle	B		X			
24F070	Naselle R nr Naselle	L	XX X	X X XXXX	X	X XXXXX	XXXXXX
24G070	Bear Branch nr Naselle	B	X	X			
24H070	Middle Nemah R nr Nemah	B		X			
24J070	South Namah R nr Nemah	B		X			
24K060	Fork Cr. @ Willapa Hatchery	B					
24L060	Canon R. @ Kleeb's Trail	B					
24L090	Canon R. @ A-Line Bridge	B					
24M050	Ellsworth Cr. @ mouth	B					
25A070	Columbia R @ Cathlamet	B	XX	X X			
25A075	Columbia R @ Bradwood	B		XXXXXX			

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
25A110	Columbia R @ Fisher Is Lt	B	XXXXX				
25A115	Columbia R nr Longview	B	XX	X X			
25A150	Columbia R blw Longview Br	B	X	X			
25B060	Grays R. nr mouth	B					
25B070	Grays R nr Grays River	B		X XX		X	
25C070	Elochoman R nr Cathlamet	B	X	X XX		X	
25D050	Germany Cr. @ mouth	B					X
25E060	Abernathy Cr. nr mouth	B					X
25E100	Abernathy Cr. @ DNR	B					X
25F060	Mill Cr. nr mouth	B					X
25F100	Mill Cr. @ DNR	B					X
26B070	Cowlitz R @ Kelso	L	XXXXXXX	XX X XX	XXXXXXXXX	XXXXXXXXXX	XXXXXX
26B100	Cowlitz R @ Castle Rock	B	XXX	X XXXX			
26B150	Cowlitz R @ Toledo	B	XXXXX	X X XX	X	X	
26B180	Cowlitz nr Kosmos B Cispus	B	X XXXXXXXX				
26B190	Cowlitz R nr Randle	B	X	X X X			
26B200	Cowlitz R nr Kosmos	B		X			
26C070	Coweeman R @ Kelso	B	XXXXX	XX X	XXXXXX	XXX X	
26C080	Coweeman R av Goble Cr	B				X	
26C090	Coweeman R nr Rose Valley	B		X X			
26D070	Toutle R nr Castle Rock	B	XXXXXXXX X	X X X XX	XXXXXXXXX	XXX	
26D090	Toutle R @ Tower Rd	B					
26E070	Cispus R nr Kosmos	B		X	XXX		
27A070	Columbia R @ Kalama	B	XX	X XX			
27A110	Columbia River nr St. Helens	B	XX	X			
27B050	Kalama R @ Kalama	B	XXXXXXXXX	X			
27B070	Kalama R nr Kalama	L		XX XX	XXXXXXXXX	XXX XXXXX	XXXXXX
27B080	Kalama R blw Upper Hatchery	B					
27B090	Kalama R @ Upper Hatchery	B		X			

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
27B110	Kalama R @ Pigeon Springs	B		X			
27C070	Lewis R @ Woodland @ I-5	B	XXXXX X	X XX			
27C080	Lewis R @ Co Rd 16	B				X	
27C110	Lewis R @ Ariel	B	X X	XXX	X		
27D070	E.F. Lewis R. nr La Center	B					
27D090	EF Lewis R nr Dollar Corner	L		XXX	XXXXXXXXXX	XXX XXXXX	XXXXXX
27D100	EF Lewis R @ Heisson	B					
27D110	EF Lewis nr Heisson	B					
27D190	E.F. Lewis R. @ Sunset Campground	B					
27E070	Cedar Cr nr Etna	B				X	
27E100	Cedar Cr. @ Grist Mill Bridge	B					
27F070	Gee Cr @ Ridgefield	B				X	
28A090	Columbia blw Vancouver WA	B	XX	X			
28A091	Columbia blw Vancouver OR	B	XX	X			
28A100	Columbia R. @ Vancouver	B					X
28A165	Columbia R @ Warrendale	B		XXXXXXX			
28A170	Columbia R blw Bonneville	B	XX	X			
28A175	Columbia R @ Bonneville Dam	B	XX	X X			
28B070	Washougal R @ Washougal	B	X	X XX XX		X	
28B080	Washougal R. @ Hathaway Park	B					
28B090	Washougal R nr Washougal	B	XXXXXXXX	X			
28B110	Washougal R blw Canyon Ck	B				X X	X
28C070	Burnt Br Cr @ Mouth	B		X			XX
28C110	Burnt Br Cr @ Vancouver	B		X			
28D070	Salmon Cr @ Salmon Creek	B		X			
28D110	Salmon Cr nr Battle Ground	B		X			
28E070	Weaver Cr nr Battle Ground	B		X			
28F070	Lake R nr Ridgefield	B				X	
28G070	Gibbons Ck nr Washougal	B				X	X

Station Number	Name	Long-term or Basin	Water Year Sampled				
			<---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
28H070	Campen Cr nr Washougal	B					X
29B070	White Salmon R nr Underwood	B	XXXXXXXXXX	X XX XXXX	XXXX	X	
29C070	Wind R nr Carson	B		X XXXX	XXXX	X	
29D070	Rattlesnake Cr nr Mouth	B				XXX	
29E070	Gilmer Cr nr Mouth	B				XXX	
30A070	Columbia R @ The Dalles	B	XX	XXXXXXXX		X	
30A090	Columbia R @ The Dalles Dam	B	X				
30A100	Columbia R nr Maryhill	B					
30B060	Klickitat R nr Lyle	B				XX	
30B070	Klickitat R nr Pitt	B	XXX	X XXXXXXX	X		
30C070	Little Klickitat nr Wahkiacus	B		X		XX	
30C090	Little Klickitat R. @ Olson Rd.	B					
30C150	Little Klickitat R. @ Hwy 97	B					
31A070	Columbia R @ Umatilla	L	X	XXXXX		XXXXXXXXX	XXXXXX
31A090	Columbia R @ McNary Dam	B	X XXXXXXXXXX				
31A130	Columbia R nr Yakima R Mouth	B	X				
32A070	Walla Walla R nr Touchet	L	X XXXXXXX	XX XXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
32A080	Walla Walla R. blw Lowden	B					
32A090	Walla Walla R nr Lowden	B		XX			
32A100	Walla Walla at east Detour Road Br	B				X	X
32A105	Walla Walla R. @ Beet Rd.	B					
32A110	Walla Walla R @ College Pl	B		XX XX			
32A120	Walla Walla R. @ Pepper Bridge	B					
32B070	Touchet R @ Touchet	B		X XX XX	XXXXXXXXXX	XXX X	
32B075	Touchet R. @ Cummins Rd.	B					X
32B080	Touchet at Sims Road	B				X	X
32B090	Touchet R nr Luckenbill Rd	B					
32B100	Touchet R @ Bolles	B		XX		X	X
32B110	Touchet R. @ County Line	B					

Station Number	Name	Long-term or Basin	Water Year Sampled					
			<---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->	
32B120	Touchet R nr Dayton	B		XX				
32B130	Touchet R @ Dayton	B	X X			XX		
32B140	Touchet R above Dayton	B				X		
32C070	Mill Cr @ Swegle Rd	B		X XX			X	
32C110	Mill Cr @ Tausick Way	B		X X		X		
32D050	Yellowhawk Cr nr mouth	B						
32D060	Yellowhawk Cr. nr mouth	B						
32E050	N.F. Touchet R. abv Dayton	B						
32E150	N.F. Touchet R. abv Jim Cr.	B						
32F060	Dry Cr. nr mouth	B						
32F150	Dry Cr. @ Hwy 125	B						
32G060	Coppei Cr. nr mouth	B						
32G100	Coppei Cr. nr Coppei	B						
32H090	E.P. Ltl Walla Walla R. @ Stateline	B						
32J070	Robinson Fork abv W.F. Touchet	B						
32K070	Wolf Fk Touchet R. @ Mtn. Home Park	B						
32L070	S.F. Touchet R. abv Dayton	B						
32M060	Cottonwood Cr. nr mouth	B						
32M100	Cottonwood Cr. @ Hood Rd.	B						
32N070	Russell Cr. nr Langdon	B						
32N120	Russell Cr. nr Walla Walla	B						
33A010	Snake R nr Mouth	B	X					
33A050	Snake R nr Pasco	L	XXXXXXX X	X		XXXXXXXXX	XXXXXX	
33A05X	Snake R @ Burbank	B						
33A070	Snake R blw Ice Harbor Dam	B	X	X XXXXXX	XXXXXXXXXX	XX		
33A100	Snake R blw Lower Monumental Dam	B						
34A070	Palouse R @ Hooper	L	X XXXXXXXXXX	X XXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX	
34A075	Palouse River @ Hwy 26	B					X	
34A080	Palouse River above Rebel Flat	B					X	

Station Number	Name	Long-term or Basin	Water Year Sampled				
			<---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
34A085	Palouse R @ Shields Rd Bridge	B				X	X
34A090	Palouse R nr Diamond	B		X X			
34A109	Palouse River blw Colfax	B					X
34A110	Palouse R abv Buck Canyon	B		X XX			
34A120	Palouse R at Colfax	B					X X
34A170	Palouse R @ Palouse	L		X		XXXXXXXX	XXXXXX
34B070	SF Palouse R nr Colfax	B		X XX			
34B075	SF Palouse R @ Shawnee Rd	B					X
34B080	SF Palouse R @ Albion	B					
34B085	SF Palouse R at Armstrong Rd	B					
34B090	SF Palouse R nr Pullman	B		X X			
34B110	SF Palouse R @ Pullman	L		X X XX	XXXXXXXXXX	XXX XXXXX	XXXXXX
34B130	SF Palouse R blw Sunshine	B		X			X
34B140	SF Palouse R @ Busby	B				X	
34B150	SF Palouse R nr Moscow ID	B					
34C060	Paradise Cr at Mouth	B				X	X
34C070	Paradise Cr nr Pullman	B		X			
34C100	Paradise Cr @ Border	B				X	X
34D070	SF Palouse Trib Whitman Fm	B		X			
34E070	Rock Creek at Revere	B				X	
34E100	Rock Creek at Escures Property	B					
34F090	Pine Cr @ Rosalia	B				X	X
34G070	Snake R @ Lyons Ferry	B					
34H070	Pleasant Valley Cr blw St John	B					X
34J050	Union Flat Cr nr Mouth	B					X
34J070	Union Flat Cr @ Winona Rd	B					X
34J090	Union Flat Cr @ Hwy 26	B					X
34J120	Union Flat Cr @Almota Rd	B					X
34K050	Rebel Flat Cr @ Mouth	B					X

Station Number	Name	Long-term or Basin	Water Year Sampled				
			<---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
34K080	Rebel Flat Cr @ Repp Rd	B					X
34K120	Rebel Flat Cr @ Fairgrounds	B					X
34L050	Cow Cr @ mouth	B					X
34M070	Dry Creek @ Pullman	B					
34N070	Missouri Flat Creek @ Pullman	B					
35A070	Snake R @ Central Ferry	B					
35A100	Snake R blw Lwr Granite Dam	B		X			
35A110	Snake R at Lwr Granite Dam	B					
35A150	Snake R @ Interstate Br	L	XXXXX XX			XXXXXXXXX	XXXXXX
35A200	Snake R nr Anatone	B		XXXXXXXX			
35B060	Tucannon R @ Powers	L		X XX	XXXXXXXXXX	XXX XXXXX	XXXXXX
35B090	Tucannon R @ Smith Hollow	B					X
35B100	Tucannon R @ Territorial Road	B					X
35B110	Tucannon R nr Delaney	B	X X				
35B120	Tucannon R @ Brines Road	B					X
35B150	Tucannon R nr Marengo	B				X	X
35C070	Grande Ronde R nr Anatone	B		X	XXX	X	
35D070	Asotin Cr @ Asotin	B		X		X X	X
35D080	Asotin Cr. blw George Creek	B					
35D100	Asotin Cr. abv George Creek	B					
35E070	Clearwater R @ US12/95	B				X	
35F050	Pataha Cr near mouth	B					X
35F070	Pataha Cr @ Archer Rd	B				X	X
35F095	Pataha Cr @ Tatman Road	B					X
35F100	Pataha Cr. nr Pataha	B					
35F110	Pataha Cr @ Rosy Grade	B					X
35G060	Joseph Cr. nr mouth	B					
35H050	Couse Cr. @ mouth	B					
35J050	Tenmile Cr. @ mouth	B					

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
35K050	Alpowa Cr. @ mouth	B					
35L050	Almota Cr. @ mouth	B					
35M060	Deadman Cr. nr mouth	B					
35M100	Deadman Cr. nr Gould City	B					
35N050	Meadow Cr. @ mouth	B					
36A055	Columbia R @ Port of Pasco	B		X			
36A060	Columbia R @ Pasco	B	XX				
36A065	Columbia R @ Richland	B		X			
36A070	Columbia R nr Vernita	L	XX XX	X X XXX XX	XXXXXXXXXX	XX XXXXXX	XXXXXX
37A040	Yakima R @ I-182	B					
37A060	Yakima R @ VanGiesen Br	B		X XX			
37A070	Yakima R nr Richland	B		X			
37A090	Yakima R @ Kiona	L	X XXX XXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
37A095	Yakima 2 mi blw Prosser	B				X	
37A100	Yakima below Prosser	B				X	
37A110	Yakima R @ Prosser	B		X XX			
37A120	Yakima River @ Euclid Rd. Brdg.	B					
37A130	Yakima R @ Mabton	B		X XX		X	
37A149	Yakima R @ Granger No Side	B		X			
37A150	Yakima R @ Granger So Side	B		X			
37A152	Yakima above Granger Drain	B					
37A170	Yakima R nr Toppenish	B		X XX		X	
37A190	Yakima R @ Parker	B		X XXXXXXX	XXXXXXXXXX	XXX	
37A200	Yakima R abv Ahtanum Cr (USGS)	B		XX X	XX		
37A205	Yakima R @ Nob Hill	L				XXXXX	XXXXXX
37A210	Yakima R nr Terrace Height	B		XX XX		X	
37B060	Satus Cr @ Satus	B		XX			
37C060	Toppenish Cr nr Satus	B		XX			
37D080	Marion Drin nr Granger	B		XX			

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
37E050	Wide Hollow Cr. @ Main Street	B					X
37E070	Wide Hollow Cr @ Union Gap	B		X X		X	
37E090	Wide Hollow Cr @ Goodman	B		X X			
37E120	Wide Hollow Creek @ Randall Park	B					XX
37F070	Sulfur Ck Wasteway @ McGee Rd	B				X	
37F080	Sulphur Creek @ Holaday Road	B					
37G120	Ahtanum Cr @ 62nd Ave	B					XX
37I070	Moxee Drain @ Birchfield Rd.	B					X
38A050	Naches R @ Yakima on US HWY 97	B	XXXXXXX			X	XX X X
38A061	Naches River @ Nelson Bridge	B					
38A070	Naches R @ Yakima	B		X X			
38A110	Naches R @ Naches	B	X X	X			
38A130	Naches R nr Naches	B	XXXX				
38A170	Naches R. @ Nile Rd.	B					
38B070	Tieton R @ Oak Creek	B	XXXX			X	
38C070	Rattlesnake Cr nr Nile	B	XX				
38D070	Bumping R @ American R	B	XX				
38E070	American R @ American R	B	XX				
38F070	Little Naches nr Cliffdell	B	XXX			X	
38G070	Cowiche Cr. @ Powerhouse Rd.	B					X
38G120	Cowiche Cr @ Zimmerman rd	B					XX
38H050	S.F. Cowiche Cr. @ mouth	B					
38H080	S.F. Cowiche Cr.nr Cowiche	B					
39A041	Yakima River below Roza Dam	B					
39A050	Yakima R @ Harrison Bridge	B				XX	XXX
39A051	Yakima River @ Umtanum	B					
39A060	Yakima R @ Ellensburg	B				XX	XX
39A070	Yakima R nr Thorp	B		X X			
39A080	Yakima R @ Cle Elum	B	X XXXXXXXXX	X			

Station Number	Name	Long-term or Basin	Water Year Sampled				
			<---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
39A090	Yakima R nr Cle Elum	L		X X		XXX XXXXX	XXXXXX
39B070	Cle Elum R nr Cle Elum	B		X X			
39B090	Cle Elum R nr Roslyn	B				X	
39C070	Wilson Cr @ Highway 821	B	XXXX	X X X		X	X
39D070	Teanaway R nr Cle Elum	B	XXXXX			X	
39D090	Teanaway R at Highway 970	B					
39E071	Cabin Creek nr Easton	B					
39F050	Wenas Cr. nr Selah	B					
39G060	Naneum Cr. nr Ellensburg	B					
39H050	Sorenson Cr. nr Ellensburg	B					
39J050	Manastash Cr. nr Ellensburg	B					
39J090	Manastash Cr. @ Manastash Rd.	B					
39K050	Reecer Cr. nr Ellensburg	B					
39L050	Packwood Dt. nr Ellensburg	B					
39M050	Swauk Cr. Nr Cle Elum	B					
39M100	Swauk Cr. @ Lauderdale Junction	B					
39N050	Crystal Cr. Nr Cle Elum	B					
39P080	Taneum Cr. @ Heart K Ranch	B					
39Q060	Big Cr. nr mouth	B					
41A070	Crab Cr nr Beverly	L	X XXXXXXXXXX	XXX XX XX	XXXXXXXXXX	XX XXXXXX	XXXXXX
41A075	Crab Cr nr Smyrna	B	XXX				
41A090	Crab Cr nr Othello	B		X			
41A101	Crab Creek @ McMannon Road	B					
41A110	Crab Cr nr Moses Lake	B	X		XXXX	X X	X
41B071	Winchester Wasteway @ Gage	B					
41C071	Frenchman Hills Wasteway @ Gage	B					
41D070	Rocky Ford Creek @ Hwy 17	B				X	X
41E070	Sand Hollow Creek on Hwy 26	B				X	
41F100	Rocky Ford Coulee Drain	B				X	

Station Number	Name	Long-term or Basin	Water Year Sampled				
			<---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
41G070	Rocky Coulee Wasteway @ K NE Road	B					X
41H050	Moses Lake at South Outlet	B					X
41J070	Lind Coulee @ Hwy 17	B					X
42A070	Crab Cr below Adrian	B					X
43A070	Crab Cr @ Irby	B	X			X	X
43A080	Crab Creek @ Odessa	B					X
43A095	Crab Creek @ Amnen Road	B					X
43A100	Crab Ck @ Marcelus Road	B				X	X
43A110	Crab Creek at Tokio Road	B					X
43A130	Crab Creek @ US23	B					X
43A150	Crab Ck @ Bluestem Road	B				X	X
43B090	Lake Ck @ Coffeepot Road	B				X	
43C070	Goose Creek nr Wilbur	B					X
44A070	Columbia R blw Rock Is Dam	B		X XX XX	XXXXXXXXXX	XX	
44A190	Columbia River @ Hwy 2 Bridge	B					
45A070	Wenatchee R @ Wenatchee	L	XXXXXXXX X	X X XX XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
45A085	Wenatchee R nr Dryden	B		X			
45A100	Wenatchee R @ Leavenworth	B		X			
45A110	Wenatchee R nr Leavenworth	L	X XXXXXXXX	XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
45A240	Wenatchee R. blw Lake Wenatchee	B					
45B050	Icicle Cr. nr mouth	B					
45B070	Icicle Cr nr Leavenworth	B		X		X	
45C060	Chumstick Cr. nr mouth	B					XX
45C070	Chumstick Cr nr Leavenworth	B				XXX	X X
45D070	Brender Cr nr Cashmere	B				XXX	X XX
45D080	Brender Cr. abv Noname Cr.	B					X
45D150	Brender Cr. blw Brender Canyon	B					
45E070	Mission Cr nr Cashmere	B				XXX	X XX
45E100	Mission Cr. @ Binder Rd.	B					

Station Number	Name	Long-term or Basin	Water Year Sampled					
			<---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->	
45F070	Peshastin Cr. @ Green Bridge Rd.	B						
45F100	Peshastin Cr. blw Ingalls Cr.	B						
45F110	Peshastin Cr. abv Ingalls Cr.	B						
45F150	Peshastin Cr. abv Tronsen Cr.	B						
45G060	Chiwaukum Cr. nr mouth	B						
45H060	Chiwawa R. @ Schugart Flat	B						
45J070	Nason Cr. nr mouth	B						
45K070	White R. nr mouth	B						
45K090	White R. nr Plain	B						
45L070	Little Wenatchee R. nr mouth	B						
45L110	Little Wenatchee R. blw Rainey Cr.	B						
45M060	Rainey Cr. nr mouth	B						
45N060	Rock Cr. nr mouth	B						
45P050	White Pine Cr. @ mouth	B						
45Q060	Eagle Cr. nr mouth	B					XX	
45R050	Noname Creek nr Cashmere	B					XX	
45R070	Noname Cr. on Mill Rd.	B					X	
46A070	Entiat R nr Entiat	L	X	XXXXXXX	X XX XX	XXXXXXXXXX	XX XXXXXX	XXXXXX
46A110	Entiat R. @ Dill Creek Bridge	B						
46A150	Entiat R. @ Tommy Creek Bridge	B						
46A160	Entiat R. blw Entiat Falls	B						
46A170	Entiat R. @ North Fork Campground	B						
46B060	Roaring Cr. nr mouth	B						
46C100	Mad R. abv Camp Nine	B						
46D050	Tillicum Cr. @ mouth	B						
46E070	Mud Cr. @ Bisping Canyon Rd.	B						
46F060	Potato Cr. nr mouth	B						
46G060	Stormy Cr. nr mouth	B						
46H050	Preston Cr. @ mouth	B						

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
46J080	Tommy Cr. Blw USFS Quarry	B					
46K050	Lake Cr. @ mouth	B					
46L050	Pope Cr. @ mouth	B					
47A070	Chelan R @ Chelan	B	XXXXXXXX X	X X XX XX	XXXXXXXXXX	XX X	
47B070	Columbia R @ Chelan Station	B				X X	
48A070	Methow R nr Pateros	L	X XXXXXXX	X XX XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
48A130	Methow R nr Twisp	B		X XX	XXXXXXXXX		
48A140	Methow R @ Twisp	L			X	XX X XXXXX	XXXXXX
48A170	Methow R @ Weeman Br	B		X			
48A190	Methow R blw Gate Cr	B		X XX	X		
48B070	Chewack R @ Winthrop	B		X			
48C070	Andrews Cr nr Mazama	B		XXXXXXXX	XX		
49A050	Okanogan R nr Brewster	B	X XXXXXXX X	X			
49A070	Okanogan R @ Malott	L	XXX	X X XX XX	XX XXXXXX	XXXXXXXXXX	XXXXXX
49A090	Okanogan R @ Okanogan	B		X XX	XXXXXXXXX	X	
49A110	Okanogan R @ Omak	B					
49A130	Okanogan R @ Riverside	B					
49A170	Okanogan R @ Janis	B		X			
49A180	Okanogan R @ Tonaskat	B				X	
49A190	Okanogan R @ Oroville	L	XXXXXXX	XX XX	XXXXXXXXXX	XX X XXXXX	XXXXXX
49B070	Similkameen R @ Oroville	L	XXXXXXX	XX XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
49B090	Similkameen R @ Nighthawk	B				X	
49B110	Similkameen R @ Chopaka, BC	B					XX
49C100	Omak Cr. nr St. Mary's Mission	B					
49D080	Johnson Cr. @ Riverside	B					
49E080	Tunk Cr. nr Riverside	B					
49F070	Bonaparte Cr. @ Tonasket	B					
49F150	Bonaparte Cr. @ Aeneas Valley Rd.	B					
49G060	Antoine Cr. nr mouth	B					

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
49H080	Tonasket Cr. nr Oroville	B					
49J060	Ninemile Cr. nr Oroville	B					
49K090	Toats Coulee Cr. nr Loomis	B					
49L100	Sinlahekin Cr nr Loomis	B					
49M100	N.F. Salmon Cr. nr Conconully	B					
49N050	W.F. Salmon Cr @ mouth	B					
50A070	Columbia R nr Brewster	B	X				
50A090	Columbia R @ Bridgeport	B	X				
51A070	Nespelem R @ Nespelem	B			XXXXXXXXXX	XX X	
52A070	Sanpoil R @ Keller	B	XXXXXXX	X XX XX	XXXXXXXXXX	XX X	
52A110	Sanpoil R 13 mi S. Republic	B				X	
52A170	Sanpoil R blw Republic	B		X			
52A190	Sanpoil R abv Republic	B		X		X	
52B070	Lake Roosevelt from Keller Ferry	B				X	
53A070	Columbia R @ Grand Coulee	L		X XX XX	XXXXXXXXXX	XX X XXXXX	XXXXXX
54A050	Spokane R @ Mouth	B				XXXX	
54A070	Spokane R @ Long Lake (USGS)	B	X XXXXXXX X	XXXXXXXXXX	XX		
54A089	Spokane R 2 mi blw Ninemile dam	B		XX			
54A090	Spokane R @ Ninemile Br	B		X X			X
54A120	Spokane R @ Riverside State Pk	L		XXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX
54A130	Spokane R @ Fort Wright Br	B		X X			
55B070	Little Spokane R nr Mouth	L		X X XXX	XXXXXXXXXX	XX XXXXXX	XXXXXX
55B075	Little Spokane @ Painted Rocks	B					X
55B080	Little Spokane R nr Griffith Spring	B				XX	
55B082	Little Spokane R abv Dartford Creek	B				XX	X
55B085	Little Spokane nr Dartford	B	XXXXXXX				
55B090	Little Spokane R abv Wandermere	B		X			
55B100	Little Spokane R abv Deadman Creek	B				XX X	
55B200	Little Spokane @ Chattaroy	B				X	X

Station Number	Name	Long-term or Basin	Water Year Sampled <---1960s--->	<---1970s--->	<---1980s--->	<---1990s--->	<---2000s--->
55B300	Little Spokane River @ Scotia	B					X
55C065	Deadman Cr nr Mouth	B				X	
55C070	Peone (Deadman) Creek abv L Deep Cr	B				XX	X
55C200	Deadman Cr@Holcomb Rd	B					X
55D070	Deer Cr nr Chattaroy	B				X	
55E070	Dragoon Cr nr Chattaroy	B				X	
56A070	Hangman Cr @ Mouth	L		X X XXX	XXXXXXXXXX	XX X XXXXX	XXXXXX
56A200	Hangman Creek @ Bradshaw Road	B				X	
57A120	Spokane R @ Spokane	B		X			
57A130	Spokane R @ Mission St Br	B		X X			
57A145	Spokane R @ Trent Br	B		X			
57A150	Spokane R @ Stateline Br	L	X XXXXXX X	XX X X		XXXXXXXXX	XXXXXX
57A190	Spokane R nr Post Falls	B		XXXXXXX	XXXXXXXXXX	XX	
59A070	Colville R @ Kettle Falls	B	XXXXXXXXXX	X X XX XX	XXXXXXXXXX	XX X	
59A080	Colville R abv Kettle Falls	B				X	X
59A110	Colville R @ Blue Creek	B		X			X
59A130	Colville R @ Chewelah	B		X			X
59B070	Little Pend Oreille @ Hwy 395	B					X
60A050	Kettle R @ Hedlund Bridge	B	X				
60A070	Kettle R nr Barstow	L	XXXXXXX X	X X XX XX	XXXXXXXXXX	XX XXXXXX	XXXXXX
61A070	Columbia R @ Northport	L	X XXXXXXXXXX	XXXXXXXXXX	XX	XXXXXXXXX	XXXXXX
61B070	Deep Ck nr Mouth	B				X	X
61C070	Onion Cr nr Northport	B				X	
61D070	Sheep Cr nr Northport	B				X	
62A070	Pend Oreille R @ Waneta BC (USGS)	B	XXX				
62A080	Pend Oreille R @ Border	B		XXXXXX	XX		
62A090	Pend Oreille R @ Metaline Falls	B	X XXX			XX XX	XXXXXX
62A150	Pend Oreille R @ Newport	L	X XXXXXXX X	X XX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX

Appendix B

Historical changes in sampling and laboratory procedures, and large-scale environmental changes potentially affecting water quality

This appendix is intended to record changes in methods and procedures used by the Environmental Monitoring & Trends Section to collect and analyze river and stream water quality data. Other environmental changes that may potentially affect water quality over a large area are also recorded here.

Many of the changes listed below are anecdotal and may or may not have affected data quality. Comments prior to October 1988 are based on interviews with individuals involved with the earlier program. Comments after that date have usually been recorded as the changes occurred.

General

- Jun to Sep 1985: Laboratory moved from Ecology's Southwest Regional Office to Manchester.
- Oct 1988: Implemented QA/QC program (See memo from David Hallock, October 17, 1988.)
- Prior to WY91: Samples were sent to contract labs from time to time. These occurrences are not all recorded here. Records are confusing and only available from bench sheets archived by Manchester Environmental Laboratory.
- 1994: The use of Polyacrylamide (PAM) to control erosion from rill irrigation is becoming widespread in eastern Washington. Water quality effects are unknown.
- 1996: Began monitoring discharge at some stations ourselves (mostly basin stations), rather than contracting with USGS.
- 1997: Contracts for about 80% of the 1.045 million acres in Washington in the Conservation Reserve Program are scheduled to expire. (See http://pnwsteep.wsu.edu)
- 2001: Began running Central (Nov 2001) and Eastern (Feb 2002) runs out of regional offices. Barometric pressures calculated from airport readings, either uncorrected, if available, or re-converted to sea level.
- Jan-Jun 2002: Some barometric pressures collected from the western part of the state may be off by 1.0 mmHg due to calibration errors. The effect of this amount of error on the percent oxygen saturation calculation is insignificant.

