CHAPTER 2 – WOOD RIVER HYDROLOGY AND WATER QUALITY STUDY

S. G. CAMPBELL, BUREAU OF RECLAMATION, DENVER, AND
W. J. EHINGER, WASHINGTON STATE DEPARTMENT OF ECOLOGY

INTRODUCTION

The studies in the Wood River Valley, the National Wildlife Refuge, and Agency Lake, Oregon, are being performed under research project "Basin-Wide Optimum Aquatic Resource Management" funded through Reclamation's WATER (Water Technology and Environmental Research) program. The objective of this research project is to develop a basin-wide management plan to address all aspects of aquatic resource and environmental issues in the Klamath Basin. The project was initiated in FY91 and is planned to continue through FY99.

The studies are currently focused on the Agency Lake basin of Upper Klamath Lake, the northwest margin of Upper Klamath Lake, the Williamson Delta area, and the Wood River Valley. Funding limitations and the physical size of the basin dictated that the studies focus on only a portion of the basin. The immediate goal for the overall studies is to develop a management plan for the Agency Lake sub-basin to improve lake water quality and habitat as well as stream and watershed habitat, which will maintain and enhance the endangered sucker populations. To accomplish this goal, various management techniques may be used, including:

- Best management practices in the watershed for procedures such as stream corridor fencing and riparian zone reestablishment.
- Irrigation water conservation.
- Pretreatment of irrigation/pasture return flows by use of detention ponds (mini-wetlands), strip wetland zones along Four-Mile and Seven-Mile Canals, or some other treatment mechanism.
- Limiting cattle access to streams.

In addition, habitat improvements in the Wood River watershed streams and the Agency Lake basin may be made.

The studies in the Wood River Valley, the National Wildlife Refuge, and Agency Lake are planned in phases. Phase 1 (FY91 through 93) consists of water quality and hydrology field research along the Wood River, Seven-Mile, Four-Mile, Crystal, and Thomason Creeks. Phase 2 (FY94 through 95) will consist of evaluation of management options by modeling hydrology and nutrient loading changes and initiating certain management pilot projects. Phase 3 (FY95 through 96) is the planned implementation stage for those management options selected. Phase 4 (FY95 through 97) will monitor the effectiveness of implemented management options and allow adjustments or changes. Phase 5 (FY98 through 99) will result in a final report or manual on management plan development that can be extrapolated to the entire Klamath Basin or applied to other Reclamation Projects.

This project is interdependent on studies being performed by:

1. The Klamath Tribe – the limnology and surface water nutrient loading to Upper Klamath Lake.

2. U.S. Geological Survey – surface and groundwater nutrient loading.

3. Oregon State University – fisheries population dynamics and habitat use.

4. Fellow Reclamation scientists at the Denver Office – research project entitled "Wetlands Ecology and Utilization."

5. U.S. Fish and Wildlife Service – bioassays to determine the tolerances of endangered suckers to water quality parameters.

MATERIALS AND METHODS

Water quality sampling and physical-chemical measurements were collected at five stream sites in a longitudinal transect from headwaters to mouth along the Wood River during 1991 (fig. 2.1). The headwater sampling site (UK100) was established at the highway bridge on Dixon Road, just southwest of Kimball Park (fig. 2.2a). Stations at highway bridges at Ft. Klamath (UK200), Loosely Road (UK300), and Weed Road (UK400) were established to provide information on augmentation of flow from tributaries such as Annie, Fort, and Crooked Creeks, and reduction of flow resulting from irrigation diversions by landowners adjacent to the Wood River (figs. 2.2b through 2.2d). The station located nearest the mouth of the Wood River (UK500) was established at a dike road bridge on private property in the remnant of the Wood River Marsh (fig. 2.2e).

During each survey, physical-chemical parameters (water temperature, dissolved oxygen concentration, pH, conductance, and oxidation-reduction potential) were measured using a multi-parameter probe. Measurements of inorganic turbidity were performed using a Hach Turbidimeter. Discharge estimates were performed using a Marsh-McBirney Model 201 flow meter according to methods reported by Bureau of Reclamation (1984). Calculation of total transect discharge volume was done using methods described on page 18 in Hamilton and Bergersen (1984).

Water quality samples for nitrogen and phosphorus nutrients, trace metals, and major ion analyses were collected at each stream site during field surveys. Three replicate Van Dorn samples were collected across the stream transect at each site and pooled. Aliquots for various water quality samples were decanted into pre-rinsed and preservative spiked (if required) bottles. Sample aliquots for dissolved trace metals and ortho-phosphorus, nitrate, and nitrite analyses were filtered through 0.45-micrometer cellulose acetate filters into prepared bottles. Each quarter, replicate sampling was randomly performed at 20 percent of the stream sites to provide analytical quality control.

Analysis of nitrogen and phosphorus nutrient samples were performed by two laboratories. Samples collected from January through May 1991 were analyzed in the Denver Laboratory according to procedures outlined in "Quality Assurance Plan" ASR No. 90-3-3, 1990. Beginning in June 1991, nitrogen and phosphorus nutrient samples were processed by Reclamation's

Pacific Northwest Region Laboratory in Boise, ID, according to procedures outlined in their "Quality Assurance Plan – Soil and Water Quality Laboratory," July 1987. Water quality samples for trace metal and major ion concentration analyses have been analyzed by the Denver Laboratory throughout the studies according to procedures given in "Quality Assurance Plan" ASR No. 90-3-3, 1990.

Biological samples to estimate chlorophyll *a* concentrations were collected at each site. Collection and spectrophometric analyses were performed according to Holm-Hansen and Riemann (1978). Calculation of chlorophyll biomass from spectrophometric analyses was performed using the trichromatic equations reported by Jeffrey and Humphrey (1975).

Complete listings of all physical-chemical parameter measurements, water quality and biological sample analyses, stream discharge and stage height measurements, and weather station information appear in appendix 2.1.

RESULTS AND DISCUSSION

All results reported here are simple comparisons of headwaters and mouth of the Wood River. Site specific results for each stream sampling site appear in appendix 2.1. These data are preliminary results of research in progress and no attempt has been made to interpret data other than to explain certain gross features or changes. As an additional comment, the Klamath Basin is currently in a drought period, and both water quality and hydrology of the Wood River are probably biased toward the low end of the cyclical hydrologic curve.

Physical-Chemical Parameters

The Wood River originates at the headwater as a series of springs in Jackson F. Kimball State Park located about 1.6 kilometers south and 0.8 kilometer east of Fort Klamath, Oregon. The water is generally cold, with temperatures ranging from 5.7 to 10.2 °C (fig. 2.3). In contrast, the water entering Agency Lake at the mouth is generally warmer, ranging from 4.1 to 18.6 °C (fig. 2.3). Water temperature was measured early in the morning at the headwater, and usually mid-day or early afternoon at the mouth of the Wood River. However, the few water temperatures measured in the afternoon at the headwater site were still quite cool; for example, on August 7, 1990, at 4 p.m. PDT, the air temperature was 34 °C and the water temperature was 9.3 °C (appendix 2.1). Dissolved oxygen concentrations ranged from 9.14 to 12.42 mg/L at the Wood River headwater site on Dixon Road and from 6.97 to 13.07 mg/L at the mouth site on the Agency Dike Road (fig. 2.3). These concentrations always represented well oxygenated conditions as is common in flowing waters.

One of the critical parameters in these studies is pH. Diel fluctuations in pH in Upper Klamath and Agency Lakes during the summer often exceed the 9.5 value for the upper limit tolerance of endangered suckers under laboratory conditions (Falter and Chech, 1991). The Wood River represents a potential source of freshening or diluting inflow to Agency Lake in the critical summer period (July-September) when lotic pH values range from 7.85 to 10.06 (Kann, this report, Chapter 5). The pH values at the Wood River headwater site on Dixon Road ranged from 7.32 to 8.32 (fig. 2.4). Values ranged from 7.13 to 8.71 at the mouth site on the Agency Dike Road (fig. 2.4). The average pH at the mouth is about 8.0. The weakly buffered (HCO_3 alkalinity 2 mg/L), low ionic strength (conductivity < 200 $\mu S/cm^2$) waters make any reduction in lotic pH values in Agency Lake resulting from increased Wood River inflow unlikely

(appendix 2.1). For example, at an approximate mean summer water surface elevation of 1262 m (4141 ft), the capacity of Agency Lake is 68,357,493 m^3 and the average inflow rate measured during the summer months of 1991 from the Wood River was 440,383 m^3/d. If Agency Lake was completely empty, that inflow rate would fill the basin in 155 d. Because the exponential growth rate for blue-green algae is much less than 155 d, pH would be controlled by the photosynthetic processes of the algal biomass and would probably not be affected by flushing or dilution at that inflow rate.

Conductivity or ionic strength values ranged from 79.6 to 102 $\mu S/cm^2$ at the Wood River headwater site and from 78.6 to 116 $\mu S/cm^2$ at the mouth site on the Agency Dike Road (fig. 2.4).

Oxidation-reduction potential (redox) ranged from 126 to 294 mV at the Wood River headwater site and from 132 to 295 mV at the mouth site on the Agency Dike Road (fig. 2.5). Turbidity was measured at each stream site during field surveys. A comparison of turbidity values at the headwaters and mouth of the Wood River is displayed on fig. 2.5. The headwaters site at Dixon Road was very clear; turbidity values generally ranged below 1 NTU (nephelometric turbidity unit) (appendix 2.1). The Wood River mouth site at the Agency Dike Road was generally less clear; values ranged from 0.6 to 5.23 NTU. These values are not high; values of 25 to 38 FTU were common in irrigation return drains to the Colorado River (Lieberman and Burke, 1991); and a maximum value of 675 FTU was measured in the Gallina River, a tributary to the Rio Chama, New Mexico, in November 1986 (Campbell, unpublished data).

Stream Discharge and Stage Height

Discharge estimates (stream transects) were made each month beginning in March 1991 at the time that stream gaging recording devices were permanently installed at each sampling site. Continuous monitoring of discharge along the river served two purposes. First, the Wood River has several tributaries. Annie and Sun Creek join the Wood between the headwater at Dixon Road and Ft. Klamath; Fort Creek enters between Loosely and Weed Roads; and Crooked Creek and the Fort Creek Ditch enter just above the mouth of the Wood River at the Agency Dike Road (fig. 2.1). Many landowners take irrigation water directly out of the Wood River, particularly between Ft. Klamath and Weed Road (fig. 2.1). Second, discharge estimates will be used to model nutrient loading to Upper Klamath Lake from surface water tributaries in the Klamath Basin. An area-capacity curve for the Agency Lake basin was developed by the Denver Office (Water Quality Section) for use in the BATHTUB model developed by U.S. Army Corps of Engineers to evaluate changes in hydrology and in-lake nutrient concentrations (appendix 2.2).

Instantaneous discharge estimates performed during field surveys in 1991 are summarized in table 2.1. Cross sections for each sampling station can be found in appendix 2.2. The average discharge ranged from 4.8 to 7.1 m^3/s (170 to 252 ft^3/s) from the headwater to the mouth of the Wood River. The irrigation season (May-September) average discharge ranged from 3.6 to 4.8 m^3/s (126 to 178 ft^3/s); the minimum discharge was measured at Fort Klamath and the maximum was measured at the headwater of the Wood River (fig. 2.6a). By contrast, the nonirrigation season (October-April) average discharge ranged from 4.6 to 8.5 m^3/s (164 to 301 ft^3/s) from the headwaters to the mouth of the Wood River. Discharge estimates at the Weed Road sampling site showed an average of 56 percent reduction between irrigation and non-irrigation periods, which was the greatest diminution in flow measured. At times, the stage

height at the Weed Road site was reduced as much as 66 percent over average flow conditions during the nonirrigation season (fig. 2.6b). The irrigation practices in the Wood River Valley are complex and some attempt has been made to prevent a complete diversion of flow, particularly in the current drought period. In the summer of 1991, an informal rotation for irrigation diversions was practiced and flow was never completely diverted in the Wood River.

U.S. Geological Survey had a gaging station at Fort Klamath in the mid-1960's (1964-67), which corresponds to an approximately average inflow period on the hydrologic cycle for the historical record available on Upper Klamath Lake beginning in 1905 and continuing through the present. The current period corresponds to a below average inflow period comparable to the drought of the 1930's. The monthly mean discharge values for water years 1966, 1967, and 1991 are compared in table 2.2. The effect of the drought is immediately apparent; nonirrigation season flows averaged about 50 to 60 percent less in the current period than those recorded in the mid-1960's. Valuable low flow data have been recorded that will refine nutrient loading coefficients for tributaries in the Klamath Basin.

Weather Monitoring

An Omnidata Easy Logger weather station (Omnidata International, Inc.) was installed near the southeast shore of Agency Lake in early June 1991 to monitor air temperature, rainfall, solar insolation, wind velocity, and wind direction at 30-minute intervals. These data are being compiled and will be used in the water quality models and to correlate wind and weather events with water quality parameters. Wind velocity, direction, and duration are of particular interest because of the possible effect of wind-induced mixing of bottom sediments on internal nutrient cycling in Agency Lake. Daily weather station measurements can be found in appendix 2.3.

Rainfall was sporadic throughout the study period as is typical for this time of year (fig. 2.12). The bulk of the average annual precipitation falls during the winter and spring (USACE, 1982). Wind velocity during the summer months often peaks during mid to late afternoon out of the northwest (fig. 2.13). The drop in insolation at 10 to 12 a.m. in June, July, and August was caused by the shadow of the wind vane passing over the solar sensor. Data from August 14 through 28 were lost (fig 2.14).

Water Quality

Ortho-phosphorus concentrations are quite high in the headwaters of the Wood River at Dixon Road (fig. 2.7), ranging from 43 to 106 µg/L (appendix 2.3). The concentrations at the mouth of the Wood River at the Agency Dike Road are even higher, ranging from 72 to 188 µg/L. Most of the nitrogen is found in the organic form, measured as TKN (total Kjeldahl nitrogen). TKN concentrations were quite low at the headwater sampling site on Dixon Road, ranging from 10 to 180 µg/L (fig. 2.8). TKN concentrations were much higher at the mouth of the Wood River at the Agency Dike Road sampling site, ranging from 60 to 490 µg/L.

No significant differences in major ion concentrations from headwater to mouth of the Wood River were observed (appendix 2.4). TSS (total suspended solids) showed the most variation in concentration, possibly in response to storm events (fig. 2.9). TSS ranged from 0 to 5.71 mg/L at the headwaters of the Wood River at Dixon Road and from 0 to 274 mg/L at the mouth sampling site on the Agency Dike Road. Bicarbonate alkalinity analysis results are presented

on figure 2.10 to illustrate the weakly buffered state of Wood River waters. Alkalinity ranged from 41.5 to 47.6 mg/L at the headwaters of the Wood River and from 42.5 to 56.8 mg/L at the mouth sampling site.

Results of trace metals analysis had one interesting facet. Manganese is not present above the detection limit at the headwaters of the Wood River, but is consistently above the detection limit at all other downstream sampling locations (appendix 2.5).

Chlorophyll *a*

Chlorophyll samples were collected at each Wood River sampling site to determine relative productivity in the stream from headwaters to mouth. Results of analysis indicate that flowing water at the headwater of the Wood River is extremely unproductive; total chlorophyll *a* ranges from 0.1 to 0.8 mg/m^3 (fig. 2.11). Although periphyton was not quantified in this study, it can represent a large component of production in streams (Lock and Williams, 1981). Visual observations of attached algae in the Wood River also follow trends in chlorophyll *a* from headwaters to mouth. There is little attached algae on rocks in the stream bed at the mouth of the Wood River, and extensive beds of macrophytes are present at the mouth. Chlorophyll *a* production increased from headwaters to mouth; total chlorophyll *a* ranged from 0.8 to 4.6 mg/m^3 at the Agency Dike Road (appendix 2.6).

SUMMARY

Studies for WATER Project "Basin-Wide Optimum Aquatic Resource Management" have focused on the Wood River Valley, Agency Lake, and the north margin of Upper Klamath Lake including the Williamson River Delta and the National Wildlife Refuge. Funding limitations and the physical size of the basin have limited the initial attempts to develop a long-term management plan for the Klamath Basin to this small basin and watershed. In practical terms, this effort is a demonstration project of management techniques that may result in reduced nutrient loading, increased endangered fish abundance, and improved water quality, in a much shorter time than would be realized in the entire basin. The studies are interdependent upon other research being performed by other federal agencies, Oregon State University, and the Klamath Tribe. Researchers are coordinating studies to prevent duplication of effort and wasteful spending of Federal funds.

The research effort for "Basin-Wide Optimum Aquatic Resource Management" is extended by:

- Cooperative agreements with the Klamath Tribe and Oregon State University.
- An interagency agreement with U.S. Fish and Wildlife Service Fishery Contaminant Research Center.
- A service contract with a Ph.D. candidate doing dissertation research in a related subject in Upper Klamath Lake.
- Coordination with another WATER Project "Wetlands Ecology and Utilization" being performed in the Klamath Basin by fellow research scientists in the Denver Office.

- The cooperation and support of the Mid-Pacific Region, Klamath Project Office, Bureau of Reclamation, including their cooperative and interagency agreements with Oregon State University, U.S. Fish and Wildlife Service Fishery Contaminant Research Center, and U.S. Geological Survey.

By sharing data, coordinating research activities, and working toward a common goal in the Klamath Basin, we will all benefit, as will the aquatic resource that we are responsible for maintaining and enhancing.

REFERENCES

Bureau of Reclamation. 1984. *Water Measurement Manual*. U.S. Government Printing Office, Washington, D.C. 327 pp.

Bureau of Reclamation. 1987 Quality Assurance Plan – Soil and Water Quality Laboratory. Pacific Northwest Region, Boise, Idaho. 13 pp.

Bureau of Reclamation. 1990. Quality Assurance Plan. Reclamation Technical Report ASR No. 90-3-3. Denver, Colorado. 25 pp.

Falter, M. A., and J. J. Cech, Jr. 1991. Maximum pH Tolerance of Three Klamath Basin Fishes. *Copeia*. (4), pp. 1109-1111.

Hamilton, K., and E. P. Bergersen. 1984. Methods to Estimate Aquatic Habitat Variables. Bureau of Reclamation, Division of Planning and Technical Services Special Report. Denver, Colorado. 260 pp. + appendixes.

Holm-Hansen, O., and R. Riemann. 1978. "Chlorophyll *a* Determination: Improvements in Methodology," *OIKOS*, 30:438-447, Copenhagen, Denmark.

Jeffrey, S. W., and G. F. Humphrey. 1975. "New Spectrophotometric Equations for Determining Chlorophylls a, b, c_1, and c_2 in Higher Plants, Algae and Natural Phytoplankton." *Biochemical Physiology Pflanzen*, (BBP), No. 2, BD. 167 pp. 191-94.

Lieberman, D., and T. Burke. 1991. "Limnology and Drift of Particulate Organic Matter through the Lower Colorado River." Bureau of Reclamation Technical Report REC-ERC-91-1. 82 pp.

Lock, M. A., and D. D. Williams. 1981. *Perspectives in Running Water Ecology*. Plenum Press, New York and London. 430 pp.

Table 2.1.—Stream discharge estimates in cubic feet per second from transects performed at five sampling sites along the Wood River, Oregon, in 1991.

Date 1991	Dixon Road (UK100)	Fort Klamath (UK200)	Loosely Road (UK300)	Weed Road (UK400)	Agency Dike (UK500)
3/5	176.6		318.3	350.6	539.2
4/2	174.0	194.7	289.2	295.8	279.4
5/7	161.6	116.5	188.3	160.2	121.6
6/4	176.8	145.5	174.4	104.4	222.4
6/24	183.6	117.9	164.7	105.2	156.2
7/24	187.8	122.8	181.7	107.9	157.0
8/20	183.6	130.6	159.0	118.7	196.0
9/17	172.4	120.4	184.9	188.3	210.7
10/9	166.0	164.4	251.2	175.5	240.3
11/5	163.3	206.9	268.3	282.5	284.3
12/4	158.8	211.8	331.4	336.1	325.2
Mean	173.6	153.9	225.9	203.1	250.0
Irrigation Season Mean	177.6	125.6	175.5	130.8	177.3
Non-Irrigation Season Mean	169.3	196.2	350.0	290.0	337.1
% Reduction	-----	36	50	55	48

Table 2.2.—Comparison of Wood River discharge from historical (USGS) stream gauging records in 1966 and 1967 with current 1991 gauging station at Fort Klamath on the Wood River, Oregon.

