SUSITNA HYDROELECTRIC PROJECT

1982

WATER QUALITY

ANNUAL REPORT

DECEMBER 1982

PREPARED BY:

R&M CONSULTANTS, INC.

PREPARED FOR:

ACRES

ALASKA POWER AUTHORITY

ALASKA POWER AUTHORITY
SUSITNA HYDROELECTRIC PROJECT

TASK 3 - HYDROLOGY

WATER QUALITY ANNUAL REPORT - 1982

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ALASKA POWER AUTHORITY
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ACKNOWLEDGMENTS

This report presents data collected for Acres American, Inc., under contract to the Alaska Power Authority for the Susitna Hydroelectric Feasibility Study. The R&M water quality data contained herein were collected and field tested by Carl Schoch and Larry Nicholson on 7/10/82, 7/16/82, 7/23/82 and 8/5/82, thereafter by Bob Butera and Lisa Fotherby. Laboratory analyses were conducted by Chemical and Geological Laboratories, Inc. and Northern Testing Laboratories, Inc. The U.S. Geological Survey data were provided by Pat Still, Greg Pope, Jim Nott and Dick Schneider of the U.S.G.S., Alaska Water Resources Division. Carol Larson and Carl Schoch of R&M Consultants compiled and summarized the majority of the data for the tables in the report. Valuable input was also provided by Mike Storonsky of Acres American, Inc., Buffalo. Assistance by Nancy Larson from the ARR Gold Creek Section House, in shipping the water samples to Fairbanks, was greatly appreciated.

1 - INTRODUCTION

The 1982 water quality program conducted by R&M Consultants is a continuation of the hydrology data collection, Subtask 3.03 of the Susitna Hydroelectric Feasibility Study. The objective of the program is to establish baseline water quality data, supplement U.S. Geological Survey data and identify parameters which are particularly sensitive to flow variability. This report describes and presents the results of the 1982 data collection effort and is intended to supplement the 1981 Water Quality Annual Report where a more comprehensive discussion on methodology is given as well as a tabulation of historical data. Section 2 of this report explains the significant problems encountered with the 1982 data and presents tabulations of the parameter concentrations as well as 1980-1982 water quality summaries of data collected by R&M Consultants and similar summaries of records available from the U.S. Geological Survey. Attachment A contains a tabulation of 1982 water temperatures recorded at Denali, Vee Canyon and in the Chulitna River by the U.S.G.S., Attachment B has a listing of provisional 1982 U.S.G.S. water quality data collected from the stations at Gold Creek, Sunshine (Parks Highway bridge) and Susitna Station near the Yentna River confluence. Attachment C has the 1982 tabulated daily discharges from the U.S.G.S. gaging station at Gold Creek, and the R&M station at Watana. Again, the U.S.G.S. data are preliminary and subject to change. Attachment D presents the results of an analysis by Particle Data Laboratories Ltd., on a suspended sediment sample collected from the Susitna River near Chase (near railroad mile post 232 or river mile 103).

2 - 1982 WATER QUALITY DATA COLLECTION

2.1 - Field Data Collection

During the previous two years of water sampling, the R&M program targeted flow events related to snowmelt floods, rainfall floods and winter low flows. These data effectively supplemented the regularly scheduled U.S.G.S. sampling program. The 1982 data collection effort concentrated on defining the variability of specific parameters pertinent to Exhibit E, Chapter 2 of the Federal Energy Regulatory Commission (FERC) license application. The application required data on concentrations of major ions (Ca, Mg, K, Na, HCO_3, SO_4, Cl), nutrients (phosphate and nitrates), specific conductance, pH, total dissolved solids, alkalinity, hardness, dissolved oxygen, suspended sediments, turbidity and temperature.

A significant change in procedures for 1982 was that Chemical and Geological Laboratories, Inc. in Anchorage, analysed 4 of the collected samples, and Northern Testing Laboratories, Inc. of Fairbanks analysed the remaining 8 samples, as noted on the data tables. The quality control procedures used by Northern Testing Labs are preferred. Duplicate samples were sent to each lab for testing on August 10, 1982, the results of which appear in Table 2.3, under separate columns labeled 8/10/82. All field parameters were measured by R&M Consultants, Inc. using methods outlined in the Water Quality Procedures Manual, revised (R&M, 1981).

Tables 2.2 and 2.3 present the results of field and laboratory testing of samples collected by R&M Consultants in 1982. These tables, together with Tables 3.1, 3.2, and 4.1 - 4.4 from the 1981 Water Quality Annual Report (R&M, 1981) provide the data base for the statistical summary presented on Tables 2.4 and 2.5 of this report.

The 1982 water quality program concentrated on a limited number of parameters sampled at frequent intervals. In addition, it was intended that a sample be collected on the rising limb, at the peak, and on the falling limb of a flood hydrograph. The first water sample for the 1982 program was collected in February through an open lead in the ice cover near the center of the channel at both Gold Creek and Vee Canyon. Summer samples were collected weekly from early July through the first half of August, thereafter every two weeks through September, and finally one set of samples was collected during freezeup in October when the water temperature had reached 0°C and frazil ice was flowing. The September 15 values correspond to a rising limb of a hydrograph near the maximum stage of a late summer flood.

Several problems with electronic instruments were experienced in the field, which has resulted in data gaps. The most significant is the lack of pH values or hydrogen ion concentrations. The instrumentation performed erratically and would not maintain the calibration values. The numbers read off the meter were of dubious accuracy and have been rejected. Alkalinity could not be measured in the field, however, the laboratory did determine alkalinity of the sample if it was received within 24 hours from the time of collection. Alkalinity, ortho-phosphate and nitrogen are time dependent parameters, and even though the samples were preserved with sulfuric acid, the concentrations of these parameters will not maintain representative values longer than 24 hours. Logistically this requirement presented a problem. With the cooperation of Alaska Railroad personnel at the Gold Creek Section House the problem was alleviated by shipping the samples to Fairbanks by train where they were picked up at the station and delivered to Northern Testing Laboratories, Inc. for analysis. Usually this could be accomplished within the time limit; however, the August 5 samples arrived too late for accurate concentration analyses.

R&M deleted from the 1982 program the measurement of settleable solids in the field. During the past two years of sampling, no appreciable accumulation of solids had been observed to settle out in the Imhoff cones.

