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SUSITNA HYDROELECTRIC PROJECT

WATER QUALITY MONITORING 1985

Report by
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Prepared for
Alaska Power Authority

Final Report
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NOTICE

ANY QUESTIONS OR COMMENTS CONCERNING THIS REPORT SHOULD BE DIRECTED TO THE ALASKA POWER AUTHORITY SUSITNA PROJECT OFFICE

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1.0 INTRODUCTION

The Alaska Power Authority has proposed the construction of a two-dam hydroelectric project on the Susitna River. Project planning has been separated by the Power Authority into the following time periods:

- o Existing Conditions
- o With-Watana Dam Only
  - Construction phase
  - Operation of Watana
- o With-Watana and Devil Canyon Dams
  - Construction of Devil Canyon Dam and operation of Watana Dam
  - Operation of Watana and Devil Canyon Dams

The construction and operation of these hydroelectric facilities are expected to alter the natural habitat conditions currently utilized by fish in the various aquatic habitat types present. Monitoring the critical water quality parameters of the aquatic environment in each of these periods is therefore necessary. Prior to initiation of project construction, monitoring of existing conditions is necessary to establish baseline conditions. Once construction begins, monitoring will be necessary to verify the accuracy of preproject projections and determine the degree of change that occurs. If changes in water quality affect fish resources, they will be addressed through the mitigation planning process.

Aquatic monitoring for this project has been divided into two broad categories by the Power Authority:

- o Construction monitoring and regulatory compliance
- o Long-term monitoring

This report describes the water quality element of the long-term monitoring program. The Power Authority draft Aquatic Monitoring Plan outlines the program approach for the construction monitoring and the other elements of the long-term monitoring plan. The general approach to long-term monitoring taken by the Power Authority is to monitor natural conditions for several years prior to dam construction with the duration of time and data requirements dependent upon the parameter or situation to be monitored. Water quality conditions will also be monitored after Watana Dam construction begins and will continue through the initial years of Devil Canyon Dam operation. The natural and with-project information will then be compared to determine if significant impacts have occurred.

In 1985, the Power Authority, in cooperation with the Alaska Department of Fish and Game (ADF&G), began the long-term water quality monitoring program. The parameters chosen for monitoring included water temperature, turbidity, suspended sediment, settleable solids, total dissolved gas, dissolved oxygen and pH. These parameters are considered good indicators of change (for the system) and are readily measured and analyzed. Other water quality parameters (heavy metals and organic nitrogen and phosphorus) included in the long-term monitoring plan were not sampled in the 1985 field season, but will be prior to the initiation of project construction.

2.0 OBJECTIVE OF STUDY

The objective of this monitoring is to compile a pre- and with-project record for the Susitna Hydroelectric Project that can be used to:

- o Evaluate the effectiveness of mitigation measures
- o Provide input to refine operation and mitigation measures
- o Provide supplemental baseline information

This will be done by monitoring the selected water quality parameters previously discussed.

3.0 METHODS

3.1 SURFACE WATER TEMPERATURE

Surface water temperature data were taken at seven sites in the main channel Susitna River. These sites were restricted to the reach of river extending from the Parks Highway Bridge (RM 86.2) upstream to the proposed Watana Dam site (RM 184.2). The location of these sites are presented in Table 1 and illustrated on Figure 1 and Appendix Figures 1-8. Each temperature station was placed in a location considered to be representative of the main flow of the Susitna River. Several of these sites were included in previous temperature studies (Keklak and Quane 1985; Keklak and Quane 1984; ADF&G 1983; ADF&G 1981).

Surface water temperature was continuously recorded using Omnidata International model DP2321 two channel Datapod temperature recorders. Both channels (a and b) were used to prevent gaps in the data that could result from the failure of a channel to record. Ryan thermographs were also used as "backup" units to further avoid data gaps.

The temperature data collected by the Datapods are recorded on an electronic memory chip referred to as a data storage module (DSM). The Datapod measures the instantaneous water temperature every five minutes and records the minimum, mean, and maximum water temperatures for each six-hour interval. The accuracy of the Datapod is stated by the manufacturer to be $\pm$0.1°C. Ryan thermographs used a continuous recording strip chart system. The accuracy of the Ryan thermograph is 0.5°C.

Differences have been observed in the measurements taken by the respective channels (a and b) in some of the Datapods. At sites where channels a and b exhibited differences in temperature, the temperature recorded by each channel was compared to the water temperatures obtained using a calibrated

Table 1

SUSITNA HYDROELECTRIC PROJECT
SAMPLING LOCATIONS MONITORED IN 1985 FOR THE SUSITNA RIVER
LONG-TERM WATER QUALITY MONITORING PROGRAM

Site	Temperature (°C)	Turbidity (NTU)	Total Dissolved Gas (%Saturation)	Dissolved Oxygen and pH	Suspended and Settleable Solids (mg/l)
Mainstem upstream of the Parks Highway Bridge (RM 86.2)		X		X	X
Mainstem upstream of the Parks Highway Bridge (RM 86.6)	X				
Talkeetna Station (RM 103.0)	X	X		X	X
Curry Station (RM 120.7)	X	X	X		
Mainstem upstream of Curry Station (RM 120.9)		X		X	X
Mainstem downstream of the Gold Creek Bridge (RM 135.8)	X	X	X	X	X
LRX 53 (RM 140.1)	X				
Mainstem upstream of Portage Creek (RM 149.4)		X		X	X
Mainstem upstream of of Devil Canyon (RM 150.1)	X		X		
Watana Dam Site (RM 189.2)	X		X	X	

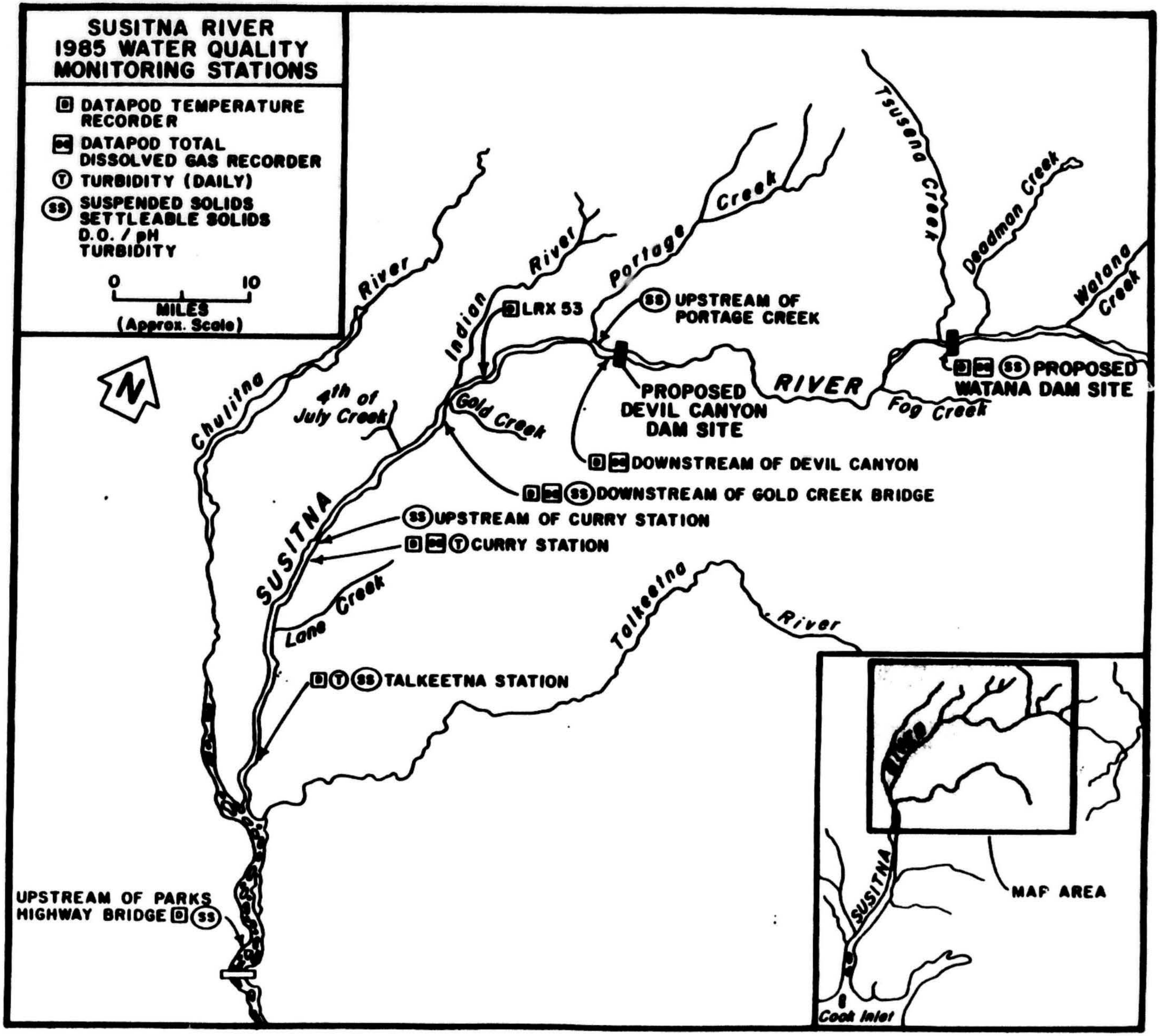

Figure 1. Susitna River water quality monitoring stations for 1985.

Brooklyn mercury thermometer (accuracy ±0.1°C). The temperatures recorded by the Datapod channel which corresponded to the temperatures observed with the mercury thermometer were considered the most accurate. Water temperature data were retrieved from the Datapod temperature recorders by reading the data storage module (DSM) with an Omnidata model 217 Datapod/Cassette reader and a microcomputer. These six-hour data bases were edited for storage errors and anomalies which may have resulted from dewatering, siltation or instrument failure. From the edited data bases, daily and monthly minimum, mean, and maximum water temperatures were calculated.

3.2 TURBIDITY, SUSPENDED SOLIDS, AND SETTLEABLE SOLIDS

Turbidity was measured at six sites on the mainstem Susitna River between the Parks Highway Bridge (RM 86.6) and the proposed Watana Dam site (RM 184.2). These sampling sites are presented in Figure 1 and Appendix Figures 1-6. Turbidity samples were taken from four of the six sites on a weekly basis. At two sampling sites (Talkeetna and Curry stations), turbidity was monitored on a daily basis in association with other studies.

Turbidity was monitored at locations considered to be representative of water quality conditions for the mainstem Susitna River outside of tributary clearwater influence. Generally, turbidity was monitored in well mixed portions of the river that had a single channel configuration. For several of the turbidity monitoring sites, other water quality parameters were also obtained (Table 1). At the Talkeetna and Curry stations, fishery studies were ongoing through the summer months of 1985, thus enabling turbidity samples to be obtained on a daily basis at these stations.

At the daily monitored sites, turbidity was measured from 250 ml water samples analyzed in the field on a HF Instrument DRT-15 turbidimeter. Weekly measurements were obtained from two-liter water samples. Samples were transported to Anchorage. Analysis was performed by Northern Testing

Laboratories, Inc. of Anchorage within 48 hours of field sampling. Northern Testing Laboratories measured turbidity on a Turner Design Model 40 Digital turbidimeter. All turbidity measurements were reported in Nephelometric Turbidity Units (NTU).

Suspended and settleable solids were monitored at five mainstem Susitna River sites. These sampling locations coincided with the weekly turbidity monitoring sites. Suspended and settleable solids concentrations were determined from the two-liter water samples collected for the turbidity analysis. Northern Testing Laboratories performed the sediment analysis. The procedure for determining total suspended solids was the total nonfilterable residue method (American Public Health Association (APHA) 1985). Settleable solids were determined using the methods for settleable matter (APHA 1985).

3.3 TOTAL DISSOLVED GAS

Total dissolved gas measurements were taken at four sites in the Susitna River between Curry Station (RM 120.7) and the proposed Watana Dam site (RM 184.2). Sampling sites were located in close proximity to areas corresponding to dissolved gas monitoring sites used in 1981 (Terrestrial Environmental Specialists 1981), 1982 (ADF&G 1983) and 1984 (ADF&G Unpublished). The 1985 dissolved gas monitoring sites are presented in Table 1 and Figure 1, and Appendix Figures 3,4,7,and 8. Dissolved gas measurements (mm of Hg) were continuously monitored using a Common Sensing Model THT-F saturometer. A Datapod recorder was connected to the saturometer and used to record water temperature and dissolved gas pressure hourly throughout this period. The Datapod dissolved gas saturometer measured temperature within $\pm$0.5°C. Dissolved gas supersaturation values were calculated using the formula of Colt (1984).

3.4 DISSOLVED OXYGEN AND pH

Dissolved oxygen and pH were monitored weekly at six mainstem sites, five of which were associated with the weekly turbidity sampling (Figure 1). At the

urry, Gold Creek, and Portage Creek stations, spot measurements performed in conjunction with other Susitna-related studies supplemented the regularly scheduled weekly sampling. Both dissolved oxygen and pH were measured using a Hydrolab model 4041 portable multiparameter water quality meter.

4.0 DATA SUMMARY

4.1 SURFACE WATER TEMPERATURE

The water temperature monitoring results are presented in Appendix Tables 1-7. Daily minimum, mean, and maximum plots of these data are presented in Appendix Figures 9-15.

Water temperatures among the seven monitoring stations in the study area were found to exhibit similar seasonal trends (Figure 2). Generally, water temperature increased in June, reached maximum temperatures in July, and subsequently decreased through the remainder of the summer, dropping to freezing or near freezing temperatures by mid-October.

In the summer months (June through August), the results show that the river warmed slightly between the Watana Dam site and Talkeetna. At Talkeetna and as far upstream as Curry Station, seasonal maximum water temperatures occurred one day earlier than the occurrence of maximum water temperatures upstream at the Gold Creek, LRX 53, Devil Canyon, and Watana stations (July 18 vs. July 19) and nine days earlier than downstream at the Parks Highway Bridge. The Talkeetna Station, although warmer in the summer, did not exceed maximum water temperatures recorded at the upstream stations by more than 2°C. The Parks Highway Bridge Station which is located downstream of the confluence of the Chulitna and Talkeetna Rivers, was consistently cooler by approximately 4°C (compared to the upstream stations) during the summer months.

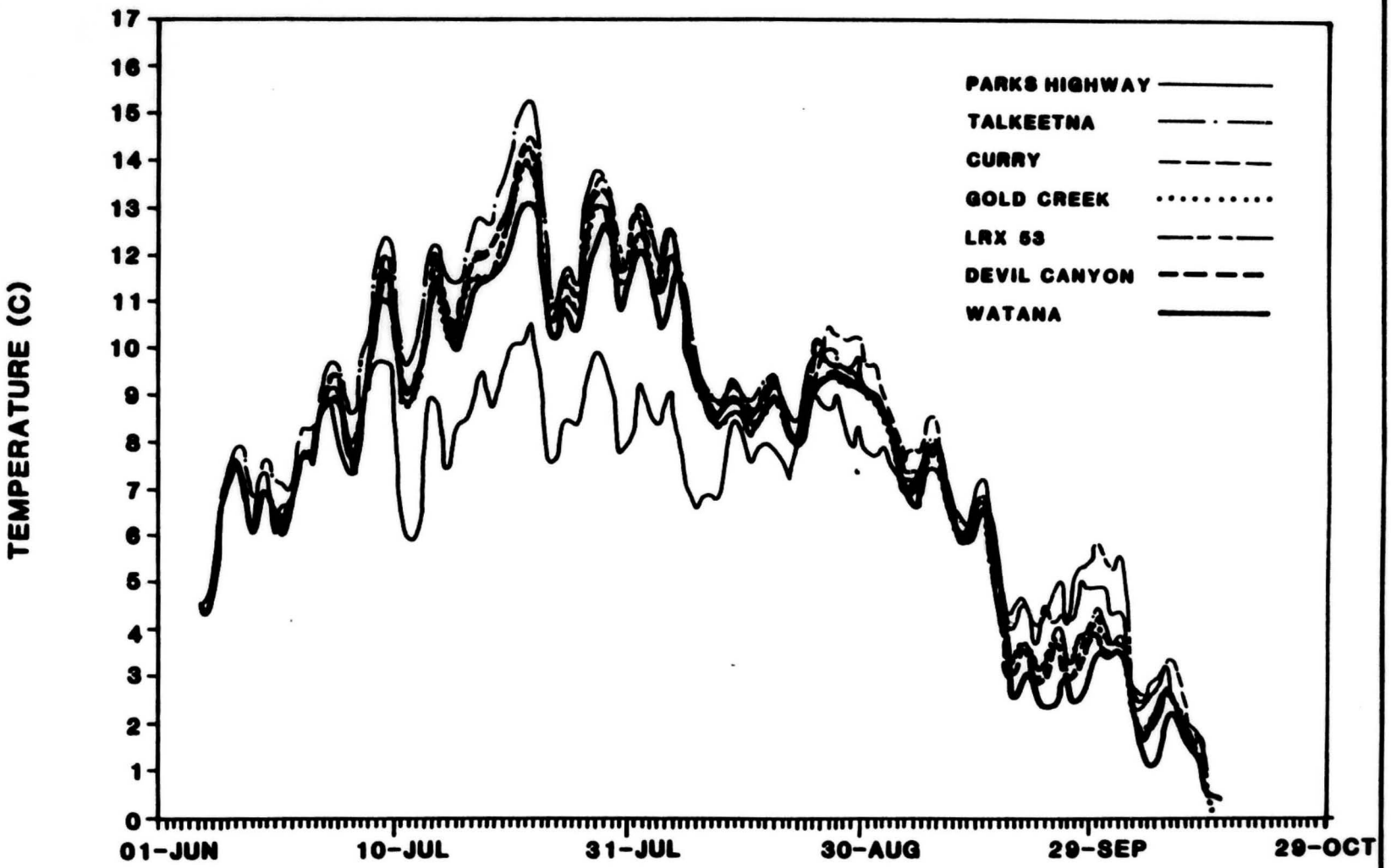

FIGURE 2 SUSITNA RIVER MEAN DAILY TEMPERATURE (1985)

By mid-September and through the remainder of the monitoring period (mid-October) water temperatures were slightly warmer at the Parks Highway Bridge than upstream at Talkeetna Station. This warmer water was a result of inflow from the Chulitna River. By October 15, freezing water temperatures were occurring upstream of Talkeetna while water temperatures at Parks Highway Bridge were slightly above freezing at 0.8°C. Overall, water temperatures from June to October 15, 1985 ranged from 0.0°C to 16.4°C upstream of Talkeetna and 0.8°C to 12.8°C downstream at the Parks Highway Bridge.

Water temperature regimes in the Susitna River have not varied substantially for the years 1981-1985 (period of ADF&G temperature record). A review of the Alaska Department of Fish and Game temperature data for these years shows that at sites monitored for each of these five years, the greatest difference in mean monthly temperature for any individual station was approximately 3°C.

4.2 TURBIDITY

Daily turbidity measurements made at the Talkeetna and Curry stations for the summer of 1985 are presented in Appendix Table 8. These data are supplemented by weekly observations used to define the portion of the Susitna River from the Parks Highway Bridge to Devil Canyon (Appendix Table 9). Plots of the weekly turbidity values are presented in Appendix Figures 16-20.

Daily turbidity values at the Talkeetna and Curry stations were found to somewhat parallel each other and follow the general trend of mainstem Susitna River discharge (Figure 3). The most turbid period in the Susitna River for 1985 occurred during the month of July. The highest turbidity recorded was 480 NTU which was measured at the Talkeetna Station during a high discharge of 39,700 cfs. This discharge was exceeded on only three previous occasions in 1985. Turbidity was generally decreasing in August and September, dropping to less than 10 NTU by October.

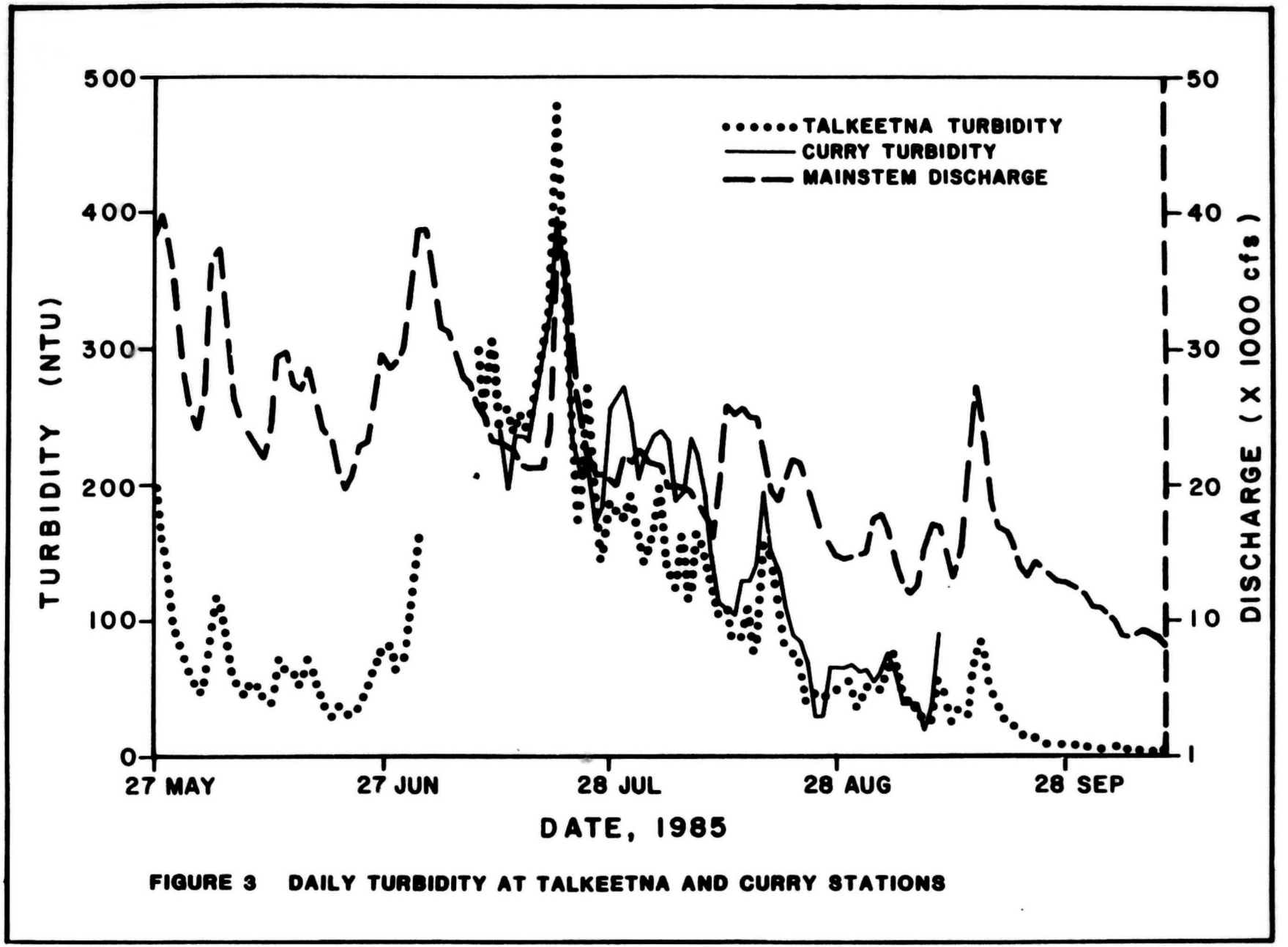

FIGURE 3 DAILY TURBIDITY AT TALKEETNA AND CURRY STATIONS

A comparison of turbidity values for the five weekly monitoring stations is presented in Figure 4. Comparisons among the four weekly monitored stations upstream of Talkeetna shows that variation in turbidity existing among these stations were less than 15% or 20 NTU during conditions of 100 NTU or greater. Variations in turbidity levels among stations occasionally increased during periods of low turbidity. These differences were relative to the low turbidity levels and were a reflection of instrument precision.

At the Parks Highway Bridge Station, turbidity was consistently higher than the upstream stations due primarily to the influence of the Chulitna River. Weekly observations made at the Parks Highway Bridge ranged from 19 to 400 NTU compared to 3 to 220 NTU for the weekly observations at the Talkeetna Station.

Except for periods of low turbidity, turbidity levels of samples collected on the daily schedule (Talkeetna and Curry stations) consistently exceeded levels obtained for the weekly schedule (Figure 5). The difference in values between daily and weekly stations is attributed to the potential variation inherent with single, surface water samples and the comparability between turbidimeters. Difference in design of turbidimeters will result in differences in measured values (APHA 1985). The greatest differences in turbidity values between daily and weekly observations occurred during highly turbid periods. The relative magnitudes were comparable which is generally the level of precision for turbidity evaluations.

4.3 SUSPENDED SOLIDS AND SETTLEABLE SOLIDS

Between July 13 and October 9, weekly measurements of suspended solids in the middle reach of the Susitna River (Talkeetna to Devil Canyon) ranged from 4 to 592 mg/l (Appendix Table 9, Appendix Figures 21 to 25). At the Parks Highway Bridge, during the same period, concentrations were higher, ranging from 60 to 751 mg/l. Peak concentrations of suspended solids occurred in July. Lowest concentrations were measured in early October. Highest concentrations recorded upstream of Talkeetna were measured at the

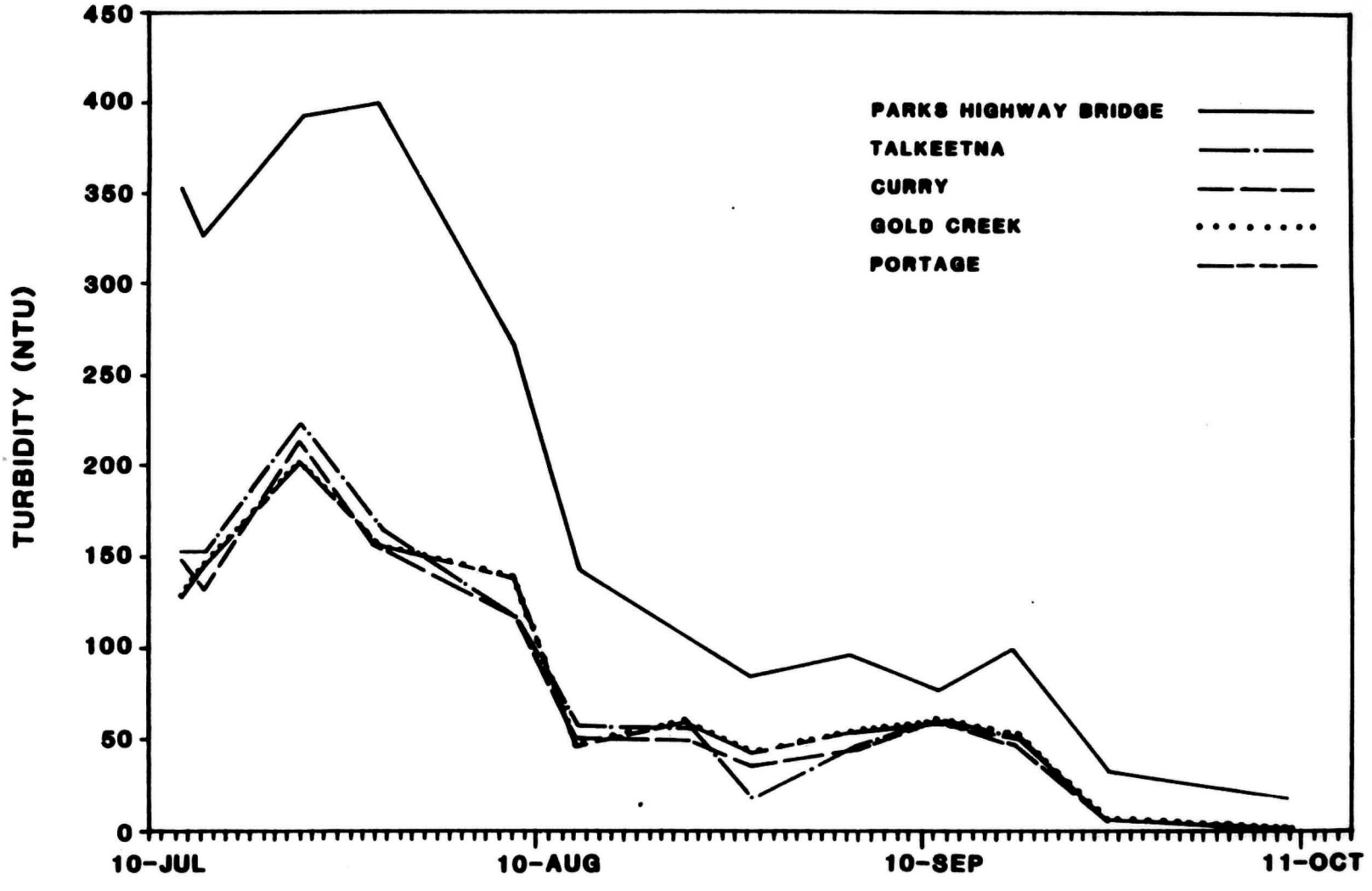

FIGURE 4 COMPARISON OF WEEKLY TURBIDITY OBSERVATIONS

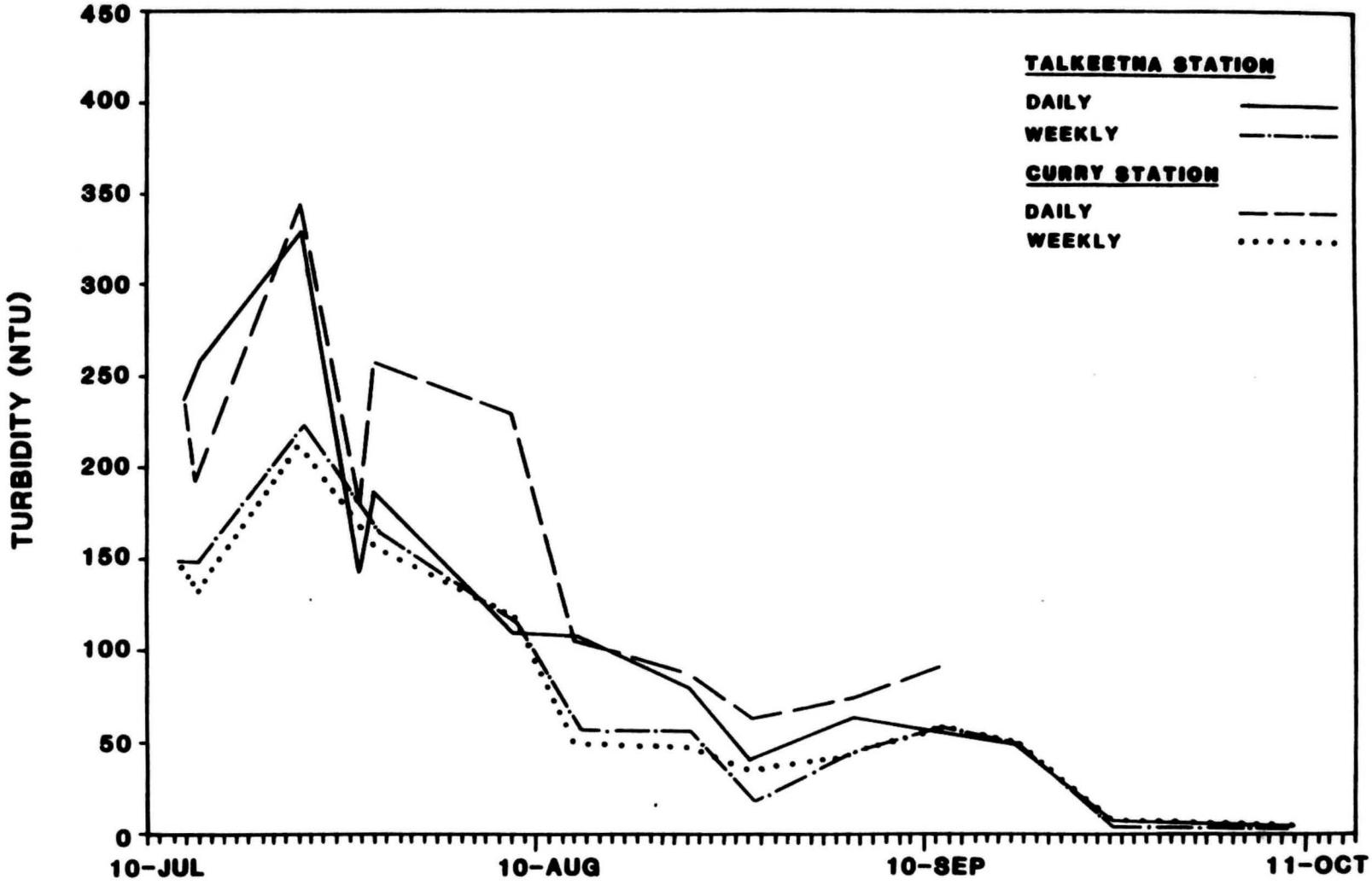

FIGURE 5 A COMPARISON OF DAILY AND WEEKLY TURBIDITY VALUES AT THE TALKEETNA AND CURRY MONITORING STATIONS

Gold Creek Station on July 22. These corresponded to a relatively high discharge of 36,000 cfs. A graph comparing weekly observations of suspended solids for the early monitoring stations is presented in Figure 6. This graph reveals that suspended solids concentrations were fairly uniform in the Susitna River between Talkeetna and Devil Canyon and concentrations were consistently higher at the Parks Highway Bridge Station.

Settleable solids ranged form 2 to 351 mg/l in the middle reach and 37 to 331 mg/l at the Parks Highway Bridge Station. As with suspended solids, there was little difference in settleable solids among stations upstream of Talkeetna (Figure 7). Concentrations of settleable solids were generally higher at the Parks Highway Bridge, but unlike suspended solids, maximum settleable solids concentrations measured at the Parks Highway Bridge did not exceed maximum concentrations at the Gold Creek Station. Also, peak concentrations at Parks Highway Bridge (as determined by weekly observations) occurred later for settleable than suspended solids. The reason for this is not clear but may be a result of local climatic conditions, particularly those that occurred in the Chulitna River drainage (pers. comm; James Knott USGS). Overall, sediment concentrations were found to be much greater at the Parks Highway Bridge due to the sediment contribution of the Chulitna River. It has been estimated from sediment data collected by the USGS during 1982 and 1983 that the Chulitna River contributes 65 percent of the approximately 14 million tons of sediment passing the Parks Highway Bridge Station (Lipscomb and Knott,1985). The Susitna River was found to contribute 24 percent and the Talkeetna River 10 percent.

A regression analysis for settleable vs. suspended solids (Figure 8) and turbidity vs. suspended solids (Figure 9) yielded fairly good relationships (r^2=0.95 for settleable vs. suspended solids; r^2=0.96 for turbidity vs. suspended solids). The relationship of settleable to suspended solids is primarily based on stream flow. Following hydroelectric development, this

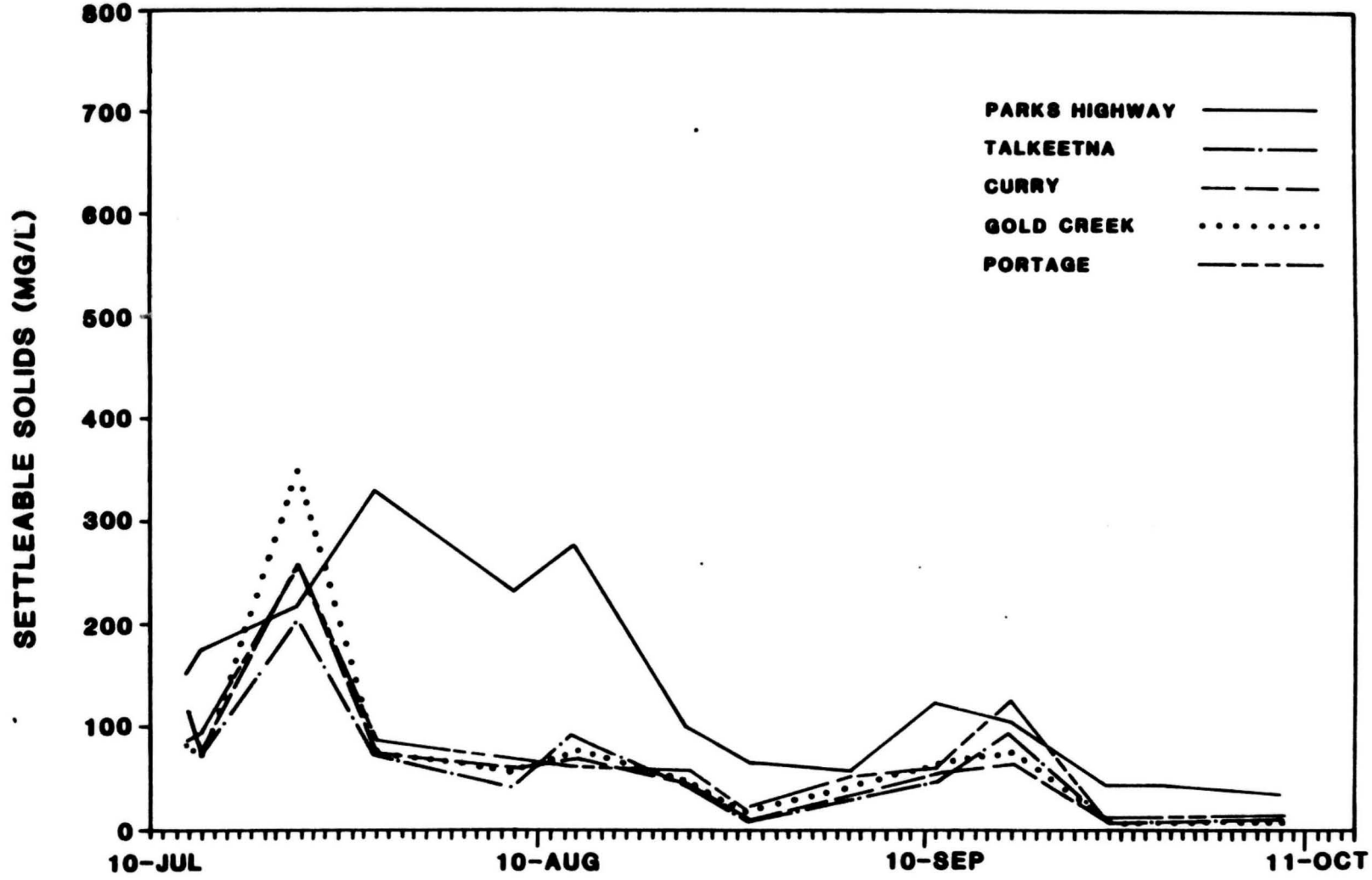

FIGURE 6 COMPARISON OF WEEKLY MEASURED SETTLEABLE SOLIDS CONCENTRATIONS AT THE FIVE WEEKLY WATER QUALITY MONITORING STATIONS

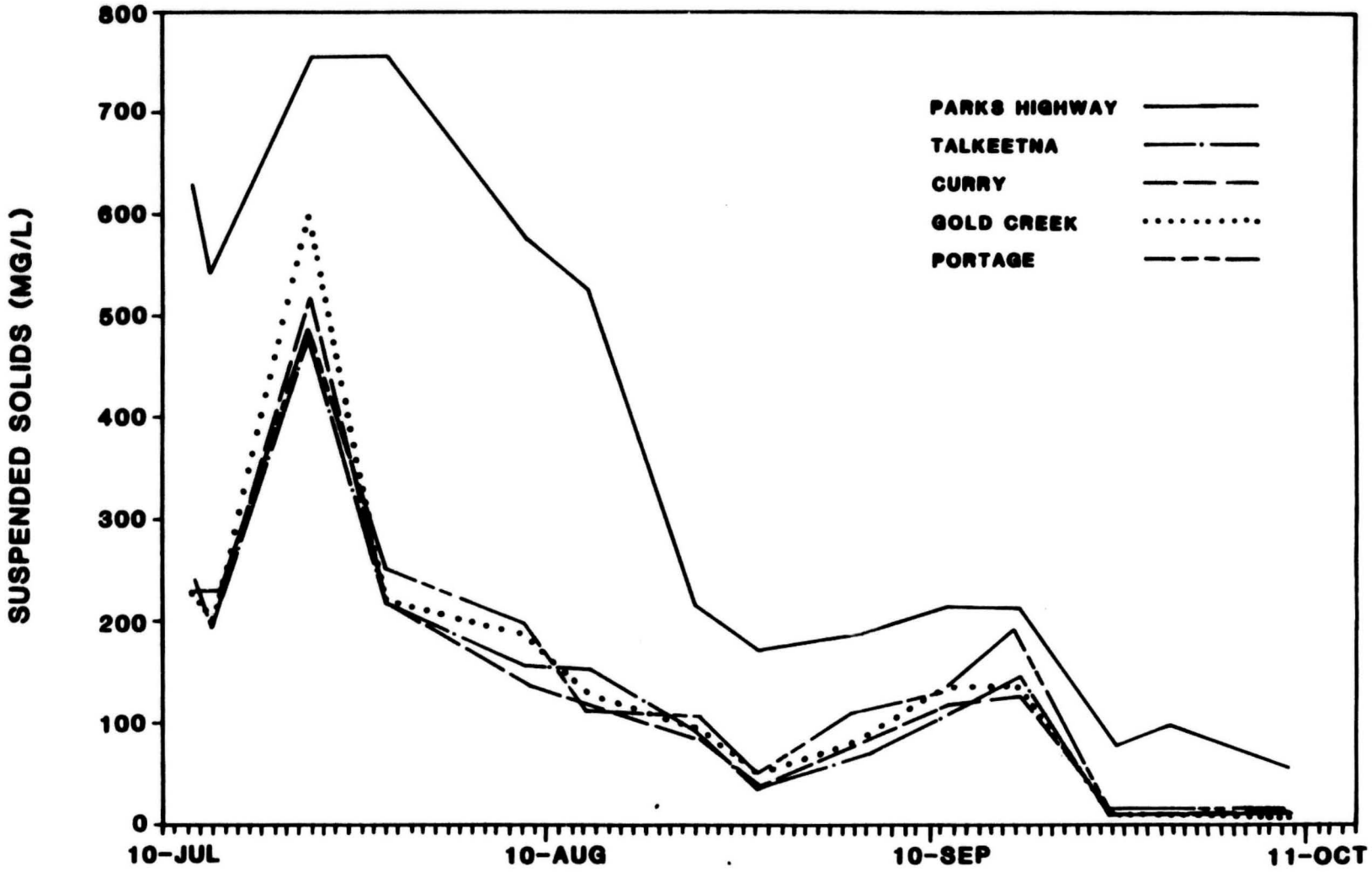

FIGURE 7 COMPARISON OF SUSPENDED SOLIDS CONCENTRATIONS AT 1985 SAMPLING STATIONS

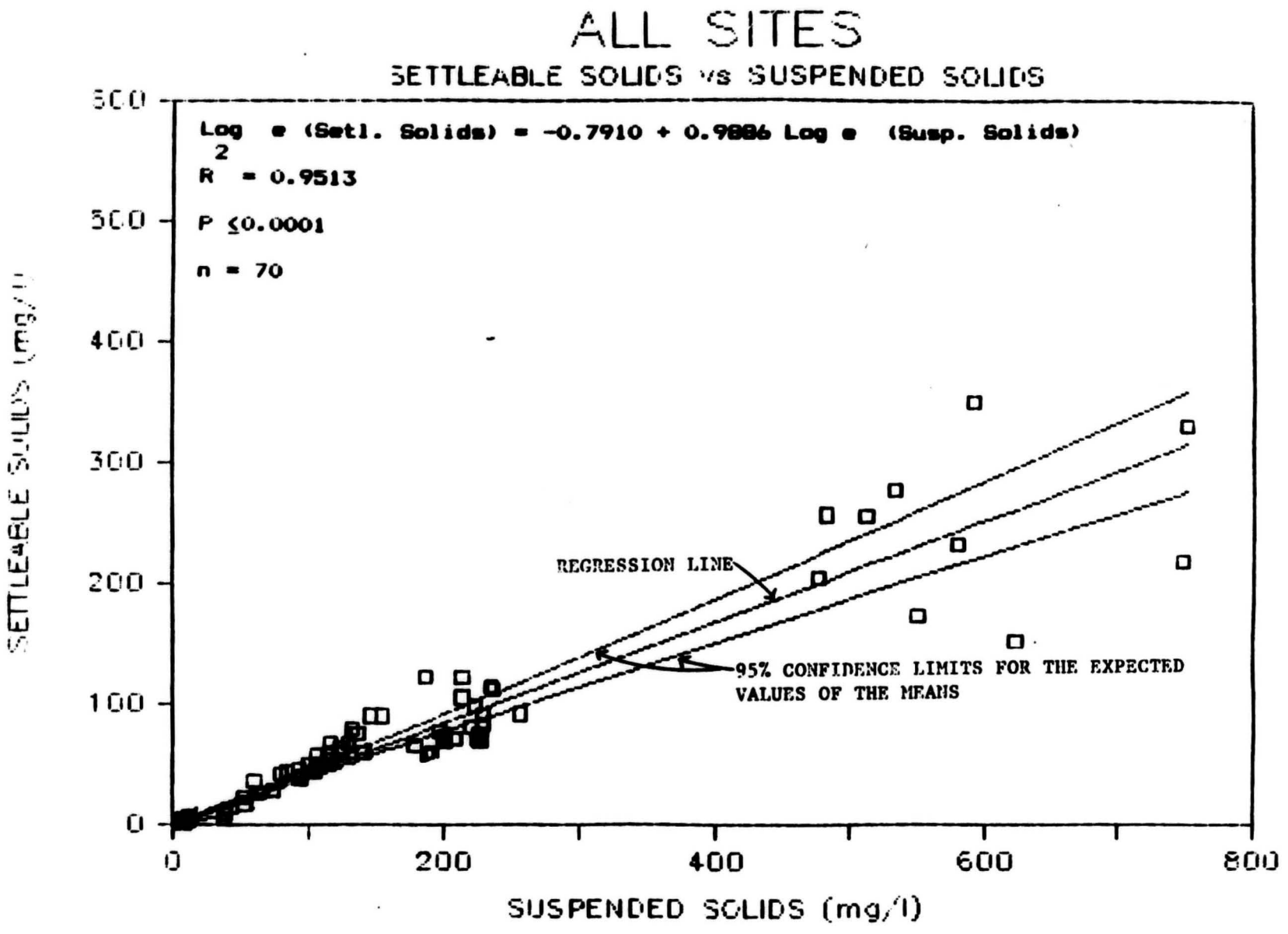

Figure 8. Settleable solids concentrations versus suspended solids.