Month	1965-66 USGS	1966-67 USGS	1991 USBR
October	395	324	119
November	416	344	143
December	399	357	184
January	394	335	
February	390	327	
March	415	348	
April	415	351	132
May	225	293	115
June	252	225	89
July	156	164	88
August	147	120	89
September	256	251	89

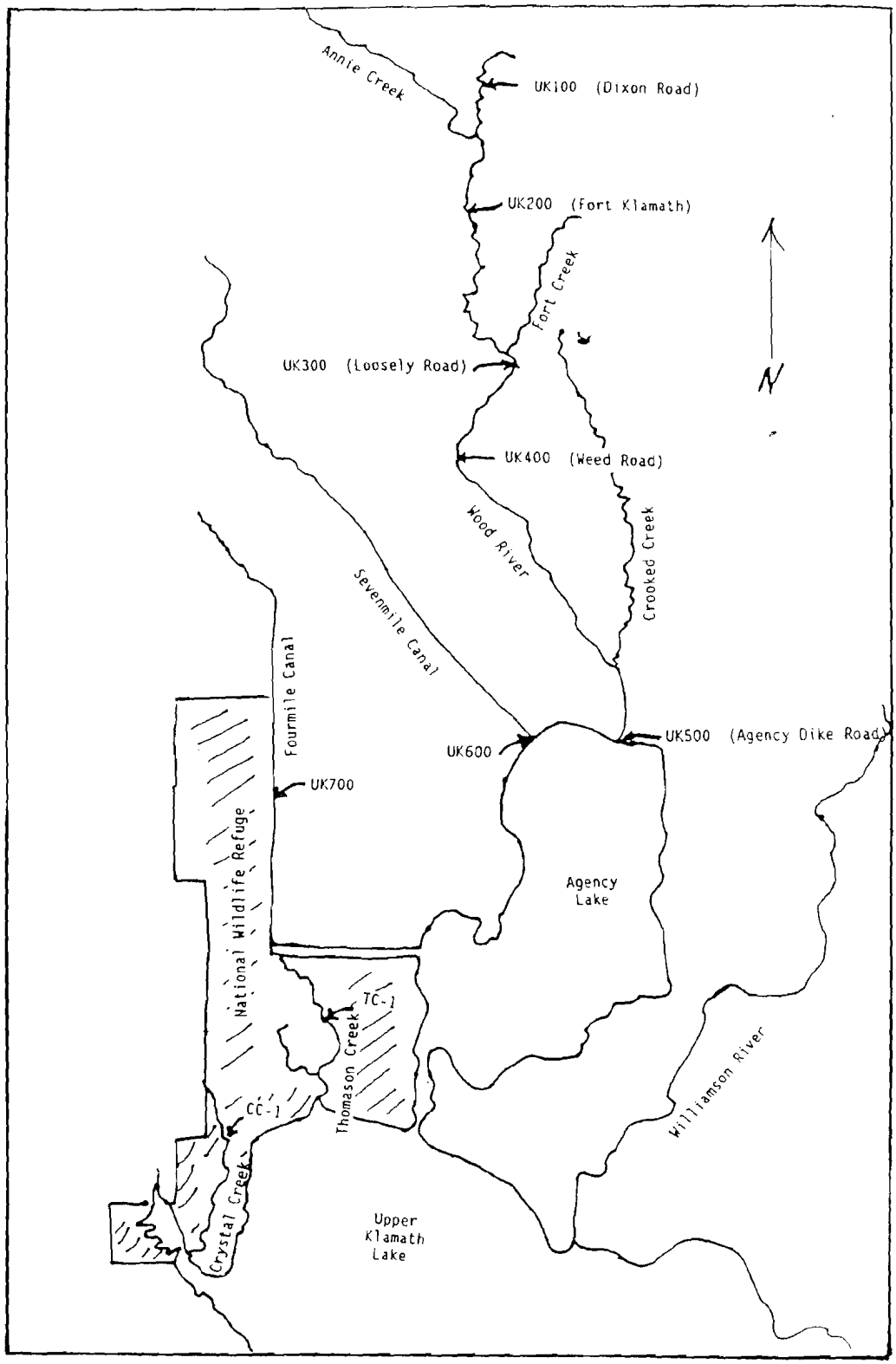


Figure 2.1. – Reclamation Denver Office Study Area.

Figure 2.2a. – Sampling site UK100 (Dixon Road) facing upstream (northeast).

Figure 2.2b. – Sampling site UK200 (Fort Klamath) facing upstream (northeast).

Figure 2.2c. – Sampling site UK300 (Loosely Road) facing downstream (south).

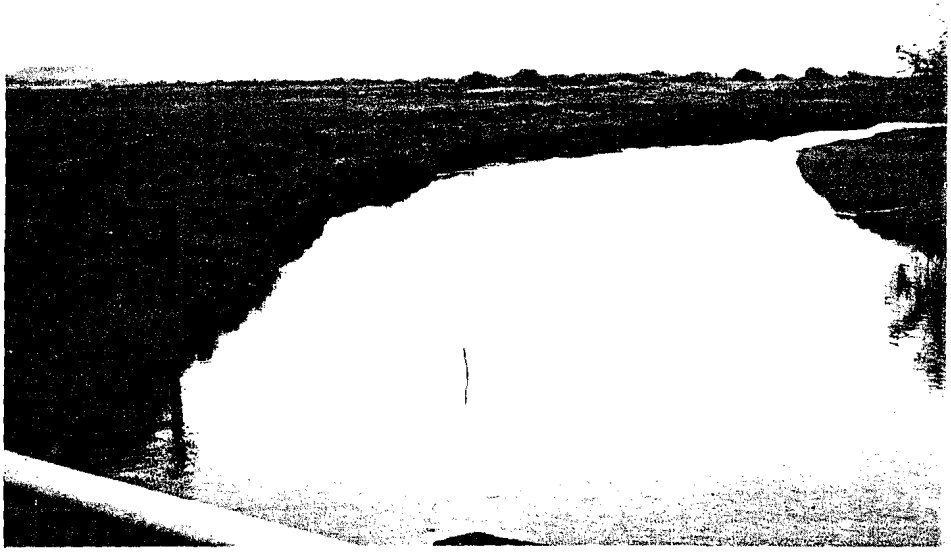


Figure 2.2d. – Sampling site UK400 (Weed Road) facing downstream (south).

Figure 2.2e. – Sampling site UK500 (Agency Dike Road) from the east bank below the bridge, facing west.

Figure 2.2f. – Sampling site UK600 (Sevenmile Canal) facing upstream (north).

Figure 2.2g. – Sampling site UK700 (Fourmile Canal) facing upstream (north).

Figure 2.2h. – Sampling site CC-1 (Crystal Creek) facing upstream (north).

Figure 2.2i. – Sampling site TC-1 (Thomason Creek) facing upstream (north).

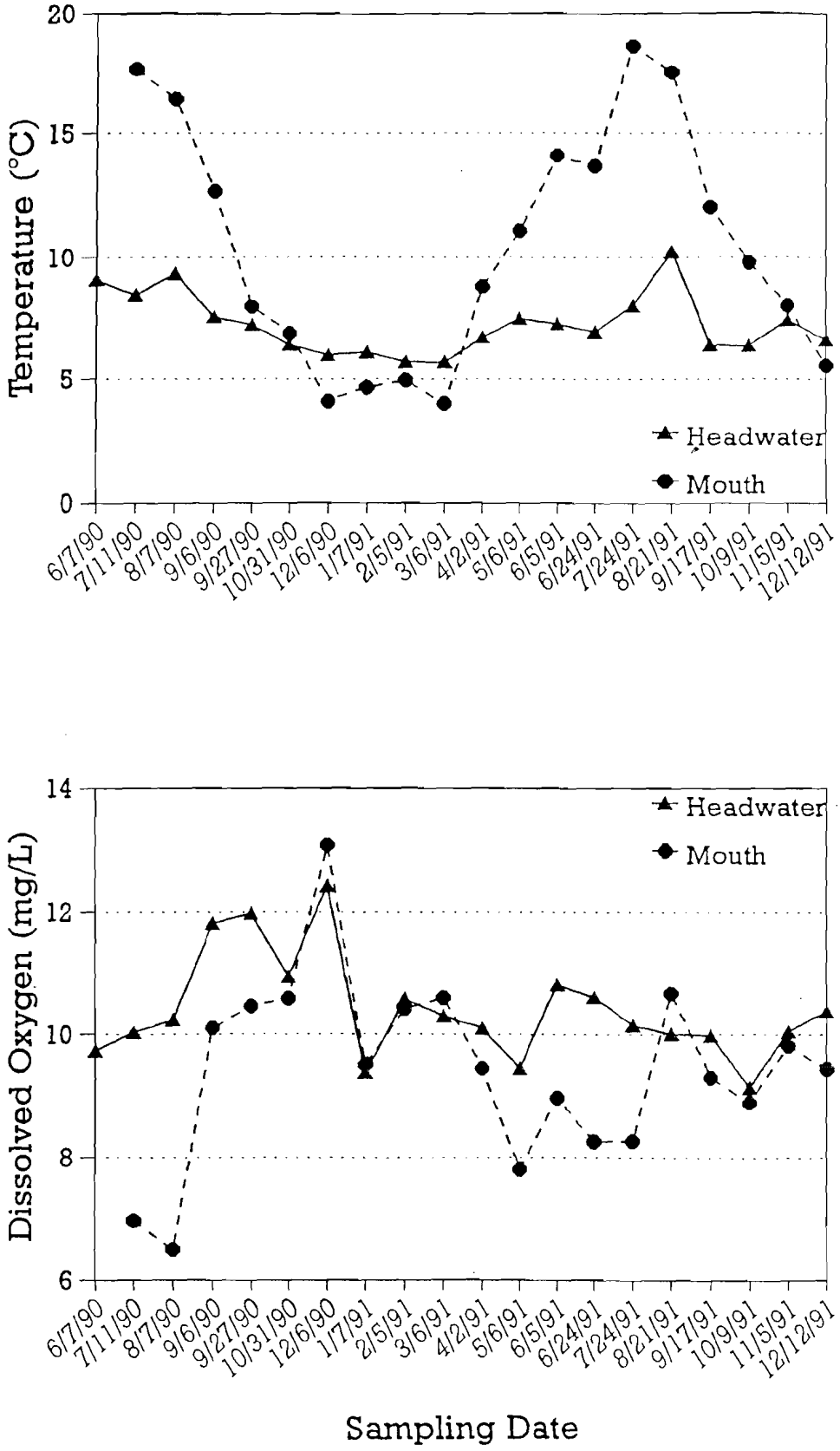


Figure 2.3. – Water temperature and dissolved oxygen concentration measured at two sites on the Wood River, Oregon.

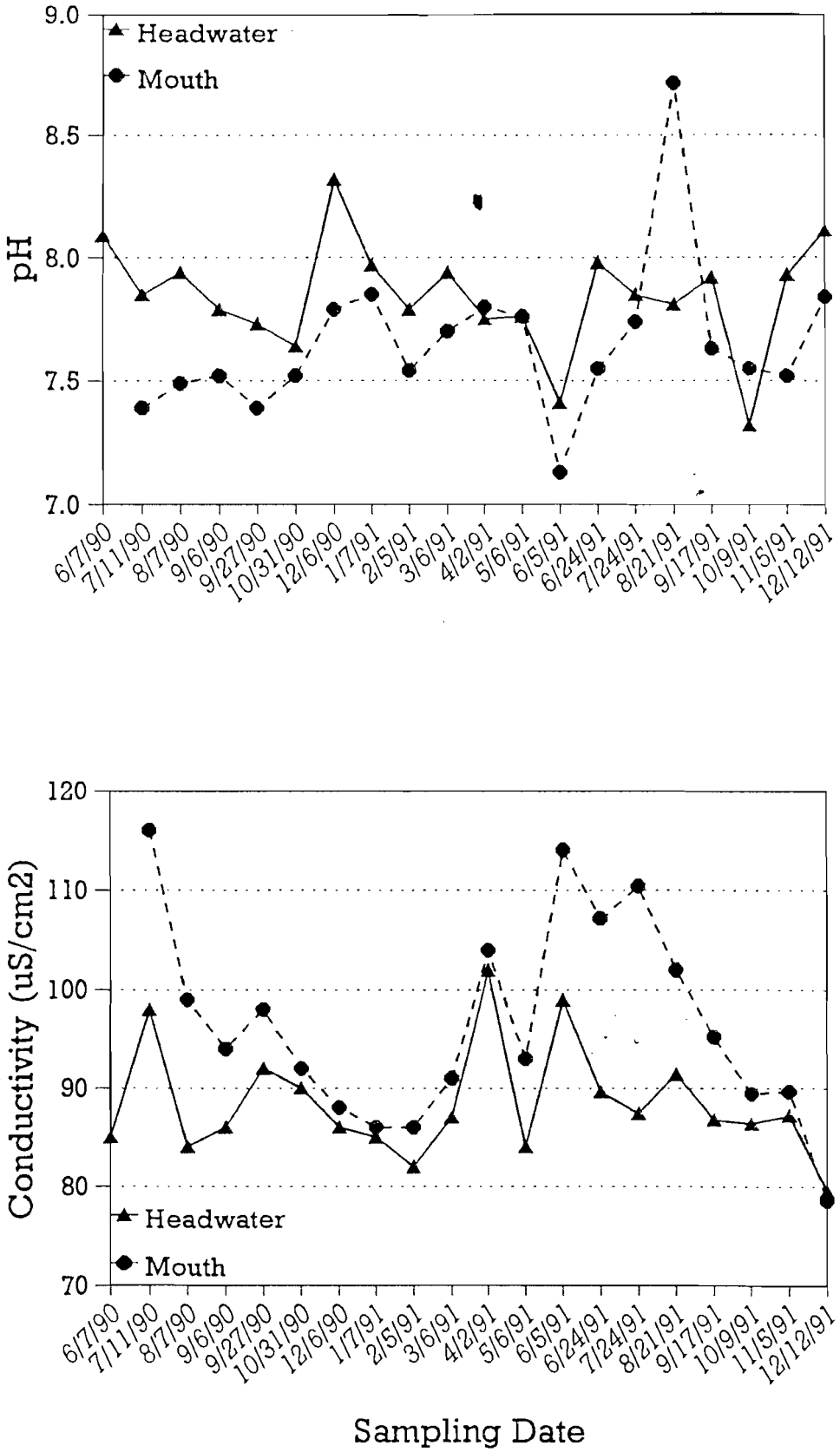


Figure 2.4. – Hydrogen ion concentration and conductance measured at two sites on the Wood River, Oregon.

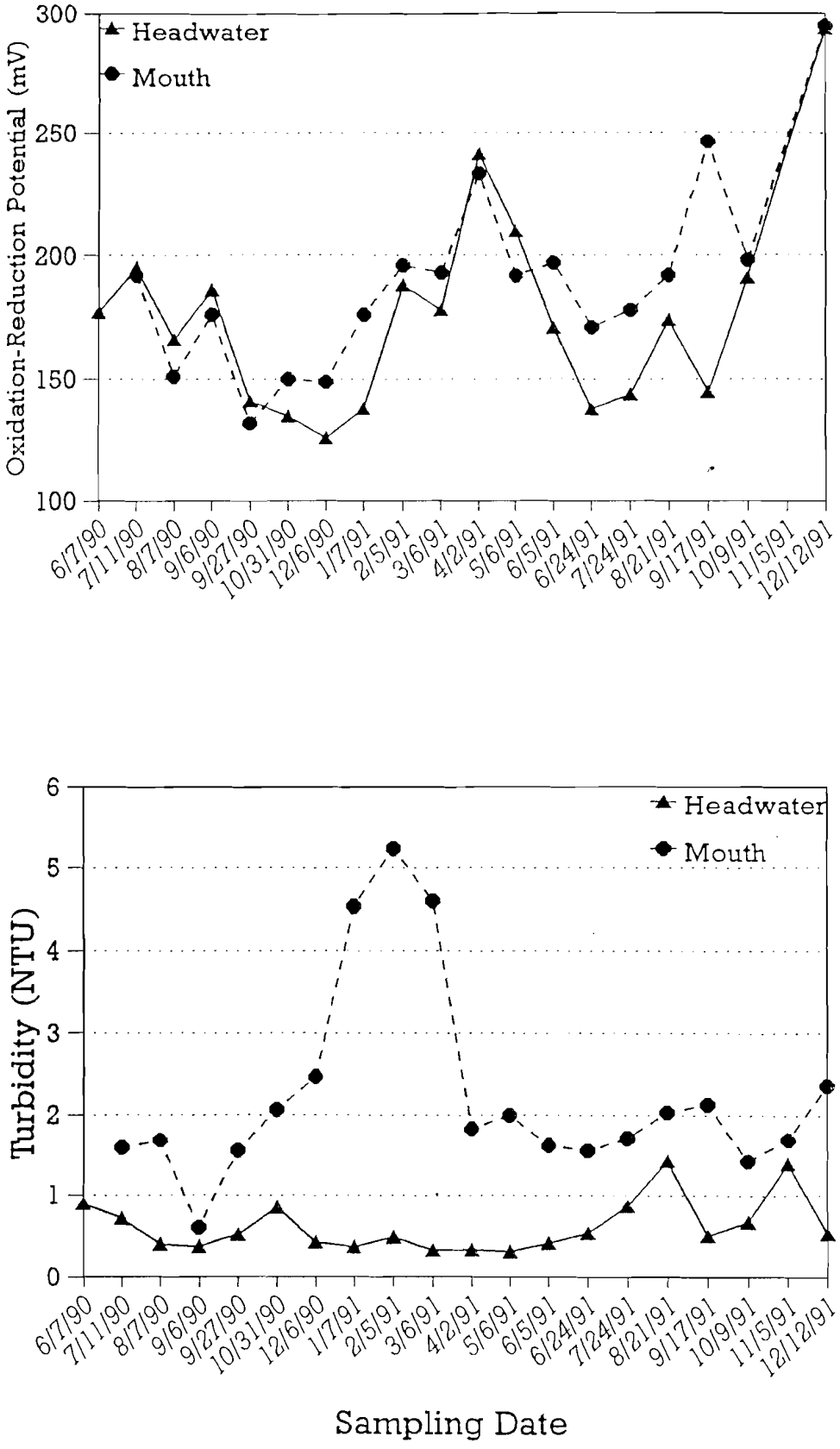


Figure 2.5. – Oxidation-reduction potential and turbidity measured at two sites on the Wood River, Oregon.

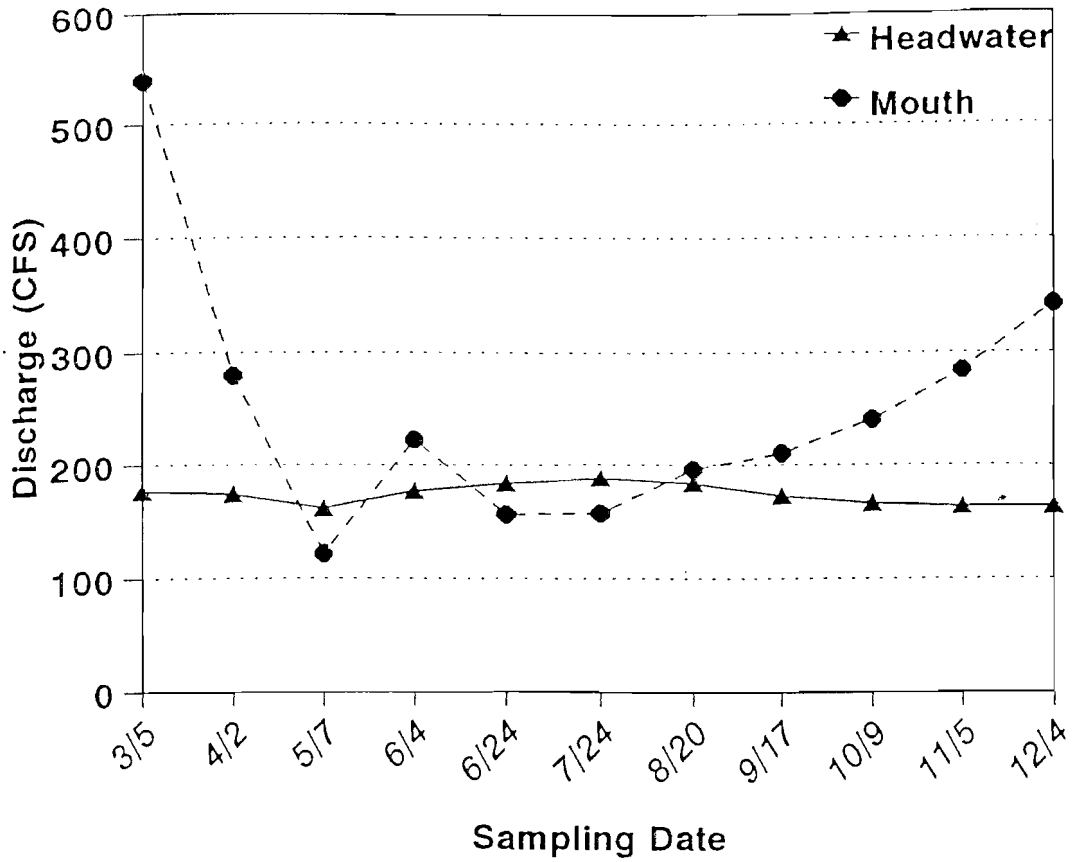


Figure 2.6a. – Instantaneous discharge measured at two sites on the Wood River, Oregon.

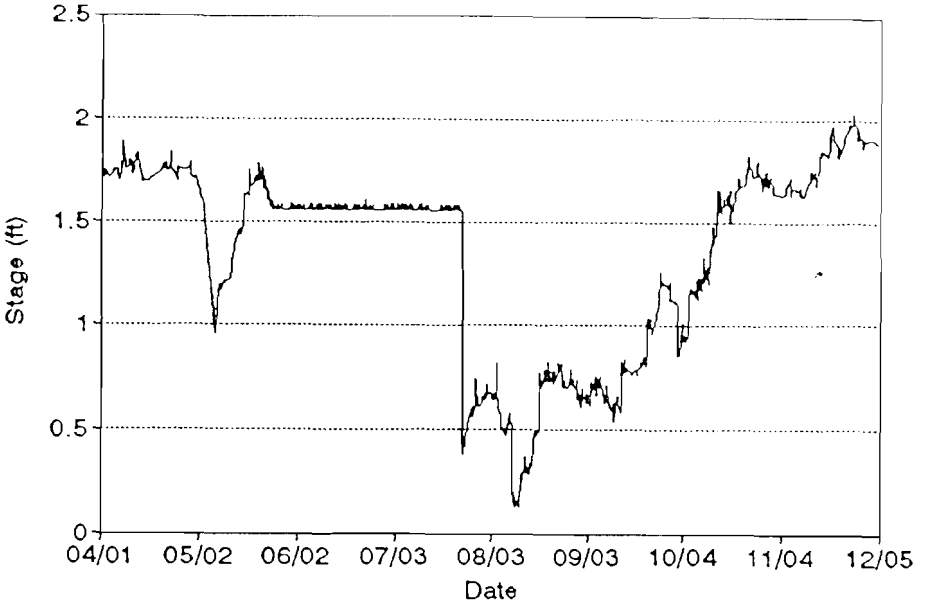


Figure 2.6b. – Stage height recorded at the Weed Road Site on the Wood River, Oregon, during 1991.