Specific conductivity which is routinely measured in the field was omitted from the list of laboratory parameters since this procedure was redundant and did little to strengthen the data base. Uranium, radioactivity and organic chemicals had been monitored in 1980 and 1981 with no significant concentrations appearing; therefore, these parameters were dropped from the 1982 program.

In 1980 when the water quality monitoring program began, the objective was to gather data on a diverse range of parameters in order to define those which were present in significant concentrations. The ICAP scan was utilized to determine which elements occurred in concentrations greater than 0.05 mg/l. After 2 years of accumulated data, the significant elements have been isolated and no further general analysis is being conducted.

Major cations and anions were routinely analyzed to determine the accuracy of the laboratory analyses by means of an ion balance calculation (the sums of the milliequivalent (meq) concentrations of the cations and of the anions should be equal). R&M computed the water hardness by dividing the major cation concentrations (Ca & Mg) by their respective equivalent weights and then multiplying the sum of the cations in meq/l by the equivalent weight of $CaCO_3$, in order to report the hardness as $CaCO_3$.

In conjunction with the river sedimentation study and with the cooperation of the U.S. Geological Survey, a comprehensive sediment sampling and analysis program was conducted in 1982. The U.S.G.S. collected samples of bedload, suspended sediment and turbidity on a weekly basis from June through September from four sites near the three rivers confluence area near Talkeetna. The Susitna River was sampled near Chase at railroad mile 232 (river mile 103) and at Sunshine, near the Parks Highway Bridge. The Chulitna River was sampled near the Chulitna Canyon, and the Talkeetna River was sampled at the U.S.G.S. gaging station about 5 miles upstream from the mouth. Turbidity samples were collected near midchannel with a depth- integrated sampler, then submitted to R&M

Consultants for analysis. The measurements were conducted with a nephelometer (Hach #16800 Portalab Turbidimeter). The U.S.G.S. determined preliminary suspended sediment concentrations on duplicate samples at their Anchorage lab. The results of these tests have been compiled and are shown on Table 2.11. The results of the particle size distribution and the bedload analyses have not been made available.

R&M submitted a depth-integrated water sample to Particle Data Laboratories, Ltd. for determination of suspended sediment concentration, particle size distribution and petrographic analysis. These results are presented in Attachment D.

2.2 - Review of Data Handling and Summarization Procedures

An explanation of the methods used for summarizing the data collected by R&M Consultants and the U.S. Geological Survey may be appropriate to define the significance of the values, to avoid potential confusion about discrepancies between the 1981 summary tables and the summary tables presented in this report, and to establish guidelines for compiling these data summaries in hopes that they will be adhered to in the future.

Because the U.S. Geological Survey and R&M Consultants use different criteria for establishing sampling intervals, some common basis for a data summary was necessary. The U.S.G.S. generally samples monthly to define seasonal and yearly variations over a long period of record, at some stations as long as 40 years. The water quality program conducted by R&M Consultants was designed to assess concentrations at various specific discharges, and only of parameters known to be critical to certain aquatic habitats currently under study. In order to present the information from both organizations in a compatible format, the data were arranged according to three seasons: summer, winter and breakup. The starting and ending points of these "seasons" can vary from year to year. For the purposes of the summaries, breakup has been defined as extending "from the time the ice begins to break-up, until recession of spring runoff" (R&M, 1981).

In practical terms, however, the available records are not always adequate to identify this period each year at each station. Historically, on the average, the ice has gone out around the first week in May, and by June summer rains have begun. Therefore, for the 1982 compilations, the month of May was considered to be breakup. Similarly, winter was defined as starting when "the water temperature drops essentially to zero in the fall." In these compilations, a temperature of "essentially zero" was considered to be 0.5°C or less. In the absence of water temperature data, winter was defined as starting October 15, when frazil ice can normally be found in the river water. Summer extends from the end of breakup till

the beginning of winter. Occasionally, data were collected during unseasonal climatic events; these data were assigned to a season on a case by case basis.

In general, each water quality parameter was reported by the USGS as a single value measured on a given day. All data were assigned to the appropriate season using the above criteria and tabulated. The maximum and minimum values were recorded, and the arithmetic mean was calculated for each parameter during each season. Occasionally, the U.S.G.S. made several measurements on the same day of certain parameters along a stream cross section. To avoid weighting days with multiple data points more heavily than days with single values, the multiple data points were averaged and the resultant value utilized as a single data point in the determination of maximum, minimum, mean values and number of observations. Data were occasionally reported as "ND" (Not Detectable) or listed as being less than a given minimum detection limit. These data were not utilized in calculating means or determining minimum values.

For Example:

> The raw data seasonal breakdown for ortho-phosphate from samples collected at Gold Creek by R&M Consultants from 1980 through 1982 is as follows:

Summer		Winter	Breakup
<0.02	0.01	<0.01	<0.01
<0.01	<0.01	<0.01	<0.01
<0.01	<0.01	0.02	
0.10	<0.01		
<0.01	<0.01		
<0.01	<0.01		
<0.01	<0.01		
<0.01	0.02		

Data Summary	Summer	Winter	Breakup
Maximum	0.10	0.02	-
Minimum	0.01	0.02	-
Mean	0.04	0.02	-
# of Detectable Values	3	1	0
# of Observations	16	3	2

The number of observations of each parameter during each season was reported two ways. The Number of Observations" indicates the number of times a parameter was tested for and includes values reported as less than the minimum detection limit. The "Number of Detectable Values" includes only hard data. Maximums, minimum, and means were calculated utilizing only detected concentrations.

Tables 2.4 and 2.5 list the 3 year summary results for all parameters which R&M Consultants tested. Table s 2.6 through 2.10 present the summarized data collected by the U.S.G.S. which are statistically compatible with the data collected by R&M Consultants.

Much of the data published by the U.S. Geological Survey represents test, analytical procedures and field methodology that are not used by R&M Consultants or the contracted laboratory. Incompatible analytical procedures, for instance, can lead to reported data that are not directly comparable. The U.S.G.S. generally reports total concentrations for a specific parameter. For the purpose of this study, R&M has only analysed and reported dissolved concentrations, unless otherwise noted. Therefore, to facilitate direct comparison of values, only the U.S.G.S. dissolved

concentrations have been summarized. See Attachment B for a comprehensive listing of all the parameters analysed by the U.S.G.S. and the many ways in which the concentrations are reported.