Nutrients

- General: Prior to 1980, USGS labs analyzed samples.
- 1966-1969: One gallon of sample was collected in glass jars and held at room temperature for indefinite periods without preservative.
- 1970-1973: Unknown methods; may have been preserved with HgCl. Filtered in field.
- 1973: Laboratory moved from Tacoma to Salt Lake City.
- 1973-1974: Chilled, no preservative. Held as long as one week. Filtered in field; kept in brown poly bottle.
- 1972-1974?: For a short time, TP and NO3 may have been added by filters (probably 72-74). (Personal communications with Joe Rinnella, USGS).
- Sept 30, 1978: USGS Lab moved to Arvada, CO. Joint program samples sent there; samples collected for Ecology project only may have been analyzed in-house.

- ~1978: Chilled. Brown poly bottle? (the brown poly bottle may have been introduced later). 30-day holding time for NO2+NO3 implemented (status of other nutrients is unknown). (Source of methods prior to 1979: pers. comm. Joe Rinnella, USGS, and Skinner, Earl L. "Chronology of Water Resources Division activities that may have affected water quality values of selected constituents in Watstore, 1970-86. Provisional Report Feb 1989.)
- 1979: For a while, the USGS lab reported nutrient results to the nearest 0.01 units. Values below 0.005 were reported as 0.00. USGS decided to change all Watstore data = 0 to 0.01K back to 1973 for NO2+NO3. Decision on other nutrients is unknown, but they may also have been changed. Most of the 0s in our database have been converted to 0.01K (K-below the detection limit) but a few 0s may remain in the older data.
- 1980: USGS requires NO2+NO3 be preserved with HgCl. Status of other nutrients is unknown. Ecology requirements are unknown.
- June 1, 1980 to 1986: Nutrients analyzed by Pat Crawford at SWRO.
- Aug 1985: High phosphate values, presumably a result of lab error. (Coded '9-do not use' in our database). (See "Trends in Puget Sound," 1988, Tetra Tech, App. B.)
- 1986 to Apr 1987: Analyzed by various people, mostly Helen Bates, Steve Twiss, and Wayne Kraft at Manchester.
- June 1985: Switched from Technicon to Rapid Flow Analysis (Alpkem) auto-analyzers
- Apr 1987 to present: Analyzed by various people at Manchester.
- Jan 1987 to Jul 1987: NO3, NH3, and TP analyzed by contract lab.
- Mar 1990: Began using MFS cellulose acetate filters for field filtration of nutrients. Previously use Millipore, type HA (cellulose nitrate?).
- Sep 17 - Oct 12, 1990: All nutrient samples were contracted out.
- Oct 1990: Dissolved ammonia (P608) and dissolved nitrate+nitrite (P631) were added to the Marine network. Totals (P610 and P630) were dropped.
- Feb 1991: All nutrients sent to contract lab.
- Mar 1991: All nutrients sent to contract lab.
- ~1993: Began collecting nutrients in acid-washed poly-bottle passenger rather than in the stainless-steel bucket used for oxygen determinations.
- Jul 1994: The phosphorus content in detergents is restricted statewide (SSB 5320). Phosphorus use had been limited in Spokane County one (?) year earlier.
- Feb 1999: MEL switched from manual to inline digestion for total phosphorus. In early 2003, during the course of evaluating a different method for phosphorus analysis, MEL discovered that the in-line method contained a high bias (4 to 20 ppb). Trend analyses of total phosphorus data should be interpreted carefully if results collected between Feb 1999 and Sept 2003 are included. (See email from Dean Momohara to David Hallock, 31 March 2003.) Total phosphorus data analyzed using this method have been coded "4" indicating a potential quality problem, and given a different name ("TP_PInline" rather than the usual "TP_P").
- Oct 2000: Nitrate+nitrite method changed from EPA 353.2 to SM 4500NO3I because the latter method is more specific. Actual procedures were not changed.
- Oct 2000: TP method changed from EPA 365.1 to SM4500PI. The former method specifies a manual digestion, while the latter correctly refers to the in-line digestion used by MEL's *Lachat* instrument.
- Oct 2000 to Feb 2001: A low bias may apply to TN data. Except for December data, MEL deemed the bias to be small enough that the data did not need to be qualified. December TN results were coded as estimates (See email from M. Lee to David Hallock, March 8, 2001.)

- Oct 2003: TP method changed from SM4500PI to EPA 200.8M, an ICP/MS method with low detection limits and without the bias associated with in-line digestion. Samples are collected in a 60mL container with HCl preservative instead of the earlier 125mL container with H_2SO_4 preservative.

Suspended Solids

- General: Filters were usually used, but sometimes Gooch crucibles were used.
- Feb 1978: Began collecting as passenger to oxygen sampler (was previously collected as aliquot of oxygen sampler). (See memo from Bill Yake, 30 Jan 1978 and Ambient Monitoring Procedure-1978(?) notebook.)
- Mid-1985: Amount filtered changed from 250 (?) to 500 ml.
- Sep 17 - Oct 12, 1990: Suspended sediment samples were contracted out.
- Apr 1991: Began collecting 1000 ml of sample.
- Jul 2002: A number of suspended solids results entered into our database as '0' were deleted. We do not know if these results were below reporting limits or "missing data"; 138 results collected between 1972 and 1981 were affected.
- Mar 2003: TSS method reference changed from EPA160.2 to SM 2540D. Methods did not change; the latter reference more accurately reflects analytical procedures. See email from Feddersen, Karin, March 24, 2003.

Conductivity

- Feb 1978: Began calibrating twice monthly using 40, 70, 140, and 200 µmho/cm standards. (See memo from Bill Yake, 30 Jan 1978 and Ambient Monitoring Procedure-1978(?) Notebook)
- Oct 1991: All meters were re-calibrated Oct 11, 1991. One conductivity meter was not calibrated above 500 µmhos/cm (and could not be calibrated). This meter had last been calibrated about 1 year earlier. Most meters read higher than the 100 µmhos/cm standard.
- Oct 1994: Switched from Beckman model Type RB-5 (which could not be field calibrated) to Orion Model 126 meter, calibrated daily.
- 1998: Orion meter calibration began drifting during the day. Sometimes meter could only be calibrated to within 4 µmhos/cm of the standard. At first, some samplers would correct the data, others would not. Now, these data are uncorrected and coded "J" (estimate).

Fecal Coliform Bacteria

- Early 1980s: field personnel may have analyzed some samples.
- Oct 7, 1975 to Nov 1981: fecal data from eastern Washington may be questionable during this period.
- 1980 to Mar 1988: No changes; analyzed by Nancy Jensen and others at Manchester.
- Mar 1988: Switched to new filter with slightly better recovery.
- Sep 2003: FC method reference changed from SM 16-909C to SM 9222D. Methods did not change; the latter reference more accurately reflects analytical procedures. See email from Feddersen, Karin, September 15, 2003.

Turbidity

- 1970s: EPA specified a 2100A turbidimeter. Formerly, turbidity units were FTU (?)
- Jan 1976: Turbidity units changed from Jackson Turbidity Units (JTU) to Nephelometric Turbidity Units (NTU). (Source: review of historical reports.) These are roughly equivalent when greater than 25 JTU/NTU, otherwise not.
- Sept 1993: Lab began using a new turbidimeter, Hach model "Ratio X/R."

- Jan 2003: In our database, the units for turbidity results collected prior to January were changed from NTU back to JTU. Though roughly equivalent at JTUs > 25, these are not equivalent for lower measurements; the original units should have been retained.

Field pH
- Oct 7, 1975 to Nov 1981: pH data from eastern Washington are questionable during this period.
- Feb 1978: Began calibrating meter twice monthly. Previous procedures unknown. (See memo from Bill Yake, 30 Jan 1978 and Ambient Monitoring Procedure-1978(?) notebook)
- 1986: Changed to Beckman digital pH meter with gel probe.
- Dec 1991: Changed to Orion model 250A meter with "spare water" liquid probe (uses 1M KCl, rather than 4M). Calibrate daily and check calibration three times during the sampling day.

Temperature
- Feb 1978: Switched from thermometer in bucket to thermistor in river. (See memo from Bill Yake, 30 Jan 1978 and Ambient Monitoring Procedure-1978(?) notebook)
- Spring 1994: Switched to YSI 300 meter (accuracy +/- 0.4C)
- Jan 1, 2001: Began calibrating thermistors prior to each run rather than annually. Some thermistors were found to be as much as 1-2 °C low.

Oxygen
- Oct 1, 1977: Began measuring barometric pressure to calculate percent saturation. Previous saturation calculations were presumably based on elevation.
- March 1989: Began applying correction factor to results of Winkler analyses based on titration with sodium biiodate to correct sodium thiosulfate normality to 0.025. Previously, thiosulfate was standardized upon preparation, but not during use.

Barometric Pressure
- ___ 1995: Began calibrating barometer prior to each run using an on-site mercury barometer rather than pressure as reported by the Olympia airport.

Chlorophyll
- Mar 15, 1990: Switched to fluorometric method (from spectrophotometric). New method has lower detection limit (0.02 µg/L) but less accuracy. (See memo from Despina Strong, April 12, 1990)

Hardness
- Jul 1, 1991: Began using 125 ml bottle with HNO3 as preservative. (Previously, aliquot from unpreserved general chemistry bottle was used.)

Metals
- May 1994: Implemented low-level dissolved metals monitoring at selected stations. Metals results prior to this date are questionable unless well above detection limits and have been quality-coded “9” in our database so that they will not routinely be retrieved. Quality problems include inconsistent blank correction and indications of simultaneous peaks and troughs in data series from unrelated stations for results above reporting limits.

Appendix C

Water Year 2004: Raw data

Data listed in this appendix are available in electronic format by contacting the Washington State Department of Ecology regional offices:

- Ecology Central Region: Chris Coffin (509 454-4257; ccof461@ecy.wa.gov)
- Ecology Eastern Region: Jim Ross (509 456-2874; jros461@ecy.wa.gov)
- Ecology Northwest Region: Bill Ward (360 407-6621; bwar461@ecy.wa.gov)
- Ecology Southwest Region: Chad Wiseman (360 407-6682; cwis461@ecy.wa.gov)

Ambient monitoring data from the most recent complete Water Year are available over the Internet on Ecology's web pages (http://www.ecy.wa.gov/). Look under "Environmental Info." and then "Watersheds."

The first two digits of each station number is the Water Resource Inventory Area (WRIA) number. This number can be used to identify which Water Quality Management Areas (WQMA) or "basin" each station is in, according to the table, below:

Basin	WRIAs		Basin	WRIAs
Cedar/Green	8-9		Nooksack/San Juan	1-2
Columbia Gorge	27-29		Okanogan	48-53
Eastern Olympics	13-14, 16-19		Puyallup/Nisqually	10-12
Esquatzel/Crab Creek	36, 42-43		Skagit/Stillaguamish	3-5
Horseheaven/Klickitat	30-31		Spokane	54-57
Island/Snohomish	6-7		Upper and Lower Snake	32-35
Kitsap	15		Upper Columbia/Pend Oreille	58-62
Lower Columbia	24-26		Upper Yakima	38-39
Lower Yakima	37		Wenatchee	40, 44-47
Mid Columbia	41		Western Olympics	20-23

Remarks codes in historical data are defined below. Only "U" and "J" were used in WY 2004.

B,V	Analyte was found in the blank indicating possible contamination
E	Result is an estimate due to interference
G, L	True result is equal to or greater than reported value
H	Sample was analyzed over holding time
J	The reported result is an estimate
K, U	The analyte was not detected at or above the reported result
N	Spike sample recovery outside control limits
P	Result is between the detection limit and the min. quantitation limit (applied to metals)
S	Spreader: one or more bacteria colonies were smeared, possibly obscuring other colonies
X	High background count of non-target bacteria, possibly obscuring additional colonies

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Conventional Data Report

Nooksack R @ Brennan

01A050

Class: A
Rivermile: 3.4
Latitude: 48 49 09.1
Longitude: 122 34 43.3
Waterbody: WA-01-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 8:40	11.5	12800	56	11.61	7.3	2540 J	0.303	0.023	0.182	1.32	0.0086	3600 J	340 J
2003/11/19 8:05	5.5	23900	52	11.91	7.23 J	1630	0.28	0.015	0.189	0.99	0.0072	1100	54 J
2003/12/17 8:40	5.5	4420	110	12.26	7.47	78	0.626	0.021	0.508	0.047	0.0093	34	20 J
2004/01/28 8:30	4.5	5010	109	12.46	7.64	57	0.868	0.022	0.733	0.0515	0.0097	33	45 J
2004/02/25 8:10	6.1	2550	128	11.9	7.68	11	0.772	0.025	0.69	0.0202	0.008	8.1	2 J
2004/03/23 7:25	9.9	3420	105	10.8	7.69	19	0.519	0.014	0.453	0.0195	0.0061	12	10 J
2004/04/20 7:30	10.3	2490	92	10.8	7.7	10	0.394	0.012	0.31	0.0155	0.0069	7.3	22 J
2004/05/19 8:05	13.8	3460	78	10.19	7.6	30	0.17	0.01 U	0.126	0.0171		13	34 J
2004/06/23 7:10	15.7	4140	72	9.8	7.54	46	0.126	0.01 U	0.097	0.0317	0.0059	24	28
2004/07/21 7:25	15.3	2210	82	9.9	7.7	36	0.13	0.01 U	0.099	0.0307	0.0076	25	39 J
2004/08/18 7:35	16.6	2020	78	9.4	7.61	100	0.14	0.01 U	0.115	0.0739	0.011	85	72 J
2004/09/22 7:50	12	3640	96	10.5	7.62	73	0.25	0.018	0.248	0.0344	0.0079	24	20 J

Conventional Data Report

Nooksack R @ No Cedarville

01A120

Class: A
Rivermile: 30.8
Latitude: 48 50 30.5
Longitude: 122 17 32.3
Waterbody: WA-01-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 9:30	10.5	25300	56	12.32	7.44	2750 J	0.278	0.024	0.157	1.48	0.0068	2400 J	69 J
2003/11/19 9:25	4.5	25200	47	12.62	7.33 J	2070 J	0.307	0.013	0.164	0.968	0.0069	1100	46 J
2003/12/17 9:25	4.8	3040	83	12.46	7.48	117	0.287	0.01 U	0.213	0.0685	0.0057	75	3 J
2004/01/28 9:35	5.4	4270	72	12.56	7.53	132	0.374	0.01 U	0.318	0.0531	0.0054	50	24
2004/02/25 9:00	4.6	2240	96	12.7	7.78	12	0.262	0.01 U	0.236	0.0104	0.0044	7.7	1
2004/03/23 8:45	7.2	3140	77	11.9	7.7	45	0.2	0.029	0.161	0.019	0.003 U	18	5 J
2004/04/20 8:20	7.8	2560	74	11.6	7.78	40	0.17	0.01 U	0.121	0.0075	0.003 U	7.1	2 J
2004/05/19 8:50	9.8	3610	64	11.4	7.66	79	0.099	0.01 U	0.061	0.0312		28	33 J
2004/06/23 8:05	11.2	3810	60	10.8	7.44	108	0.067	0.01 U	0.044	0.0658	0.0034	70	31
2004/07/21 8:15	11.7	1920	75	10.8	7.64	34	0.06	0.01 U	0.047	0.0216	0.003 U	20	17 J
2004/08/18 8:40	12.5	1540	71	10.8	7.63	145	0.079	0.01 U	0.049	0.0878	0.0036	100	19 J
2004/09/22 9:00	10.1	3720	87	11.01	7.69	43	0.17	0.01 U	0.161	0.0229	0.0041	21	9 J

Conventional Data Report

Skagit R nr Mount Vernon

03A060

Class: A
Rivermile: 15.9
Latitude: 48 26 43.0
Longitude: 122 20 02.0
Waterbody: WA-03-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 16:00		46900	39	11.01	7.21	211	0.13	0.01 U	0.083	0.164	0.0034	100 J	29
	LLT quit working (got wet from rain).												
2003/11/18 15:30	6.2	39900	45	12.02	7.25	841	0.17	0.01 U	0.104	0.434	0.0041	260	
2003/12/16 15:55	5.9	14600	64	11.95	7.31	67	0.2	0.011	0.133	0.0167	0.0045	20	7
2004/01/27 15:40	4.8	17700		12.66		27	0.18	0.01 U	0.136	0.0139	0.0038	14	5
	pH probe problem. Forgot to record conductivity measurement.												
2004/02/24 15:35	5.8	15100	70	12.4	7.62	18	0.12	0.01 U	0.101	0.0069	0.003 U	4.4	1 U
2004/03/22 15:40	8.4	11900	66	11.9	7.48	12	0.16	0.013	0.123	0.0088	0.003 U	5.4	1
2004/04/19 15:00	9.9	12000	60	11.2	7.61	21	0.14	0.01	0.087	0.0105	0.0032	5	1
2004/05/18 15:35	13	13900	48	10.9	7.6	52	0.11	0.011	0.057	0.0084	0.003 U	5.8	4
2004/06/22 15:55	13.8	21500	43	10.7	7.56	29	0.068	0.01 U	0.034	0.0152	0.003 U	10	9
2004/07/20 13:40	15.9	11500	51	10.19	7.56	30	0.064	0.01 U	0.037	0.0124	0.0032	7.9	4
2004/08/17 15:30	17.5	11200	50	10	7.63	135	0.064	0.01 U	0.028	0.0387	0.003 U	35	13
2004/09/21 15:50	12.2	18000	51	10.8	7.39	88	0.12	0.01 U	0.094	0.0165	0.0037	11	4

Conventional Data Report

Samish R nr Burlington

03B050

Class: A
Rivermile: 10.4
Latitude: 48 32 45.4
Longitude: 122 20 13.0
Waterbody: WA-03-2010

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2003/10/20 15:25		642	70	9.89	7.1	199	0.844	0.019	0.79	0.165	0.0093	100 J	560
	LLT quit working (got wet from rain).												
2003/11/18 14:55	6.8	2930	47	11.11	6.68	311	1.26	0.013	1.04	0.195	0.013	190	
2003/12/16 15:20	6.7	251	71	12.06	7.26	10	0.864	0.017	0.704	0.0155	0.0067	7.3	31
2004/01/27 15:05	5.9	790	57	12.66		59	1.19	0.012	1.07	0.0261	0.0055	26	33 J
	pH probe problem.												
2004/02/24 15:00	7.9	203	77	11.8	7.5	5	0.887	0.01 U	0.815	0.0148	0.0058	4.6	1
2004/03/22 14:00	10.4	223	73	11.5	7.52	7	0.808	0.01 U	0.72	0.0165	0.0041	4.8	1
2004/04/19 14:20	11	108	88	11.2	7.76	5	0.808	0.012	0.672	0.0171	0.0063	3.3	36
2004/05/18 15:05	15.3	57	103	10.4	7.76	3	0.843	0.011	0.711	0.016	0.0071	2	49
2004/06/22 15:00	16.9	74	99	9.8	7.75	2	0.719	0.01 U	0.607	0.0137	0.0071	2.2	41
2004/07/20 15:10	17	34	116	10.1	8.06	2	0.779	0.01 U	0.692	0.0095	0.0054	0.7	150
2004/08/17 14:55	17.3	23	122	9.8	7.8	2	0.793	0.01 U	0.736	0.0118	0.0073	0.9	120
	Swimmers upstream of sample location.												
2004/09/21 15:10	12.3	141	82	10.3	7.4	10	0.576	0.012	0.436	0.0221	0.0069	5.7	400

Conventional Data Report

Skagit R @ Marblemount

04A100

Class: AA
Rivermile: 78.2
Latitude: 48 31 37.0
Longitude: 121 25 40.0
Waterbody: WA-04-1090

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 10:00		48500											
The Skaget Valley roads were flooded and the station could not be reached.													
2003/11/19 11:25	4.8	18100	30	12.32		99	0.11	0.01 U	0.062	0.0284	0.003	39	4
pH probe quit working.													
2003/12/17 11:20	5.9	6760	55	12.36	7.35	3	0.087	0.01 U	0.051	0.0035	0.003 U	3.9	1 U
2004/01/28 11:30	4.7	8430	62	12.76	7.56	2	0.089	0.01 U	0.055	0.0039	0.003 U	3.3	2
2004/02/25 11:00	4.4	8360	66	12.7	7.76	2	0.063	0.01 U	0.053	0.0024	0.003 U	1.3	1 U
2004/03/23 10:45	5.7	5150	51	12.5	7.64	2	0.093	0.01 U	0.066	0.0033	0.003 U	3	1 U
2004/04/20 10:05	6.7	4760	51	12.2	7.7	1	0.099	0.01 U	0.066	0.0018	0.003 U	1.2	1 J
2004/05/19 10:45	8	5350	36	12.4	7.51	3	0.094	0.01 U	0.065	0.0018		1.7	4
2004/06/23 10:25	10	11100	42	11.6	7.42	16	0.069	0.01 U	0.043	0.0046	0.003 U	3.3	2
2004/07/21 12:10	11.5	5580	49	11.3	7.63	2	0.062	0.01 U	0.046	0.002	0.003 U	1.6	1
2004/08/18 11:05	12.3	4700	47	11.2	7.65	2	0.063	0.01 U	0.047	0.0021	0.003 U	1.7	3
2004/09/22 11:25	10.2	6510	47	11.31	7.43	17	0.076	0.01 U	0.06	0.0056	0.003 U	4.2	3
pH was 7.43 aft recal @11.8*C													

Conventional Data Report

Stillaguamish R nr Silvana

05A070

Class: A
Rivermile: 11.1
Latitude: 48 11 49.5
Longitude: 122 12 32.0
Waterbody: WA-05-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 14:05	12.2	67502	30	11.11	7.12	1050 J	0.316	0.017	0.2	0.466	0.0074	800 J	200 J
Sampling was done on Day 3.													
2003/11/18 14:10	5.6	36119	26	12.62	7.09	1650 J	0.154	0.017	0.062	0.895	0.006	1300	
2003/12/17 14:10	5.2	6407	39	12.76	7.12	215	0.258	0.01 U	0.176	0.109	0.0314	140	17
2004/01/28 14:30	5.2	10039	42	12.66	7.17	1070	0.299	0.013	0.217	0.789	0.0067	750	22 J
2004/02/25 15:10	5.4	2168	60	12.1	7.44	17	0.314	0.01 U	0.291	0.0197	0.0063	18	4 J
2004/03/22 13:15	9.1	2666	52	11.8	7.41	19	0.23	0.01 U	0.193	0.0209	0.0037	15	2
2004/04/19 13:30	10	1943	53	11.8	7.52	12	0.18	0.01 U	0.124	0.0146	0.004	11	1 U
2004/05/18 14:20	14.5	1927	52	11.2	7.59	18	0.12	0.01 U	0.079	0.0156	0.0037	16	38
2004/06/22 14:10	18.2	1589	58	9.69	7.55	8	0.154	0.01 U	0.101	0.0118	0.0059	5.2	7
2004/07/20 14:20	21.7	574	85	11.1	8.63	3	0.071	0.01 U	0.01 U	0.0066	0.003 U	1.4	12
2004/08/17 13:35	22.2	328	103	9.2	7.81	7	0.16	0.01 U	0.087	0.0186	0.011	3.4	18
Air bubble was entrained in DO sample so DO moved from split sample.													
2004/09/21 14:00	11.5	3058	51	10.9	7.42	30	0.24	0.01 U	0.212	0.0191	0.0051	14	15

Conventional Data Report

SF Stillaguamish @ Arlington

05A090

Class: A
Rivermile: 18.2
Latitude: 48 12 03.2
Longitude: 122 07 04.0
Waterbody: WA-05-1040

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 14:15			38	11.71	7.18	1460 J	0.21	0.01 U	0.159	0.867	0.0048	400 J	380
	LLT quit working (got wet from rain).												
2003/11/18 13:30	5.5		23	13.13	7	1390 J	0.134	0.018	0.054	0.92	0.0063	1200	
2003/12/16 14:30	5.4		48	12.86	7.27	54	0.363	0.01 U	0.273	0.0357	0.0048	40	3
2004/01/27 14:00	4.8		43	12.96		136	0.368	0.01 U	0.302	0.0938	0.0046	130	9
	pH probe problem												
2004/02/24 13:55	6.1		53	12.6	7.57	29	0.32	0.01 U	0.308	0.0284	0.0043	35	2
2004/03/22 12:30	9.3		44	11.9	7.54	27	0.2	0.01 U	0.179	0.0226	0.003 U	17	2
2004/04/19 12:55	9.8		45	11.5	7.63	17	0.18	0.01 U	0.126	0.0167	0.003 U	17	4
2004/05/18 13:40	14.3		42	10.8	7.56	58	0.11	0.01 U	0.072	0.0361	0.003 U	50	31
2004/06/22 13:40	18.5		48	9.8	7.62	7	0.134	0.01 U	0.088	0.006	0.0034	3.8	8
2004/07/20 13:40	21.3		73	9.19	7.92	2	0.13	0.01 U	0.07	0.0028	0.003 U	1.1	19
2004/08/17 13:05	22.5		90	9.1	7.94	2	0.19	0.01 U	0.11	0.0044	0.003 U	1.3	25
	Dog & Swimmers upstream of sample site.												
2004/09/21 13:35	11.7		45	11.01	7.42	20	0.21	0.01 U	0.18	0.0151	0.004	12	11

Conventional Data Report

SF Stillaguamish nr Granite Falls

05A110

Class: AA
Rivermile: 34.6
Latitude: 48 06 10.5
Longitude: 121 57 07.0
Waterbody: WA-05-1050

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2003/10/20 13:20	11.1		27	12.02	7.28	3470 J	0.16	0.019	0.089	2.19	0.0065	1800 J	130
2003/11/18 12:20	5.2		20	13.53	7.07	2290 J	0.066	0.019	0.027	0.96	0.0051	1100	
2003/12/16 13:35	4.9		43	12.86	7.33	894	0.2	0.019	0.097	0.65	0.0065	850	6
2004/01/27 13:15	3.8		36	13.56		247	0.181	0.01 U	0.131	0.144	0.004	230	7
	pH probe problem												
2004/02/24 12:50	5		44	13	7.73	46	0.13	0.015	0.108	0.0293	0.0037	32	1
2004/03/22 11:25	6.7		37	12.6	7.47	67	0.1	0.01 U	0.069	0.0376	0.003 U	30	1
2004/04/19 12:00	7.6		37	12.1	7.57	4	0.085	0.01 U	0.047	0.0261	0.003 U	27	5
2004/05/18 12:50	10.3		31	11.5	7.53	129	0.068	0.01 U	0.043	0.0565	0.0035	70	36
2004/06/22 12:30	14.8		38	10.45	7.65	9	0.067	0.01 U	0.048	0.0065	0.0034	5.6	1
2004/07/20 12:45	19.1		59	9.4	7.99	2	0.044	0.01 U	0.01 U	0.0034	0.003 U	1.7	10 J
2004/08/17 12:10	21.1		74	9.3	8.25	2	0.081	0.01 U	0.014	0.0061	0.0039	1	36
2004/09/21 12:30	9.9		39	11.61	7.45	32	0.12	0.01 U	0.109	0.0238	0.0041	21	2

Conventional Data Report

NF Stillaguamish @ Cicero

05B070

Class: A
Rivermile: 9.5
Latitude: 48 16 03.0
Longitude: 122 00 42.5
Waterbody: WA-05-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 13:20	11.7	26400	31	11.41	7.09	1570 J	0.32	0.084	0.211	0.822	0.0064	900 J	140
2003/11/19 14:20	4.9	15300	32	12.22		649	0.24	0.01 U	0.187	0.326	0.0054	370	9
pH probe quit working.													
2003/12/17 13:05	5.1	3130	43	12.86	7.25	77	0.24	0.01 U	0.171	0.0463	0.0054	45	1
2004/01/28 13:20	4.7	5210	35	13.06	7.45	512	0.278	0.035	0.199	0.459	0.0054	260	14
2004/02/25 14:15	5.1	1450	59	12.4	7.6	13	0.221	0.01 U	0.191	0.0166	0.0064	11	2
2004/03/23 12:30	7.7	2140	44	12.2	7.47	25	0.17	0.01 U	0.106	0.0205	0.0036	17	1
2004/04/20 12:05	8.8	1490	45	12	7.63	16	0.12	0.01 U	0.066	0.017	0.0041	13	3
2004/05/19 12:50	11.8	1350	46	11.4	7.62	14	0.104	0.01 U	0.049	0.0104		8.2	25
2004/06/23 13:00	14.9	1060	56	10.75	7.66	9	0.093	0.01 U	0.058	0.0105	0.005	5.3	19
2004/07/21 14:30	19.1	399	84	10.3	8.43	4	0.046	0.01 U	0.01 U	0.0077	0.0046	1.9	4
2004/08/18 12:50	19.8	234	100	10	8.31	5	0.1	0.01 U	0.034	0.0132	0.0075	2.9	23
2004/09/22 14:15	11.3	1610	57	10.9	7.47	20	0.21	0.01 U	0.185	0.019	0.0057	14	6

Conventional Data Report

NF Stillaguamish nr Darrington

05B110

Class: A
Rivermile: 30
Latitude: 48 16 48.7
Longitude: 121 42 04.2
Waterbody: WA-05-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 11:50	11.1	9140	23	11.51	6.89	487 J	0.276	0.01 U	0.191	0.3	0.0044	310 J	69 J
2003/11/19 13:15	4.5	4260	26	12.22		262	0.18	0.01 U	0.152	0.0601	0.0038	110	6
pH probe quit working.													
2003/12/17 12:30	5	789	38	12.46	7.09	9	0.19	0.01 U	0.132	0.0086	0.0048	5.9	2
2004/01/28 12:40	4.7	942	36	12.56	7.24	28	0.19	0.01 U	0.141	0.0129	0.004	11	3
2004/02/25 13:40	4.7	342	47	12.4	7.43	1	0.13	0.01 U	0.124	0.0045	0.0042	0.8	1 U
2004/03/23 11:50	7	648	35	12.1	7.42	4	0.1	0.01 U	0.068	0.0045	0.003 U	2.1	2
2004/04/20 11:30	7.8	350	36		7.49	1	0.1	0.01 U	0.058	0.0033	0.003 U	0.9	1 U
No DO result - air bublle was entrained in sample.													
2004/05/19 11:55	9.7	375	32	11.4	7.43	2	0.086	0.01 U	0.042	0.0032		1	8
2004/06/23 12:00	13.1		38	10.5	7.41	3	0.085	0.01 U	0.054	0.0033	0.0035	0.6	12
2004/07/21 13:50	17.5	114	63	10.3	7.97	1 U	0.097	0.01 U	0.057	0.004	0.004	0.5 U	1
2004/08/18 12:10	16.7	74.2	80	10.8	8.24	1	0.1	0.01 U	0.064	0.0051	0.0051	0.5 U	11
2004/09/22 13:25	10.7	449	45	10.8	7.4	2	0.13	0.01 U	0.133	0.0041	0.0032	1.2	3