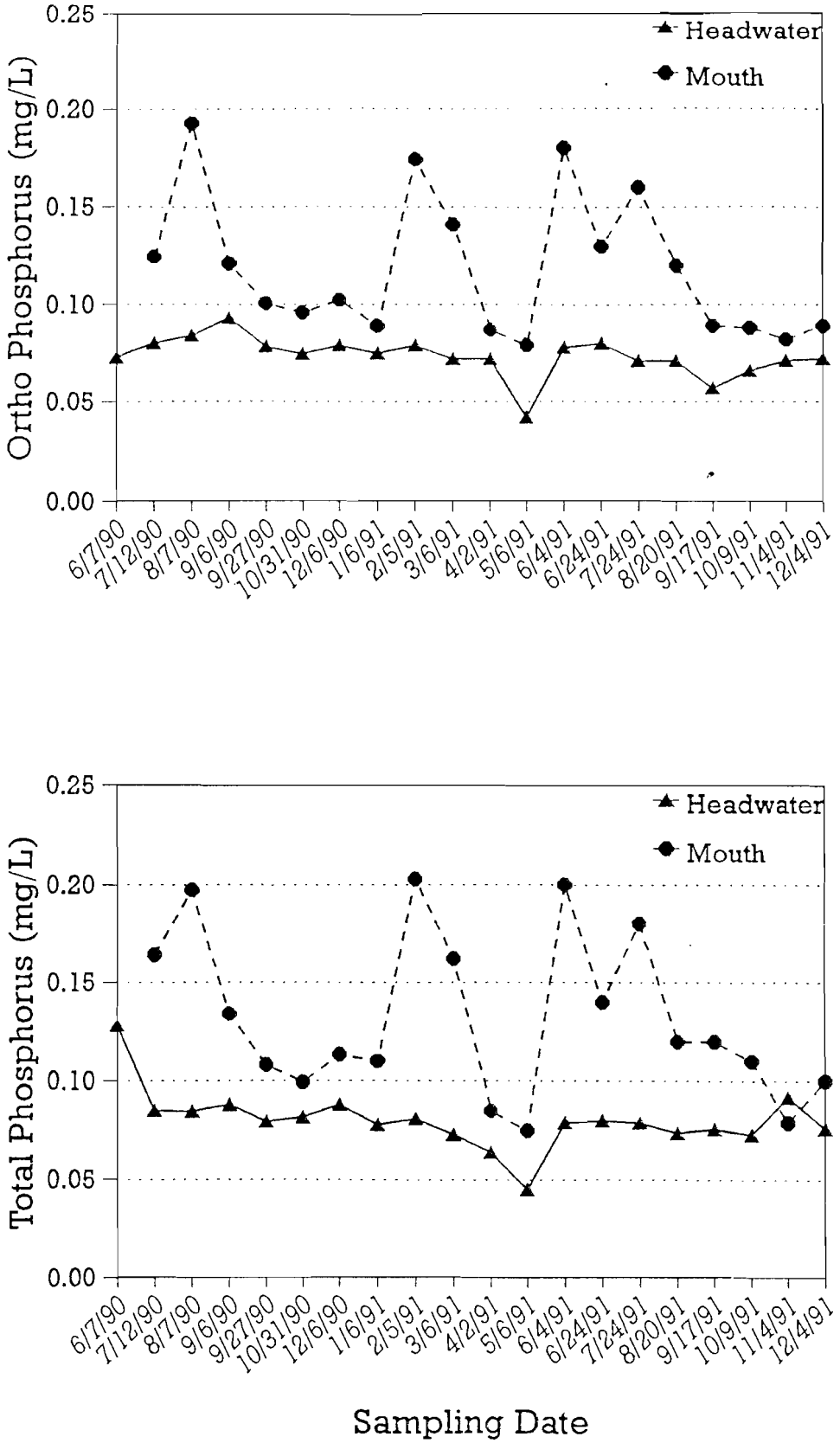


Figure 2.7. – Phosphorus concentration at two sampling sites on the Wood River, Oregon.

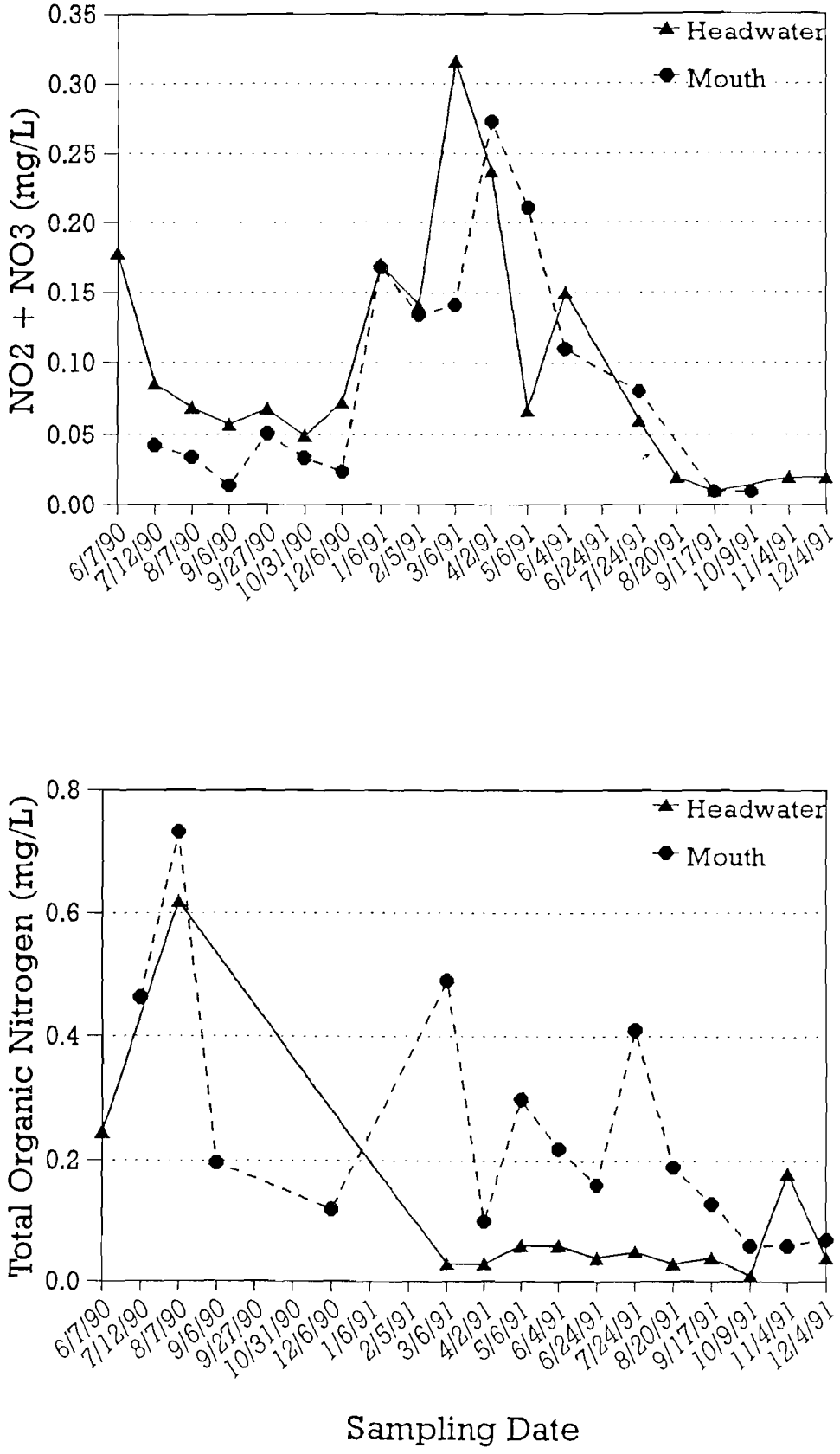


Figure 2.8. – Nitrogen concentration at two sampling sites on the Wood River, Oregon.

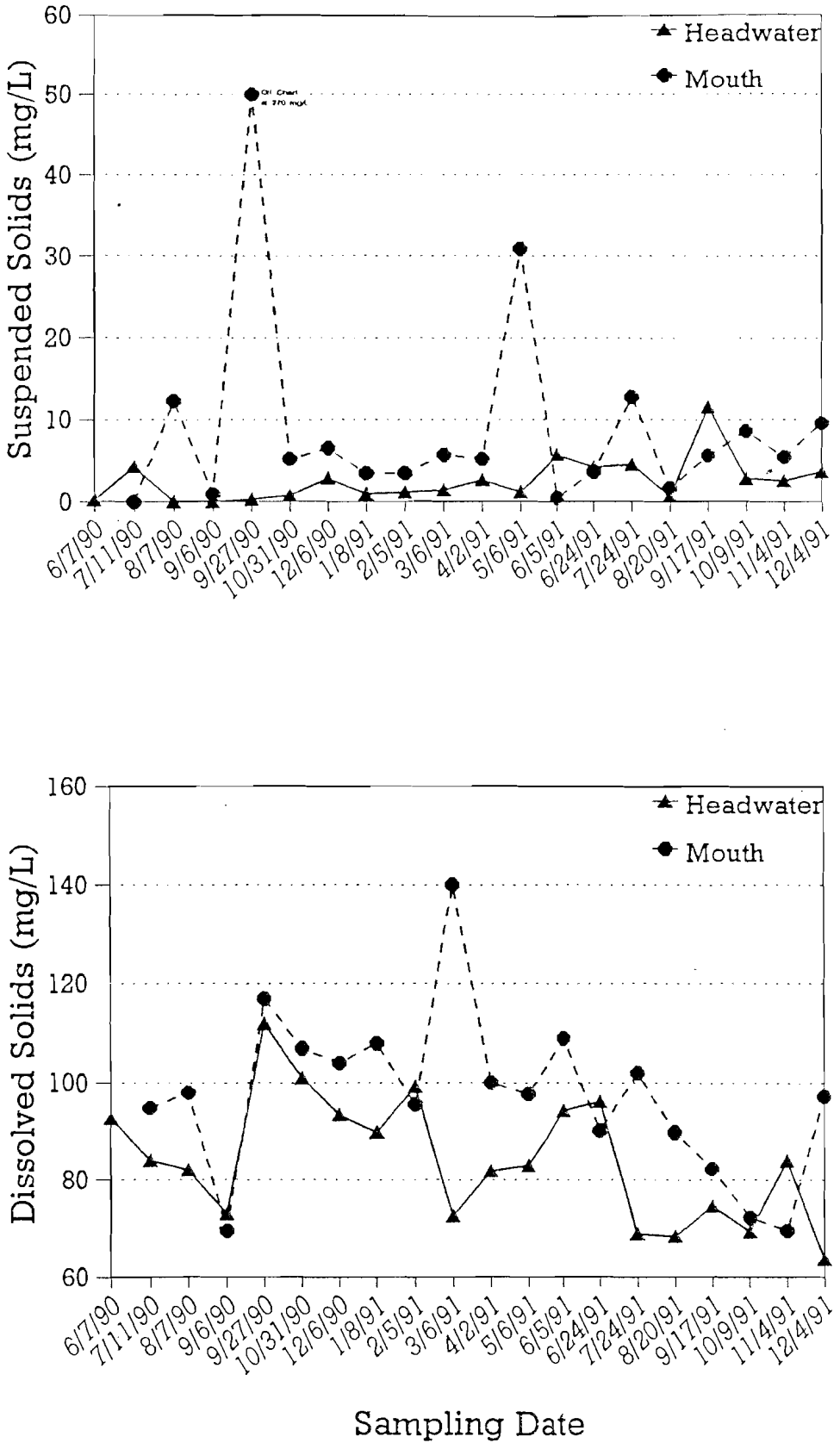


Figure 2.9. – Suspended and dissolved solids measured at two sites on the Wood River, Oregon.

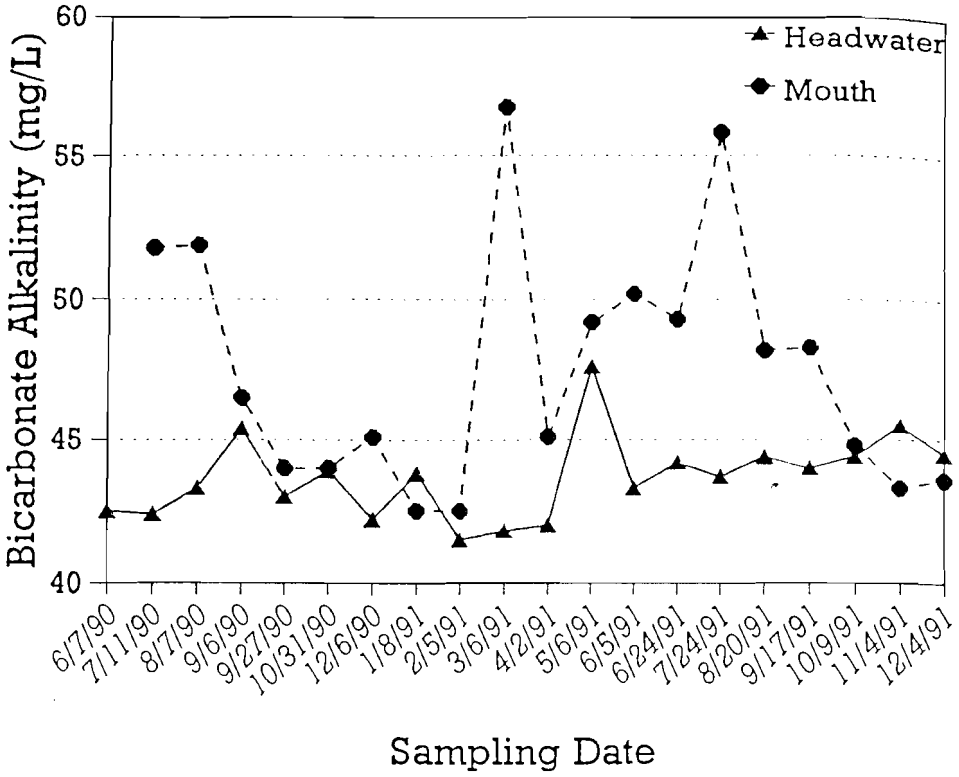


Figure 2.10. – Bicarbonate alkalinity at two sampling sites on the Wood River, Oregon.

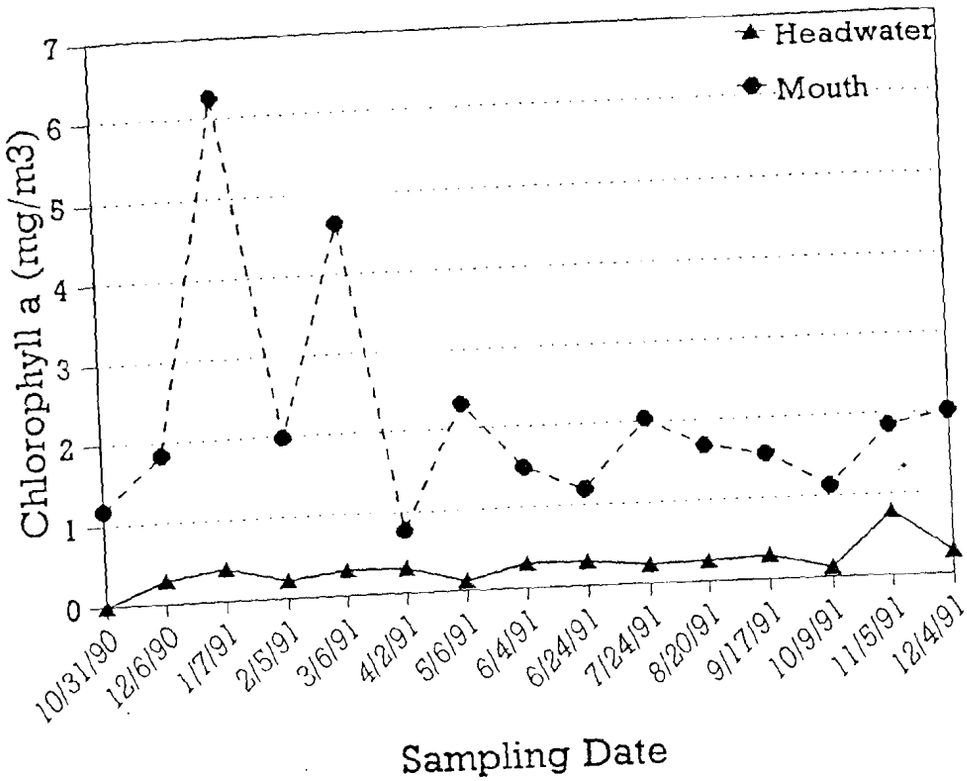


Figure 2.11. – Chlorophyll *a* concentration at two sampling sites on the Wood River, Oregon.

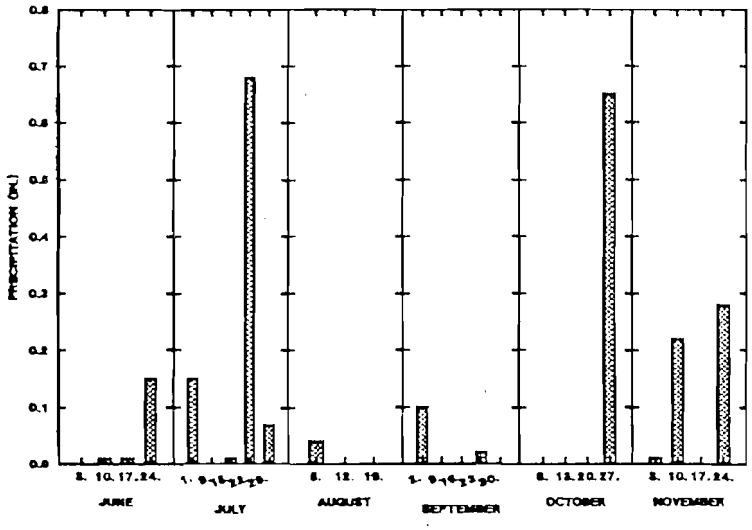


Figure 2.12. – Weekly precipitation, Agency Lake.

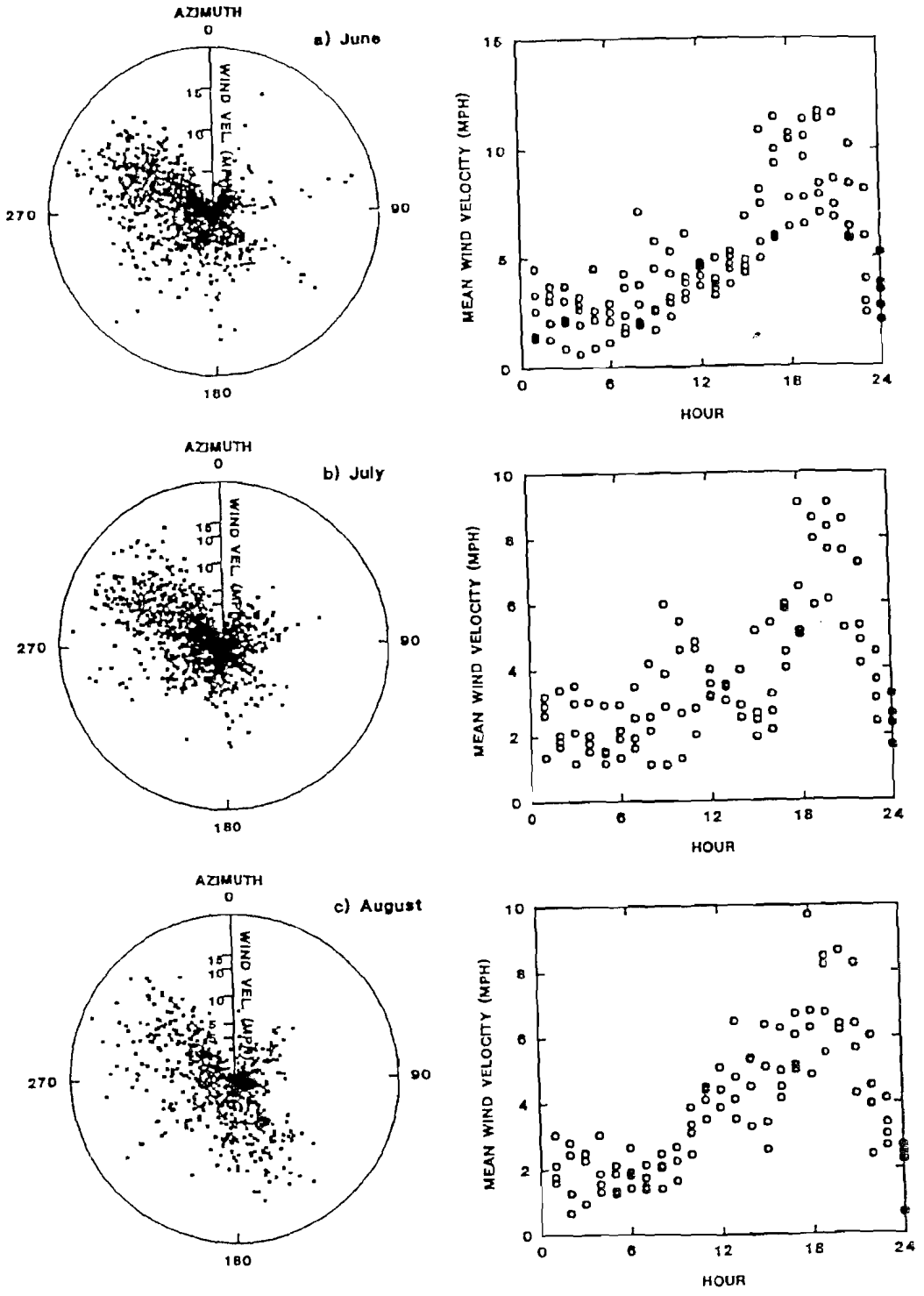


Figure 2.13. – Wind direction and velocity, Agency Lake (1 of 2).