Note: R&M Consultants, Inc. at Vee Canyon and Gold Creek

U.S. Geological Survey at Denali, Vee Canyon, Gold Creek, Sunshine, and Susitna Station

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FIGURE 2.1
Susitna River Water Quality Sampling Sites

TABLE 2.1
WATER QUALITY PARAMETERS ANALYSED
FROM GOLD CREEK
BY R&M CONSULTANTS, INC.[1]

	Method[2]	Detection Limit[3]	Years of Data Available
Field Parameters			
Dissolved Oxygen	SM 421F	0.1	1980-1982
Percent Saturation, %	C	1	1980-1982
pH, pH units	EPA p239	±0.01	1980-1981
Conductivity, umhos/cm	EPA p275	1	1980-1982
Temperature, °C	SM 212	0.1	1980-1982
Carbon Dioxide	SM 407A	1	1980-1981
Alkalinity as $CaCO_3$	EPA p3	2	1980-1981
Settleable Solids, ml/l	EPA p273	0.1	1980-1981
Laboratory Parameters			
Ammonia Nitrogen	EPA p159	0.05	1980-1982
Organic Nitrogen	Kjeldahl	0.1	1980-1981
Kjeldahl Nitrogen	EPA p175	0.1	1980-1982
Nitrate Nitrogen	EPA p197	0.1	1980-1982
Nitrite Nitrogen	EPA p215	0.01	1980-1982
Total Nitrogen	EPA p175	0.1	1980-1981
Ortho-Phosphate	EPA p249	0.01	1980-1982
Total Phosphorus	EPA p249	0.01	1980-1982
Chemical Oxygen Demand	EPA p20	1	1980-1982
Chloride	EPA p29	0.2	1980-1982

TABLE 2.1 (Continued)

	Method[2]	Detection Limit[3]	Years of Data Available
Laboratory Parameters (Cont'd)			
Color	EPA p36	1	1980-1981
Hardness	C	1	1980-1982
Sulfate	EPA p277	1	1980-1982
Total Dissolved Solids[4]	EPA p266	1	1980-1982
Total Suspended Solids[5]	EPA p268	1	1980-1982
Turbidity	EPA p295	0.05	1980-1981
Uranium	Fluorescence	0.075	1980-1981
Gross Alpha picocurie/liter	EPA p264	3	1980-1981
Total Organic Carbon	EPA p415	1.0	1980-1982
Total Inorganic Carbon	EPA p415	1.0	1980-1982
Organic Chemicals			
Endrin	SM 509A	0.0002	1980-1981
Lindane	SM 509A	0.004	1980-1981
Methoxychlor	SM 509A	0.1	1980-1981
Toxaphene	SM 509A	0.005	1980-1981
2, 4-D	SM 509B	0.1	1980-1981
2, 4, 5-TP Silvex	SM 509B	0.01	1980-1981
Elements[6]			
Ag, Silver		0.05	1980-1981
Al, Aluminum		0.05	1980-1981
As, Arsenic		0.10	1980-1981
Au, Gold		0.05	1980-1981
B, Boron		0.05	1980-1981
Ba, Barium		0.05	1980-1981
Bi, Bismuth		0.05	1980-1981
Ca, Calcium		0.05	1980-1982

TABLE 2.1 (Continued)

	Method[2]	Detection Limit[3]	Years of Data Available
Laboratory Parameters (Cont'd)			
Elements - (Cont'd)			
Cd, Cadmium		0.01	1980-1981
Co, Cobalt		0.05	1980-1981
Cr, Chromium		0.05	1980-1981
Cu, Copper		0.05	1980-1981
Fe, Iron		0.05	1980-1981
Hg, Mercury		0.1	1980-1981
K, Potassium		0.05	1980-1982
Mg, Magnesium		0.05	1980-1982
Mn, Manganese		0.05	1980-1981
Mo, Molybdenum		0.05	1980-1981
Na, Sodium		0.05	1980-1982
Ni, Nickel		0.05	1980-1981
Pb, Lead		0.05	1980-1981
Pt, Platinum		0.05	1980-1981
Sb, Antimony		0.10	1980-1981
Se, Selenium		0.10	1980-1981
Si, Silicon		0.05	1980-1981
Sn, Tin		0.10	1980-1981
Sr, Strontium		0.05	1980-1981
Ti, Titanium		0.05	1980-1981
W, Tungsten		1.0	1980-1981
V, Vanadium		0.05	1980-1981

TABLE 2.1 (Continued)

	Method[2]	Detection Limit[3]	Years of Data Available
Laboratory Parameters (Cont'd)			
Elements - (Cont'd)			
Zn, Zinc		0.05	1980-1981
Zr, Zirconium		0.05	1980-1981

(1) From 1980 to 1981 Chemical & Geological Laboratories of Alaska, Inc., in Anchorage provided laboratory analyses. In 1982, lab analysis was performed by Northern Testing Laboratories, Inc., in Fairbanks.

(2) SM - Standard Methods for the Examination of Water and Wastewater, 15th edition, 1980.

EPA - Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020.

C - Value computed by R&M Consultants, Inc.

Kjeldahl - SM 420

Fluorescence - Following the accepted method outlined by G.K. Turner Associates.

(3) All values are expressed in mg/l unless otherwise noted.

(4) TDS - (filterable) material that passes through a standard glass fiber filter and remains after evaporation (SM p93).

(5) TSS - (nonfilterable) material retained on a standard glass fiber filter after filtration of a well-mixed sample.

(6) An ICAP Scan was used by Chemical and Geological Laboratories for element anaysis from 1980 to 1981.

TABLE 2.2
R&M CONSULTANTS, INC.
1982 WATER QUALITY DATA - SUSITNA RIVER AT VEE CANYON (RM 223.1)

NOTE: Dash indicates data not available.

	Date Sampled 2/4/82*
Field Parameters[1]	
Dissolved Oxygen	14.5
Percent Saturation	101
pH, pH Units	5.95
Conductivity, umhos/cm @ 25°C	333
Temperature, °C	0.0
Free Carbon Dioxide [2]	----
Alkalinity, as $CaCO_3$	----
Settleable Solids, ml/l	----
Discharge c.f.s.	----
Laboratory Parameters[1][3]	
Ammonia Nitrogen	<0.01
Organic Nitrogen	----
Kjeldahl Nitrogen	< 1
Nitrate Nitrogen	0.30
Nitrite Nitrogen	0.01
Total Nitrogen	----
Ortho-Phosphate	0.02
Total Phosphorus	0.02
Alkalinity, as $CaCO_3$	----
Chemical Oxygen Demand	13
Chloride	18.0
Conductivity, umhos/cm @ 25°C	----
True Color, Color Units	5 @ pH 7.1 @ 12.8°C

TABLE 2.2 (Continued)

NOTE: Dash indicates data not available.