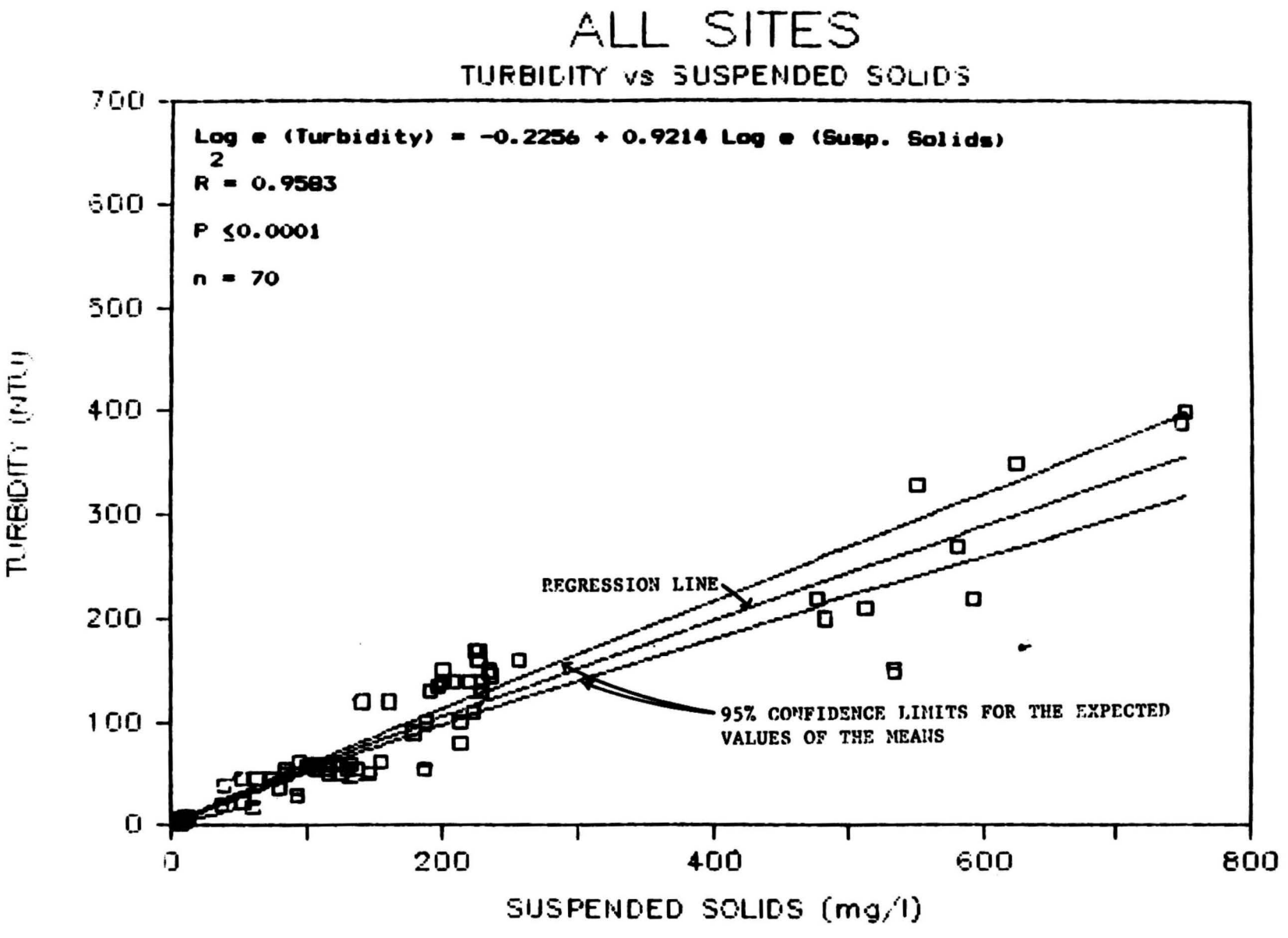

Figure 9. Turbidity versus suspended solids concentrations.

relationship is expected to change due to settling of material in the reservoir.

4.4 TOTAL DISSOLVED GAS

The total dissolved gas field data collected during 1985 has been reduced to mean daily total dissolved gas and mean daily percent saturation values. These mean daily dissolved gas values are presented in Appendix Tables 10-13. Also included is daily Susitna River discharge at Gold Creek (USGS provisional data). A plot of total dissolved gas saturation over time for the four monitoring stations, along with a hydrograph of Susitna River discharge, are presented in Figure 10.

Dissolved gas supersaturation occurred at both the Devil Canyon and Gold Creek monitoring stations throughout the monitoring period. The highest mean daily supersaturation value recorded in 1985 was 118 percent. This value occurred at the Devil Canyon Station on July 21. It corresponded to a mean daily discharge of 38,400 cfs. Upstream of Devil Canyon at the Watana Station, mean daily values of dissolved gas did not reach levels of supersaturation in 1985. At Curry, the furthest downstream station, dissolved gas concentrations were in the supersaturation range only for a short period in mid-October.

In 1982, the relationship of dissolved gas concentrations to discharge were evaluated. It was found that increased levels of supersaturation at Devil Canyon were a function of mainstem discharge and the physical process of the Devil Canyon rapids (ADF&G 1983). The relationship of dissolved gas saturation to discharge were plotted for the Devil Canyon, Gold Creek and Watana stations (Appendix Figures 26-28). At the Devil Canyon station the relationship of dissolved gas saturation as a function of discharge was good (r^2=0.86). For the Gold Creek and Watana stations, dissolved gas saturation did not respond directly to mainstem discharge. In 1984, dissolved gas

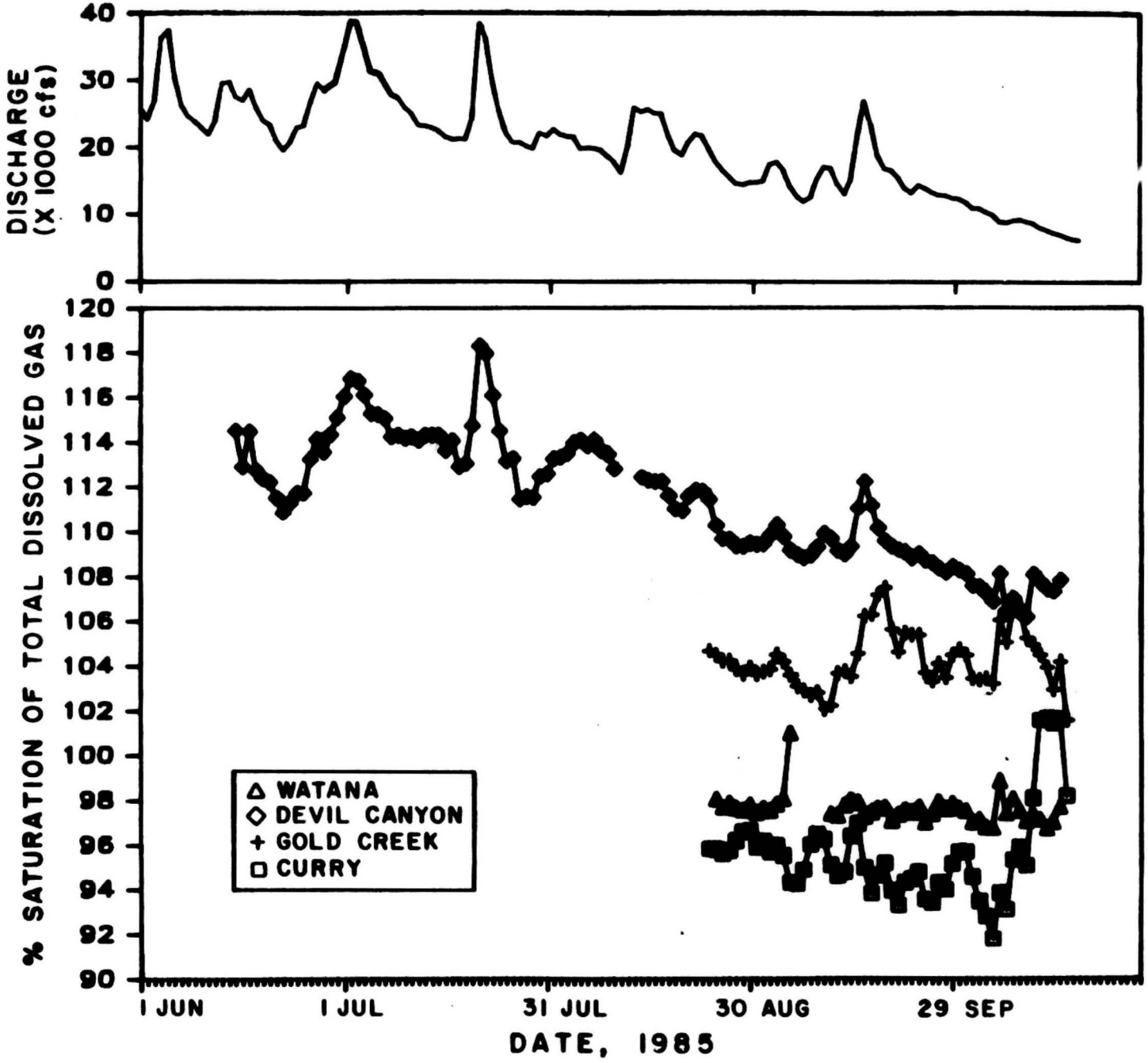

Figure 10. A comparison of percent saturation of total dissolved gas for the four continuous dissolved gas monitoring stations

concentrations were continuously monitored at Gold Creek. When the 1984 dissolved gas data at Gold Creek was plotted versus Susitna River discharge, dissolved gas was found to respond directly to mainstem discharge (Figure 11). This relationship differs substantially from the 1985 data and leads us to question the reliability of the meter used at Gold Creek in 1985.

In 1982, predictability of dissolved gas concentrations was established using discharge and distance downstream of the Devil Canyon rapids (ADF&G 1983). Dissolved gas supersaturation levels were found to substantially decay downstream of Devil Canyon. It was estimated that decay of gas supersaturation occurred at a rate of an approximately 50 percent decrease in the initial concentrations for approximately every 20 miles of downstream movement. Figure 10 shows a similar decrease in dissolved gas saturation levels for 1985 data taken at the Gold Creek Station (14 miles downstream). At Curry, dissolved gas levels were no longer supersaturated. Although a comparison of Appendix Figure 27 to Figure 11 suggests meter problems at Gold Creek for 1985, a comparison of supersaturation levels for Devil Canyon and Gold Creek stations for 1985 resulted in an average of a 50 percent decay of supersaturation at Gold Creek Station, thus supporting the 1982 estimate.

Increased levels of saturation occurred at Gold Creek and Curry stations in early October. It was expected that the Gold Creek and Curry stations would follow the trend of Devil Canyon in the fall and show a general decline in dissolved gas concentrations. The reason for this late season increase is unclear, but it may have been related to equipment malfunctioning or a real increase in total dissolved gas due, for example, to a fall algal bloom. Overall, the dissolved gas data collected to date shows that Devil Canyon dissolved gas concentrations occasionally exceed Alaska water quality standards under natural conditions. Dissolved gas concentrations at Devil Canyon respond to mainstem discharge and substantially decay downstream.

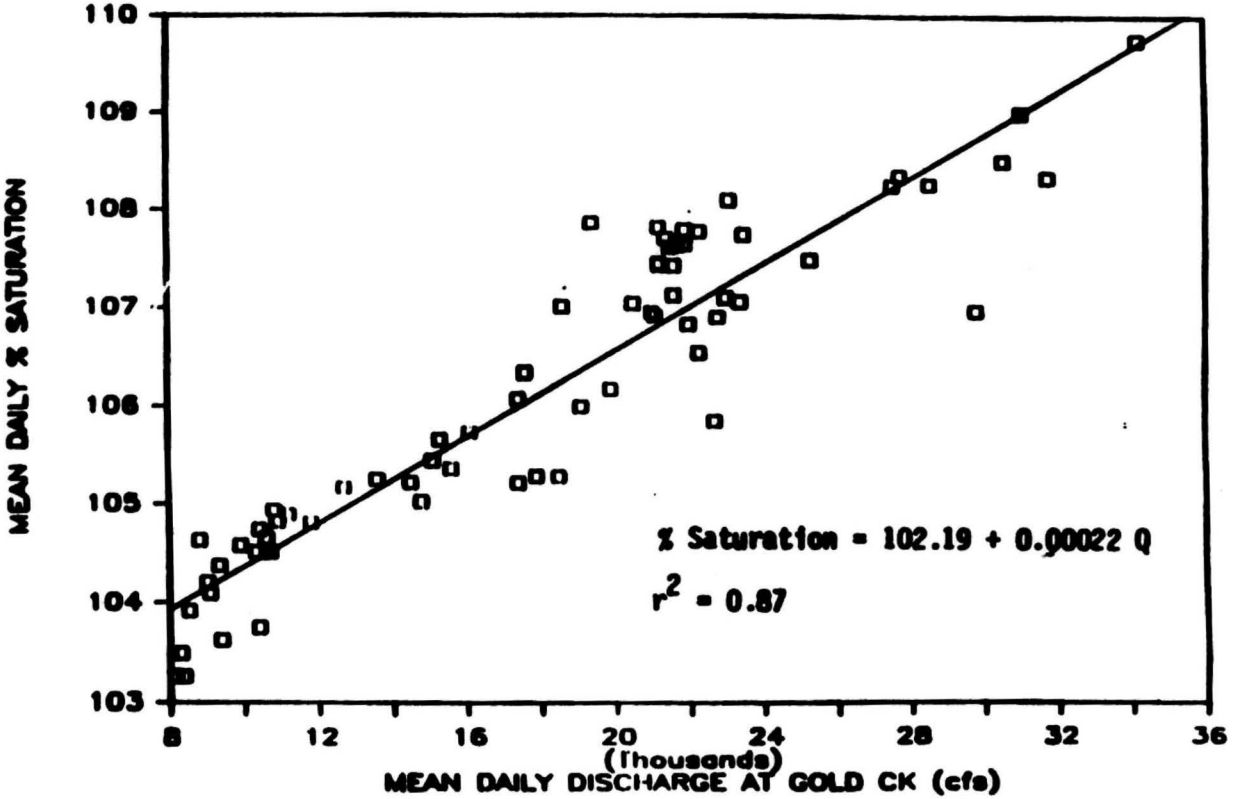

Figure 11. A plot of 1984 Gold Creek dissolved gas percent saturation values versus mainstem discharge.

4.5 DISSOLVED OXYGEN

The dissolved oxygen concentrations and resultant levels of percent saturation measured at the weekly water quality monitoring stations are presented in Appendix Table 14. In addition to the regular weekly measurements, spot measurements were made by Task 6 ADF&G personnel in the vicinity of the Curry and Gold Creek stations and the station located just upstream of Portage Creek. These data are also presented in Appendix Table 14. Plots of dissolved oxygen over time and percent saturation over time are presented in Appendix figures 29-40.

Dissolved oxygen concentrations in the Susitna River were generally high, ranging from 7.9 to 14.8 mg/l, with corresponding levels of percent saturation ranging from 82 to 113 percent. A comparison of the six monitoring stations presented in Figure 12 shows that peak levels occurred for all stations in late July. With the exception of the Watana and Portage stations, dissolved oxygen percent saturation levels were similar. The station located upstream of Portage Creek was consistently higher in percent saturation following peak levels in July as a result of the Devil Canyon rapids whereas the Watana station located upstream of Devil Canyon was consistently lower through the monitoring period.

The spot measurements made in the vicinity of the Curry, Gold Creek and Portage Creek stations were consistently higher than the dissolved oxygen measurements made at the weekly monitoring stations (Figure 13). These differences are possibly the result of local river conditions or instrumentation. Both the weekly and spot measurements by ADF&G for 1985 when compared to the USGS Gold Creek and Sunshine water quality stations were comparable although the ADF&G measurements ranged overall approximately 9% higher (Appendix Table 15). Under the present natural conditions dissolved oxygen levels in the mainstem Susitna River exceed levels needed to satisfy oxygen demands of aquatic life (Alabaster and Lloyd 1982).

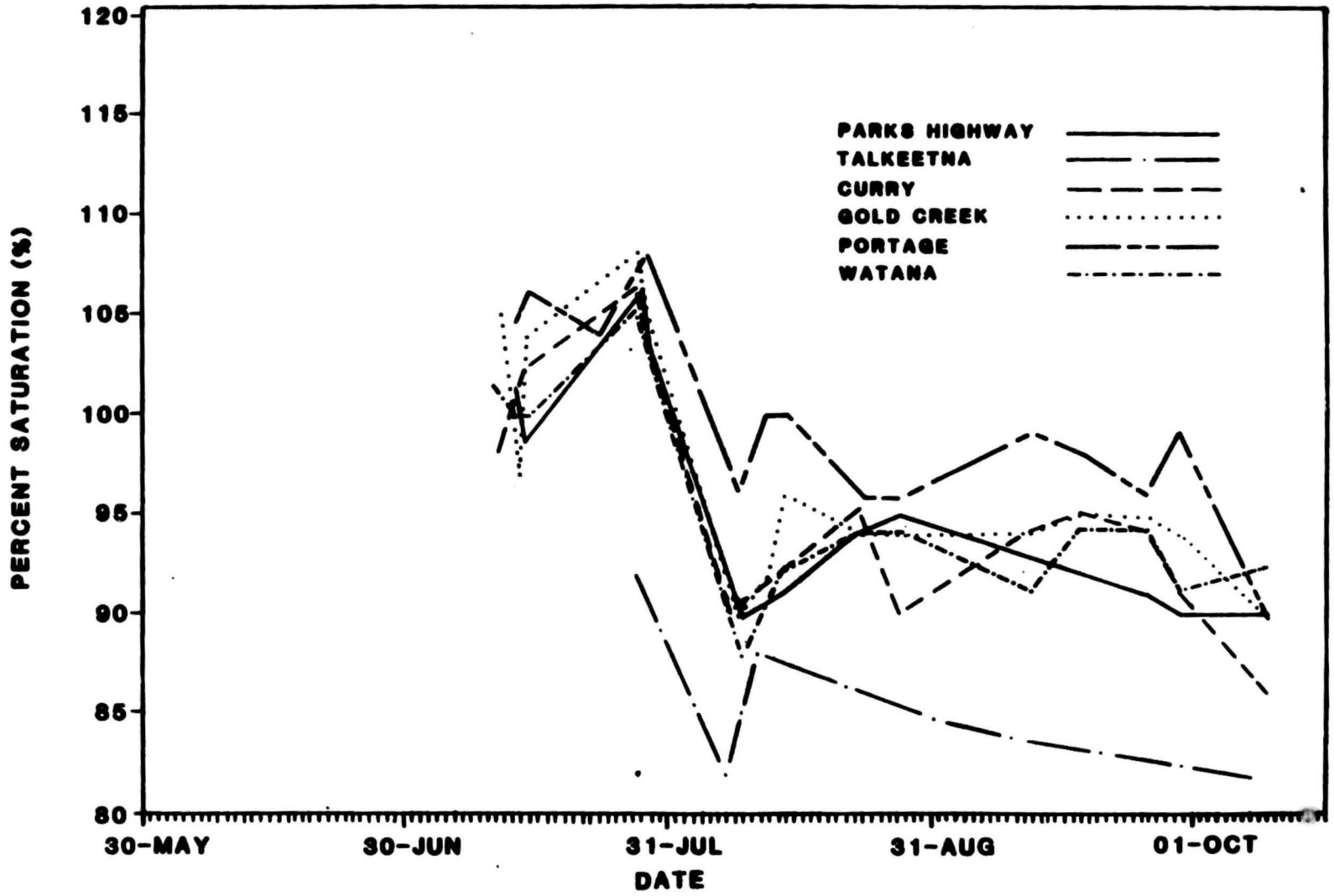

FIGURE 12 COMPARISON OF DISSOLVED OXYGEN PERCENT SATURATION LEVELS AMONG WEEKLY MONITORING STATIONS

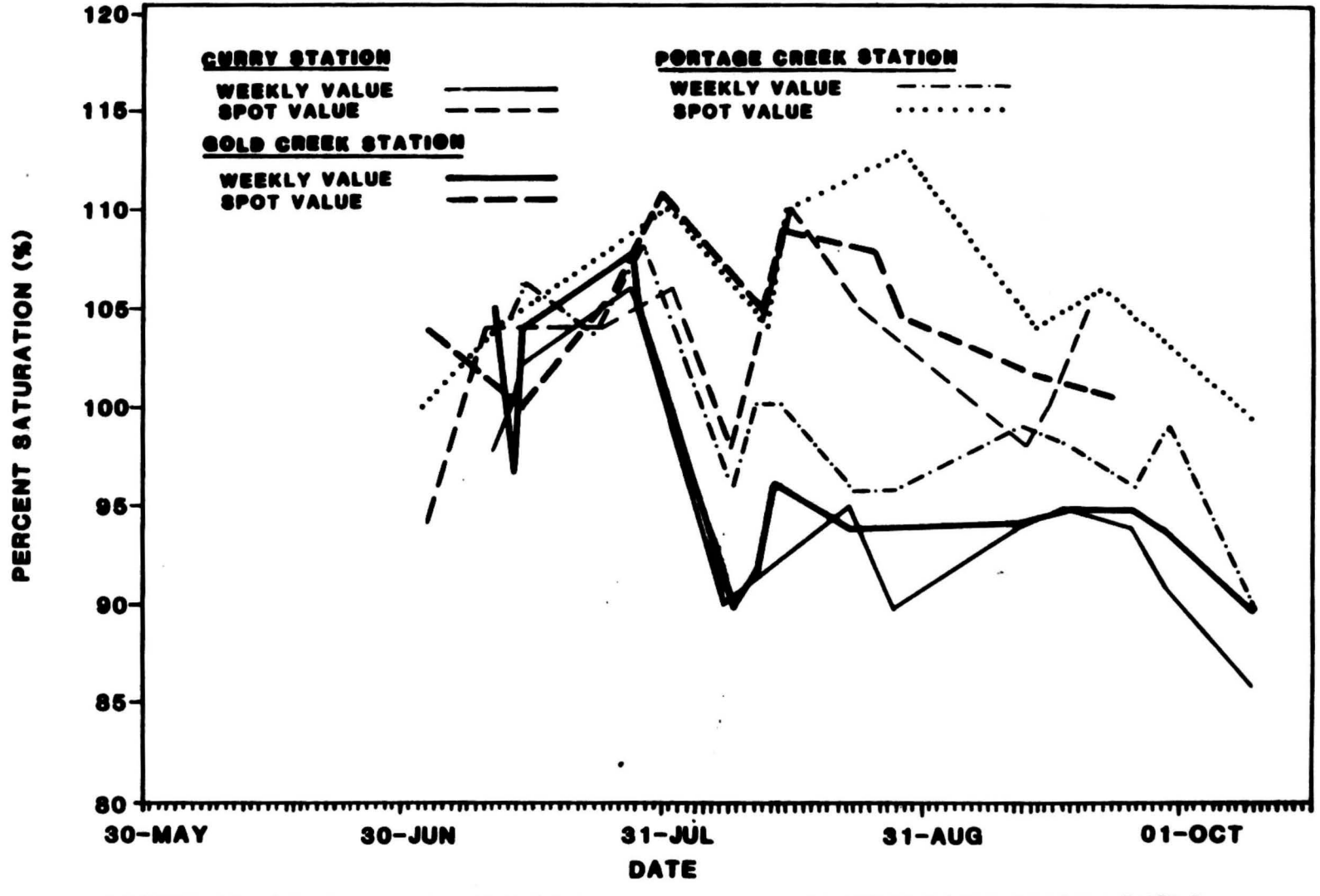

FIGURE 13 COMPARISON OF DISSOLVED OXYGEN PERCENT SATURATION LEVELS BETWEEN WEEKLY AND SPOT MEASUREMENTS AT CURRY, GOLD CREEK AND PORTAGE CREEK STATIONS

4.6 pH

The pH of the Susitna River in 1985 ranged from 6.8 to 8.5 (Appendix Table 14). Plots of pH versus time are presented in Appendix Figures 41-46. In addition to the scheduled sampling for pH, spot measurements were made by ADF&G personnel in the vicinity of the Curry, Gold Creek, and Portage Creek stations. The spot measurements were found to be consistently lower in value when compared to the regularly scheduled pH measurements made in the local vicinity. However, they were within the expected pH range of the Susitna River. A review of pH values measured among scheduled sampling stations found pH levels to be relatively similar for 1985 with the exception of slightly high pH at the Parks Highway Bridge occurring in July (Figure 14).

A comparison of pH data obtained by ADF&G at replicate stations for 1983 (Sandone and Quane 1984) and 1985 and the USGS stations at Sunshine and Gold Creek for 1981-1984 (USGS 1981, USGS 1982, USGS 1983, USGS 1984) is presented in Appendix Table 16. A review of this data shows the middle reach of the Susitna River to be fairly uniform relative to pH; the pH was consistently within a range of 6.3 to 8.4.

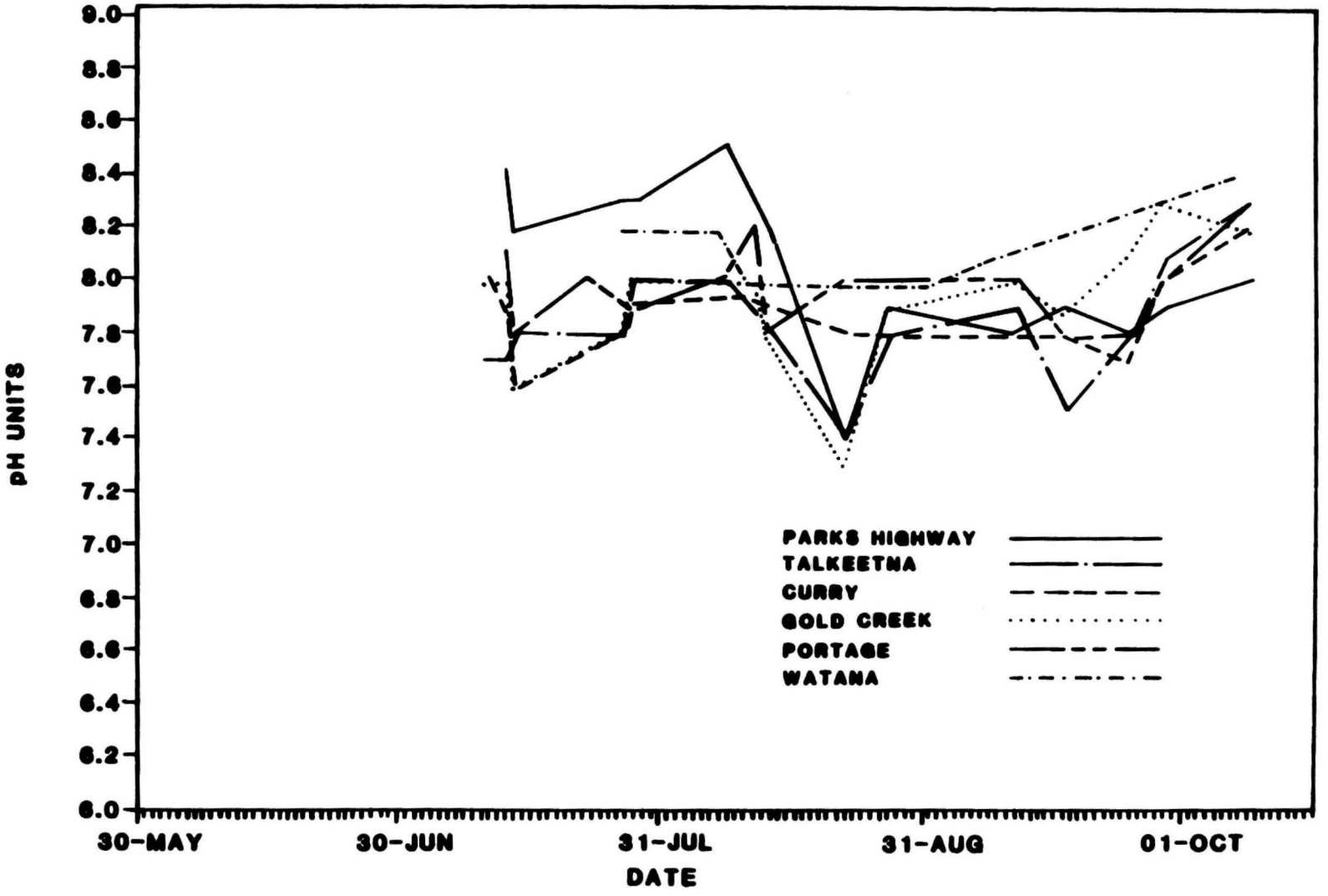

FIGURE 14 COMPARISON OF pH DATA FOR 1985 ADF&G MONITORING STATIONS

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APPENDIX TABLES
AND
FIGURES

APPENDIX

Appendix Table 1

Datapod temperature recorder data summary:
Surface water temperature (C) recorded at Mainstem Susitna River upstream of the Parks Highway Bridge (RM 86.2).

June 1985

Date	Surface Water Temperature (C) Min	Mean	Max
850607	4.1	4.5	5.0
850608	4.4	4.9	6.0
850609	5.5	6.3	7.5
850610	6.3	7.1	8.3
850611	6.8	7.5	8.3
850612	6.6	7.3	7.9
850613	5.3	6.0	6.6
850614	6.3	7.3	8.9
850615	6.8	7.5	8.4
850616	5.1	6.0	7.2
850617	6.0	6.7	7.2
850618	6.2	6.6	7.1
850619	6.3	7.1	8.2
850620	7.3	7.9	8.4
850621	6.5	7.5	8.7
850622	7.9	8.7	9.6
850623	8.1	9.0	9.8
850624	7.9	8.4	9.5
850625	7.2	7.6	8.2
850626	6.5	7.2	8.6
850627	7.7	8.7	10.0
850628	8.6	9.4	10.4
850629	8.9	9.7	10.4
850630	9.1	9.8	10.6
Monthly Value	4.1	7.4	10.6

Appendix Table 1
(continued).

August 1985

Date	Surface Water Temperature (C) Min	Mean	Max
850801	7.0	8.1	10.3
850802	8.4	9.3	10.1
850803	8.4	8.9	9.7
850804	7.4	8.3	9.2
850805	7.6	8.6	9.4
850806	8.3	9.1	9.6
850807	7.1	7.9	9.0
850808	6.4	7.0	7.6
850809	6.1	6.6	7.5
850810	6.4	6.9	7.7
850811	6.4	6.9	7.4
850812	6.4	6.8	7.0
850813	6.7	7.7	10.1
850814	7.8	8.5	9.3
850815	7.2	7.8	8.5
850816	6.7	7.5	8.2
850817	6.9	7.9	8.7
850818	7.2	8.0	8.5
850819	7.2	7.8	8.3
850820	7.1	7.7	8.3
850821	6.9	7.3	7.6
850822	7.3	7.8	8.3
850823	7.6	8.5	9.5
850824	8.5	9.1	9.7
850825	8.2	8.8	9.6
850826	7.8	8.7	9.4
850827	8.2	9.0	9.7
850828	8.0	8.5	9.2
850829	7.5	7.9	8.5
850830	7.4	8.4	9.1
850831	7.4	7.8	8.8
Monthly Value	6.1	8.0	10.3

Appendix Table 1
(continued).

September 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850901	7.3	7.7	8.1
850902	7.5	8.0	8.7
850903	6.7	7.5	8.0
850904	6.6	7.3	7.8
850905	6.2	7.1	7.7
850906	6.8	7.3	7.7
850907	6.5	6.8	7.3
850908	7.1	7.4	7.7
850909	7.0	7.4	7.9
850910	6.5	6.7	7.2
850911	5.8	6.5	6.9
850912	5.5	5.7	6.4
850913	5.5	6.0	6.5
850914	6.3	6.7	7.4
850915	6.8	7.3	8.2
850916	5.9	6.6	7.2
850917	4.6	5.2	6.0
850918	4.1	4.2	4.9
850919	4.1	4.6	5.3
850920	4.1	4.7	5.3
850921	3.6	4.4	4.9
850922	3.7	4.0	4.5
850923	3.9	4.2	4.4
850924	4.3	4.7	5.1
850925	4.8	5.1	5.6
850926	3.9	4.1	4.9
850927	3.9	4.3	4.9
850928	4.9	5.1	5.4
850929	4.6	4.8	5.3
850930	4.5	5.0	5.4
Monthly Value	3.6	5.9	8.7

Appendix Table 1
(continued).

October 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
851001	4.6	4.9	5.4
851002	3.7	4.2	4.6
851003	4.2	4.5	5.0
851004	2.8	3.4	4.2
851005	2.0	2.5	2.9
851006	2.0	2.3	2.7
851007	2.6	2.8	2.9
851008	2.8	2.9	3.0
851009	2.8	3.3	4.7
851010	2.3	2.7	3.1
851011	2.1	2.5	2.8
851012	1.7	1.9	2.2
851013	1.6	1.9	2.5
851014	1.1	1.6	1.8
851015	0.8	0.9	1.2
Monthly Value	0.8	---	5.4

Appendix Table 2

Datapod temperature recorder data summary: surface water temperature (C) recorded at Mainstem Susitna River at Talkeetna Station (RM 103.0).

June 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850607	4.6	5.1	5.6
850608	4.8	5.4	6.4
850609	5.4	6.4	7.7
850610	6.2	7.3	8.6
850611	6.9	7.9	9.2
850612	7.4	7.9	9.1
850613	6.0	6.7	7.5
850614	6.4	7.3	8.5
850615	7.2	7.6	8.4
850616	6.5	7.2	8.1
850617	6.3	7.0	7.9
850618	6.5	6.9	7.7
850619	6.8	7.7	9.0
850620	7.8	8.3	9.0
850621	7.3	8.2	9.4
850622	7.9	8.9	10.3
850623	8.7	9.6	11.0
850624	9.2	9.7	10.0
850625	8.5	8.9	9.8
850626	8.1	8.5	9.1
850627	8.3	9.1	10.3
850628	9.4	10.2	11.5
850629	10.6	11.2	12.0
850630	11.6	12.1	13.3
Monthly Value	4.6	8.1	13.3

Appendix Table 2
(continued).

July 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850701	11.8	12.4	13.4
850702	10.0	10.6	11.8
850703	9.2	9.6	10.1
850704	9.3	9.8	10.7
850705	9.2	10.4	12.4
850706	11.0	11.8	12.8
850707	11.9	12.3	12.7
850708	11.0	11.5	12.1
850709	10.2	11.3	12.3
850710	10.8	11.4	12.2
850711	11.0	11.9	13.3
850712	11.6	12.6	14.2
850713	12.3	12.8	13.9
850714	11.4	12.5	14.3
850715	11.7	13.1	14.9
850716	12.5	13.6	14.6
850717	13.0	14.0	15.4
850718	13.7	14.8	16.4
850719	14.2	15.3	16.3
850720	13.7	14.9	16.1
850721	11.6	12.4	13.8
850722	10.2	10.8	11.5
850723	10.9	11.4	12.4
850724	11.3	11.8	12.5
850725	10.5	11.2	12.4
850726	11.4	12.3	13.8
850727	12.2	13.3	15.0
850728	12.9	13.8	15.1
850729	12.9	13.5	14.8
850730	11.8	12.5	13.4
850731	11.3	11.7	12.8
Monthly Value	9.2	12.3	16.4

Appendix Table 2
(continued).

August 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850801	11.2	12.3	13.8
850802	12.5	13.1	13.9
850803	12.3	12.9	13.7
850804	11.6	12.2	12.9
850805	10.8	11.7	13.1
850806	11.8	12.6	13.6
850807	11.6	12.2	13.4
850808	10.8	11.1	11.7
850809	9.4	10.0	11.1
850810	9.0	9.3	9.7
850811	8.7	9.1	9.4
850812	8.5	8.8	9.3
850813	8.7	8.8	9.3
850814	9.2	9.4	10.0
850815	8.8	9.1	9.6
850816	8.5	8.8	9.3
850817	8.3	9.1	10.2
850818	8.6	9.3	10.1
850819	8.9	9.5	10.4
850820	8.5	9.0	10.0
850821	8.4	8.6	9.1
850822	7.9	8.3	8.8
850823	8.0	8.8	10.1
850824	8.8	9.6	10.5
850825	9.1	9.9	11.0
850826	8.7	9.9	11.1
850827	9.0	10.0	11.1
850828	8.7	9.7	10.3
850829	9.2	9.5	9.9
850830	9.0	9.9	10.8
850831	8.8	9.1	9.6
Monthly Value	7.9	10.1	13.9

Appendix Table 2
(continued).