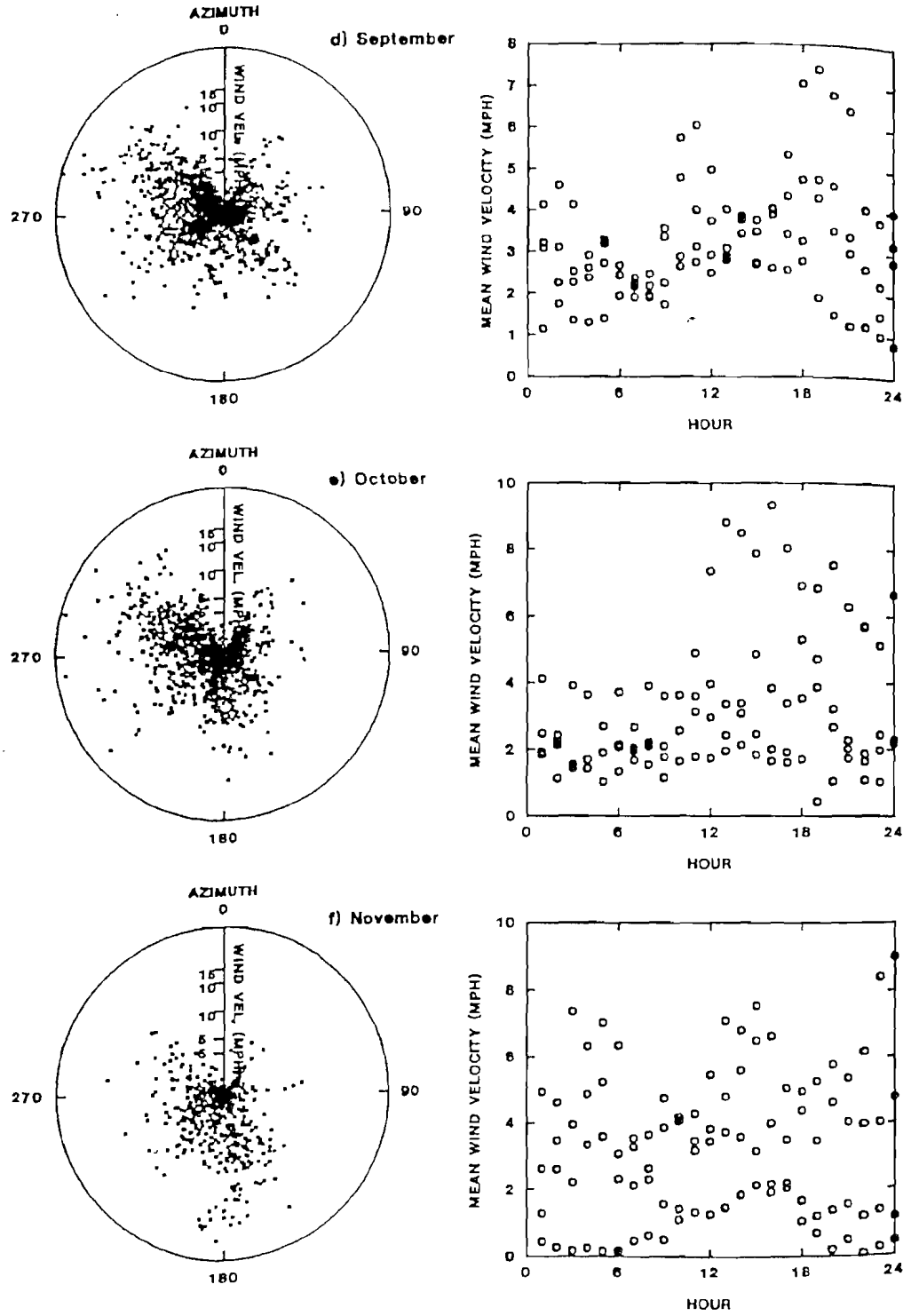


Figure 2.13. – Wind direction and velocity, Agency Lake (2 of 2).

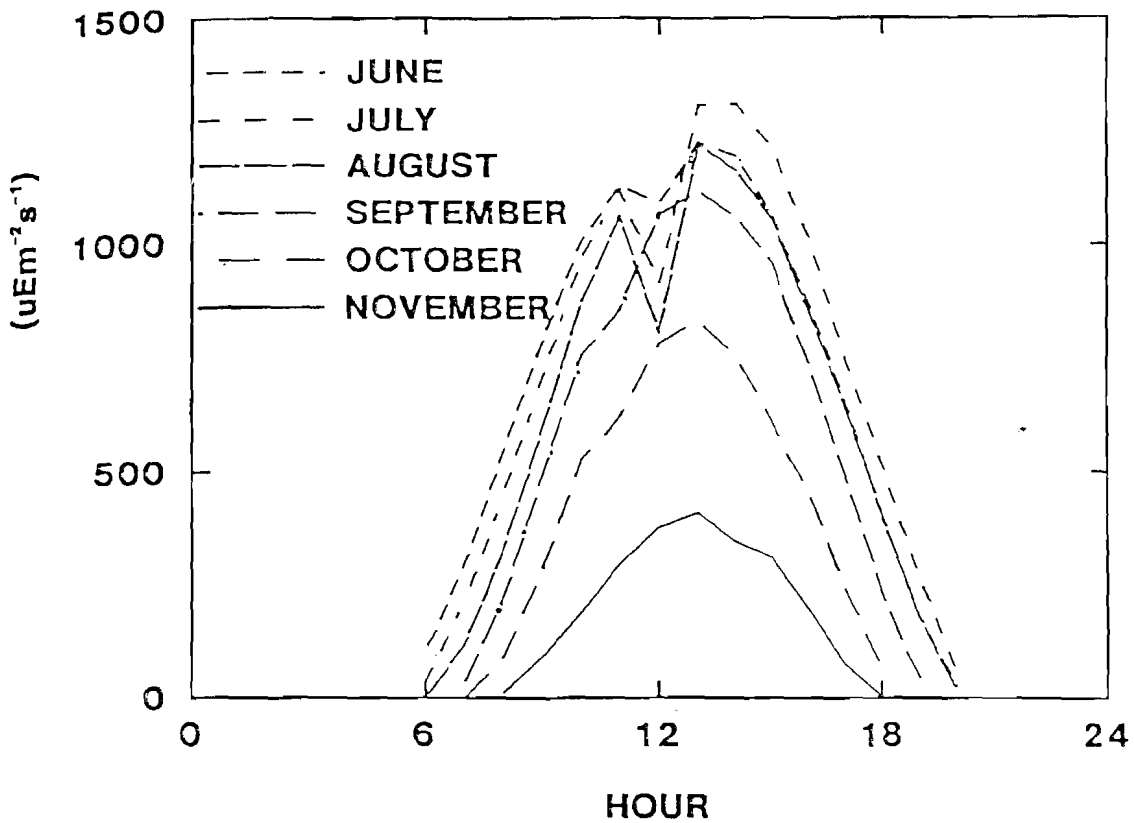


Figure 2.14. – Photosynthetically active radiation (hourly average) measured at Agency Lake, Oregon, during 1991.

APPENDIX 2.1

Wood River Physical-Chemical Measurements

Wood River Station	Date	Temperature (degrees C)	Dissolved Oxygen (mg/L)	pH	Conductivity (uS/cm2)	Redox (mV)	Air Temperature (degrees C)	Turbidity (NTU)
Dixon Road	060790	9.09	9.73	8.09	85.0	177	23	0.90
Fort Klamath	060790	12.34	9.11	7.88	78.0	134	24	1.75
Loosely Road	060790	12.55	9.45	7.99	80.0	157	24	2.17
Weed Road	060790	12.42	9.73	8.02	81.0	158	24	2.07
Dixon Road	071190	8.46	10.03	7.85	98.0	195	28	0.72
Fort Klamath	071190	11.23	9.83	7.81	98.0	192	28	1.20
Loosely Road	071190	11.45	9.60	7.58	101.0	196	28	1.12
Weed Road	071190	11.89	9.21	7.52	103.0	199	28	1.50
Agency Dike	071190	17.65	6.97	7.39	116.0	192	25	1.60
Dixon Road	080790	9.34	10.24	7.94	84.0	166	34	0.40
Fort Klamath	080790	12.43	10.45	8.21	85.0	137	33	3.47
Loosely Road	080790	13.41	10.04	7.93	87.0	153	34	1.18
Weed Road	080790	13.62	10.32	7.91	88.0	153	35	1.93
Agency Dike	080790	16.39	6.50	7.49	99.0	151	22	1.68
Dixon Road	090690	7.54	11.82	7.79	86.0	186	27	0.37
Fort Klamath	090690	8.25	11.46	7.66	86.0	181	27	1.17
Loosely Road	090690	9.16	11.48	7.59	89.0	154	28	0.78
Weed Road	090690	9.90	11.07	7.30	90.0	173	28	1.17
Agency Dike	090690	12.69	10.11	7.52	94.0	176	30	0.60
Dixon Road	092790	7.21	11.98	7.73	92.0	141	19	0.52
Fort Klamath	092790	6.59	11.61	7.35	93.0	105	18	1.07
Loosely Road	092790	6.47	11.29	7.43	95.0	105	15	0.99
Weed Road	092790	6.46	11.09	7.35	95.0	114	15	1.00
Agency Dike	092790	7.98	10.46	7.39	98.0	132	12	1.57
Dixon Road	103190	6.40	10.95	7.64	90.0	135	7	0.85
Fort Klamath	103190	6.00	10.86	7.28	88.0	115	6	1.87
Loosely Road	103190	6.30	10.81	7.51	90.0	120	6	1.93
Weed Road	103190	6.35	10.67	7.33	90.0	140	6	1.77
Agency Dike	103190	6.85	10.59	7.52	92.0	150	7	2.07
Dixon Road	120690	5.97	12.42	8.32	86.0	126	5	0.42
Fort Klamath	120690	4.39	12.75	8.01	84.0	98	5	0.57
Loosely Road	120690	4.23	12.96	8.11	86.0	107	8	0.86
Weed Road	120690	3.96	13.11	7.87	86.0	131	8	1.17
Agency Dike	120690	4.11	13.07	7.79	88.0	149	9	2.47
Dixon Road	10791	6.09	9.38	7.97	85.0	138	3	0.37
Fort Klamath	10791	4.42	10.09	7.83	80.0	106	4	0.94
Loosely Road	10791	4.64	9.97	7.94	83.0	154	8	1.20
Weed Road	10791	4.54	9.59	7.95	83.0	153	3	1.50
Agency Dike	10791	4.65	9.51	7.85	86.0	176	2	4.53
Dixon Road	20591	5.70	10.58	7.79	82.0	188	3	0.48
Fort Klamath	20591	6.68	10.85	7.62	77.0	158	13	1.90
Loosely Road	20591	6.19	11.03	7.70	78.0	160	13	2.23

Wood River Station	Date	Temperature (degrees C)	Dissolved Oxygen (mg/L)	pH	Conductivity (uS/cm2)	Redox (mV)	Air Temperature (degrees C)	Turbidity (NTU)
Weed Road	20591	5.42	10.69	7.51	78.0	178	13	3.57
Agency Dike	20591	4.96	10.42	7.54	86.0	196	9	5.23
Dixon Road	30691	5.69	10.30	7.94	87.0	178	na	0.32
Fort Klamath	30691	3.80	11.30	7.94	76.0	144	na	1.67
Loosely Road	30691	3.86	11.70	7.92	74.0	155	na	1.95
Weed Road	30691	3.76	11.30	7.78	68.0	174	na	2.27
Agency Dike	30691	3.98	10.60	7.70	91.0	193	na	4.60
Dixon Road	40291	6.70	10.10	7.75	102.0	241	11	0.33
Fort Klamath	40291	6.70	10.45	7.86	97.0	175	9	1.03
Loosely Road	40291	7.42	10.10	7.90	101.0	170	15	1.15
Weed Road	40291	7.60	10.04	7.80	101.0	207	15	1.65
Agency Dike	40291	8.80	9.44	7.80	104.0	233	15	1.83
Dixon Road	50691	7.47	9.45	7.76	84.0	210	15	0.31
Fort Klamath	50691	7.80	9.16	7.78	80.0	96	17	1.32
Loosely Road	50691	9.24	9.22	7.83	84.0	180	17	1.35
Weed Road	50691	9.85	8.92	7.81	86.0	185	19	2.13
Agency Dike	50691	11.08	7.81	7.76	93.0	192	14	2.00
Dixon Road	60591	7.26	10.82	7.41	99.0	171	10	0.41
Fort Klamath	60591	10.53	10.17	7.23	96.0	169	13	1.27
Loosely Road	60591	10.57	10.46	7.33	102.0	187	16	1.30
Weed Road	60591	10.68	10.53	7.30	102.0	187	18	1.85
Agency Dike	60591	14.10	8.97	7.13	114.0	197	19	1.63
Dixon Road	62491	6.92	10.61	7.98	89.6	138	15	0.53
Fort Klamath	62491	7.52	10.31	7.81	88.0	160	18	1.12
Loosely Road	62491	8.85	9.92	7.82	92.4	164	18	1.20
Weed Road	62491	10.35	9.55	7.62	93.2	165	20	1.57
Agency Dike	62491	13.70	8.27	7.55	107.2	171	20	1.57
Dixon Road	72491	7.99	10.15	7.85	87.4	144	NA	0.87
Fort Klamath	72491	9.63	9.89	7.78	88.0	151	NA	1.33
Loosely Road	72491	12.14	9.14	7.40	90.6	169	NA	1.57
Weed Road	72491	14.64	8.90	7.43	93.4	194	NA	1.67
Agency Dike	72491	18.60	8.28	7.74	110.4	178	NA	1.72
Dixon Road	82191	10.24	10.01	7.81	91.4	174	NA	1.43
Fort Klamath	82191	12.83	9.59	7.59	93.4	170	NA	1.47
Loosely Road	82191	13.21	9.67	7.78	95.2	184	NA	2.40
Weed Road	82191	13.13	9.67	7.73	97.6	203	NA	2.15
Agency Dike	82191	17.50	10.67	8.71	102.0	192	NA	2.03
Dixon Road	91791	6.38	9.99	7.92	86.8	145	8	0.50
Fort Klamath	91791	6.67	9.92	7.69	87.4	211	20	0.98
Loosely Road	91791	8.27	9.83	7.68	89.2	226	22	1.43
Weed Road	91791	9.52	9.53	7.18	90.6	223	25	1.47
Agency Dike	91791	12.04	9.30	7.63	95.2	246	28	2.13

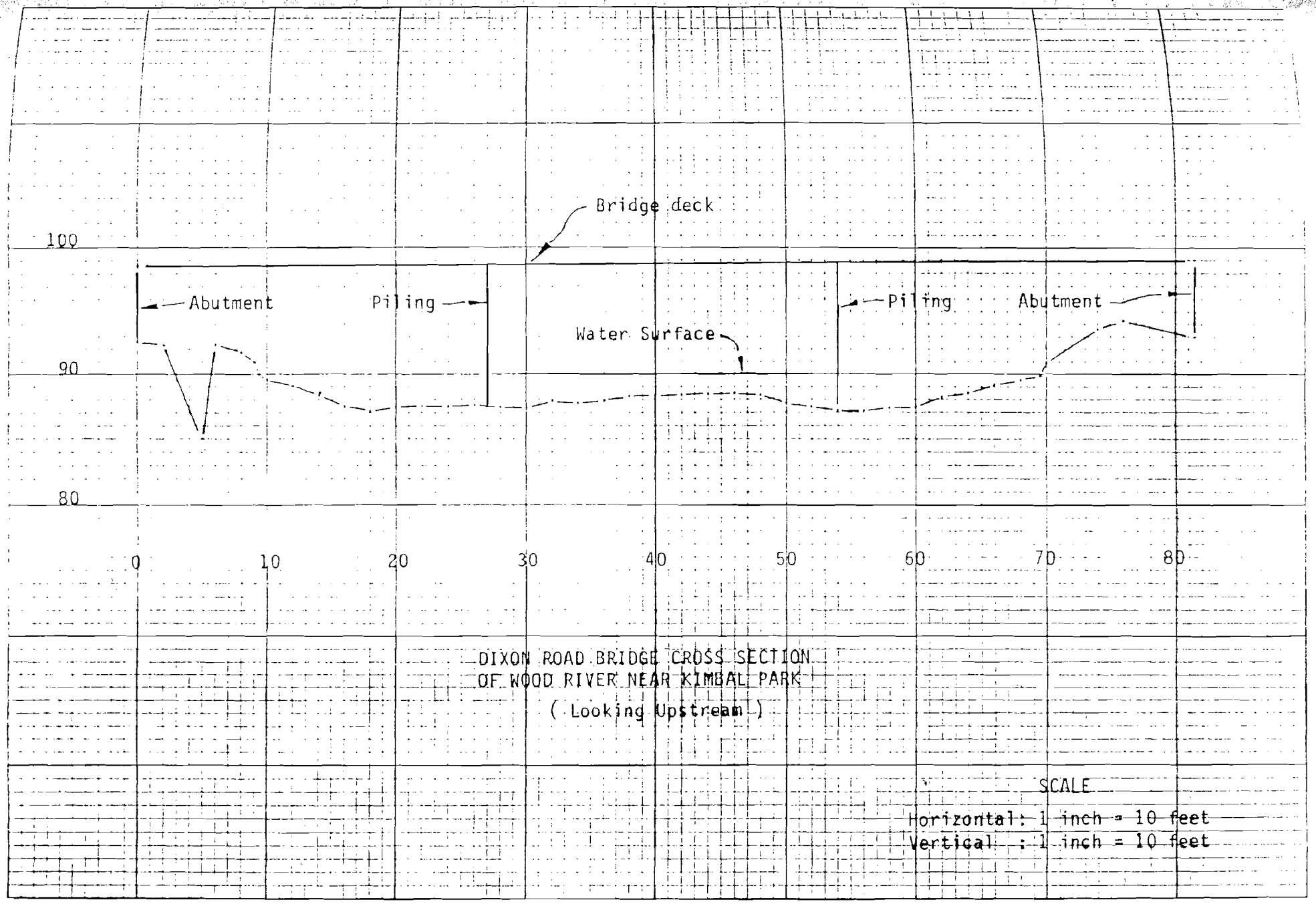
Wood River Station	Date	Temperature (degrees C)	Dissolved Oxygen (mg/L)	pH	Conductivity (uS/cm2)	Redox (mV)	Air Temperature (degrees C)	Turbidity (NTU)
Dixon Road	100991	6.36	9.14	7.32	86.4	191	1	0.67
Fort Klamath	100991	5.81	9.50	7.47	86.2	178	12	1.00
Loosely Road	100991	6.64	9.46	7.30	88.0	197	12	1.12
Weed Road	100991	7.36	9.57	7.45	88.4	190	NA	1.10
Agency Dike	100991	9.81	8.90	7.55	89.4	198	19	1.43
7Mile Canal	100991	13.57	6.50	7.24	90.2	203	21	3.87
Dixon Road	110591	7.40	10.05	7.93	87.2	NA	16	1.40
Fort Klamath	110591	7.03	9.82	7.68	84.2	NA	17	1.13
Loosely Road	110591	6.99	10.93	7.69	86.8	NA	19	1.60
Weed Road	110591	7.17	10.38	7.80	86.6	NA	16	1.07
Agency Dike	110591	8.00	9.82	7.52	89.6	NA	13	1.70
7Mile Canal	110591	6.35	9.45	7.23	74.8	NA	NA	4.57
Dixon Road	121291	6.58	10.38	8.11	79.6	294	0	0.53
Fort Klamath	121291	5.55	10.81	7.82	72.9	289	1	1.50
Loosely Road	121291	5.51	10.90	7.86	76.5	296	2	1.57
Weed Road	121291	5.28	10.78	7.85	76.6	304	2	1.67
Agency Dike	121291	5.55	9.44	7.84	78.6	295	2	2.37
7Mile Canal	121291	3.18	9.28	7.73	83.4	307	2	2.80

APPENDIX 2.2

Wood River Elevation and Stream Discharge Transects and the Area-Capacity Table for the Agency Lake Sub-Basin

The following cross section data is for the Wood River at the downstream edge of the Dixon Road bridge, near Kimbal Park.