Laboratory Parameters[1][3] (continued)	Date Sampled 2/4/82*
Hardness, as $CaCO_3$[4]	122
Sulfate	18
Total Dissolved Solids	157
Total Suspended Solids	1.3
Turbidity, NTU	0.55
Uranium	----
Radioactivity, Gross Alpha, pCi/l	----
Total Organic Carbon	2
Total Inorganic Carbon	2
Ca, Calcium	40.59
Mg, Magnesium	5.0
K, Potassium	4.5
Na, Sodium	12.0
Fe, Iron	1.35
Si, Silicon	5.0

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* Analysed by Northern Testing Laboratories, Inc., Fairbanks.

(1) Table values are mg/l unless noted otherwise.

(2) All values for free CO_2 determined from nomograph on p. 297 of Standard Method, 14th edition.

(3) Samples for all parameters except chemical oxygen demand, dissolved and suspended solids, and turbidity were filtered.

(4) Hardness calculated by R&M personnel.

TABLE 2.3
R&M CONSULTANTS, INC.
1982 WATER QUALITY DATA - SUSITNA RIVER AT GOLD CREEK (RM 136.7)

NOTE: Dash indicates data not available.

	Date Sampled					
	2/06/82*	7/10/82	7/16/82	7/23/82	8/05/82*	8/10/82*
Field Parameters[1]						
Dissolved Oxygen	----	11.7	11.8	11.6	10.8	11.4
Percent Saturation	----	110	108	105	104	103
pH, pH Units	----	----	----	----	----	----
Conductivity, umhos/ cm @ 25°C	230	183	157	117	149	124
Temperature, °C	0.0	12.0	10.5	10.5	12.4	9.6
Free Carbon Dioxide [2]	----	----	----	----	----	----
Alkalinity, as $CaCO_3$	----	----	----	----	----	----
Settleable Solids, ml/l	----	----	----	----	----	----
Discharge c.f.s.	----	21,700	24,200	23,600	16,300	15,400
Laboratory Parameters[1][3]						
Ammonia Nitrogen	<0.01	0.15	0.21	0.08	----	0.03
Organic Nitrogen	----	0.50	0.51	0.56	----	----
Kjeldahl Nitrogen	<1.00	0.65	0.72	0.64	4.80	0.06
Nitrate Nitrogen	0.34	0.28	<0.10	0.57	0.86	0.29
Nitrite Nitrogen	<0.01	<0.01	<0.01	<0.01	----	<0.01
Total Nitrogen	1.34	0.93	0.82	1.21	5.66	0.35
Ortho-Phosphate	0.02	<0.01	<0.01	<0.01	----	0.01
Total Phosphorus	0.02	0.10	0.21	0.43	0.01	0.01
Alkalinity, as $CaCO_3$	----	----	----	----	----	43
Chemical Oxygen Demand	10.0	5.0	1.3	4.1	6.0	1.0
Chloride	26.0	----	----	----	4.2	12.0
Conductivity, umhos/cm @ 25°C	----	----	----	----	----	----
True Color, Color Units	----	----	----	----	----	----

TABLE 2.3 (Continued)

NOTE: Dash indicates data not available.

	Date Sampled					
	2/06/82*	7/10/82	7/16/82	7/23/82	8/05/82*	8/10/82*
Laboratory Parameters[1][3] (continued)						
Hardness, as $CaCO_3$[4]	104	----	----	----	97	48
Sulfate	17.0	6.1	<1.0	<1.0	14.7	14.8
Total Dissolved Solids	166	85	100	72	89	103
Total Suspended Solids	1	580	56	213	231	206
Turbidity, NTU	----	----	----	----	----	----
Uranium	----	----	----	----	----	----
Radioactivity, Gross Alpha, pCi/l	----	----	----	----	----	----
Total Organic Carbon	1.0	2.8	2.5	1.4	----	2.1
Total Inorganic Carbon	4	11	11	12	----	12
Ca, Calcium	34.4	----	----	----	33.5	16.2
Mg, Magnesium	4.4	----	----	----	3.1	1.7
K, Potassium	2.7	----	----	----	1.9	1.3
Na, Sodium	21.1	----	----	----	4.3	10.0

* Samples that were analysed by Northern Testing Laboratories, Fairbanks. Other laboratory analyses were performed by Chemical and Geological Laboratories of Anchorage, Alaska.

(1) Table values are mg/l unless noted otherwise.

(2) All values for free CO_2 determined from nomograph on p. 297 of Standard Methods, 14th edition.

(3) Samples for all parameters except chemical oxygen demand, dissolved and suspended solids, and turbidity were filtered.

(4) Hardness calculated by R&M personnel.

s17/h

TABLE 2.3 (Continued)

NOTE: Dash indicates data not available.

	Date Sampled				
	8/10/82	8/26/82*	9/04/82*	9/15/82*	10/14/82*
Field Parameters[1]					
Dissolved Oxygen	----	10.5	11.6	11.1	----
Percent Saturation	----	95	100	----	----
pH, pH Units	----	6.83	----	----	----
Conductivity, umhos/cm @ 25°C	----	135	133	103	84
Temperature, °C	----	10.5	7.8	7.8	0.0
Free Carbon Dioxide [2]	----	----	----	----	----
Alkalinity, as $CaCO_3$	----	----	----	----	----
Settleable Solids, ml/l	----	----	----	----	----
Discharge c.f.s.	15,400	12,000	13,500	29,400	7,300
Laboratory Parameters [1][3]					
Ammonia Nitrogen	0.07	0.18	0.02	0.02	----
Organic Nitrogen	<0.05	----	----	----	----
Kjeldahl Nitrogen	0.07	<0.1	15.00	<0.01	<0.10
Nitrate Nitrogen	<0.10	<0.10	0.14	<0.10	0.12
Nitrite Nitrogen	<0.01	<0.01	<0.01	<0.01	----
Total Nitrogen	----	----	----	----	----
Ortho-Phosphate	<0.01	<0.01	<0.01	<0.01	----
Total Phosphorus	<0.05	0.02	0.01	<0.01	0.01
Alkalinity, as $CaCO_3$	----	37	40	35	----
Chemical Oxygen Demand	1.3	<1.0	<1.0	7.5	6.0
Chloride	----	8.8	6.4	5.2	9.0
Conductivity, umhos/cm @ 25°C	----	37	37	----	----
True Color, Color Units	----	----	----	----	----

s17/h

TABLE 2.3 (Continued)

NOTE: Dash indicates data not available.