Conventional Data Report

Snohomish R @ Snohomish

07A090

Class: A
Rivermile: 12.7
Latitude: 47 54 38.7
Longitude: 122 05 51.2
Waterbody: WA-07-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 10:20	11	7650	37	10.8	6.99	16	0.354	0.044	0.238	0.0251	0.0075	7.9	150
2003/11/18 9:45	6.3	36660	30	11.91	7.05	260	0.22	0.01 U	0.166	0.113	0.0046 J	110 J	
2003/12/16 9:45	5.6	9482	44	12.16	7.14	7	0.404	0.01 U	0.32	0.011	0.005	8.1	6 J
2004/01/27 9:40	4.6	12900	44	12.46	7.44	8	0.533	0.01 U	0.454	0.0106	0.0049	7.7	4 J
2004/02/24 9:35	5.9	6124	52	12.1	7.32	4	0.421	0.01	0.364	0.0094	0.0046	3.3	2 J
2004/03/22 9:00	7.8	6833	48	11.8	7.38	3	0.285	0.01 U	0.233	0.0086	0.0032	2.5	6 J
2004/04/19 9:25	8.8	7354	38	11.1	7.4	4	0.19	0.01 U	0.143	0.0056	0.0043	2.1	1 UJ
2004/05/18 9:45	10.9	8600	34	11.2	7.39	4	0.13	0.01 U	0.089	0.005	0.003 U	2	26 J
2004/06/22 9:10	15.3	7580	36	9.8	7.53	5	0.139	0.01 U	0.088	0.0055	0.0038	2.7	15 J
2004/07/20 9:45	19.4	2862	52	8.8	7.5	2	0.17	0.01 U	0.118	0.007	0.0035	1.3	21 J
2004/08/17 9:15	21	1677	67	8.6	7.42	4	0.21	0.01 U	0.144	0.0102	0.0047	3	43 J
2004/09/21 9:35	11.5	8737	38	10.7	7.38	9	0.23	0.01 U	0.176	0.0089	0.005	6.1	19 J

Conventional Data Report

Skykomish R @ Monroe

07C070

Class: A
Rivermile: 25.6
Latitude: 47 51 08.0
Longitude: 121 57 28.8
Waterbody: WA-07-1160

Date/Time		Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20	11:50	11	5557	31	10.9	7.11	9	0.25	0.021	0.176	0.0107	0.0042	5.5	73
2003/11/18	11:00		49143											
		No samples collected because part of Woods Cr. had flooded into a high water channel that disgharged above the Skykomish R. sample site.												
2003/12/16	11:30	5.2	6254	34	12.56	7.18	5	0.23	0.01 U	0.169	0.0065	0.0032	8.6	5
2004/01/27	11:35	4.3	9782	33	13.06		6	0.273	0.01 U	0.229	0.0074	0.003 U	7.4	4
		pH probe problem												
2004/02/24	11:35	5.4	3860	39	12.7	7.27	1	0.193	0.01 U	0.173	0.0034	0.003 U	2.8	1 U
2004/03/22	10:20	7.6	4744	35	12.3	7.35	1 U	0.15	0.01 U	0.113	0.0029	0.003 U	1.9	1 U
2004/04/19	10:45	8	6311	31	11.9	7.46	17	0.12	0.01 U	0.078	0.0028	0.003 U	1.3	1 U
2004/05/18	11:20	9.9	6767	27	11.7	7.24	3	0.08	0.01 U	0.042	0.0027	0.003 U	1.7	5
2004/06/22	11:10	13.8	5603	28	10.6	7.35	2	0.073	0.01 U	0.033	0.0021	0.003 U	1.6	2
2004/07/20	11:25	17.2	2158	39	11.1	7.54	2	0.076	0.01 U	0.041	0.0019	0.003 U	0.6	5 J
2004/08/17	10:35	19	1367	45	9.4	7.46	2	0.12	0.01 U	0.058	0.003	0.003 U	1	12
2004/09/21	11:25	11.2	5442	33	11.11	7.38	2	0.15	0.01 U	0.131	0.0033	0.003 U	1.5	7

Conventional Data Report

Snoqualmie R nr Monroe

07D050

Class: A
Rivermile: 2.7
Latitude: 47 48 14.3
Longitude: 122 00 06.0
Waterbody: WA-07-1060

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 11:10	11.1	2790	36	10.7	6.99	10	0.23	0.01 U	0.244	0.0118	0.004	6.9	230
2003/11/18 10:30	6.2	15275	35	11.71	7.03	11	0.262	0.01 U	0.219	0.0105	0.0036 J	11 J	
2003/12/16 10:50	5.7	3676	49	12.16	7.02	9	0.469	0.01 U	0.383	0.0115	0.0053	7.1	3 U
2004/01/27 10:25	5.2	5227	44	12.36	7.05	14	0.546	0.01 U	0.461	0.0114	0.0054	7.6	10 J
2004/02/24 10:25	6.3	2316	55	11.7	7.03	6	0.414	0.011	0.363	0.0087	0.0042	3.6	1
2004/03/22 9:45	8.2	2564	48	11.7	7.24	4	0.298	0.01 U	0.253	0.0096	0.0031	3.2	1 UJ
2004/04/19 10:00	10.1	2652	41	11.2	7.3	5	0.22	0.01 U	0.168	0.0068	0.0038	3	5
2004/05/18 10:30	12	2965	35	10.8	7.22	4	0.17	0.01 U	0.117	0.006	0.003 U	2.3	25
2004/06/22 9:50	16.5	2664	40	9.69	7.25	8	0.174	0.011	0.114	0.008	0.0046	3.6	17 J
2004/07/20 10:35	20.3		59	8.8	7.42	3	0.2	0.013	0.142	0.0097	0.005	1.7	24 J
	Too windy for RP.												
2004/08/17 9:55	21.5	563	70	8.69	7.46	3	0.24	0.01	0.163	0.0107	0.0058	1.6	40
2004/09/21 10:15	11.8	3742	37	10.5	7.22	11	0.25	0.01 U	0.197	0.0113	0.0061	5.9	31

Conventional Data Report

Snoqualmie R @ Snoqualmie

07D130

Class: A
Rivermile: 42.3
Latitude: 47 31 37.5
Longitude: 121 48 39.3
Waterbody: WA-07-1100

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/19 9:40	10.1	1920	30	11.11	6.97	6	0.25	0.01 U	0.214	0.0061	0.003 U	3.9	17 J
2003/11/17 10:05	5.5	3100	27	11.91	7.04	17	0.23	0.01 U	0.178	0.0102	0.003 U	11	13
2003/12/15 9:50	5.1	2300	36	12.56	7.17	10	0.31	0.01 U	0.256	0.0104	0.003 U	11	7 J
2004/01/26 9:40	4.3	2730	34	12.56	7.09	6	0.285	0.01 U	0.244	0.0082	0.003 U	6.1	8
2004/02/23 10:35	5.6	1330	45	12.5	7.37	2	0.272	0.01 U	0.253	0.0035	0.003 U	1.5	6
2004/03/24 10:00	6.3	2630	30	11.7	7.38	6	0.18	0.01 U	0.145	0.0075	0.003 U	3.6	5
2004/04/21 10:30	7.2	1940	30	11.8	7.4	3	0.16	0.01 U	0.119	0.0038	0.003 U	1.9	8 J
2004/05/17 10:20	8.6	2040	26	12	7.4	3	0.13	0.01 U	0.084	0.0031	0.003 U	1.4	15
2004/06/21 10:50	12.8	2070	30	10.5	7.31	4	0.123	0.01 U	0.086	0.0045	0.0035	2.1	8
2004/07/19 10:35	16.2	703	47	9.4	7.49	2	0.15	0.01 U	0.111	0.0033	0.003 U	1	87
2004/08/16 10:05	17	430	59	8.69	7.48	3	0.22	0.01 U	0.165	0.007	0.004	1.4	80 J
2004/09/20 10:55	10.3	2910	28	11.11	7.28	5	0.17	0.01 U	0.15	0.0049	0.003 U	2.4	20

Conventional Data Report

Cedar R @ Logan St/Renton

08C070

Class: A
Rivermile: 1
Latitude: 47 29 09.0
Longitude: 122 12 28.0
Waterbody: WA-08-1143

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/19 11:20	12.2	408	71	11.21	7.63	14	0.277	0.016	0.198	0.0109	0.0088	3	120
2003/11/17 11:25	7.5	466	65	11.51	7.4	3	0.272	0.01 U	0.194	0.0091	0.0065	1.2	40
2003/12/15 11:40	6.3	981	54	12.26	7.48	3	0.423	0.01 U	0.342	0.008	0.0065	1.8	4
Several spawned out - dead salmon.													
2004/01/26 11:25	6.4	735	63	12.36	7.46	4	0.489	0.01 U	0.436	0.0091	0.0052	1.5	8
2004/02/23 12:40	7.9	552	72	12.4	7.66	3	0.361	0.01 U	0.35	0.0077	0.0069	0.9	5
2004/03/24 11:25	9	639	63	11.9	7.87	3	0.276	0.01 U	0.231	0.0081	0.0044	1.2	23
2004/04/21 12:35	10.8	381	79	12.1	8.07	3	0.25	0.01 U	0.199	0.0072	0.0062	1.1	12 J
2004/05/17 12:15	13.3	390	76	12.7	8.94	3	0.15	0.01 U	0.087	0.0052	0.0044	0.8	20
Lots of Suckers in stream.													
2004/06/21 12:50	16.4	451	82	10.6	7.97	3	0.245	0.01 U	0.174	0.0095	0.0075	1.5	140
2004/07/19 13:15	17.6	326	94	10.8	8.32	3	0.22	0.01 U	0.165	0.0111	0.0091	0.9	560
2004/08/16 11:50	17.3	303	98	11.8	8.57	7	0.16	0.01 U	0.104	0.0082	0.0062	1.9	200
2004/09/20 13:15	13.4	928	56	10.8	7.6	7	0.16	0.01 U	0.133	0.0082	0.006	2.2	84
pH was 7.60 @ 14*C aft recal (7.81 before)													

Conventional Data Report

Cedar R nr Landsburg

08C110

Class: AA
Rivermile: 25.1
Latitude: 47 23 29.3
Longitude: 121 55 09.5
Waterbody: WA-08-1150

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/19 8:50	11.1	408	54	10.6	7.4	1	0.17	0.01 U	0.128	0.0046	0.0035	0.6	2 J
2003/11/17 9:10	6.8	466	48	11.41	7.29	1	0.2	0.01 U	0.158	0.0037	0.0039	0.7	1 UJ
2003/12/15 9:10		988											
	No access - road blocked by downed trees.												
2004/01/26 9:10		735											
	No access due to blown down trees.												
2004/02/23 9:40	7.2	552	56	11.9	7.68	1 U	0.191	0.01 U	0.187	0.0047	0.005	0.5 U	1 U
	Had to hike road 56.1 due to downed trees from earlier wind storm												
2004/03/24 8:50	7.7	628	51	12.1	7.61	1 U	0.18	0.01 U	0.159	0.0041	0.0033	0.5 U	1 J
2004/04/21 9:35	9	386	62	11.2	7.68	1 U	0.2	0.01 U	0.175	0.0045	0.0051	0.5 U	1 J
2004/05/17 9:15	10.1	390	60	11.1	7.68	1 U	0.19	0.01 U	0.148	0.0043	0.0049	0.5 U	11 J
	No temperature correction needed.												
2004/06/21 9:25	11	456	65	11	7.22	1	0.167	0.01 U	0.145	0.0045	0.0059	0.5 U	5
2004/07/19 9:40	11.4	326	70	11	7.78	1 U	0.18	0.01 U	0.171	0.0063	0.0067	0.5 U	24 J
2004/08/16 9:15	11.8	303	70	10.9	7.75	1 U	0.2	0.01 U	0.172	0.0059	0.0058	0.5 U	4 J
2004/09/20 9:40	12.9	928	44	10.4	7.55	2	0.14	0.01 U	0.101	0.0041	0.004	0.7	4 J

Conventional Data Report

Laughing Jacobs Cr nr Mouth

08L070

Class: AA
Rivermile: 0.1
Latitude: 47 33 58.0
Longitude: 122 03 06.0
Waterbody: WA-08-1116

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2003/10/19 10:25	12.9	1.27	199	9.59	7.68	2	0.843	0.01 U	0.621	0.0354	0.023	1.9	150
2003/11/17 10:50	7.6	3.57	183	10.2	7.52	8	0.942	0.01 U	0.739	0.0273	0.018	6.1	180
2003/12/15 10:55	6.6	9.76	126	11.45	7.48	7	0.968	0.016	0.701	0.0295	0.018	4.4	15
One dead spawned out salmon. More flow in the tributary.													
2004/01/26 10:40	6.6	9.13	130	11.45	7.67	6	1.12	0.018	0.929	0.0328	0.016	7.2	63
The other tributary had 2 times the flow.													
2004/02/23 11:40	8.6	5	163	11	7.83	5	1.31	0.02	1.23	0.036	0.024	3	33
2004/03/24 10:50	10.4	3.72	147	10.8	7.81	12	1.16	0.014	0.962	0.0536	0.018	8	240
2004/04/21 11:10	10	0.8	183	10.5	7.8	12	1.28	0.018	1.16	0.043	0.026	6	43 J
2004/05/17 11:35	12	1.65	188	10	7.8	9	1.3	0.019	1.14	0.0507	0.0311	5.9	220
2004/06/21 12:00	13.8	0.35	203	9.5	7.82	7	1.37	0.023	1.23	0.0528	0.0322	3.8	150
No staff gage measurement													
2004/07/19 12:00	14.9	0.21	204	9.19	7.83	10	1.25	0.027	1.14	0.0543	0.0349	5	670 J
2004/08/16 11:00	15.3	0.14	209	9.3	7.88	8	1.25	0.024	1.12	0.0674	0.037	4.1	1500 J
2004/09/20 12:15	12.5	1	188	9.69	7.73	5	1.15	0.02	1.05	0.0488	0.0327	3.2	270

Conventional Data Report

SF Thornton Cr @ 107th Ave NE

08M070

Class: AA
Rivermile: 0.1
Latitude: 47 42 25.0
Longitude: 122 17 43.0
Waterbody: WA-08-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 8:50	14.5	96	86	10.1	7.46	117 J	0.698	0.054	0.411	0.0847	0.0334	22	5900 J
2003/11/18 8:35	8.6	120	45	11.01	7.03	832	0.453	0.071	0.255	0.389	0.0329 J	240 J	
staff was 1.7 @ 08:50.													
2003/12/16 8:10	8.4	7.8	166	11.65	7.7	6	1.14	0.057	0.866	0.0301	0.016	5	170 J
2004/01/27 8:25	8.2	2.6	246	11.55	8.1	1	1.76	0.01 U	1.63	0.0307	0.026	1.5	80 J
2004/02/24 8:15	8.3	14	224	11.7	8.05	103	1.55	0.059	1.35	0.11	0.025	38	540 J
2004/03/22 7:50	10.4	3	261	11.8	8.07	2	1.55	0.013	1.5	0.0185	0.0086	0.9	100 J
RP taken - Flow below staff gage.													
2004/04/19 7:50	10.3	3.5	253	10.7	8.04	6	1.82	0.018	1.52	0.0398	0.023	2.6	1200 J
Flow below Staff Gage. RP to be converted to gage measurement later.													
2004/05/18 8:35	12.5	2.3	257	10.5	8.12	2	1.74	0.01 U	1.55	0.0505	0.0394	1.6	100 J
Used Staff located under bridge													
2004/06/22 7:40	14.7	1.9	260	9.85	8.11	2	1.78	0.01 U	1.66	0.0516	0.0465	1.4	350 J
2004/07/20 8:30	16.1	2	259	9.5	8.23	5	1.73	0.01 U	1.6	0.0536	0.0433	2.7	430 J
2004/08/17 7:50	16.3	0.75	260	9.6	8.19	6	1.58	0.01 U	1.51	0.0479	0.041	3	470 J
2004/09/21 8:10	12.1	1.2	247	10.6	8.08	1	1.53	0.01 U	1.45	0.0417	0.036	0.6	210 J

Metals Data Report

SF Thornton Cr @ 107th Ave NE

08M070

Class: AA
Rivermile: 0.1
Latitude: 47 42 25.0
Longitude: 122 17 43.0
Waterbody: WA-08-1020

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/20	8:50		35.2	0.42	0.032	13	0.67	26.3	3.47	52.1	0.834	0.0037	0.79 J	4	120	14.2
2003/12/16	8:10		70.8	0.1 U	0.024	0.89	0.95	3.09	2.17	1.61	0.431	0.003	1.45	1	19	15.4
2004/02/24	8:15		95	0.14	0.02 U	6.15	0.91	10.4	2.42	16.2	0.19	0.016	1.49	3.11	53.5	7.9
2004/04/19	7:50		108	0.1 U	0.02 U	1	1.2	3.21	2.22	1.12	0.19	0.0027	1.47	1.33	10	7
2004/06/22	7:40		107	0.1 U	0.02 U	0.78	1.17	1.22	0.81	0.47	0.02 U	0.002 U	1.01	1.7	5 U	2.7
2004/08/17	7:50		109	0.1 U	0.02 U	0.68	1.3	4.29	0.92	0.57	0.057	0.002 U	0.97	1.72	5 U	3

Conventional Data Report

Green R @ Tukwila

09A080

Class: A
Rivermile: 12.4
Latitude: 47 27 56.0
Longitude: 122 14 47.9
Waterbody: WA-09-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/19 12:00	12.5	849	73	9.79	7.32	12	0.413	0.028	0.284	0.0445	0.015	6.5	58
	WWG still in temp. location												
2003/11/17 12:15	6.5	954	72	10.7	7.27	5	0.303	0.01 U	0.232	0.0272	0.015	4.1	11
	WWG still in temporary location.												
2003/12/15 12:30	5.7	1760	77	12.16	7.27	7	0.918	0.013	0.736	0.0412	0.0381	4.4	21
2004/01/26 12:35	5.4	2670	62	12.36	7.28	12	0.583	0.01 U	0.506	0.0263	0.014	5.4	8
2004/02/23 13:35	6.9	1250	99	11	7.35	6	0.634	0.014	0.566	0.0215	0.01	2.5	1
2004/03/24 12:15	9	1500	73	11.1	7.47	12	0.368	0.01 U	0.299	0.0215	0.007	3.5	27
2004/04/21 13:05	10.6	929	102	10.4	7.42	6	0.332	0.015	0.228	0.0245	0.0074	3	16 J
2004/05/17 13:20	13.5	777	100	10	7.37	8	0.295	0.02	0.195	0.0275	0.01	1.8	8
	No WWG												
2004/06/21 13:45	17.8	748	111	9.6	7.39	8	0.353	0.018	0.252	0.0258	0.0099	3	24
2004/07/19 14:05	19.8	358	154	9.19	7.51	8	0.368	0.032	0.252	0.035	0.0093	2.7	30
2004/08/16 12:40	20.2	230	174	8.4	7.43	7	0.418	0.063	0.247	0.055	0.014	3.2	88
2004/09/20 13:50	13.1	1710	60	9.89	7.45	15	0.23	0.01 U	0.169	0.0224	0.011	4	56

Conventional Data Report

Green R @ Kanaskat

09A190

Class: AA
Rivermile: 57.6
Latitude: 47 19 10.0
Longitude: 121 53 32.3
Waterbody: WA-09-1030

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/19 8:00	11.3	639	51	10.7	7.46	4	0.255	0.01 U	0.188	0.0086	0.005	2.6	3 J
2003/11/17 8:15	5.3	735	44	12.02	7.55	14	0.17	0.013	0.128	0.0129	0.0051	11	7 J
	Turbid.												
2003/12/15 8:35	5.9	1170	40	13.06	7.67	1	0.303	0.01 U	0.252	0.0076	0.0074	1.5	1 J
2004/01/26 8:30	4.2	1910	37	12.86	7.61	2	0.2	0.01 U	0.172	0.0083	0.0064	1.5	3 J
2004/02/23 8:50	5.4	745	44	12.8	7.54	1	0.193	0.01 U	0.182	0.0066	0.0067	0.9	1 UJ
2004/03/24 7:25	6.9	1130	39	11.9	7.37	1	0.11	0.01 U	0.078	0.0082	0.0051	0.8	1 J
2004/04/21 8:30	7.8	639	40	11.7	7.57	1	0.064	0.01 U	0.023	0.007	0.0058	1.1	1 UJ
2004/05/17 8:10	9.6	538	41	11.5	7.61	1	0.088	0.016	0.025	0.0061	0.006	1	2 J
2004/06/21 7:45	11.1	491	44	11	7.49	1 U	0.098	0.01 U	0.05	0.0039	0.0046	0.6	2 J
2004/07/19 8:35	14.9	200	52	10.4	7.54	1 U	0.11	0.011	0.052	0.0056	0.0055	0.5 U	24 J
2004/08/16 8:10	16.6	114	57	9.4	7.6	1	0.12	0.01 U	0.057	0.0052	0.0043	0.7	26 J
2004/09/20 8:20	12.4	1590	45	10.6	7.44	2	0.13	0.01 U	0.09	0.0058	0.0059	0.9	6 J

Conventional Data Report

Des Moines Cr nr Mouth

09C070

Class: AA
Rivermile: 0.1
Latitude: 47 24 21.0
Longitude: 122 19 35.0
Waterbody: WA-09-2000

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/19 15:05	14.2	6.3	169	10	7.68	5	0.765	0.026	0.454	0.047	0.026	2.5	100
2003/11/17 14:10	8	8.29	189	10.8	7.69	2	0.619	0.013	0.368	0.0305	0.014	1.4	52
2003/12/15 15:00	7.5	7.24	157	11.75	7.6	3	0.878	0.029	0.606	0.0321	0.021		28
2004/01/26 14:25	7.4	6.59	190	11.55	7.68	2	0.904	0.02	0.66	0.0316	0.014	2	13
2004/02/23 15:40	9.1	6.28	203	11.6	8.04	2	0.952	0.01 U	0.788	0.0287	0.02	1.7	15
2004/03/24 14:00	10.2	6.91	148	11.1	7.94	14	0.759	0.01 U	0.573	0.035	0.0085	7.3	300 J
2004/04/21 15:20	13.1	2.06	234	10.6	8.16	6	0.966	0.018	0.751	0.0494	0.0324	2.1	31 J
2004/05/17 15:15	14.8	1.75	240	9.9	7.98	2	1.07	0.01 U	0.838	0.0705	0.0517	1.1	980 J
2004/06/21 16:00	17.9	1.61	236	9.19	8.01	3	0.966	0.011	0.837	0.0628	0.056	1.7	410
2004/07/19 15:50	17.8	1.29	246	9.6	8.2	2	0.865	0.01 U	0.748	0.0656	0.0579	0.7	160
2004/08/16 15:00	17.5	0.77	248	9.4	8.14	2	0.831	0.01 U	0.786	0.0777	0.0683	1.3	610
2004/09/20 16:30	14.3	2.17	181	9.89	7.86	2	0.645	0.01 U	0.454	0.0323	0.018	1.2	57

Conventional Data Report

Miller Cr nr Mouth

09D070

Class: A
Rivermile: 0.4
Latitude: 47 26 44.1
Longitude: 122 21 03.6
Waterbody: WA-09-2005

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/19 14:10	14.4	4.16	143	9.69	7.53	5	0.788	0.01 U	0.57	0.0726	0.0438	5.2	800 J
2003/11/17 13:35	8.1	3.69	189	10.6	7.67	2	0.868	0.01 U	0.626	0.0475	0.0322	1.4	460
2003/12/15 14:00	7.5	7.05	177	11.95	7.78	2	1.3	0.014	1.01	0.0428	0.029	2.1	20
Dead salmon present. Do not recall if they looked spawned out.													
2004/01/26 13:55	7.2	8.09	190	11.85	7.77	4	1.44	0.01 U	1.22	0.0386	0.022	1.9	23
2004/02/23 15:00	8.8	5.22	216	11.5	8.18	8	1.5	0.01 U	1.33	0.0403	0.025	3.6	10
2004/03/24 13:30	10.6	14.51	160	10.9	7.89	60	0.978	0.03	0.713	0.0903	0.021	19	620 J
2004/04/21 14:40	12.4	2.45	250	10.8	8.28	3	1.45	0.014	1.22	0.0594	0.0362	3.2	46 J
2004/05/17 14:45	13.9	1.94	258	9.69	8	3	1.54	0.014	1.33	0.0778	0.0514	3	84 J
2004/06/21 15:10	17.7	1.49	261	9	8.05	2	1.54	0.021	1.39	0.0728	0.0621	1.7	230
2004/07/19 15:25	17.6	1.49	258	9.1	8.24	2	1.47	0.011	1.32	0.0809	0.0671	1.4	160
2004/08/16 14:30	17	1.93	244	9.3	8.15	2	1.18	0.01 U	1.14	0.0835	0.068	1.5	140
2004/09/20 15:35	14	2.1	231	9.79	7.99	3	0.958	0.01 U	0.816	0.07	0.0515	2.9	140

Metals Data Report

Miller Cr nr Mouth

09D070

Class: A
Rivermile: 0.4
Latitude: 47 26 44.1
Longitude: 122 21 03.6
Waterbody: WA-09-2005

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/19	14:10		58.3	0.1 U	0.02 U	1	0.89	4.31	3.43	2.06	0.582	0.0047	1.11 J	1.29	12	9.3
2003/12/15	14:00		74	0.1 U	0.02	0.57	0.86	2.94	2.71	0.51	0.254	0.0032	1.99	1.17	12	11.4
2004/02/23	15:00		89	0.1 U	0.02 U	1	0.87	2.18	1.76	1.16	0.273	0.0032	1.93	1.24	8.8	7.1
2004/04/21	14:40		110	0.1 U	0.02 U	0.7	1.1	1.93	1.54	0.49	0.11	0.002 U	1.59	1.3	8.4	3.4
2004/06/21	15:10		107	0.1 U	0.02 U	0.63	1.12	1.25	1	0.44	0.046	0.002 U	1.43	1.65	5 U	3.2
2004/08/16	14:30		100	0.1 U	0.02 U	0.55	1.1	1.33	1.14	0.34	0.08	0.002 U	1.3	1.88	5 U	2.4

Conventional Data Report

Longfellow Cr abv 24-25th St juctn

09J090

Class: A
Rivermile: 2
Latitude: 47 32 41.0
Longitude: 122 21 48.0
Waterbody: WA-09-1000

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/19 13:25	14.4	3.2	189	9.49	7.58	7	0.871	0.01 U	0.652	0.0527	0.0303	7.1	600
2003/11/17 13:00	9.2	1.5	276	10.1	7.74	2	1.03	0.01 U	0.875	0.0275	0.022	1.3	200
2003/12/15 13:15	9.2	1.7	271	10.95	7.67	2	1.31	0.024	1.06	0.0319	0.0398	2	14
2004/01/26 13:10	9	1.7	296	10.95	7.8	1	1.45	0.02	1.32	0.0335	0.018	1.6	4
2004/02/23 14:05	10.1	1.8	302	10.9	7.8	3	1.5	0.031	1.36	0.0356	0.022	3.1	42
2004/03/24 12:55	11	5.4	122	10.6	7.57	51	0.853	0.072	0.541	0.111	0.024	28	920 J
2004/04/21 13:50	13.4	1.3	291	10.8	8.02	2	1.09	0.01 U	0.934	0.0382	0.021	1.5	130 J
2004/05/17 14:10	14.7	1.3	302	9.8	7.93	27	1.37	0.025	1.2	0.0749	0.0366	13	310
2004/06/21 14:25	16.5	1.3	310	9.6	8	3	1.37	0.03	1.23	0.042	0.0349	1.8	120
2004/07/19 14:45	16.3	1.5	302	10.3	8.26	2	1.28	0.01 U	1.18	0.0418	0.0335	1.3	160
2004/08/16 13:35	15		307	9.3	7.96	1	1.24	0.056	1.22	0.0826	0.0607	0.9	730
2004/09/20 14:40	13.5	1	306	9.89	7.86	1	1.31	0.013	1.2	0.0464	0.032	1.1	280

Metals Data Report

Longfellow Cr abv 24-25th St juctn

09J090

Class: A
Rivermile: 2
Latitude: 47 32 41.0
Longitude: 122 21 48.0
Waterbody: WA-09-1000

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/19	13:25		81.2	0.1 U	0.02 U	1.2	1	3.67	2.52	2.22	0.355	0.0046	1.23 J	1.44	11	6.6
2003/12/15	13:15		125	0.1 U	0.021	0.6	1.1	1.88	1.47	0.35	0.14	0.002 U	2.05	1.27	10	8.5
2004/02/23	14:05		134	0.1 U	0.02 U	0.87	0.94	1.92	1.46	1.02	0.13	0.002 U	1.89	1.37	7.4	6.4
2004/04/21	13:50		129	0.1 U	0.02 U	0.58	1.1	1.6	1.21	0.34	0.075	0.002 U	1.27	1.48	6.6	5.5
2004/06/21	14:25		133	0.1 U	0.02 U	0.62	1.12	0.87	0.65	0.59	0.02 U	0.002 U	0.97	1.69	5 U	2.4
2004/08/16	13:35		134	0.1 U	0.02 U	0.5 U	1.1	0.73	0.59	0.26	0.039	0.002 U	1.23	1.84	5 U	1.8