September 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850901	8.7	9.1	9.5
850902	8.3	9.0	9.4
850903	7.8	8.4	9.3
850904	7.1	8.0	8.9
850905	6.3	7.3	8.2
850906	6.7	7.4	8.1
850907	6.9	7.3	7.5
850908	7.5	7.9	8.4
850909	7.6	8.2	8.9
850910	6.9	7.5	8.1
850911	6.3	7.0	7.7
850912	5.8	6.1	6.4
850913	5.6	6.1	6.5
850914	6.0	6.4	6.7
850915	6.3	6.9	7.7
850916	5.3	6.1	6.6
850917	3.8	4.8	5.4
850918	3.2	3.5	3.8
850919	3.0	3.3	3.7
850920	3.4	3.8	4.5
850921	3.0	3.7	4.5
850922	2.9	3.1	3.3
850923	3.0	3.3	3.4
850924	3.3	3.8	4.3
850925	3.6	4.2	4.7
850926	2.9	3.2	3.6
850927	3.0	3.5	4.0
850928	3.6	4.0	4.2
850929	3.6	3.9	4.3
850930	4.0	4.6	5.3
Monthly Value	2.9	5.7	9.5

Appendix Table 2
(continued).

October 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
851001	3.6	4.2	4.6
851002	3.1	3.6	3.9
851003	3.4	4.0	4.5
851004	2.5	3.0	3.4
851005	1.5	2.0	2.5
851006	1.3	1.8	2.1
851007	1.7	2.0	2.2
851008	1.9	2.1	2.4
851009	2.3	2.8	3.4
851010	1.8	2.5	3.0
851011	1.4	2.0	2.4
851012	1.3	1.5	1.8
Monthly Value	1.3	---	4.6

Appendix Table 3

Datapod temperature recorder data summary: surface water temperature (C) recorded at Mainstem Susitna River at Curry Station (RM 120.7).

June 1985

	Surface Water Temperature (C)		
Date	Min	Mean	Max
850615	6.5	7.1	7.7
850616	6.2	6.6	7.1
850617	5.9	6.4	7.0
850618	6.2	6.5	7.1
850619	6.7	7.3	8.4
850620	7.4	7.8	8.2
850621	7.2	7.7	8.5
850622	7.8	8.5	9.5
850623	8.5	9.1	9.7
850624	9.0	9.2	9.5
850625	8.0	8.4	9.1
850626	7.2	7.9	8.5
850627	8.1	8.5	9.4
850628	9.2	9.6	10.3
850629	10.0	10.6	11.2
850630	11.0	11.5	12.5
Monthly Value	5.9	---	12.5

Appendix Table 3
(continued).

July 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850701	10.8	11.6	12.3
850702	9.2	9.7	10.8
850703	8.7	9.0	9.3
850704	8.9	9.2	9.6
850705	9.2	10.0	11.3
850706	10.4	11.1	12.1
850707	11.3	11.8	12.2
850708	10.5	10.9	11.3
850709	9.8	10.5	11.0
850710	10.4	10.9	11.5
850711	11.0	11.4	12.1
850712	11.3	12.0	12.9
850713	11.8	12.1	12.8
850714	11.3	12.1	13.3
850715	11.8	12.6	13.6
850716	12.5	12.9	13.4
850717	12.9	13.5	14.5
850718	13.6	14.3	15.3
850719	13.9	14.6	15.2
850720	13.1	14.2	15.2
850721	10.6	11.5	13.0
850722	10.2	10.6	11.1
850723	11.0	11.4	11.8
850724	11.3	11.6	11.9
850725	10.7	11.2	12.1
850726	11.9	12.3	13.1
850727	12.5	13.3	14.3
850728	13.4	13.7	14.3
850729	12.9	13.4	14.1
850730	11.9	12.3	12.9
850731	11.5	11.7	12.1
Monthly Value	8.7	11.8	15.3

Appendix Table 3
(continued).

August 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850801	11.5	12.4	13.6
850802	12.5	13.1	13.7
850803	12.5	12.9	13.7
850804	11.6	12.0	12.7
850805	11.3	11.9	12.7
850806	12.2	12.6	13.3
850807	11.2	11.9	12.8
850808	10.3	10.9	11.3
850809	9.3	9.6	10.3
850810	8.9	9.2	9.4
850811	8.6	8.9	9.1
850812	8.4	8.6	8.8
850813	8.5	8.8	9.4
850814	8.7	9.0	9.4
850815	8.7	8.9	9.0
850816	8.1	8.5	8.8
850817	8.4	8.8	9.3
850818	8.6	8.9	9.2
850819	8.9	9.3	9.8
850820	8.5	8.8	9.2
850821	8.1	8.4	8.6
850822	7.8	8.1	8.5
850823	8.0	8.6	9.6
850824	8.9	9.2	9.8
850825 [1]	9.1	9.7	10.1
850826 [1]	10.0	10.5	11.0
850827 [1]	10.0	10.4	11.0
850828 [1]	10.0	10.3	11.0
850829 [1]	10.0	10.2	10.5
850830 [1]	10.0	10.3	11.0
850831 [1]	9.5	9.6	10.0
Monthly Value	7.8	10.0	13.7

1/ Data obtained from datapod associated with the total dissolved gas recorder.

Appendix Table 3
(continued)

September 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850901 [1]	9.5	9.7	10.0
850902 [1]	9.0	9.2	10.0
850903 [1]	8.5	8.7	9.0
850904 [1]	7.5	8.3	9.0
850905 [1]	7.0	7.6	8.5
850906 [1]	7.5	7.9	8.5
850907 [1]	7.5	7.8	8.0
850908 [1]	8.0	8.5	9.0
850909	8.0	8.6	9.0
850910	7.5	7.9	8.0
850911	6.2	6.7	7.1
850912	5.6	6.0	6.2
850913	5.6	5.9	6.2
850914	5.8	6.3	6.6
850915	6.3	6.6	6.8
850916	5.0	5.9	6.3
850917	3.6	4.4	5.1
850918	2.9	3.3	3.6
850919	2.8	3.3	3.7
850920	3.3	3.7	4.2
850921	3.0	3.5	4.1
850922	2.7	3.0	3.2
850923	2.9	3.1	3.2
850924	3.1	3.7	4.2
850925	3.1	3.9	4.6
850926	2.8	3.0	3.2
850927	2.8	3.4	3.9
850928	3.6	3.7	3.9
850929	3.5	3.8	4.2
850930	4.0	4.4	4.9
Monthly Value	2.7	5.7	11.0

1/ Data obtained from datapod associated with the total dissolved gas recorder.

Appendix Table 3
(continued)

September 1985

Date	Surface Water Temperature (C) Min	Mean	Max
850901 [1]	9.5	9.7	10.0
850902 [1]	9.0	9.2	10.0
850903 [1]	8.5	8.7	9.0
850904 [1]	7.5	8.3	9.0
850905 [1]	7.0	7.6	8.5
850906 [1]	7.5	7.9	8.5
850907 [1]	7.5	7.8	8.0
850908 [1]	8.0	8.5	9.0
850909	8.0	8.6	9.0
850910	7.5	7.9	8.0
850911	6.2	6.7	7.1
850912	5.6	6.0	6.2
850913	5.6	5.9	6.2
850914	5.8	6.3	6.6
850915	6.3	6.6	6.8
850916	5.0	5.9	6.3
850917	3.6	4.4	5.1
850918	2.9	3.3	3.6
850919	2.8	3.3	3.7
850920	3.3	3.7	4.2
850921	3.0	3.5	4.1
850922	2.7	3.0	3.2
850923	2.9	3.1	3.2
850924	3.1	3.7	4.2
850925	3.1	3.9	4.6
850926	2.8	3.0	3.2
850927	2.8	3.4	3.9
850928	3.6	3.7	3.9
850929	3.5	3.8	4.2
850930	4.0	4.4	4.9
Monthly Value	2.7	5.7	11.0

1/ Data obtained from datapod associated with the total dissolved gas recorder.

Appendix Table 4

Datapod temperature recorder data summary: surface water temperature (C) recorded at Mainstem Susitna River downstream of Gold Creek Bridge (RM 135.8).

June 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850630	10.2	11.0	12.0
Monthly Value	10.2	---	12.0

Appendix Table 4
(continued).

July 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850701	9.9	10.9	12.0
850702	8.7	8.9	9.8
850703	8.4	8.6	9.1
850704	8.6	8.8	9.1
850705	9.1	9.7	11.1
850706	9.6	10.7	12.1
850707	10.9	11.4	12.1
850708	10.1	10.4	10.9
850709	9.4	10.0	10.9
850710	9.8	10.5	11.2
850711	10.5	11.1	11.8
850712	10.9	11.5	12.3
850713	10.9	11.5	12.7
850714	11.1	11.5	12.0
850715	11.6	12.1	12.8
850716	11.6	12.4	13.0
850717	12.4	13.1	14.0
850718	13.0	13.8	14.6
850719	13.0	13.9	14.9
850720	12.3	13.5	14.9
850721	10.0	10.6	12.3
850722	9.7	10.2	11.0
850723	10.6	11.0	11.4
850724	10.5	11.1	11.4
850725	10.1	10.6	11.8
850726	11.2	11.8	12.5
850727	12.1	12.7	13.6
850728	12.5	13.1	13.6
850729	12.1	12.8	13.2
850730	11.0	11.4	12.2
850731	10.9	11.2	11.5
Monthly Value	8.4	11.3	14.9

Appendix Table 4
(continued).

August 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850801	11.0	11.8	12.6
850802	11.9	12.5	13.1
850803	11.7	12.1	12.8
850804	10.6	11.1	11.7
850805	10.8	11.3	12.2
850806	11.6	12.0	12.4
850807	11.0	11.5	12.3
850808	9.7	10.5	11.1
850809	9.0	9.2	9.7
850810	8.4	8.8	9.2
850811	8.4	8.6	8.8
850812	8.0	8.3	8.7
850813	8.1	8.4	9.1
850814	8.4	8.6	9.0
850815	8.3	8.6	8.7
850816	7.5	8.0	8.4
850817	7.8	8.3	8.8
850818	7.9	8.5	9.0
850819	8.7	9.0	9.2
850820	8.2	8.4	8.7
850821	7.8	8.0	8.4
850822	7.7	7.9	8.1
850823	7.9	8.3	9.2
850824	8.9	9.1	9.2
850825	9.0	9.2	9.3
850826	8.9	9.4	9.9
850827	8.9	9.4	9.8
850828	8.9	9.2	9.5
850829	8.9	9.2	9.3
850830	8.9	9.2	9.7
850831	8.6	8.7	9.1
Monthly Value	7.5	9.4	13.1

Appendix Table 4
(continued).

September 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850901	8.6	8.8	8.9
850902	8.0	8.3	8.7
850903	7.6	7.8	8.0
850904	6.9	7.3	7.7
850905	6.2	6.8	7.1
850906	6.9	7.1	7.4
850907	6.9	7.2	7.4
850908	7.2	7.7	8.1
850909	7.3	7.7	8.0
850910	6.8	7.0	7.4
850911	6.3	6.5	6.8
850912	5.7	5.9	6.3
850913	5.6	5.8	5.9
850914	5.9	6.3	6.5
850915	6.2	6.4	6.6
850916	4.9	5.7	6.2
850917	3.7	4.2	4.9
850918	2.9	3.2	3.7
850919	3.0	3.4	3.8
850920	3.5	3.8	4.1
850921	3.1	3.5	3.8
850922	2.8	3.0	3.1
850923	3.0	3.2	3.2
850924	3.2	3.8	4.1
850925	3.1	3.8	4.3
850926	2.8	3.0	3.2
850927	2.8	3.5	4.1
850928	3.6	3.7	3.9
850929	3.6	3.9	4.2
850930	4.1	4.3	4.8
Monthly Value	2.8	5.4	8.9

Appendix Table 4
(continued).

October 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
851001	3.4	3.8	4.2
851002	3.2	3.6	3.8
851003	3.2	3.8	4.2
851004	2.1	2.8	3.3
851005	1.5	1.8	2.2
851006	1.4	1.8	2.1
851007	1.6	1.9	2.2
851008	1.7	2.2	2.6
851009	2.4	2.8	3.4
851010	2.0	2.3	2.7
851011	1.6	2.1	2.7
851012	1.0	1.5	1.7
851013	1.4	1.6	1.8
851014	0.0	0.6	1.5
851015	0.0	0.0	0.1
851016	0.0	0.1	0.4
851017	0.0	0.0	0.1
Monthly Value	0.0	---	4.2

Appendix Table 5

Datapod temperature recorder data summary: surface water temperature (C) recorded at Mainstem Susitna River at LRX 53 (RM 140.1).

June 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850616	6.0	6.5	6.9
850617	5.5	6.3	7.0
850618	6.2	6.6	7.0
850619	6.8	7.4	8.5
850620	7.0	7.7	8.5
850621	7.2	7.7	8.1
850622	7.8	8.3	9.2
850623	8.2	8.9	9.6
850624	8.5	9.0	9.8
850625	7.7	8.3	8.9
850626	6.6	7.5	8.5
850627	7.2	8.3	9.7
850628	8.4	9.4	10.8
850629	9.3	10.3	13.2
850630	10.2	11.1	12.1
Monthly Value	5.5	---	13.2

Appendix Table 5
(continued).

July 1985

Date	Surface Water Temperature (C) Min	Mean	Max
850701	9.9	11.0	12.2
850702	8.7	9.0	9.9
850703	8.4	8.7	9.2
850704	8.6	9.0	9.3
850705	9.2	9.8	11.2
850706	9.7	10.7	12.3
850707	11.0	11.5	12.3
850708	10.2	10.5	11.1
850709	9.5	10.0	11.0
850710	9.9	10.5	11.2
850711	10.5	11.2	11.8
850712	10.8	11.5	12.9
850713	11.0	11.6	12.9
850714	11.3	11.6	12.0
850715	11.6	12.2	12.9
850716	11.5	12.5	13.2
850717	12.5	13.2	14.0
850718	13.1	13.9	14.7
850719	12.9	14.1	15.0
850720	12.2	13.6	15.0
850721	10.0	10.6	12.3
850722	9.7	10.3	11.2
850723	10.6	11.1	11.4
850724	10.5	11.1	13.9
850725	10.0	10.7	11.9
850726	11.2	11.8	12.6
850727	12.1	12.9	13.5
850728	12.5	13.1	13.6
850729	12.2	12.9	13.4
850730	10.8	11.4	12.2
850731	10.9	11.2	11.5
Monthly Value	8.4	11.4	15.0

Appendix Table 5
(continued).

August 1985

Date	Surface Water Temperature (C) Min	Mean	Max
850801	11.1	11.9	12.8
850802	12.0	12.6	13.0
850803	11.7	12.1	12.7
850804	10.5	11.1	11.8
850805	10.8	11.4	12.2
850806	11.8	12.1	12.4
850807	11.0	11.7	12.4
850808	9.6	9.7	11.3
850809	9.0	9.3	9.6
850810	8.4	8.9	9.3
850811	8.4	8.6	10.0
850812	8.0	8.4	8.7
850813	8.0	8.4	9.1
850814	8.4	8.7	9.0
850815	8.3	8.6	8.9
850816	7.6	8.1	8.5
850817	7.8	8.4	8.9
850818	7.9	8.6	9.1
850819	8.8	9.1	9.4
850820	8.3	8.5	8.8
850821	7.8	8.1	8.5
850822	7.7	7.9	8.2
850823	8.0	8.4	9.2
850824	8.9	9.2	9.4
850825	9.1	9.3	9.5
850826	9.0	9.3	9.7
850827	9.0	9.6	10.0
850828	9.1	9.4	9.8
850829	9.1	9.3	9.4
850830	8.9	9.3	9.7
850831	8.7	9.1	9.6
Monthly Value	7.6	9.5	13.0

Appendix Table 5
(continued).

September 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850901	8.7	8.8	9.0
850902	8.1	8.5	9.1
850903	7.6	8.0	8.3
850904	7.3	7.7	8.2
850905	6.4	6.9	7.3
850906	7.0	7.2	7.5
850907	7.1	7.4	7.6
850908	7.4	7.8	8.3
850909	7.5	7.9	8.3
850910	7.0	7.4	8.1
850911	6.5	6.8	7.2
850912	5.9	6.4	6.9
850913	5.9	6.1	6.3
850914	6.2	6.6	6.9
850915	6.7	6.9	7.0
850916	5.9	6.4	6.8
850917	4.4	5.0	6.0
850918	3.6	4.1	4.7
850919	3.5	3.8	4.4
850920	4.3	4.5	4.9
850921	3.9	4.2	4.7
850922	2.8	3.4	4.6
850923	3.3	4.5	4.8
850924	3.2	4.0	5.1
850925	3.8	4.3	5.4
850926	3.2	3.9	4.8
850927	4.4	5.1	6.1
850928	5.1	5.3	5.7
850929	5.1	5.4	5.7
850930	5.5	5.9	6.7
Monthly Value	2.8	6.0	9.1

Appendix Table 5
(continued).

October .1985

Date	Surface Water Temperature (C)		
	Min	Mean	Max
851001	5.2	5.6	6.1
851002	5.0	5.2	5.5
851003	5.4	5.6	5.8
851004	3.4	4.8	5.7
851005	1.6	2.2	3.4
851006	1.6	2.2	3.1
851007	2.1	2.6	3.0
851008	2.3	2.7	3.1
851009	2.8	3.1	3.3
851010	2.2	2.7	3.2
851011	1.7	2.1	2.6
851012	1.0	1.5	2.1
851013	1.4	1.6	1.7
851014	0.0	0.9	1.6
851015	0.0	0.1	0.2
851016	0.0	0.1	0.2
851017	0.1	0.2	0.3
Monthly Value	0.0	---	6.1

Appendix Table 6

Datapod temperature recorder data summary: surface water temperature (C) recorded at Mainstem Susitna River downstream of Devil Canyon (RM 150.1).

June 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850616	6.0	6.6	7.1
850617	5.5	6.2	6.9
850618	6.2	6.6	7.4
850619	7.0	7.6	8.6
850620	7.2	7.8	8.6
850621	7.3	7.8	8.3
850622	8.1	8.5	9.3
850623	8.7	9.3	10.1
850624	8.9	9.5	10.3
850625	7.9	8.4	9.2
850626	6.8	7.6	8.7
850627	7.4	8.4	10.0
850628	8.8	9.8	11.3
850629	9.9	10.8	12.1
850630	11.3	11.9	12.8
Monthly Value	5.5	---	12.8

Appendix Table 6
(continued).

July 1985

Date	Surface Water Temperature (C) Min	Mean	Max
850701	10.9	12.0	12.7
850702	9.3	9.9	10.9
850703	8.7	9.1	9.4
850704	8.9	9.2	9.6
850705	9.5	10.1	11.4
850706	9.9	11.0	12.6
850707	11.5	12.1	12.8
850708	10.7	11.0	11.5
850709	9.4	10.3	11.2
850710	10.0	10.8	11.9
850711	10.6	11.5	12.0
850712	11.1	11.9	13.0
850713	11.2	11.9	12.7
850714	11.7	12.0	12.8
850715	11.7	12.5	13.2
850716	11.7	12.7	13.6
850717	12.7	13.5	14.6
850718	13.4	14.2	14.9
850719	13.2	14.2	15.1
850720	12.3	13.8	15.1
850721	10.1	10.8	12.3
850722	9.9	10.5	11.6
850723	11.0	11.4	11.9
850724	10.8	11.3	12.0
850725	10.3	11.0	12.4
850726	11.3	12.1	13.0
850727	12.2	13.1	13.9
850728	12.6	13.4	14.0
850729	12.4	13.3	14.1
850730	11.1	11.7	12.4
850731	11.4	11.7	12.0
Monthly Value	8.7	11.7	15.1

Appendix Table 6
(continued).

August 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850801	11.8	12.4	13.3
850802	12.3	12.9	13.4
850803	12.0	12.5	12.9
850804	10.4	11.2	12.1
850805	10.9	11.7	12.6
850806	12.0	12.5	12.8
850807	11.5	12.2	12.9
850808	10.0	10.9	11.9
850809	9.4	9.7	10.0
850810	8.4	9.0	9.5
850811	8.7	9.0	9.2
850812	8.5	8.8	9.2
850813	8.6	8.9	9.5
850814	8.7	9.2	9.8
850815	8.8	9.1	9.4
850816	8.2	8.6	9.0
850817	7.9	8.7	9.5
850818	7.9	8.9	9.7
850819	8.9	9.4	10.0
850820	8.5	8.8	9.2
850821	7.9	8.3	8.8
850822	7.8	8.2	8.4
850823	8.0	8.5	9.6
850824 1	9.0	9.5	10.0
850825	10.0	10.3	10.5
850826	9.0	9.7	10.2
850827	9.0	9.7	10.2
850828	8.9	9.6	10.2
850829	9.3	9.5	9.7
850830	9.1	9.4	9.9
850831	8.7	9.2	9.8
Monthly Value	7.8	9.9	13.4

1/ Data obtained from datapod associated with the total dissloved gas recorder.

Appendix Table 6
(continued).

September 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850901	8.8	9.0	9.2
850902	8.2	8.7	9.2
850903	7.6	8.2	8.7
850904	6.9	7.7	8.5
850905	6.2	6.8	7.4
850906	6.9	7.2	7.4
850907	7.0	7.3	7.5
850908	7.3	7.9	8.5
850909	7.7	8.1	8.5
850910	6.9	7.5	8.4
850911	6.3	6.8	7.3
850912	5.7	6.3	6.9
850913	5.5	5.8	6.0
850914	5.8	6.3	6.6
850915	6.6	6.8	6.9
850916	5.6	6.2	6.8
850917	3.7	4.4	5.7
850918	2.6	3.2	4.0
850919	2.7	3.0	3.5
850920	3.2	3.6	3.8
850921	2.8	3.4	3.8
850922	2.7	2.9	3.3
850923	2.8	2.9	3.0
850924	2.9	3.4	3.9
850925	3.4	3.7	3.9
850926	2.6	2.9	3.5
850927	2.6	3.0	3.6
850928	3.2	3.4	3.6
850929	3.5	3.7	4.0
850930	3.9	4.0	4.3
Monthly Value	2.6	5.5	9.2

Appendix Table 6
(continued).

October 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
851001	3.3	3.6	4.2
851002	3.2	3.5	3.7
851003	3.6	3.7	4.0
851004	2.5	3.0	3.8
851005	1.2	1.8	2.7
851006	1.3	1.6	2.0
851007	1.8	1.9	2.2
851008	2.1	2.3	2.7
851009	2.6	2.8	3.2
851010	2.2	2.6	3.2
851011	2.2**	2.3	2.5
851012	1.4	1.8	2.4
851013	1.4	1.7	2.0
851014	0.5	0.9	1.7
851015	0.5	0.5	0.5
851016	0.5	0.5	0.5
Monthly Value	0.5	---	4.2

Appendix Table 7

Datapod temperature recorder data summary: surface water temperature (C) recorded at Mainstem Susitna River at Watana Dam Site (RM 184.2)

June 1985

Date	Surface Water Temperature (C) Min	Mean	Max
850606	4.1	4.6	5.4
850607	3.7	4.3	5.1
850608	4.1	5.0	6.2
850609	4.8	5.8	7.3
850610	5.3	6.7	9.0
850611	7.1	7.8	8.8
850612	6.0	6.9	8.1
850613	5.3	6.0	7.6
850614	6.1	6.8	8.2
850615	6.4	7.0	8.3
850616	5.6	6.2	7.0
850617	4.9	5.8	6.5
850618	6.0	6.6	7.8
850619	7.2	7.8	8.8
850620	7.2	7.8	8.5
850621	7.1	7.8	8.7
850622	7.8	8.7	10.2
850623	8.2	9.5	10.7
850624	8.7	9.3	10.6
850625	7.7	8.1	8.7
850626	6.4	7.2	8.4
850627	7.3	8.3	10.3
850628	8.9	9.9	11.3
850629	10.0	10.9	12.0
850630	11.8	12.0	12.7
Monthly Value	3.7	7.5	12.7

Appendix Table 7
(continued).

July 1985

Date	Surface Water Temperature (C) Min	Mean	Max
850701	10.8	11.7	12.7
850702	9.0	9.7	10.8
850703	8.5	8.9	9.3
850704	8.5	9.0	10.1
850705	9.4	10.1	11.0
850706	9.8	10.8	12.5
850707	11.2	11.6	12.5
850708	9.9	10.5	11.3
850709	8.7	9.8	10.8
850710	9.4	10.3	12.0
850711	10.0	11.0	12.1
850712	10.4	11.4	12.6
850713	10.6	11.3	12.3
850714	10.9	11.7	12.9
850715	10.7	11.8	12.8
850716	10.8	11.9	13.5
850717	11.9	12.8	14.1
850718	12.3	13.1	13.9
850719	12.6	13.2	14.4
850720	11.3	12.6	13.7
850721	9.5	10.2	11.3
850722	9.4	10.1	11.3
850723	10.6	11.0	11.6
850724	9.7	10.4	11.5
850725	9.6	10.5	12.1
850726	10.3	11.6	13.4
850727	11.3	12.3	13.8
850728	11.8	12.7	13.9
850729	11.5	12.3	13.8
850730	10.0	10.7	11.6
850731	10.7	11.2	12.3
Monthly Value	8.5	11.2	14.4

Appendix Table 7
(continued).

August 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850801	11.0	11.8	12.6
850802	11.8	12.1	12.6
850803	11.0	11.5	12.6
850804	9.4	10.3	11.4
850805	10.2	11.0	12.5
850806	11.0	11.7	12.6
850807	10.9	11.4	12.5
850808	9.1	9.9	11.3
850809	8.4	9.0	9.6
850810	7.9	8.5	9.3
850811	8.2	8.8	9.3
850812	8.4	8.7	9.2
850813	8.4	8.9	9.8
850814	8.4	8.9	9.7
850815	8.5	8.8	9.1
850816	7.9	8.5	9.2
850817	7.6	8.5	9.7
850818	7.9	8.9	10.3
850819	8.4	9.0	10.1
850820	8.2	8.6	9.2
850821	7.6	8.0	8.5
850822	7.3	7.9	8.2
850823	7.7	8.4	10.2
850824	8.4	9.2	10.1
850825	8.7	9.4	10.4
850826	8.4	9.4	10.4
850827	8.1	9.4	10.6
850828	8.2	9.2	10.5
850829	8.8	9.3	9.8
850830	8.5	9.0	9.7
850831	8.3	8.8	9.5
Monthly Value	7.3	9.4	12.6

Appendix Table 7
(continued).

September 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
850901	8.3	8.7	9.0
850902	7.5	8.4	9.0
850903	7.2	8.0	8.8
850904	6.1	7.1	8.4
850905	5.5	6.6	7.7
850906	6.1	6.8	7.7
850907	6.5	7.0	7.7
850908	7.7	8.0	8.3
850909	7.4	8.0	8.5
850910	6.4	7.1	8.4
850911 1/	6.0	6.8	7.5
850912 1/	5.5	6.2	7.0
850913 1/	5.0	5.8	6.5
850914 1/	6.5	6.7	7.0
850915 1/	7.0	7.1	7.5
850916 1/	5.0	6.0	7.0
850917	3.0	3.9	5.0
850918	1.9	2.5	3.7
850919	2.3	2.6	3.3
850920	2.8	3.2	3.7
850921	2.0	2.7	3.7
850922	2.0	2.3	3.0
850923	2.0	2.3	3.1
850924	2.7	3.1	3.6
850925	2.5	3.1	3.6
850926	1.9	2.3	3.2
850927	2.3	2.5	2.8
850928	2.4	2.7	3.5
850929 1/	3.0	3.4	4.0
850930 1/	3.5	3.7	4.0
Monthly Value	1.9	5.1	9.0

1/ Data obtained from dataped associated with the total dissloved gas recorder.

Appendix Table 7
(continued).

October 1985			
	Surface Water Temperature (C)		
Date	Min	Mean	Max
851001[1]	3.0	3.4	4.0
851002[1]	3.0	3.4	4.0
851003[1]	3.5	3.6	4.0
851004[1]	2.0	2.7	3.5
851005[1]	0.5	1.3	2.5
851006[1]	0.5	1.0	1.5
851007[1]	1.0	1.2	2.0
851008[1]	1.5	2.0	2.5
851009[1]	2.0	2.4	2.5
851010[1]	1.0	1.8	2.5
851011[1]	1.5	1.7	2.0
851012[1]	1.0	1.3	2.0
851013[1]	0.0	0.6	1.5
851014[1]	0.0	0.1	0.5
851015[1]	0.0	0.1	0.5
851016[1]	0.0	0.4	0.5
Monthly Value	0.0	---	4.0

1/ Data obtained from datapod associated with the total dissloved gas recorder.

Appendix Table 8

Daily turbidity (NTU) collected at Mainstem Susitna River at Talkeetna Station (RM 103.0), Curry Station (RM 120.7), and mean daily Susitna River discharge at Gold Creek (USGS gaging station 15292000).

Date	Talkeetna Station (NTU)	Curry Station (NTU)	Discharge (cfs)
850527	210		38100
850528	160		39700
850529	136		37300
850530	94		34300
850531	76		29100
850601	59		25600
850602	49		24000
850603	49		26800
850604	90		36300
850605	120		37400
850606	90		30600
850607	57		26200
850608	48		24600
850609	53		23700
850610	52		22800
850611	42		21800
850612	40		23800
850613	72		29500
850614	62		29800
850615	61		27400
850616	50		26900
850617	72		28500
850618	54		25900
850619	39		24000
850620	30		23300
850621	36		20900
850622	32		19600
850623	28		20700
850624	37		22900
850625	52		23200
850626	66		26600
850627	79		29500
850628	82		28500
850629	64		29100
850630	74		30100

Appendix Table 8
(continued).

Date	Talkeetna Station (NTU)	Curry Station (NTU)	Discharge (cfs)
850701	112		33900
850702	158		38700
850703			38800
850704			35100
850705			31500
850706			31200
850707			29600
850708			27900
850709			27300
850710	304		25800
850711	256		25000
850712	304		23200
850713	240	240	23100
850714	256	196	22800
850715	240	236	22500
850716	252	236	21500
850717	240	232	21100
850718	264	264	21200
850719	288	300	21100
850720	320	328	24100
850721	480	396	38400
850722	328	344	36200
850723	232	232	29600
850724	172	208	25200
850725	272	216	22100
850726	200	172	20600
850727	144	184	20700
850728	184	256	20100
850729	180	264	19800
850730	176	272	22100
850731	192	244	21600

Appendix Table 8
(Continued).

Date	Talkeetna Station (NTU)	Curry Station (NTU)	Discharge (cfs)
850801	164	204	22600
850802	144	224	21800
850803	164	236	21500
850804	200	240	21400
850805	141	232	19800
850806	124	188	19900
850807	160	194	19700
850808	112	232	19500
850809	168	220	18600
850810	150	192	17800
850811	128	144	16100
850812	104	112	20000
850813	108	108	25800
850814	86	104	25200
850815	88	130	25600
850816	112	130	25000
850817	74	142	24900
850818	156	194	21700
850819	148	152	19500
850820	120	138	18700
850821	86	108	20600
850822	80	89	21900
850823	72	84	21600
850824	43	69	19700
850825	46	30	17900
850826	44	30	16600
850827	44	66	15600
850828	48	66	14600
850829	52	65	14400
850830	56	67	14700
850831	37	62	14800

Appendix Table 8
(continued).

Date	Talkeetna Station (NTU)	Curry Station (NTU)	Discharge (cfs)
850901	50	64	15000
850902	52	55	17500
850903	48	63	17800
850904	64	76	16600
850905	76	62	14200
850906	52	39	12700
850907	40	39	11900
850908	34	39	12600
850909	28	20	15400
850910	26	39	17100
850911	56	92	16900
850912	46		14600
850913	26		13100
850914	39		15100
850915	30		21900
850916	68		26800
850917	84		23200
850918	50		18800
850919	37		16800
850920	26		16500
850921	23		15500
850922	16		13900
850923	16		13200
850924	13		14300
850925	10		13900
850926	10		13300
850927	10		12900
850928	9		12800
850929	8		12500
850930	8		12300

Appendix Table 8
(continued).

Date	Talkeetna Station (NTU)	Curry Station (NTU)	Discharge (cfs)
851001	8		11800
851002	4		11000
851003	6		10900
851004	6		10400
851005	8		9880
851006	6		8960
851007	6		8760
851008	5		9060
851009	5		9240
851010	4		8960
851011	5		8640
851012	5		8100

Appendix Table 9

Comparison of turbidity, suspended solids and settleable solids of water samples collected weekly at five 1985 mainstem Susitna River study sites.

LOCATION	RIVER MILE	DATE	TIME	TURB. (NTU)	SUSP. SOLIDS (MG/L)	SETTLE. SOLIDS (MG/L)	MAINSTEM DISCHARGE GOLD CRK. (CFS)	LOG TURB.	LOG SUSP. SOLIDS	LOG SETTLE. SOLIDS
Mainstem Upstream Of Parks Hwy. Br.	86.2	13-Jul	1630	350.0	623.0	152.0	23100	2.54	2.79	2.18
		14-Jul	1155	330.0	550.0	174.0	22800	2.52	2.74	2.24
		22-Jul	1605	390.0	748.0	220.0	36200	2.59	2.87	2.34
		28-Jul	1500	400.0	751.0	331.0	20100	2.60	2.88	2.52
		08-Aug	2030	270.0	580.0	233.0	19500	2.43	2.76	2.37
		13-Aug	2000	150.0	533.0	278.0	25800	2.18	2.73	2.44
		22-Aug	1800	110.0	222.0*	99.0	21900	2.04	2.35	2.00
		27-Aug	1415	90.0	178.0	66.0	15600	1.95	2.25	1.82
		04-Sep	1842	100.0	188.0	59.0	16600	2.00	2.27	1.77
		11-Sep	1900	80.0	213.0	124.0	16900	1.90	2.33	2.09
		17-Sep	1910	100.0	213.0	107.0	23200	2.00	2.33	2.03
		25-Sep	1300	36.0	80.0	43.0	13900	1.56	1.90	1.63
		29-Sep	1800	30.0	93.0	46.0	12500	1.48	1.97	1.66
		09-Oct	1225	19.0	60.0	37.0	9240	1.28	1.78	1.57
Mainstem At Talkeetna Station	103.0	13-Jul	1525	150.0	234.0	116.0	23100	2.54	2.79	2.18
		14-Jul	1140	150.0	200.0	74.0	22800	2.52	2.74	2.24
		22-Jul	1537	220.0	476.0	206.0	36200	2.59	2.87	2.34
		28-Jul	1433	170.0	224.0	72.0	20100	2.60	2.88	2.52
		08-Aug	2000	120.0	160.0	40.0	19500	2.43	2.76	2.37
		13-Aug	1916	62.0	154.0	91.0	25800	2.18	2.73	2.44
		22-Aug	1745	61.0	94.0	40.0	21900	2.04	2.35	2.00
		27-Aug	1335	21.0	37.0	6.0	15600	1.95	2.25	1.82
		04-Sep	1825	45.0	63.0	28.0	16600	2.00	2.27	1.77
		11-Sep	1815	60.0	105.0	44.0	16900	1.90	2.33	2.09
		17-Sep	1850	50.0	145.0	91.0	23200	2.00	2.33	2.03
		25-Sep	1345	6.5	8.0	2.5	13900	1.56	1.90	1.63
		29-Sep	1705	4.5	7.3	4.1	12500	1.48	1.97	1.66
		09-Oct	1305	3.3	5.5	3.2	9240	1.28	1.78	1.57
Mainstem Upstream Of Curry Station	120.9	13-Jul	1300	145.0	236.0	113.0	23100	2.18	2.37	2.06
		14-Jul	1125	135.0	196.0	78.0	22800	2.18	2.30	1.87
		22-Jul	1525	210.0	512.0	257.0	36200	2.34	2.68	2.31
		28-Jul	1348	160.0	226.0	71.0	20100	2.23	2.35	1.86
		08-Aug	1840	120.0	140.0	60.0	19500	2.08	2.20	1.60
		13-Aug	1744	54.0	116.0	69.0	25800	1.79	2.19	1.96
		22-Aug	1725	50.0	84.0	44.0	21900	1.79	1.97	1.60
		27-Aug	1250	38.0	39.0	10.0	15600	1.32	1.57	0.78
		04-Sep	1608	45.0	74.0	30.0	16600	1.65	1.80	1.45
		11-Sep	1607	60.0	116.0	55.0	16900	1.78	2.02	1.64
		17-Sep	1828	50.0	124.0	64.0	23200	1.70	2.16	1.96
		25-Sep	1440	7.0	8.8	3.8	13900	0.81	0.90	0.40
		29-Sep	1550	5.2	9.0	3.2	12500	0.65	0.86	0.61
		09-Oct	1405	3.2	6.8	5.8	9240	0.52	0.74	0.51

Appendix Table 9
(continued).

LOCATION	RIVER MILE	DATE	TIME	TURB. (NTU)	SUSP. SOLIDS (MG/L)	SETTLE. SOLIDS (ML/L)	MAINSTEM DISCHARGE GOLD CRK. (CFS)	LOG TURB.	LOG SUSP. SOLIDS	LOG SETTLE. SOLIDS
Mainstem Downstream	135.8	13-Jul	1225	140.0	220.0	82.0	23100	2.16	2.37	2.05
Of Gold Creek Bridge		14-Jul	1105	140.0	208.0	73.0	22800	2.13	2.29	1.89
		22-Jul	1515	220.0	592.0	351.0	36200	2.32	2.71	2.41
		28-Jul	1246	170.0	226.0	77.0	20100	2.20	2.35	1.85
		08-Aug	1757	130.0	190.0	60.0	19500	2.08	2.15	1.78
		13-Aug	1711	60.0	132.0	81.0	25800	1.73	2.06	1.84
		22-Aug	1710	57.0	100.0	50.0	21900	1.70	1.92	1.64
		27-Aug	1210	22.0	53.0	18.0	15600	1.58	1.59	1.00
		04-Sep	1751	55.0	84.0	45.0	16600	1.65	1.87	1.48
		11-Sep	1415	55.0	129.0	69.0	16900	1.78	2.06	1.74
		17-Sep	1810	55.0	136.0	77.0	23200	1.70	2.09	1.81
		25-Sep	1530	7.9	10.0	3.0	13900	0.85	0.94	0.58
		29-Sep	1455	5.7	6.7	2.3	12500	0.72	0.95	0.51
		09-Oct	1450	3.6	3.7	2.8	9240	0.51	0.83	0.76
Mainstem Upstream	149.4	13-Jul	1147	130.0	228.0	85.0	23100	2.15	2.34	1.91
Of Portage Creek		14-Jul	1020	140.0	229.0	92.0	22800	2.15	2.32	1.86
		22-Jul	1410	200.0	482.0	258.0	36200	2.34	2.77	2.55
		28-Jul	1215	160.0	256.0	93.0	20100	2.23	2.35	1.89
		08-Aug	1722	140.0	200.0	70.0	19500	2.11	2.28	1.78
		13-Aug	1642	50.0	116.0	61.0	25800	1.78	2.12	1.91
		22-Aug	1545	60.0	106.0	58.0	21900	1.76	2.00	1.70
		27-Aug	1140	45.0	52.0	23.0	15600	1.34	1.72	1.26
		04-Sep	1757	55.0	106.0	50.0	16600	1.74	1.92	1.65
		11-Sep	1252	60.0	123.0	61.0	16900	1.74	2.11	1.84
		17-Sep	1730	55.0	186.0	124.0	23200	1.74	2.13	1.89
		25-Sep	1705	8.2	12.0	7.5	13900	0.90	1.00	0.48
		29-Sep	1330	6.1	9.0	3.4	12500	0.76	0.83	0.36
		09-Oct	1515	4.2	7.5	1.5	9240	0.56	0.57	0.45

Appendix Table 10

Susitna River mean daily total dissolved gas and percent saturation recorded at Curry Station (RM 120.7) with mean daily Susitna River discharge at Gold Creek (USGS gaging station 15292000).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
850824	724.60	95.82	19700
850825	724.58	95.80	17900
850826	724.67	95.60	16600
850827	724.75	95.71	15600
850828	724.17	96.16	14600
850829	724.00	96.57	14400
850830	723.83	96.63	14700
850831	722.08	95.86	14800
850901	722.00	96.13	15000
850902	721.33	95.64	17500
850903	719.33	95.95	17800
850904	718.75	95.50	16600
850905	716.67	94.29	14200
850906	717.25	94.25	12700
850907	717.68	94.85	11900
850908	719.00	95.99	12600
850909	718.92	96.46	15400
850910	717.08	96.23	17100
850911	716.00	95.08	16900
850912	713.92	94.58	14600
850913	713.08	94.75	13100
850914	714.42	96.37	15100
850915	715.58	96.92	21900
850916	713.67	94.96	26800
850917	709.67	93.82	23200
850918	706.25	94.62	18800
850919	705.75	95.17	16800
850920	707.42	93.90	16500
850921	706.67	93.27	15500
850922	705.08	94.28	13900
850923	705.92	94.45	13200
850924	706.92	94.77	14300
850925	707.83	93.54	13900
850926	705.08	93.38	13300
850927	705.58	94.30	12900
850928	706.42	93.98	12800
850929	706.61	95.12	12500
850930	708.67	95.65	12300

Appendix Table 10
(continued).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
851001	707.42	95.68	11800
851002	706.33	94.54	11000
851003	706.75	93.45	10900
851004	704.75	92.79	10400
851005	701.83	91.76	9880
851006	700.92	93.82	8960
851007	701.42	93.09	8760
851008	701.75	95.29	9060
851009	703.75	95.85	9240
851010	703.00	95.04	8960
851011	727.00	98.08	8640
851012	753.75	101.54	8100
851013	758.42	101.62	7650
851014	761.00	101.42	7230
851015	750.50	101.62	6960
851016	740.50	98.18	6600

Appendix Table 11

Susitna River mean daily total dissolved gas and percent saturation recorded downstream of Gold Creek Bridge (RM 135.8) with mean daily Susitna River discharge at Gold Creek (USGS gaging station 15292000).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
850824	791.50	104.66	19700
850825	790.33	104.49	17900
850826	790.00	104.22	16600
850827	789.25	104.23	15600
850828	782.25	103.87	14600
850829	777.08	103.66	14400
850830	778.50	103.93	14700
850831	780.67	103.64	14800
850901	779.08	103.73	15000
850902	783.08	103.83	17500
850903	783.25	104.48	17800
850904	784.17	104.19	16600
850905	787.33	103.59	14200
850906	784.42	103.08	12700
850907	777.83	102.89	11900
850908	769.08	102.67	12600
850909	766.08	102.79	15400
850910	760.33	102.04	17100
850911	769.75	102.21	16900
850912	782.33	103.64	14600
850913	780.83	103.75	13100
850914	767.33	103.51	15100
850915	771.75	104.53	21900
850916	798.25	106.21	26800
850917	803.92	106.28	23200
850918	800.00	107.18	18800
850919	797.17	107.49	16800
850920	795.67	105.62	16500
850921	792.58	104.60	15500
850922	788.58	105.45	13900
850923	787.42	105.35	13200
850924	786.00	105.37	14300
850925	784.50	103.67	13900
850926	779.92	103.29	13300
850927	778.83	104.09	12900
850928	777.75	103.47	12800
850929	776.00	104.46	12500
850930	775.33	104.72	12300

Appendix Table 11
(continued).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
851001	772.42	104.47	11800
851002	772.67	103.42	11000
851003	781.58	103.35	10900
851004	785.42	103.42	10400
851005	789.25	103.19	9880
851006	792.08	106.02	8960
851007	791.42	105.03	8760
851008	784.25	106.50	9060
851009	782.67	106.59	9240
851010	778.42	105.24	8960
851011	777.67	104.91	8640
851012	775.42	104.46	8100
851013	775.50	103.91	7650
851014	772.17	102.91	7230
851015	769.25	104.16	6960
851016	766.00	101.56	6600

Appendix Table 12

Susitna River mean daily total dissolved gas and percent saturation recorded downstream of Devil Canyon (RM 150.1) with mean daily Susitna River discharge at Gold Creek (USGS gaging station 15292000).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
850615	864.57	114.52	27400
850616	855.67	112.90	26900
850617	854.92	114.47	28500
850618	847.50	112.75	25900
850619	847.83	112.38	24000
850620	845.08	112.21	23300
850621	841.00	111.53	20900
850622	838.58	110.87	19600
850623	839.25	111.30	20700
850624	839.58	111.75	22900
850625	838.25	111.74	23200
850626	852.42	113.26	26600
850627	862.75	114.13	29500
850628	860.75	113.54	28500
850629	865.58	114.34	29100
850630	867.75	115.09	30100
850701	874.67	116.06	33900
850702	881.42	116.85	38700
850703	878.08	116.73	38800
850704	873.75	116.12	35100
850705	866.25	115.29	31500
850706	867.83	115.25	31200
850707	865.67	115.05	29600
850708	863.17	114.25	27900
850709	862.50	114.33	27300
850710	857.50	114.16	25800
850711	858.42	114.23	25000
850712	859.00	114.09	23200
850713	863.17	114.32	23100
850714	865.83	114.32	22800
850715	864.50	114.32	22500
850716	859.83	113.61	21500
850717	864.58	114.06	21100
850718	854.25	112.90	21200
850719	850.92	113.04	21100
850720	857.25	114.75	24100
850721	887.33	118.32	38400
850722	882.08	117.97	36200
850723	867.50	116.09	29600
850724	861.00	114.49	25200
850725	854.67	113.16	22100
850726	859.25	113.27	20600
850727	844.50	111.46	20700
850728	841.83	111.57	20100
850729	839.42	111.52	19800
850730	842.25	112.47	22100
850731	841.17	112.58	21600

Appendix Table 12
(continued).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
850801	844.33	113.26	22600
850802	847.17	113.33	21800
850803	851.25	113.50	21500
850804	853.83	113.97	21400
850805	854.83	114.09	19800
850806	855.67	113.83	19900
850807	850.42	114.05	19700
850808	850.17	113.62	19500
850809	850.42	113.45	18600
850810	847.42	112.78	17800
850811	------	------	16100
850812	------	------	20000
850813	------	------	25800
850814	851.17	112.41	25200
850815	847.25	112.29	25600
850816	845.75	112.23	25000
850817	844.67	112.22	24900
850818	840.67	111.58	21700
850819	836.17	111.01	19500
850820	830.83	110.92	18700
850821	827.50	111.57	20600
850822	836.92	111.85	21900
850823	844.58	111.82	21[illegible]00
850824	842.58	111.42	19[illegible]00
850825	834.08	110.28	17900
850826	831.25	109.67	16600
850827	830.25	109.65	15600
850828	823.50	109.35	14600
850829	819.67	109.34	14400
850830	820.00	109.47	14700
850831	824.17	109.41	14800

1/ Data not available.