Laboratory Parameters[1]	Date Sampled 8/10/82	8/26/82*	9/04/82*	9/15/82*	10/14/82*
Hardness, as $CaCO_3$[4]	----	37	37	----	67
Sulfate	6.0	11.5	11.5	3.2	15.8
Total Dissolved Solids	100	95	68	83	104
Total Suspended Solids	181	219	60	231	7
Turbidity, NTU	----	----	----	----	----
Uranium	----	----	----	----	----
Radioactivity, Gross Alpha, pCi/l	----	----	----	----	----
Total Organic Carbon	2.0	1.6	2.2	3.8	----
Total Inorganic Carbon	8.7	11	9.6	8.6	----
Ca, Calcium	----	12.9	12.4	16.1	21.0
Mg, Magnesium	----	1.2	1.4	2.4	3.4
K, Potassium	----	1.6	1.4	0.9	1.2
Na, Sodium	----	6.7	6.5	6.0	8.4

* Samples that were analysed by Northern Testing Laboratories, Inc., Fairbanks. Other laboratory analyses were performed by Chemical and Geological Laboratories of Alaska, Anchorage.

(1) Table values are mg/l unless noted otherwise.

(2) All values for free CO_2 determined from nomograph on p. 297 of Standard Methods, 14th edition.

(3) Samples for all parameters except chemical oxygen demand, dissolved and suspended solids, and turbidity were filtered.

(4) Hardness calculated by R&M personnel.

TABLE 2.4

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: VEE CANYON 1980 - 1982
Elevation: 1900 FT.

	Summer/Winter/Break-Up				
	Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Field Parameters (1)					
Dissolved Oxygen	12.6/14.5/10.4	9.7/10.7/10.4	11.9/13.1/10.4	7/4/1	7/4/1
Percent Saturation	110/104/83	84/84/83	101/98/83	7/4/1	7/4/1
pH, pH Units	7.9/7.6/6.6	7.0/6.0/6.6	7.6/7.1/6.6	10/4/1	10/4/1
Conductivity, umhos/cm @ 25°C	171/333/100	103/130/100	129/212/100	9/4/1	9/4/1
Temperature, °C	11.9/0.1/6.5	5.3/-0.1/6.5	7.7/0.0/6.5	10/4/1	10/4/1
Free Carbon Dioxide (2)	4.5/20.0/-	1.7/5.5/-	3.0/10.3/-	7/3/0	7/3/0
Alkalinity, as $CaCO_3$	81/99/-	41/57/-	61/81/-	7/3/0	7/3/0
Settleable Solids, ml/l	1.0/-/-	0.1/-/-	0.7/-/-	4/0/0	10/3/1
Laboratory Parameters (1)(3)					
Ammonia Nitrogen	.27/.26/.13	.09/.09/.13	.16/.19/.13	6/2/1	9/4/1
Organic Nitrogen	.63/.85/.34	.22/.08/.34	.49/.40/.34	8/3/1	9/3/1
Kjeldahl Nitrogen	.79/.85/.47	.26/.17/.47	.60/.52/.47	9/4/1	9/4/1
Nitrate Nitrogen	.19/.30/-	.09/.30/-	.14/.30/-	5/1/0	10/4/1
Nitrite Nitrogen	-/.01/-	-/.01/-	-/.01/-	0/1/0	9/4/1
Total Nitrogen	.92/.85/.47	.39/.17/.47	.61/.52/.47	9/3/1	9/3/1
Ortho-Phosphate	.05/.02/-	.03/.02/-	.04/.02/-	2/2/0	9/4/1
Total Phosphorus	.49/.07/-	.03/.02/-	.14/.05/-	6/2/0	10/4/1

TABLE 2.4 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: VEE CANYON 1980 - 1982
Elevation: 1900 FT.

Laboratory Parameters (1) (3) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Alkalinity, as $CaCO_3$	60/66/-	40/66/-	48/66/-	4/1/0	4/1/0
Chemical Oxygen Demand	39/13/8	8/6/8	20/10/8	8/4/1	8/4/1
Chloride	11/18/4.5	3/16/4.5	6.7/17.5/4.5	7/4/1	10/4/1
Conductivity, umhos/cm @ 25°C	150/190/-	150/190/-	150/190/-	1/1/0	1/1/0
True Color, Color Units	175/30/15	5/5/15	70/15/15	9/4/1	9/4/1
Hardness, as $CaCO_3$ (4)	76/122/40	49/78/40	58/103/40	10/4/1	10/4/1
Sulfate	9/18/4	2/11/4	6/14/4	10/4/1	10/4/1
Total Dissolved Solids	170/157/100	38/115/100	98/141/100	10/4/1	10/4/1
Total Suspended Solids	1150/14/93	25/0.6/93	358/6.0/93	10/4/1	10/4/1
Turbidity, NTU	720/2.5/25	8.7/.35/25	156/1.3/25	14/4/1	14/4/1
Uranium	-/-/-	-/-/-	-/-/-	0/0/0	5/2/0
Radioactivity, Gross Alpha, pCi/l	-/-/-	-/-/-	11.6 ± 0.6/ 10.3 ± 0.6/-	1/1/0	1/1/0
Total Organic Carbon	-/2/-	-/2/-	-/2/-	0/1/0	0/1/0
Total Inorganic Carbon	-/2/-	-/2/-	-/2/-	0/1/0	0/1/0
Organic Chemicals					
Endrin	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
Lindane	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0

TABLE 2.4 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: VEE CANYON 1980 - 1982
Elevation: 1900 FT.