Conventional Data Report

Puyallup R @ Meridian St

10A070

Class: A
Rivermile: 8.3
Latitude: 47 12 10.0
Longitude: 122 17 33.0
Waterbody: WA-10-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 15:06	11.9	10300	62	10.5	7.24	2890 J	0.24	0.012	0.182	1.58	0.011	2000 J	140
2003/11/18 14:49	8.4	3610	59	11.31	7.45	2690	0.19	0.01 U	0.146	1.34	0.012	230	270 J
2003/12/16 14:15	6	3190	74	11.91	7.32	51	0.756	0.025	0.594	0.0506	0.017	8.9	46
2004/01/27 12:56	4.7 muddy	2700	68	12.5	7.43	26	0.587	0.015	0.512	0.031	0.016	4.2	3
2004/02/24 14:32	7.2	1990	82	11.9	7.46	9	0.449	0.024	0.373	0.029	0.018	2.9	1
2004/03/23 12:15	9.5	2540	67	11.7	7.62	19	0.25	0.016	0.173	0.0275	0.011	2.9	9
2004/04/20 13:40	10	2160	72	11.81	7.79	17	0.19	0.013	0.113	0.0271	0.014	2.5	4
2004/05/18 13:55	12.3	2640	64	10.9	7.55	45	0.14	0.011	0.071	0.0386	0.01	5.7	35
2004/06/22 15:05	14.6	3630	50	10.19	7.48	69	0.108	0.01 U	0.056	0.0688	0.013	35	15
2004/07/20 13:54	14.4	2600	52	10.6	7.43	619	0.095	0.048	0.071	0.343	0.018	310 J	41
2004/08/17 11:15	14.1	2370	53	10.25	7.24	826	0.1	0.01 U	0.062	0.421	0.019	390	80
2004/09/21 13:45	11.7	3020	69	10.8	7.45	92	0.2	0.012	0.147	0.0388	0.015	8.3	16

Conventional Data Report

Puyallup R. nr Sumner

10A080

Class: A
Rivermile: 12.2
Latitude: 47 11 07.0
Longitude: 122 13 42.0
Waterbody: WA-10-1050

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 15:54	10.1	10100	56	11.51	7.18	3660 J	0.24	0.012	0.17	2.22	0.013	2500 J	110
2003/11/18 15:24	8.2	3590	51	11.51	7.41	2990	0.19	0.01 U	0.124	1.57	0.0092	450 J	210 J
2003/12/16 14:49	6.1	2120	65	12.02	7.43	55	0.588	0.01 U	0.471	0.0239	0.012	5.5	6
2004/01/27 11:50	4.4	2720	63	12.5	7.42	13	0.476	0.01 U	0.411	0.0186	0.01	3.6	3
	muddy												
2004/02/24 13:12	7.2	2000	77	11.9	7.59	6	0.399	0.01 U	0.347	0.0171	0.012	2	1 U
2004/03/23 10:50	8.9	2490	64	11.7	7.09	17	0.23	0.01 U	0.17	0.0149	0.0057	3	7
2004/04/20 11:47	9.8	2160	74	12.12	7.45	6	0.19	0.01 U	0.127	0.014	0.0074	2.2	8
2004/05/18 12:05	11.8	2600	63	11.2	7.57	12	0.15	0.01 U	0.082	0.0162	0.0081	2.6	3
2004/06/22 13:38	13.4	3660	45	10.5	7.28	89	0.105	0.01 U	0.059	0.0783	0.0094	55	13
2004/07/20 12:08	12.2	2640	45	10.9	7.35	789	0.078	0.012	0.068	0.488	0.011	400 J	20
2004/08/17 9:30	11.4	2420	46	11.05	7.22	926 J	0.072	0.01 U	0.041	0.457	0.011	450	34 J
2004/09/21 12:00	10.2	3030	62	11.11	7.42	85 J	0.16	0.01 U	0.151	0.0292	0.0099	6.8	15
	Grit in samples												

Conventional Data Report

White River @ R Street

10C095

Class: A
Rivermile: 8
Latitude: 47 16 31.0
Longitude: 122 12 22.0
Waterbody: WA-10-1030

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 14:11	11.6	3580	67	10.7	7.24	3250 J	0.327	0.018	0.227	2.04	0.013	3000 J	96
2003/11/18 14:03	9.4	412	89	11.31	7.65	109	0.507	0.041	0.404	0.136	0.052	28	780
2003/12/16 13:27	6.4	285	102	12.02	7.5	10	1.87	0.032	1.52	0.0515	0.0411	2.3	46
2004/01/27 12:15	5	957	70	12.6	7.15	77	0.67	0.01 U	0.615	0.0224	0.018	2.9	1
	muddy												
2004/02/24 13:40	6.9	1000	73	12.1	7.52	9	0.329	0.01 U	0.301	0.0191	0.015	2	1
	Clear water												
2004/03/23 11:28	9.5	1380	62	11.9	7.83	51	0.14	0.01 U	0.09	0.0221	0.0075	3.2	2
2004/04/20 13:00	9.7	1450	63	11.91	7.47	44	0.095	0.01 U	0.044	0.0182	0.0098	2.2	1
2004/05/18 13:05	12.1	1550	58	10.9	7.66	63	0.083	0.01 U	0.038	0.0221	0.0099	3.9	1
2004/06/22 14:18	14.5	1810	49	10.19	7.58	109	0.087	0.01 U	0.044	0.0839	0.013	45 J	7 J
2004/07/20 12:52	16	1130	55	9.9	7.59	477	0.077	0.02	0.063	0.332	0.019	270 J	29
2004/08/17 10:20	16.3	1040	54	9.94	7.4	1940 J	0.074	0.01 U	0.046	0.518	0.018	550	66
2004/09/21 12:45	12	844	70	11.01	7.62	1300 J	0.12	0.01 U	0.097	0.0759	0.013	9.2	6
	Grit in samples. RP location uncertain (see flow book). RP correction should be available after Oct 04.												

Conventional Data Report

Nisqually R @ Nisqually

11A070

Class: A
Rivermile: 3.4
Latitude: 47 03 43.0
Longitude: 122 41 42.0
Waterbody: WA-11-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 17:07	14.6	918	70	9.69	7.47	36	0.22	0.01	0.181	0.0437	0.0093	45	27
2003/11/18 16:16	10.2	1043	68	10.8	7.22	46	0.23	0.01 U	0.18	0.0719	0.0091	80	37
2003/12/16 15:52	6.4	2965	54	11.91	6.8	18	0.35	0.01 U	0.265	0.032	0.0097	28	6
muddy water													
2004/01/27 13:35	5.2	2242	64	12.6	7.11	10	0.451	0.01 U	0.377	0.0207	0.01	13	6
muddy													
2004/02/24 15:23	7	1501	63	12.1	7.03	4	0.433	0.01 U	0.378	0.0149	0.0087	6	1
2004/03/23 13:03	8.6	1418	63	12.1	7.51	5	0.361	0.01 U	0.296	0.0144	0.0058	4.9	1
2004/04/20 14:27	9.6	1296	65	12.02	7.42	5	0.318	0.01 U	0.23	0.0133	0.0074	4	6
2004/05/18 14:50	13.4	1247	66	11.3	7.83	1 U	0.19	0.01 U	0.11	0.0108	0.0064	2.7	1
2004/06/22 15:53	16	1109	62	10.6	7.74	7	0.166	0.01 U	0.095	0.0108	0.0079	4.4	29
2004/07/20 11:05	15	1115	65	10.19	7.82	7	0.13	0.01 U	0.088	0.0106	0.0062	3	21
2004/08/17 12:05	16.4	888	68	10.35	7.69	5	0.14	0.01 U	0.087	0.0104	0.0063	2.9	17
2004/09/21 14:35	13.9	1147	64	10.4	7.53	21	0.17	0.014	0.132	0.0387	0.0342	26	21

Conventional Data Report

Deschutes R @ E St Bridge

13A060

Class: A
Rivermile: 0.6
Latitude: 47 00 43.0
Longitude: 122 54 07.0
Waterbody: WA-13-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 9:15	14.8	199	99	8.48	7.05	77 J	0.613	0.016	0.413	0.0663	0.03	26	3600 J
High flow, brown water, salmon carcass floating downstream													
2003/11/17 9:09	8	326	117	10.6	7.2	18	0.625	0.01 U	0.496	0.0256	0.013	6.1	140 J
2003/12/15 9:15	6	921	67	11.51	6.89	13	0.7	0.01 U	0.546	0.0203	0.014	11	6
muddy water													
2004/01/26 8:37	6.3	518	85	11.3	6.87	5	0.744	0.01 U	0.659	0.0205	0.012	4.9	10 J
Raining; river is muddy													
2004/02/23 9:56	7.6	377	98	10.9	7.06	3	0.761	0.01 U	0.708	0.0185	0.015	2.8	1 J
clear water													
2004/03/23 6:52	10.5	252	107	9.69	7.14	4	0.8	0.01 U	0.718	0.0178	0.0087	1.7	3 J
2004/04/20 7:48	10.4	206	118	9.89	7.05	3	0.775	0.01 U	0.688	0.0179	0.01	1.7	15 J
Zn_TR and Ni_TR added manually from hard copy. Don't know why these weren't in LIMS to EIM batch.													
2004/05/18 8:20	13.6	135	32	8.9	7.29	4	0.891	0.011	0.762	0.0206	0.012	1.5	34 J
2004/06/22 9:04	16.6	140	123	8.4	7.27	4	0.804	0.013	0.691	0.0247	0.019	2	52
2004/07/20 7:40	16.5	93	141	8.1	7.13	3	0.822	0.011	0.736	0.0233	0.015	1.3	28 J
2004/08/17 8:00	16.2	70	143	8.14	7.31	3	0.867	0.011	0.782	0.0247	0.015	1.2	38 J
2004/09/21 8:15	11	241	91	9.79	7.22	5	0.521	0.01 U	0.448	0.0187	0.013	2.3	52 J

Metals Data Report

Deschutes R @ E St Bridge

13A060

Class: A
Rivermile: 0.6
Latitude: 47 00 43.0
Longitude: 122 54 07.0
Waterbody: WA-13-1010

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/20	9:15		36.1	0.1 U	0.02 U	2.5	0.44	4.61	0.91	0.78	0.047	0.0064	0.53	0.9	7.5	1.2
2003/12/15	9:15		25.6	0.1 U	0.02 U	0.5 U	0.37	1.63	1.06	0.1 U	0.033	0.0034	0.44	0.29	5 U	2
2004/02/23	9:56		34.6	0.1 U	0.02 U	0.5 U	0.44	0.88	0.5	0.1 U	0.02 U	0.002 U	0.39	0.33	5 U	9
2004/04/20	7:48		45.1	0.1 U	0.02 U	0.5 U	0.55	0.61	0.42	0.1 U	0.029	0.002 U	0.61	0.46	5 U	3
2004/06/22	9:04		45.9	0.1 U	0.02 U	0.62	0.44	0.63	0.45	0.1 U	0.02 U	0.002 U	0.23	0.53	5 U	1.5
2004/08/17	8:00		52.1	0.1 U	0.02 U	0.63	0.67	0.48	0.4	0.1 U	0.02 U	0.002 U	0.29	0.62	5 U	1.1

Conventional Data Report

Skokomish R nr Potlatch

16A070

Class: AA
Rivermile: 5.3
Latitude: 47 18 36.0
Longitude: 123 10 33.0
Waterbody: WA-16-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 12:27	10.6	18600	54	10.8	7.52	92	0.075	0.01 U	0.046	0.571	0.0049	75	35
high flow; flood stage													
2003/11/18 12:25	8.6	20800	37	12.02	7.33	374	0.025 U	0.01 U	0.013	0.19	0.0053	300	38
Flooding													
2003/12/16 11:26	7.1	2020	55	11.41	7.01	15	0.12	0.019	0.065	0.0163	0.0091	11	4
2004/01/27 10:20	6.4	1310	60	11.5	7.49	4	0.079	0.01 U	0.063	0.0086	0.009	5.1	3 J
clear water													
2004/02/24 11:15	7.4	1190	58	11	7.47	3	0.054	0.01 U	0.055	0.0107	0.008	3.5	1 J
2004/03/22 17:47	10.9	737	65	10.8	7	2	0.054	0.01 U	0.029	0.0104	0.0065	1.1	1 U
2004/04/19 19:30	8.5	670	66	10.9	7.25	2	0.061	0.01 U	0.027	0.0088	0.0072	1	30
2004/05/17 17:35	13.7	469	70	10.3	7.42	2	0.054	0.01 U	0.023	0.0106	0.0086	0.8	3
2004/06/21 17:52	15.6	413	71	9.8	7.3	1 U	0.045	0.01 U	0.019	0.0089	0.0075	0.8	4
2004/07/19 17:35	14.4	293	74	10.1	7.5	1	0.052	0.01 U	0.022	0.0118	0.0097	0.7	5
2004/08/16 16:30	14.5	267	77	9.54	7.55	2	0.054	0.01 U	0.021	0.0112	0.0088	0.7	1 U
2004/09/20 16:40	12.4	682	70	10.2	7.56	2	0.079	0.01 U	0.062	0.008	0.0064	1.4	7

Conventional Data Report

Duckabush R nr Brinnon

16C090

Class: AA
Rivermile: 4.5
Latitude: 47 41 03.0
Longitude: 123 00 37.0
Waterbody: WA-16-3010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 11:25	9.7	3050	57	11.21	7.69	38	0.061	0.01 U	0.036	0.0234	0.0038	20	4
	high flow												
2003/11/18 11:10	5.8	3080	38	12.92	7.53	370	0.072	0.01 U	0.032	0.237	0.0048	250	31
	High Flow												
2003/12/16 10:22	5.3	471	65	12.52	7.67	4	0.052	0.01 U	0.024	0.0047	0.0032	1.9	1 J
2004/01/27 9:03	4.5	266	78	12.6	7.81	1 U	0.025 U	0.01 U	0.023	0.0027	0.003 U	1	1 UJ
	clear water												
2004/02/24 10:16	5.6	300	75	12.2	7.85	1 U	0.05 U	0.01 U	0.021	0.0027	0.003 U	0.7	2
	clear water												
2004/03/22 16:53	6.7	275	77	12	7.73	1 U	0.026	0.01 U	0.01 U	0.0025	0.003 U	0.6	1 U
2004/04/19 18:30	5.9	501	66	12.22	7.64	5	0.062	0.01 U	0.015	0.0045	0.003 U	1.7	7
2004/05/17 16:40	8.9	376	67	10.5	7.8	1	0.04	0.01 U	0.011	0.0028	0.003 U	0.8	1 U
2004/06/21 16:41	12.1	372	62	10.5	7.68	2	0.037	0.01 U	0.01 U	0.0026	0.003 U	1.3	1 U
2004/07/19 16:32	13.2	159	75	11	7.77	1 U	0.025 U	0.01 U	0.01 U	0.0026	0.003 U	0.5 U	12
2004/08/16 15:15	14.2	100	84	11.05	7.91	1 U	0.06	0.01 U	0.015	0.0026	0.003 U	0.5 U	5
2004/09/20 15:35	9.4	144	78	11.51	7.85	1 U	0.026	0.01 U	0.025	0.0027	0.003 U	0.5 U	1 U

Gage house read 1.165. If flows are from USGS based on GH, they could be off.

Conventional Data Report

Dungeness R nr Mouth

18A050

Class: A
Rivermile: 1
Latitude: 48 08 37.7
Longitude: 123 07 39.7
Waterbody: WA-18-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/21 9:03	10	3075	85	11.11	7.57	400 J	0.1	0.01 U	0.047	0.197	0.0077	220 J	36 J
	high flow												
2003/11/18 9:21	6	1266	105	12.12	7.61	493	0.069	0.01 U	0.01 U	0.295	0.0089	230	150 J
	High Flow												
2003/12/16 8:12	4.4	343	133	12.52	7.58	11	0.1	0.01 U	0.058	0.01	0.0059	2.4	3 J
2004/01/27 7:45	4	242	138	12.5	7.68	2	0.07	0.01 U	0.056	0.0056	0.0046	1.5	22 J
	clear water												
2004/02/24 8:25	4.7	192	143	12.3	7.79	2	0.054	0.01 U	0.041	0.0054	0.0035	1	2 J
	clear water												
2004/03/22 12:45	8.3	226	140	12.6	7.89	2	0.046	0.01 U	0.015	0.0056	0.003 U	0.7	11
2004/04/19 13:35	9.6	213	130	11.61	7.74	4	0.068	0.01 U	0.023	0.0037	0.0032	1.3	6
2004/05/17 14:40	12.8	294	114	10.7	8.03	4	0.054	0.01 U	0.015	0.0063	0.0035	1.7	3
2004/06/21 14:17	14.7	439	96	10.1	7.87	6	0.05	0.01 U	0.012	0.0075	0.0034	4.3	11
2004/07/19 14:45	16.4	233	110	9.69	8.03	3	0.045	0.01 U	0.024	0.0066	0.004	1.3	17
2004/08/16 13:00	16	110	135	10.05	8.04	2	0.078	0.01 U	0.046	0.0058	0.0043	0.5	57
2004/09/20 13:50	11.9	142	140	10.7	8.01	2	0.065	0.01 U	0.044	0.006	0.004	0.7	14
	RP location ok. Staff under bridge read 1.10												

Metals Data Report

Dungeness R nr Mouth

18A050

Class: A
Rivermile: 1
Latitude: 48 08 37.7
Longitude: 123 07 39.7
Waterbody: WA-18-1010

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/21	9:03		44.8	0.1 U	0.02 U	16	0.42	17	0.77	4.49	0.041	0.02	0.58	2.36	28	1.4
2003/12/16	8:12		64.8	0.1 U	0.02 U	0.5 U	0.51	0.58	0.68	0.1 U	0.02 U	0.002 U	0.64	0.14	5 U	1.2
2004/02/24	8:25		68.3	0.1 U	0.02 U	0.5 U	0.44	0.31	0.34	0.1 U	0.028	0.002 U	0.48	0.19	5 U	1 U
2004/04/19	13:35		62.2	0.1 U	0.02 U	1.1	0.39	0.51	0.3	0.1 U	0.02 U	0.002 U	0.75	0.2	5 U	1.1
2004/06/21	14:17		44.2	0.1 U	0.02 U	0.5 U	0.39	0.48	0.13	0.1 U	0.02 U	0.002 U	0.11	0.18	5 U	1.2
2004/08/16	13:00		60.2	0.1 U	0.02 U	0.5 U	0.44	0.33	0.31	0.1 U	0.024	0.002 U	0.33	0.21	5 U	1.3

Conventional Data Report

Elwha R nr Port Angeles

18B070

Class: AA
Rivermile: 8.1
Latitude: 48 03 56.0
Longitude: 123 34 35.0
Waterbody: WA-18-2010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 17:40	9.8	24300	54	12.42	7.26	1490 J	0.055	0.01 U	0.01 U	0.824	0.0064	2800 J	23
	high flow												
2003/11/17 15:31	5.5	1590	96	12.32	7.67	38	0.025 U	0.01 U	0.012	0.0317	0.0056	45	2
2003/12/15 15:39	5	1590	92	12.62	7.53	38	0.052	0.01 U	0.025	0.0348	0.0059	50	1
2004/01/26 14:45	5.2	1350	89	12.4	7.35	15	0.025 U	0.01 U	0.025	0.0213	0.0047	23	1 U
	clear water												
2004/02/23 16:26	5.6	1190	97	12.5	7.29	5	0.05 U	0.01 U	0.01 U	0.009	0.0044	8.2	1 U
	clear water												
2004/03/22 11:32	6.7	1090	99	12.2	7.82	1	0.025 U	0.01 U	0.01 U	0.0055	0.003 U	2	1 U
2004/04/19 12:20	8.1	1080	93	11.81	7.87	2	0.025 U	0.01 U	0.01 U	0.0057	0.003 U	1.4	1 U
2004/05/17 13:30	10.2	1530	87	11.3	7.89	3	0.033	0.01 U	0.01 U	0.0064	0.003 U	2.3	1 U
2004/06/21 13:12	12	1480	79	10.8	7.85	2	0.025 U	0.01 U	0.01 U	0.0037	0.003 U	2.2	2
2004/07/19 13:35	14.5	809	86	10.19	7.65	10	0.025 U	0.01 U	0.01 U	0.0039	0.003 U	1.2	2
2004/08/16 11:35	15.3	541	96	9.94	7.89	1 U	0.04	0.01 U	0.01 U	0.0032	0.003 U	0.8	1
2004/09/20 12:35	12.3	717	94	10.8	7.9	3	0.033	0.01 U	0.01 U	0.0059	0.003	3.5	2
	pH after checking calibration (which was ok): 7.70												

Conventional Data Report

Hoh R @ DNR Campground

20B070

Class: AA
Rivermile: 16.5
Latitude: 47 48 36.0
Longitude: 124 14 47.0
Waterbody: WA-20-2010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 15:37	10.1	33000	65	11.81	7.21	2600 J	0.12	0.015	0.053	0.861	0.0038	1300 J	230
Very high flow; dark brown water; sand transport along margin, where samples were taken													
2003/11/17 13:55	7.4	4830	73	11.61	7.39	148	0.09	0.01 U	0.07	0.0804	0.0037	65	11
2003/12/15 14:08	5.9	3760	73	12.22	7.3	35	0.13	0.01 U	0.084	0.0265	0.004	20	8
2004/01/26 13:20	5.5	2140	75	12.2	7.51	19	0.082	0.01 U	0.078	0.021	0.003 U	11	2
glacial flour													
2004/02/23 14:55	7.6	1900	80	11.7	7.53	7	0.063	0.01 U	0.067	0.0106	0.0039	7	1
clear water													
2004/03/22 10:06	7.6	1540	85	11.8	7.5	5	0.057	0.01 U	0.036	0.0078	0.003 U	3.2	1
2004/04/19 10:47	8.3	1500	88	11.61	7.7	4	0.04	0.01 U	0.012	0.0051	0.003 U	2.4	4
2004/05/17 11:34	10.4	1330	93	11.3	7.74	4	0.039	0.01 U	0.013	0.0058	0.003 U	2.4	1 U
2004/06/21 11:20	11.5	1910	83	10.9	7.58	15	0.036	0.01 U	0.015	0.0162	0.003	13	5
Heavy Glacial Till													
2004/07/19 11:20	12.8	1570	75	10.6	7.37	37	0.035	0.01 U	0.019	0.0309	0.0031	27	59
2004/08/16 9:50	12.6	1690	74	10.55	7.57	63	0.034	0.01 U	0.018	0.0491	0.003 U	55	84 J
2004/09/20 10:50	8.9	2380	89	11.51	7.51	27	0.11	0.01 U	0.1	0.0227	0.0038	12	47

Conventional Data Report

Humptulips R nr Humptulips

22A070

Class: A
Rivermile: 23.6
Latitude: 47 13 48.0
Longitude: 123 57 38.0
Waterbody: WA-22-1010

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2003/10/20 13:22	10.8	17100	40	11.21	7.07	461 J	0.22	0.014	0.144	0.202	0.0052	290	54
	High Flow												
2003/11/17 12:20	7.9	3720	45	11.61	7.02 J	65	0.11	0.01 U	0.099	0.0492	0.0047	45	12
	pH=J, I didn't see the final value stabilize												
2003/12/15 12:30	6.3	2140	48	12.02	7.06	4	0.15	0.01 U	0.126	0.0081	0.0054	5.2	2
2004/01/26 11:37	6.2	1710	49	12.1	6.86	2	0.13	0.01 U	0.128	0.0063	0.0037	3.2	9
	clear water												
2004/02/23 13:07	7.9	1480	51	12.1	6.83	2	0.11	0.01 U	0.115	0.0054	0.0055	2.3	1 UJ
	clear water												
2004/03/22 8:30	8.5	791	55	11.2	6.82	1	0.093	0.01 U	0.068	0.0036	0.003 U	0.8	1 J
2004/04/19 9:20	8.5	580	55	11.51	6.89	1	0.066	0.01 U	0.028	0.0028	0.0034	5.3	1 J
2004/05/17 10:00	12	282	61	10.8	7.43	1 U	0.057	0.01 U	0.017	0.0029	0.0036	0.5 U	1 J
2004/06/21 9:45	14.6	426	62	9.8	7.17	1 U	0.094	0.01 U	0.059	0.0037	0.0042	0.7	17
	Clear water, cows in riparian zone												
2004/07/19 9:25	18.2	181	68	8.9	7.11	1	0.094	0.01 U	0.037	0.0132	0.0053	0.7	27 J
	Based on RP converted later to WWG result.												
2004/08/16 7:50	17.6	171	70	8.74	6.95	1	0.092	0.01 U	0.041	0.0036	0.0042	0.6	98 J
2004/09/20 9:00	10.1	1360	55	10.9	7.98	3	0.19	0.01 U	0.172	0.0052	0.004	2.7	35 J

Conventional Data Report

Chehalis R @ Porter

23A070

Class: A
Rivermile: 33.3
Latitude: 46 56 17.0
Longitude: 123 18 45.0
Waterbody: WA-23-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 11:36	13.3	3200	62	9.39	7.07	153 J	1.06	0.029	0.924	0.0526	0.011	45	270 J
High flow, brown water, LWD and duckweed flushing out													
2003/11/17 10:56	7.6	2570	94	11.01	7.32	10	0.656	0.025	0.505	0.0263	0.013	5	31
2003/12/15 11:12	6.4	13600	65	11.61	7.05	42	0.819	0.01 U	0.649	0.0361	0.013	18	54
muddy water													
2004/01/26 9:50	5.8	6760	80	11.4	7.1	14	0.853	0.021	0.708	0.0367	0.016	8.4	12 J
river is muddy													
2004/02/23 12:00	7.5	4500	81	11	7.1	10	0.792	0.023	0.705	0.0233	0.012	5.3	4 J
A little muddy.													
2004/03/23 8:58	10.3	2250	93	10.6	7.29	6	0.689	0.01 U	0.586	0.0245	0.0075	3.2	4 J
2004/04/20 9:55	10.9	1820	100	10.4	7.33	6	0.643	0.013	0.507	0.0301	0.011	3.6	4 J
2004/05/18 10:35	16.1	879	102	9.6	7.55	7	0.593	0.013	0.439	0.0201	0.0083	2.2	12
2004/06/22 12:00	20.5	755	93	8.3	7.53	3	0.573	0.013	0.43	0.0229	0.014	1.5	7
2004/07/20 9:43	21.4	422	107	8.4	7.73	3	0.504	0.01 U	0.389	0.0191	0.0088	0.9	24 J
2004/08/16 17:35	23.7	342	110	10.25	7.97	3	0.558	0.019	0.422	0.0337	0.022	1.1	13
2004/09/21 10:00	12.8	2260	93	9.89	7.4	8	0.559	0.01 U	0.492	0.029	0.014	3.9	47

Conventional Data Report

Chehalis R @ Prather Rd

23A100

Class: A
Rivermile: 59.9
Latitude: 46 46 31.4
Longitude: 123 02 03.3
Waterbody: WA-23-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/20 10:18	13.5	1490	61	9.59	7.24	177 J	0.845	0.018	0.695	0.104	0.011	85	610 J
High flow, brown water, LWD and duckweed flushing out													
2003/11/17 10:03	7.3	2640	100	11.01	7.34	19	0.474	0.044	0.345	0.0349	0.015	8.4	34
2003/12/15 10:20	6.2	10800	68	11.41	7.1	39	0.885	0.017	0.692	0.0449	0.021	18	99 J
muddy water													
2004/01/26 9:17	5.7	4860	80	11.7	7.18	13	0.813	0.021	0.706	0.0283	0.01	8	9 J
river is muddy													
2004/02/23 11:00	7.5	2850	84	11.2	7.17	7	0.689	0.034	0.597	0.0241	0.013	5	1 UJ
A little muddy													
2004/03/23 8:06	9.6	1420	96	10.5	7.22	3	0.543	0.025	0.418	0.0267	0.01	3.3	7 J
2004/04/20 8:55	10.8	1270	103	10.2	7.25	3	0.456	0.038	0.292	0.0381	0.017	3.3	16 J
Homeless camp under bridge													
2004/05/18 9:35	15.4	794	101	9.3	7.34	2	0.36	0.01 U	0.226	0.0277	0.013	2	14 J
2004/06/22 11:02	20.4	509	86	7.8	7.18	1 U	0.432	0.014	0.277	0.0371	0.025	1.5	13
2004/07/20 8:35	21.5	260	101	8	7.42	4	0.318	0.01 U	0.191	0.0373	0.019	1.7	38 J
2004/08/16 18:33	24.1	193	100	10.75	8.13	3	0.524	0.016	0.373	0.0914	0.0706	1.3	25
2004/09/21 9:00	11.8	1790	94	9.89	7.23	4	0.586	0.01 U	0.506	0.0272	0.014	3.4	45 J

Conventional Data Report

Chehalis R @ Dryad

23A160

Class: A
Rivermile: 101.7
Latitude: 46 37 52.0
Longitude: 123 14 56.0
Waterbody: WA-23-1100