Appendix Table 12
(continued).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
850901	822.00	109.44	15000
850902	828.42	109.84	17500
850903	826.67	110.27	17800
850904	826.17	109.77	16600
850905	829.83	109.18	14200
850906	829.17	108.96	12700
850907	822.75	108.83	11900
850908	816.08	108.95	12600
850909	814.75	109.32	15400
850910	819.00	109.91	17100
850911	825.92	109.67	16900
850912	823.83	109.14	14600
850913	820.25	108.99	13100
850914	810.50	109.33	15100
850915	819.92	111.06	21900
850916	843.42	112.22	26800
850917	840.83	111.16	23200
850918	822.25	110.16	18800
850919	812.67	109.59	16800
850920	823.58	109.33	16500
850921	827.25	109.18	15500
850922	815.75	109.08	13900
850923	813.08	108.79	13200
850924	813.08	109.00	14300
850925	822.67	108.72	13900
850926	819.91	108.59	13300
850927	810.83	108.37	12900
850928	813.00	108.15	12800
850929	805.50	108.44	12500
850930	802.08	108.26	12300

Appendix Table 12
(continued).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
851001	799.42	108.12	11800
851002	803.67	107.57	11000
851003	813.25	107.54	10900
851004	814.50	107.25	10400
851005	817.25	106.85	9880
851006	807.67	108.11	8960
851007	802.00	106.44	8760
851008	788.00	107.01	9060
851009	780.83	106.34	9240
851010	785.25	106.16	8960
851011	801.17	108.08	8640
851012	799.83	107.75	8100
851013	801.67	107.42	7650
851014	805.00	107.29	7230
851015	796.42	107.84	6960

Appendix Table 13

Susitna River mean daily total dissolved gas and percent saturation recorded at Watana Dam Site (RM 184.2) with mean daily Susitna River discharge at Gold Creek (USGS gaging station 15292000).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
850825	741.56	98.04	17900
850826	740.33	97.67	16600
850827	741.08	97.87	15600
850828	735.25	97.63	14600
850829	731.25	97.54	14400
850830	732.33	97.77	14700
850831	733.75	97.41	14800
850901	733.00	97.59	15000
850902	735 42	97.51	17500
850903	733.25	97.81	17800
850904	738.00	98.06	16600
850905	767.42	100.97	14200
850906	------ 1/	-----	12700
850907	------	-----	11900
850908	------	-----	12600
850909	------	-----	15400
850910	------	-----	17100
850911	733.33	97.38	16900
850912	734.42	97.30	14600
850913	735.75	97.76	13100
850914	726.42	97.99	15100
850915	722.58	97.87	21900
850916	730.75	97.23	26800
850917	736.83	97.41	23200
850918	728.67	97.62	18800
850919	724.00	97.63	16800
850920	731.25	97.07	16500
850921	737.50	97.34	15500
850922	729.42	97.54	13900
850923	728.25	97.44	13200
850924	728.50	97.67	14300
850925	738.83	96.98	13900
850926	733.00	97.34	13300
850927	732.42	97.89	12900
850928	730.50	97.58	12800
850929	726.92	97.86	12500
850930	723.08	97.60	12300

1/ Data not available.

Appendix Table 13
(Continued).

Date	Mean Daily Total Dissloved Gas	Mean Daily % Saturation	Mean Daily Discharge (cfs)
851001	720.75	97.48	11800
851002	724.50	96.98	11000
851003	734.33	97.10	10900
851004	734.83	96.76	10400
851005	739.75	96.72	9880
851006	738.42	98.84	8960
851007	733.75	97.38	8760
851008	722.08	98.06	9060
851009	715.75	97.48	9240
851010	717.67	97.03	8960
851011	721.42	97.33	8640
851012	720.75	97.10	8100
851013	721.75	96.71	7650
851014	727.58	96.97	7230
851015	721.25	97.66	6960

Appendix Table 14

Dissolved oxygen (D.O.) and pH data collected for long term water quality monitoring at mainstem Susitna River locations during 1985.

	DATE	TIME	D.O. (mg/l)	% SAT'N.	pH
UPSTR.OF PARKS HWY	13-Jul	1630	11.7	101	8.4
RM 84.2	14-Jul	1150	11.7	99	8.2
	27-Jul	1209	12.3	106	8.3
	28-Jul	1505	11.8	104	8.3
	08-Aug	2035	10.8	90	8.5
	13-Aug	2000	10.5	91	8.2
	22-Aug	1005	11.2	94	7.4
	27-Aug	1415	11.1	95	7.9
	11-Sep	1905	11.5	93	7.8
	17-Sep	1915	11.8	92	7.9
	25-Sep	1300	12.0	91	7.8
	29-Sep	1000	11.7	90	7.9
	09-Oct	1222	12.4	90	8.0
TALKEETNA STATION	11-Jul	1059	11.1	101	7.7
RM 102.8	13-Jul	1525	10.8	100	7.7
	14-Jul	1141	10.8	100	7.8
	27-Jul	1326	10.8	105	7.8
	28-Jul	1433	10.7	104	8.0
	08-Aug	2005	9.8	88	8.0
	13-Aug	1915	10.5	92	7.8
	22-Aug	1746	11.0	94	7.4
	27-Aug	1335	10.3	94	7.8
	11-Sep	1815	11.0	91	7.9
	17-Sep	1856	12.0	94	7.5
	25-Sep	1345	12.2	94	7.8
	29-Sep	1705	12.0	91	8.1
	09-Oct	1310	12.5	92	8.3
UPSTR OF CURRY STA	03-Jul 1/	1200	10.7	94	7.1
RM 120.9	10-Jul 1/	1730	11.1	104	8.0
	11-Jul	1230	10.9	98	8.0
	13-Jul	1302	10.9	100	7.9
	14-Jul	1122	11.0	102	7.6
	24-Jul 1/	1730	11.3	104	7.2
	27-Jul	1418	11.2	106	7.8
	28-Jul	1351	11.1	105	7.9
	01-Aug 1/	1330	11.4	106	6.9
	08-Aug 1/	1800	11.0	98	7.2
	08-Aug	1845	10.1	90	7.9
	13-Aug	1745	10.6	92	7.9
	15-Aug 1/	1300	12.8	110	7.0
	22-Aug	1330	11.2	95	7.8
	23-Aug 1/	1800	11.9	105	6.8
	27-Aug	1250	10.8	99	7.8
	29-Aug 1/	1000	11.8	103	6.9
	11-Sep	1610	11.5	94	7.8

Appendix Table 14 (continued).

	12-Sep 1/	1100	12.6	98	7.3
	15-Sep 1/	1600	12.3	100	7.0
	17-Sep	1835	12.4	95	7.8
	20-Sep 1/	1700	13.9	105	7.0
	25-Sep	1445	12.2	94	7.7
	29-Sep	1535	12.0	91	8.0
	09-Oct	1405	12.2	86	8.2
DWNSTR OF GOLD CR BRIDGE	03-Jul 2/	1000	11.9	104	7.0
	11-Jul	1525	11.6	105	8.0
RM 135.8	13-Jul	1224	10.8	97	8.0
	14-Jul	1104	11.3	104	7.6
	14-Jul 2/	1800	10.9	100	7.1
	25-Jul 2/	1630	11.5	106	7.4
	27-Jul	1505	11.6	108	7.8
	28-Jul	1249	11.1	105	8.0
	31-Jul 2/	1800	12.2	111	7.1
	08-Aug	1800	10.3	90	8.0
	11-Aug	1514	10.8	92	8.0
	12-Aug 2/	1300	12.6	105	7.0
	13-Aug	1710	11.1	96	7.8
	14-Aug 2/	1200	12.8	109	7.0
	22-Aug	1708	11.0	94	7.3
	25-Aug 2/	1600	12.4	108	6.8
	27-Aug	1210	10.8	94	7.9
	28-Aug 2/	1100	12.4	105	7.1
	11-Sep	1415	11.6	94	8.0
	12-Sep 2/	1700	12.9	102	7.0
	17-Sep	1815	12.6	95	7.9
	21-Sep 2/	1100	13.7	101	7.4
	25-Sep	1530	12.5	95	8.1
	29-Sep	1445	12.4	94	8.3
	09-Oct	1450	12.3	90	8.2
UPSTR OF PORTAGE CREEK	01-Jun 3/	1500	12.6	97	7.5
	02-Jul 3/	1200	11.5	100	7.0
RM 149.4	11-Jul 3/	1430	11.9	104	7.1
	13-Jul	1147	11.5	105	8.1
	14-Jul	1025	11.6	106	7.8
	22-Jul	1640	11.1	104	8.0
	28-Jul	1218	11.6	108	7.9
	31-Jul 3/	1230	12.2	110	7.1
	08-Aug	1728	10.9	96	8.0
	11-Aug	1320	11.7	100	8.2
	12-Aug 3/	1400	12.0	104	7.0
	13-Aug	1640	11.6	100	7.8
	14-Aug 3/	1300	13.0	110	6.8
	22-Aug	1545	11.6	96	8.0
	27-Aug	1140	11.4	96	8.0
	28-Aug 3/	1100	13.2	113	7.0
	11-Sep	1250	12.2	99	8.0
	13-Sep 3/	1200	13.2	104	7.3
	17-Sep	1736	13.0	98	7.8
	21-Sep 3/	1200	14.8	106	7.6

Appendix Table 14 (continued).

	25-Sep	1710	13.0	96	7.8
	29-Sep	1330	13.3	99	8.0
	09-Oct 3/	1100	13.8	100	7.2
	09-Oct	1515	12.3	90	8.3
WATANA DAM SITE	14-Jul	940	10.2	92	8.2
RM 184.2	22-Aug	1440	9.9	82	8.2
	25-Aug	1615	10.1	88	8.0
	10-Sep	1445	10.6	85	8.0
	17-Sep	1703	11.6	84	8.1
	09-Oct	1543	11.5	82	8.4

1/ Data collected by Task 6 personnel to supplement Task 7 and were obtained between RM 120.4 and 120.6.

2/ Data collected by Task 6 between RM 136.1 & 136.7.

3/ Data collected by Task 6 between RM 150.0 & 150.2.

Appendix Table 15

A Comparison of Dissolved Oxygen Percent Saturation Levels Among ADF&G and USGS Water Quality Monitoring Stations for 1985

	USGS Sunshine Station at Parks Highway Bridge (RM 83.9)	
Period	n	Range
May - September	25	83 - 103
	ADF&G Station upstream of the Parks Highway Bridge (RM 86.2)	
Period	n	Range
July - October	13	90 - 106
	ADF&G Talkeetna Station (RM 102.8)	
Period	n	Range
July - October	14	88 - 105
	ADF&G Station Upstream of Curry (RM120.9)	
Period	n	Range
July - October	25	86 - 110
	ADF&G Station Downstream of Gold Creek Bridge (RM 135.8)	
Period	n	Range
July - October	25	90 - 111
	USGS Station at Gold Creek (RM 136)	
Period	n	Range
June - September	20	80 - 98

Appendix Table 15

A Comparison of Dissolved Oxygen Percent Saturation Levels Among ADF&G and USGS Water Quality Monitoring Stations for 1985

	USGS Sunshine Station at Parks Highway Bridge (RM 83.9)	
Period	n	Range
May - September	25	83 - 103
	ADF&G Station upstream of the Parks Highway Bridge (RM 86.2)	
Period	n	Range
July - October	13	90 - 106
	ADF&G Talkeetna Station (RM 102.8)	
Period	n	Range
July - October	14	88 - 105
	ADF&G Station Upstream of Curry (RM120.9)	
Period	n	Range
July - October	25	86 - 110
	ADF&G Station Downstream of Gold Creek Bridge (RM 135.8)	
Period	n	Range
July - October	25	90 - 111
	USGS Station at Gold Creek (RM 136)	
Period	n	Range
June - September	20	80 - 98

Appendix Table 15 (Cont'd)

	ADF&G Station Upstream of Portage Creek RM 149.4	
Period	n	Range
June - October	24	90 - 113

	ADF&G Station at the Proposed Watana Dam Site (RM 184.2)	
Period	n	Range
July - October	6	82 - 92

Appendix Table 16

A Summary of pH Data Obtained at ADF&G and USGS Water Qualtiy Monitoring Stations in the Portion of the Susitna River Extending from the Parks Highway Bridge to the Proposed Watana Dam Site

Sunshine Station at Parks Highway Bridge
RM 83.9 USGS

Period	n	Range
May - September 1981	21	7.2 - 8.0
April - September 1982	18	6.9 - 8.0
May - August 1983	9	7.2 - 8.1
May - September 1984	25	7.2 - 8.1

Parks Highway Bridge
RM 83.9 ADF&G

Period	n	Range
July - October 1983	7	7.3 - 7.6

Upstream of Parks Highway Bridge
RM 86.2 ADF&G

Period	n	Range
July - October 1985	13	7.4 - 8.5

Talkeetna Station
RM 103 ADF&G

Period	n	Range
June - October 1983	82	7.1 -7.8
July - October 1985	14	7.4 - 8.3

Curry Station
RM 120.0 ADF&G

Period	n	Range
June - October 1983	8	7.2 - 7.6

Appendix Table 16 (Cont'd)

Upstream of Curry
RM 120.9 ADF&G

Period	n	Range
July - October 1985	25	6.8 - 8.2

Downstream of Gold Creek
RM 135.8 ADF&G

Period	n	Range
July - October 1985	25	6.8 - 8.3

Gold Creek Camp
RM 136.8 ADF&G

Period	n	Range
June - November 1983	72	6.3 - 8.2

Gold Creek Station
RM 136.6 USGS

Period	n	Range
May - September 1981	25	6.4 - 7.7
May - September 1982	20	6.7 - 8.0
May - August 1983	20	7.4 - 8.0
May - September 1984	25	7.0 - 8.0

Upstream of Portage Creek
RM 149.4 ADF&G

Period	n	Range
June - October 1985	24	6.8 - 8.3

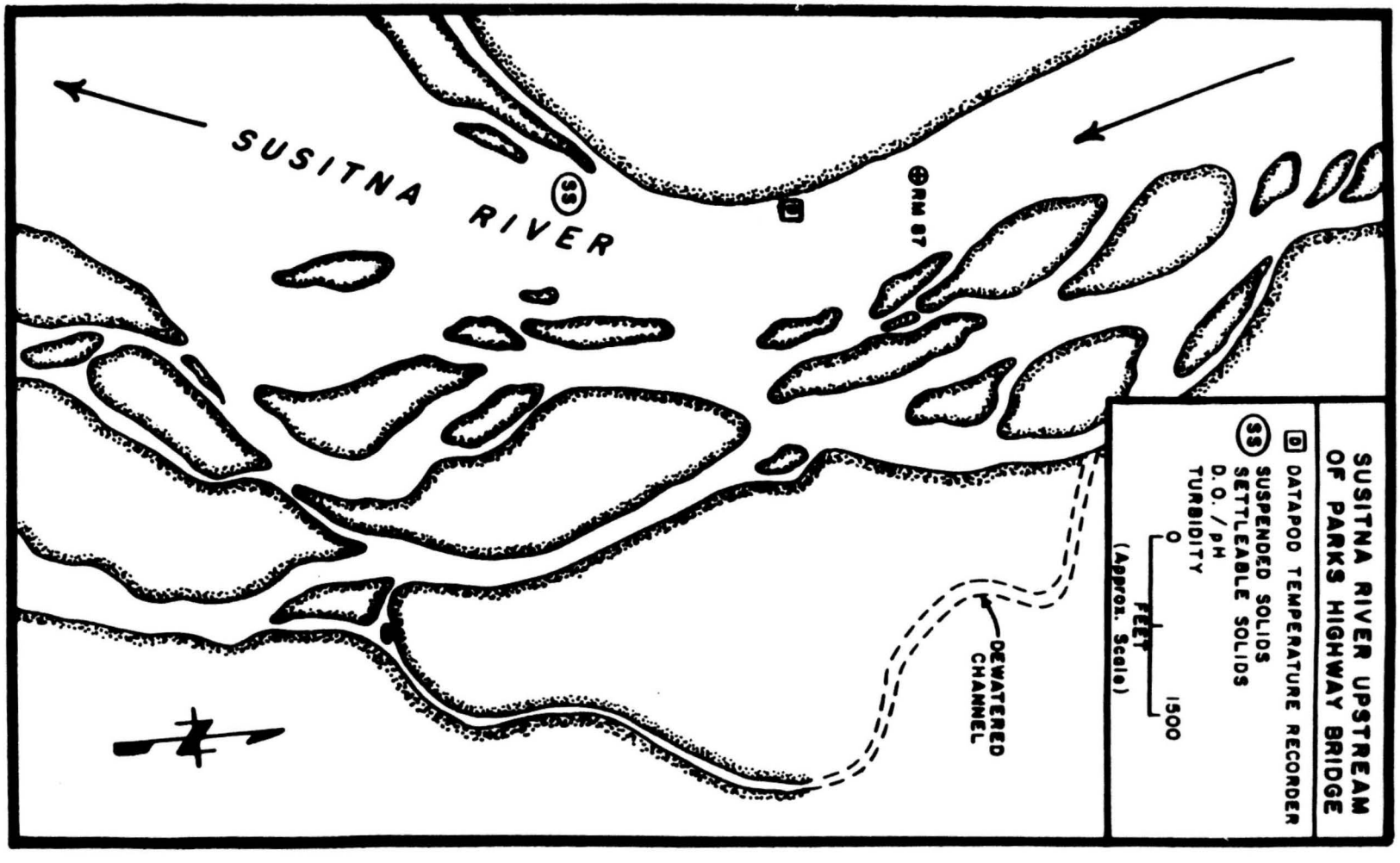
Back Eddy, in Devil Canyon
RM 150.1 ADF&G

Period	n	Range
July - October 1983	5	7.0 - 7.7

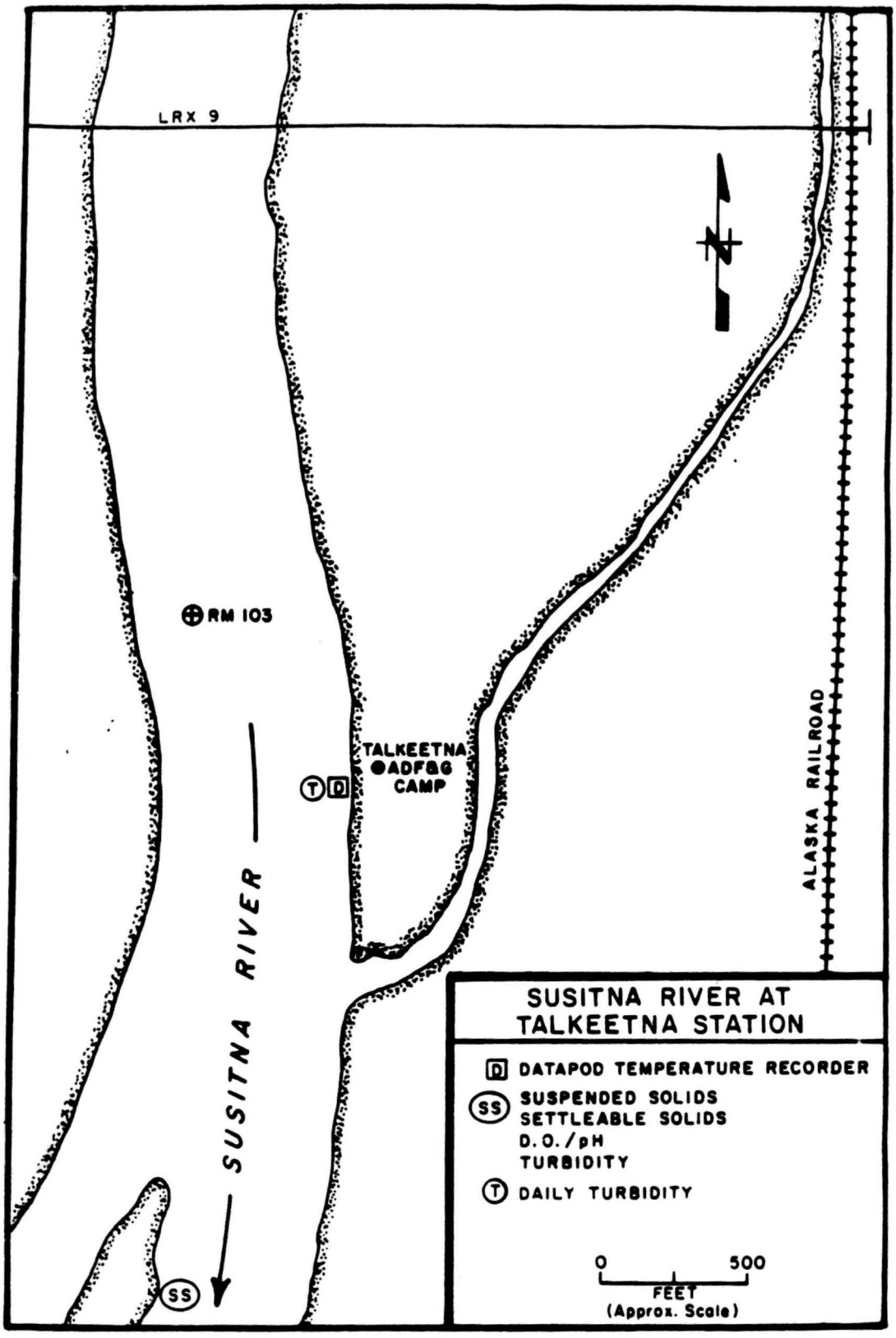
Appendix Table 16 (Cont'd)

Watana Dam Site
RM 184.2 ADF&G

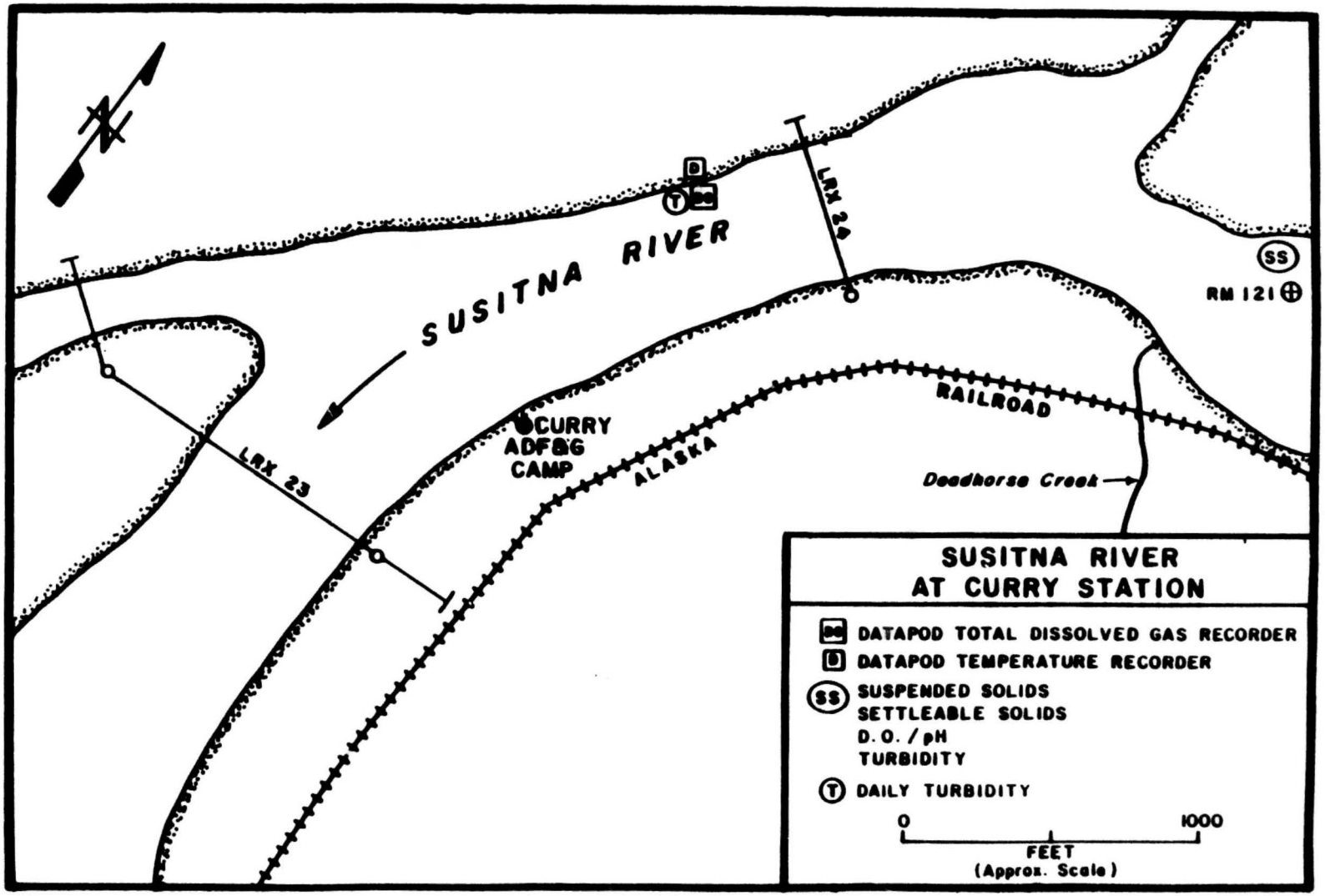
Period	n	Range
July - October 1985	6	8.0 - 8.4



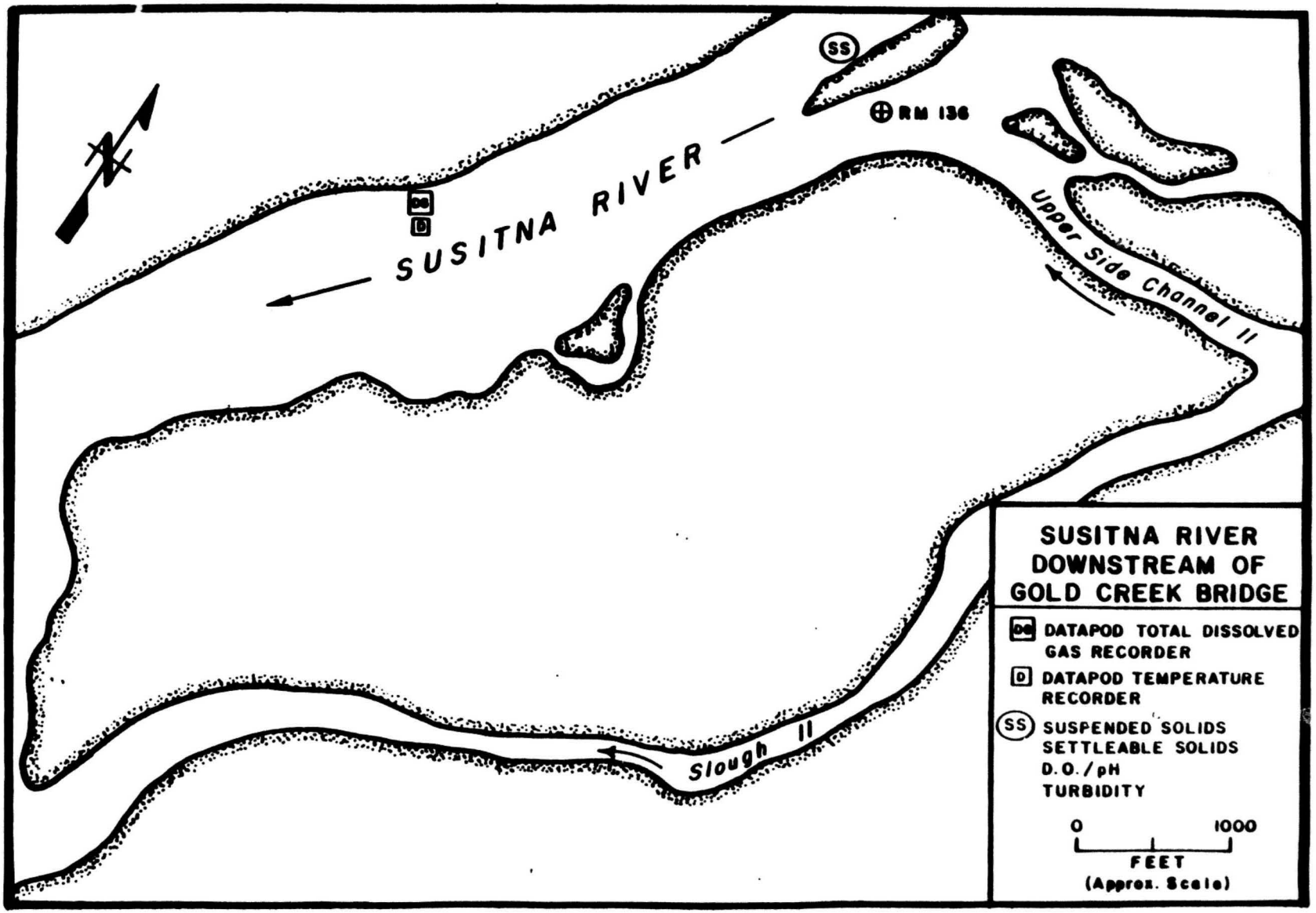
Appendix Figure 1. Site map of the water quality monitoring station located upstream of the Parks Highway Bridge.



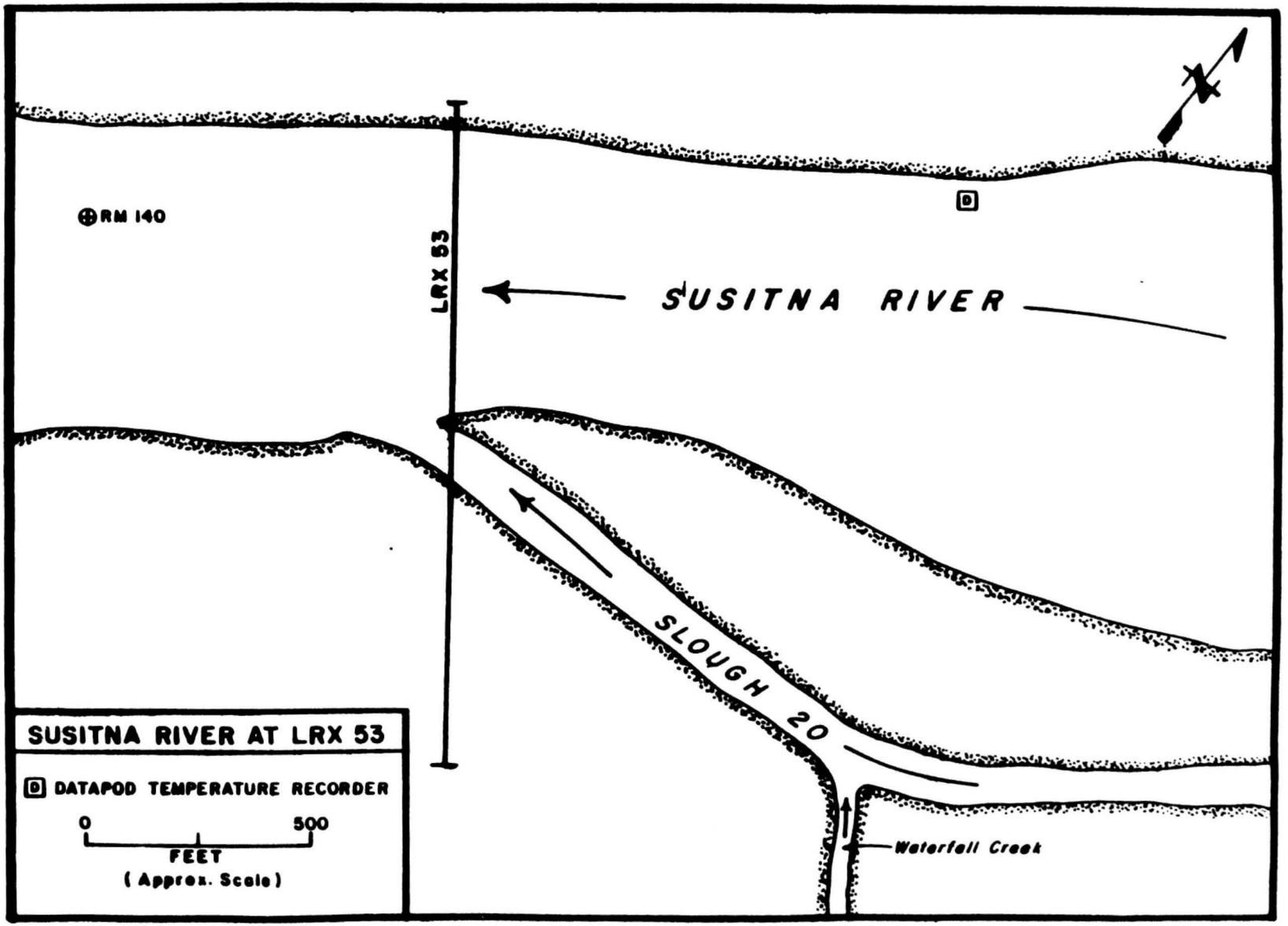
Appendix Figure 2. Site map of the Talkeetna water quality monitoring station.



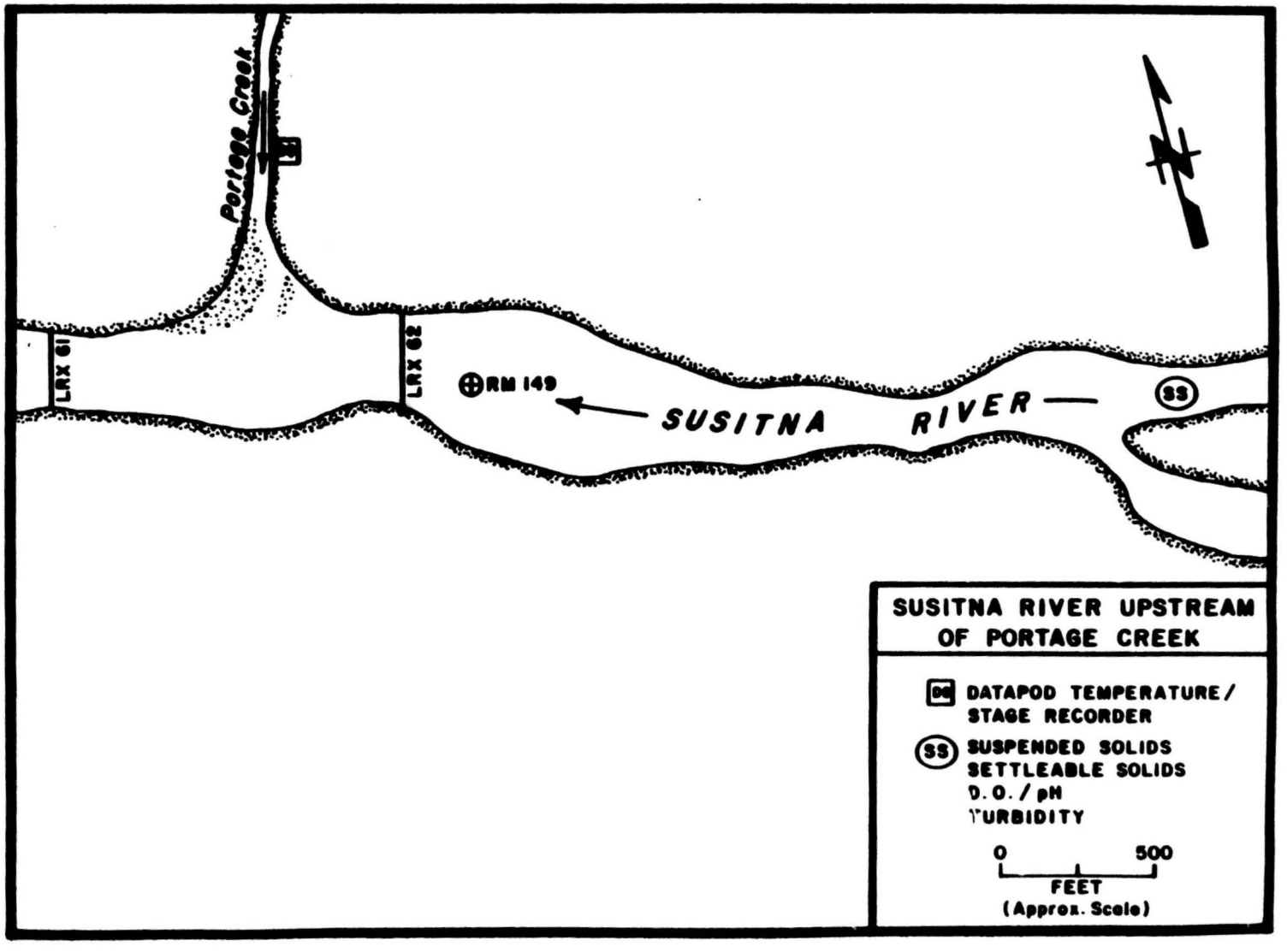
Appendix Figure 3. Site map of the Curry water quality station.