Laboratory Parameters (1) (3) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Methoxychlor	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
Toxaphene	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
2, 4-D	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
2, 4, 5-TP Silvex	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
Elements (Dissolved)					
Ag, Silver	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Al, Aluminum	2.2/.18/-	1.6/.18/-	1.4/.18/-	3/1/0	10/3/1
As, Arsenic	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Au, Gold	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
B, Boron	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Ba, Barium	.12/-/-	.07/-/-	.10/-/-	7/0/0	10/3/1
Bi, Bismuth	.19/-/-	.19/-/-	.19/-/-	1/0/0	10/3/1
Ca, Calcium	23/41/13	13/25/13	18/33/13	10/4/1	10/4/1
Cd, Cadmium	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Co, Cobalt	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Cr, Chromium	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Cu, Copper	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Fe, Iron	4.0/.37/.08	.05/.37/.08	1.1/.37/.08	9/1/1	10/3/1
Hg, Mercury	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1

TABLE 2.4 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: VEE CANYON 1980 - 1982
Elevation: 1900 FT.

Laboratory Parameters (1) (3) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
K, Potassium	5.0/9.0/1.6	1.7/2.0/1.6	2.3/5.2/1.6	9/3/1	10/4/1
Mg, Magnesium	3.4/7.6/1.7	1.2/3.8/1.7	2.4/5.2/1.7	10/4/1	10/4/1
Mn, Manganese	.10/-/-	.07/-/-	.09/-/-	2/0/0	10/3/0
Mo, Molybdenum	-/-/-	-/-/-	-/-/-	0/0/0	10/3/0
Na, Sodium	5.1/12.0/2.0	2.4/6.3/2.0	3.4/8.0/2.0	10/4/1	10/4/1
Ni, Nickel	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Pb, Lead	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Pt, Platinum	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Sb, Antimony	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Se, Selenium	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Si, Silicon	6.9/5.0/1.7	2.0/3.7/1.7	3.5/4.5/1.7	10/4/1	10/4/1
Sn, Tin	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Sr, Strontium	.08/.13/-	.05/.06/-	.06/.10/-	9/3/0	10/3/1
Ti, Titanium	.24/-/-	.13/-/-	.18/-/-	3/0/0	10/3/1
W, Tungsten	-/.4/-	-/.4/-	-/.4/-	0/1/0	10/3/1
V, Vanadium	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1
Zn, Zinc	.07/-/-	.07/-/-	.07/-/-	1/0/0	10/3/1
Zr, Zirconium	-/-/-	-/-/-	-/-/-	0/0/0	10/3/1

(1) Table values are mg/l unless noted otherwise.

(2) All values for free CO2 determined from nomograph on p. 297 of Standard Method, 14th edition.

(3) Samples for all parameters except chemical oxygen demand, dissolved and suspended solids, and turbidity were filtered.

(4) Hardness calculated by R&M personnel.

TABLE 2.5

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: GOLD CREEK 1980 - 1982
Elevation: 676.5 FT.

	Summer/Winter/Break-Up				
	Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Field Parameters (1)					
Dissolved Oxygen	12.8/14.1/11.5	8.6/13.3/11.2	11.2/13.8/11.4	10/3/2	10/3/2
Percent Saturation	110/101/102	81/100/101	101/101/102	9/3/2	9/3/2
pH, pH Units	7.8/7.8/6.7	6.8/7.1/6.4	7.3/7.4/6.5	8/3/2	8/3/2
Conductivity, umhos/cm @ 25°C	183/249/106	75/84/105	128/179/106	15/5/2	15/5/2
Temperature, °C	12.8/0.8/10.5	6.8/0.0/10.3	9.8/0.2/10.4	15/5/2	15/5/2
Free Carbon Dioxide (2)	8.6/20/-	2.1/3.2/-	4.4/10.7/-	5/3/0	5/3/0
Alkalinity, as $CaCO_3$	64/74/-	25/46/-	44/65/-	5/3/0	5/3/0
Settleable Solids, ml/l	0.6/-/-	0.1/-/-	0.4/-/-	7/3/2	7/3/2
Laboratory Parameters (1)(3)					
Ammonia Nitrogen	.21/.52/.08	.02/.32/.08	.09/.42/.08	11/2/1	14/4/2
Organic Nitrogen	.74/.81/.34	.05/.34/.27	.49/.54/.31	10/3/2	10/3/2
Kjeldahl Nitrogen	4.8/.99/.35	.06/.66/.34	.87/.82/.35	11/3/2	14/5/2
Nitrate Nitrogen	.86/.34/-	.14/.12/-	.32/.21/-	10/3/0	16/5/2
Nitrite Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	14/4/2
Total Nitrogen	5.66/1.34/0.35	.35/.66/.34	1.22/1.00/.35	11/4/2	11/4/2
Ortho-Phosphate	.10/.02/-	.01/.02/-	.04/.02/-	3/1/0	16/3/2
Total Phosphorus	.43/.02/.08	.01/.01/.08	.12/.02/.08	10/2/1	16/5/2

TABLE 2.5 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: GOLD CREEK 1980 - 1982
Elevation: 676.5 FT.

Laboratory Parameters (1) (3) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Alkalinity, as $CaCO_3$	36/57/-	28/57/-	32/57/-	2/1/0	2/1/0
Chemical Oxygen Demand	24/16/12	1.3/2/8	10.9/8.4/10	14/5/2	16/5/2
Chloride	14/29/10	4/9/6	7.3/19/8	10/5/2	12/5/2
Conductivity, umhos/cm @ 25°C	37/165/-	37/165/-	37/165/-	2/1/0	2/1/0
True Color, Color Units	110/40/15	5/10/10	50/20/10	7/3/2	7/3/2
Hardness, as $CaCO_3$(4)	97/121/43	31/67/43	50/87/43	11/5/2	11/5/2
Sulfate	14.8/17/6	1.0/9.5/5	6.7/13.6/5.5	16/5/2	16/5/2
Total Dissolved Solids	103/188/90	63/100/87	86/135/89	16/5/2	16/5/2
Total Suspended Solids	1255/8/56	56/1/49	268/6/53	16/5/2	16/5/2
Turbidity, NTU	728/1.2/19	14/0.3/15	199/0.8/17	22/3/2	22/3/2
Uranium	-/-/-	-/-/-	-/-/-	0/0/0	4/2/0
Radioactivity, Gross Alpha, pCi/l	5.5/2.0/-	2.6/2.0/-	4.1/2.0/-	2/1/0	2/1/0
Total Organic Carbon	3.8/1.0/-	1.4/1.0/-	23/1.0/-	8/1/0	8/1/0
Total Inorganic Carbon	12/4/-	8.6/4/-	10.5/4/-	8/1/0	8/1/0
Organic Chemicals					
Endrin	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
Lindane	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0

TABLE 2.5 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: GOLD CREEK 1980 - 1982
Elevation: 676.5 FT.