Date/Time		Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/22	16:00	10.9	1252	59	11.11	7.12	5	0.717	0.01 U	0.649	0.0134	0.0076	3.4	40
2003/11/19	16:54	8	6358	51	12.12	6.79	70	0.776	0.01 U	0.671	0.0586	0.0098		37
		High Flow												
2003/12/17	14:10	7.1	1874	56	12.32	6.85	3	0.587	0.01 U	0.523	0.0122	0.011	2	8
2004/01/28	15:50	7.2	1906	50	12.1	6.68	17	0.477	0.01 U	0.429	0.0206	0.0087	8.5	23
2004/02/25	17:17	6.6	656	56	12.2	7.03	2	0.458	0.01 U	0.431	0.0117	0.0095	1.9	17
2004/03/24	17:45	8.8	450	61	11.8	7.07	4	0.324	0.01 U	0.256	0.0136	0.0051	3	87
2004/04/21	16:55	9.5	764	55	12.02	7.58	8	0.297	0.01 U	0.226	0.0115	0.006	2.4	28 J
2004/05/19	17:30	14.6	116	71	11.2	8.41	3	0.21	0.01 U	0.084	0.0113		1.3	9
2004/06/23	17:50	16.2	107	70	9.9	7.66	2	0.238	0.01	0.13	0.0144	0.0088	1.3	45
2004/07/21	16:06	22.5	61	80	10	8.31	1	0.18	0.01 U	0.054	0.013	0.0067	1	35
2004/08/18	14:55	23.1	50	84	10.05	8.1	2	0.066	0.01 U	0.012	0.0162	0.0074	1.1	51
2004/09/22	13:25	11	238	66	11.51	7.7	1	0.408	0.01 U	0.355	0.0082	0.0057	0.9	28

Conventional Data Report

Willapa R nr Willapa

24B090

Class: A
Rivermile: 17.7
Latitude: 46 39 01.0
Longitude: 123 39 08.0
Waterbody: WA-24-2020

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2003/10/22 14:55	11.5	1690	57	11.01	6.97	20	0.938	0.01 U	0.884	0.0187	0.0065	9.2	79
2003/11/19 15:56	8.8	5960	49	11.21	6.72	156	1.27	0.01	1.07	0.0766	0.0089		230
	High Flow												
2003/12/17 15:13	7.5	1380	54	11.81	7.04	8	0.942	0.01 U	0.852	0.0128	0.0084	3.9	13
2004/01/28 15:02	8	1610	48	11.5	7.08	41	0.627	0.01 U	0.587	0.0273	0.0074	14	53
2004/02/25 16:20	7.5	753	53	11.8	7.21	3	0.757	0.01 U	0.728	0.0107	0.0069	2.3	9
2004/03/24 16:28	9.9	537	58	11.6	7.34	6	0.544	0.01 U	0.469	0.0152	0.0039	2.9	90
2004/04/21 15:57	10.5	645	53	11.81	7.36	9	0.49	0.01 U	0.413	0.0127	0.0053	3.6	37 J
2004/05/19 16:34	16	103	64	10.6	7.55	2	0.344	0.01 U	0.212	0.0206		1	100
	Periphyton growth; slimy surface residue												
2004/06/23 16:58	17.1	97	65	9.69	7.51	3	0.369	0.015	0.26	0.0139	0.0065	1.4	45
2004/07/21 15:13	23.1	45	72	9.9	7.76	5	0.22	0.01 U	0.079	0.0136	0.0043	1.5	33
2004/08/18 13:45	22.3	24	77	9.24	7.41	3	0.17	0.02	0.085	0.0178	0.0057	1.5	28
2004/09/22 12:15	11.7	230	64	10.9	7.21	3	0.54	0.01 U	0.482	0.0102	0.0053	1.3	50

Conventional Data Report

Naselle R nr Naselle

24F070

Class: A
Rivermile: 17.4
Latitude: 46 22 23.0
Longitude: 123 44 44.0
Waterbody: WA-24-3010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/22 13:40	10.5	1130	51	11.21	7.27	13	0.681	0.01 U	0.63	0.0162	0.0074	7	40
2003/11/19 14:02	8.4	3010	44	12.02	7.07	102	0.627	0.01 U	0.587	0.0524	0.0061		48
	High Flow												
2003/12/17 13:34	7.8	707	49	12.02	7.23	4	0.615	0.01 U	0.56	0.0105	0.011	2.1	5
2004/01/28 12:00	8	1180	43	11.7	6.99	43	0.487	0.01 U	0.47	0.02	0.0087	11	79
2004/02/25 13:45	7.1	349	48	11.9	6.86	4	0.494	0.01 U	0.497	0.0092	0.0088	1.2	13
2004/03/24 13:21	8.8	288	50	11.7	7.51	5	0.401	0.01 U	0.36	0.0116	0.0048	2.4	150
2004/04/21 12:20	10.1	377	48	12.02	7.43	7	0.394	0.01 U	0.34	0.0106	0.0062	2.8	49 J
2004/05/19 13:40	12.7	73	57	11.2	7.85	1	0.287	0.01 U	0.212	0.0059		0.6	17
2004/06/23 14:32	14.1	92	57	10.4	7.59	2	0.338	0.01 U	0.285	0.0087	0.0084	0.7	69
2004/07/21 13:36	18.2	46	62	10.1	7.76	1 U	0.2	0.01 U	0.142	0.007	0.0052	0.7	29
2004/08/18 12:30	20.1	28	64	9.94	7.74	1 U	0.19	0.01 U	0.114	0.0091	0.0062	0.6	33
2004/09/22 11:00	10.2	291	56	11.21	7.34	3	0.576	0.01 U	0.548	0.0081	0.0065	1.1	47

Conventional Data Report

Cowlitz R @ Kelso

26B070

Class: A
Rivermile: 4.9
Latitude: 46 08 44.0
Longitude: 122 54 47.0
Waterbody: WA-26-1040

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/22 11:50	12	5620	85	10.5	7.34	76	0.18	0.01 U	0.133	0.044	0.0055	30	35
2003/11/19 12:30	9.3	15600	64	10.9	7.11	601	0.343	0.01 U	0.291	0.32	0.0075	85	100
2003/12/17 11:47	7.4	14500	65	11.91	6.97	203	0.416	0.01 U	0.339	0.109	0.0076	40	29
2004/01/28 10:35	6.3 muddy	15900	61	12	7.22	179	0.352	0.01 U	0.337	0.0173	0.0075	8.3	12
2004/02/25 12:11	6.4	9970	71	11.9	6.86	55	0.258	0.01 U	0.239	0.0406	0.007	11	5
2004/03/24 11:45	8	10000	74	11.6	6.89	20	0.16	0.01 U	0.125	0.0148	0.003 U	4.1	11
2004/04/21 10:52	9.1	7460	81	11.41	7.46	30	0.14	0.01 U	0.085	0.0151	0.0044	4.2	15 J
2004/05/19 12:06	13.8	4830	90	10.3	7.65	17	0.11	0.01 U	0.041	0.0111		3.3	22
2004/06/23 12:40	13.7	4760	96	10.5	7.4	16	0.097	0.01 U	0.046	0.0133	0.0041	3.2	15
2004/07/21 11:52	15.3	5000	91	10	7.67	16	0.09	0.01 U	0.04	0.0072	0.0036	2.6	29
2004/08/18 10:40	17	3340	104	9.74	7.58	10	0.085	0.01 U	0.03	0.0064	0.0035	2	64
2004/09/22 9:15	12.7	6670	81	10.5	7.32	101	0.16	0.01 U	0.127	0.0559	0.0058	12	13

Conventional Data Report

Kalama R nr Kalama

27B070

Class: A
Rivermile: 2.8
Latitude: 46 02 51.0
Longitude: 122 50 10.0
Waterbody: WA-27-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/22 11:17	11.7	375	50	10.7	7.44	8	0.279	0.056	0.166	0.0233	0.016	3.9	100
2003/11/19 11:24	8.3	4092	32	11.81	7.13	168	0.508	0.01	0.422	0.0669	0.0081	65	130
	High Flow												
2003/12/17 11:15	6.4	1242	42	12.52	7.25	3	0.68	0.01 U	0.617	0.0101	0.01	2.3	17
2004/01/28 10:10	6.8	1776	42	12.1	7.28	6	0.629	0.01 U	0.657	0.0146	0.011	3.7	19 J
	clear water												
2004/02/25 11:35	6.2	922	40	12.2	7.36	2	0.383	0.01 U	0.4	0.011	0.011	1.6	2
	Clear water												
2004/03/24 11:10	8.6	680	43	11.9	7.35	6	0.26	0.01 U	0.23	0.0109	0.007	1.3	7
2004/04/21 9:15	7.5	1145	42	12.12	7.47	17	0.35	0.01 U	0.304	0.0159	0.0091	6.4	1 UJ
	Muddy Water												
2004/05/19 11:35	11.6	295	52	11.4	7.75	2	0.19	0.01 U	0.122	0.0107		0.8	10
2004/06/23 12:00	13	325	51	10.7	7.7	2	0.19	0.01 U	0.142	0.0099	0.01	1	57
2004/07/21 11:20	16.2	204	68	10.1	7.7	1	0.16	0.01 U	0.092	0.0135	0.012	0.7	7
2004/08/18 10:10	18	166	65	9.44	7.57	2	0.13	0.01 U	0.065	0.0141	0.013	0.8	18 J
2004/09/22 8:40	10.1	580	46	10.8	7.08	5	0.249	0.01	0.244	0.0209	0.01	1.7	36 J

Conventional Data Report

EF Lewis R nr Dollar Corner

27D090

Class: A
Rivermile: 10.2
Latitude: 45 48 53.0
Longitude: 122 35 26.0
Waterbody: WA-27-2020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/22 10:20	13.3	84	54	10.8	7.58	4	0.3	0.01 U	0.228	0.0034	0.003 U	1.2	67
2003/11/19 10:30	8.2	2770	28	11.61	7	105	0.501	0.01 U	0.441	0.0263	0.004	30	130 J
	High Flow												
2003/12/17 10:30	6.9	1370	32	12.22	7.41	2	0.643	0.01 U	0.572	0.004	0.0041	2.1	6
2004/01/28 9:20	6.7	2140	32	11.8	7.5	4	0.535	0.01 U	0.517	0.0055	0.005	2.3	3 J
	high stage, but not flooding; quite a few fishermen												
2004/02/25 10:27	6.3	770	32	12.1	7.23	1	0.369	0.01 U	0.365	0.0043	0.0048	1.3	1
	Clear water												
2004/03/24 10:21	8.9	611	34	11.4	7.52	1	0.22	0.01 U	0.181	0.0042	0.003 U	1.3	2
2004/04/21 8:35	7.7	770	31	11.81	7.17	4	0.23	0.01 U	0.169	0.0042	0.0033	1.6	15 J
2004/05/19 10:38	12.3	251	42	11	7.58	1	0.22	0.01 U	0.144	0.0034		0.9	13
2004/06/23 10:56	14.2	308	41	10.4	7.56	1	0.265	0.01 U	0.208	0.0046	0.0044	0.9	18
2004/07/21 10:22	19.1	98	55	9.6	7.77	1	0.2	0.01 U	0.135	0.0053	0.004	0.6	46
2004/08/18 9:20	20.8	54	64	8.74	7.5	1	0.16	0.01 U	0.092	0.0044	0.0037	0.8	24 J
2004/09/22 7:45	10.2	469	38	10.9	7.39	2	0.318	0.01 U	0.273	0.0037	0.0034	0.9	140 J

Conventional Data Report

Burnt Br Cr @ Mouth

28C070

Class: A
Rivermile: 14.7
Latitude: 45 39 42.0
Longitude: 122 40 16.0
Waterbody: WA-28-1040

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/22 9:15	13.6		198	9.59	7.76	5	1.53	0.01 U	1.36	0.0923	0.0802	2.5	480 J
2003/11/19 9:33	7.9		36	11.31	6.85	320	0.403	0.053	0.24	0.193	0.0477	80	1200 J
	High Flow												
2003/12/17 9:40	8.7		146	11.11	7.47	9	2.8	0.02	2.23	0.103	0.0838	8.5	200 J
2004/01/28 8:40	8.6		152	11	7.66	10	2.6	0.013	3.08	0.0978	0.0748	9.4	74 J
	turbid												
2004/02/25 9:30	8.4		149	11	7.66	13	2.19	0.01 U	2.48	0.0828	0.0573	7.5	36 J
	Brown and turbid												
2004/03/24 9:17	12.4		182	10.3	7.78	31	2.1	0.01 U	1.9	0.0858	0.0349	12	130 J
2004/04/21 9:10	10.7		122	10.5	7.65	87	1.34	0.037	1.08	0.128	0.0339	28	540 J
	Muddy Water												
2004/05/19 9:35	14.7		200	9.5	7.94	8	1.46	0.016	1.24	0.0794		7.3	220 J
2004/06/23 10:00	16.8		201	9.19	7.89	6	1.23	0.019	1.03	0.118	0.089	4.4	720
	Unusually clear												
2004/07/21 9:35	18.5		221	8.3	7.93	4	1	0.023	0.744	0.108	0.0941	2.3	600
2004/08/18 8:15	19		229	8.24	7.9	13	0.962	0.015	0.785	0.115	0.0983	2.1	320 J
2004/09/22 7:00	12.7		183	9.89	7.8	7	1.06	0.012	0.922	0.0996	0.0819	2.6	150 J
	RP location not absolutely certain.												

Metals Data Report

Burnt Br Cr @ Mouth

28C070

Class: A
Rivermile: 14.7
Latitude: 45 39 42.0
Longitude: 122 40 16.0
Waterbody: WA-28-1040

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/22	9:15		84.8	0.1 U	0.02 U	0.5 U	0.7	1.82	1.54	0.5	0.135	0.002 U	1.01	0.66	5.1	4
2003/12/17	9:40		63.4	0.1 U	0.02 U	0.52	0.58	2.99	2.07	0.95	0.11	0.0034	1.04	0.67	11	7.8
2004/02/25	9:30		66	0.1 U	0.02 U	0.89	0.45	2.41	1.52	1.63	0.1	0.0033	0.79	0.65	12	7.9
2004/04/21	9:10		52.9	0.1 U	0.02 U	2.8	0.41	5.12	1.74	7.21	0.15	0.0091	0.54	0.9	31	7
2004/06/23	10:00		88	0.1 U	0.02 U	0.5 U	0.69	1.42	1.04	0.81	0.075	0.002 U	0.74	0.85	5 U	3.3
2004/08/18	8:15		28	0.1 U	0.02 U	0.5 U	0.8	1.31	1	0.42	0.085	0.002 U	0.9	1.01	5 U	2.6

Conventional Data Report

Columbia R @ Umatilla

31A070

Class: A
Rivermile: 290.5
Latitude: 45 56 02.0
Longitude: 119 19 31.0
Waterbody: WA-CR-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/08 12:50	18.6	197100	148	9.19	8.26	3	0.22	0.01 U	0.102	0.0132	0.0078	1.3	3
2003/11/04 12:30	10.9	142200	144	10.5	8.07	3	0.254	0.01 U	0.171	0.0197	0.012	1.5	6
2003/12/10 12:55	7.3	318700	149	11.31	8.17	2	0.299 J	0.01 UJ	0.213	0.0167	0.014	1.3	3
2004/01/14 12:20	2.4	202800	150	13.13	8.07	1	0.286	0.01 U	0.222	0.0123	0.0092	1	1 U
2004/02/11 11:50	3.2	269600	161	13.43	8.09	2	0.368	0.01 U	0.313	0.0121	0.011	1.3	1
2004/03/10 13:15	5.2	266600	179	13.03	8.24	3	0.563	0.01 U	0.486	0.0124	0.0081	1.8	1 U
2004/04/14 11:55	10.7	267300	144	11.5	8.26	4	0.422	0.01 U	0.33	0.017	0.0068	2.7	2
2004/05/05 12:10	13	355100	129	11.61	8.1	4	0.302	0.01 U	0.212	0.0096	0.0042	2	1
2004/06/16 12:30	16.1	344300	109	10.62	8.04	9	0.208	0.01 U	0.107	0.0138	0.0069	3.4	2
2004/07/14 12:35	19.9	342500	116	9.56	8.25	5	0.17	0.01 U	0.081	0.0115	0.0056	2.8	1
2004/08/04 12:50	21.9	249100	123	9.29	8.05	4	0.15	0.01 U	0.052	0.0091	0.0048	1.7	1 U
2004/09/13 11:27	19.5	199400	134	8.73	8.02	5	0.18	0.01 U	0.096	0.0131	0.0077	1.4	1

Conventional Data Report

Walla Walla R nr Touchet

32A070

Class: B
Rivermile: 15.3
Latitude: 46 02 16.0
Longitude: 118 45 55.0
Waterbody: WA-32-1010

Date/Time		Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/08	11:35	16	26	341	11.11	8.74	2	0.582	0.012	0.351	0.0704	0.0515	1.5	29
2003/11/04	11:15	4	98	223	13.43	8.21	2	0.558	0.01 U	0.442	0.0536	0.0417	1.6	61
2003/12/10	11:35	4.5	365	147	12.02	7.91	5	0.804 J	0.01 UJ	0.637	0.109	0.103	2.9	12
2004/01/14	10:40	1.9	496	111	13.23	7.86	25	0.881	0.01 U	0.76	0.0932	0.0729	11	33
2004/02/11	10:35	4.3	1010	142	12.42	7.8	37	1.64	0.01 U	1.55	0.0984	0.0992	12	16
2004/03/10	10:40	8.1	1610	104	11.21	7.68	165	0.853	0.01 U	0.751	0.103	0.0605	22	75
2004/04/14	10:40	12.6	739	111	10	7.98	21	0.478	0.01 U	0.345	0.0505	0.0325	4	29
		very windy, Stage is best estimate												
2004/05/05	10:50	15.1	809	113	9.39	7.76	44	0.518	0.015	0.365	0.0688	0.0445	6.4	77
2004/06/16	11:10	16.5	861	128	9.31	7.9	61	0.6	0.012	0.443	0.113	0.0572	14	220
2004/07/14	11:10	23.9	43	333	8.24	8.06	8	0.7	0.017	0.47	0.0786	0.0535	4	77
2004/08/04	11:30	24	27	441	9.29	8.32	8	1.12	0.039	0.886	0.112	0.0945	4.3	47
2004/09/13	10:07	16.4	74	315	8.22	7.95	3	0.667	0.01 U	0.511	0.0731	0.0536	1.5	71

Conventional Data Report

Snake R nr Pasco

33A050

Class: A
Rivermile: 2.2
Latitude: 46 13 00.0
Longitude: 119 01 23.0
Waterbody: WA-33-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/08 14:05	17.9	23900	197	8.08	7.92	4	0.348	0.015	0.197	0.0437	0.034	1.9	1 U
2003/11/04 13:50	12.6	24900	254	9.49	7.96	4	0.459	0.01 U	0.319	0.0554	0.0417	2.3	2 J
2003/12/10 14:10	7.3	59900	302	11.11	8.34	5	0.607 J	0.01 UJ	0.464	0.0458	0.0391	2.8	1 J
2004/01/14 13:35	2.9	55100	250	12.22	8.13	6	0.7	0.01 U	0.59	0.0574	0.0489	1.6	2 J
2004/02/11 13:10	3.4	64300	350	12.72	8.16	3	1.26	0.01 U	1.14	0.0606	0.0595	3.5	1 U
2004/03/10 14:30	5.2	52500	332	13.53	8.45	4	1.46	0.01 U	1.35	0.0485	0.0362	3.1	1 U
2004/04/14 13:10	11.2	151800	161	11.6	8.05	7	0.636	0.015	0.497	0.0435	0.028	5.5	1 U
2004/05/05 13:25	13.1	211600	106	12.12	8.12	10	0.22	0.01 U	0.118	0.0201	0.0089	5.3	1
2004/06/16 13:40	15.6	133100	82	11.03	7.8	6	0.244	0.01	0.12	0.024	0.016	4.2	1
2004/07/14 14:10	21.6	117100	113	9.66	7.97	5	0.17	0.017	0.088	0.026	0.018	4.1	1 U
2004/08/04 14:05	22.4	67100	79	9.09	7.7	5	0.269	0.018	0.156	0.0292	0.024	2.2	1
2004/09/13 13:20	18.9	48900	160	8.02	7.77	4	0.318	0.027	0.175	0.039	0.028	2.1	1 U

Conventional Data Report

Palouse R @ Hooper

34A070

Class: B
Rivermile: 19.5
Latitude: 46 45 32.0
Longitude: 118 08 49.0
Waterbody: WA-34-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/08 8:30	13.8	42	390	8.68	8.43	18	0.686	0.018	0.37	0.026	0.0063	8.9	180 J
2003/11/04 8:05	1.4	66	404	13.03	8.78	3	1.7	0.01 U	1.41	0.0408	0.023	2	8 J
2003/12/10 8:35	2.7	195	252	12.62	8.26	10	1.58 J	0.015 J	1.28	0.122	0.0975	4.8	19 J
2004/01/14 7:50		318											
Station Froze													
2004/02/11 7:45	3	547	244	12.62	8.02	17	7.36	0.011	6.87	0.128	0.119	13	8 J
2004/03/03 15:50	3.6	1070	194		8.01							20.5	
Turbidity assessment													
2004/03/10 7:45	6.8	1430	221	11.41	8.03	45	7.13	0.014	6.57	0.133	0.0917	35	12 J
Smell from upstram cattle feeding operations quite noticable													
2004/03/24 14:51	9.7	1020	158		8.05							14.5	
2004/04/14 7:40	14.4	480	161	9	9.21	10	1.23	0.01 U	0.991	0.0469	0.021	4.8	8 J
2004/05/05 7:18	16.6	281	262	8.28	8.08	15	1.68	0.089	1.22	0.149	0.102	4.8	16 J
2004/06/16 8:15	17.5	252	228	9.41	8.92	12	0.801	0.012	0.545	0.0599	0.0388	6	72 J
Water a little green													
2004/07/14 8:10	21.5	60	311	7.52	8.28	13	0.813	0.02	0.537	0.105	0.0793	5.8	49 J
2004/08/04 8:05	21.4	30	310	7.47	9.02	30	0.328	0.01 U	0.01 U	0.054	0.021	13	31 J
2004/09/13 7:10	15.4	47	340	8.12	8.28	14	0.538	0.01 U	0.232	0.0351	0.013	5.6	31 J

Conventional Data Report

Palouse River @ Hwy 26

34A075

Class: B
Rivermile: 25.7
Latitude: 46 46 25.0
Longitude: 118 02 28.0
Waterbody: WA-34-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2004/03/03 15:17	4.1		191		8.1							18.9	
	Turbidity assessment												
2004/03/24 14:32	10.6		152		8.33							13.1	

Conventional Data Report

Palouse River above Rebel Flat

34A080

Class: B
Rivermile: 49.4
Latitude: 46 56 42.0
Longitude: 117 48 12.0
Waterbody: WA-34-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2004/03/03 13:46	3.3		152		7.58							20.1	
	Turbidity assessment												
2004/03/24 12:59	9.1		106		7.7							12.7	

Conventional Data Report

Palouse R @ Shields Rd Bridge

34A085

Class: B
Rivermile: 77.8
Latitude: 46 57 10.0
Longitude: 117 30 12.0
Waterbody: WA-34-1010

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2004/03/03 12:45	2.7		150		7.7							17.4	
	Turbidity assessment												
2004/03/24 11:59	7.9		92		7.82							10.9	
	showers starting												

Conventional Data Report

Palouse River blw Colfax

34A109

Class: B
Rivermile: 94.6
Latitude: 46 53 28.0
Longitude: 117 22 27.0
Waterbody: WA-34-1020

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2004/03/03 11:35	2.2		123		7.67							17.2	
	Turbidity assessment												
2004/03/24 10:55	6.7		67		7.76							12.3	

Conventional Data Report

Palouse R at Colfax

34A120

Class: A
Rivermile: 90.2
Latitude: 46 53 45.0
Longitude: 117 21 34.0
Waterbody:

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2004/03/03 11:10	1.9		97		7.68							17.3	
	Turbidity assessment												
2004/03/24 10:37	6.5		51		7.42							12.6	

Conventional Data Report

Palouse R @ Palouse

34A170

Class: A
Rivermile: 121.2
Latitude: 46 54 33.0
Longitude: 117 04 33.0
Waterbody: WA-34-1030

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 12:00	13.4	40	86	9.79	8.25	1	0.21	0.01 U	0.01 U	0.0138	0.0033	1.1	31
2003/11/05 11:45	0.3	64	101	13.43	8.1	3	0.15	0.01 U	0.01 U	0.0213	0.0081	1.5	2
Station iced over													
2003/12/09 12:40	0.8	154	68	13.03	7.24	9	0.16 J	0.01 U	0.049	0.0291	0.016	12	5
2004/01/13 11:40		318											
Station Froze													
2004/02/10 12:15	0.9	555	113	13.13	7.5	3	2.65	0.018	3.12	0.0527	0.029	13	3
2004/03/09 11:35	4.6	1300	73	11.11	7.28	37	1.4	0.01 U	1.17	0.074	0.0507	34	57
2004/03/24 8:32	5.4	955	38		7.25							15.2	
2004/04/13 11:22	10.1	495	43	10.3	7.6	8	0.15	0.01 U	0.038	0.0295	0.013	5.6	10
2004/05/04 10:55	14.6	290	54	9.29	7.64	6	0.15	0.011	0.012	0.0409	0.017	5.3	33
2004/06/15 12:05	16.1	270	57	9.71	8.09	3	0.124	0.01 U	0.01 U	0.0346	0.017	5.4	36
Water a bit cloudy.													
2004/07/13 11:00	20.8	62	73	8.54	8.1	2	0.14	0.01 U	0.01 U	0.0251	0.0095	1.4	65
2004/08/03 11:40	22.1	30	85	8.78	8.51	2	0.27	0.01 U	0.01 U	0.0199	0.0066	1.3	140
2004/09/15 10:50	13.3	44	82	8.32	7.83	9	0.16	0.01 U	0.01 U	0.0175	0.0049	1.2	29

Conventional Data Report

SF Palouse R @ Shawnee Rd

34B075

Class: A
Rivermile: 11.1
Latitude: 46 49 38.0
Longitude: 117 16 26.0
Waterbody: WA-34-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2004/03/03 9:20	3.5		263		7.83							18.2	
Turbidity assessment													
2004/03/24 9:42	9.4		302		8.23							9.9	

Conventional Data Report

SF Palouse R @ Pullman

34B110

Class: A
Rivermile: 22.2
Latitude: 46 43 57.0
Longitude: 117 10 48.0
Waterbody: WA-34-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 12:40	13.6	4.73	643	9.39	8.08	3	3.29	0.01	2.36	0.706	0.727	2.7	23
2003/11/05 12:50	0.8	10.5	636	13.43	8.15	2	3.39	0.011	3.22	0.464	0.452	1.8	18
2003/12/09 13:30	3.5	10.8	478	12.52	7.84	2	3.03 J	0.01	2.71	0.186	0.167	4.6	120 J
2004/01/13 12:05	2.2	34.5	424	12.52	7.95	4	4.67	0.03	4.74	0.202	0.16	17	190
2004/02/10 12:50	3.1	47	390	12.52	7.8	6	9.46	0.028	8.84	0.149	0.113	16	32
2004/03/03 8:40	2.6		246		7.75							19.6	
Turbidity assessment													
2004/03/09 12:40	7	148	210	10.8	7.78	25	8.2	0.01 U	6.23	0.146	0.105	45	8
2004/03/24 9:15	7.5		252		8							12.6	
2004/04/13 12:15	12.4	26.4	360	11.8	8.5	4	3.52	0.01 U	3.31	0.18	0.122	3.6	34
2004/05/04 11:30	14.5	19.6	416	9.89	8.14	5	3.01	0.023	2.52	0.204	0.14	2.6	43
2004/06/15 12:45	15	13.4	380	10.52	8.4	3	1.52	0.011	1.18	0.243	0.189	3.3	88
2004/07/13 12:25	17	1.38	520	8.34	7.92	5	1.41	0.013	1.04	0.281	0.218	2.4	150
2004/08/03 12:40	17.7	1.36	596	7.37	8	3	2.02	0.026	1.66	0.471	0.407	1.8	310 J
2004/09/15 11:40	13.3	19.1	342	7.71	7.62	8	1.18	0.048	0.844	0.315	0.252	8.8	1500 J

Conventional Data Report

Pine Cr @ Rosalia

34F090

Class: AA
Rivermile: 22.4
Latitude: 47 14 28.5
Longitude: 117 22 25.5
Waterbody: WA-34-1017

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2003/10/07 10:45	11.7		465	9.09	7.98	7	0.909	0.01 U	0.364	0.0635	0.029	4.1	9
2003/11/05 10:20	2.9		423	10.7	7.97	3	1.31	0.024	0.946	0.0707	0.0505	3.2	8
	Station iced over												
2003/12/09 11:00	1.4		345	11.61	7.98	3	2.11 J	0.015	1.67	0.137	0.11	3.8	3
2004/02/10 10:45	1.3		378	12.72	7.91	9	13.7	0.011	14.6	0.138	0.112	12	8
2004/03/09 10:20	6.8		324	10.8	7.73	20	14.6	0.012	14.3	0.152	0.108	55	60
2004/04/13 9:55	12.3		354	9.3	7.94	5	2.97	0.01 U	2.67	0.0274	0.0071	2.2	19
2004/05/04 9:50	14.7		360	7.17	7.73	7	1.43	0.046	0.96	0.0832	0.0369	5	71
2004/06/15 10:35	14.7		356	8.8	8.03	10	1.63	0.023	1.23	0.0829	0.0527	8.3	430
	Collected metals. Very little flow. Domestic geese just below bridge.												
2004/07/13 9:55	18		407	4.88	7.75	14	1.15	0.04	0.71	0.142	0.0827	12	250
2004/08/03 10:12	19.7		439	5.75	7.7	17	1.42	0.048	0.891	0.0871	0.0386	8.5	240 J
2004/09/15 9:48	12.7		457	7.51	7.85	10	1.16	0.055	0.841	0.0943	0.0535	5.1	17

Metals Data Report

Pine Cr @ Rosalia

34F090

Class: AA
Rivermile: 22.4
Latitude: 47 14 28.5
Longitude: 117 22 25.5
Waterbody: WA-34-1017