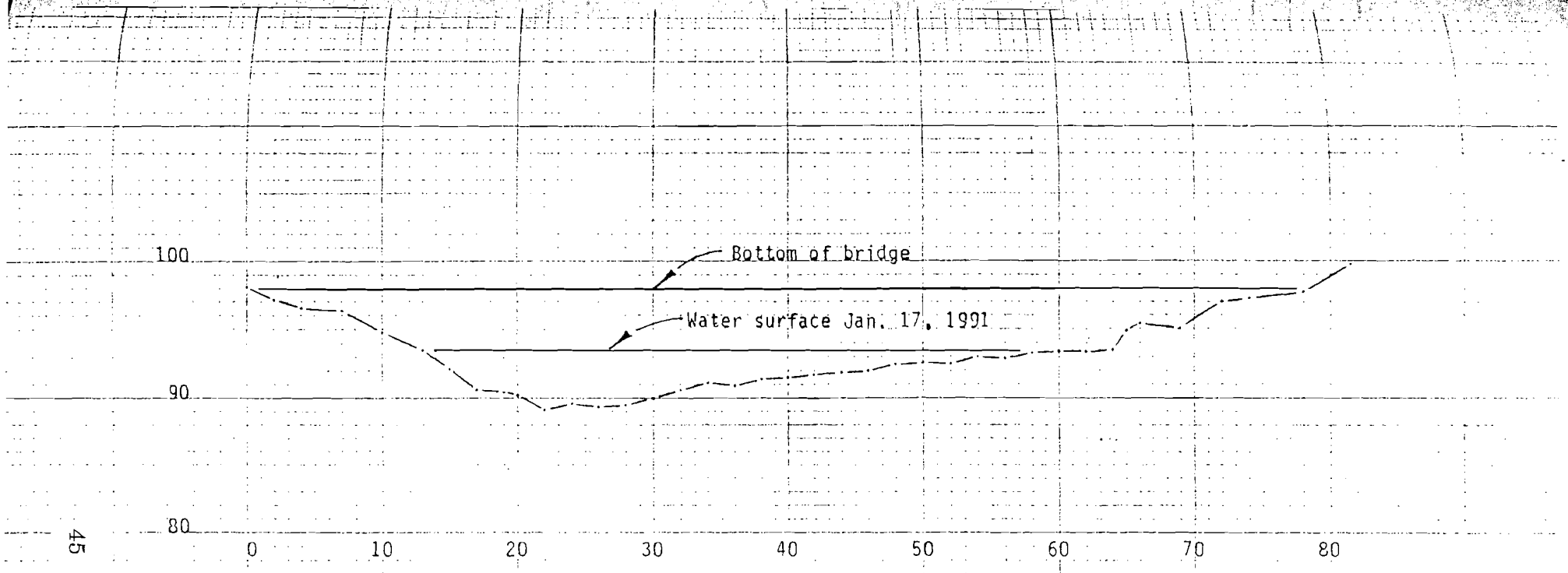
Elevation	98.6	92.6	92.2	85.0	92.3	91.8	91.0	90.0	89.6	89.1	88.3
Distance	0.0	0.0	2.0	5.0	6.0	8.0	9.0	9.3	10.0	12.0	14.0
Elevation	87.5	87.1	87.3	87.5	87.5	87.6	87.4	87.3	87.9	87.8	87.9
Distance	16.0	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0	36.0
Elevation	88.2	88.2	88.3	88.4	88.5	88.3	87.8	87.5	87.1	87.1	87.3
Distance	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0	54.0	56.0	58.0
Elevation	87.4	88.1	88.5	89.1	89.6	89.9	90.9	93.6	94.2	93.0	99.0
Distance	60.0	62.0	64.0	66.0	68.0	69.5	70.0	74.0	76.0	81.5	81.5



DIXON ROAD BRIDGE CROSS SECTION
OF WOOD RIVER NEAR KIMBAL PARK
(Looking Upstream)

The following cross section data is for the Wood River at the Highway 62 bridge, near Fort Klamath, Oregon.

Elevation	98.1	97.1	96.6	96.2	94.8	93.5	92.1	90.7	90.3	90.1	89.1
Distance	0.0	2.0	4.0	7.0	10.0	13.0	15.0	17.0	19.0	20.0	22.0
Elevation	89.7	89.3	89.5	90.0	90.6	91.1	90.9	91.3	91.5	91.8	91.9
Distance	24.0	26.0	28.0	30.0	32.0	34.0	36.0	38.0	40.0	42.0	44.0
Elevation	92.0	92.4	92.6	92.5	93.0	92.9	93.2	93.3	93.3	93.5	94.9
Distance	48.0	50.0	52.0	54.0	56.0	58.0	60.0	62.0	64.0	65.0	66.0
Elevation	95.0	97.0	97.2	97.8	99.8						
Distance	69.0	72.0	74.0	78.0	81.5						



CROSS SECTION OF THE WOOD RIVER
AT THE HIGHWAY 62 BRIDGE

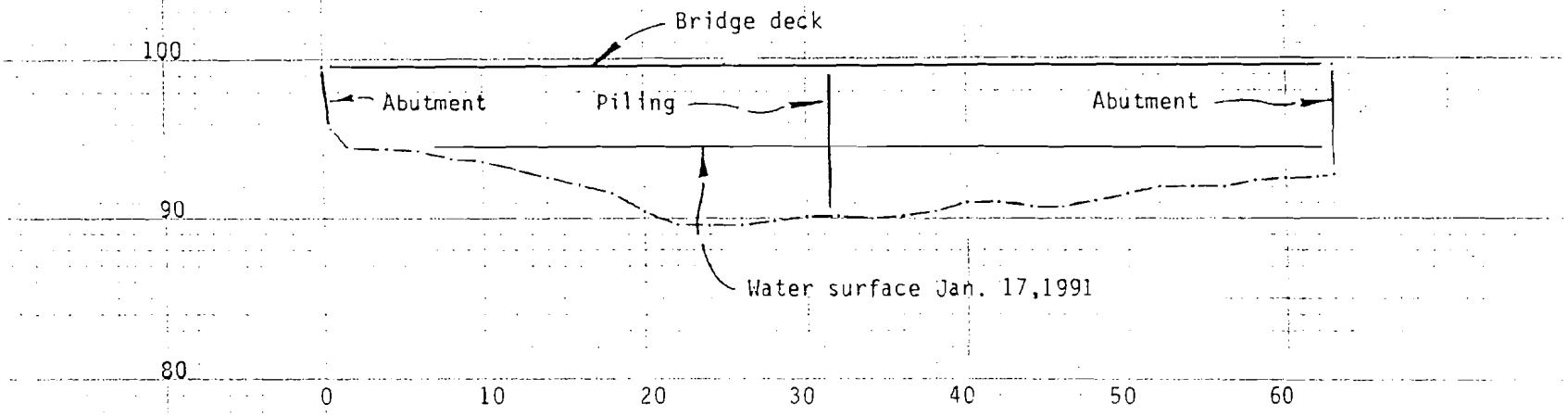
(Looking Upstream)

SCALE--

Horizontal: 1 inch = 10 feet
Vertical: 1 inch = 10 feet

The following cross section data is for the Wood River at the Highway 62 bridge, at Loosely Road.

Elevation	99.5	95.7	94.5	94.3	94.2	93.8	93.6	93.1	92.6	92.1	91.6
Distance	0.0	0.5	1.5	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0
Elevation	90.4	89.7	89.7	89.6	89.9	90.1	90.1	90.0	90.1	90.4	91.0
Distance	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0	36.0	38.0	40.0
Elevation	90.8	90.8	91.1	91.6	92.0	92.0	92.0	92.3	92.5	92.6	92.8
Distance	44.0	46.0	48.0	50.0	52.0	54.0	56.0	58.0	60.0	62.0	63.0
Elevation	99.7										
Distance	63.0										



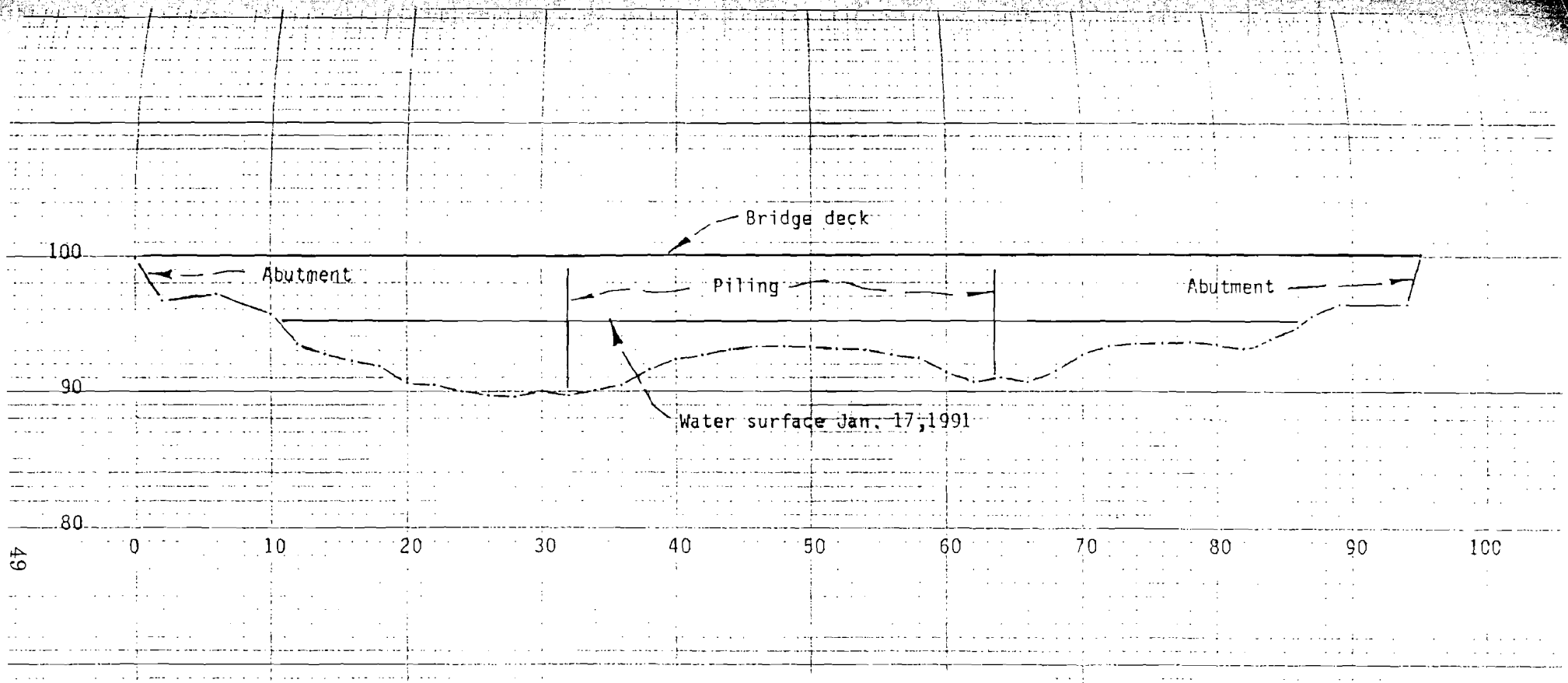
CROSS SECTION OF THE WOOD RIVER
AT THE LOOSLEY ROAD BRIDGE
(Looking Upstream)

SCALE

Horizontal: 1 inch = 10 feet
Vertical: 1 inch = 10 feet

The following cross section data is for the Wood River at the Highway 62 bridge, at Weed Road.

Elevation	99.1	96.6	97.1	95.7	95.0	93.4	92.8	92.2	91.9	90.7	90.4
Distance	0.0	2.0	6.0	10.0	11.0	12.0	14.0	16.0	18.0	20.0	22.0
Elevation	90.0	89.8	89.7	90.0	89.8	90.1	90.4	91.7	92.2	92.7	93.0
Distance	24.0	26.0	28.0	30.0	32.0	34.0	36.0	38.0	40.0	42.0	44.0
Elevation	93.2	93.2	93.2	93.1	93.0	92.7	92.4	91.3	90.8	91.0	90.7
Distance	46.0	48.0	50.0	52.0	54.0	56.0	58.0	60.0	62.0	64.0	66.0
Elevation	91.5	92.7	93.2	93.4	93.5	93.6	93.3	93.1	93.2	93.8	94.7
Distance	68.0	70.0	72.0	74.0	76.0	78.0	80.0	82.0	83.0	84.0	86.0
Elevation	95.3	96.3	96.4	100.1							
Distance	87.0	89.0	94.0	95.0							



CROSS SECTION OF THE WOOD RIVER
AT THE WEED ROAD BRIDGE

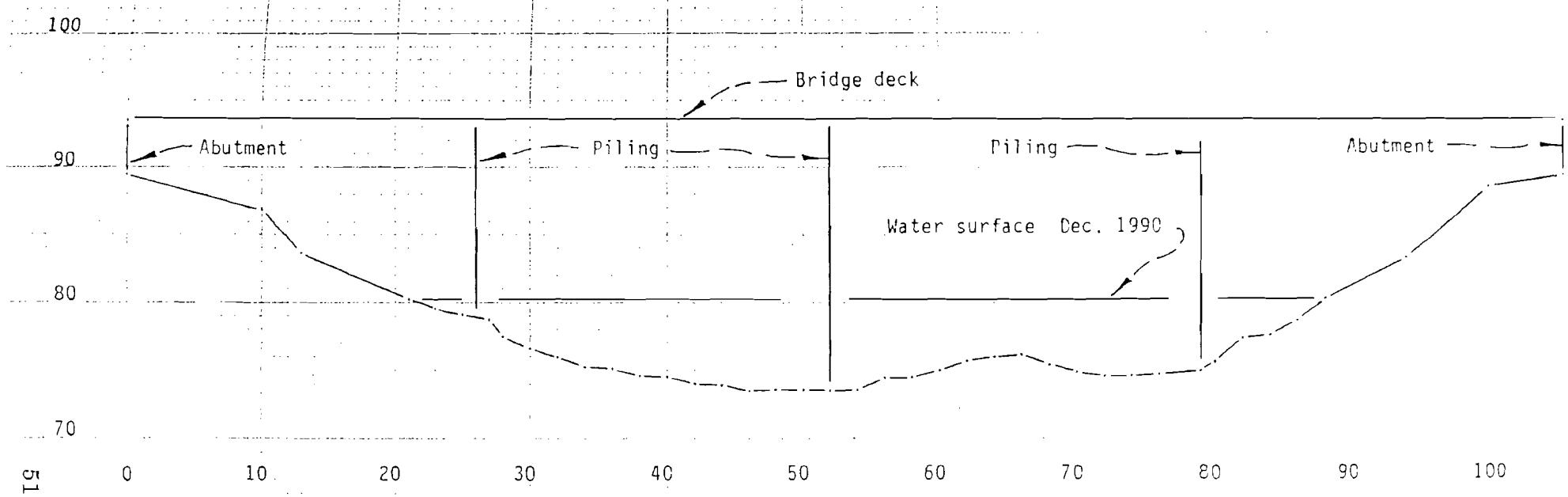
(Looking Upstream)

SCALE

Horizontal: 1 inch = 10 feet
Vertical: 1 inch = 10 feet

The following cross section data id for the Wood River at the downstream edge of the Dike Road bridge, near Petric Park.

Elevation	93.4	89.4	86.9	83.6	80.2	79.6	79.1	78.8	77.5	76.7	76.0
Distance	0.0	0.0	10.0	13.0	21.0	23.0	25.0	27.0	28.0	30.0	32.0
Elevation	75.2	75.1	74.7	74.6	74.0	73.9	73.4	73.6	73.5	73.5	73.6
Distance	34.0	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0	54.0
Elevation	74.4	74.5	75.0	75.8	76.0	76.1	75.3	74.9	74.6	74.7	74.8
Distance	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0	72.0	74.0	76.0
Elevation	75.0	75.7	77.3	77.7	78.8	80.2	83.2	88.6	89.3	93.4	
Distance	79.0	80.0	82.0	84.0	86.0	88.0	94.0	100.0	105.5	105.5	



CROSS SECTION OF WOOD RIVER
AT DIKE ROAD BRIDGE
DOWN STREAM OF PETRIC PARK
(Looking Upstream)

SCALE

Horizontal: 1 inch = 10 feet
Vertical: 1 inch = 10 feet

SUMMARY TABLE DISCHARGE IN CFS

DATE 1991	DIXON ROAD (UK100)	FT. KLAMA (UK200)	LOOSELY ROAD (UK300)	WEED ROAD (UK400)	PETRIC PARK (UK500)
3/5	176.63		318.30	350.59	539.18
4/2	174.00	194.69	289.16	295.81	279.38
5/7	161.55	116.45	188.31	160.18	121.63
6/4	176.82	145.45	174.37	104.39	222.36
6/24	183.61	117.86	164.71	105.19	156.20
7/24	187.77	122.81	181.74	107.90	156.96
8/20	183.63	130.59	158.96	118.70	196.02
9/17	172.43	120.43	184.94	188.25	210.68
10/9	165.95	164.36	251.20	175.45	240.31
11/5	163.33	206.93	268.30	282.50	284.25
12/4	163.73	218.83	304.97	345.08	342.52

AGENCY LAKE ELEVATION-AREA-CAPACITY DATA

ELEVATION (FEET)	AREA (SQ.MI.)	TOTALS (SQ.MI.)	AREA ACRES	VOLUME (AC.FT.)	TOTAL VOLUME (AC.FT)
4148	13.72	13.72	8780.8	8780.8	116883.2
4147	13.72	13.72	8780.8	8780.8	108102.4
4146	13.72	13.72	8780.8	8780.8	99321.6
4145	13.72	13.72	8780.8	8780.8	90540.8
4144	13.72	13.72	8780.8	8780.8	81760
4143	13.72	13.72	8780.8	8780.8	72979.2
4142	13.72	13.72	8780.8	8780.8	64198.4
4141	13.72	13.72	8780.8	8780.8	55417.6
4140	13.72	13.72	8780.8	8780.8	46636.8
4139	13.72	13.72	8780.8	8780.8	37856
4138	13.72	13.72	8780.8	8387.2	29075.2
4137	12.49	12.49	7993.6	7667.2	20688
4136	11.29	11.47	7340.8	6358.4	13020.8
4136	0.11				
4136	0.07				
4135	8.4	8.4	5376	4339.2	6662.4
4134	4.4	5.16	3302.4	1987.2	2323.2
4134	0.7				
4134	0.06				
4133	0.93	1.05	672	336	336
4133	0.07				
4133	0.05				
4132	0	0	0	0	0

APPENDIX 2.3

Daily Average Measurements of Temperature, Wind Speed, Direction, Insolation, and Precipitation Recorded at the Weather Station on Agency Lake

DATE	TEMPERATURE MEAN	TEMPERATURE MAX	TEMPERATURE MIN	WIND SPEED MEAN	WIND SPEED MAX	WIND SPEED DIRECTION	IRRADIENCE PAR MAX	PRECIPITATION CUMMULATIVE
	(°C)			(m/h)			($\mu E/m^2/s$)	(in)
6 2 91	17.5	21.3	9.29	10.6	16.4	NW	1346	0.00
6 3 91	11.5	19.8	3.72	6.0	12.6	W	1460	0.00
6 4 91	8.1	15.8	-0.13	8.8	17.4	W	1487	0.00
6 5 91	7.2	16.3	-0.95	4.8	10.1	W	1434	0.01
6 6 91	9.1	18.7	-0.37	3.2	12.2	W	1447	0.00
6 7 91	12.1	21.8	0.78	3.3	10.5	NW	1296	0.00
6 8 91	13.9	22.5	4.08	2.9	11.2	W	1291	0.00
6 9 91	17.0	26.8	5.99	2.7	6.4	NW	1361	0.00
6 10 91	19.0	28.3	10.18	5.0	14.2	NW	1369	0.00
6 11 91	15.3	21.0	7.54	6.4	13.5	W	1379	0.00
6 12 91	10.3	18.0	1.04	6.6	16.3	NW	1395	0.00
6 13 91	7.3	15.0	-2.90	5.8	13.1	W	1399	0.00
6 14 91	9.9	20.4	-2.25	3.7	11.6	W	1389	0.00
6 15 91	11.5	20.6	-0.64	7.4	18.5	W	1377	0.01
6 16 91	9.9	17.5	-0.80	4.6	12.7	W	1396	0.00
6 17 91	12.0	22.2	0.75	4.8	9.3	W	1399	0.00
6 18 91	14.0	23.6	3.49	5.6	14.2	W	1433	0.00
6 19 91	8.9	13.7	6.13	6.4	15.4	W	1156	0.07
6 20 91	10.4	18.0	2.87	6.0	11.4	W	1412	0.01
6 21 91	10.4	20.8	-1.14	4.5	14.7	W	1516	0.00
6 22 91	11.6	21.3	-0.04	4.1	13.6	W	1423	0.00
6 23 91	10.0	19.4	1.99	3.0	18.0	W	1358	0.05
6 24 91	12.2	19.0	5.77	3.1	15.1	W	1435	0.02
6 25 91	11.4	19.7	2.66	3.9	12.0	W	1421	0.00
6 26 91	11.7	20.1	1.34	3.2	10.4	W	1285	0.00
6 27 91	12.5	19.1	7.86	3.0	11.3	W	1219	0.00
6 28 91	12.2	19.0	8.04	3.1	12.1	W	1564	0.15
6 29 91	12.7	17.2	6.90	5.5	11.3	W	980	0.00
6 30 91	14.3	23.7	2.39	3.3	8.4	W	1472	0.00
7 1 91	18.1	28.6	7.52	3.4	7.8	W	1377	0.00
7 2 91	21.9	31.8	10.92	3.1	6.9	NW	1391	0.00
7 3 91	23.2	34.5	12.28	2.2	8.2	NW	1405	0.00
7 4 91	23.5	33.8	15.03	3.7	8.8	W	1389	0.00
7 5 91	21.2	31.8	12.32	4.6	9.0	W	1399	0.00
7 6 91	20.3	31.3	10.51	4.2	8.8	NW	1388	0.00
7 7 91	20.5	30.7	10.89	4.7	9.2	W	1388	0.00
7 8 91	20.4	29.9	11.29	5.0	12.6	W	1380	0.00
7 9 91	16.7	24.2	6.17	4.6	12.6	W	1396	0.00
7 10 91	15.4	26.9	1.50	3.1	12.1	NW	1391	0.00
7 11 91	18.4	29.7	7.11	1.9	7.8	W	1373	0.00
7 12 91	20.8	31.4	10.02	3.7	12.5	W	1397	0.00
7 13 91	18.9	26.4	10.16	4.8	13	W	1360	0.00
7 14 91	17.5	25.3	8.95	4.3	11.1	W	1369	0.01
7 15 91	15.8	25.1	6.38	3.9	11	W	1525	0.00
7 16 91	13.2	16.4	10.57	1.3	7.8	W	396	0.51
7 17 91	15.3	23.2	9.45	2.2	11.8	W	1509	0.00
7 18 91	17.1	27.6	7.70	3.8	11.2	NW	1386	0.00
7 19 91	18.7	28.4	9.28	4.6	14.3	W	1385	0.00
7 20 91	17.7	28.7	7.93	4.1	16.8	W	1374	0.00