Laboratory Parameters (1) (3) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Methoxychlor	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
Toxaphene	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
2, 4-D	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
2, 4, 5-TP Silvex	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
Elements (Dissolved)					
Ag, Silver	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Al, Aluminum	.70/.18/-	.08/.18/-	.39/.18/-	2/1/0	6/3/2
As, Arsenic	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Au, Gold	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
B, Boron	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Ba, Barium	.11/.05/.07	.06/.05/.05	.09/.05/.06	7/1/2	7/3/2
Bi, Bismuth	.19/.07/-	.19/.07/-	.19/.07/-	1/1/0	7/3/2
Ca, Calcium	33.5/34.4/14	10/21/14	16.0/26.5/14	12/5/2	12/5/2
Cd, Cadmium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Co, Cobalt	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Cr, Chromium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Cu, Copper	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Fe, Iron	2.3/.35/.07	.07/.35/.07	.77/.35/.07	6/1/1	7/3/2
Hg, Mercury	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2

TABLE 2.5 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: GOLD CREEK 1980 - 1982
Elevation: 676.5

Laboratory Parameters (1) (3) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
K, Potassium	2.0/2.7/1.9	0.9/1.2/1.8	1.6/2.1/1.9	12/4/2	12/4/2
Mg, Magnesium	3.1/10.0/2.0	1.2/3.2/2.0	2.2/4.9/2.0	12/5/2	12/5/2
Mn, Manganese	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Mo, Molybdenum	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Na, Sodium	10.2/21.1/4.1	2.8/7.4/3.9	5.1/11.7/4.0	12/5/2	12/5/2
Ni, Nickel	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Pb, Lead	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Pt, Platinum	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Sb, Antimony	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Se, Selenium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Si, Silicon	5.9/5.0/2.5	2.6/3.9/2.4	3.5/4.4/2.5	7/3/2	7/3/2
Sn, Tin	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Sr, Strontium	.09/.19/.07	.06/.10/.06	.07/.13/.07	4/3/2	7/3/2
Ti, Titanium	.14/-/-	.11/-/-	.13/-/-	2/0/0	7/3/2
W, Tungsten	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
V, Vanadium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Zn, Zinc	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Zr, Zirconium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2

(1) Table values are mg/l unless noted otherwise.

(2) All values for free CO2 determined from nomograph on p. 297 of Standard Method, 14th edition.

(3) Samples for all parameters except chemical oxygen demand, dissolved and suspended solids, and turbidity were filtered.

(4) Hardness calculated by R&M personnel.

TABLE 2.6

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: NR. DENALI 1957 - 1982
Elevation: 2440 FT.

	Summer/Winter/Break-Up				
	Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Field Parameters (1)					
Dissolved Oxygen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Percent Saturation	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
pH, pH Units	7.9/7.6/7.2	7.2/7.1/7.2	7.6/7.4/7.2	11/3/1	11/3/1
Conductivity, umhos/cm @ 25°C	226/467/124	121/351/124	161/400/124	18/3/1	18/3/1
Temperature, °C	10.5/0.0/6.5	0.0/0.0/1.5	5.5/0.0/4.0	47/3/6	47/3/6
Free Carbon Dioxide	5.2/25/5.8	1.5/5.5/5.8	3.1/12.9/5.8	11/3/1	11/3/1
Alkalinity, as $CaCO_3$	75/161/47	42/112/47	55/136/47	11/3/1	11/3/1
Settleable Solids, ml/l	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Laboratory Parameters (1)					
Ammonia Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Organic Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Kjeldahl Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Nitrate Nitrogen	.09/.07/.05	0.0/0.0/.05	.03/.04/.05	11/3/1	11/3/1
Nitrite Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ortho-Phosphate	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Phosphorus	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.6 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S GEOLOGICAL SURVEY
Station: NR. DENALI 1957 - 1982
Elevation: 2440 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Alkalinity, as $CaCO_3$	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Chemical Oxygen Demand	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Chloride	11/30/4.2	1.5/19/4.2	4.7/23.3/4.2	11/3/1	11/3/1
Conductivity, umhos/cm @ 25°C	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
True Color, Color Units	10/5/30	0/0/30	5/5/30	14/3/1	14/3/1
Hardness, as $CaCO_3$	87/181/50	52/135/50	67/157/50	11/3/1	11/3/1
Sulfate	31/39/9.2	13/36/9.2	17/37/9.2	11/3/1	11/3/1
Total Dissolved Solids	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Suspended Solids	5690/8/1190	85/5/102	1163/7/542	45/2/8	45/2/8
Turbidity, NTU	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Uranium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Radioactivity, Gross Alpha, pCi/l	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Organic Carbon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Inorganic Carbon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Organic Chemicals					
Endrin	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Lindane	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.6 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: NR. DENALI 1957 - 1982
Elevation: 2440 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Methoxychlor	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Toxaphene	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
2, 4-D	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
2, 4, 5-TP Silvex	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Elements (Dissolved)					
Ag, Silver	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Al, Aluminum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
As, Arsenic	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Au, Gold	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
B, Boron	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ba, Barium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Bi, Bismuth	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ca, Calcium	29/51/17	17/41/17	21/46/17	11/3/1	11/3/1
Cd, Cadmium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Co, Cobalt	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Cr, Chromium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Cu, Copper	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Fe, Iron	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Hg, Mercury	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.6 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: NR. DENALI 1957 - 1982
Elevation: 2440 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
K, Potassium	3.6/6.6/2.3	1.3/6.3/2.3	2.6/6.5/2.3	11/3/1	11/3/1
Mg, Magnesium	6.4/16/1.9	1.7/6.8/1.9	3.5/10.3/1.9	11/3/1	11/3/1
Mn, Manganese	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Mo, Molybdenum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Na, Sodium	10/23/3.6	2.1/15/3.6	4.3/18.7/3.6	11/3/1	11/3/1
Ni, Nickel	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Pb, Lead	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Pt, Platinum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sb, Antimony	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Se, Selenium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Si, Silicon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sn, Tin	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sr, Strontium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ti, Titanium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
W, Tungsten	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
V, Vanadium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Zn, Zinc	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Zr, Zirconium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

1. Table values are mg/1 unless noted otherwise.

TABLE 2.7

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: VEE CANYON 1962 - 1982
Elevation: 1900 FT.