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/07	10:45		175	0.1 U	0.02 U	0.5 U	1.7	1.27	1.06	0.16	0.02 U	0.002 UJ	2.34	1.6	5 U	1 U
2003/12/09	11:00		127	0.1 U	0.02 U	0.5 U	0.94	1.74	1.49	0.1 U	0.02 U	0.002 U	1.8	0.9	5 U	1.4
2004/02/10	10:45		129	0.17	0.12	0.66	0.82	1.72	1.2	0.28	0.041	0.002 U	1.42	0.76	5 U	1.9
2004/04/13	9:55		136	0.1 U	0.02 U	0.5 U	0.48	1.53	1.16	0.1 U	0.02 U	0.002 U	1.27	0.78	5 U	1.2
2004/06/15	10:35		142	0.1 U	0.02 U	0.5 U	1.1	1.62	1.21	0.23	0.02 U	0.002 U	1.74	1.15	5 U	2.3
2004/08/03	10:12		168	0.1 U	0.03	0.72	1.2	1.48	0.85	0.3	0.02 U	0.0033	2.51	2	5 U	1.7

Conventional Data Report

Union Flat Cr nr Mouth

34J050

Class: A
Rivermile: 0.5
Latitude: 46 49 42.0
Longitude: 117 59 10.0
Waterbody: WA-34-3010

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2004/03/03 14:32	4		345		8.23							35.8	
	Turbidity assessment												
2004/03/24 13:53	11.3		371		8.69							11.4	
	showers ending												

Conventional Data Report

Union Flat Cr @ Winona Rd

34J070

Class: A
Rivermile: 8.9
Latitude: 46 51 32.0
Longitude: 117 51 25.0
Waterbody: WA-34-3010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2004/03/24 13:27	10.4		378		8.21							9.1	

Conventional Data Report

Union Flat Cr @ Hwy 26

34J090

Class: A
Rivermile: 28.1
Latitude: 46 49 58.0
Longitude: 117 30 32.0
Waterbody: WA-34-3010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2004/03/03 12:05	2.9		331		7.84							23.2	
	Turbidity assessment												
2004/03/24 11:19	9.4		344		8.22							4.5	

Conventional Data Report

Union Flat Cr @Almota Rd

34J120

Class: A
Rivermile: 32.3
Latitude: 46 48 36.0
Longitude: 117 25 54.0
Waterbody: WA-34-3010

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2004/03/03 10:18	2.7		274		8.03 J							22.2	
Turbidity assessment. Bad pH meter battery. Replaced after this station.													
2004/03/24 10:10	8.1		336		8.38							4.4	

Conventional Data Report

Rebel Flat Cr @ Mouth

34K050

Class: A
Rivermile: 0.3
Latitude: 46 56 36.0
Longitude: 117 47 48.0
Waterbody: WA-34-4010

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2004/03/03 13:35	4.6		556		8.31							6.3	
	Turbidity assessment												
2004/03/24 12:47	9.9		553		8.38							3.2	

Conventional Data Report

Rebel Flat Cr @ Repp Rd

34K080

Class: A
Rivermile: 8.2
Latitude: 46 55 12.0
Longitude: 117 39 28.0
Waterbody: WA-34-4010

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2004/03/03 13:12	4		538		8.25							7.24	
	Turbidity assessment												
2004/03/24 12:25	9.1		537		8.19							6.9	

Conventional Data Report

Rebel Flat Cr @ Fairgrounds

34K120

Class: A
Rivermile: 22.3
Latitude: 46 52 11.0
Longitude: 117 26 08.0
Waterbody: WA-34-4010

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2004/03/03 12:20	3.2		495		8.17							4	
	Turbidity assessment												
2004/03/24 11:36	9.8		495		7.95							3.7	
	windy												

Conventional Data Report

Cow Cr @ mouth

34L050

Class: A
Rivermile: 0.7
Latitude: 46 45 57.0
Longitude: 118 08 46.0
Waterbody: WA-34-0000

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2004/03/03 15:36	3.7		342		8.69							5.77	
	Turbidity assessment												

Conventional Data Report

Snake R @ Interstate Br

35A150

Class: A
Rivermile: 139.6
Latitude: 46 25 15.0
Longitude: 117 02 05.0
Waterbody: WA-35-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 14:00	18.7	13000	346	8.68	8.33	5	0.889	0.012	0.656	0.0831	0.0669	1.8	8
2003/11/05 14:10	9.2	12600	359	10.9	8.51	4	0.67	0.01 U	0.5	0.0513	0.0417	2	1 J
2003/12/09 14:50	6.5	14300	343	11.71	8.36	3	0.785 J	0.01 U	0.665	0.0666	0.057	1.7	6
2004/01/13 13:42	3.5	17300	425	12.82	8.32	3	1.25	0.01 U	1.09	0.0634	0.0538	2	7
2004/02/10 14:00	3	16600	403	13.33	8.33	4	1.33	0.01 U	1.23	0.0506	0.0397	2.8	1
2004/03/09 13:55	5	24200	363	12.32	8.37	6	1.32	0.015	1.15	0.0664	0.0518	3.7	1
2004/04/13 13:45	11.6	32400	178	10.4	8.47	26	0.53	0.01 U	0.383	0.0342	0.016	9.2	10
2004/05/04 13:20	13.7	40300	129	9.89	7.99	12	0.326	0.013	0.18	0.0299	0.019	5.2	38
2004/06/15 13:50	16	46200	170	9.71	8.18	10	0.371	0.01 U	0.224	0.0359	0.026	2.9	6
	Good visible flow												
2004/07/13 13:40	20.2	22000	223	8.54	8.19	11	0.396	0.01 U	0.269	0.0457	0.0328	4.1	45
2004/08/03 14:20	22.5	15700	250	7.67	8.11	5	0.439	0.015	0.27	0.0496	0.0411	2.2	27 J
2004/09/15 13:20	19.2	19700	319	8.52	8.13	8	0.512	0.01 U	0.35	0.0663	0.0457	3.1	45

Conventional Data Report

Tucannon R @ Powers

35B060

Class: A
Rivermile: 2.3
Latitude: 46 32 16.0
Longitude: 118 09 16.0
Waterbody: WA-35-2010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/08 9:35	13.8	70	166	10	8.1	4	0.287	0.01 U	0.176	0.0375	0.034	0.9	37 J
2003/11/04 9:20	5.6	85	149	12.42	8.13	3	0.279	0.01 U	0.209	0.0386	0.0322	1	12
2003/12/10 9:40	6.5	94	134	11.71	8.01	4	0.378 J	0.01 UJ	0.276	0.0435	0.0435	1.3	24
2004/01/14 8:35	3.6	120	129	12.72	7.98	9	0.446	0.01 U	0.363	0.0504	0.0478	3.1	25 J
2004/02/11 8:45	4.6	120	134	12.42	7.9	8	0.671	0.01 U	0.592	0.0485	0.0655	2.9	13
2004/03/10 8:50	7.9	130	129	11.71	7.93	10	0.388	0.01 U	0.293	0.0416	0.0362	3.3	4 J
2004/04/14 8:40	11.4	155	106	10.5	8.06	11	0.2	0.01 U	0.101	0.041	0.029	3.2	16
2004/05/05 8:20	12.9	180	103	10	7.91	24	0.2	0.01 U	0.08	0.0477	0.0328	4.6	35
2004/06/16 9:25	14.6	132	117	10.52	8.35	7	0.158	0.01 U	0.051	0.0349	0.028	2	35
Used same filter as at Hooper for OP. Well rinsed, though, so should be ok.													
2004/07/14 9:10	18.5	58	146	9.25	8.1	4	0.22	0.01 U	0.11	0.0404	0.0364	1.2	32
2004/08/04 9:31	19.3	57	151	8.88	8.09	4	0.259	0.01 U	0.168	0.0506	0.0509	0.9	44
2004/09/13 8:18	15	62	146	9.44	8.02	6	0.18	0.01 U	0.126	0.0381	0.0323	1.3	28 J

Conventional Data Report

Columbia R nr Vernita

36A070

Class: A
Rivermile: 405
Latitude: 46 38 30.0
Longitude: 119 43 50.0
Waterbody: WA-CR-1030

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/08 12:07	18.6	53200	133	9.1	8.29	1 U	0.134	0.01	0.056	0.007	0.0046	0.5 U	1 U
Several fishing boats within a mile upstream of sampling site.													
2003/11/05 12:13	12.4	63500	130	10.15	7.99	2	0.177	0.01 U	0.097	0.0099	0.0078	1.2	1
pH measured @ 11.3°C.													
2003/12/09 12:15	8.2	124000	131	11.02	7.9	1 U	0.15	0.01 U	0.102	0.0071	0.0051	0.7	1 U
pH measured @ 8.6°C.													
2004/01/14 11:45	3.4	79400	141	12.95	8.15	1 U	0.17	0.01 U	0.142	0.0039	0.003 U	0.6	1 U
pH measured @ 4.8° C.													
2004/02/11 12:17	3.4	78100	141	13.67	8.14 J	1	0.17	0.01 U	0.151	0.0025	0.0038	0.7	1 U
pH measured @ 6.3° C. pH meter very slow with questionable result. "J" pH.													
2004/03/10 10:20	4.6	75200	149	13.3	8.14	2	0.21	0.01 U	0.155	0.0034	0.003 U	0.8	1 U
pH measured @ 7.1°C.													
2004/04/14 11:39	8.7	113000	144	12.62	8.26	2	0.255	0.01 U	0.193	0.0039	0.003 U	1.1	1 U
pH measured @ 11.5°C. High winds, blowing dust, and heavy traffic caused dangerous conditions on the bridge. QA moved from this location to Kiona Bridge.													
2004/05/05 12:13	10.7	133000	135	13.13	7.99	2	0.22	0.01 U	0.169	0.0039	0.003 U	0.9	1 U
pH recorded @ 13.5°C.													
2004/06/09 11:00	13.8	122000	122	11.91	8.2	2	0.16	0.01 U	0.083	0.0035	0.003 U	1.1	1
pH measured @ 14.3°C.													
2004/07/14 9:27	17.2	48100	123	10.8	8.3	2	0.11	0.01 U	0.053	0.0041	0.003 U	1	1 U
pH measured @ 19.0°C.													
2004/08/04 12:35	20	59600	128	10.2	8.22	2	0.11	0.01 U	0.052	0.0048	0.003 U	0.7	2
pH measured @ 21.3°C.													
2004/09/15 11:52	19	48300	132	9.43	8.24	1	0.16	0.012	0.068	0.008	0.005	1	1 U
pH measured @ 19.1°C													

Conventional Data Report

Yakima R @ Kiona

37A090

Class: A
Rivermile: 29.8
Latitude: 46 15 11.0
Longitude: 119 28 27.0
Waterbody: WA-37-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/08 13:45	16.7	1310	291	11.53	8.79	7	1.39	0.01 U	1.2	0.123	0.108	1.2	4
Blowing with dust storm. Dust in the air and visible on the surface of the water.													
2003/11/05 13:24	5.8	2250	254	14.01	8.42	4	1.5	0.023	1.24	0.0972	0.089	2.2	4
pH measured @ 6.8°C.													
2003/12/09 13:47	5.1	2840	204	13.26	8.08	6	1.08	0.01 U	0.95	0.0934	0.0804	2.6	3
pH measured @ 7.2°C.													
2004/01/14 13:47	3.2	2340	230	15.1	8.34	4	1.2	0.01 U	1.12	0.0834	0.0726	3	4
pH measured @ 5.2° C.													
2004/02/11 14:02	5.3	2790	217	14.38	8.3	7	1.04	0.01 U	0.946	0.0911	0.0844	3.5	1 U
pH measured @ 7.9° C.													
2004/03/10 11:40	9.4	4390	200	11.2	8.1	46	0.885	0.026	0.755	0.106	0.0645	15	6
pH measured @ 10.5°C.													
2004/04/14 13:47	13.2	5450	138	10.6	8.11	52	0.492	0.01 U	0.363	0.0681	0.0416	13	20
pH measured @ 14.2°C. High winds, dust, rain squall.													
2004/05/05 13:31	18.3	2640	168	10	8.32	19	0.655	0.021	0.481	0.106	0.072	8.5	17
pH recorded @ 18.6°C.													
2004/06/09 12:54	16.9	1920	201	10.4	8.16	12	0.994	0.021	0.784	0.0788	0.0579	5.6	32
pH measured @ 17.8°C. Plant debris in water. Greenish color to water.													
2004/07/14 10:50	23.9	920	271	9.09	8.48	4	1.11	0.01 U	0.897	0.1	0.0832	2.2	3
pH measured @ 23.3°C.													
2004/08/04 13:52	25.3	1190	279	10.3	8.6	6	1.09	0.01 U	0.946	0.142	0.127	2.2	16
pH measured @ 24.8°C.													
2004/09/15 13:06	18.1	2280	257	11.28	8.61	7	1.27	0.01 U	1.13	0.135	0.105	2.9	11
pH measured @ 19.3°C													

Metals Data Report

Yakima R @ Kiona

37A090

Class: A
Rivermile: 29.8
Latitude: 46 15 11.0
Longitude: 119 28 27.0
Waterbody: WA-37-1010

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/08	13:45		116	0.1 U	0.02 U	0.5 U	0.85	0.97	0.81	0.11	0.02 U	0.002 UJ	1.06 J	2.02	5 U	1.3
2003/12/09	13:47		81.3	0.1 U	0.02 U	0.5 U	0.72	0.7	0.48	0.1 U	0.02 U	0.002 U	0.96	1.1	5 U	1 U
2004/02/11	14:02		88	0.1 U	0.02 U	0.5 U	0.62	0.77	0.51	0.1 U	0.02 U	0.002 U	0.83	1.11	5 U	1 U
2004/04/14	13:47		55.8	0.1 U	0.02 U	1.4	0.25	2.47	0.55	0.69	0.023	0.0032	0.52	0.99	6.4	2.3
2004/06/09	12:54		76.4	0.1 U	0.02 U	0.5 U	0.52	1.06	0.8	0.15	0.032	0.002 U	0.8	1.45	5 U	1.6
2004/08/04	13:52		109	0.1 U	0.02 U	0.5 U	0.88	1.13	0.83	0.12	0.02 U	0.002 U	1.28	2.58	5 U	1 U

Conventional Data Report

Yakima R @ Nob Hill

37A205

Class: A
Rivermile: 111.3
Latitude: 46 34 54.0
Longitude: 120 27 38.0
Waterbody: WA-37-1040

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2003/10/08 15:47	15.7	1940	104	10.93	8.95	6	0.21	0.01 U	0.113	0.0311	0.022	4.1	6
2003/11/05 14:51	4.6	1440	139	14.21	8.42	4	0.353	0.01 U	0.257	0.0241	0.02	2.2	2
pH measured @ 6.2°C.													
2003/12/09 16:17	3	1900	113	13.46	7.96	2	0.21	0.01 U	0.161	0.0184	0.015	1.5	6
pH measured @ 5.5°C.													
2004/01/14 15:15	1.7	1510	120	15.1	8.26	3	0.254	0.01 U	0.191	0.0199	0.017	2	2
pH measured @ 3.9° C.													
2004/02/11 15:45	3.5	1910	123	14.69	8.34	3	0.189	0.01 U	0.135	0.0188	0.022	1.5	1 U
pH measured @ 5.3° C.													
2004/03/10 12:55	7.1	4390	117	12.5	7.93	42	0.337	0.01 U	0.227	0.039	0.019	18	11
pH measured @ 8.5°C.													
2004/04/14 16:16	9	5410	81	11.61	7.87	19	0.15	0.01 U	0.07	0.0207	0.012	8.4	15
pH measured @ 10.2°C.													
2004/05/05 14:49	11.7	4350	78	11.31	8.21	19	0.17	0.01 U	0.087	0.0337	0.021	5.7	15
pH recorded @ 12.8°C.													
2004/06/09 14:45	13.5	3580	86	10.9	8.27	8	0.2	0.01 U	0.108	0.0245	0.018	3.9	23
pH measured @ 15.5°C.													
2004/07/14 12:15	18	3150 J	87	10	8.25	11	0.271	0.011	0.177	0.0293	0.021	4	30
pH measured @ 19.6°C.													
2004/08/04 15:45	21.2	3360	84	10.1	8.73	9	0.19	0.01 U	0.114	0.0279	0.023	2.9	10
pH measured @ 21.9°C.													
2004/09/15 14:33	16.1	2810	102	11.17	8.66	6	0.2	0.01 U	0.105	0.0361	0.025	3.2	22
pH measured @ 17.6°C													

Conventional Data Report

Yakima R nr Cle Elum

39A090

Class: AA
Rivermile: 191
Latitude: 47 11 09.0
Longitude: 121 02 36.0
Waterbody: WA-39-1060

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/08 8:15	11.5	285	58	9.51	7.48	1	0.045	0.01 U	0.01 U	0.0049	0.003 U	0.6	6 J
2003/11/05 9:24	3	328	60	12.38	7.46	2	0.044	0.01 U	0.01 U	0.0052	0.0042	2.8	1
pH measured @ 4.6°C.													
2003/12/09 8:55	3.6	443	65	11.93	7.27	1	0.09	0.01 U	0.048	0.0057	0.0048	1	4 J
pH measured @ 4.0°C.													
2004/01/14 8:50	2.8	271	63	12.44	7.81	1	0.072	0.01 U	0.031	0.0034	0.0032	0.7	1 U
pH measured @ 3.6° C.													
2004/02/11 9:27	2.3	526	72	13.06	7.67	1	0.043	0.01 U	0.021	0.0029	0.007	0.7	1 UJ
pH measured @ 2.3° C.													
2004/03/10 7:22	3.6	1130	75	11.8	7.49	5	0.065	0.01 U	0.018	0.0046	0.003 U	3.1	1 UJ
pH measured @ 3.8°C.													
2004/04/14 8:12	5.6	1422	56	11.21	7.35	8	0.041	0.01 U	0.01 U	0.0074	0.003 U	5	1
pH measured @ 7.4°C.													
2004/05/05 8:52	6.9	532	60	11.21	7.24	5	0.041	0.01 U	0.01 U	0.0061	0.0031	2.9	8
pH recorded @ 8.1°C.													
2004/06/09 8:10	9.3	343	60	10.2	7.21	4	0.057	0.01 U	0.012	0.0049	0.0034	1.7	19
pH measured @ 11.0°C.													
2004/07/14 6:45	14.2	390	58	8.88	7.08	3	0.042	0.01 U	0.013	0.005	0.0031	1.5	22 J
pH measured @ 14.9°C.													
2004/08/04 9:40	17.5	611	52	8.77	7.42	5	0.057	0.01 U	0.01 U	0.0054	0.003 U	1.8	29
pH measured @ 18.4°C.													
2004/09/15 8:57	13.3	277	60	9.23	7.16	2	0.057	0.01 U	0.01 U	0.0064	0.0032	0.8	12
pH measured @ 13.1°C													

Conventional Data Report

Crab Cr nr Beverly

41A070

Class: B
Rivermile: 6
Latitude: 46 49 53.0
Longitude: 119 48 54.0
Waterbody: WA-41-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/08 10:31	14.5	257	531	9.51	8.58	11	1.85	0.01 U	1.59	0.0342	0.017	5.2	65
2003/11/05 10:58	3.8	203	728	12.89	8.33	18	2.63	0.019	2.15	0.0963	0.0603	12	170
pH measured @ 6.3°C.													
2003/12/09 11:01	4.4	152	814	12.44	8.32	9	3	0.01 U	2.64	0.0617	0.0305	5	9
pH measured @ 5.6°C.													
2004/01/14 10:40	3.6	188	843	12.44	8.27	15	3.16	0.024	2.79	0.104	0.0715	9.1	12
pH measured @ 5.4° C.													
2004/02/11 11:15	3.4	190	792	13.67	8.36	16	3.82	0.01 U	2.76	0.0809	0.0657	9	1
pH measured @ 5.9° C.													
2004/03/10 9:15	7.9	157	790	11.3	8.47	26	3.08	0.022	2.95	0.111	0.0524	16	7
pH measured @ 8.5°C.													
2004/04/14 10:17	13.4	201	580	9.69	8.46	76	1.8	0.01 U	1.54	0.0544	0.0084	24	53
pH measured @ 13.4°C. High winds and blowing dust.													
2004/05/05 10:54	14.1	130	609	9.89	8.44	29	1.6	0.015	1.3	0.0681	0.025	16	55
pH recorded @ 15.0°C.													
2004/06/09 10:02	15.7	198	543	8.68	8.26	52	1.57	0.015	1.26	0.0524	0.019	24	120
pH measured @ 16.9°C. Water appears turbid with plant debris. Small amount of foam.													
2004/07/14 8:25	22.2	146	564	7.17	8.33	54	1.92	0.021	1.36	0.0718	0.0301	19	100
pH measured @ 21.3°C.													
2004/08/04 11:28	22.3	167	547	9.59	8.51	62	1.57	0.01 U	1.21	0.0424	0.0089	17	84
pH measured @ 21.7°C.													
2004/09/15 10:53	15.8	266	550	9.84	8.43	21	1.72	0.01 U	1.48	0.0444	0.013	7.9	120
pH measured @ 16.0°C													

Conventional Data Report

Wenatchee R @ Wenatchee

45A070

Class: A
Rivermile: 1.1
Latitude: 47 27 32.0
Longitude: 120 20 07.0
Waterbody: WA-45-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 13:13	15.6 J	411	101	12.55	8.95	2	0.369	0.01 U	0.259	0.0089	0.0068	0.7	7
	Water at this site appeared to be backed up by high water in the Columbia River. Some, but very little current was visible.												
2003/11/03 13:06	5.4	2040	47	13.5	7.52	3	0.15	0.01 U	0.098	0.0064	0.0037	3.1	9
	pH measured @ 6.5°C. Riffle observed d/s of sampling site indicating backwater from Columbia unlikely. Samples also pulled approximately 1 mile u/s from site @ Sleepy Hollow Bridge for data comparison. Sleepy Hollow results: pH = 7.95, conductivity = 46,												
2003/12/07 13:57	3.1	2310	53	13.97	7.88	1	0.14	0.01 U	0.093	0.0044	0.0035	0.7	3
	pH measured @ 4.2°C.												
2004/01/12 13:45	1.1 J	1100	70 J	14.99 J	7.88 J	2	0.21	0.01 U	0.155	0.006	0.0054	0.6	
	pH measured @ 3.4° C. The river at the regular site was not sampleable because of ice. Measurements were made and samples were taken apprpximately 1 mile upstream at the Sleepy Hollow Road bridge.												
2004/02/09 13:35	2.9	1530	68	14.99	8.47	2	0.14 J	0.01 U	0.107	0.0039	0.0031	0.5	1 U
	pH measured @ 6.4° C.												
2004/03/08 13:10	6.5	1790	87	14.4	8.65	7	0.13	0.01 U	0.059	0.0057	0.003 U	2.9	1
	pH measured @ 12.7°C.												
2004/04/12 14:00	8.3	6680	45	13.13	8.37	10	0.098	0.01 U	0.04	0.0034	0.003 U	2.6	4
	pH measured @ 12.4°C												
2004/05/03 12:57	9.2	9600	35	11.91	7.3 J	29	0.1	0.01 U	0.052	0.008	0.003 U	5	15
	pH recorded @ 13.3°C. pH was given a "J" because of an abnormally long response time by the meter.												
2004/06/07 14:34	11.1	6580	33	11.41	8.07	4	0.082	0.01 U	0.043	0.0029	0.003 U	1.3	2
	pH measured @ 15.2°C.												
2004/07/12 14:22	19.3	1560	48	9.39	8.22	2	0.16	0.01 U	0.104	0.0045	0.003 U	1	3
	pH measured @ 20.7°C. River appeared to be backed up by high water in the Columbia. A sample was taken approximately 1 mile upstream of the Wenatchee @ Wenatchee site (45A070) at the Sleepy Hollow Bridge. The results are: Time = 14:42; Temp. = 19.8; pH												
2004/08/02 11:15	21.1	862	67	9.69	8.33	2	0.21	0.01 U	0.137	0.0042	0.0038	0.7	20
	pH measured @ 22.0°C.												
2004/09/13 11:50	14.4	1010	64	11.48	7.98	4	0.163	0.01 U	0.088	0.0081	0.0038	1	43
	pH measured @ 15.2°C												

Metals Data Report

Wenatchee R @ Wenatchee

45A070

Class: A
Rivermile: 1.1
Latitude: 47 27 32.0
Longitude: 120 20 07.0
Waterbody: WA-45-1010

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/06	13:13		44.5	0.1 U	0.02 U	0.5 U	0.45	0.67	0.43	0.13	0.02 U	0.002 UJ	1.06 J	0.36	5 U	1 U
2003/12/07	13:57		23.2	0.1 U	0.02 U	0.5 U	0.28	0.7	0.38	0.1 U	0.02 U	0.002 U	1.36	0.38	5 U	1 U
2004/02/09	13:35		30.9	0.1 U	0.02 U	0.5 U	0.32	0.53	0.35	0.1 U	0.023	0.002 U	1.26	0.36	5 U	1 U
2004/04/12	14:00		19	0.1 U	0.02 U	0.8	0.25 U	0.88	0.45	0.12	0.024	0.002 U	1.21	0.38	5 U	1.7
2004/06/07	14:34		13.8	0.1 U	0.02 U	0.5 U	0.25 U	0.43	0.31	0.1 U	0.02 U	0.002 U	0.92	0.3	5 U	1.7
2004/08/02	11:15		28.3	0.1 U	0.02 U	0.5 U	0.3	0.61	0.48	0.11	0.02 U	0.002 U	1.07	0.3	5 U	2.9

Conventional Data Report

Wenatchee R nr Leavenworth

45A110

Class: AA
Rivermile: 35.6
Latitude: 47 40 35.0
Longitude: 120 43 58.0
Waterbody: WA-45-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 8:45	12.5 J	311	41	10.02	7.27	1	0.049	0.01 U	0.01 U	0.0022	0.003 U	0.8	1 J
Water too shallow to use stainess steel sampler off bridge. Station was sampled by hand dipping from right bank. Salmon were observed in the river.													
2003/11/03 8:40	5	1390	31	11.97	7.19	3	0.088	0.01 U	0.038	0.0074	0.003 U	4.8	3 J
Salmon present in river. pH measured @ 5.7°C.													
2003/12/07 9:27	3.2	1370	32	12.34	7.25	1 U	0.086	0.01 U	0.056	0.0025	0.003 U	0.9	2
pH measured @ 2.6°C.													
2004/01/12 8:20	1.2	695 J	40	13.26	6.46	2	0.097	0.01 U	0.051	0.002	0.003 UJ	0.6 J	
pH measured @ 2.9° C.													
2004/02/09 8:39	1.1	921	38	13.46	6.69	1 U	0.083	0.01 U	0.051	0.0021	0.003 U	0.5 U	1 J
pH measured @ 2.4° C.													
2004/03/08 8:45	3.8	1050	44	12.5	7.1	3	0.087	0.01 U	0.043	0.003	0.003 U	1	1 U
pH measured @ 4.8°C.													
2004/04/12 9:40	5.9	4460	33	11.91	6.87	7	0.12	0.01 U	0.075	0.003	0.003 U	2.2	1
pH measured @ 10.1°C													
2004/05/03 8:40	7.4	6390	28	11.31	7.1	33	0.09	0.01 U	0.057	0.0057	0.003 U	5.8	5 J
pH recorded @ 10.1°C.													
2004/06/07 9:12	9	4650	27	10.7	6.96	4	0.072	0.01 U	0.038	0.0019	0.003 U	1.5	5
pH measured @ 10.3°C. A request was made to the lab to check and verify pH value.													
2004/07/12 10:39	14.7	1190	30	10.6	6.7	2	0.044	0.01 U	0.012	0.0021	0.003 U	0.7	6
pH measured @ 17.3°C. pH meter was rechecked and a second sample was measured.													
2004/08/02 7:20	18.3	877	37	8.46	6.9	2	0.062	0.01 U	0.013	0.0038	0.003 U	1	23 J
pH measured @ 19.0°C.													
2004/09/13 8:05	13	699	35	9.94	7.66	3	0.047	0.01 U	0.01 U	0.0024	0.003 U	2.6	13 J
pH measured @ 12.4°C													

Conventional Data Report

Chumstick Cr. nr mouth

45C060

Class: A
Rivermile: 0.2
Latitude: 47 36 18.0
Longitude: 120 38 51.0
Waterbody: WA-45-1200

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 10:30	10.6 J	2.12	342	9.31	7.36	1 U	1.35	0.01 U	1.26	0.0235	0.023	0.5 U	810
Stage was measured with staff gage. New SHU bubbler at this site. Site was sampled by hand filling bottles from the middle of the stream. DO hand sampler used.													
2003/11/03 10:12	7	2.57	576	9.75	7.51	1	1.3	0.01 U	1.16	0.0225	0.017	0.6	17
Sample bottles hand held and dipped. DO hand sampler used. pH measured @ 10.3C. [this record hand-entered later. Original not found, though on hard copy.]													
2003/12/07 11:18	4	6.6	308	11.83	7.79	2	0.608	0.01 U	0.508	0.0227	0.019	0.9	2
pH measured @ 4.8°C. Sampled with hand held bottles. Snow on ground.													
2004/02/09 10:40	2.4	10.8	274	13.06	8	1	0.421	0.01 U	0.354	0.0186	0.014	0.8	1 UJ
pH measured @ 3.8° C. Hand sampled from bank.													
2004/03/08 10:55	4.7	48.2	253	12.3	7.93	14	0.426	0.01 U	0.29	0.0327	0.019	5.5	31
pH measured @ 6.3°C. Sampled with hand held bottles.													
2004/04/12 11:03	8	22.1	323	11.31	8	5	0.412	0.01 U	0.299	0.027	0.018	3.3	3
pH measured @ 9.3°C. Site was hand sampled from right bank. Used plastic DO sampler. Staff gage hard to read because of water surge. Estimate + or - 0.06 on staff gage.													
2004/05/03 10:42	9.8	14.7	280	10.5	7.98	7	0.327	0.01 U	0.248	0.0282	0.018	3.4	10
pH recorded @ 10.9°C. Sampled by hand midstream. Surge made reading staf gage difficult. Estimate variable by + or - 0.05.													
2004/06/07 10:26	9.7	6.6	264	10.1	7.94	5	0.459	0.01 U	0.366	0.0276	0.021	2.2	68
pH measured @ 10.6°C. Raining hard at this site. Stormwater from road running into creek.													
2004/07/12 11:51	12.4	3.09	258	9.69	7.44	4	0.771	0.01 U	0.71	0.0207	0.017	1.8	27
pH measured @ 14.7°C.													
2004/08/02 8:51	11.1	2.12	324	9.18	7.62	1 U	1.13	0.01 U	1.08	0.0265	0.024	0.5	180
pH measured @ 13.7°C. Site sampled by hand. Filimentous algae abundant.													
2004/09/13 9:35	11	4.33	182	9.74	7.08	4	0.593	0.01 U	0.535	0.0201	0.015	1.6	48
pH measured @ 11.4°C													