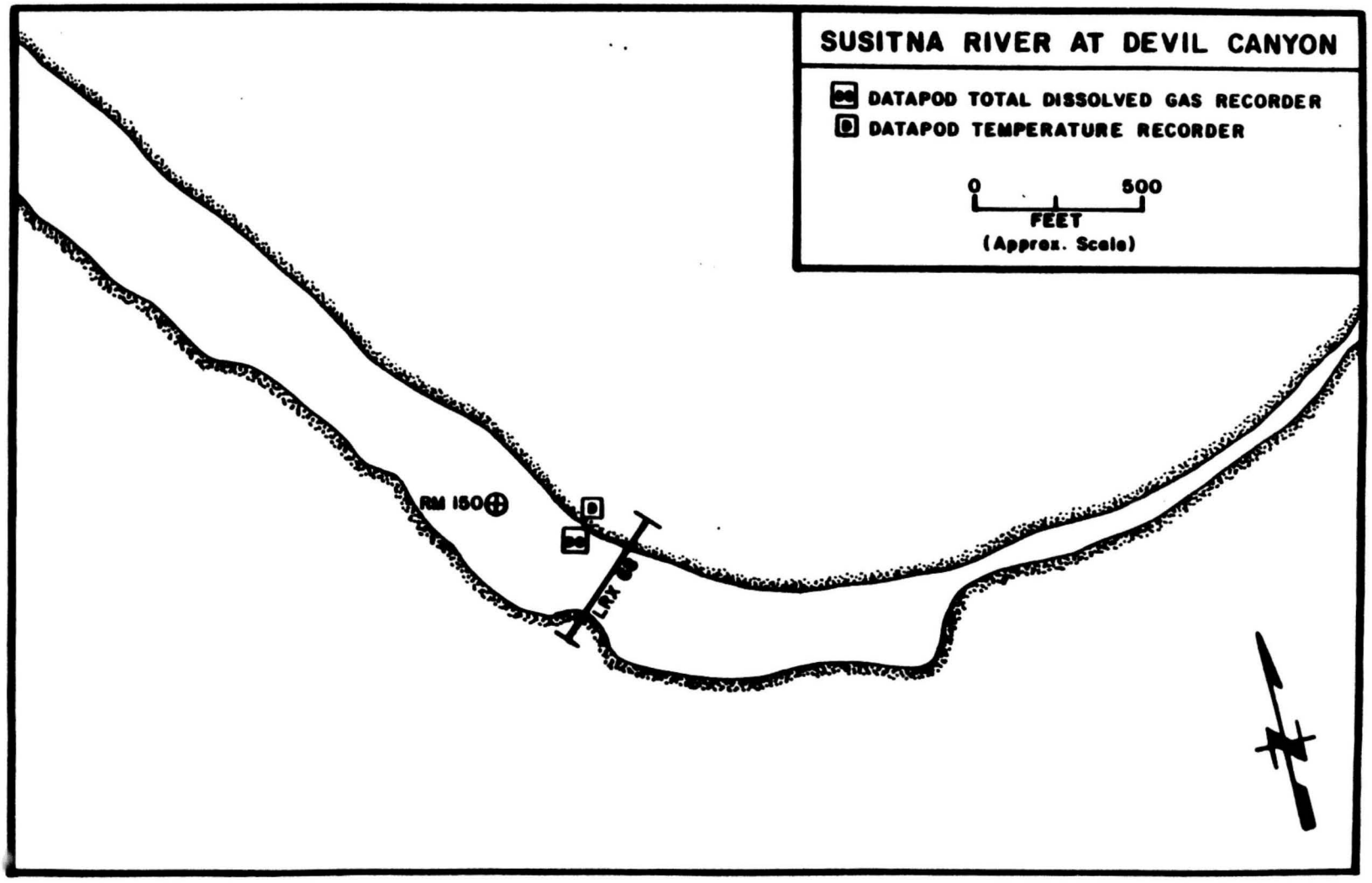
Appendix Figure 4. Site map of the water quality monitoring station located downstream of the Gold Creek Bridge.



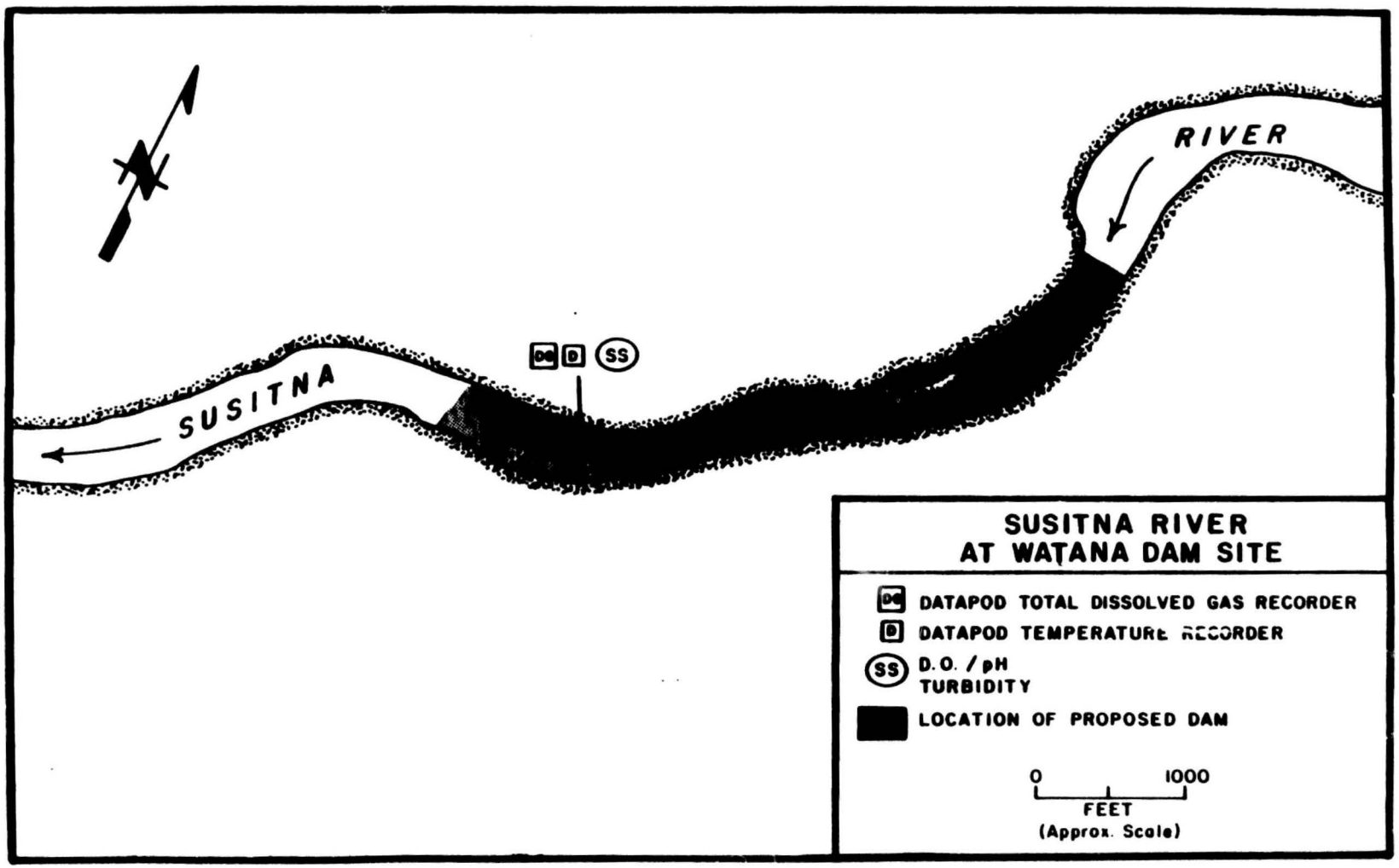
Appendix Figure 5. Site map of the LRX 53 water quality monitoring station.



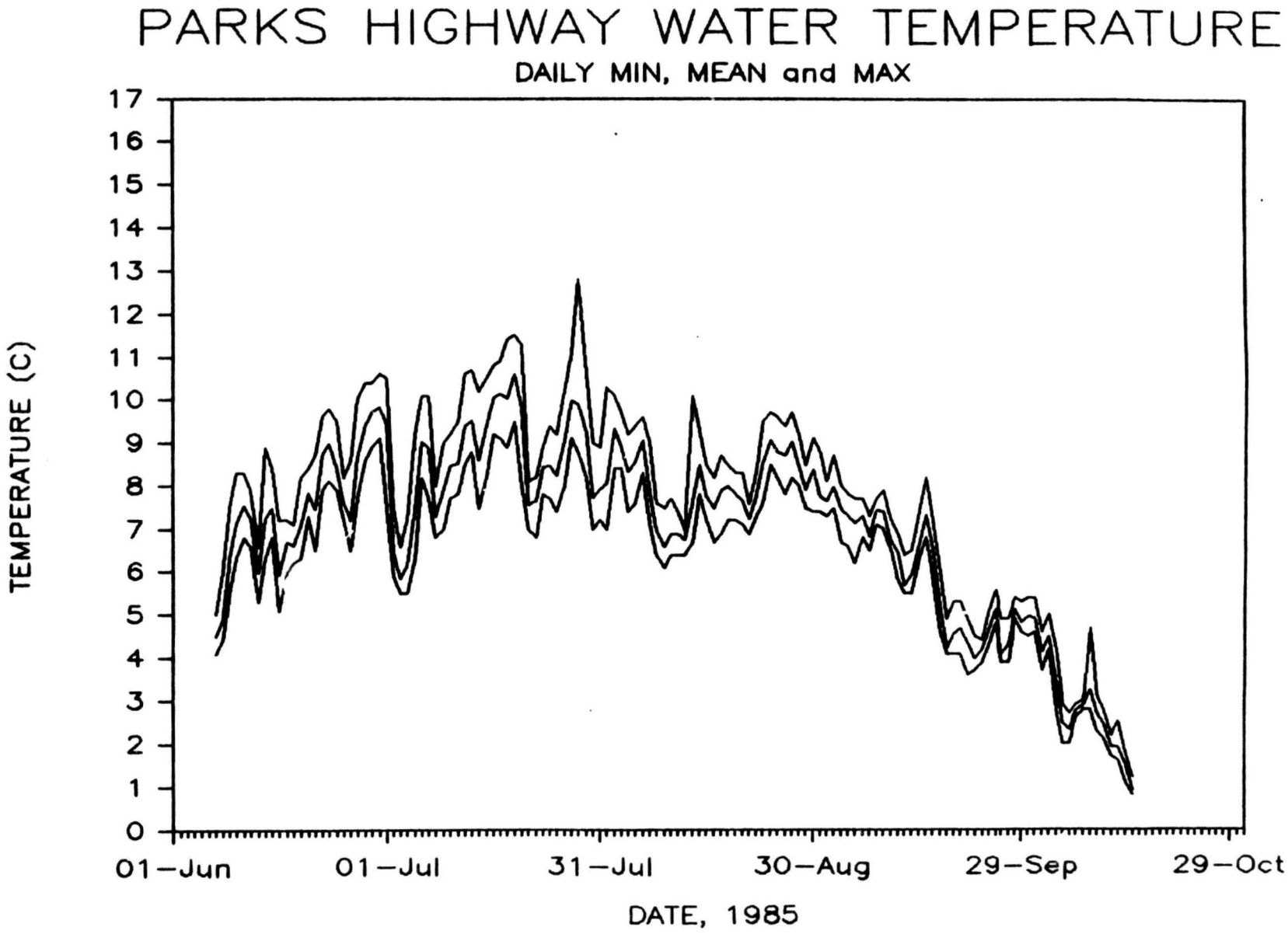
Appendix Figure 6. Site map of the water quality monitoring station located upstream of Portage Creek.



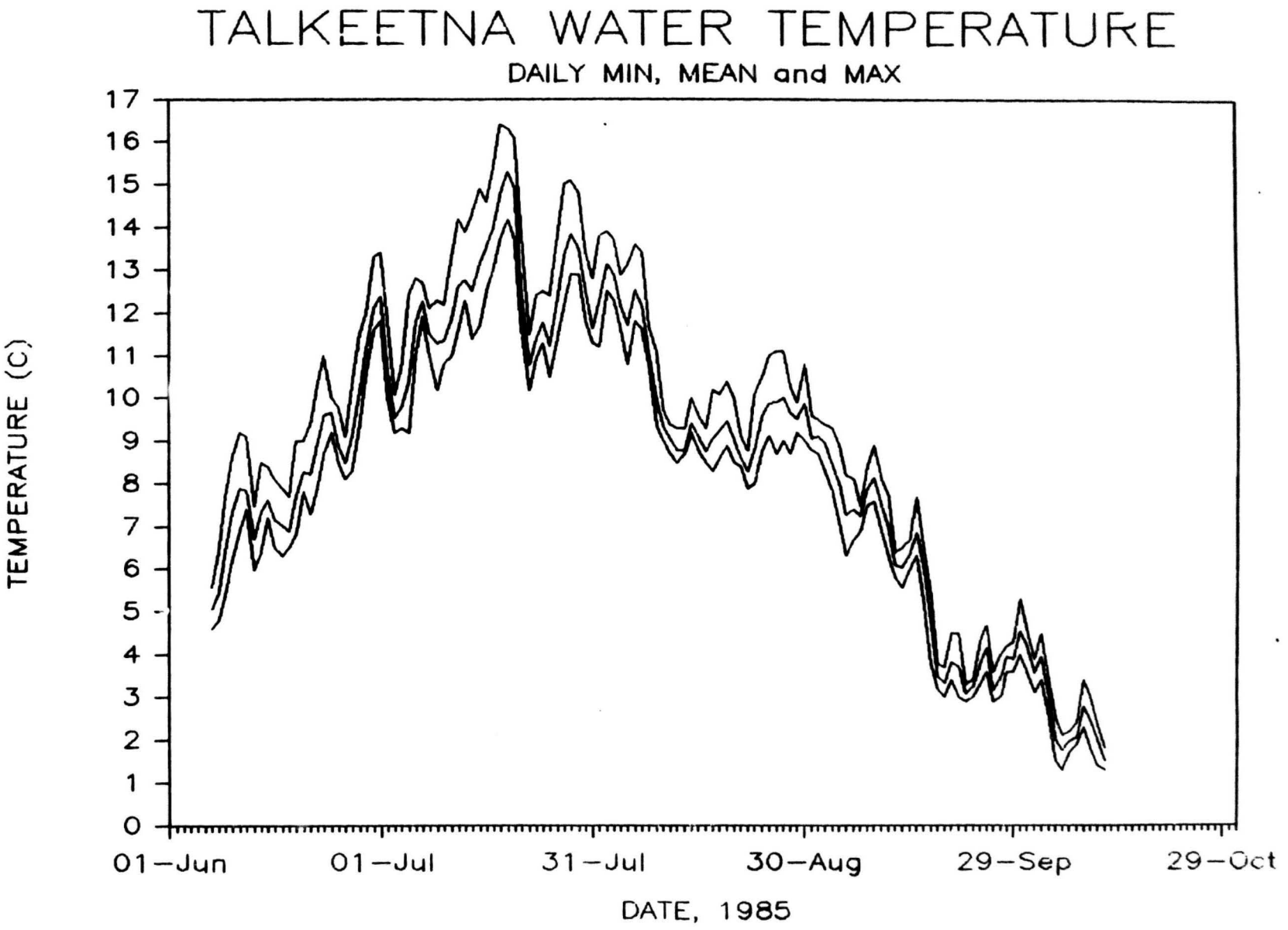
Appendix Figure 7. Site map of the water quality monitoring station located downstream of Devil Canyon.



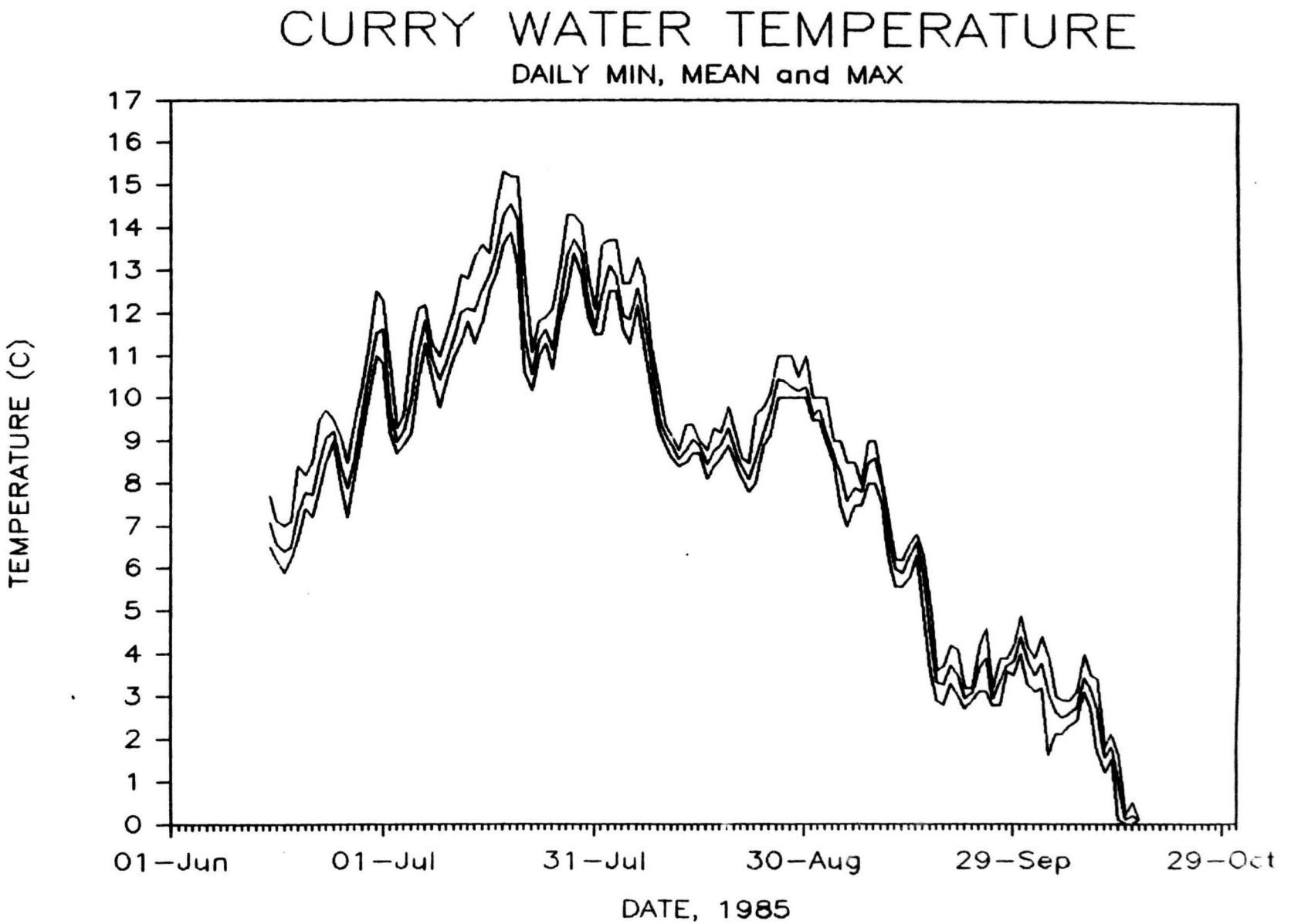
Appendix Figure 8. Site map of the water quality monitoring station at the proposed Watana Dam Site.



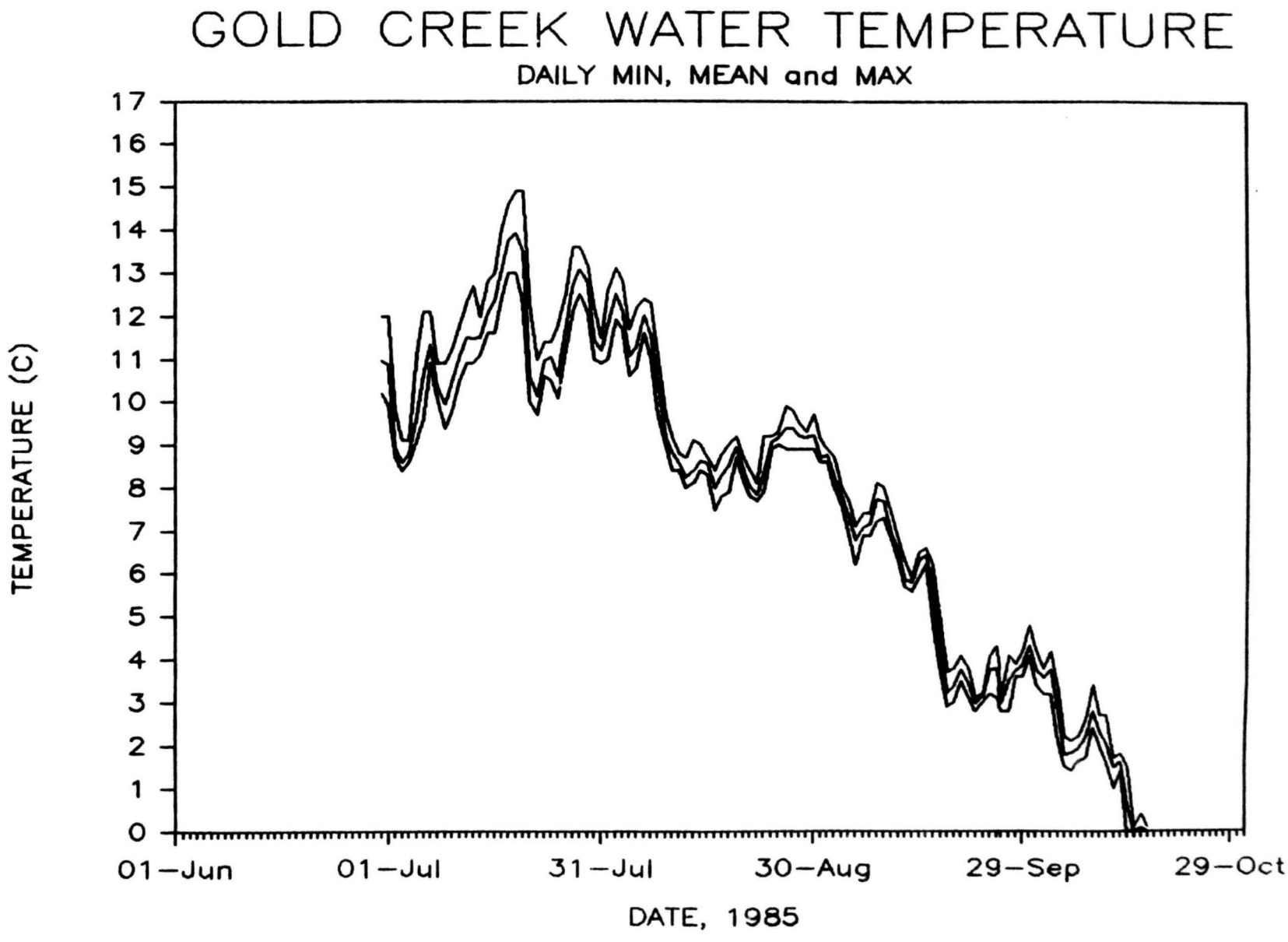
Appendix Figure 9. Daily minimum, mean, and maximum water temperatures monitored upstream of the Parks Highway Bridge (RM 86.6).



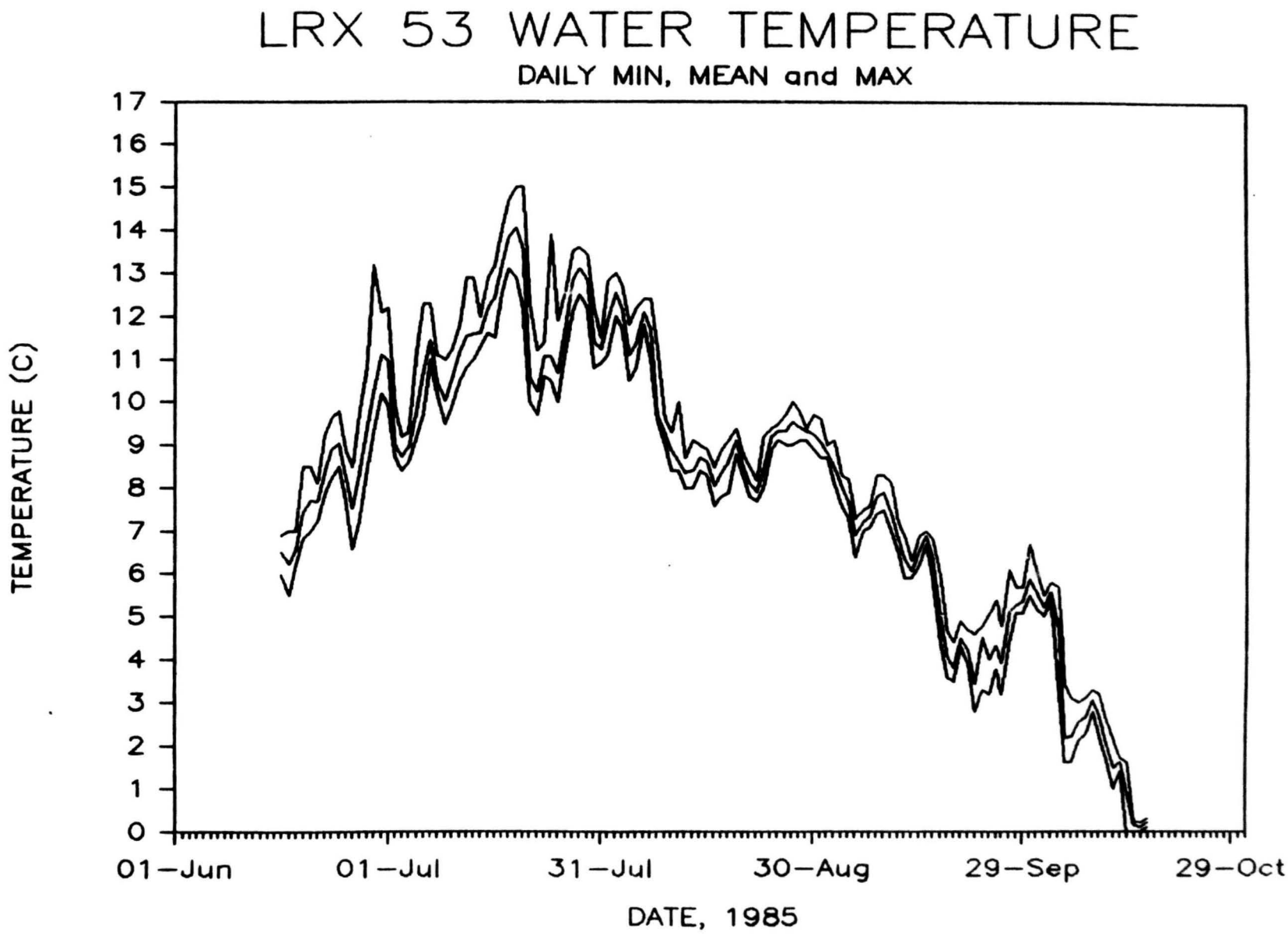
Appendix Figure 10. Daily minimum, mean, and maximum water temperatures monitored at the Talkeetna Station (RM 103.0).



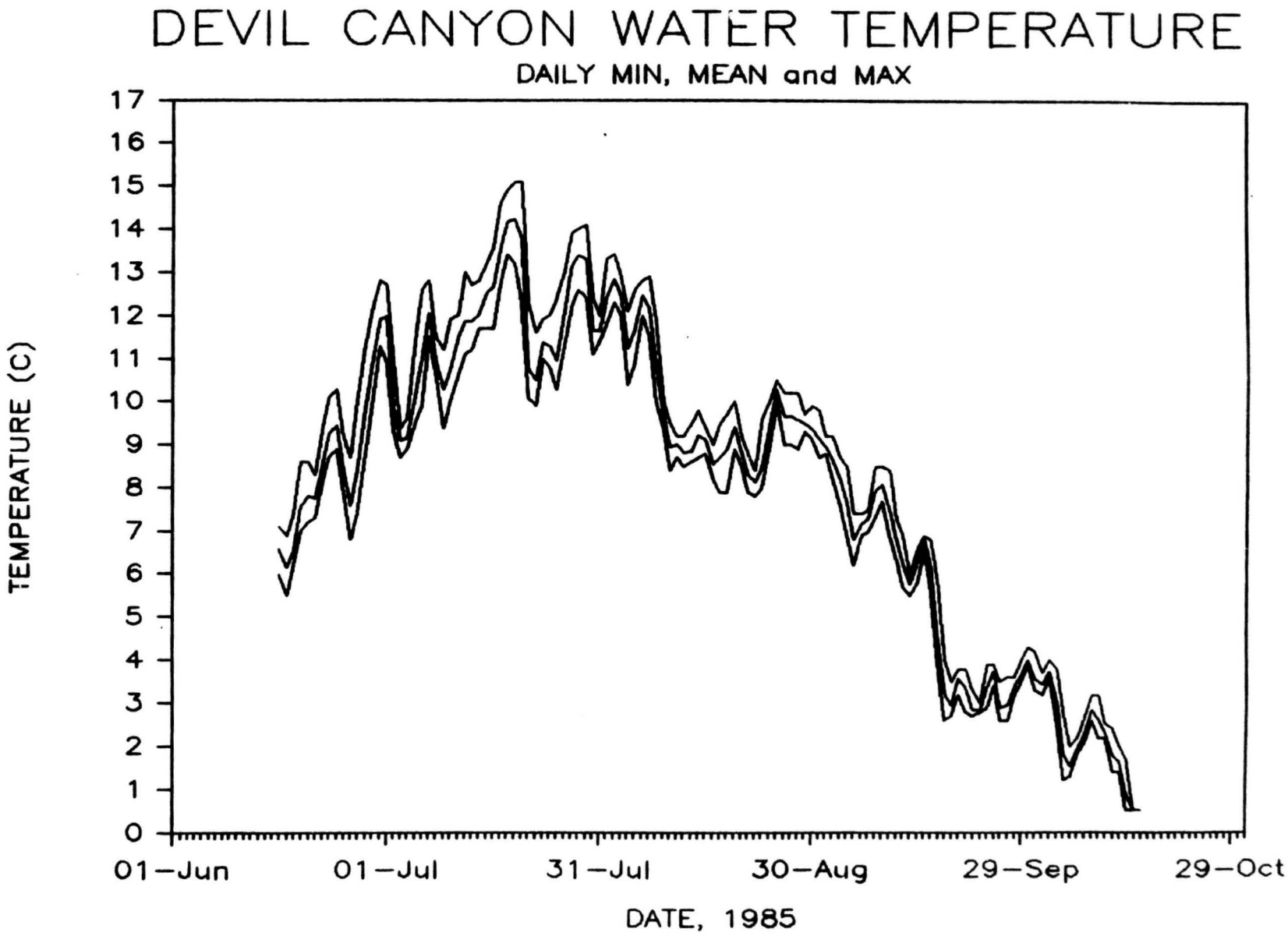
Appendix Figure 11. Daily minimum, mean, and maximum water temperatures monitored at the Curry Station (RM 120.7).



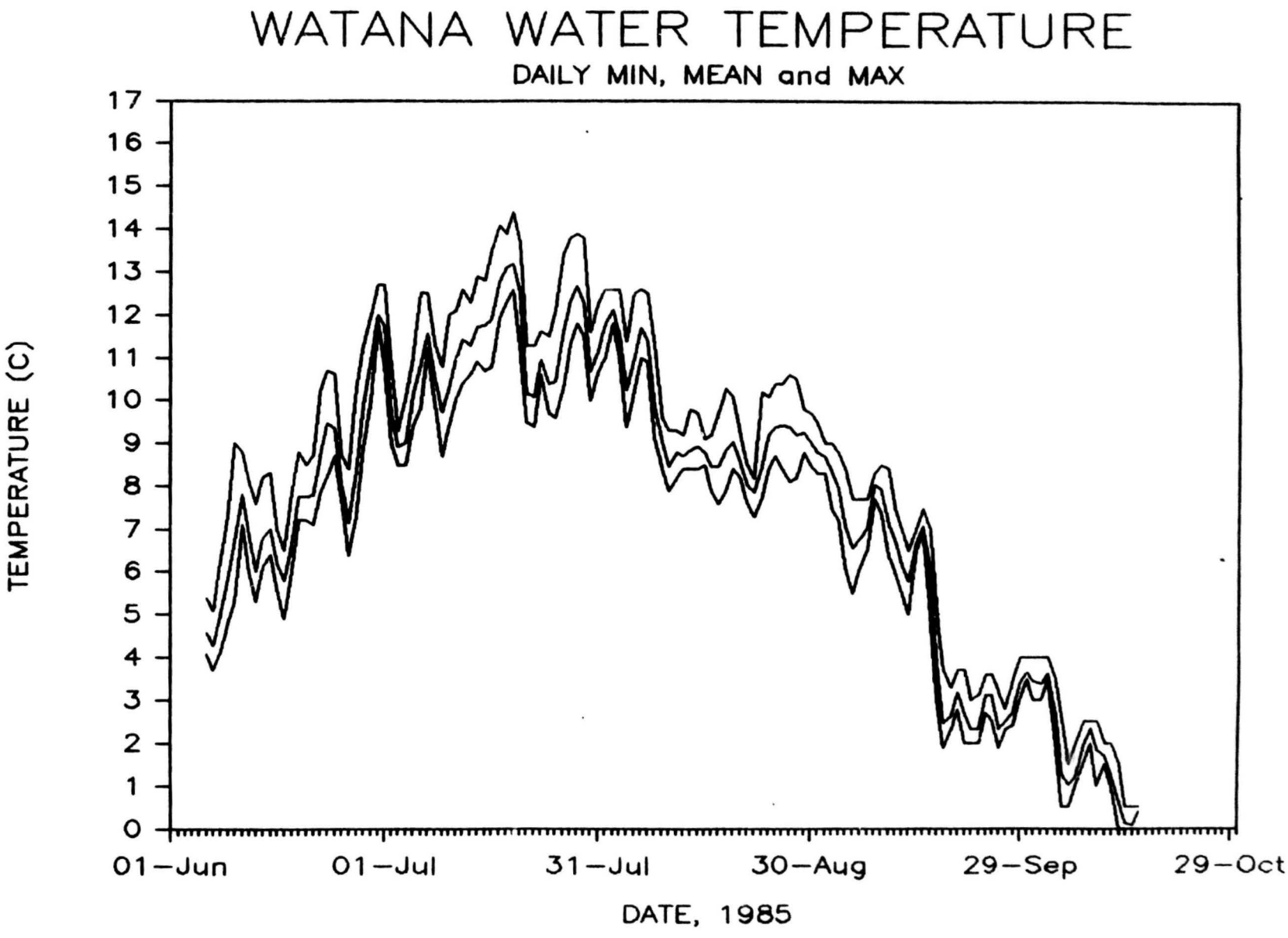
Appendix Figrue 12. Daily minimum, mean, and maximum water temperatures monitored at the Gold Creek Station (RM 135.8).



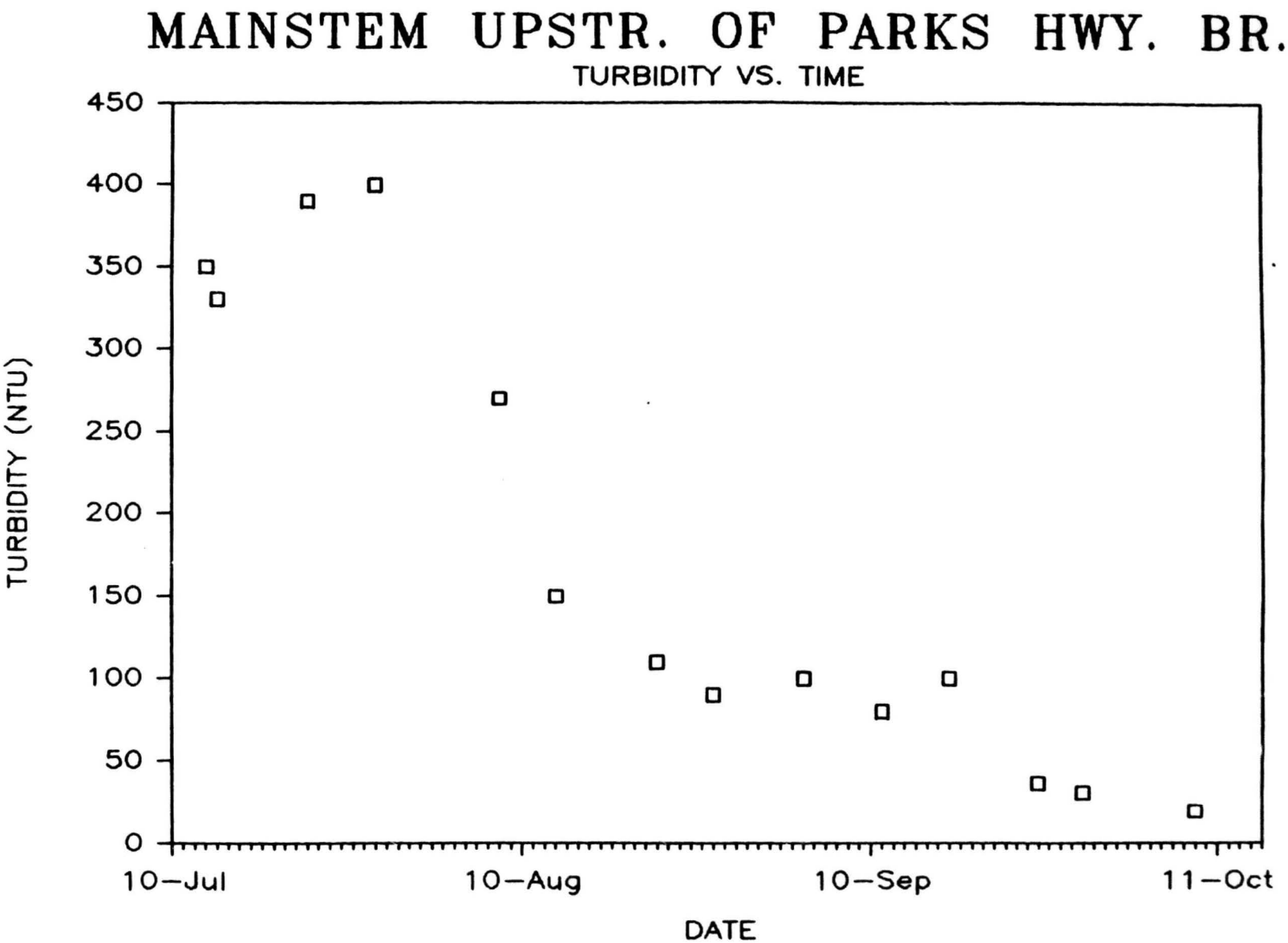
Appendix Figure 13. Daily minimum, mean, and maximum water temperatures monitored at the LRX 53 Station (RM 140.1).



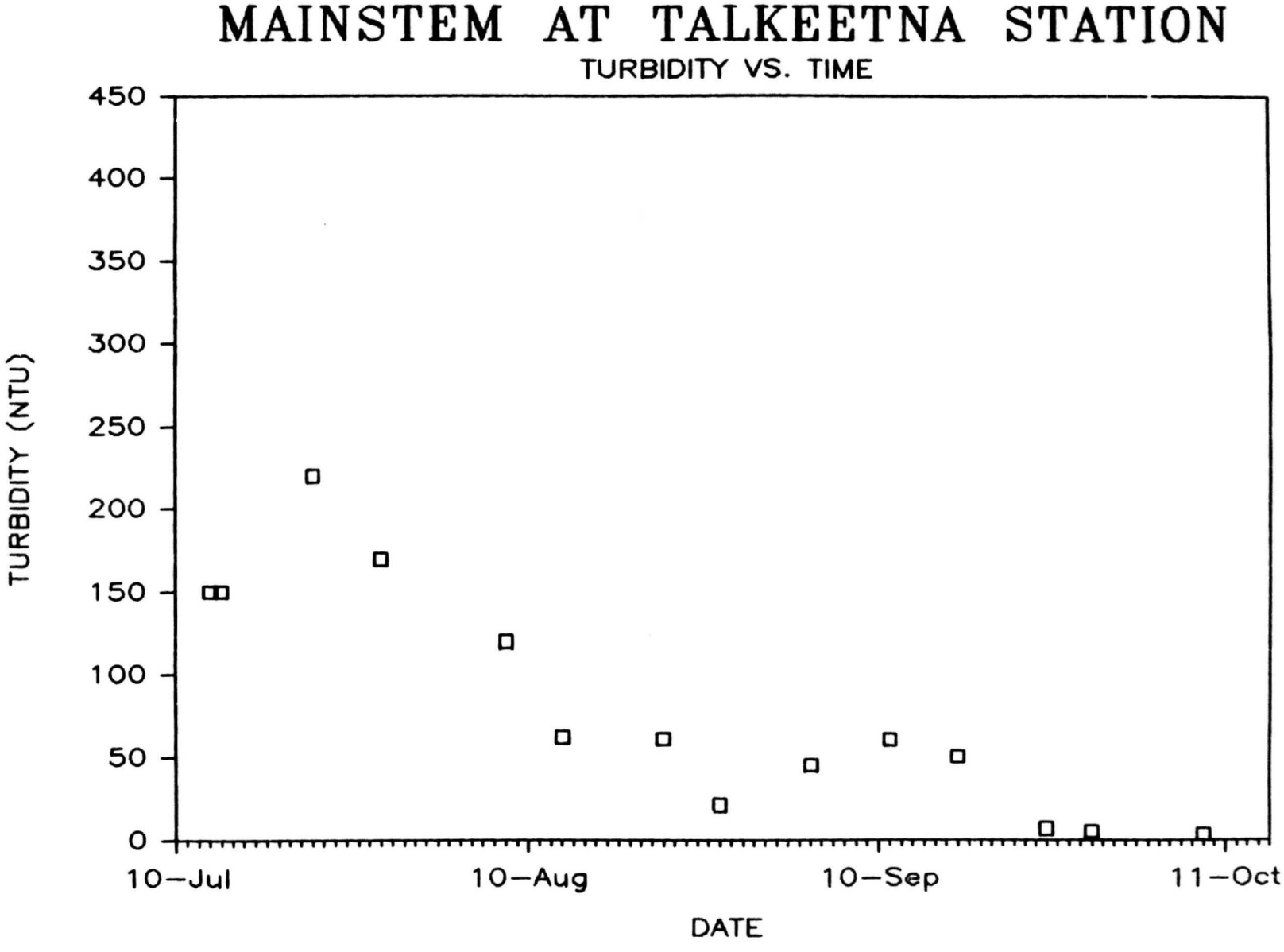
Appendix Figure 14. Daily minimum, mean, and maximum water temperatures monitored at the Devil Canyon Station (RM 150.0).