DATE	TEMPERATURE MEAN	TEMPERATURE MAX	TEMPERATURE MIN	WIND SPEED MEAN	WIND SPEED MAX	WIND SPEED DIRECTION	IRRADIENCE PAR MAX	PRECIPITATION CUMMULATIVE
	(°C)			(m/h)			($\mu E/m^2/s$)	(in)
7 21 91	17.6	28.8	4.96	2.8	10.3	W	1365	0.00
7 22 91	20.1	31.8	12.05	4.6	9.3	W	1399	0.17
7 23 91	20.0	30.5	10.30	2.7	8.2	W	1350	0.07
7 24 91	19.1	28.7	10.39	5.1	18.4	W	1358	0.00
7 25 91	16.7	26.5	7.58	4.4	14.8	W	1352	0.00
7 26 91	17.6	28.9	7.36	4.5	12.4	W	1366	0.00
7 27 91	19.9	31.0	8.49	3.4	8.6	W	1360	0.00
7 28 91	20.8	32.3	11.38	3.6	11.3	W	1347	0.00
7 29 91	20.0	30.5	9.61	4.2	12.6	NW	1365	0.00
7 30 91	19.9	31.3	9.52	3.5	10.4	NW	1373	0.00
7 31 91	19.9	29.9	9.68	5.9	17.4	W	1322	0.00
8 1 91	17.5	27.1	5.29	4.6	10.5	W	1363	0.00
8 2 91	19.1	30.0	9.33	3.7	9.3	W	1356	0.00
8 3 91	20.2	30.6	10.88	4.3	13.1	W	1320	0.00
8 4 91	17.3	25.0	11.17	2.3	11.8	W	1062	0.00
8 5 91	17.9	27.1	9.68	3.0	8.4	W	1430	0.04
8 6 91	16.5	25.8	7.67	3.5	8.4	W	1323	0.00
8 7 91	16.6	22.2	11.01	6.7	11.9	W	1408	0.00
8 8 91	18.4	29.5	6.65	2.4	9.8	W	1323	0.00
8 9 91	15.2	22.9	6.80	4.6	14.1	W	1396	0.00
8 10 91	14.2	25.2	3.01	3.9	8.5	W	1347	0.00
8 11 91	16.7	28.0	7.83	4.2	11.7	NW	1309	0.00
8 12 91	15.9	28.3	3.16	3.2	10.3	W	1307	0.00
8 13 91	17.8	27.8	5.48	3.4	10.0	W	1305	0.00
8 14 91	16.8	30.2	8.23	2.8	5.2	W	1284	0.00
8 28 91	14.2	17.7	10.84	2.8	7.8	W	322	0.00
8 29 91	16.2	26.2	7.76	4.2	12.5	W	1222	0.00
8 30 91	16.7	28.1	5.28	3.1	9.8	W	1220	0.01
8 31 91	15.4	25.7	4.58	4.3	16.6	W	1202	0.09
9 1 91	15.4	24.4	6.70	3.6	10.8	W	1205	0.00
9 2 91	15.9	26.7	7.14	3.4	6.5	W	1201	0.00
9 3 91	18.9	31.1	8.53	3.5	7.7	W	1203	0.00
9 4 91	20.2	32.5	11.37	3.3	6.9	W	1195	0.00
9 5 91	20.3	31.2	11.58	3.9	14.6	W	1181	0.00
9 6 91	18.5	30.1	7.57	2.7	11.0	W	1201	0.00
9 7 91	15.9	25.1	6.66	4.4	13.8	W	1174	0.00
9 8 91	11.6	24.0	0.57	3.8	15.4	W	1226	0.00
9 9 91	13.3	23.4	3.82	6.1	11.9	W	1190	0.00
9 10 91	13.6	24.5	3.39	4.2	11.8	W	1181	0.00
9 11 91	14.2	25.9	3.44	1.7	5.4	W	1206	0.00
9 12 91	14.8	28.7	3.37	2.0	7.8	W	1169	0.00
9 13 91	14.3	24.4	5.30	4.3	14.8	W	1191	0.00
9 14 91	13.4	24.5	4.37	3.8	8.7	W	1171	0.00
9 15 91	15.4	27.0	5.12	3.0	7.0	W	1161	0.00
9 16 91	16.4	30.4	4.42	1.4	5.0	W	1166	0.00
9 17 91	19.1	32.0	8.93	2.2	6.5	W	1153	0.00
9 18 91	20.0	31.7	10.85	2.7	7.4	NW	1129	0.00
9 19 91	19.8	32.1	11.41	3.4	9.5	W	1118	0.00
9 20 91	16.9	28.1	8.66	5.2	12.8	NW	1128	0.00
9 21 91	10.7	22.6	-2.40	5.3	10.2	W	1146	0.02

DATE	TEMPERATURE MEAN (°C)	TEMPERATURE MAX (°C)	TEMPERATURE MIN (°C)	WIND SPEED MEAN (m/h)	WIND SPEED MAX (m/h)	WIND SPEED DIRECTION	IRRADIENCE PAR MAX ($\mu E/m^2/s$)	PRECIPITATION CUMMULATIVE (in)
9 22 91	12.7	24.2	2.24	3.3	8.7	W	1100	0.00
9 23 91	16.9	27.9	5.70	4.1	7.9	W	1096	0.00
9 24 91	16.9	29.3	8.17	2.7	7.4	W	1095	0.00
9 25 91	17.2	30.4	5.49	2.1	6.4	W	1086	0.00
9 26 91	16.3	27.3	6.19	2.6	9.1	W	996	0.00
9 27 91	14.4	27.3	4.01	1.2	4.3	W	1056	0.00
9 28 91	14.0	27.7	3.94	1.6	9.7	W	1051	0.00
9 29 91	16.4	27.0	6.69	2.6	5.9	W	1038	0.00
9 30 91	14.1	28.1	2.74	1.2	3.5	W	1050	0.00
10 1 91	14.3	28.9	3.03	2.2	8.1	W	1040	0.00
10 2 91	13.6	27.8	1.13	1.7	7.6	W	1026	0.00
10 3 91	14.7	28.2	4.76	2.5	6.4	W	1043	0.00
10 4 91	14.0	25.1	5.89	3.3	6.7	W	1026	0.00
10 5 91	14.1	28.9	2.22	1.4	4.9	W	1014	0.00
10 6 91	14.6	27.7	2.72	2.3	11.4	W	1025	0.00
10 7 91	11.2	24.0	0.47	2.0	7.8	W	995	0.00
10 8 91	12.8	24.9	3.64	1.7	6.8	W	973	0.00
10 9 91	15.7	26.1	6.40	3.1	5.3	W	994	0.00
10 10 91	12.7	26.7	1.17	1.7	7.0	W	989	0.00
10 11 91	12.7	28.5	1.40	0.8	4.1	W	963	0.00
10 12 91	12.7	26.7	2.83	1.9	9.3	W	937	0.00
10 13 91	13.3	26.0	3.55	2.5	7.2	W	930	0.00
10 14 91	13.2	27.3	2.77	0.9	5.7	W	950	0.00
10 15 91	12.5	27.6	1.99	1.4	10.0	W	926	0.00
10 16 91	11.9	18.4	3.58	5.0	14.6	W	491	0.00
10 17 91	9.4	21.7	0.87	1.9	4.7	W	922	0.00
10 18 91	7.1	17.5	-2.39	0.9	3.7	W	1021	0.00
10 19 91	11.5	20.5	3.51	3.6	6.2	W	894	0.00
10 20 91	11.0	22.4	3.16	2.2	5.1	W	874	0.00
10 21 91	9.6	21.1	-0.42	3.7	12.0	W	887	0.00
10 22 91	5.0	10.4	-0.18	5.9	17.6	W	965	0.00
10 23 91	3.0	9.3	-1.68	3.3	8.7	W	922	0.00
10 24 91	3.1	7.3	-1.32	5.1	11.3	W	517	0.07
10 25 91	4.3	6.0	1.83	6.2	12.7	W	281	0.43
10 26 91	4.0	7.2	1.50	6.2	15.1	NW	941	0.10
10 27 91	1.5	4.2	-0.20	9.0	16.7	NW	893	0.01
10 28 91	0.5	6.3	-7.58	3.5	10.6	W	758	0.04
10 29 91	2.2	6.1	-5.47	8.0	14.4	W	852	0.01
10 30 91	-3.1	7.2	-9.22	2.2	6.5	W	820	0.00
10 31 91	-1.1	8.3	-8.10	0.6	2.4	W	854	0.00
11 1 91	2.4	13.8	-4.99	0.4	3.0	W	787	0.00
11 2 91	3.7	7.5	-0.13	3.9	8.4	W	519	0.00
11 3 91	5.4	11.5	-1.63	0.3	1.6	NW	662	0.00
11 4 91	7.6	15.2	1.13	0.8	3.8	W	595	0.00
11 5 91	10.4	16.0	6.67	2.0	10.2	W	571	0.00
11 6 91	11.3	18.0	5.31	2.2	9.1	W	741	0.00
11 7 91	6.2	14.9	1.83	0.1	0.9	W	560	0.01
11 8 91	6.4	10.0	3.28	0.1	1.5	W	218	0.20
11 9 91	5.5	8.6	2.75	0.6	3.3	W	380	0.01
11 10 91	3.7	8.9	0.43	0.4	2.0	W	528	0.00

DATE	TEMPERATURE MEAN	TEMPERATURE MAX	TEMPERATURE MIN	WIND SPEED MEAN	WIND SPEED MAX	DIRECTION	IRRADIENCE PAR MAX	PRECIPITATION CUMMULATIVE
	(°C)			(m/h)			($\mu E/m^2/s$)	(in)
11 11 91	3.6	9.0	0.30	0.4	2.2	W	552	0.00
11 12 91	5.6	12.9	-0.50	1.7	8.4	W	330	0.00
11 13 91	4.2	6.5	0.07	4.6	12.7	W	511	0.00
11 14 91	0.2	4.1	-4.06	4.5	14.0	W	787	0.00
11 15 91	-1.8	7.0	-6.37	2.5	5.9	W	729	0.00
11 16 91	-0.7	6.8	-7.97	6.8	17.7	W	307	0.00
11 17 91	1.2	3.0	0.13	8.4	13.4	W	377	0.00
11 18 91	1.4	5.5	-1.60	4.5	11.2	W	714	0.00
11 19 91	1.9	5.1	-2.54	3.1	10.2	W	346	0.03
11 20 91	3.5	4.4	2.91	8.6	16.0	W	112	0.25

APPENDIX 2.4

Wood River Phosphorus-Nitrogen Nutrient Analysis Results

Wood River Station	Date	Total-P (mg/L)	Ortho-P (mg/L)	Ammonia (mg/L)	NO2+NO3 (mg/L)	TKN (mg/L)
DIXON ROAD	06/07/90	0.128	0.073	<0.01	0.178	0.246
DIXON ROAD	07/12/90	0.085	0.080	0.005	0.086	<0.03 *
DIXON ROAD	08/07/90	0.085	0.084	<0.01	0.069	0.619 *
DIXON ROAD	09/06/90	0.088	0.093	<0.01	0.057	<0.03 *
DIXON ROAD	09/27/90	0.079	0.079	<0.01	0.068	<0.03 *
DIXON ROAD	10/31/90	0.082	0.075	<0.01	0.050	<0.03 *
DIXON ROAD	12/06/90	0.088	0.079	<0.01	0.073	<0.03 *
DIXON ROAD	01/06/91	0.078	0.075	<0.01	0.170	<0.03
DIXON ROAD	02/05/91	0.081	0.079	<0.01	0.141	<0.03
DIXON ROAD	03/06/91	0.073	0.072	<0.01	0.316	0.030
DIXON ROAD	04/02/91	0.064	0.072	<0.01	0.237	0.030
DIXON ROAD	05/06/91	0.045	0.042	<0.01	0.067	0.060
DIXON ROAD	06/04/91	0.079	0.078	<0.01	0.150	0.060
DIXON ROAD	06/24/91	0.080	0.080	<0.01	<0.01	0.040
DIXON ROAD	07/24/91	0.079	0.071	<0.01	0.060	0.050
DIXON ROAD	08/20/91	0.074	0.071	<0.01	0.020	0.030
DIXON ROAD	09/17/91	0.076	0.057	0.010	0.010	0.040
DIXON ROAD	10/09/91	0.073	0.066	<0.01	<0.01	0.010
DIXON ROAD	11/04/91	0.092	0.071	0.030	0.020	0.180
DIXON ROAD	12/04/91	0.076	0.072	<0.01	0.020	0.040
FORT KLAMATH	06/07/90	0.081	0.070	<0.01	0.176	0.231
FORT KLAMATH	07/12/90	0.085	0.082	0.004	0.045	0.195 *
FORT KLAMATH	08/07/90	0.093	0.087	<0.01	0.038	0.527 *
FORT KLAMATH	09/06/90	0.102	0.093	<0.01	0.054	<0.03 *
FORT KLAMATH	09/27/90	0.088	0.085	<0.01	0.056	<0.03 *
FORT KLAMATH	10/31/90	0.081	0.077	<0.01	0.043	<0.03 *
FORT KLAMATH	12/06/90	0.087	0.074	<0.01	0.030	<0.03 *
FORT KLAMATH	01/06/91	0.075	0.071	<0.01	0.141	<0.03
FORT KLAMATH	02/05/91	0.103	0.101	<0.01	0.132	<0.03
FORT KLAMATH	03/06/91	0.069	0.066	<0.01	0.232	0.100
FORT KLAMATH	04/02/91	0.066	0.066	<0.01	0.228	0.030
FORT KLAMATH	05/06/91	0.072	0.062	<0.01	0.130	0.090
FORT KLAMATH	06/04/91	0.081	0.078	<0.01	0.080	0.080
FORT KLAMATH	06/24/91	0.077	0.071	<0.01	0.010	0.060
FORT KLAMATH	07/24/91	0.081	0.071	<0.01	0.060	0.070
FORT KLAMATH	08/20/91	0.092	0.073	<0.01	0.010	0.060
FORT KLAMATH	09/17/91	0.081	0.070	<0.01	<0.01	0.060
FORT KLAMATH	10/09/91	0.076	0.068	<0.01	0.010	0.030
FORT KLAMATH	11/04/91	0.110	0.069	<0.01	0.010	0.060
FORT KLAMATH	12/04/91	0.070	0.068	<0.01	0.010	0.030
LOOSELY ROAD	06/07/90	0.093	0.076	<0.01	0.211	0.057
LOOSELY ROAD	07/12/90	0.194	0.088	<0.01	0.042	0.308 *
LOOSELY ROAD	08/07/90	0.097	0.092	<0.01	0.051	0.874 *
LOOSELY ROAD	09/06/90	0.103	0.107	<0.01	0.029	0.094 *
LOOSELY ROAD	09/27/90	0.089	0.085	0.004	0.053	0.030 *
LOOSELY ROAD	10/31/90	0.087	0.085	<0.01	0.039	<0.03 *
LOOSELY ROAD	12/06/90	0.093	0.077	0.004	0.028	0.051 *

*Note: values marked with an asterisk were Total Nitrogen, not TKN

Wood River Station	Date	Total-P (mg/L)	Ortho-P (mg/L)	Ammonia (mg/L)	NO2+NO3 (mg/L)	TKN (mg/L)	
LOOSELY ROAD	01/06/91	0.092	0.078	<0.01	0.170	<0.03	
LOOSELY ROAD	02/05/91	0.128	0.106	<0.01	0.131	<0.03	
LOOSELY ROAD	03/06/91	0.083	0.076	<0.01	0.130	0.110	
LOOSELY ROAD	04/02/91	0.078	0.074	<0.01	0.216	0.040	
LOOSELY ROAD	05/06/91	0.052	0.061	<0.01	0.086	0.100	
LOOSELY ROAD	06/04/91	0.091	0.084	0.020	0.060	0.110	
LOOSELY ROAD	06/24/91	0.100	0.075	<0.01	<0.01	0.080	
LOOSELY ROAD	07/24/91	0.100	0.083	0.010	0.160	0.120	
LOOSELY ROAD	08/20/91	0.094	0.080	<0.01	<0.01	0.080	
LOOSELY ROAD	09/17/91	0.090	0.078	<0.01	<0.01	0.050	
LOOSELY ROAD	10/09/91	0.084	0.071	<0.01	<0.01	0.030	
LOOSELY ROAD	11/04/91	0.089	0.074	<0.01	<0.01	0.050	
LOOSELY ROAD	12/04/91	0.080	0.075	<0.01	0.030	0.050	
WEED ROAD	06/07/90	0.093	0.077	<0.01	0.166	0.052	
WEED ROAD	07/12/90	0.109	0.096	0.011	0.036	0.179	*
WEED ROAD	08/07/90	0.105	0.124	<0.01	0.043	0.737	*
WEED ROAD	09/06/90	0.098	0.108	<0.01	0.022	0.129	*
WEED ROAD	09/27/90	0.093	0.907	<0.01	0.061	<0.03	*
WEED ROAD	10/31/90	0.090	0.085	0.005	0.034	<0.03	*
WEED ROAD	12/06/90	0.095	0.080	0.022	0.033	0.066	*
WEED ROAD	01/06/91	0.092	0.077	<0.01	0.170	<0.03	
WEED ROAD	02/05/91	0.146	0.125	<0.01	0.157	<0.03	
WEED ROAD	03/06/91	0.088	0.082	<0.01	0.133	0.140	
WEED ROAD	04/02/91	0.078	0.075	<0.01	0.250	0.060	
WEED ROAD	05/06/91	0.060	0.063	0.019	0.067	0.120	
WEED ROAD	06/04/91	0.110	0.093	<0.01	0.150	0.180	
WEED ROAD	06/24/91	0.077	0.077	<0.01	<0.01	0.110	
WEED ROAD	07/24/91	0.110	0.088	<0.01	0.020	0.140	
WEED ROAD	08/20/91	0.100	0.084	0.010	<0.01	0.100	
WEED ROAD	09/17/91	0.130	0.080	0.010	<0.01	0.100	
WEED ROAD	10/09/91	0.084	0.071	<0.01	<0.01	0.030	
WEED ROAD	11/04/91	0.087	0.073	<0.01	0.370	0.080	
WEED ROAD	12/04/91	0.082	0.075	0.010	<0.01	0.060	
AGENCY DIKE	07/12/90	0.164	0.124	0.019	0.043	0.463	*
AGENCY DIKE	08/07/90	0.197	0.193	<0.01	0.034	0.731	*
AGENCY DIKE	09/06/90	0.134	0.121	0.004	0.014	0.197	*
AGENCY DIKE	09/27/90	0.108	0.101	<0.01	0.051	<0.03	*
AGENCY DIKE	10/31/90	0.099	0.096	0.004	0.034	<0.03	*
AGENCY DIKE	12/06/90	0.113	0.102	0.003	0.024	0.121	*
AGENCY DIKE	01/06/91	0.110	0.089	<0.01	0.168	<0.03	
AGENCY DIKE	02/05/91	0.203	0.174	<0.01	0.134	<0.03	
AGENCY DIKE	03/06/91	0.162	0.141	<0.01	0.141	0.490	
AGENCY DIKE	04/02/91	0.085	0.087	<0.01	0.273	0.100	
AGENCY DIKE	05/06/91	0.075	0.079	0.036	0.211	0.300	
AGENCY DIKE	06/04/91	0.200	0.180	<0.01	0.110	0.220	
AGENCY DIKE	06/24/91	0.140	0.130	<0.01	<0.01	0.160	
AGENCY DIKE	07/24/91	0.180	0.160	<0.01	0.080	0.410	

*Note: values marked with an asterisk were Total Nitrogen, not TKN

Wood River Station	Date	Total-P (mg/L)	Ortho-P (mg/L)	Ammonia (mg/L)	NO2+NO3 (mg/L)	TKN (mg/L)
AGENCY DIKE	08/20/91	0.120	0.120	0.010	<0.01	0.190
AGENCY DIKE	09/17/91	0.120	0.089	0.010	0.010	0.130
AGENCY DIKE	10/09/91	0.110	0.088	0.010	0.010	0.060
AGENCY DIKE	11/04/91	0.079	0.082	<0.01	<0.01	0.060
AGENCY DIKE	12/04/91	0.100	0.089	0.010	<0.01	0.070
7MILE CANAL	10/09/91	0.130	0.087	0.030	<0.01	0.770
7MILE CANAL	11/04/91	0.078	0.061	<0.01	<0.01	0.030