Conventional Data Report

Brender Cr nr Cashmere

45D070

Class: A
Rivermile: 0.1
Latitude: 47 31 17.0
Longitude: 120 28 32.0
Waterbody:

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 11:50	12.6 J	1.41	512	8.29	7.77	1 U	3.68	0.01 U	3.29	0.04	0.03	0.8	280
Site sampled by hand dipping bottles in the center of the stream. DO hand sampler used. There had been recent brush cutting around the site to clear the road right-of-way.													
2003/11/03 11:20	7	1.41	529	9.54	7.69	1	3.31	0.01 U	3.4	0.0346	0.024	0.5 U	67
Sample bottles hand held and dipped. DO hand sampler used. pH measured @ 8.3°C.													
2003/12/07 12:35	6.4	1.46	551	9.38	7.68	1	3.72	0.012	3.48	0.0509	0.0356	0.8	44
pH measured @ 6.9°C. Sampled with hand held bottles. Snow on ground.													
2004/01/12 11:05	7	1.41	567	9.08	7.64	2	3.99	0.016	3.46	0.0473	0.0383	1.1	
pH measured @ 7.0° C.													
2004/02/09 12:13	7.5	1.46	565	9.79	7.71	2	3.78	0.016	4.48	0.0431	0.03	1.2	81
pH measured @ 9.0° C. Hand sampled from bank.													
2004/03/08 11:45	10.6	1.46	553	9.6	7.81	3	3.93	0.01	3.3	0.049	0.028	1.6	55
pH measured @ 10.9°C. Sampled with pole.													
2004/04/12 12:23	13.4	1.46	545	8.68	7.68	4	3.73	0.01 U	2.71	0.0492	0.0308	1.6	90
pH measured @ 14.3°C. Site was hand sampled from left bank. Used plastic DO sampler.													
2004/05/03 11:58	13.7	3.08	296	8.28	7.61	8	1.44	0.011	1.33	0.0432	0.027	3.3	160
pH recorded @ 14.2°C. Sampled by hand from left bank.													
2004/06/07 12:00	12.2	3.62	226	8.78	7.55	5	1.06	0.01 U	0.961	0.0337	0.026	3.1	400
pH measured @ 12.9°C.													
2004/07/12 12:50	16.3	2.41	288	8.08	7.61	2	1.26	0.01 U	1.16	0.0375	0.029	1.5	280
pH measured @ 17.0°C.													
2004/08/02 10:06	17.2	1.65	315	6.63	7.65	3	1.4	0.01 U	1.28	0.0412	0.033	1.3	400
Hand sampled.													
2004/09/13 10:40	12.5	5.46	192	9.02	7.3	8	0.612	0.01 U	0.531	0.038	0.026	2.6	710
pH measured @ 12.9°C													

Conventional Data Report

Mission Cr nr Cashmere

45E070

Class: A
Rivermile: 0.2
Latitude: 47 31 17.0
Longitude: 120 28 29.0
Waterbody: WA-45-1011

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/11/03 11:46	2.8	3.11	329	13.29	8.18	1 U	1.11	0.01 U	0.987	0.0053	0.003 U	0.5 U	11
Sample bottles hand held and dipped from right bank u/s of bridge.. DO hand sampler used. pH measured @ 4.7°C.													
2003/12/07 12:53	1.6	15.6	287	13.77	8.1	1 U	0.689	0.01 U	0.617	0.0051	0.0042	0.5 U	5
pH measured @ 4.4°C. Sampled with hand held bottles. Snow on ground.													
2004/01/12 11:35	1.6		301	14.18	8.19	1	0.688	0.01 U	0.586	0.0039	0.004	0.9	
pH measured @ 3.2° C. No flow measurement was taken. Creek was iced over at RP, bubbler and staff gauge.													
2004/02/09 12:27	2.5	16.7	276	14.38	8.24	2	0.359	0.01 U	0.337	0.0028	0.003 U	0.9	2
pH measured @ 4.0° C. Hand sampled from bank.													
2004/03/08 11:52	5.3	38.7	196	12.4	8.2	182	0.24	0.01 U	0.145	0.0457	0.006	60	6
Ph measured @ 9.4°C. Sampled with pole. Floating vegetation and debris.													
2004/04/12 12:47	8.2	25.1	213	11.91	8.4	14	0.24	0.01 U	0.161	0.0046	0.003 U	3.9	1 U
pH measured @ 10.1°C. Site was hand sampled from right bank. Used plastic DO sampler.													
2004/05/03 12:16	9.7	25.1	186	11.31	8.27	18	0.22	0.01 U	0.15	0.0058	0.0037	4.9	8
pH recorded @ 11.1°C. Sampled by hand from right bank.													
2004/06/07 12:23	10.8	14.2	224	10.9	8.31	7	0.406	0.01 U	0.33	0.006	0.0046	3.6	59
pH measured @ 12.7°C.													
2004/07/12 13:04	17.1	2.33	248	10.5	8.56	2	0.727	0.01 U	0.636	0.0107	0.0069	1.7	160
pH measured @ 18.5°C. Abundance of filamentous algae.													
2004/08/02 10:31	20.4		140	9.08	8.17	2	0.309	0.01 U	0.24	0.0062	0.0052	1.2	120
pH measured @ 20.7°C. Hand sampled. Water was very low and would not allow full submersion of bottle. Samples included surface water.													
2004/09/13 11:00	11.9	1.57	130	10.87	7.31	4	0.4	0.018	0.275	0.0336	0.018	3.5	520
pH measured @ 12.8°C													

Conventional Data Report

Eagle Cr. nr mouth

45Q060

Class: A
Rivermile: 0.2
Latitude: 47 37 35.0
Longitude: 120 38 22.0
Waterbody:

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/12/07 10:39	0.8	2.11	460	13.67	8.25	1 U	0.16	0.01 U	0.09	0.0186	0.014	0.5 U	7
pH measured @ 4.3°C. Sampled with hand held bottles. Snow on ground.													
2004/01/12 9:40	1.3		448	13.26	7.96	1 U	0.18	0.01 U	0.119	0.0178	0.016	0.5 U	
pH measured @ 3.2° C. No tape-down was attempted because RP was covered with snow.													
2004/02/09 9:52	0.4	2.5	455	14.48	8.2	1 U	0.16	0.01 U	0.107	0.0154	0.012	0.5 U	1 UJ
pH measured @ 2.8° C. Hand sampled from bank.													
2004/03/08 10:25	4	5.09	378	12.6	8.17	3	0.25	0.01 U	0.133	0.0259	0.018	1.5	1 U
pH measured @ 5.3°C. Sampled with hand held bottles.													
2004/04/12 10:32	8.2	3.92	443	11.51	8.25	4	0.22	0.01 U	0.11	0.0201	0.014	2.2	1
pH measured @ 10.5°C. Site was hand sampled from left bank. Used plastic DO sampler. Stage was tape-down at Chelan CD RP.													
2004/05/03 9:46	10.5	2.95	448	10.8	8.23	4	0.15	0.01 U	0.059	0.0207	0.014	1.9	2
pH recorded @ 12.3°C. Sampled by hand from left bank.													
2004/06/07 9:54	10.7	2.5	446	10.8	8.29	1	0.13	0.01 U	0.045	0.0166	0.014	0.6	540 J
pH measured @ 11.5°C. Filamentous algae abundant in stream.													

Conventional Data Report

Noname Creek nr Cashmere

45R050

Class: A
Rivermile: 0.01
Latitude: 47 31 17.0
Longitude: 120 28 34.0
Waterbody:

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 11:27	13.6 J		565	8.4	7.66	1 U	4.24	0.015	4.46	0.0619	0.0475	0.6	350
Site was hand sampled using a pole. DO bottled was filled directly from the stream.													
2003/11/03 10:57	10		576	8.73	7.59	4 J	4.03	0.048	3.89	0.0606	0.0383	1	1100 J
Sampling pole used to dip bottles. Do bottle dipped directly into stream. pH measured @ 10.3°C.													
2003/12/07 12:05	8.6		555	8.77	7.51	1 U	3.82	0.062	3.55	0.0636	0.0396	1.7	450
pH measured @ 8.5°C. Sampled with hand held sampling pole. Snow on ground.													
2004/01/12 10:40	8.5		566	9.28	7.56	4	3.53	0.061	3.18	0.0561	0.0366	2.5	
pH measured @ 8.6° C. Several ducks were observed upstream of the sampling site.													
2004/02/09 11:48	8.1		539	9.69	7.55	1	3.29	0.035	3.42	0.0566	0.037	1.4	40 J
pH measured @ 9.7° C. Hand sampled with sampling pole. DO bottle filled directly.													
2004/03/08 11:35	10.3		600	9.6	7.66	3	4.58	0.032	4.13	0.0723	0.0411	2.8	14
pH measured @ 10.8°C. Sampled with pole.													
2004/04/12 11:56	12.9		568	8.98	7.53	2	3.47	0.01 U	3.44	0.0542	0.0308	1.8	25
pH measured @ 14.5°C. Site sampled using pole. DO bottled filled directly from stream.													
2004/05/03 11:45	12.8		334	8.68	7.54	3	1.7	0.01 U	1.61	0.0404	0.025	2.3	100
pH recorded @ 14.0°C. Sampled by hand standing midstream.													
2004/06/07 11:13	12.1		253	8.68	7.57	2	1.27	0.01 U	1.14	0.0285	0.021	1.8	880 J
pH measured @ 12.8°C.													
2004/07/12 12:33	16.1		377	8.58	7.53	1	2.06	0.01 U	1.85	0.0345	0.026	0.8	260
pH measured @ 17.3°C.													
2004/08/02 9:45	16.5		391	7.04	7.63	2	2.25	0.01	2	0.0334	0.028	0.9	250
pH measured @ 17.7°C. Hand sampled.													
2004/09/13 10:20	12.5		216	9.02	7.27	3	1.06	0.01 U	0.933	0.0381	0.026	2	270
pH measured @ 12.7°C													

Conventional Data Report

Entiat R nr Entiat

46A070

Class: A
Rivermile: 1.5
Latitude: 47 39 48.0
Longitude: 120 14 58.0
Waterbody: WA-46-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 14:39	14.5 J	82	112	10.82	9.17	2	0.22	0.01 U	0.121	0.0026	0.0037	0.5 U	6
	pH meter re-checked for calibration and found to be within acceptable limits.												
2003/11/03 15:01	2.8	220	67	13.6	7.46	2	0.1	0.01 U	0.08	0.0026	0.0033	0.7	2
	Salmon present in river. pH measured @ 4.8°C.												
2003/12/07 15:57	1.2	191	76	13.97	7.46	1 U	0.1	0.01 U	0.081	0.0023	0.0036	0.5 U	1
	pH measured @ 2.7°C. Temperature measured with alcohol thermometer (CT1) in place of long-line thermister.												
2004/01/12 12:55	1.5	165	85	14.59	8.34	1	0.12	0.01 U	0.077	0.0017	0.0036	0.7	
	pH measured @ 3.1° C. Flow was measured using the USGS gaging station but ice had narrowed the channel to approximately 1/2 its normal width so the Stage entry should not be relied on.												
2004/02/09 15:10	2.8	128	100	14.28	8.58	1	0.093 J	0.01 U	0.068	0.0021	0.003 U	0.5 U	1 U
	pH measured @ 5.6° C.												
2004/03/08 13:50	8.6	209	103	12.5	8.87	4	0.094	0.01 U	0.035	0.0025	0.003 U	1	1 U
	pH measured @ 10.4°C.												
2004/04/12 15:18	9.6	890	53	12.02	8.33	14	0.068	0.01 U	0.01 U	0.0049	0.003 U	3	1 U
	pH measured @ 12.3°C.												
2004/05/03 15:19	9.6	1660	37	11.41	7.37	36	0.049	0.01 U	0.01 U	0.0113	0.0032	7.5	3
	pH recorded @ 12.8°C.												
2004/06/07 16:08	11.4	1200	37	11.51	7.56	7	0.043	0.01 U	0.013	0.0034	0.0033	1.6	7
	pH measured @ 12.1°C.												
2004/07/12 15:30	19.5	266	66	9.59	8.08	4	0.083	0.01 U	0.033	0.0031	0.003 U	1.1	18
	pH measured @ 20.7°C.												
2004/08/02 12:45	20.2	156	79	9.18	8.28	2	0.14	0.01 U	0.072	0.0041	0.0038	0.6	15
	pH measured @ 21.4°C.												
2004/09/13 12:40	13.1	117	87	10.87	8.09	11	0.165	0.01 U	0.108	0.0109	0.003	14	13
	pH measured @ 14.5°C												

Conventional Data Report

Methow R nr Pateros

48A070

Class: A
Rivermile: 5
Latitude: 48 04 29.0
Longitude: 119 57 20.0
Waterbody: WA-48-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 15:37	13.8	294	171	10.32	8.56	1 U	0.323	0.01 U	0.247	0.0018	0.003 U	0.5 U	1 U
2003/11/04 15:06	2.8	938	134	13.4	8.02	1	0.12	0.01 U	0.101	0.0016	0.003 U	0.5 U	1
pH measured @ 4.4°C.													
2003/12/08 16:50		626											
No sample taken because of dangerous bridge conditions (ice and darkness).													
2004/01/13 15:12	0.2	667	153	14.69	8.01	2	0.19	0.01 U	0.156	0.0011	0.0033	1	
pH measured @ 1.6° C. Ice covering 75%+ of the river.													
2004/02/10 15:41	2.5	383	173	13.87	8.14	1 U	0.22	0.01 U	0.198	0.0011	0.003 U	0.5 U	1 U
pH measured @ 4.4° C.													
2004/03/09 15:48	9.5	452	170	11.4	8.3	3	0.22	0.01 U	0.164	0.0014	0.0032	0.9	1 U
pH measured @ 10.9°C.													
2004/04/13 15:32	8.6	4320	89	11.41	7.81	43	0.15	0.01 U	0.077	0.0109	0.003 U	11	18
pH measured @ 10.4°C.													
2004/05/04 15:12	9.9	6050	68	11.21	7.73	34	0.097	0.01 U	0.033	0.0111	0.003	8.8	4
pH recorded @ 11.9°C.													
2004/06/08 15:35	12.3	3360	78	10.6	7.87	5	0.078	0.01 U	0.032	0.002	0.003 U	1.6	3
pH measured @ 14.4°C.													
2004/07/13 16:07	19.5	1070	118	9.19	8.34	3	0.1	0.01 U	0.038	0.0044	0.0031	1.4	6
pH measured @ 20.7°C.													
2004/08/10 14:19	21.4	564	132	9.18	8.46	16	0.24	0.01 U	0.131	0.0236	0.011	6.8	17
pH measured @ 22.1°C. River unusually turbid and dark.													
2004/09/14 14:43	14.8	414	160	10.76	8.58	3	0.13	0.01 U	0.06	0.0048	0.003 U	1	1
pH measured @ 16.2°C													

Conventional Data Report

Methow R @ Twisp

48A140

Class: A
Rivermile: 39.4
Latitude: 48 21 34.0
Longitude: 120 06 47.0
Waterbody: WA-48-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 14:33	12.5	248	143	10.72	8.68	1	0.284	0.01 U	0.211	0.0017	0.003 U	0.5 U	4
2003/11/04 14:06	3.2	795	114	13.8	7.97	1 U	0.12	0.01 U	0.079	0.0014	0.003 U	0.5 U	1
pH measured @ 4.4°C.													
2003/12/08 16:02	2	558	125	13.87	8.14	1 U	0.12	0.01 U	0.083	0.0012	0.003 U	0.5 U	
pH measured @ 2.7°C.													
2004/01/13 14:12	3.5	385 J	134	13.67	8.32	1	0.14	0.01 U	0.108	0.001 U	0.0035	0.5 U	
pH measured @ 4.6° C.													
2004/02/10 14:34	2.7	315	145	13.67	8.14	1 U	0.16	0.01 U	0.138	0.001	0.003 U	0.5 U	1 U
pH measured @ 4.5° C.													
2004/03/09 14:45	8.5	412	145	11.6	8.19	2	0.17	0.01 U	0.114	0.0011	0.003 U	0.6	1 U
pH measured @ 11.3°C.													
2004/04/13 14:22	7	4200	81	11.61	7.82	30	0.16	0.01 U	0.085	0.0099	0.0031	9.2	9
pH measured @ 10.2°C.													
2004/05/04 14:20	8.5	5710	65	11.21	7.71	33	0.093	0.01 U	0.032	0.0079	0.003 U	5.3	6
pH recorded @ 10.7°C.													
2004/06/08 14:27	11.6	3070	74	10.8	7.75	5	0.076	0.01 U	0.034	0.002	0.003 U	1	2
pH measured @ 13.6°C.													
2004/07/13 15:14	15.6	995	102	10.5	8.45	2	0.12	0.01 U	0.058	0.0046	0.0036	1.7	13
pH measured @ 18.0°C.													
2004/08/10 13:22	18	502	114	9.89	8.25	15	0.23	0.01 U	0.132	0.0185	0.0093	6.3	62
pH measured @ 19.6°C. River unusually turbid and dark.													
2004/09/14 13:35	12.8	390	134	10.46	8.35	3	0.18	0.01 U	0.126	0.0041	0.003 U	1	17
pH measured @ 14.6°C													

Conventional Data Report

Okanogan R @ Malott

49A070

Class: A
Rivermile: 17
Latitude: 48 16 50.0
Longitude: 119 42 12.0
Waterbody: WA-49-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 13:05	16.5	494	308	9.41	8.55	2	0.17	0.01 U	0.01 U	0.0089	0.0034	1.3	23
2003/11/04 12:25	3.2	2180	194	13.19	7.98	5	0.16	0.01 U	0.044	0.0079	0.0031	3.5	5
pH measured @ 4.6°C.													
2003/12/08 13:54		1350	247	14.18	8.1	2	0.089	0.01 U	0.01 U	0.0052	0.003 U	1.2	
pH measured @ 4.3°C. Long-line thermister broken. No temperature recorded.													
2004/01/13 13:45		1400											
River frozen over. No sample taken.													
2004/02/10 12:46	2.2	854	283	14.08	8.23	2	0.11	0.01 U	0.021	0.0058	0.003 U	0.9	1 U
pH measured @ 4.2° C.													
2004/03/09 13:30	9.1	741	294	11.5	8.13	3	0.14	0.01 U	0.026	0.008	0.003	1.2	1 U
pH measured @ 10.6°C.													
2004/04/13 12:52	11.7	4010	138	10.7	8.01	46	0.13	0.01 U	0.01 U	0.0182	0.004	18	25
pH measured @ 13.1°C.													
2004/05/04 13:13	10.9	9390	79	10.9	7.48	150	0.12	0.01 U	0.01 U	0.08	0.0044	75	63
pH recorded @ 13.7°C. Relativly high water with high turbidity and floating debris.													
2004/06/08 12:46	13.9	6720	84	10.2	8.25	34	0.084	0.01 U	0.01 U	0.0145	0.0038	10	31
pH measured @ 15.7°C.													
2004/07/13 13:39	22.1	2060	182	8.68	8.4	6	0.097	0.01 U	0.01 U	0.0093	0.0039	3	24
pH measured @ 22.5°C.													
2004/08/10 11:44	23.7	1130	222	8.16	8.25	5	0.14	0.01 U	0.01 U	0.0092	0.004	1.7	72
pH measured @ 23.5°C.													
2004/09/14 12:43	17.3	1200	274	9.43	8.27	4	0.13	0.01 U	0.01 U	0.0105	0.003 U	1.3	200
pH measured @ 18.7°C													

Metals Data Report

Okanogan R @ Malott

49A070

Class: A
Rivermile: 17
Latitude: 48 16 50.0
Longitude: 119 42 12.0
Waterbody: WA-49-1010

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/07	13:05		152	0.1 U	0.02 U	0.5 U	0.92	1.21	0.96	0.1 U	0.02 U	0.002 UJ	1.05 J	4.62	5 U	1 U
2003/12/08	13:54		104	0.1 U	0.02 U	0.5 U	0.65	1.01	0.76	0.1 U	0.02 U	0.002 U	1.02	2.01	5 U	1 U
2004/02/10	12:46		130	0.1 U	0.027	0.5 U	0.64	0.88	0.72	0.1 U	0.02 U	0.002 U	0.92	2.39	5 U	1 U
2004/04/13	12:52		61.5	0.1 U	0.02 U	1.9	0.25 U	5.01	1.48	0.52	0.036	0.0042	0.46	3.92	5 U	1.3
2004/06/08	12:46		37.2	0.1 U	0.02 U	0.5 U	0.25 U	2.63	1.03	0.27	0.02	0.0039	0.35	3.14	5 U	1 U
2004/08/10	11:44		108	0.1 U	0.02 U	0.5 U	0.78	1.4	1.11	0.1 U	0.02 U	0.0027	1.14	6.11	5 U	1.4

Conventional Data Report

Okanogan R @ Oroville

49A190

Class: A
Rivermile: 78
Latitude: 48 56 21.0
Longitude: 119 25 32.0
Waterbody: WA-49-1040

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2003/10/07 11:25	17.6	348	310	7.28	8.26	4	0.281	0.039	0.01 U	0.007	0.003 U	1.8	6
2003/11/04 10:43	9	430	313	10.76	8.31	3	0.21	0.01 U	0.029	0.0076	0.003 U	1.5	1 U
	pH measured @ 8.8°C.												
2003/12/08 11:50	4.2	229	317	12.24	8.19	2	0.24	0.01 U	0.047	0.0081	0.003 U	1	
	pH measured @ 5.5°C.												
2004/01/13 11:45	0.2	264	322	14.08	8.22	1	1.26	0.01 U	0.059	0.0062	0.003 U	1.2	
	pH measured @ 2.2° C.												
2004/02/10 11:17	0.8	205	323	13.87	8.24	2	0.262	0.01 U	0.066	0.0075	0.003 U	1	1
	pH measured @ 2.3° C.												
2004/03/09 11:42	5	116	320	13.2	8.23	3	0.25	0.01 U	0.057	0.0077	0.003 U	1.4	1 U
	pH measured @ 9.1°C.												
2004/04/13 11:31	11.5	110	318	11.51	8.38	5	0.22	0.01 U	0.01 U	0.0071	0.003 U	2.8	2
	pH measured @ 12.8°C												
2004/05/04 11:02	17.3	527	316	10.2	8.46	3	0.2	0.01 U	0.01 U	0.0084	0.003 U	1.6	9
	pH recorded @ 17.7°C.												
2004/06/08 11:24	18.7	305	314	9.79	8.6	5	0.22	0.01 U	0.01 U	0.0084	0.003 U	1.9	3
	pH measured @ 19.1°C. Water appears slightly cloudy with a slight green color.												
2004/07/13 12:14	22.6	311	310	8.78	8.7	2	0.2	0.01 U	0.01 U	0.0076	0.003 U	1.9	1
	pH measured @ 22.7°C.												
2004/08/10 10:27	24.3	172	288	9.38	8.71	6	0.24	0.01 U	0.01 U	0.0077	0.003 U	3	9
	pH measured @ 23.5°C.												
2004/09/14 10:28	18.3	305	295	7.38	8.34	4	0.21	0.01 U	0.01 U	0.0089	0.003 U	2.1	2
	pH measured @ 17.8°C												

Conventional Data Report

Similkameen R @ Oroville

49B070

Class: A
Rivermile: 5
Latitude: 48 56 05.0
Longitude: 119 26 27.0
Waterbody: WA-49-1030

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 10:50	15.7	193	240	10.22	8.56	1 U	0.09	0.01 U	0.01 U	0.0037	0.003 U	0.5 U	3
Switched to thermister CT2. Many dead and decaying salmon in the river.													
2003/11/04 10:14	2.6	1713	145	14.31	7.88	4	0.12	0.01 U	0.034	0.0067	0.0036	2.3	5
Many salmon carcasses in river. pH measured @ 5.0°C.													
2003/12/08 11:06	1.6		176	14.89	7.82	1	0.047	0.01 U	0.01 U	0.0029	0.003 U	0.9 J	
pH measured @ 4.5°C. Surface Hydrology Units reports that USGS wire weight gage counter skips numbers and is giving anomalous readings. Stage measured at 27.71 but not included with data.													
2004/01/13 10:30	0.2	1178	196	15.1	7.98	2	0.051	0.01 U	0.01 U	0.0024	0.0034	0.7	
pH measured @ 2.7° C. River frozen over approximately 1/4 out from left and right bank. "J" stage measurment.													
2004/02/10 10:42	2.3	534	203	14.28	8.13	2	0.047	0.01 U	0.01 U	0.0024	0.003 U	0.8	1 U
pH measured @ 5.1° C.													
2004/03/09 10:58	8.9	481	215	11.7	8.11	2	0.079	0.01 U	0.011	0.0042	0.004	0.9	8
pH measured @ 11.1°C.													
2004/04/13 11:06	8.3	5058	111	12.42	7.84	94	0.13	0.01 U	0.01 U	0.0394	0.0034	45	57
pH measured @ 10.3°C													
2004/05/04 10:40	8.1	10438	74	12.72	7.85	163	0.1	0.01 U	0.01 U	0.049	0.0039	45	18
pH recorded @ 11.0°C. Relativly high water with high turbidity and floating debris.													
2004/06/08 10:57	11.9	6516	81	11.51	7.85	19	0.073	0.01 U	0.01 U	0.008	0.003 U	6.2	4
pH measured @ 14.5°C.													
2004/07/13 11:15	17.9	2041	144	9.69	8.02	4	0.084	0.01 U	0.01 U	0.0053	0.003 U	1.7	25
pH measured @ 18.8°C.													
2004/08/10 10:02	21.2	663	176	8.97	8.15	2	0.082	0.01 U	0.01 U	0.0049	0.003 U	1.1	17
pH measured @ 21.3°C.													
2004/09/14 10:00	14.3	894	174	10.35	7.99	6	0.05	0.01 U	0.01 U	0.0093	0.003 U	6.1	110
pH measured @ 14.9°C. River turbid following recent rain.													