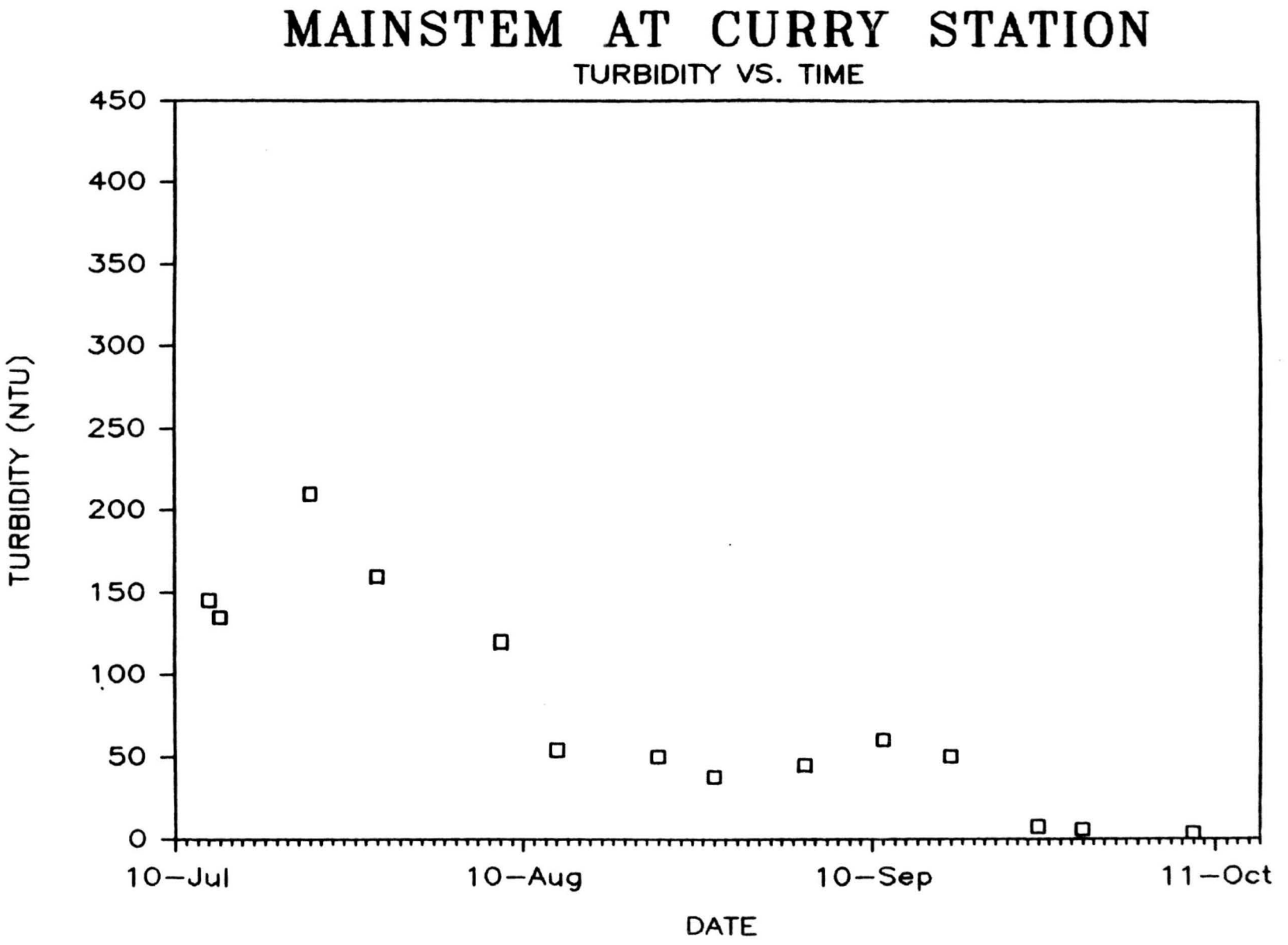
Appendix Figure 15. Daily minimum, mean, and maximum water temperatures monitored at the proposed Watana Dam Site (RM 184.2).



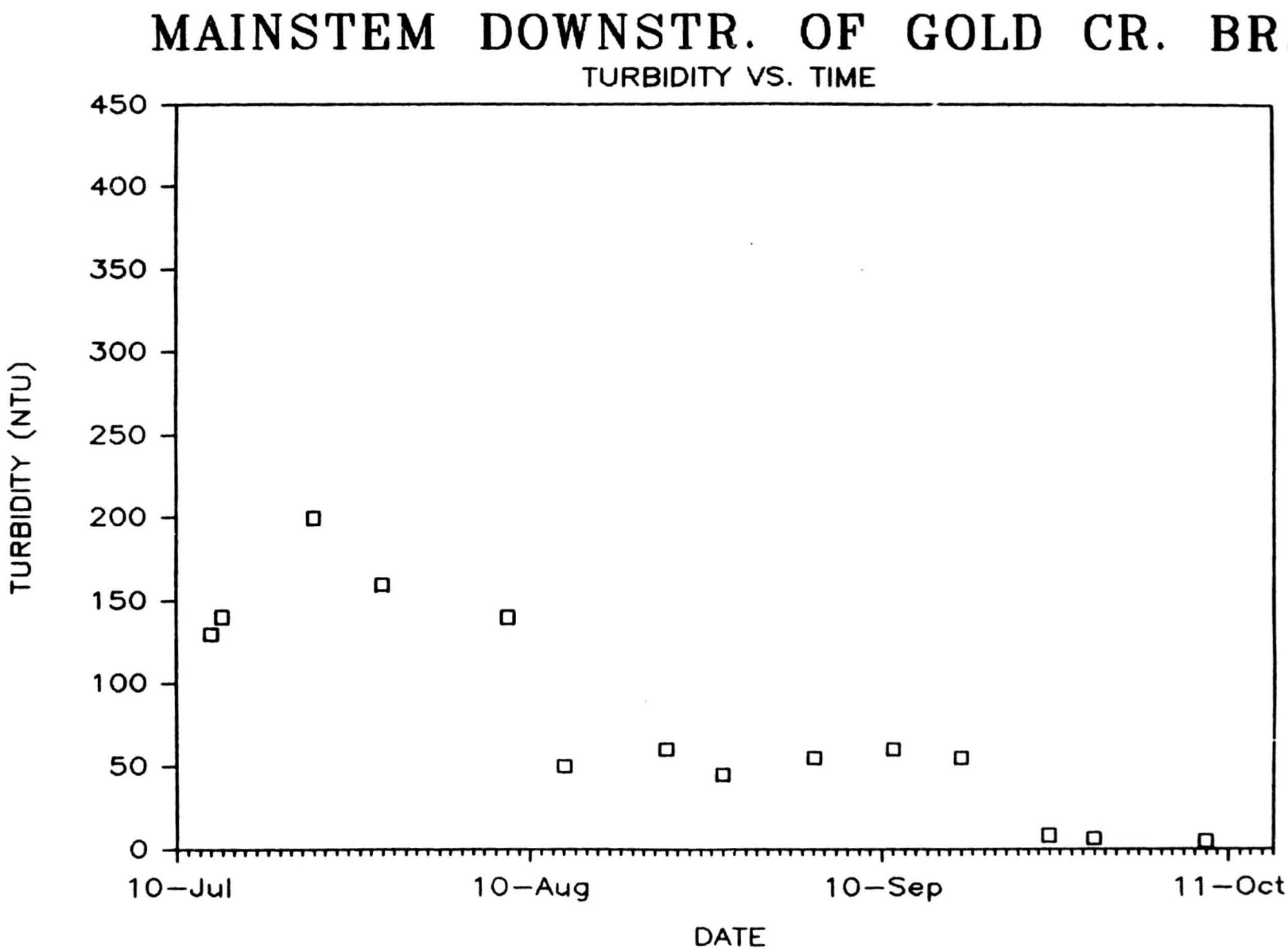
Appendix Figure 16. Weekly measurements of turbidity from upstream of the Parks Highway Bridge Station (RM 86.2).



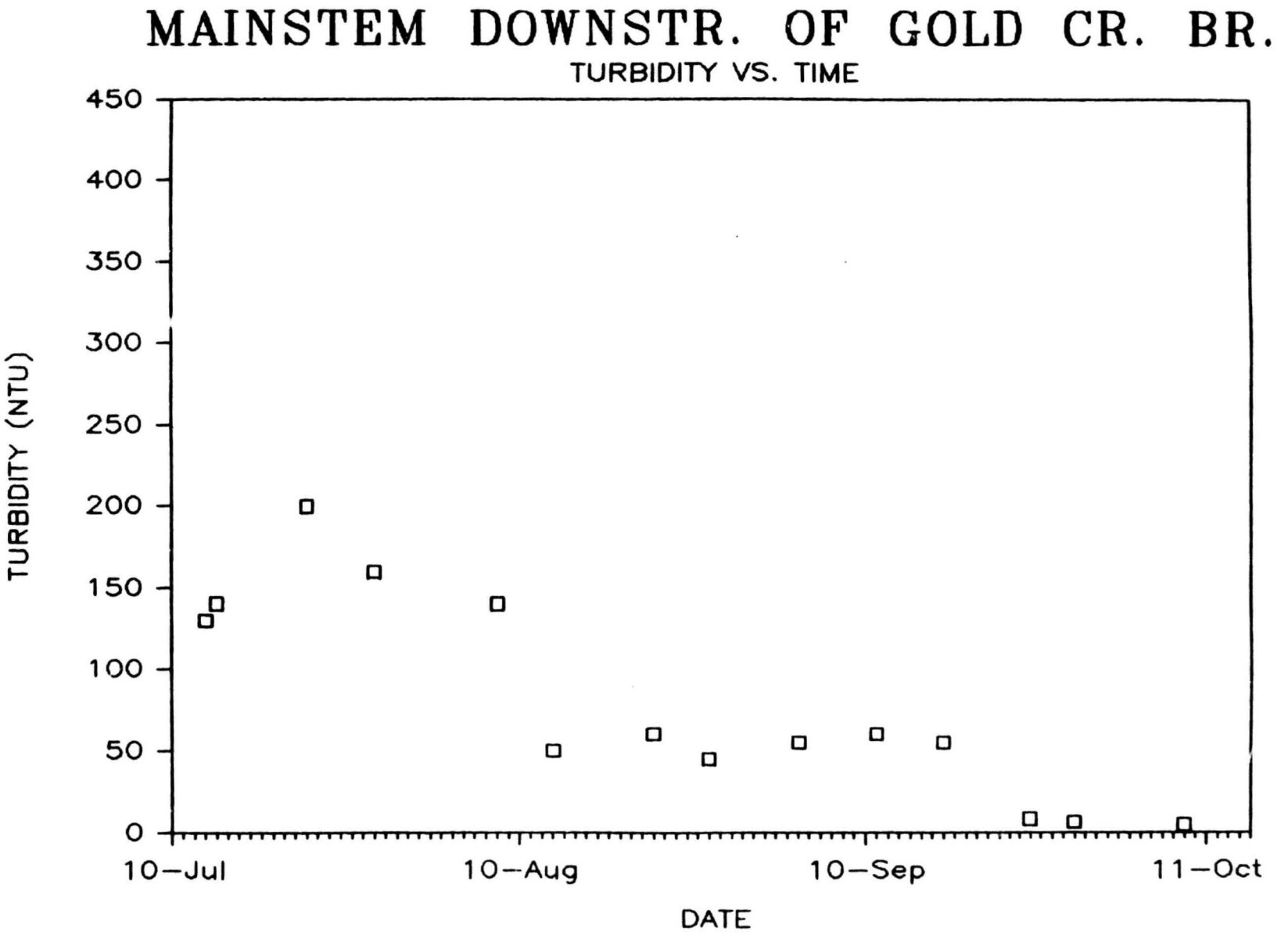
Appendix Figure 17. Weekly measurements of turbidity from the Talkeetna Station (RM 103.0).



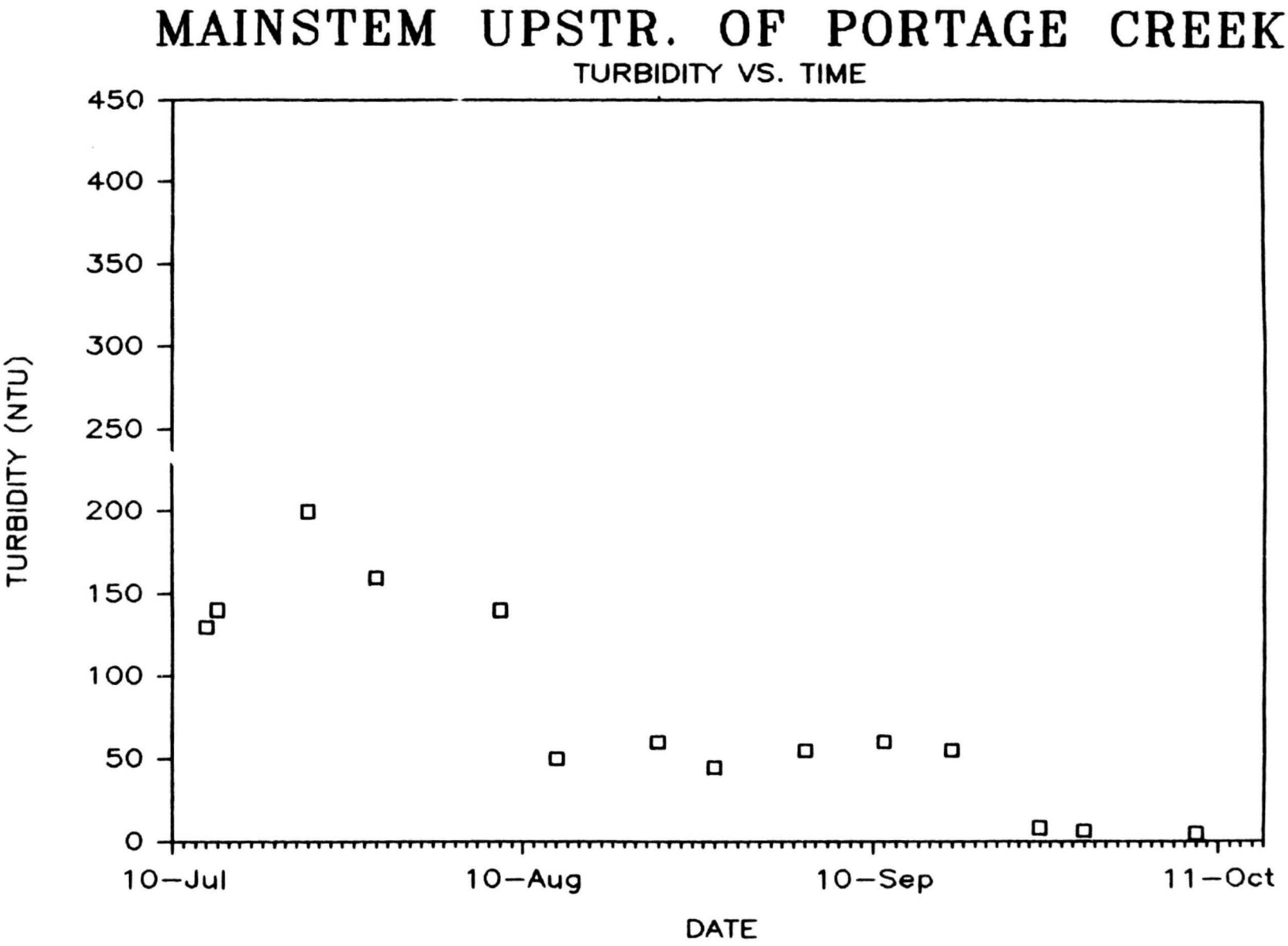
Appendix Figure 18. Weekly measurements of turbidity from the Curry Station (RM 120.7).



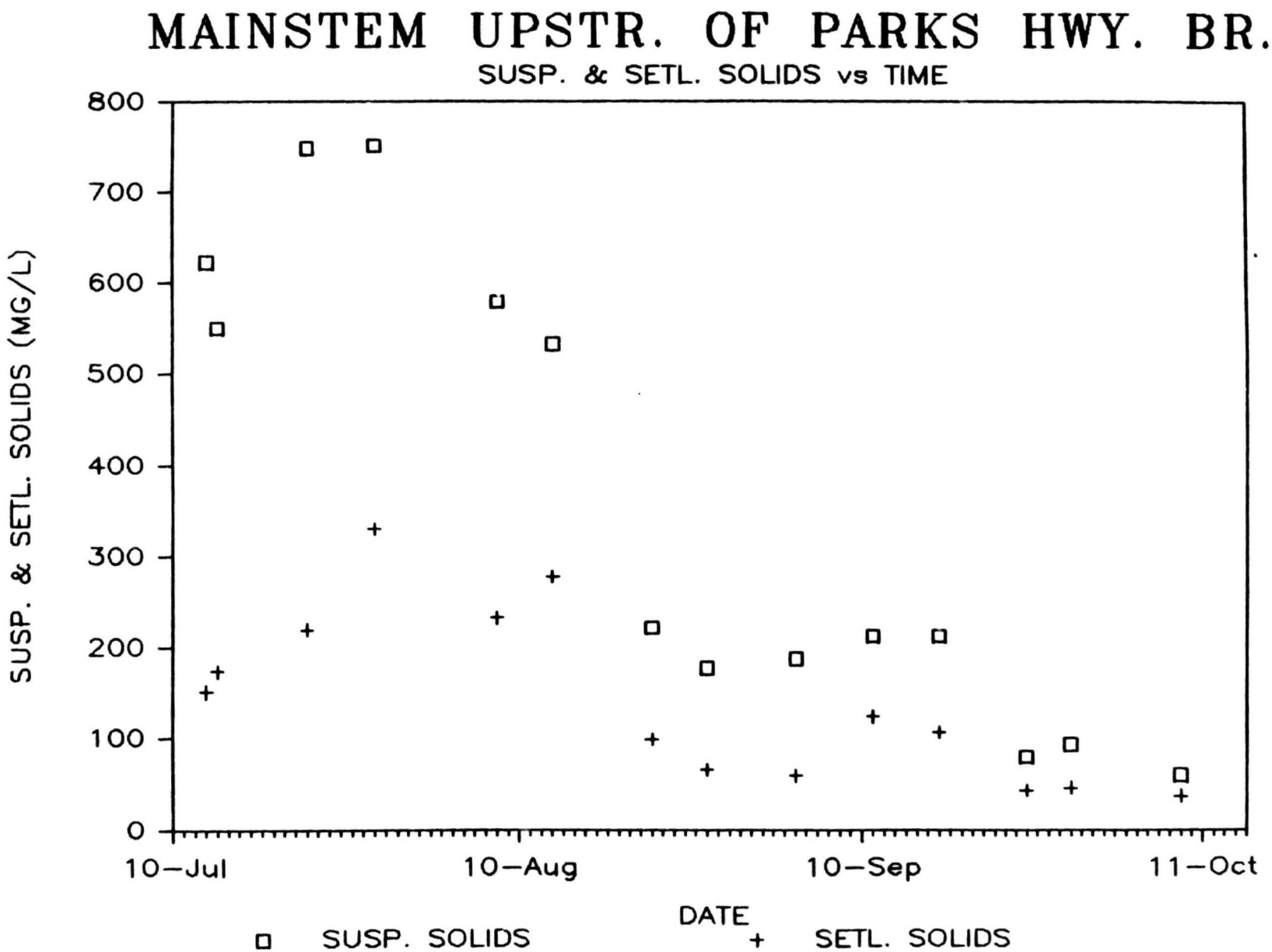
Appendix Figure 19. Weekly measurements of turbidity from downstream of the Gold Creek Bridge (RM 135.8).



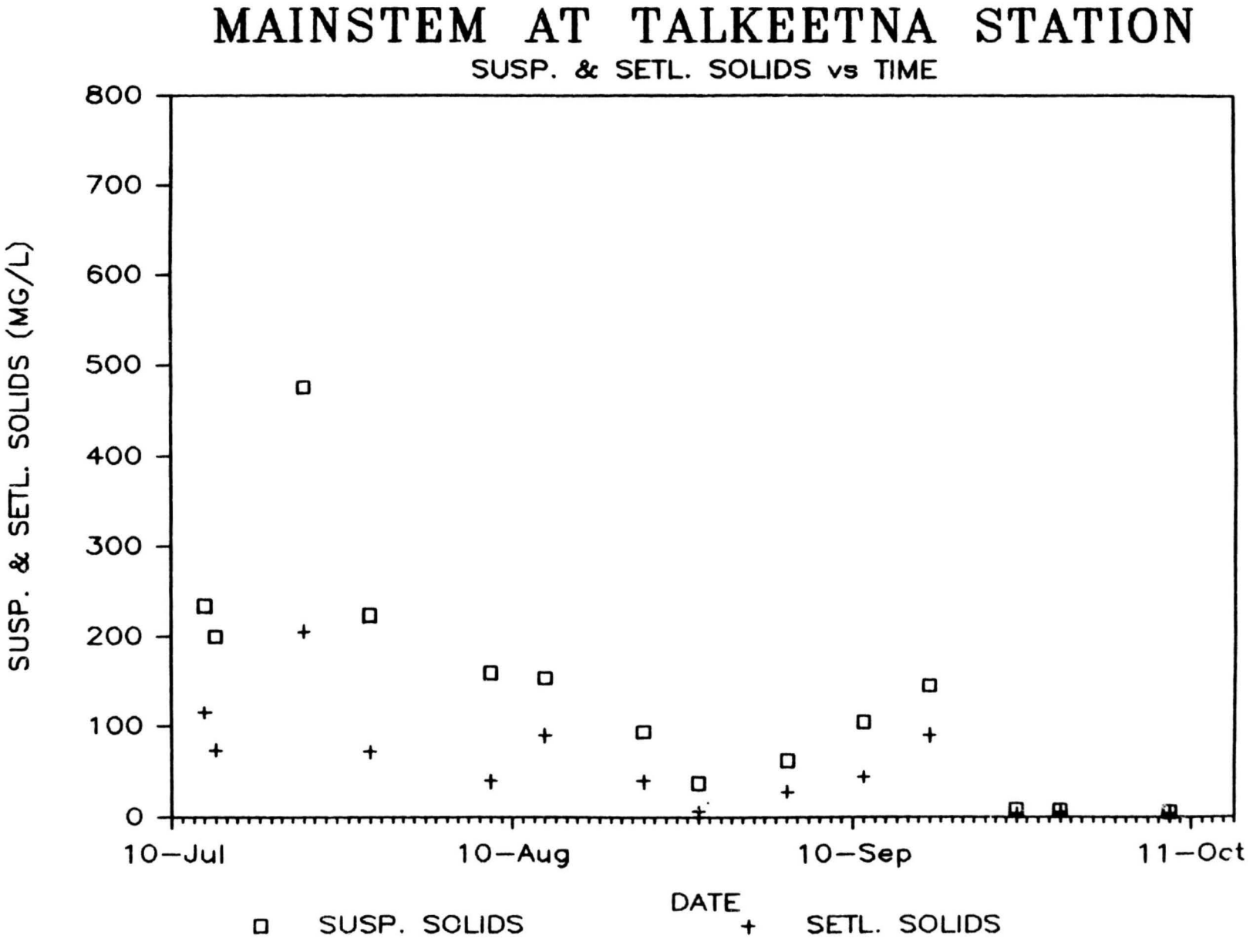
Appendix Figure 19. Weekly measurements of turbidity from downstream of the Gold Creek Bridge (RM 135.8).



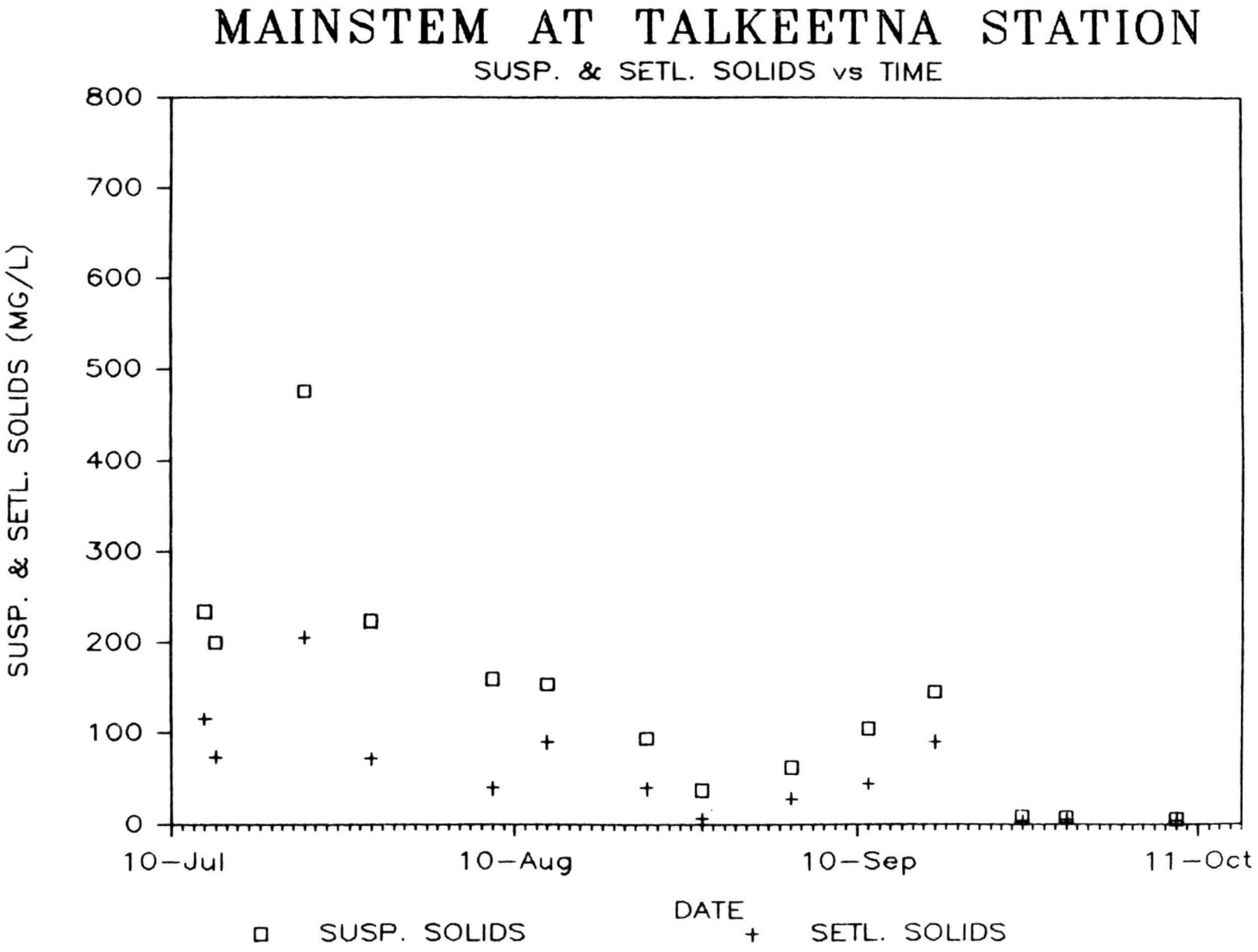
Appendix Figure 20. Weekly measurements of turbidity from upstream of Portage Creek (RM 149.4).



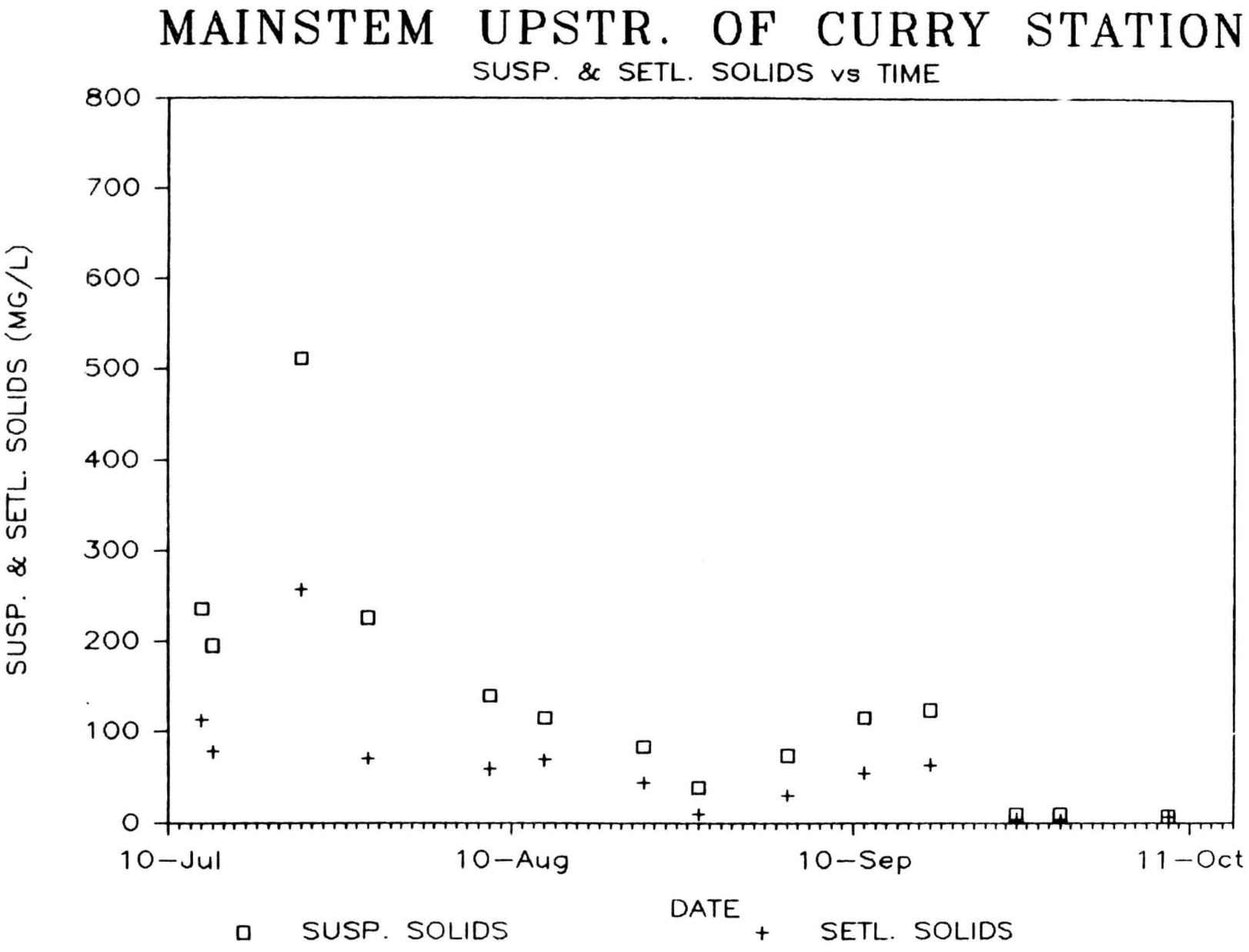
Appendix Figure 21. Weekly suspended and settleable solids measurements from upstream of the Parks Highway Bridge (RM 86.2).



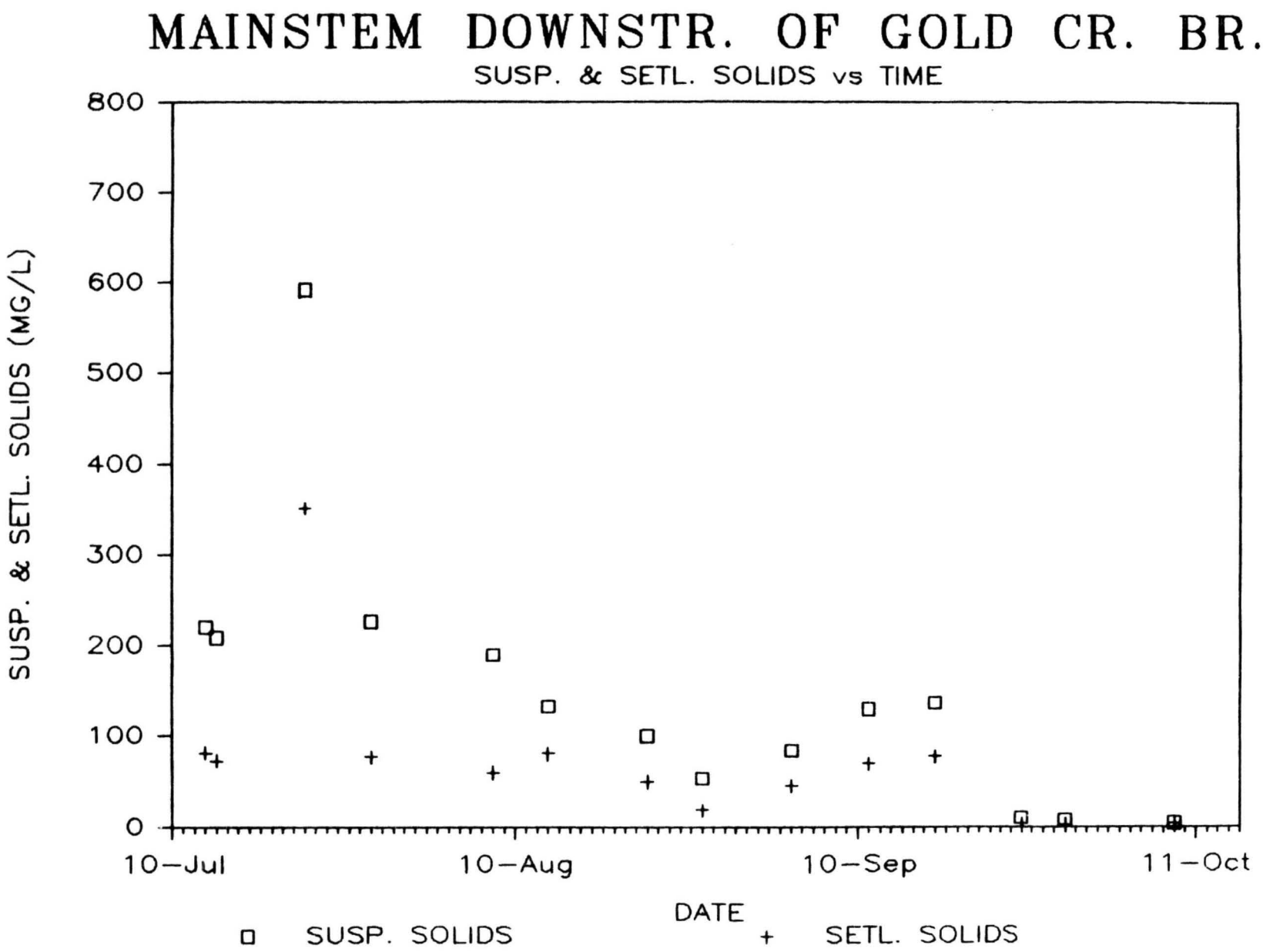
Appendix Figure 22. Weekly suspended and settleable solids measurements from the Talkeetna Station (RM 103.0).



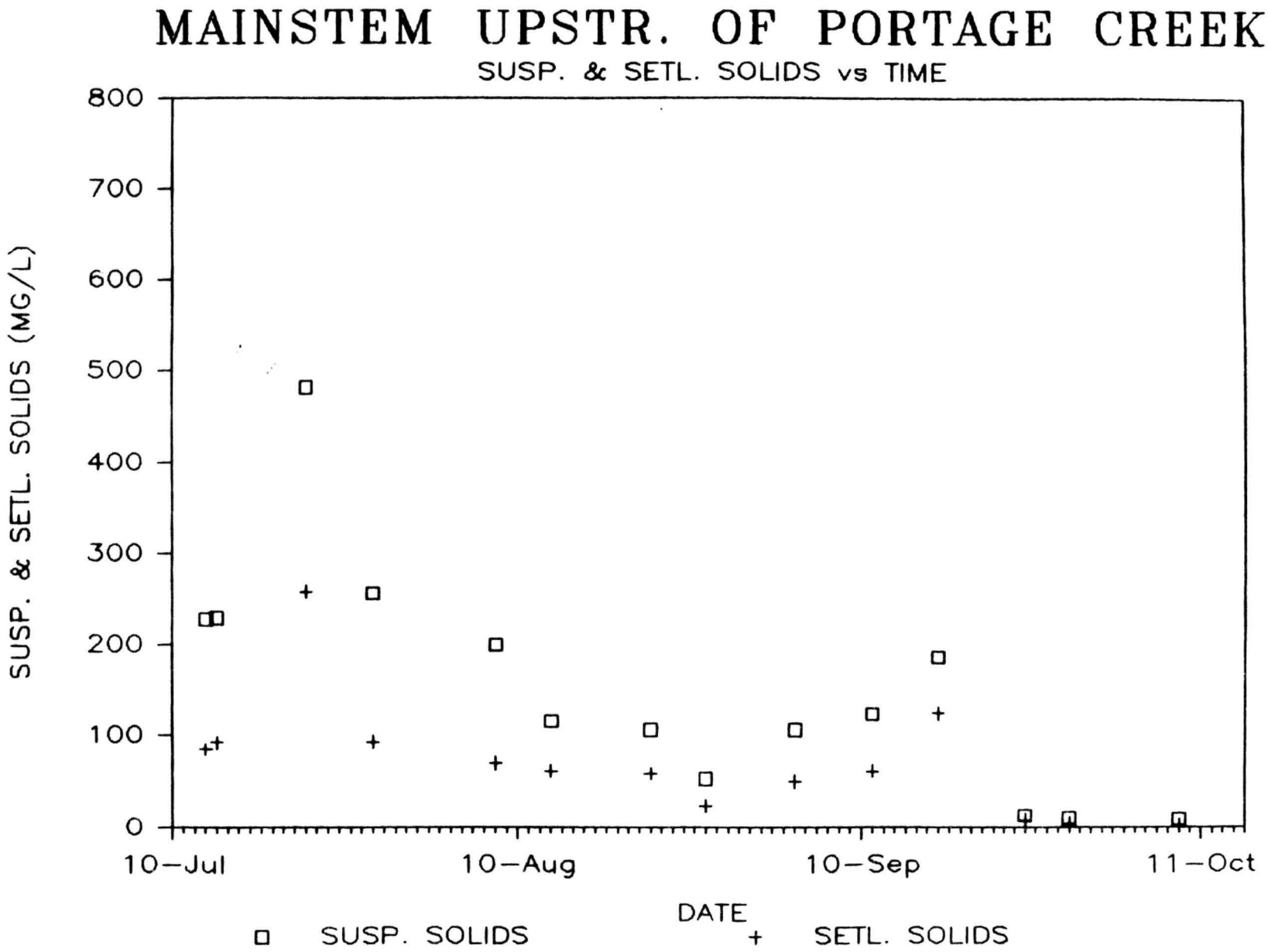
Appendix Figure 22. Weekly suspended and settleable solids measurements from the Talkeetna Station (RM 103.0).



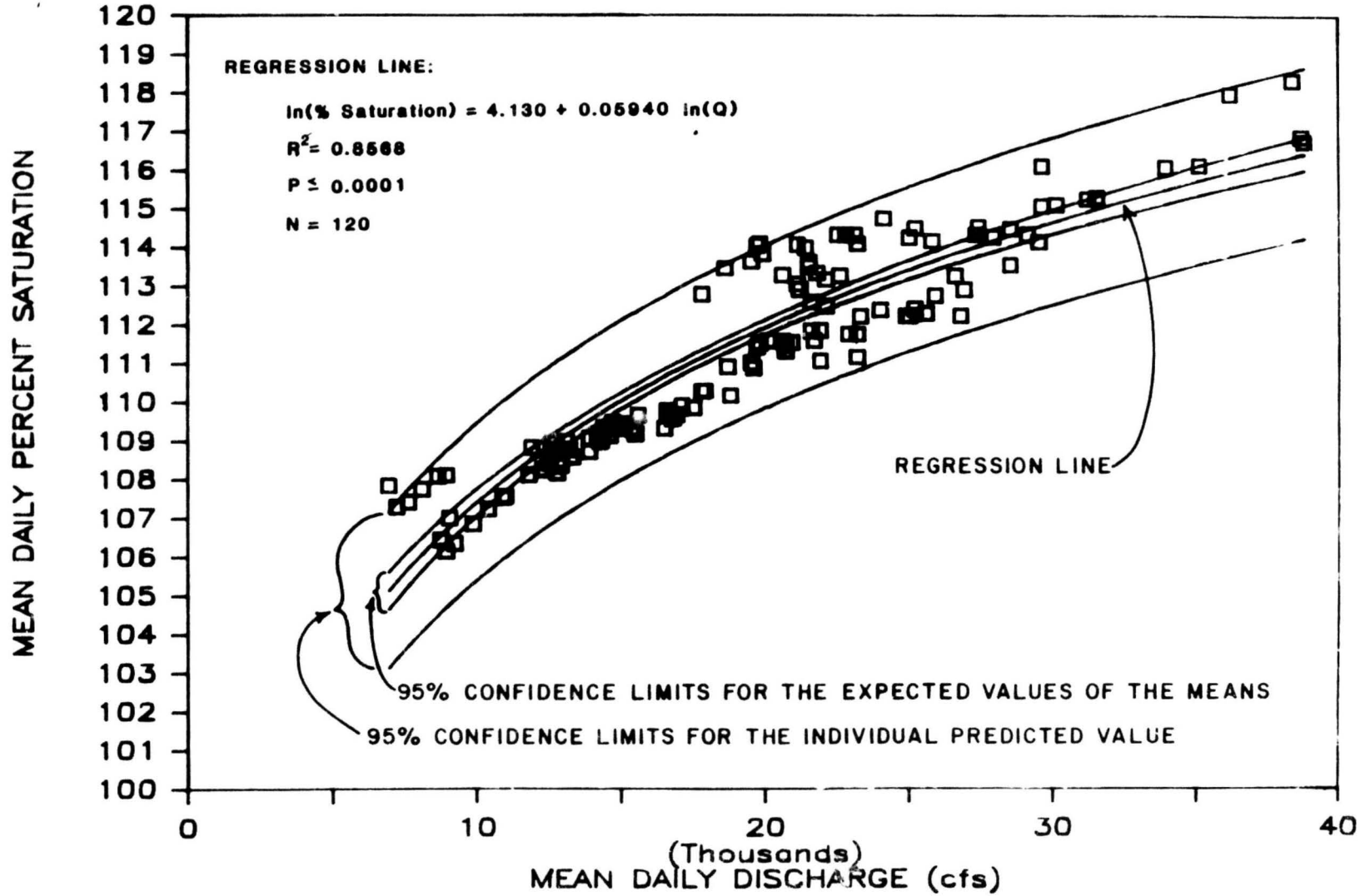
Appendix Figure 23. Weekly suspended and settleable solids measurements from upstream of Curry (RM 120.7).