APPENDIX 2.5

Wood River Major Ion Analysis Results

WOOD RIVER STATION	SAMPLING DATE	TSS (mg/L)	TDS (mg/L)	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	HCO3 (mg/L)	SO4 (mg/L)	Cl (mg/L)
DIXON ROAD	060790	0.20	92.7	5.70	2.80	8.1	1.50	42.5	1.63	5.40
DIXON ROAD	071190	4.23	84.0	5.04	2.67	9.8	2.08	42.4	5.23	5.89
DIXON ROAD	080790	0.00	82.0	5.25	2.77	9.7	2.26	43.3	5.24	5.95
DIXON ROAD	090690	0.00	72.9	5.21	2.77	9.3	2.67	45.4	5.24	5.76
DIXON ROAD	092790	0.30	112.0	5.30	2.64	8.4	4.40	43.0	5.19	5.76
DIXON ROAD	103190	0.75	101.0	5.41	2.65	8.8	4.13	43.9	5.28	6.06
DIXON ROAD	120690	2.86	93.4	5.43	2.66	9.7	1.79	42.2	5.41	6.65
DIXON ROAD	010891	0.96	89.8	5.52	2.70	9.5	1.70	43.8	5.45	6.17
DIXON ROAD	020591	1.14	99.2	5.22	2.52	9.0	1.97	41.5	5.24	5.94
DIXON ROAD	030691	1.43	72.5	5.37	2.64	9.3	1.53	41.8	5.42	6.13
DIXON ROAD	040291	2.65	81.8	5.81	2.75	11.1	2.59	42.0	5.94	6.96
DIXON ROAD	050691	1.15	82.9	6.16	3.00	11.4	2.18	47.6	6.20	7.25
DIXON ROAD	060591	5.71	94.2	5.86	2.72	10.7	2.61	43.3	5.39	6.39
DIXON ROAD	062491	4.14	96.1	5.61	2.69	10.5	2.43	44.2	5.77	6.91
DIXON ROAD	072491	4.50	68.9	5.62	2.64	9.9	2.28	43.7	5.77	6.78
DIXON ROAD	082091	0.69	68.4	5.61	2.67	10.1	2.01	44.4	5.81	6.81
DIXON ROAD	091791	11.60	74.6	5.32	2.56	9.9	2.81	44.0	3.85	6.45
DIXON ROAD	100991	2.80	69.3	5.45	2.63	10.1	2.91	44.4	4.04	6.44
DIXON ROAD	110491	2.53	84.0	5.63	2.67	10.9	2.39	45.5	5.77	6.79
DIXON ROAD	120491	3.60	63.7	5.61	2.68	10.8	2.01	44.5	5.79	6.86
FORT KLAMATH	060790	1.60	82.5	5.60	2.50	7.6	1.60	39.3	1.19	4.10
FORT KLAMATH	071190	0.81	11.0	5.04	2.71	9.8	2.02	44.7	5.22	5.75
FORT KLAMATH	080790	0.88	80.7	5.21	2.74	9.1	1.94	44.8	5.19	5.68
FORT KLAMATH	090690	0.94	78.5	5.21	2.78	9.0	2.94	44.2	5.20	5.71
FORT KLAMATH	092790	0.00	91.5	5.37	2.71	8.5	3.91	43.8	5.20	5.70
FORT KLAMATH	103190	0.00	75.7	5.30	2.64	8.1	4.15	37.9	5.29	5.31
FORT KLAMATH	120690	2.67	87.0	5.61	2.71	9.0	1.46	41.8	5.41	5.64
FORT KLAMATH	010891	2.90	86.2	5.57	2.65	9.4	2.27	42.6	5.52	5.47
FORT KLAMATH	020591	2.86	90.0	5.16	2.52	8.6	2.85	39.7	5.30	5.26
FORT KLAMATH	030691	2.29	90.5	5.51	2.67	9.3	2.43	42.3	5.62	5.42
FORT KLAMATH	040291	2.78	54.6	5.74	2.70	10.3	2.58	41.8	6.07	6.27
FORT KLAMATH	050691	0.87	101.0	5.51	2.60	10.4	2.39	44.0	5.85	6.37
FORT KLAMATH	060591	9.52	72.5	5.69	2.66	10.0	2.16	43.2	5.71	6.49
FORT KLAMATH	062491	1.41	68.9	5.64	2.69	9.9	2.16	42.2	5.76	6.53
FORT KLAMATH	072491	11.10	70.0	5.75	2.72	9.7	2.27	46.6	5.72	6.60
FORT KLAMATH	082091	3.08	86.9	5.70	2.73	10.0	2.28	44.6	5.73	6.73
FORT KLAMATH	091791	8.00	69.1	5.36	2.59	10.0	2.80	44.9	3.76	6.37
FORT KLAMATH	100991	3.20	88.0	5.49	2.63	10.0	2.91	46.4	3.92	6.25
FORT KLAMATH	110491	1.82	87.1	5.52	2.60	10.3	1.93	43.9	5.90	6.32
FORT KLAMATH	120491	8.89	86.7	5.52	2.58	10.1	1.92	42.6	5.88	6.04
LOOSELY ROAD	060790	3.05	75.6	5.60	2.50	8.5	1.60	39.8	1.58	4.70
LOOSELY ROAD	071190	3.13	86.6	4.85	2.73	10.7	1.85	44.1	5.66	5.94
LOOSELY ROAD	080790	1.21	75.0	4.98	2.72	10.1	2.62	42.0	5.72	5.97
LOOSELY ROAD	090690	0.71	117.0	5.15	2.69	9.7	4.03	46.5	5.76	5.97
LOOSELY ROAD	092790	1.71	92.8	5.15	2.65	9.3	4.08	43.2	5.58	5.89
LOOSELY ROAD	103190	0.79	94.1	5.05	2.52	9.0	4.27	41.5	5.61	5.73
LOOSELY ROAD	120690	0.71	93.0	5.85	2.89	10.2	1.54	42.8	5.88	6.05
LOOSELY ROAD	010891	1.14	91.0	5.15	2.53	9.6	1.71	41.9	5.86	5.88

WOOD RIVER STATION	SAMPLING DATE	TSS (mg/L)	TDS (mg/L)	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	HCO3 (mg/L)	SO4 (mg/L)	Cl (mg/L)
LOOSELY ROAD	020591	7.92	104.0	4.89	2.47	9.4	3.22	41.0	5.43	5.56
LOOSELY ROAD	030691	4.29	95.5	5.30	2.64	9.9	1.74	43.9	5.85	5.84
LOOSELY ROAD	040291	3.46	10.7	5.54	2.83	11.5	2.42	44.5	6.22	6.63
LOOSELY ROAD	050691	5.61	115.0	5.67	2.84	11.9	2.23	47.2	6.45	6.93
LOOSELY ROAD	060591	0.92	104.0	5.78	2.95	11.2	2.65	43.5	5.94	6.31
LOOSELY ROAD	062491	3.86	63.0	5.45	2.68	11.1	1.96	45.7	6.05	6.75
LOOSELY ROAD	072491	11.50	73.1	5.77	3.01	10.7	2.85	44.8	6.07	6.93
LOOSELY ROAD	082091	2.05	86.1	5.44	2.64	10.6	2.37	44.3	6.07	6.94
LOOSELY ROAD	091791	0.00	62.3	5.03	2.53	10.8	2.82	44.4	4.37	6.60
LOOSELY ROAD	100991	1.80	81.4	5.15	2.58	10.7	2.91	43.9	4.42	6.51
LOOSELY ROAD	110491	5.22	93.3	5.66	2.94	11.5	2.08	43.0	6.16	6.58
LOOSELY ROAD	120491	6.05	67.4	5.32	2.58	11.1	1.71	43.6	6.15	6.38
WEED ROAD	060790	1.71	64.8	5.60	2.60	8.9	1.60	39.6	1.55	4.60
WEED ROAD	071190	1.18	87.7	5.21	2.81	1.1	2.42	40.2	5.59	5.95
WEED ROAD	080790	1.27	71.1	5.09	2.77	10.3	2.79	45.0	5.61	6.21
WEED ROAD	090690	1.25	85.0	5.24	2.72	9.5	3.84	44.1	5.69	6.00
WEED ROAD	092790	0.86	96.1	5.19	2.62	9.1	4.45	43.8	5.62	5.98
WEED ROAD	103190	0.67	116.0	5.00	2.59	8.9	4.20	41.8	5.58	5.61
WEED ROAD	120690	2.82	103.0	5.15	2.38	9.3	1.38	39.8	5.76	5.92
WEED ROAD	010891	4.86	71.8	5.23	2.58	10.0	2.21	42.3	5.88	5.81
WEED ROAD	020591	6.29	86.1	4.80	2.44	9.2	3.57	40.8	5.33	5.49
WEED ROAD	030691	8.50	102.0	5.45	2.75	10.6	2.39	43.6	5.83	5.85
WEED ROAD	040291	1.50	69.3	5.40	2.65	11.3	2.32	43.2	6.23	6.55
WEED ROAD	050691	16.50	103.0	5.43	2.71	11.4	2.25	45.8	6.21	5.76
WEED ROAD	060591	10.20	128.0	5.57	2.76	11.1	2.22	46.5	5.60	6.34
WEED ROAD	062491	5.39	86.9	5.55	2.72	11.4	2.01	44.9	6.04	6.77
WEED ROAD	072491	6.91	69.3	5.75	2.86	10.9	2.41	47.6	5.99	6.92
WEED ROAD	082091	5.17	79.6	5.47	2.72	10.8	2.29	46.0	6.01	7.03
WEED ROAD	091791	12.40	73.9	5.12	2.58	10.1	2.89	46.3	4.27	6.67
WEED ROAD	100991	2.00	78.5	5.12	2.56	10.5	3.08	44.6	4.36	6.52
WEED ROAD	110491	2.57	92.7	5.30	2.61	11.2	2.00	43.3	6.12	6.58
WEED ROAD	120491	0.62	94.7	5.30	2.56	11.1	2.02	42.1	6.16	6.37
AGENCY DIKE	071190	0.00	94.8	5.48	3.16	1.3	2.71	51.8	5.49	6.45
AGENCY DIKE	080790	12.30	98.0	5.40	3.10	11.7	3.47	51.9	5.53	6.37
AGENCY DIKE	090690	0.92	69.5	5.07	2.72	10.1	4.47	46.5	5.71	6.12
AGENCY DIKE	092790	274.00	117.0	4.94	2.61	9.6	4.49	44.0	5.68	6.01
AGENCY DIKE	103190	5.20	107.0	4.89	2.60	9.7	4.52	44.0	5.71	5.78
AGENCY DIKE	120690	6.50	104.0	5.30	2.76	11.3	1.29	4.5	5.96	6.11
AGENCY DIKE	010891	3.43	10.8	5.01	2.59	10.3	1.47	42.5	6.01	6.07
AGENCY DIKE	020591	3.43	95.6	5.00	2.54	10.3	2.72	42.5	5.40	6.15
AGENCY DIKE	030691	5.71	140.0	7.11	3.50	14.2	1.96	56.7	8.14	7.43
AGENCY DIKE	040291	5.18	100.0	5.31	2.70	12.1	2.30	45.1	5.89	6.36
AGENCY DIKE	050691	30.90	97.7	5.83	2.97	12.6	2.35	49.2	6.56	7.16
AGENCY DIKE	060591	0.46	109.0	5.87	3.04	12.7	2.54	50.2	5.66	6.66
AGENCY DIKE	062491	3.61	90.2	5.79	2.92	12.6	2.02	49.3	6.01	7.18
AGENCY DIKE	072491	12.80	102.0	6.81	3.31	13.5	2.52	55.8	6.41	7.82
AGENCY DIKE	082091	1.61	89.8	5.56	2.88	13.0	2.43	48.2	6.08	7.32
AGENCY DIKE	091791	5.60	82.3	5.03	2.63	12.1	2.94	48.3	4.34	6.88
AGENCY DIKE	100991	8.60	72.2	4.85	2.54	11.4	2.74	44.8	4.36	6.46

WOOD RIVER STATION	SAMPLING DATE	TSS (mg/L)	TDS (mg/L)	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	HCO3 (mg/L)	SO4 (mg/L)	Cl (mg/L)
AGENCY DIKE	110491	5.41	69.6	5.19	2.64	12.1	1.91	43.3	6.22	6.77
AGENCY DIKE	120491	9.60	97.2	5.32	2.69	1.2	2.10	43.6	6.20	6.57
7MILE CANAL	100991	10.4	50.5	4.14	1.87	5.83	2.51	33.2	1.61	3.84
7MILE CANAL	110491	4.71	86.8	6.50	2.75	7.3	2.08	46.8	3.97	3.66
7MILE CANAL	120491	6.17	97.7	7.76	3.12	8.4	2.31	56.8	3.96	3.86

APPENDIX 2.6

Wood River Trace Metal Analysis Results

WOOD RIVER STATION	DATE	SAMPLE TYPE	IRON (μg/L)	COPPER (μg/L)	MANGANESE (μg/L)	ZINC (μg/L)	LEAD (μg/L)
DIXON ROAD	60790	TOTAL	23.3	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	71190	TOTAL	6.7	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	80790	TOTAL	67.1	<1.0	3.3	29.4	<5.0
DIXON ROAD	90690	TOTAL	4.0	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	92790	TOTAL	<3.0	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	103190	TOTAL	10.6	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	120690	TOTAL	10.7	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	10891	TOTAL	8.5	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	20591	TOTAL	40.0	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	30691	TOTAL	26.3	<1.0	<2.0	4.6	<5.0
DIXON ROAD	40291	TOTAL	28.8	<1.0	<2.0	5.1	<5.0
DIXON ROAD	50691	TOTAL	14.0	<1.0	<2.0	4.1	<5.0
DIXON ROAD	60591	TOTAL	33.9	<1.0	<2.0	4.6	<5.0
DIXON ROAD	62491	TOTAL	25.4	<1.0	<2.0	10.2	<5.0
DIXON ROAD	72491	TOTAL	52.0	<1.0	<2.0	21.3	<5.0
DIXON ROAD	82091	TOTAL	28.8	<1.0	<2.0	11.7	<5.0
DIXON ROAD	91791	TOTAL	16.6	<1.0	<2.0	4.1	<5.0
DIXON ROAD	100991	TOTAL	27.0	<1.0	<2.0	8.4	<5.0
DIXON ROAD	110491	TOTAL	12.4	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	120491	TOTAL	22.9	<1.0	<2.0	8.8	<5.0
DIXON ROAD	60790	DISSOLVED	<3.0	6.4	<2.0	58.8	<5.0
DIXON ROAD	71190	DISSOLVED	<3.0	<1.0	<2.0	29.4	<5.0
DIXON ROAD	80790	DISSOLVED	<3.0	8.0	<2.0	29.4	<5.0
DIXON ROAD	90690	DISSOLVED	<3.0	6.4	<2.0	<4.0	<5.0
DIXON ROAD	92790	DISSOLVED	<3.0	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	103190	DISSOLVED	<3.0	8.0	<2.0	<4.0	<5.0
DIXON ROAD	120690	DISSOLVED	3.0	<1.0	<2.0	14.8	<5.0
DIXON ROAD	10891	DISSOLVED	<3.0	<1.0	<2.0	4.6	<5.0
DIXON ROAD	20591	DISSOLVED	17.0	<1.0	<2.0	5.2	<5.0
DIXON ROAD	30691	DISSOLVED	24.8	<1.0	<2.0	12.5	<5.0
DIXON ROAD	40291	DISSOLVED	23.5	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	50691	DISSOLVED	15.8	<1.0	<2.0	15.5	<5.0
DIXON ROAD	60591	DISSOLVED	16.9	<1.0	<2.0	23.3	<5.0
DIXON ROAD	62491	DISSOLVED	30.0	<1.0	<2.0	19.2	<5.0
DIXON ROAD	72491	DISSOLVED	33.8	<1.0	<2.0	38.8	<5.0
DIXON ROAD	82091	DISSOLVED	27.3	<1.0	<2.0	10.7	<5.0
DIXON ROAD	91791	DISSOLVED	<3.0	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	100991	DISSOLVED	6.4	<1.0	<2.0	5.1	<5.0
DIXON ROAD	110491	DISSOLVED	23.7	<1.0	<2.0	<4.0	<5.0
DIXON ROAD	120491	DISSOLVED	<3.0	<1.0	<2.0	7.9	<5.0
FORT KLAMATH	60790	TOTAL	144.0	<1.0	4.7	<4.0	<5.0
FORT KLAMATH	71190	TOTAL	76.4	<1.0	6.0	<4.0	<5.0
FORT KLAMATH	80790	TOTAL	99.7	<1.0	7.3	<4.0	<5.0
FORT KLAMATH	90690	TOTAL	104.0	<1.0	5.3	<4.0	<5.0
FORT KLAMATH	92790	TOTAL	57.2	<1.0	4.7	<4.0	<5.0
FORT KLAMATH	103190	TOTAL	99.7	<1.0	4.7	<4.0	<5.0
FORT KLAMATH	120690	TOTAL	60.4	<1.0	2.2	<4.0	<5.0
FORT KLAMATH	10891	TOTAL	83.2	<1.0	2.8	<4.0	<5.0
FORT KLAMATH	20591	TOTAL	162.0	<1.0	9.5	<4.0	<5.0

WOOD RIVER STATION	DATE	SAMPLE TYPE	IRON (µg/L)	COPPER (µg/L)	MANGANESE (µg/L)	ZINC (µg/L)	LEAD (µg/L)
FORT KLAMATH	30691	TOTAL	155.0	<1.0	6.5	<4.0	<5.0
FORT KLAMATH	40291	TOTAL	121.0	<1.0	4.9	<4.0	<5.0
FORT KLAMATH	50691	TOTAL	128.0	<1.0	5.9	6.1	<5.0
FORT KLAMATH	60591	TOTAL	132.0	<1.0	6.5	7.1	<5.0
FORT KLAMATH	62491	TOTAL	125.0	<1.0	6.2	51.3	<5.0
FORT KLAMATH	72491	TOTAL	144.0	<1.0	7.1	21.3	<5.0
FORT KLAMATH	82091	TOTAL	118.0	<1.0	6.8	6.1	<5.0
FORT KLAMATH	91791	TOTAL	68.5	<1.0	4.0	4.6	<5.0
FORT KLAMATH	100991	TOTAL	66.8	<1.0	<2.0	127.0	<5.0
FORT KLAMATH	110491	TOTAL	79.8	<1.0	3.7	14.7	<5.0
FORT KLAMATH	120491	TOTAL	112.0	<1.0	4.8	<4.0	<5.0
FORT KLAMATH	60790	DISSOLVED	69.4	<1.0	4.0	59.4	<5.0
FORT KLAMATH	71190	DISSOLVED	53.5	<1.0	3.3	<4.0	<5.0
FORT KLAMATH	80790	DISSOLVED	64.7	8.0	4.6	<4.0	<5.0
FORT KLAMATH	90690	DISSOLVED	46.2	6.4	4.0	<4.0	<5.0
FORT KLAMATH	92790	DISSOLVED	23.1	<1.0	4.0	58.8	<5.0
FORT KLAMATH	103190	DISSOLVED	39.6	<1.0	3.3	<4.0	<5.0
FORT KLAMATH	120690	DISSOLVED	30.2	<1.0	3.8	14.9	<5.0
FORT KLAMATH	10891	DISSOLVED	34.0	<1.0	3.7	4.8	<5.0
FORT KLAMATH	20591	DISSOLVED	83.7	<1.0	9.3	<4.0	<5.0
FORT KLAMATH	30691	DISSOLVED	99.4	<1.0	7.8	6.5	<5.0
FORT KLAMATH	40291	DISSOLVED	64.0	<1.0	4.1	6.7	<5.0
FORT KLAMATH	50691	DISSOLVED	66.0	5.3	4.5	112.0	<5.0
FORT KLAMATH	60591	DISSOLVED	88.9	<1.0	7.6	11.4	<5.0
FORT KLAMATH	62491	DISSOLVED	85.4	<1.0	5.7	32.6	<5.0
FORT KLAMATH	72491	DISSOLVED	92.8	<1.0	5.1	51.3	<5.0
FORT KLAMATH	82091	DISSOLVED	62.0	<1.0	<2.0	10.1	<5.0
FORT KLAMATH	91791	DISSOLVED	36.2	<1.0	<2.0	5.6	<5.0
FORT KLAMATH	100991	DISSOLVED	26.9	<1.0	<2.0	8.4	<5.0
FORT KLAMATH	110491	DISSOLVED	34.3	<1.0	<2.0	<4.0	<5.0
FORT KLAMATH	120491	DISSOLVED	50.0	<1.0	<2.0	6.2	<5.0
LOOSELY ROAD	60790	TOTAL	171.0	<1.0	8.0	<4.0	<5.0
LOOSELY ROAD	71190	TOTAL	135.0	<1.0	8.6	<4.0	<5.0
LOOSELY ROAD	80790	TOTAL	134.0	<1.0	8.6	<4.0	<5.0
LOOSELY ROAD	90690	TOTAL	114.0	<1.0	9.3	<4.0	<5.0
LOOSELY ROAD	92790	TOTAL	83.7	<1.0	7.3	<4.0	<5.0
LOOSELY ROAD	103190	TOTAL	116.0	<1.0	6.0	<4.0	<5.0
LOOSELY ROAD	120690	TOTAL	98.0	<1.0	6.2	<4.0	<5.0
LOOSELY ROAD	10891	TOTAL	83.5	<1.0	3.2	<4.0	<5.0
LOOSELY ROAD	20591	TOTAL	200.0	<1.0	13.5	<4.0	<5.0
LOOSELY ROAD	30691	TOTAL	262.0	<1.0	14.8	<4.0	<5.0
LOOSELY ROAD	40291	TOTAL	167.0	<1.0	12.0	<4.0	<5.0
LOOSELY ROAD	50691	TOTAL	150.0	<1.0	10.2	42.7	<5.0
LOOSELY ROAD	60591	TOTAL	176.0	5.5	17.2	13.2	<5.0
LOOSELY ROAD	62491	TOTAL	147.0	<1.0	8.0	21.3	<5.0
LOOSELY ROAD	72491	TOTAL	198.0	5.1	16.6	24.4	<5.0
LOOSELY ROAD	82091	TOTAL	141.0	<1.0	8.0	6.6	<5.0
LOOSELY ROAD	91791	TOTAL	119.0	5.5	15.1	17.3	<5.0
LOOSELY ROAD	100991	TOTAL	110.0	<1.0	<2.0	10.1	8.0