Conventional Data Report

Columbia R @ Grand Coulee

53A070

Class: A
Rivermile: 596
Latitude: 47 57 56.0
Longitude: 118 58 51.0
Waterbody: WA-CR-1050

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 7:45	19.5 J	101600	131	8.29	8.06	1 U	0.109	0.01 U	0.046	0.0043	0.0033	0.5 U	1 J
	See run comments about "J" qualifier on temperature.												
2003/11/04 7:56	15	198800	130	9.03	7.39	1	0.12	0.01 U	0.059	0.0059	0.0041	0.7	1 J
	pH measured @ 11.2°C.												
2004/01/13 8:00	3.5	201600	140	12.24 J	7.85	1 U	0.18	0.01 U	0.133	0.0023	0.003 UJ	0.8 J	
	pH measured @ 4.3° C. Occasional ice chunks floating past sampling site appearing to coincide with small patches of oily sheen on water surface. Source could not be determined.												
2004/02/10 8:17	2.6	191300	145	12.75	7.64	1 U	0.21	0.01 U	0.182	0.004	0.003 U	0.7	2 J
	pH measured @ 2.4° C.												
2004/03/09 8:12	3.3	168300	147	12.8	7.83	1	0.22	0.01 U	0.172	0.0027	0.003 U	0.8	1 UJ
	pH measured @ 7.9°C.												
2004/04/13 7:35	5.7	96800	151	12.92	7.91	1	0.321	0.01 U	0.269	0.0029	0.003 U	0.6	1 UJ
	pH measured @ 7.6°C.												
2004/05/04 7:38	7.4	99600	143	11.81	7.84	1 U	0.19	0.01 U	0.126	0.0034	0.003 UJ	0.6	1 J
	pH recorded @ 9.8°C.												
2004/06/08 8:02	12	122000	125	10.4	7.66	1 U	0.15	0.015	0.074	0.0033	0.003 U	0.5 U	1 U
	pH measured @ 13.2°C.												
2004/07/13 7:51	15	123600	125	9.89	7.63	1 U	0.13	0.01 U	0.064	0.0038	0.0034	0.5 U	1 UJ
	pH measured @ 16.2°C.												
2004/08/10 7:47	15.6	66300	126	8.97	7.63	1 U	0.16	0.01 U	0.095	0.0055	0.0046	0.5 U	1 J
	pH measured @ 16.9°C.												
2004/09/14 7:48	19	73700	126	7.48	7.3	1 U	0.154	0.01 U	0.094	0.0067	0.0051	0.5 U	1 J
	pH measured @ 15.7°C												

Conventional Data Report

Spokane R @ Riverside State Pk

54A120

Class: A
Rivermile: 66
Latitude: 47 41 48.0
Longitude: 117 29 48.0
Waterbody: WA-54-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 8:55	13.3	1240	199	9.29	7.87	2	1.24	0.01 U	1.13	0.0205	0.0118	0.9	17 J
2003/11/05 8:45	6.7	2390	142	10.9	8.07	1	0.825	0.01 U	0.745	0.0535	0.0475	0.5	11
2003/12/09 9:20	5.8	3800	103	11.71	8.02	2	0.605 J	0.01 U	0.535	0.0452	0.0386	0.7	8 J
2004/01/13 9:40	5.1	2190	158	11.41	7.82	1	1.07	0.01 U	0.998	0.0506	0.0394	0.8	8
2004/02/10 9:00	3.6	4190	107	12.62	7.87	2	0.93	0.01 U	0.851	0.0228	0.015	1.4	4 J
2004/03/09 8:45	5	5760	100	13.03	7.75	5	1.24	0.01 U	1.16	0.0221	0.015	5.1	3 J
2004/04/13 8:05	9.3	13300	69	11.5	7.8	6	0.261	0.01 U	0.197	0.0097	0.005	2.4	3 J
2004/05/04 8:05	12	10300	73	8.28	7.65	4	0.279	0.01 U	0.202	0.0071	0.0033 J	1.2	10 J
High flows, sample taken from bank													
2004/06/15 8:55	13.6	6210	97	10.42	8.05	3	0.458	0.01 U	0.372	0.0074	0.0034	1	16
2004/07/13 8:15	15.6	1460	178	9.05	8	2	1.2	0.01 U	1.14	0.0171	0.0093	0.6	34 J
2004/08/03 8:45	16.4	889	248	8.58	7.97	2	1.55	0.01 U	1.48	0.0248	0.015	0.9	60 J
2004/09/15 8:10	12.5	898	211	9.23	8.09	1	1.3	0.01 U	1.4	0.0277	0.017	0.6	68

Conventional Data Report

Little Spokane R nr Mouth

55B070

Class: A
Rivermile: 1.1
Latitude: 47 46 59.0
Longitude: 117 31 46.0
Waterbody: WA-55-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 8:15	10.7	369	281	8.58	8.07	3	1.36	0.01 U	1.26	0.0076	0.0063	0.9	27 J
2003/11/05 8:10	4.8	392	265	10.5	7.99	2	1.4	0.01 U	1.31	0.0092	0.0094	0.8	21 J
2003/12/09 8:45	5.8	484	228	10.1	8.13	5	1.32 J	0.01 U	1.17	0.0175	0.013	1.6	17 J
2004/01/13 9:00	5.9	446	244	10.3	7.9	8	1.41	0.01 U	1.33	0.0153	0.012	2.1	21
2004/02/10 8:30	5.8	470	219	10.3	8.07	15	1.39	0.01 U	1.3	0.0164	0.01	3.2	10 J
2004/03/09 8:00	7.3	726	214	9.89	8.02	16	1.19	0.01 U	1.08	0.0244	0.017	5.1	14 J
2004/04/13 7:25	11.5	603	210	8.5	7.96	13	1.09	0.01 U	0.98	0.0211	0.012	3.1	16 J
2004/05/04 7:30	12.6	490	262	11.31	7.97	11	1.12	0.011	1.02	0.024	0.012 J	3	50 J
2004/06/15 8:20	11.8	438	265	8.9	8.19	4	1.18	0.01 U	1.08	0.0125	0.008	1.4	64
2004/07/13 7:40	13.2	369	285	8.24	7.88	3	1.21	0.01 U	1.14	0.0092	0.0056	1.1	110 J
2004/08/03 8:02	13.8	344	247	7.77	7.89	3	1.31	0.01 U	1.21	0.0085	0.0073	1	96 J
2004/09/15 7:30	11.2	372	288	8.42	7.92	2	1.07	0.01 U	1.18	0.01	0.0077	0.6	92 J

Conventional Data Report

Little Spokane River @ Scotia

55B300

Class: A
Rivermile: 46.7
Latitude: 48 06 22.2
Longitude: 117 09 07.0
Waterbody: WA-55-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 8:05	6.8		224	9.29	7.64	2	0.24	0.01 U	0.165	0.0064	0.0063	0.7	4 J
2003/11/03 9:05	3.4		224	10.9	7.48	3	0.276	0.01 U	0.22	0.0081	0.0053	1	4
2003/12/08 9:00	4		194	9.89	7.64	5	0.33 J	0.01 U	0.233	0.0118	0.0092	1.4	4 J
2004/01/12 9:00	4.4		214	10.1	7.76	10 J	0.313	0.012	0.237	0.0148	0.012	2	28
2004/02/09 9:00	3.7		194	10.6	7.83	9	0.316	0.01	0.243	0.0158	0.0099	3.1	1
2004/03/08 8:30	4.9		206	10.1	7.77	5	0.288	0.012	0.223	0.0139	0.011	1.4	4
2004/04/12 7:45	6.6		191	9.3	7.57	11	0.22	0.01 U	0.149	0.011	0.0089	2	13 J
2004/05/03 7:25	9.6		206	8.88	7.56	8	0.17	0.01 U	0.092	0.0105	0.0076	2.2	26 J
2004/06/14 8:35	10.2		234	9.81	8.2	4	0.135	0.01 U	0.058	0.0079	0.0061	1.2	34
	Sampler error: no baro. Pressure												
2004/07/12 8:05	10.6		189	9.25	7.91	5	0.11	0.01 U	0.052	0.0089	0.0058	1	53 J
2004/08/02 8:40	12.1		194	8.68	7.67	2	0.14	0.01 U	0.01 U	0.0085	0.0062	1	53
2004/09/14 8:15	9.4		204	8.22	7.72	1	0.2	0.01 U	0.135	0.0093	0.0058	0.5 U	64 J

Conventional Data Report

'eone (Deadman) Creek abv L Deep C

55C070

Class: A
Rivermile: 0.5
Latitude: 47 47 37.0
Longitude: 117 22 33.0
Waterbody: WA-55-1011

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 7:00	8.9		374	10.4	7.75	2	1.18	0.01 U	1.07	0.0194	0.015	0.7	61 J
2003/11/03 7:00	5.1		372	11.41	7.74	2	1.21	0.01 U	1.06	0.0236	0.014	0.7	13 J
2003/12/08 7:05	2.9		219	12.32	8.11	3	0.702 J	0.01 U	0.546	0.0427	0.027	2.3	12 J
2004/01/12 7:10	4.8		368	11.71	7.98	3	1.17	0.01 U	1.01	0.0337	0.023	1.2	23 J
2004/02/09 7:05	2.6		240	12.52	7.84	3	0.768	0.01 U	0.612	0.0297	0.017	2.4	5 J
2004/03/08 6:45	5.1		197	11.51	7.68	7	0.64	0.01 U	0.416	0.0352	0.02	5.7	20 J
2004/04/12 6:35	10.5		118	9.8	7.55	19	0.357	0.01 U	0.208	0.045	0.03	3.6	8 J
2004/05/03 6:20	13.6		142	9.39	7.62	13	0.481	0.01	0.275	0.0898	0.0444	4.2	51 J
2004/06/14 7:45	12.1		197	10.02	8.14	4	0.549	0.01 U	0.411	0.0652	0.0313	2.2	68 J
	Sampler error: no baro. Pressure												
2004/07/12 6:44	11.6		307	10.17	7.38 J	2	0.888	0.01 U	0.774	0.0545	0.028	1.3	350 J
	original pH reading premature												
2004/08/02 6:50	11.9		373	9.59	7.87	2	1.13	0.01 U	1.04	0.0267	0.0195	0.8	210 J
2004/09/14 6:57	10.9		337	9.74	7.91	3	1.02	0.01 U	0.911	0.0319	0.02	1	84 J

Conventional Data Report

Deadman Cr@Holcomb Rd

55C200

Class: A
Rivermile: 12.1
Latitude: 47 49 48.0
Longitude: 117 12 24.0
Waterbody: WA-55-1011

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 6:20	8.6		45	10.1	6.76	1 U	0.09	0.01 U	0.01 U	0.0445	0.0379	1	11 J
Stream split between two culverts. Stage is from left hand culvert (facing downstream) Both measurements being recorded in flowbook.													
2003/11/03 7:50	0.2		50	12.82	7.11	1 U	0.065	0.01 U	0.01 U	0.0415	0.034	1	52 J
2003/12/08 7:45	0.9		67	12.72	7.66	2	0.22 J	0.01 U	0.12	0.035	0.028	3.3	4 J
2004/02/09 7:50	0		84	13.23	7.35	3	0.266	0.01 U	0.156	0.0293	0.024	3	1 J
2004/03/08 7:25	1.8		77	12.42	7.28	4	0.371	0.01 U	0.231	0.0417	0.0323	8.1	13 J
2004/04/12 6:05	4.4		32	11.4	7.01	27	0.14	0.01 U	0.067	0.0325	0.025	4.9	1 J
2004/05/03 5:35	7.9		29	10.8	6.98	9	0.078	0.01 U	0.022	0.027	0.023	2.4	4 J
2004/06/14 6:50	8		43	10.72	7.76	3	0.093	0.01 U	0.014	0.0334	0.028	2.4	10 J
Sampler error: no baro. Pressure. RP taken at flattened part of right culvert, near the mid-point.													
2004/07/12 5:56	10.6		42	9.76	6.83	4	0.091	0.01 U	0.026	0.0369	0.0324	1.2	360 J
2004/08/02 7:30	14.7		45	8.58	7.41	2	0.14	0.01 U	0.05	0.0442	0.0356	0.8	240 J
2004/09/14 6:18	10.3		49	9.64	7.31	7	0.1	0.01 U	0.01 U	0.0455	0.0371	2.7	110 J

Conventional Data Report

Hangman Cr @ Mouth

56A070

Class: A
Rivermile: 0.6
Latitude: 47 39 17.0
Longitude: 117 27 12.0
Waterbody: WA-56-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 9:35	12.7	6.8	394	7.97	8.02	3	0.983	0.01 U	0.754	0.013	0.0068	1.2	92 J
2003/11/05 9:25	0	9.6	405	13.53	8.5	2	0.928	0.01 U	0.755	0.016	0.013	0.8	17
	station iced over												
2003/12/09 10:00	1.2	35	286	13.23	8.33	1	0.783 J	0.01 U	0.595	0.0163	0.01	1.1	43
2004/01/13 10:15		34											
	Station Froze												
2004/02/10 9:40	1.1	169	210	13.03	7.87	6	8.82	0.015	9.61	0.0732	0.0569	11	43
2004/03/09 9:20	6.8	517	180	10.9	7.7	18	9.89	0.012	8.35	0.0815	0.0557	36	17 J
2004/04/13 8:45	12.9	84	201	9.4	8.11	3	1.16	0.01 U	0.884	0.0215	0.0071	1.9	7
2004/05/04 8:45	14.9	50	273	8.98	7.96	5	0.763	0.01 U	0.445	0.0188	0.005	1.5	26
2004/06/15 9:30	14.5	5.5	227	10.52	8.58	3	0.46	0.01 U	0.195	0.0225	0.01	2.3	52
2004/07/13 9:00	18.3	16	374	7.73	7.93	5	0.741	0.02	0.504	0.021	0.0094	2.7	180
2004/08/03 9:16	20.4	4	409	6.16	8.02	5	1.04	0.031	0.761	0.0139	0.0074	2.2	220 J
2004/09/15 8:50	13	10	384	8.32	8.17	4	0.752	0.016	0.555	0.0179	0.0075	1.7	130

Conventional Data Report

Spokane R @ Stateline Br

57A150

Class: A
Rivermile: 96.35
Latitude: 47 41 55.0
Longitude: 117 02 37.0
Waterbody: WA-57-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/07 6:45	16.2	819	53	8.48	7.47	1	0.2	0.013	0.099	0.0052	0.0033	0.7	6 J
2003/11/05 7:00	7.2	1930	53	10.3	7.24	1 U	0.12	0.01 U	0.043	0.0061	0.0054	0.6	1 J
2003/12/09 7:20	5.3	3550	52	10.7	7.66	1 U	0.11 J	0.01 U	0.048	0.0066	0.0059	0.9	3 J
2004/01/13 7:30	2.8	1550	60	11.81	7.34	1	0.19	0.029	0.089	0.0122	0.0097	0.8	3 J
2004/02/10 7:05	2.6	3990	56	12.12	7.36	1 U	0.12	0.01 U	0.057	0.0058	0.0031	0.9	1 UJ
2004/03/09 6:55	3.6	5600	56	12.02	7.5	2	0.12	0.018	0.036	0.0035	0.0038	1.1	1 UJ
2004/04/13 6:15	8.7	14000	55	11.7	7.46	4	0.14	0.01 U	0.059	0.0117	0.003 U	1.9	1 UJ
2004/05/04 6:02	11.1	10600	52	10.9	7.46	2	0.12	0.01 U	0.032	0.0043	0.003 UJ	1.1	4 J
2004/06/15 7:05	13.5	5630	47	10.02	7.39	2	0.092	0.01 U	0.01 U	0.0031	0.003 U	0.9	6 J
	Collected metals.												
2004/07/13 6:30	20.7	761	53	8.03	7.47	2	0.19	0.01 U	0.108	0.006	0.0039	1	17 J
2004/08/03 6:45	24	283	57	6.86	7.18	2	0.264	0.021	0.16	0.0053	0.005	0.8	24 J
2004/09/15 6:22	17.1	358	57	8.22	7.53	1	0.303	0.012	0.167	0.0055	0.0032	0.6	23 J

Metals Data Report

Spokane R @ Stateline Br

57A150

Class: A
Rivermile: 96.35
Latitude: 47 41 55.0
Longitude: 117 02 37.0
Waterbody: WA-57-1010

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/07	6:45		22	0.13	0.068	0.5 U	0.25 U	0.59	0.5	1.31	0.12	0.002 UJ	0.15 J	0.41	36	34
2003/12/09	7:20		21.3	0.25	0.19	0.5 U	0.25 U	0.7	0.55	0.87	0.086	0.002 U	0.38	0.47	60.4	60.9
2004/02/10	7:05		23	0.22	0.19	0.5 U	0.25 U	0.63	0.53	0.72	0.096	0.002 U	0.37	0.48	58.1	63.7
2004/04/13	6:15		21.4	0.38	0.263	0.5 U	0.25 U	0.83	0.54	4.04	0.633	0.002 U	0.27	0.52	79.5	67.8
2004/06/15	7:05		19.4	0.25	0.2	0.5 U	0.25 U	0.48	0.48	1.1	0.13	0.002 U	0.27	0.33	52.1	51
2004/08/03	6:45		23.4	0.15	0.11	0.5 U	0.25 U	0.57	0.82	1.25	0.16	0.002 U	0.39	0.5	36	33

Conventional Data Report

Kettle R nr Barstow

60A070

Class: AA
Rivermile: 10.9
Latitude: 48 47 05.0
Longitude: 118 07 27.0
Waterbody: WA-60-1010

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 14:35	14.2	147	224	10.9	8.49	1	0.16	0.01 U	0.021	0.0061	0.0044	0.6	6
2003/11/03 14:50	2.3	563	136	13.43	8.06	1	0.11	0.01 U	0.045	0.0021	0.003 U	0.5 U	1 U
BP not recorded													
2003/12/08 15:20	0.3	394	164	14.34	8.15	1	0.19 J	0.01 U	0.142	0.0027	0.003 U	0.5	1 U
2004/01/12 15:26		532											
Station Froze													
2004/02/09 15:05	0.7	315	178	14.54		1	0.21	0.01 U	0.15	0.0031	0.003 U	0.6	1 U
pH buffer contaminated. Reading ~0.3 units high.													
2004/03/08 14:05	4.8	399	173	12.92	8.47	3	0.2	0.01 U	0.102	0.0032	0.003 U	0.7	1 U
2004/04/12 13:50	8.3	8056	63	11.5	8	29	0.17	0.01 U	0.028	0.0109	0.003 U	5	8
2004/05/03 14:00	9.3	13780	44	12.12	7.48	70	0.13	0.01 U	0.01 U	0.0175	0.0031	11	35
2004/06/14 14:45	13.1	9805	54	10.93	7.68	8	0.105	0.01 U	0.01 U	0.0091	0.0033	2.3	10
Sampler error: no baro. Pressure. Water level high and a bit turbid.													
2004/07/12 14:50	19.6	2258	96	9.46	8.15	2	0.095	0.01 U	0.025	0.0041	0.003 U	0.8	13
BP inadvertently missed													
2004/08/02 15:01	24.1	602	144	8.58	8.26	1 U	0.11	0.01 U	0.012	0.0024		0.5 U	12
2004/09/14 14:12	16.2	1230	111	9.64	8.19	2	0.082	0.01 U	0.01 U	0.0033	0.003 U	0.6	66

Conventional Data Report

Columbia R @ Northport

61A070

Class: AA
Rivermile: 735.1
Latitude: 48 55 21.0
Longitude: 117 46 32.0
Waterbody: WA-CR-1060

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 13:10	15	89600	122	9.79	7.99	2	0.1	0.01 U	0.03	0.0026	0.003 U	0.6	13
2003/11/03 13:45	9.7	96000	127	10.5	8.02	1	0.11	0.01 U	0.051	0.0031	0.003 U	0.8	5
2003/12/08 14:00	4.7	101000	59	11.81	7.68	1	0.16 J	0.01 U	0.114	0.0028	0.003 U	0.5 U	2
2004/01/12 14:00	2.6	68500	141	12.52	8.1	1	0.17	0.01 U	0.119	0.0026	0.003 U	0.7	1 U
2004/02/09 13:45	2.4	65200	161	13.03		2	0.14	0.01 U	0.095	0.0031	0.003 U	2.6	1 U
pH buffer contaminated. Reading ~0.3 units high.													
2004/03/08 13:10	3.7	69100	140	12.42	8.14	2	0.16	0.01 U	0.102	0.003	0.003 U	0.8	1 U
2004/04/12 12:45	7.2	73800	124	11.9	8.18	2	0.13	0.01 U	0.079	0.0032	0.003 U	1.1	1 U
2004/05/03 12:40	9.9	91500	119	11.61	7.92	4	0.14	0.01 U	0.067	0.0038	0.003 U	1.1	2
2004/06/14 13:25	12.1	138000	123	11.84	8.21	2	0.124	0.01 U	0.055	0.0036	0.003 U	1	2
Sampler error: no baro. Pressure. Collected metals.													
2004/07/12 13:45	17.1	110000	115	10.07	7.73	2	0.075	0.01 U	0.032	0.0037	0.003 U	1.1	1 U
2004/08/02 14:00	20.1	87500	121	9.59	8.39	2	0.095	0.01 U	0.027	0.0027	0.003 U	0.9	8
2004/09/14 13:10	16.5	88100	123	9.44	8.2	2	0.12	0.01 U	0.041	0.0032	0.003 U	0.5	41

Metals Data Report

Columbia R @ Northport

61A070

Class: AA
Rivermile: 735.1
Latitude: 48 55 21.0
Longitude: 117 46 32.0
Waterbody: WA-CR-1060

Date/Time		Flow CFS	Hardness mg/L	Tot. Rec. Cadmium ug/L	Dissolved Cadmium ug/L	Tot. Rec. Chromium ug/L	Dissolved Chromium ug/L	Tot. Rec. Copper ug/L	Dissolved Copper ug/L	Tot. Rec. Lead ug/L	Dissolved Lead ug/L	Total Mercury ug/L	Dissolved Nickle ug/L	Tot. Rec. Arsenic ug/L	Tot. Rec. Zinc ug/L	Dissolved Zinc ug/L
2003/10/06	13:10		63.6	0.1 U	0.024	0.5 U	0.32	0.62	0.56	0.2	0.021	0.002 UJ	0.73 J	0.34	5 U	3
2003/12/08	14:00		66.6	0.1 U	0.022	0.5 U	0.3	0.6	0.56	0.12	0.02 U	0.002 U	0.82	0.33	5 U	2.3
2004/02/09	13:45		77.3	0.1 U	0.027	0.5 U	0.4	0.89	0.6	0.3	0.04	0.002 U	0.64	0.49	6.1	4.1
2004/04/12	12:45		65.4	0.1 U	0.027	0.5 U	0.25 U	1.14	0.51	0.33	0.023	0.002 U	0.33	0.48	9.4	2.6
2004/06/14	13:25		58.3	0.1 U	0.02 U	0.5 U	0.37	0.71	0.52	0.29	0.029	0.002 U	0.45	0.37	6.2	2.2
2004/08/02	14:00		63.8	0.1 U	0.02 U	0.5 U	0.28	0.58	0.46	0.21	0.02	0.002 U	0.63	0.38	5 U	1.7

Conventional Data Report

Pend Oreille R @ Metaline Falls

62A090

Class: A
Rivermile: 27
Latitude: 48 51 54.0
Longitude: 117 22 20.0
Waterbody: WA-62-1010

Date/Time	Temp	Flow	Conduc-tivity	Oxygen	ph	Suspend. Solids	Total Pers. N.	Ammonia Nitrogen	Nitrate+ Nitrite	Total Phosp.	Soluble Reactive P	Turbid-ity	Fecal Coliforms
	deg. C	CFS	umhos/cm	mg/L	std units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	#/100/mL
2003/10/06 10:30	15.9	16200	152	9.09	8.43	2	0.15	0.01 U	0.01 U	0.0041	0.003 U	0.9	7
2003/11/03 11:15	7.3	26200	154	10.7	8.16	1 U	0.084	0.01 U	0.01 U	0.0039	0.003 U	1.1	3
2003/12/08 11:30	2.8	14600	150	12.02	8.17	2	0.072 J	0.01 U	0.012	0.0046	0.003 U	0.9	1 U
2004/01/12 11:25	0	10600	169	12.62	8.2	3	0.084	0.01 U	0.022	0.0036	0.003 U	1	1 U
River mostly froze over													
2004/02/09 11:15	1.9	12600	154	12.92	8.05	3	0.082	0.01 U	0.01 U	0.0038	0.003 U	1.2	1 U
2004/03/08 10:45	3.2	17000	156	11.91	8.26	5	0.095	0.01 U	0.013	0.0051	0.003 U	1.7	1 U
2004/04/12 10:00	10.4	17900	130	11	8.06	6	0.078	0.01 U	0.01 U	0.0049	0.003 U	1.7	1
2004/05/03 10:10	13.3	22000	130	10.3	7.9	3	0.025	0.01 U	0.01 U	0.0047	0.003 U	1.6	1 U
2004/06/14 10:45	14.7	35800	137	10.52	8.52	5	0.085	0.01 U	0.01 U	0.0056	0.003 U	2.2	1 U
Sampler error: no baro. Pressure													
2004/07/12 10:55	19.7	26100	128	9.25	8.15	3	0.064	0.01 U	0.01 U	0.0056	0.003 U	1.6	1
2004/08/02 11:16	22.3	13300	138	8.28	8.38	2	0.1	0.01 U	0.01 U	0.0058	0.0035	0.9	1
2004/09/14 10:42	17.8	11400	144	8.62	8.38	1	0.092	0.01 U	0.01 U	0.005	0.003 U	0.6	1

Conventional Data Report

Pend Oreille R @ Newport

62A150

Class: A
Rivermile: 88.2
Latitude: 48 11 07.0
Longitude: 117 02 02.0
Waterbody: WA-62-1020

Date/Time	Temp deg. C	Flow CFS	Conduc-tivity umhos/cm	Oxygen mg/L	ph std units	Suspend. Solids mg/L	Total Pers. N. mg/L	Ammonia Nitrogen mg/L	Nitrate+ Nitrite mg/L	Total Phosp. mg/L	Soluble Reactive P mg/L	Turbid-ity NTU	Fecal Coliforms #/100/mL
2003/10/06 8:50	15.6	15100	153	9.19	8.19	2	0.093	0.01 U	0.01 U	0.0032	0.003 U	1	1 J
2003/11/03 9:40	5.9	26100	159	11.31	7.79	2	0.071	0.01 U	0.01 U	0.0037	0.003 U	1.9	1
2003/12/08 9:40	3.1	14100	149	11.91	8.06	2	0.092 J	0.01 U	0.024	0.0036	0.003 U	1.3	1 U
2004/01/12 9:40	0.2	8750	163	12.42	7.8	2	0.11	0.01 U	0.038	0.0035	0.003 U	1.1	1 U
2004/02/09 9:35	1.6	11200	153	12.82	8.22	2	0.093	0.01 U	0.036	0.0033	0.003 U	1.4	1 U
2004/03/08 9:05	3.2	15900	158	12.22	8.17	5	0.1	0.01 U	0.032	0.0034	0.003 U	1.4	1 U
2004/04/12 8:20	9.4	17700	129	11.4	8.09	5	0.07	0.01 U	0.01 U	0.0039	0.003 U	2.1	1
2004/05/03 8:05	12.4	19800	128	10.4	7.94	5	0.077	0.01 U	0.01 U	0.0043	0.003 U	2.3	2 J
2004/06/14 9:05	12.9	35300	145	10.32	8.47	4	0.084	0.01 U	0.01 U	0.0043	0.003 U	1.6	6
Sampler error: no baro. Pressure													
2004/07/12 8:45	18.7	26100	129	9.15	8.12	2	0.056	0.01 U	0.01 U	0.0045	0.003 U	1.4	2
2004/08/02 9:24	23	11900	136	8.48	8.07	2	0.12	0.01 U	0.01 U	0.0032	0.003 U	1	1 U
2004/09/14 9:10	17.7	11800	145	8.62	8.27	2	0.096	0.01 U	0.01 U	0.0037	0.003 U	0.7	2 J

Appendix D

Water Year 2004: Missing data

(12 standard constituents only)

Station	Date	Remarks	Temperature	Conductivity	Oxygen	pH	Suspended Solids, total	Total Persulfate Nitrogen	Ammonia-nitrogen	Nitrate+nitrite-nitrogen	Phosphorus, total	Orthophosphate	Turbidity	Fecal Coliform Bacteria
03A060	2003-10-20	Equipment problem	X											
03A060	2003-11-18	Over holding time												X
03A060	2004-01-27	Equipment problem (pH); Sampler error: forgot to record (Conductivity)		X		X								
03B050	2003-10-20	Equipment problem	X											
03B050	2003-11-18	Over holding time												X
03B050	2004-01-27	Equipment problem				X								
04A100	2003-10-21	Inaccessible: roads flooded	X	X	X	X	X	X	X	X	X	X	X	X
04A100	2003-11-19	Equipment problem				X								
05A070	2003-11-18	Over holding time												X
05A090	2003-10-20	Equipment problem	X											
05A090	2003-11-18	Over holding time												X
05A090	2004-01-27	Equipment problem				X								
05A110	2003-11-18	Over holding time												X
05A110	2004-01-27	Equipment problem				X								
05B070	2003-11-19	Equipment problem				X								
05B110	2003-11-19	Equipment problem				X								
05B110	2004-04-20	Sampler error: air in BOD bottle			X									
07A090	2003-11-18	Over holding time												X
07C070	2003-11-18	Flooding: no samples collected	X	X	X	X	X	X	X	X	X	X	X	X
07C070	2004-01-27	Equipment problem				X								
07D050	2003-11-18	Over holding time												X
08C110	2003-12-15	Inaccessible: downed trees	X	X	X	X	X	X	X	X	X	X	X	X
08C110	2004-01-26	Inaccessible: downed trees	X	X	X	X	X	X	X	X	X	X	X	X
08M070	2003-11-18	Over holding time												X
09C070	2003-12-15	Over holding time											X	
34A070	2004-01-14	Frozen	X	X	X	X	X	X	X	X	X	X	X	X
34A170	2004-01-13	Frozen	X	X	X	X	X	X	X	X	X	X	X	X
34F090	2004-01-13	Frozen	X	X	X	X	X	X	X	X	X	X	X	X

Station	Date	Remarks	Temperature	Conductivity	Oxygen	pH	Suspended Solids, total	Total Persulfate Nitrogen	Ammonia-nitrogen	Nitrate+nitrite-nitrogen	Phosphorus, total	Orthophosphate	Turbidity	Fecal Coliform Bacteria
45A070	2004-01-12	Over holding time												X
45A110	2004-01-12	Over holding time												X
45C060	2004-01-12	Inaccessible: snow	X	X	X	X	X	X	X	X	X	X	X	X
45D070	2004-01-12	Over holding time												X
45E070	2003-10-06	Dry	X	X	X	X	X	X	X	X	X	X	X	X
45E070	2004-01-12	Over holding time												X
45Q060	2003-10-06	Dry	X	X	X	X	X	X	X	X	X	X	X	X
45Q060	2003-11-03	Dry	X	X	X	X	X	X	X	X	X	X	X	X
45Q060	2004-01-12	Over holding time												X
45Q060	2004-07-12	Dry	X	X	X	X	X	X	X	X	X	X	X	X
45Q060	2004-08-02	Dry	X	X	X	X	X	X	X	X	X	X	X	X
45Q060	2004-09-13	Dry	X	X	X	X	X	X	X	X	X	X	X	X
45R050	2004-01-12	Over holding time												X
46A070	2004-01-12	Over holding time												X
48A070	2003-12-08	Dangerous bridge conditions (ice and darkness)	X	X	X	X	X	X	X	X	X	X	X	X
48A070	2004-01-13	Over holding time												X
48A140	2003-12-08	Over holding time												X
48A140	2004-01-13	Over holding time												X
49A070	2003-12-08	Equipment problem	X											X
49A070	2004-01-13	Frozen	X	X	X	X	X	X	X	X	X	X	X	X
49A190	2003-12-08	Over holding time												X
49A190	2004-01-13	Over holding time												X
49B070	2003-12-08	Over holding time												X
49B070	2004-01-13	Over holding time												X
53A070	2004-01-13	Over holding time												X
55C200	2004-01-12	Frozen	X	X	X	X	X	X	X	X	X	X	X	X
56A070	2004-01-13	Frozen	X	X	X	X	X	X	X	X	X	X	X	X
60A070	2004-01-12	Frozen	X	X	X	X	X	X	X	X	X	X	X	X