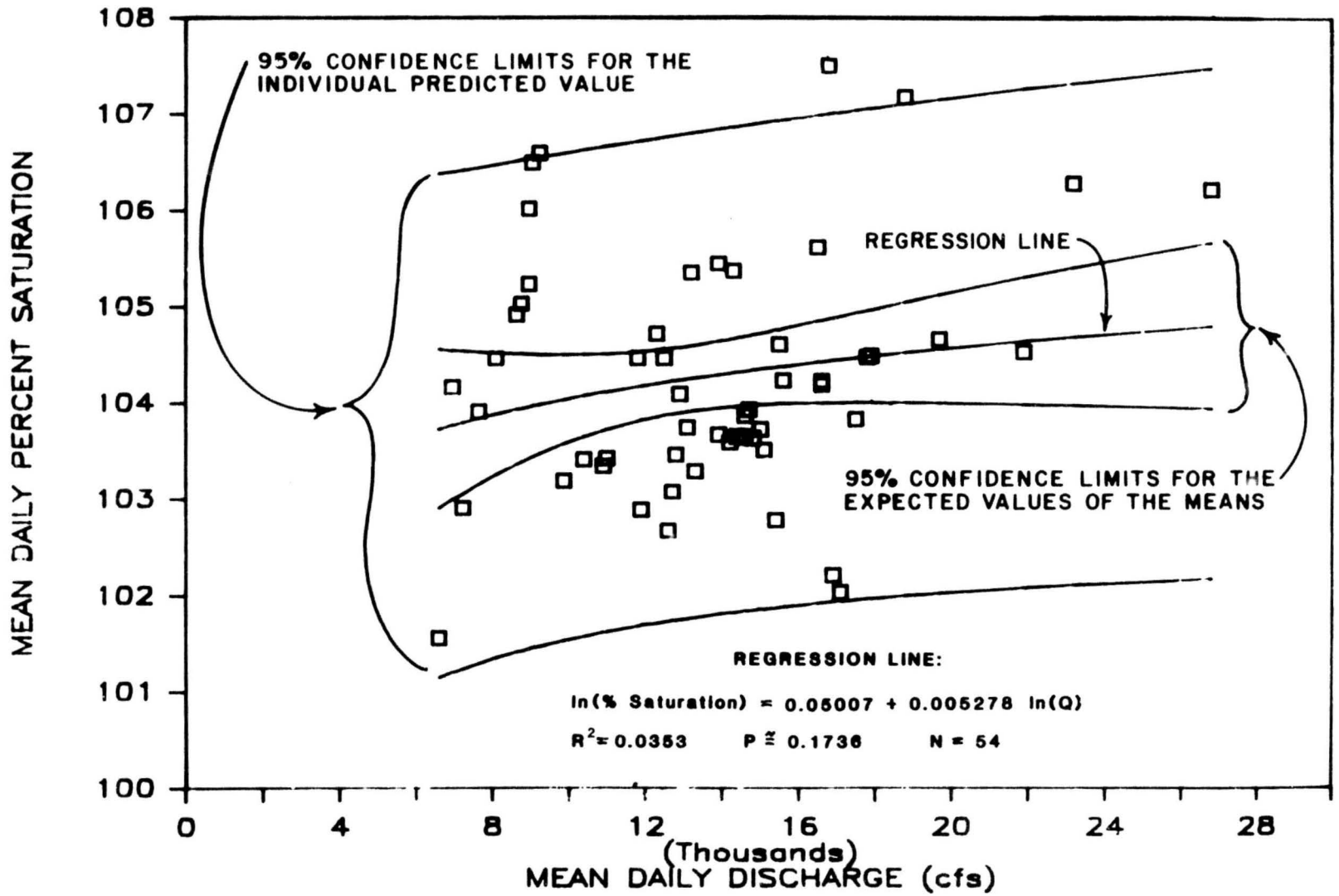
Appendix Figure 24. Weekly suspended and settleable solids measurements from downstream of the Gold Creek Bridge (RM 135.8).



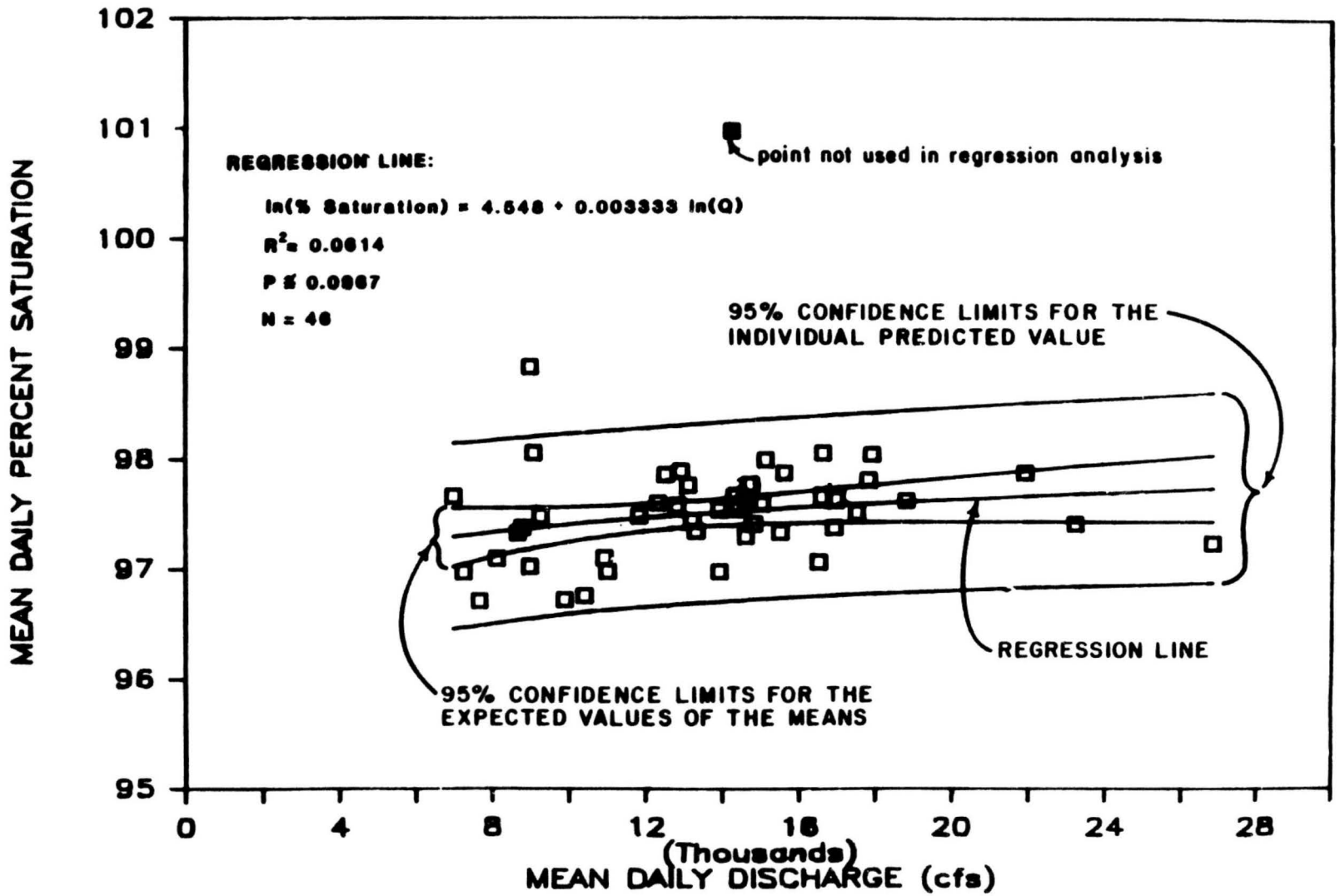
Appendix Figure 25. Weekly suspended and settleable solids measurements from downstream of the Gold Creek Bridge (RM 135.8).



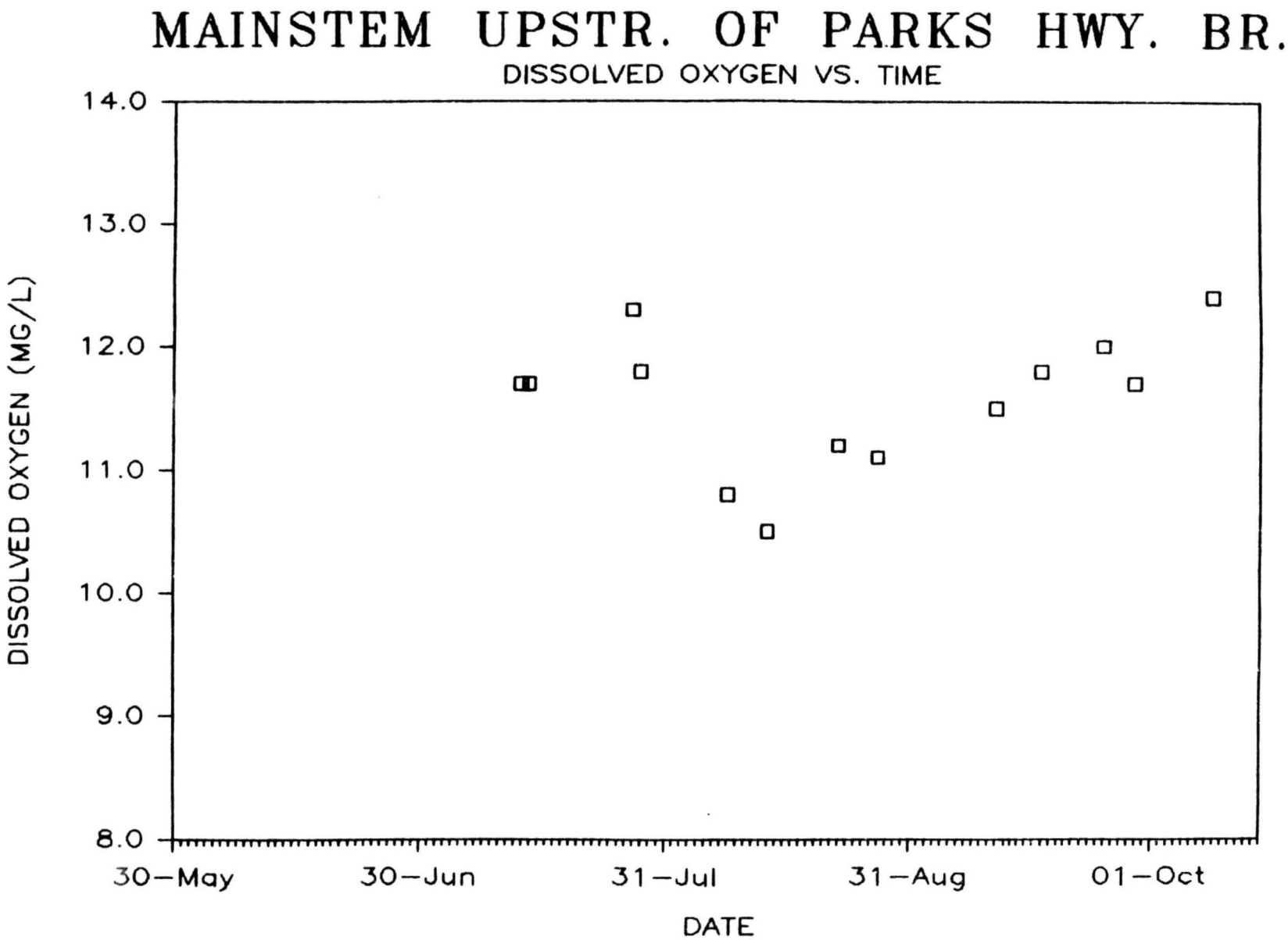
APPENDIX FIGURE 26 DISSOLVED GAS PERCENT SATURATION VERSUS MAINSTEM DISCHARGE AT DEVIL CANYON



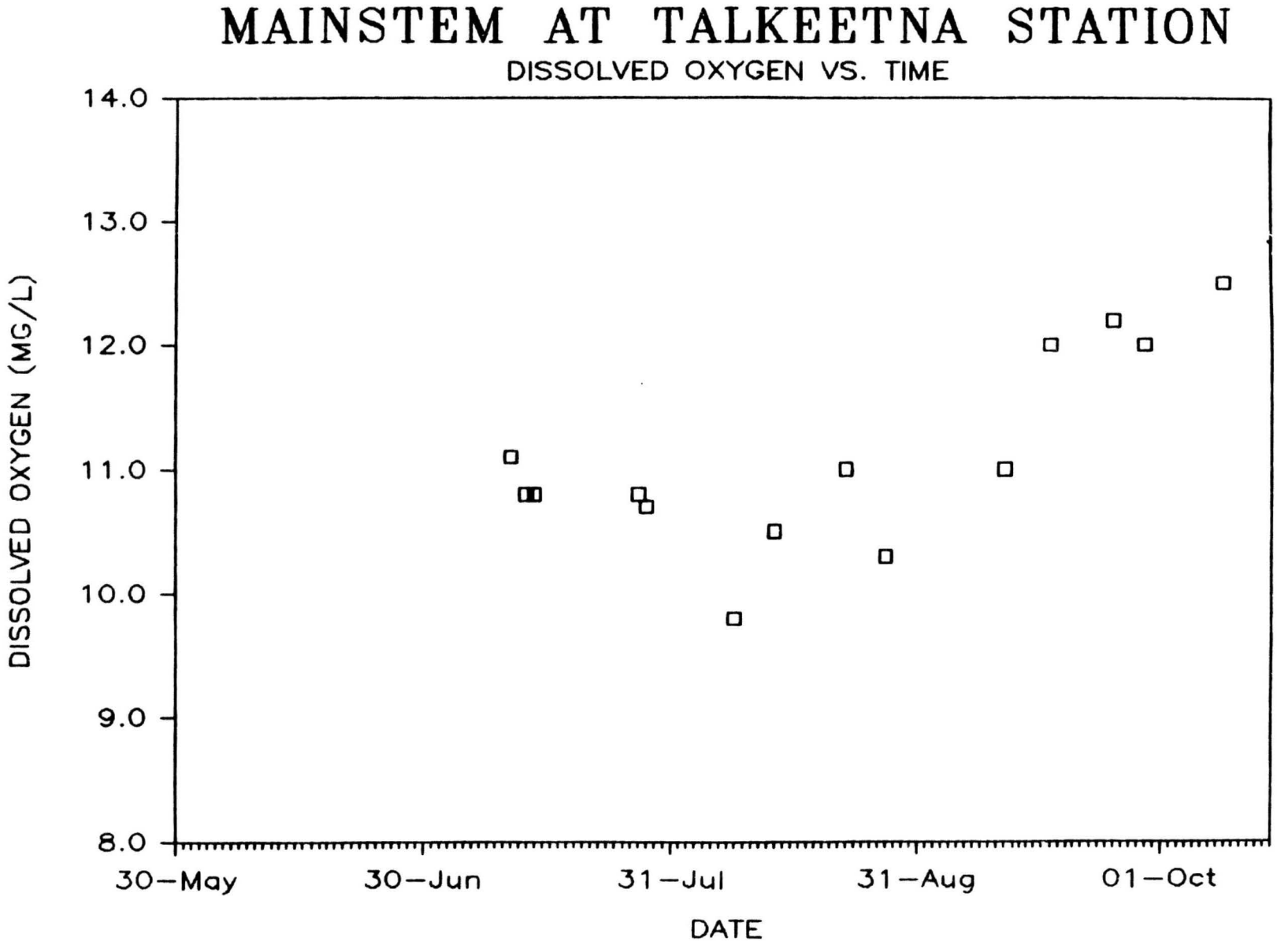
APPENDIX FIGURE 27 DISSOLVED GAS PERCENT SATURATION VERSUS MAINSTEM DISCHARGE AT GOLD CREEK



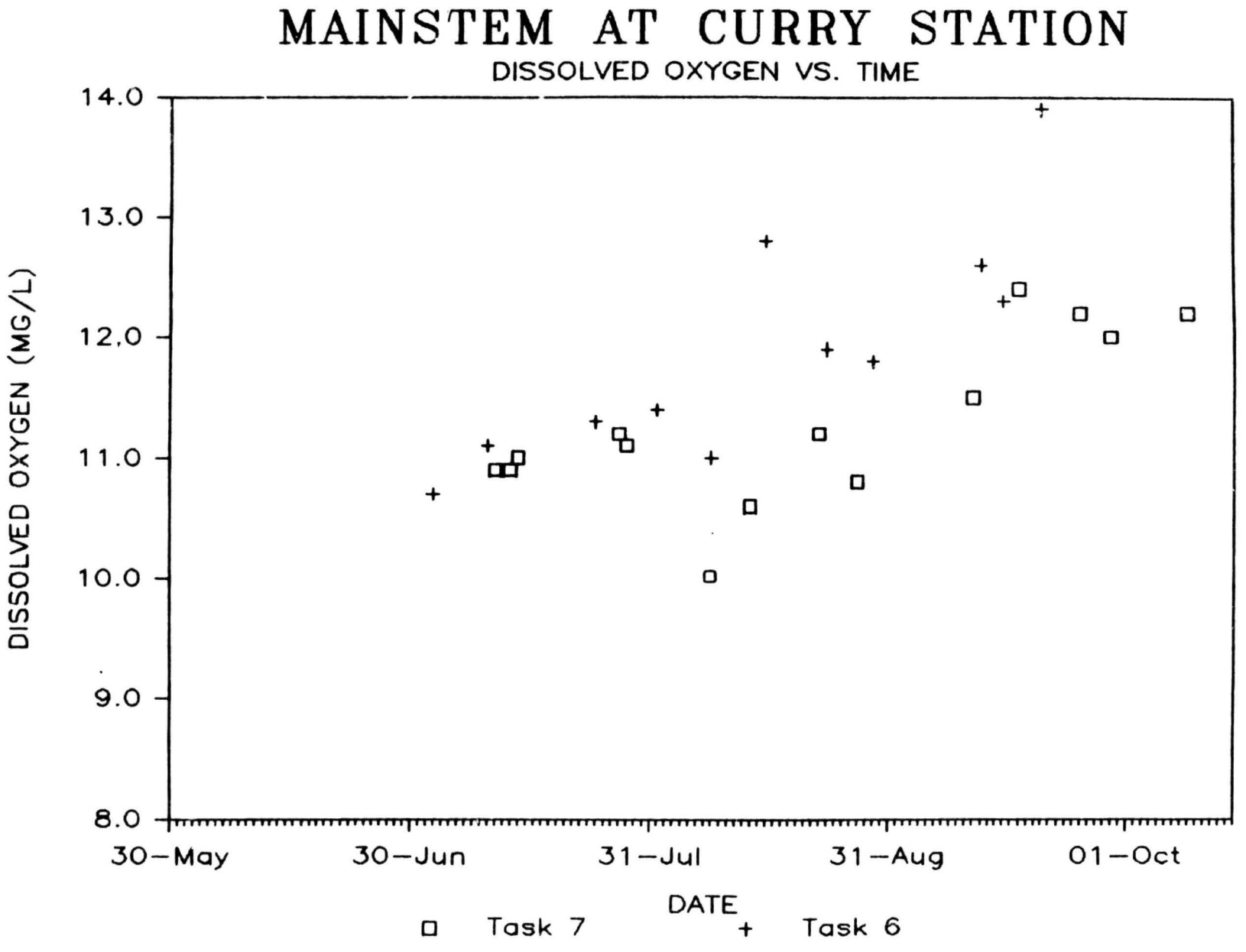
APPENDIX FIGURE 28 DISSOLVED GAS PERCENT SATURATION VERSUS MAINSTEM DISCHARGE AT THE PROPOSED WATANA DAMSITE



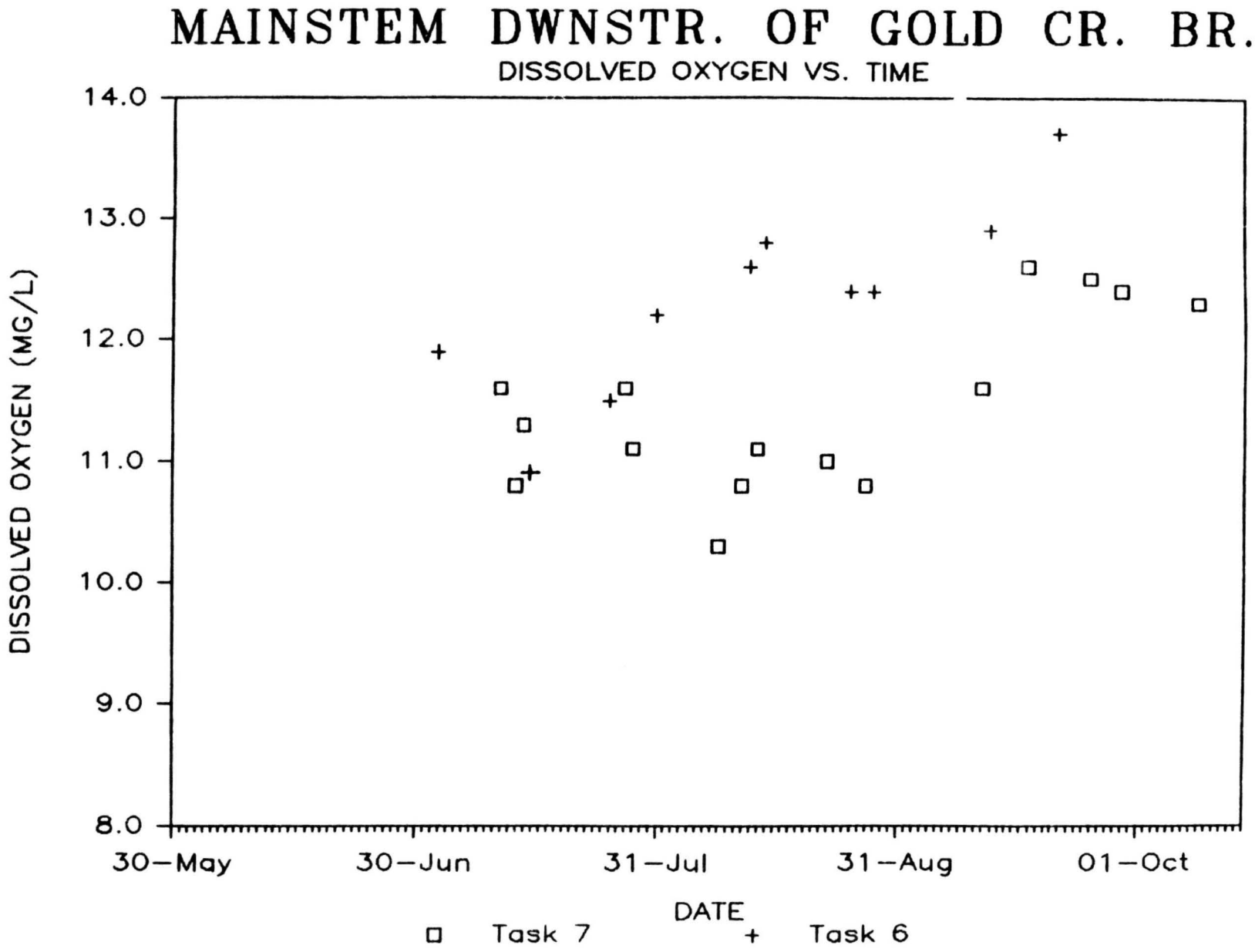
Appendix Figure 29. Weekly dissolved oxygen measurements from upstream of the Parks Highway Bridge (RM 86.2).



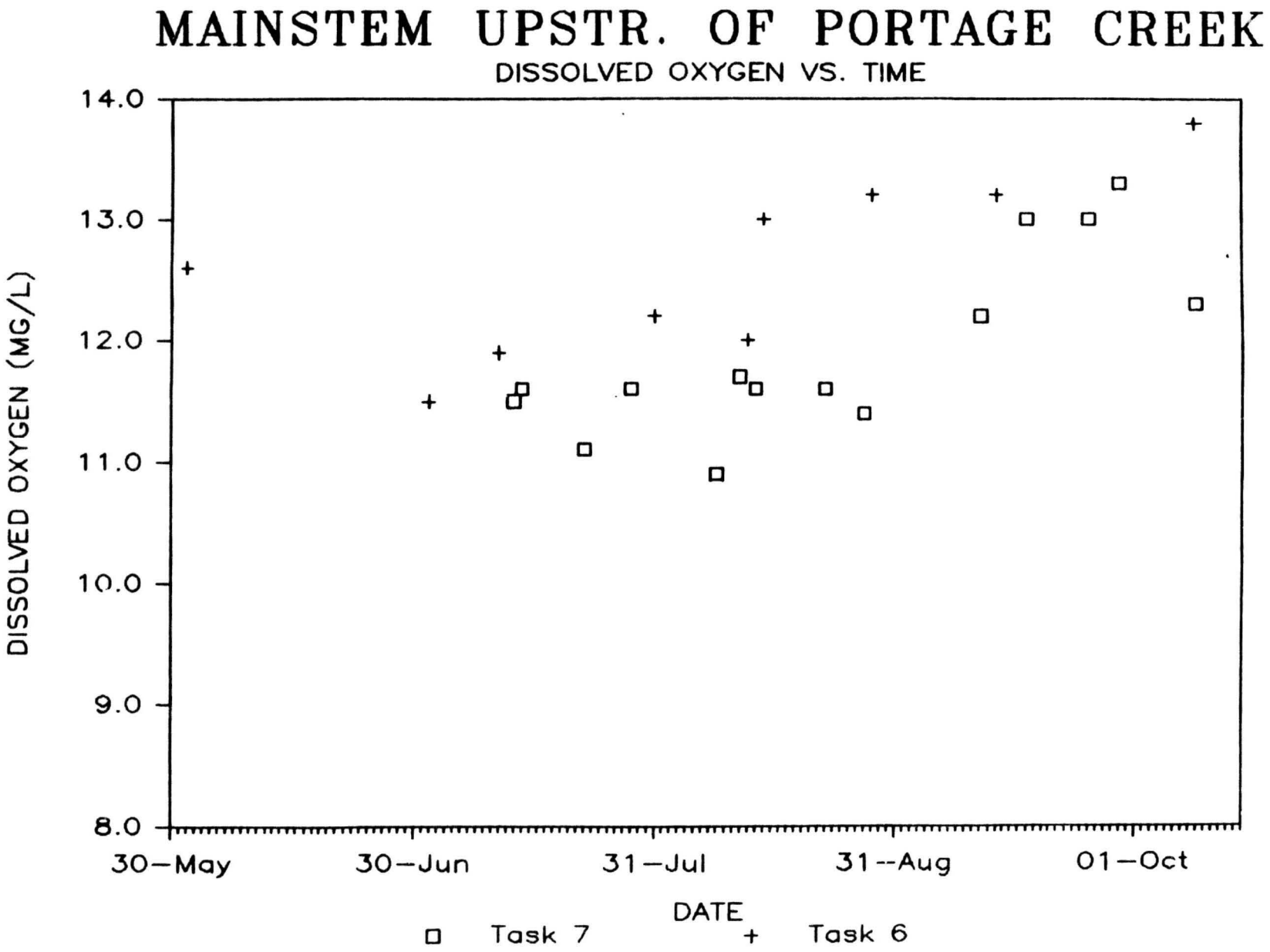
Appendix Figure 30. Weekly dissolved oxygen measurements at the Talkeetna Station (RM 103.0).



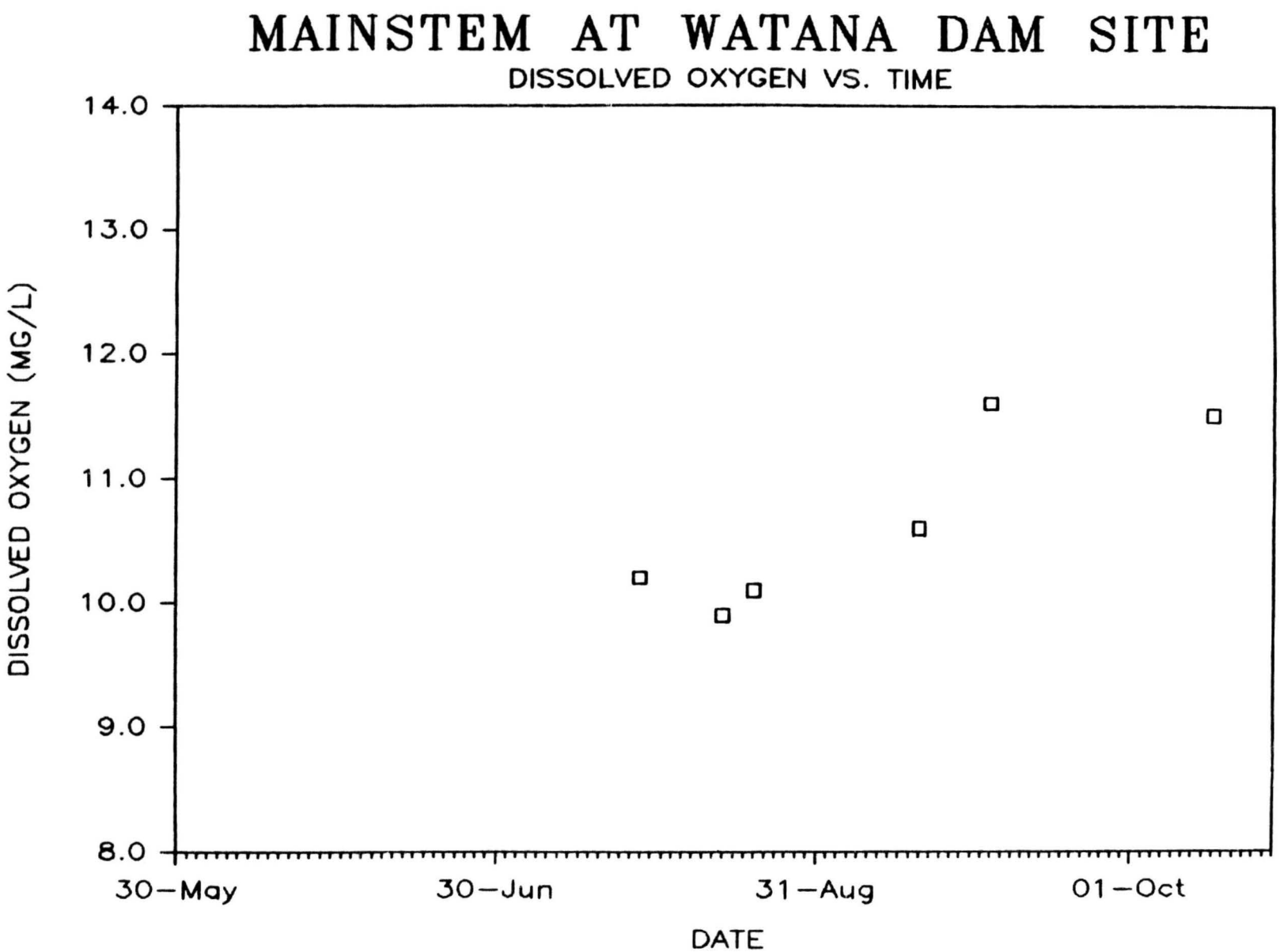
Appendix Figure 31. Weekly dissolved oxygen measurements at the Curry Station (RM 120.7).



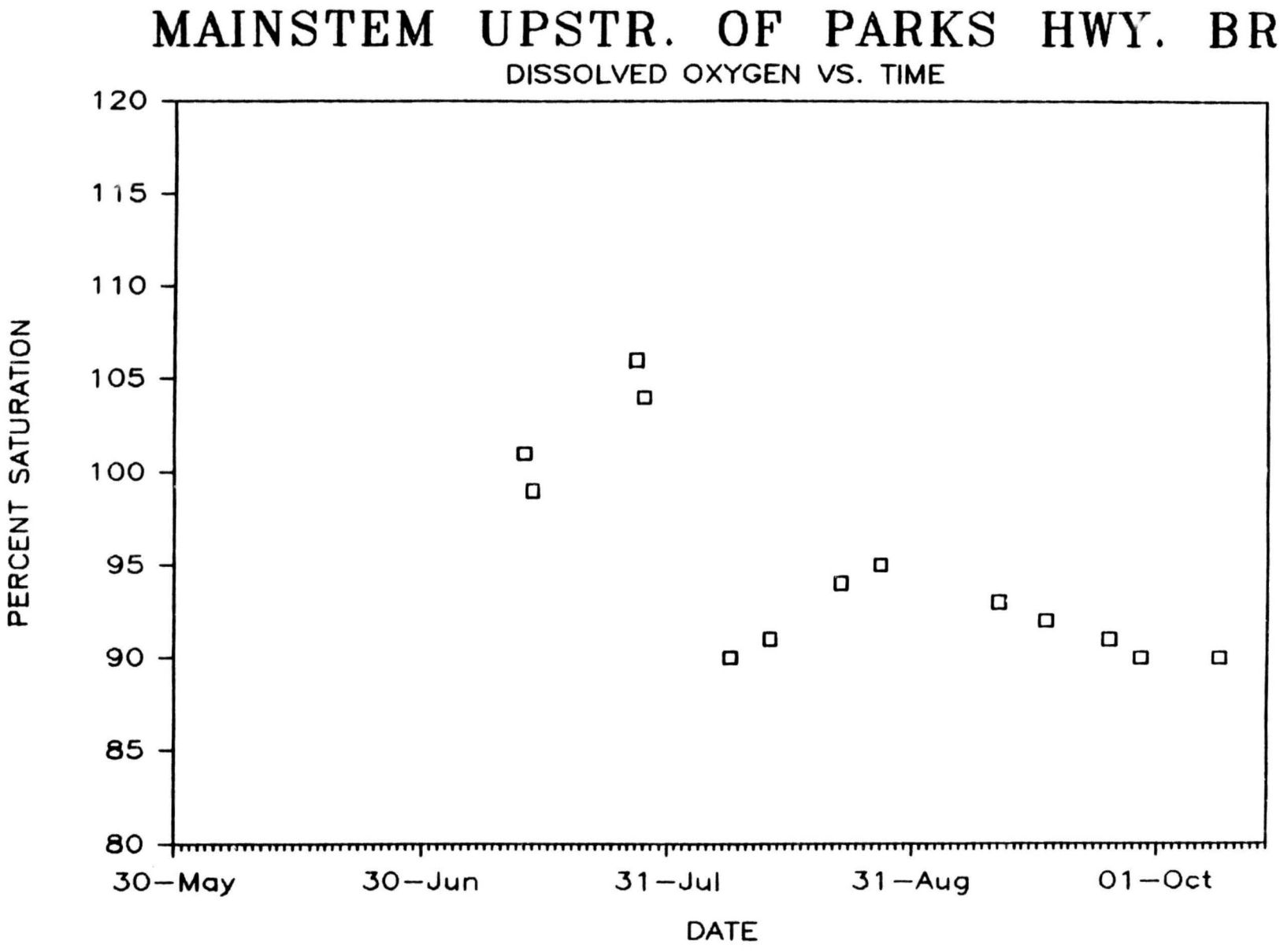
Appendix Figure 32. Weekly dissolved oxygen measurements from downstream of the Gold Creek Bridge (RM 135.8).



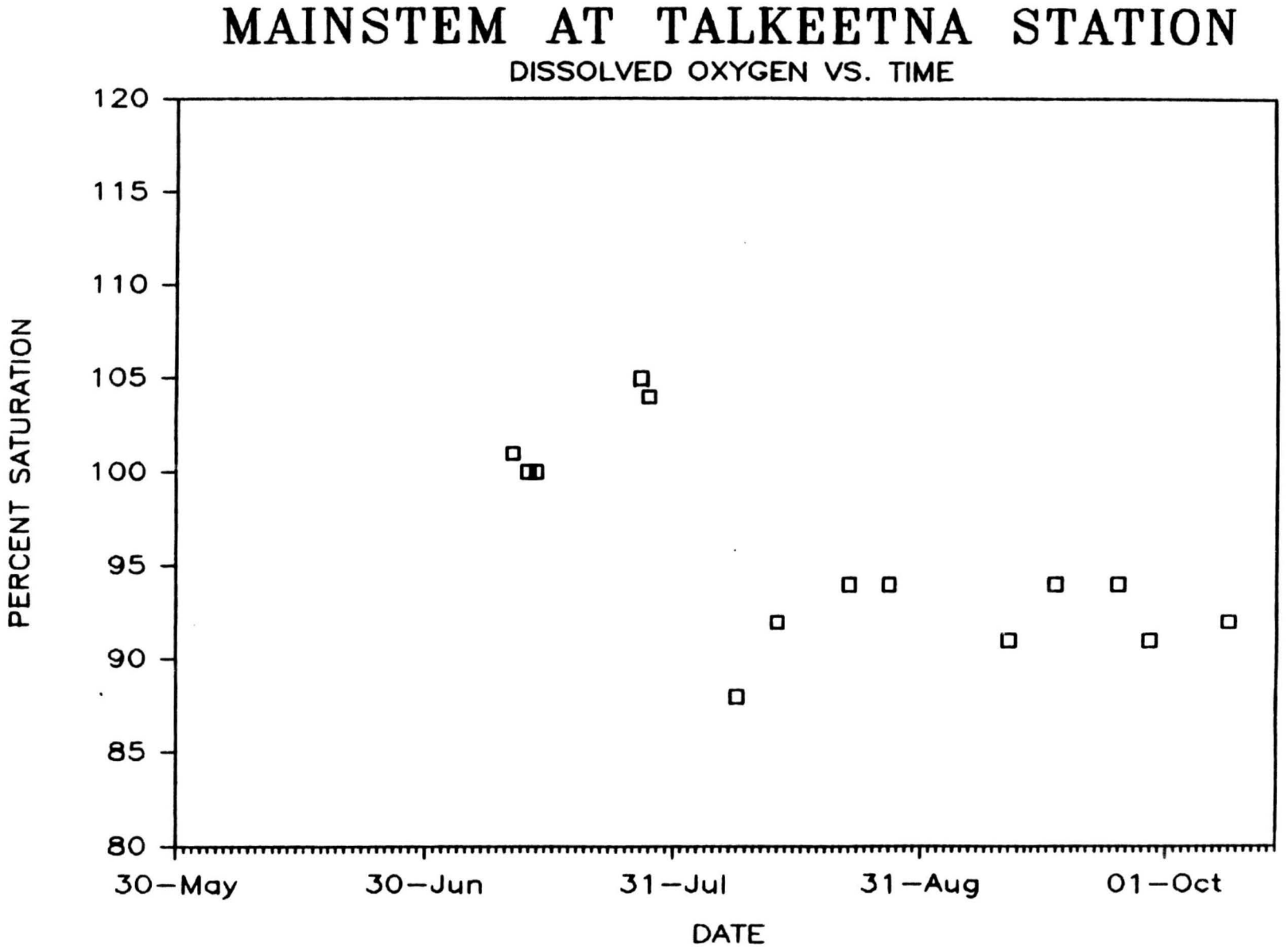
Appendix Figure 33. Weekly dissolved oxygen measurements from upstream of Portage Creek (RM 149.4).