WOOD RIVER STATION	DATE	SAMPLE TYPE	IRON (μg/L)	COPPER (μg/L)	MANGANESE (μg/L)	ZINC (μg/L)	LEAD (μg/L)
LOOSELY ROAD	110491	TOTAL	111.0	<1.0	4.9	<4.0	<5.0
LOOSELY ROAD	120491	TOTAL	156.0	<1.0	18.1	13.5	<5.0
LOOSELY ROAD	60790	DISSOLVED	99.8	6.4	4.6	<4.0	<5.0
LOOSELY ROAD	71190	DISSOLVED	87.9	6.4	8.6	58.8	<5.0
LOOSELY ROAD	80790	DISSOLVED	87.9	<1.0	8.0	<4.0	<5.0
LOOSELY ROAD	90690	DISSOLVED	64.7	8.0	6.0	<4.0	<5.0
LOOSELY ROAD	92790	DISSOLVED	28.4	<1.0	4.6	<4.0	<5.0
LOOSELY ROAD	103190	DISSOLVED	50.9	6.4	4.6	<4.0	<5.0
LOOSELY ROAD	120690	DISSOLVED	54.3	<1.0	6.5	10.9	<5.0
LOOSELY ROAD	10891	DISSOLVED	50.5	<1.0	4.3	6.9	<5.0
LOOSELY ROAD	20591	DISSOLVED	114.0	<1.0	12.4	5.7	<5.0
LOOSELY ROAD	30691	DISSOLVED	133.0	<1.0	13.8	<4.0	<5.0
LOOSELY ROAD	40291	DISSOLVED	163.0	<1.0	7.0	10.9	<5.0
LOOSELY ROAD	50691	DISSOLVED	114.0	<1.0	16.9	34.7	<5.0
LOOSELY ROAD	60591	DISSOLVED	104.0	<1.0	7.6	14.0	<5.0
LOOSELY ROAD	62491	DISSOLVED	98.6	<1.0	8.0	21.8	<5.0
LOOSELY ROAD	72491	DISSOLVED	122.0	<1.0	8.6	33.1	<5.0
LOOSELY ROAD	82091	DISSOLVED	99.1	<1.0	8.7	17.9	<5.0
LOOSELY ROAD	91791	DISSOLVED	57.4	<1.0	<2.0	8.4	<5.0
LOOSELY ROAD	100991	DISSOLVED	42.9	<1.0	<2.0	<4.0	<5.0
LOOSELY ROAD	110491	DISSOLVED	67.8	5.1	5.9	10.1	<5.0
LOOSELY ROAD	120491	DISSOLVED	58.2	<1.0	<2.0	4.5	<5.0
WEED ROAD	60790	TOTAL	193.0	<1.0	8.6	<4.0	<5.0
WEED ROAD	71190	TOTAL	279.0	<1.0	17.9	<4.0	<5.0
WEED ROAD	80790	TOTAL	246.0	<1.0	14.6	<4.0	<5.0
WEED ROAD	90690	TOTAL	179.0	<1.0	13.3	<4.0	<5.0
WEED ROAD	92790	TOTAL	132.0	<1.0	10.0	<4.0	<5.0
WEED ROAD	103190	TOTAL	139.0	<1.0	9.3	<4.0	<5.0
WEED ROAD	120690	TOTAL	123.0	<1.0	6.6	<4.0	<5.0
WEED ROAD	10891	TOTAL	130.0	<1.0	5.9	<4.0	<5.0
WEED ROAD	20591	TOTAL	317.0	<1.0	16.6	<4.0	<5.0
WEED ROAD	30691	TOTAL	306.0	<1.0	16.0	<4.0	<5.0
WEED ROAD	40291	TOTAL	209.0	<1.0	10.5	4.6	<5.0
WEED ROAD	50691	TOTAL	190.0	<1.0	12.3	33.5	<5.0
WEED ROAD	60591	TOTAL	254.0	<1.0	17.2	6.1	<5.0
WEED ROAD	62491	TOTAL	223.0	<1.0	13.2	25.9	<5.0
WEED ROAD	72491	TOTAL	300.0	<1.0	16.6	29.5	<5.0
WEED ROAD	82091	TOTAL	249.0	<1.0	18.8	13.7	<5.0
WEED ROAD	91791	TOTAL	197.0	<1.0	14.2	<4.0	<5.0
WEED ROAD	100991	TOTAL	127.0	<1.0	3.5	9.0	<5.0
WEED ROAD	110491	TOTAL	118.0	<1.0	6.5	<4.0	<5.0
WEED ROAD	120491	TOTAL	164.0	<1.0	10.2	<4.0	<5.0
WEED ROAD	60790	DISSOLVED	128.0	6.4	6.6	<4.0	<5.0
WEED ROAD	71190	DISSOLVED	181.0	<1.0	14.6	58.8	<5.0
WEED ROAD	80790	DISSOLVED	181.0	9.6	13.2	<4.0	<5.0
WEED ROAD	90690	DISSOLVED	102.0	<1.0	8.6	<4.0	<5.0
WEED ROAD	92790	DISSOLVED	55.5	<1.0	7.3	<4.0	<5.0
WEED ROAD	103190	DISSOLVED	65.4	<1.0	6.0	<4.0	<5.0

WOOD RIVER STATION	DATE	SAMPLE TYPE	IRON (μg/L)	COPPER (μg/L)	MANGANESE (μg/L)	ZINC (μg/L)	LEAD (μg/L)
WEED ROAD	120690	DISSOLVED	72.5	<1.0	6.9	12.3	<5.0
WEED ROAD	10891	DISSOLVED	52.0	<1.0	5.6	10.9	<5.0
WEED ROAD	20591	DISSOLVED	140.0	<1.0	13.9	5.5	<5.0
WEED ROAD	30691	DISSOLVED	162.0	<1.0	14.3	8.6	<5.0
WEED ROAD	40291	DISSOLVED	108.0	<1.0	8.0	38.8	<5.0
WEED ROAD	50691	DISSOLVED	145.0	<1.0	13.0	22.8	<5.0
WEED ROAD	60591	DISSOLVED	166.0	<1.0	13.7	10.9	<5.0
WEED ROAD	62491	DISSOLVED	166.0	<1.0	12.7	36.3	<5.0
WEED ROAD	72491	DISSOLVED	225.0	<1.0	14.6	18.6	<5.0
WEED ROAD	82091	DISSOLVED	165.0	<1.0	14.7	10.1	<5.0
WEED ROAD	91791	DISSOLVED	119.0	<1.0	6.3	4.5	<5.0
WEED ROAD	100991	DISSOLVED	64.8	<1.0	<2.0	<4.0	<5.0
WEED ROAD	110491	DISSOLVED	68.8	<1.0	2.4	<4.0	<5.0
WEED ROAD	120491	DISSOLVED	81.4	<1.0	<2.0	<4.0	<5.0
AGENCY DIKE	71190	TOTAL	251.0	<1.0	13.9	<4.0	<5.0
AGENCY DIKE	80790	TOTAL	272.0	6.3	39.8	<4.0	<5.0
AGENCY DIKE	90690	TOTAL	167.0	<1.0	19.3	<4.0	<5.0
AGENCY DIKE	92790	TOTAL	144.0	<1.0	17.3	<4.0	<5.0
AGENCY DIKE	103190	TOTAL	118.0	<1.0	10.0	<4.0	<5.0
AGENCY DIKE	120690	TOTAL	159.0	<1.0	9.2	<4.0	<5.0
AGENCY DIKE	10891	TOTAL	196.0	<1.0	13.6	7.5	<5.0
AGENCY DIKE	20591	TOTAL	306.0	<1.0	19.3	<4.0	<5.0
AGENCY DIKE	30691	TOTAL	354.0	<1.0	19.3	<4.0	<5.0
AGENCY DIKE	40291	TOTAL	163.0	<1.0	6.8	<4.0	<5.0
AGENCY DIKE	50691	TOTAL	221.0	<1.0	14.2	32.5	<5.0
AGENCY DIKE	60591	TOTAL	201.0	<1.0	19.4	10.7	<5.0
AGENCY DIKE	62491	TOTAL	199.0	<1.0	14.8	164.0	<5.0
AGENCY DIKE	72491	TOTAL	314.0	<1.0	28.0	20.3	<5.0
AGENCY DIKE	82091	TOTAL	214.0	<1.0	18.5	9.2	<5.0
AGENCY DIKE	91791	TOTAL	186.0	<1.0	18.8	<4.0	<5.0
AGENCY DIKE	100991	TOTAL	143.0	<1.0	11.9	<4.0	<5.0
AGENCY DIKE	110491	TOTAL	141.0	<1.0	9.2	<4.0	<5.0
AGENCY DIKE	120491	TOTAL	169.0	<1.0	8.9	<4.0	<5.0
AGENCY DIKE	71190	DISSOLVED	192.0	8.0	9.3	<4.0	<5.0
AGENCY DIKE	80790	DISSOLVED	192.0	9.6	29.8	<4.0	<5.0
AGENCY DIKE	90690	DISSOLVED	100.0	<1.0	14.0	<4.0	35.0
AGENCY DIKE	92790	DISSOLVED	65.4	8.0	10.6	<4.0	<5.0
AGENCY DIKE	103190	DISSOLVED	58.1	6.4	7.3	<4.0	<5.0
AGENCY DIKE	120690	DISSOLVED	82.1	<1.0	8.3	28.0	<5.0
AGENCY DIKE	10891	DISSOLVED	63.8	<1.0	11.9	19.1	<5.0
AGENCY DIKE	20591	DISSOLVED	147.0	<1.0	14.8	14.6	<5.0
AGENCY DIKE	30691	DISSOLVED	224.0	<1.0	16.8	5.1	<5.0
AGENCY DIKE	40291	DISSOLVED	106.0	<1.0	4.8	4.7	<5.0
AGENCY DIKE	50691	DISSOLVED	155.0	<1.0	11.8	25.4	<5.0
AGENCY DIKE	60591	DISSOLVED	153.0	<1.0	12.4	35.2	<5.0
AGENCY DIKE	62491	DISSOLVED	144.0	<1.0	11.8	119.0	<5.0
AGENCY DIKE	72491	DISSOLVED	245.0	<1.0	25.5	43.0	<5.0
AGENCY DIKE	82091	DISSOLVED	147.0	7.4	10.1	14.6	<5.0
AGENCY DIKE	91791	DISSOLVED	108.0	<1.0	9.4	7.9	<5.0

WOOD RIVER STATION	DATE	SAMPLE TYPE	IRON (μg/L)	COPPER (μg/L)	MANGANESE (μg/L)	ZINC (μg/L)	LEAD (μg/L)
AGENCY DIKE	100991	DISSOLVED	69.4	<1.0	6.6	45.4	<5.0
AGENCY DIKE	110491	DISSOLVED	59.9	<1.0	2.1	<4.0	<5.0
AGENCY DIKE	120491	DISSOLVED	82.1	<1.0	<2.0	<4.0	<5.0

APPENDIX 2.7

Wood River Chlorophyll *a* Analysis

WOOD RIVER STATION	SAMPLING DATE	SIZE FRACTION	AVG.CHL a (mg/m3)	AVG.CHL b (mg/m3)	AVG.CHL c (mg/m3)
DIXON ROAD	103190	LT 25 um	0.00	0.00	0.00
DIXON ROAD	120690	LT 25 um	0.18	0.00	0.00
DIXON ROAD	10791	LT 25 um	0.12	0.00	0.00
DIXON ROAD	20591	LT 25 um	2.10	0.05	0.50
DIXON ROAD	30691	LT 25 um	0.25	0.08	0.15
DIXON ROAD	40291	LT 25 um	0.28	0.27	0.05
DIXON ROAD	50691	LT 25 um	0.12	0.00	0.00
DIXON ROAD	60491	LT 25 um	0.24	0.02	0.00
DIXON ROAD	62491	LT 25 um	0.30	0.06	0.06
DIXON ROAD	72491	LT 25 um	0.24	0.00	0.00
DIXON ROAD	82091	LT 25 um	0.24	0.05	0.00
DIXON ROAD	91791	LT 25 um	0.12	0.00	0.00
DIXON ROAD	100991	LT 25 um	0.12	0.00	0.00
DIXON ROAD	110591	LT 25 um	0.69	0.33	0.52
DIXON ROAD	120491	LT 25 um	0.12	0.00	0.00
DIXON ROAD	103190	Total	0.00	0.00	0.00
DIXON ROAD	120690	Total	0.29	0.01	0.06
DIXON ROAD	10791	Total	0.40	0.01	0.11
DIXON ROAD	20591	Total	0.22	0.10	0.14
DIXON ROAD	30691	Total	0.31	0.05	0.14
DIXON ROAD	40291	Total	0.31	0.04	0.07
DIXON ROAD	50691	Total	0.12	0.00	0.00
DIXON ROAD	60491	Total	0.30	0.02	0.00
DIXON ROAD	62491	Total	0.30	0.01	0.06
DIXON ROAD	72491	Total	0.24	0.00	0.00
DIXON ROAD	82091	Total	0.25	0.00	0.00
DIXON ROAD	91791	Total	0.30	0.06	0.06
DIXON ROAD	100991	Total	0.12	0.00	0.00
DIXON ROAD	110591	Total	0.80	0.47	0.68
DIXON ROAD	120491	Total	0.29	0.15	0.22
FORT KLAMATH	103190	LT 25 um	0.00	0.00	0.00
FORT KLAMATH	120690	LT 25 um	0.24	0.00	0.00
FORT KLAMATH	10791	LT 25 um	0.29	0.01	0.06
FORT KLAMATH	20591	LT 25 um	1.82	0.08	0.13
FORT KLAMATH	30691	LT 25 um	0.38	0.04	0.07
FORT KLAMATH	40291	LT 25 um	0.41	0.09	0.21
FORT KLAMATH	50691	LT 25 um	0.36	0.02	0.13
FORT KLAMATH	60491	LT 25 um	0.48	0.00	0.05
FORT KLAMATH	62491	LT 25 um	0.42	0.06	0.01
FORT KLAMATH	72491	LT 25 um	0.71	0.00	0.00
FORT KLAMATH	82091	LT 25 um	0.91	0.00	0.14
FORT KLAMATH	91791	LT 25 um	0.46	0.16	0.29
FORT KLAMATH	100991	LT 25 um	0.42	0.01	0.12
FORT KLAMATH	110591	LT 25 um	0.92	0.43	0.53
FORT KLAMATH	120491	LT 25 um	0.36	0.05	0.05
FORT KLAMATH	103190	Total	0.52	0.78	0.00
FORT KLAMATH	120690	Total	0.34	0.09	0.01
FORT KLAMATH	10791	Total	1.54	0.04	0.33

WOOD RIVER STATION	SAMPLING DATE	SIZE FRACTION	AVG.CHL a (mg/m3)	AVG.CHL b (mg/m3)	AVG.CHL c (mg/m3)
FORT KLAMATH	20591	Total	1.11	0.28	0.59
FORT KLAMATH	30691	Total	0.50	0.08	0.21
FORT KLAMATH	40291	Total	0.32	0.00	0.00
FORT KLAMATH	50691	Total	0.42	0.01	0.12
FORT KLAMATH	60491	Total	0.54	0.00	0.12
FORT KLAMATH	62491	Total	0.62	0.00	0.00
FORT KLAMATH	72491	Total	1.03	0.00	0.19
FORT KLAMATH	82091	Total	1.28	0.00	0.08
FORT KLAMATH	91791	Total	0.71	0.15	0.21
FORT KLAMATH	100991	Total	0.48	0.00	0.11
FORT KLAMATH	110591	Total	1.28	0.45	0.66
FORT KLAMATH	120491	Total	0.59	0.13	0.01
LOOSELY ROAD	103190	LT 25 um	0.30	0.00	0.00
LOOSELY ROAD	120690	LT 25 um	0.41	0.00	0.00
LOOSELY ROAD	10791	LT 25 um	0.50	0.17	0.05
LOOSELY ROAD	20591	LT 25 um	2.09	0.17	0.20
LOOSELY ROAD	30691	LT 25 um	0.57	0.00	0.10
LOOSELY ROAD	40291	LT 25 um	0.37	0.00	0.00
LOOSELY ROAD	50691	LT 25 um	0.71	0.04	0.25
LOOSELY ROAD	60491	LT 25 um	0.60	0.06	0.05
LOOSELY ROAD	62491	LT 25 um	0.55	0.00	0.00
LOOSELY ROAD	72491	LT 25 um	0.71	0.00	0.00
LOOSELY ROAD	82091	LT 25 um	1.02	0.02	0.24
LOOSELY ROAD	91791	LT 25 um	0.43	0.00	0.05
LOOSELY ROAD	100991	LT 25 um	0.54	0.05	0.13
LOOSELY ROAD	110591	LT 25 um	1.27	0.55	0.75
LOOSELY ROAD	120491	LT 25 um	0.54	0.00	0.05
LOOSELY ROAD	103190	Total	0.85	0.25	0.00
LOOSELY ROAD	120690	Total	0.52	0.00	0.09
LOOSELY ROAD	10791	Total	1.03	0.00	0.27
LOOSELY ROAD	20591	Total	1.13	0.10	0.43
LOOSELY ROAD	30691	Total	0.76	0.02	0.17
LOOSELY ROAD	40291	Total	0.50	0.00	0.00
LOOSELY ROAD	50691	Total	0.79	0.00	0.15
LOOSELY ROAD	60491	Total	0.89	0.08	0.18
LOOSELY ROAD	62491	Total	0.73	0.00	0.03
LOOSELY ROAD	72491	Total	0.92	0.00	0.20
LOOSELY ROAD	82091	Total	1.19	0.13	0.19
LOOSELY ROAD	91791	Total	0.89	0.06	0.31
LOOSELY ROAD	100991	Total	0.65	0.09	0.13
LOOSELY ROAD	110591	Total	1.45	0.54	0.94
LOOSELY ROAD	120491	Total	0.83	0.10	0.19
WEED ROAD	103190	LT 25 um	0.00	0.00	0.00
WEED ROAD	120690	LT 25 um	0.58	0.00	0.03
WEED ROAD	10791	LT 25 um	1.09	0.00	0.26
WEED ROAD	20591	LT 25 um	1.24	0.16	0.25
WEED ROAD	30691	LT 25 um	0.69	0.11	0.01
WEED ROAD	40291	LT 25 um	0.42	0.01	0.12

WOOD RIVER STATION	SAMPLING DATE	SIZE FRACTION	AVG.CHL a (mg/m3)	AVG.CHL b (mg/m3)	AVG.CHL c (mg/m3)
WEED ROAD	50691	LT 25 um	0.60	0.02	0.18
WEED ROAD	60491	LT 25 um	0.79	0.00	0.06
WEED ROAD	62491	LT 25 um	0.49	0.00	0.00
WEED ROAD	72491	LT 25 um	0.71	0.00	0.00
WEED ROAD	82091	LT 25 um	1.09	0.00	0.20
WEED ROAD	91791	LT 25 um	0.84	0.00	0.23
WEED ROAD	100991	LT 25 um	0.60	0.06	0.05
WEED ROAD	110591	LT 25 um	1.26	0.63	0.96
WEED ROAD	120491	LT 25 um	0.65	0.09	0.13
WEED ROAD	103190	Total	0.59	0.00	0.00
WEED ROAD	120690	Total	0.91	0.04	0.17
WEED ROAD	10791	Total	2.45	0.00	0.41
WEED ROAD	20591	Total	1.82	0.02	0.49
WEED ROAD	30691	Total	0.89	0.00	0.25
WEED ROAD	40291	Total	0.84	0.08	0.07
WEED ROAD	50691	Total	0.82	0.21	0.15
WEED ROAD	60491	Total	1.01	0.14	0.15
WEED ROAD	62491	Total	0.54	0.01	0.00
WEED ROAD	72491	Total	0.80	0.05	0.10
WEED ROAD	82091	Total	1.51	0.00	0.19
WEED ROAD	91791	Total	0.89	0.08	0.18
WEED ROAD	100991	Total	0.66	0.04	0.00
WEED ROAD	110591	Total	1.34	0.41	0.78
WEED ROAD	120491	Total	1.07	0.08	0.25
AGENCY DIKE	103190	LT 25 um	0.59	0.00	0.00
AGENCY DIKE	120690	LT 25 um	1.03	0.00	0.19
AGENCY DIKE	10791	LT 25 um	2.00	0.00	0.47
AGENCY DIKE	20591	LT 25 um	1.19	0.10	0.17
AGENCY DIKE	30691	LT 25 um	3.93	0.01	0.48
AGENCY DIKE	40291	LT 25 um	0.54	0.00	0.10
AGENCY DIKE	50691	LT 25 um	2.02	0.22	0.51
AGENCY DIKE	60491	LT 25 um	1.15	0.00	0.00
AGENCY DIKE	62491	LT 25 um	0.72	0.01	0.00
AGENCY DIKE	72491	LT 25 um	1.60	0.03	0.00
AGENCY DIKE	82091	LT 25 um	1.73	0.07	0.29
AGENCY DIKE	91791	LT 25 um	1.38	0.00	0.07
AGENCY DIKE	100991	LT 25 um	0.96	0.00	0.00
AGENCY DIKE	110591	LT 25 um	1.56	0.58	1.01
AGENCY DIKE	120491	LT 25 um	1.32	0.00	0.21
AGENCY DIKE	103190	Total	1.19	0.00	0.00
AGENCY DIKE	120690	Total	1.84	0.00	0.09
AGENCY DIKE	10791	Total	6.25	0.15	0.89
AGENCY DIKE	20591	Total	1.99	0.09	0.39
AGENCY DIKE	30691	Total	4.63	0.00	0.52
AGENCY DIKE	40291	Total	0.78	0.09	0.21
AGENCY DIKE	50691	Total	2.31	0.27	0.65
AGENCY DIKE	60491	Total	1.49	0.09	0.23
AGENCY DIKE	62491	Total	1.20	0.01	0.36

WOOD RIVER STATION	SAMPLING DATE	SIZE FRACTION	AVG.CHL a (mg/m3)	AVG.CHL b (mg/m3)	AVG.CHL c (mg/m3)
AGENCY DIKE	72491	Total	2.04	0.27	0.47
AGENCY DIKE	82091	Total	1.68	0.04	0.10
AGENCY DIKE	91791	Total	1.55	0.06	0.23
AGENCY DIKE	100991	Total	1.13	0.07	0.11
AGENCY DIKE	110591	Total	1.86	0.66	0.89
AGENCY DIKE	120491	Total	2.02	0.22	0.51
7MILE CANAL	110591	LT 25 um	2.91	1.06	1.85
7MILE CANAL	120491	LT 25 um	1.09	0.56	0.85
7MILE CANAL	100991	Total	3.68	0.03	0.20
7MILE CANAL	110591	Total	3.16	0.92	1.17
7MILE CANAL	120491	Total	1.47	0.29	0.54