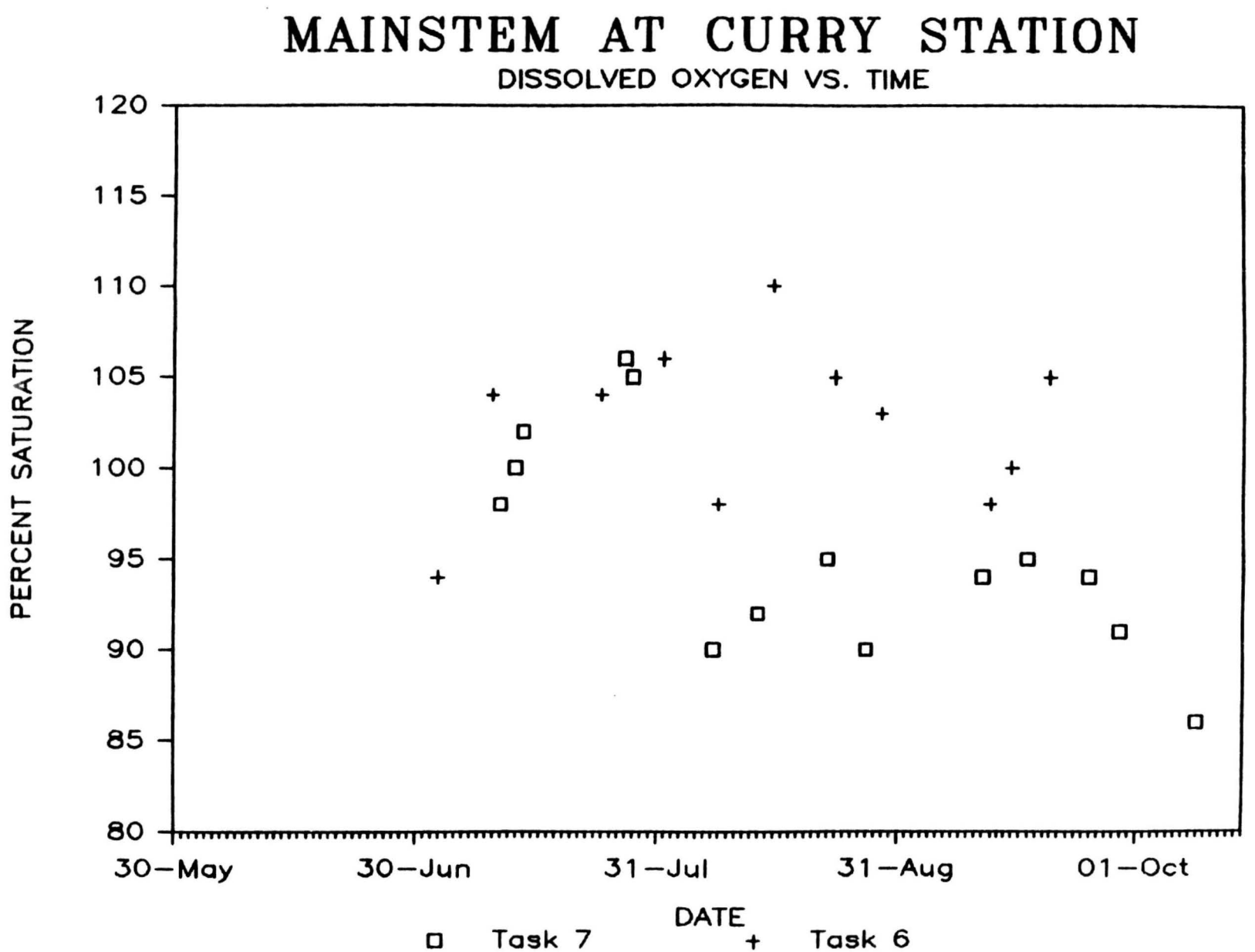
Appendix Figure 34. Weekly dissolved oxygen measurements from the proposed Watana Dam Site (RM 89.2).



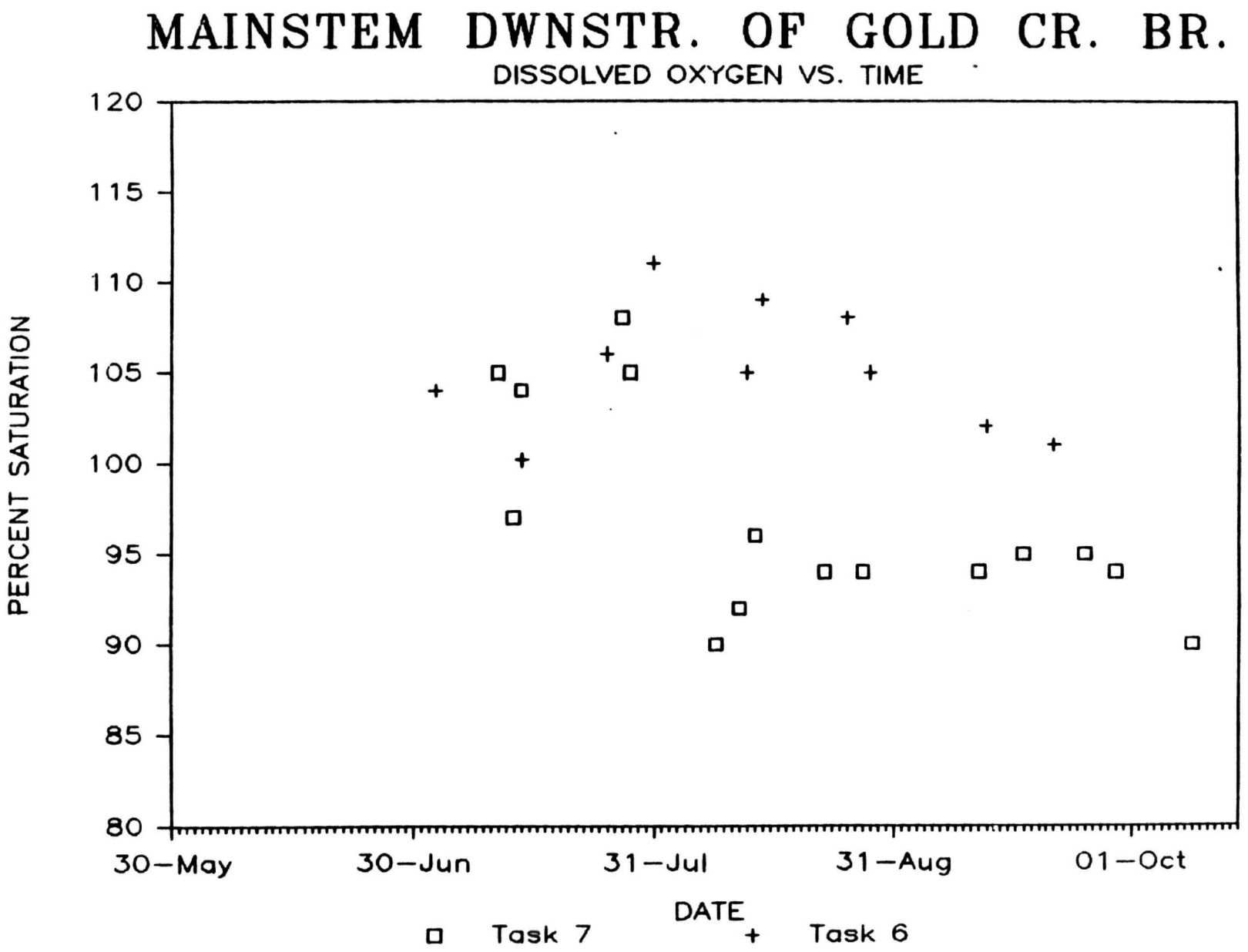
Appendix Figure 35. Dissolved oxygen percent saturation levels from upstream of the Parks Highway Bridge (RM 86.2).



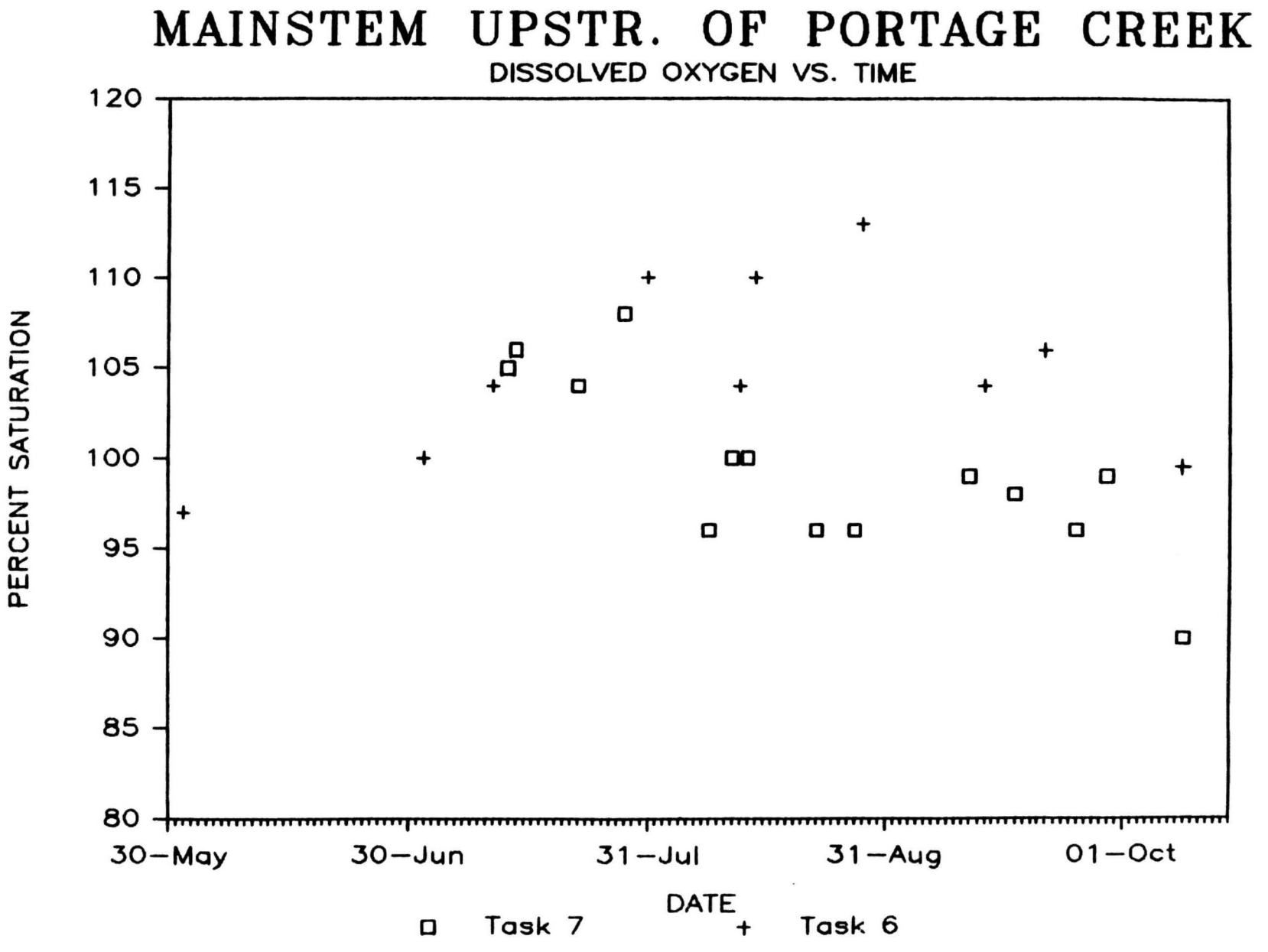
Appendix Figure 36. Dissolved oxygen percent saturation levels from the Talkeetna Station (RM 103.0).



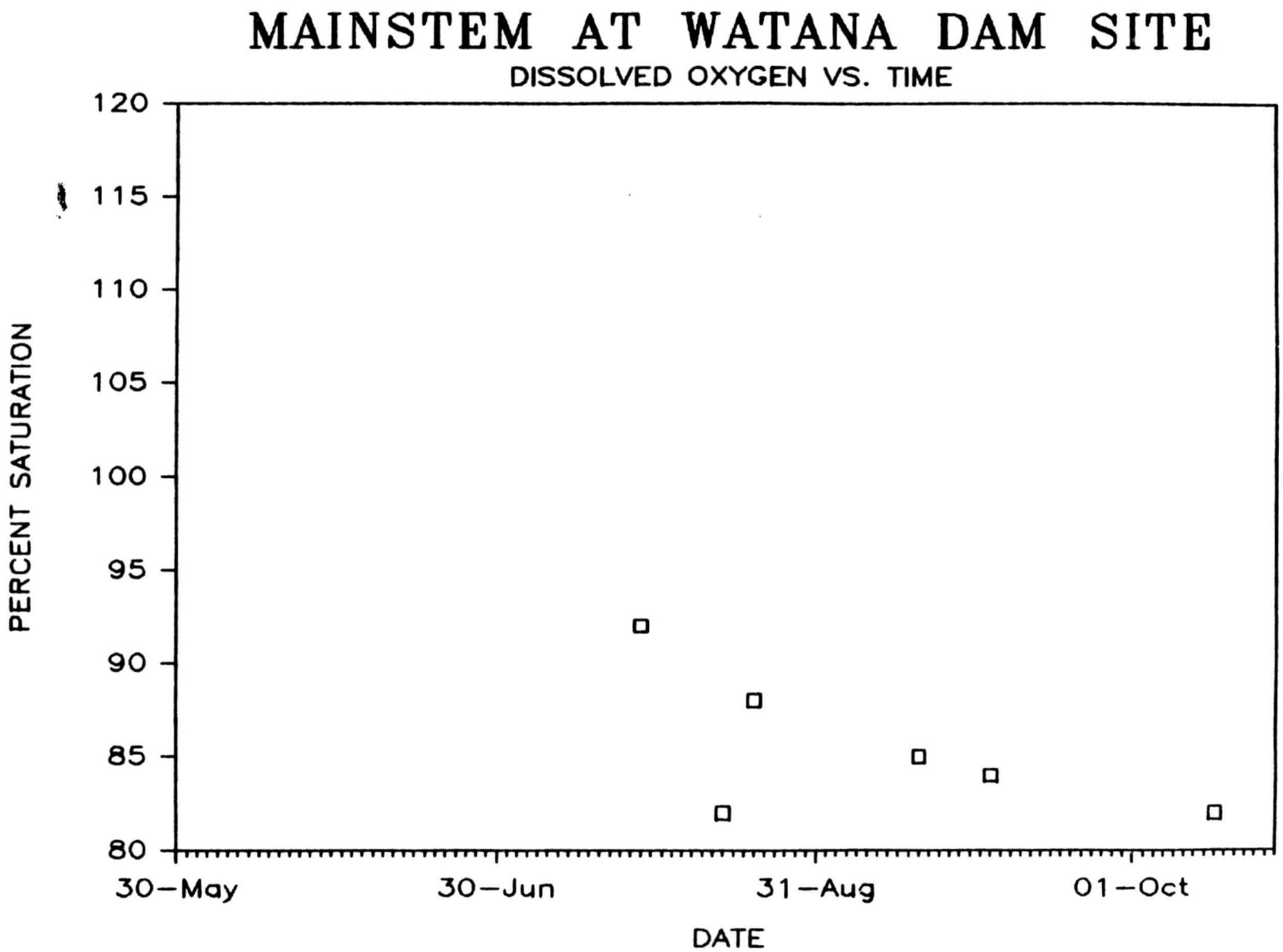
Appendix Figure 37. Dissolved oxygen percent saturation levels at Curry Station (RM 120.7).



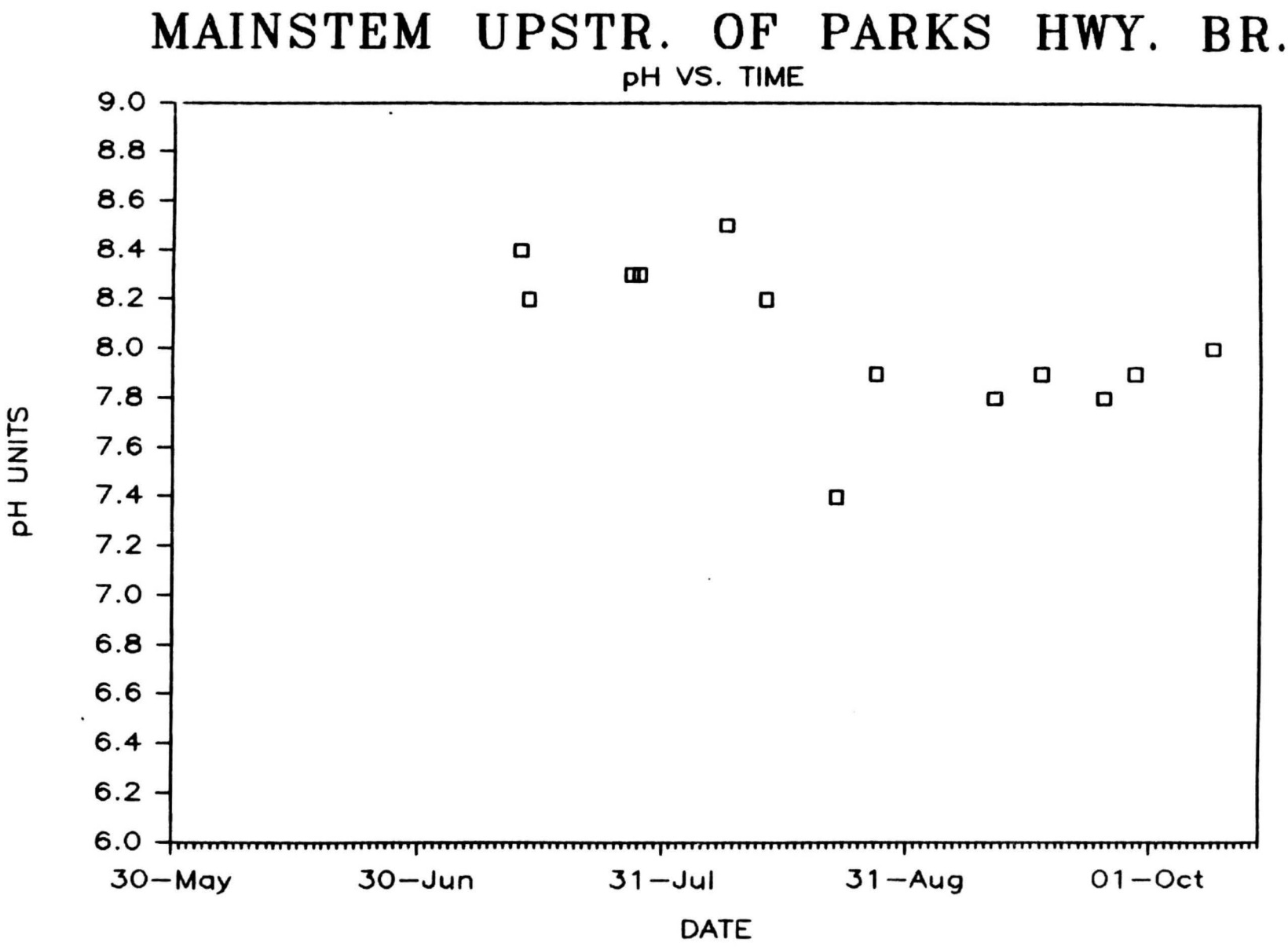
Appendix Figure 38. Dissolved oxygen percent saturation levels from downstream of the Gold Creek Bridge (RM 135.8).



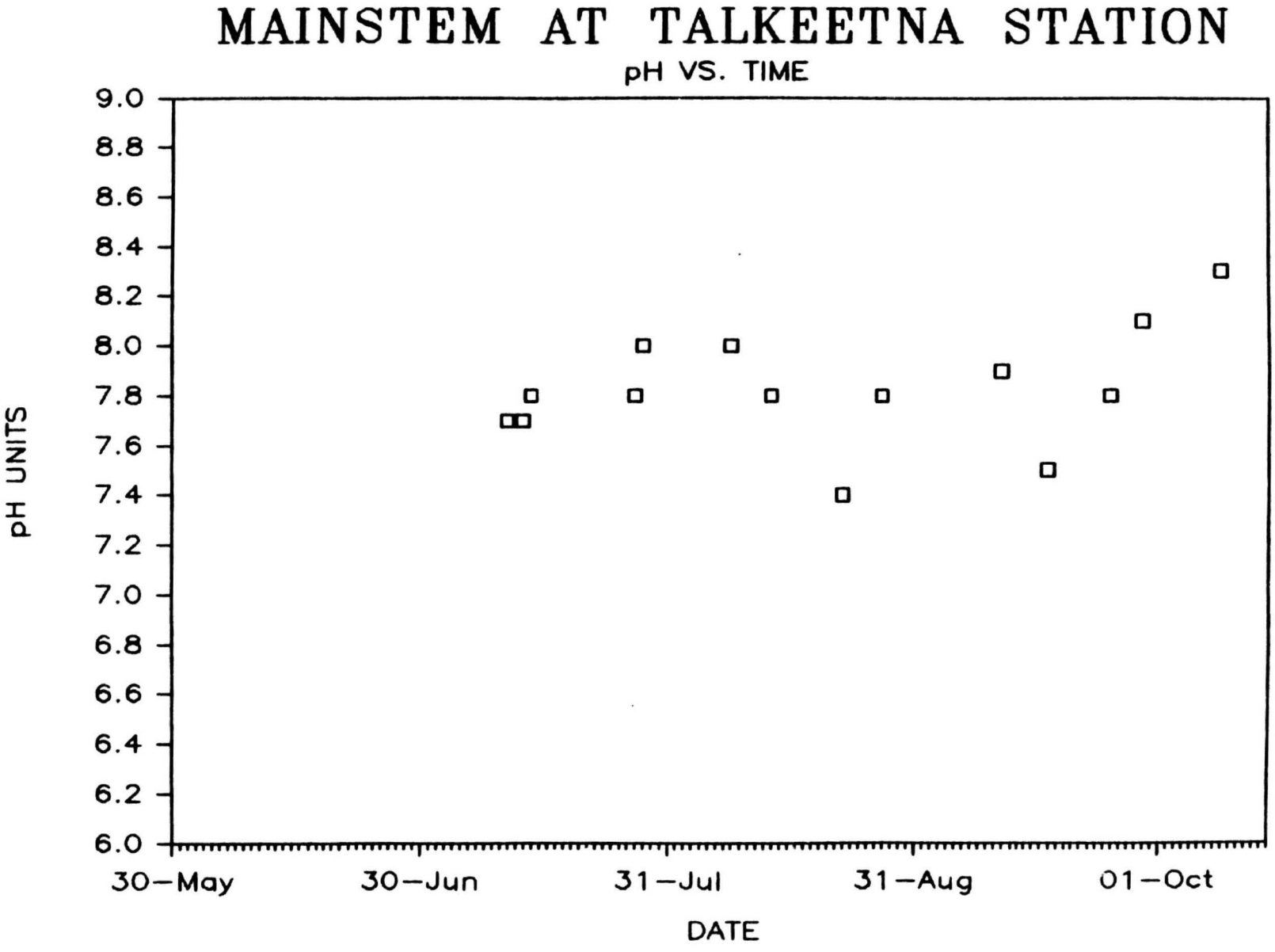
Appendix Figure 39. Dissolved oxygen percent saturation levels from upstream of Portage Creek (RM 149.4).



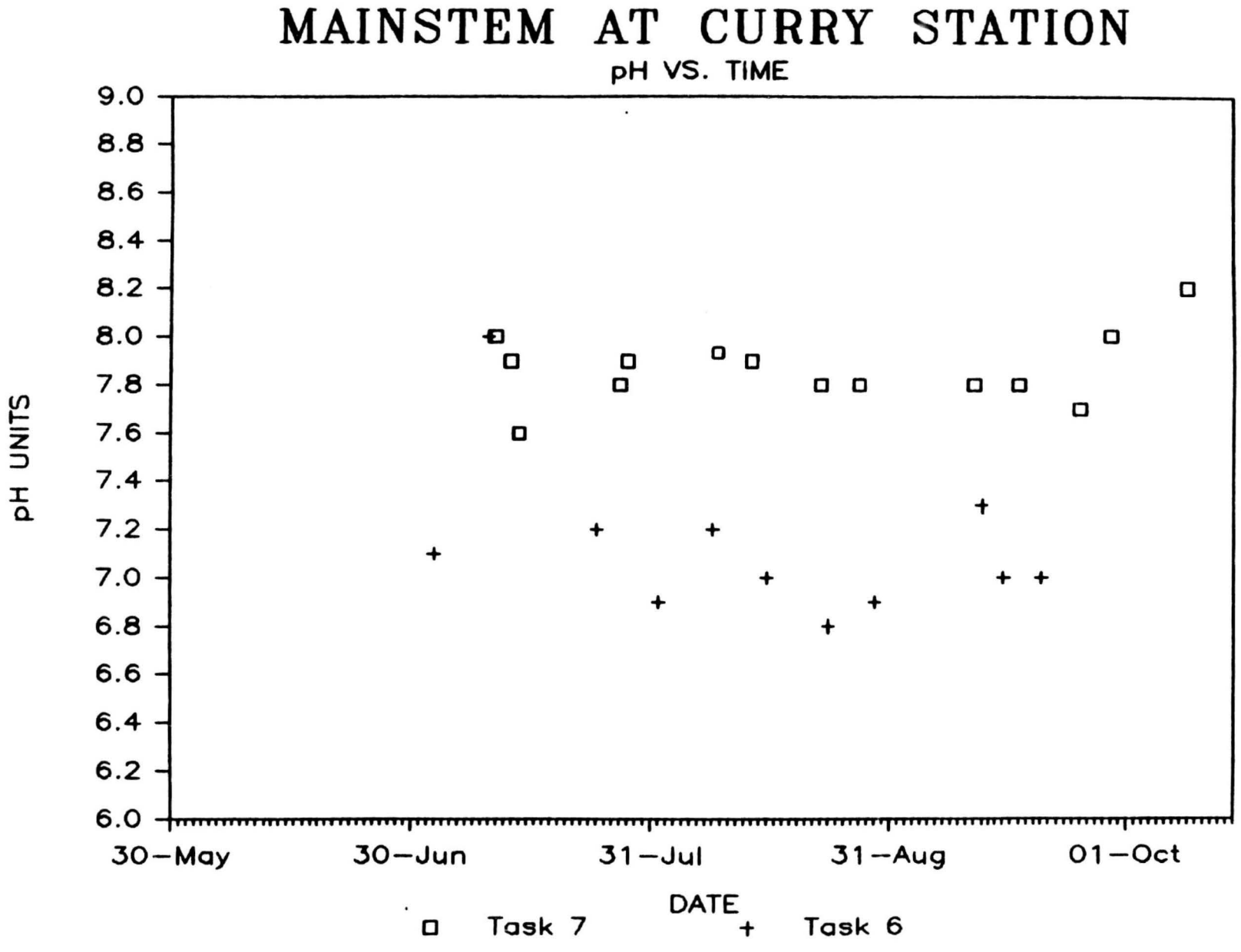
Appendix Figure 40. Dissolved oxygen percent saturation levels from the proposed Watana Dam Site (RM 189.2).



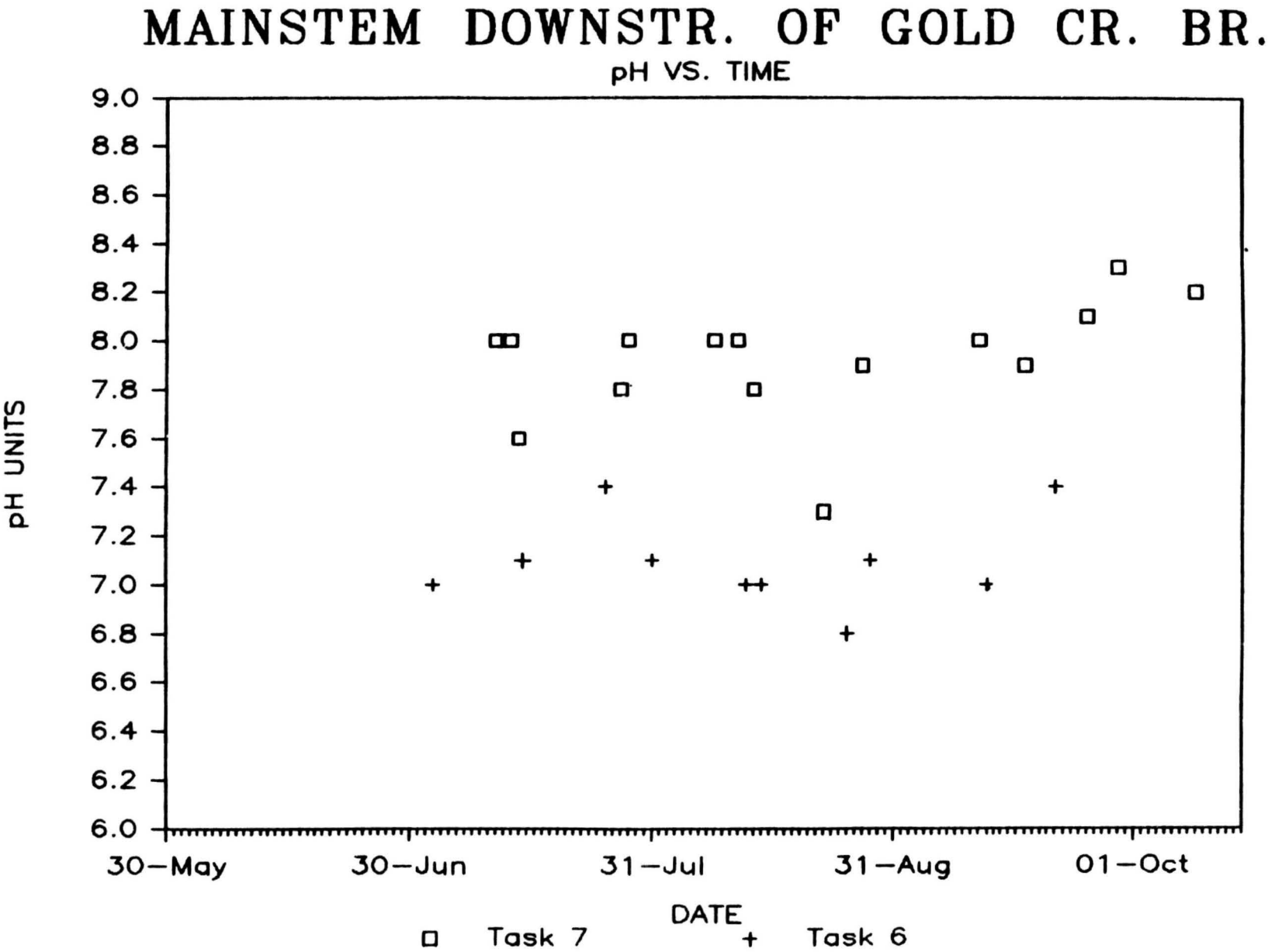
Appendix Figure 41. Weekly measurements of pH from upstream of the Parks Highway Bridge (RM 86.2).



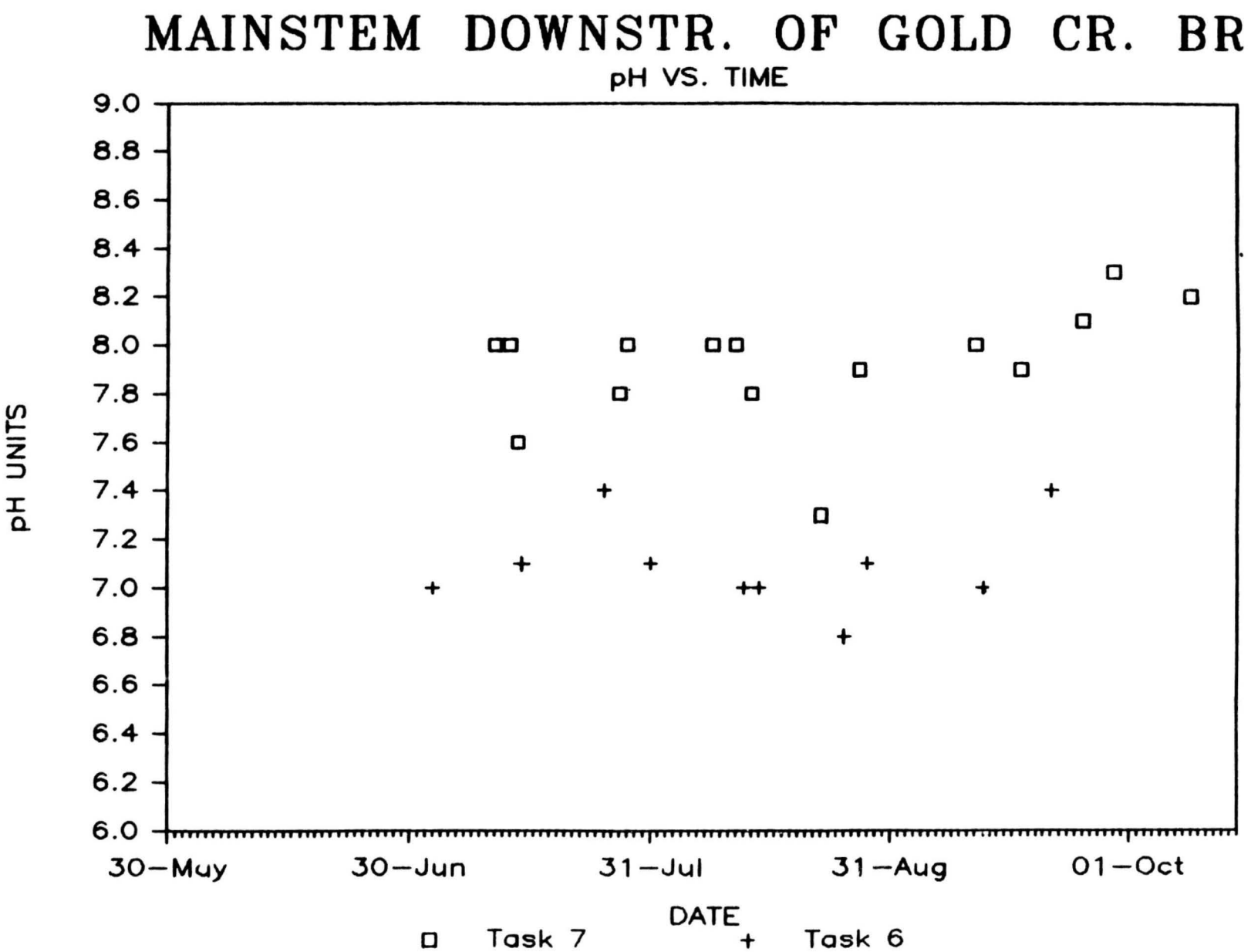
Appendix Figure 42. Weekly measurements of pH from the Talkeetna Station (RM 103.0).



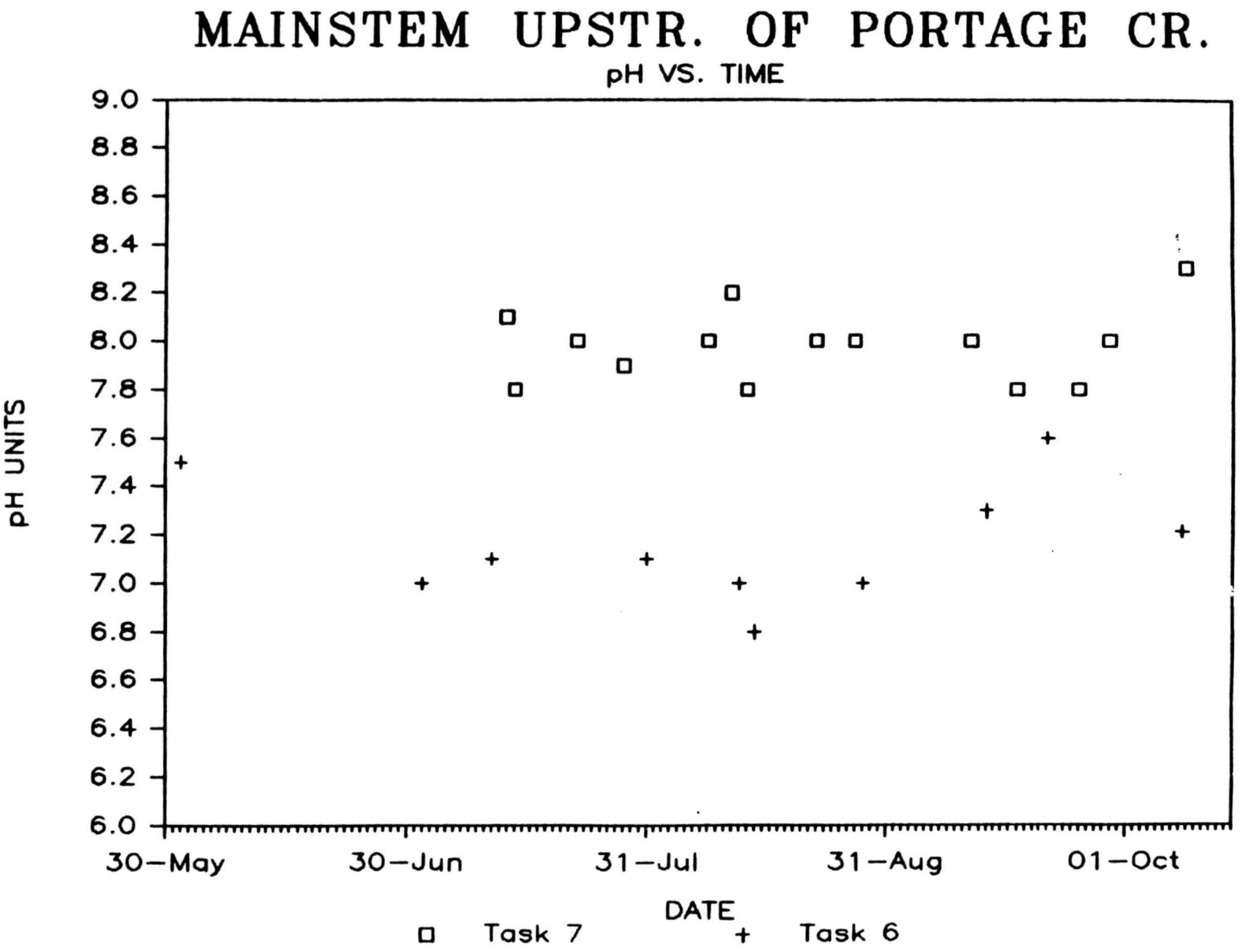
Appendix Figure 43. Weekly measurements of pH from Curry Station (RM 120.7).



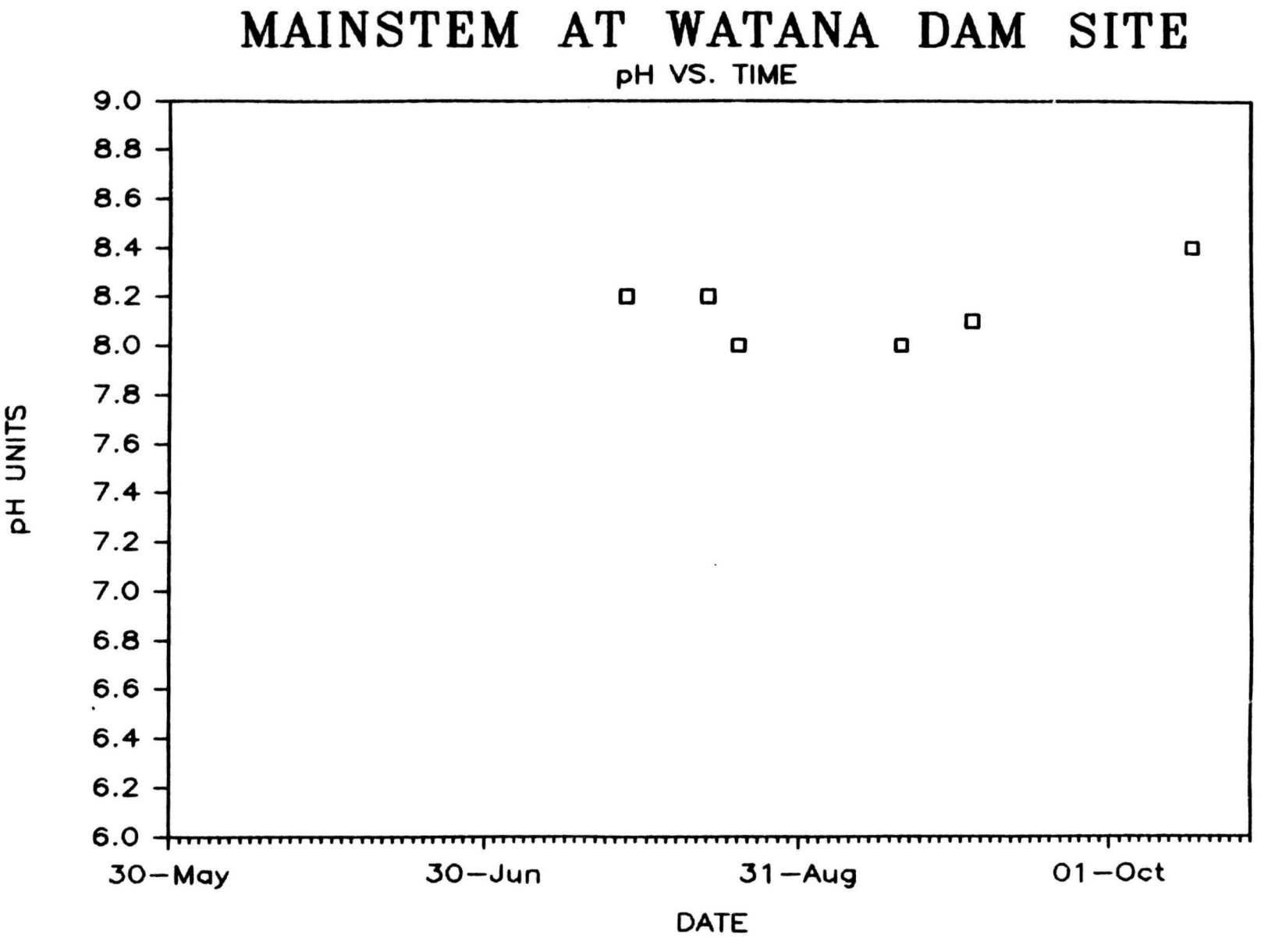
Appendix Figure 44. Weekly measurements fo pH from downstream of the Gold Creek Bridge (RM 120.7).



Appendix Figure 44. Weekly measurements fo pH from downstream of the Gold Creek Bridge (RM 120.7).



Appendix Figure 45. Weekly measuremtns of pH from upstream of Portage Creek (RM 149.4).



Appendix Figure 46. Weekly measurements of pH from the proposed Watana Dam Site (RM 189.2).