	Summer/Winter/Break-Up				
	Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Field Parameters (1)					
Dissolved Oxygen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Percent Saturation	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
pH, pH Units	8.1/-/7.6	7.2/-/7.6	7.7/-/7.6	9/0/1	9/0/1
Conductivity, umhos/cm @ 25°C	187/250/136	91/250/114	146/250/125	20/1/2	20/1/2
Temperature, °C	13.0/0.1/7.0	1.0/-0.1/2.0	7.9/0.0/4.3	49/4/4	49/4/4
Free Carbon Dioxide	6.8/-/2.2	0.7/-/2.2	2.6/-/2.2	9/0/1	9/0/1
Alkalinity, as $CaCO_3$	59/-/44	39/-/44	52/-/44	9/0/1	9/0/1
Settleable Solids, ml/l	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Laboratory Parameters (1)					
Ammonia Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Organic Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Kjeldahl Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Nitrate Nitrogen	.88/-/.16	.00/-/.16	.20/-/.16	9/0/1	9/0/1
Nitrite Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ortho-Phosphate	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Phosphorus	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.7 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: VEE CANYON 1962 - 1982
Elevation: 1900 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Alkalinity, as $CaCO_3$	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Chemical Oxygen Demand	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Chloride	9.2/-/7.4	2.1/-/7.4	5.3/-/7.4		9/0/1
Conductivity, umhos/cm @ 25°C	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
True Color, Color Units	40/-/30	5/-/30	10/-/30	8/0/1	8/0/1
Hardness, as $CaCO_3$	76/-/54	42/-/54	63/-/54	9/0/1	9/0/1
Sulfate	18/-/12	7.5/-/12	14/-/12	9/0/1	9/0/1
Total Dissolved Solids	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Suspended Solids	2790/14/726	34/14/661	799/14/694	36/1/2	36/1/2
Turbidity, NTU	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Uranium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Radioactivity, Gross Alpha, pCi/l	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Organic Carbon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Inorganic Carbon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Organic Chemicals					
Endrin	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Lindane	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.7 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: VEE CANYON 1962 - 1982
Elevation: 1900 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Methoxychlor	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Toxaphene	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
2, 4-D	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
2, 4, 5-TP Silvex	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Elements (Dissolved)					
Ag, Silver	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Al, Aluminum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
As, Arsenic	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Au, Gold	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
B, Boron	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ba, Barium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Bi, Bismuth	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ca, Calcium	27/-/17	14/-/17	21/-/17	9/0/1	9/0/1
Cd, Cadmium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Co, Cobalt	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Cr, Chromium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Cu, Copper	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Fe, Iron	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Hg, Mercury	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.7 - Continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: VEE CANYON 1962 - 1982
Elevation: 1900 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
K, Potassium	7.3/-/2.8	1.4/-/2.8	3.5/-/2.8	9/0/1	9/0/1
Mg, Magnesium	4.4/-/2.4	1.1/-/2.4	2.7/-/2.4	9/0/1	9/0/1
Mn, Manganese	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Mo, Molybdenum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Na, Sodium	6.3/-/4.8	2.1/-/4.8	3.8/-/4.8	9/0/1	9/0/1
Ni, Nickel	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Pb, Lead	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Pt, Platinum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sb, Antimony	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Se, Selenium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Si, Silicon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sn, Tin	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sr, Strontium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ti, Titanium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
W, Tungsten	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
V, Vanadium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Zn, Zinc	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Zr, Zirconium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

1. Table values are mg/l unless noted otherwise.

TABLE 2.8

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: GOLD CREEK 1949 - 1982
Elevation: 676.5 FT.

	Summer/Winter/Break-Up				
	Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Field Parameters (1)					
Dissolved Oxygen	13.3/15.8/14.1	9.5/11.0/14.1	11.9/13.9/14.1	9/5/1	9/5/1
Percent Saturation	110/110/111	83/77/111	102/97/111	6/5/1	6/5/1
pH, pH Units	7.9/8.1/8.0	6.5/7.0/6.5	7.3/7.5/7.0	66/31/7	66/31/7
Conductivity, umhos/cm @ 25°C	227/300/147	90/164/70	147/250/97	66/32/7	66/32/7
Temperature, °C	14.0/0.5/6.0	0.4/0.0/1.0	9.2/0.1/3.1	39/12/8	39/12/8
Free Carbon Dioxide	20/16/24	1.1/1.2/2.9	5.8/6.2/10.8	57/26/6	57/26/6
Alkalinity, as $CaCO_3$	87/88/47	23/49/25	51/72/33	62/30/7	62/30/7
Settleable Solids, ml/l	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Laboratory Parameters (1)					
Ammonia Nitrogen	.33/.08/.13	.01/.03/.13	.16/.06/.13	7/5/1	7/6/1
Organic Nitrogen	.39/.44/.07	.10/.18/.07	.27/.29/.07	7/5/1	7/5/1
Kjeldahl Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Nitrate Nitrogen	.36/.32/.69	.02/.05/.05	.12/.16/.24	55/25/7	55/25/7
Nitrite Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Nitrogen	.60/.66/-	.25/.44/-	.50/.51/-	5/6/0	5/6/0
Ortho-Phosphate	.03/.03/.04	.00/.01/.04	.01/.02/.04	11/4/1	12/4/1
Total Phosphorus	.23/.05/.09	.02/.01/.09	.13/.03/.09	7/6/1	7/6/1

TABLE 2.8 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: GOLD CREEK 1949 - 1982
Elevation; 676.5 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Alkalinity, as $CaCO_3$	45/85/27	35/82/27	40/83/27	5/3/1	5/3/1
Chemical Oxygen Demand	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Chloride	15/35/7.6	1.4/6.2/1.8	5.5/22/4.4	62/28/7	62/28/7
Conductivity, umhos/cm @ 25°C	142/289/115	114/266/84	128/279/100	5/6/2	5/6/2
True Color, Color Units	45/10/50	0/0/5	10/5/25	55/22/6	55/22/6
Hardness, as $CaCO_3$	107/120/56	35/60/30	64/98/39	62/28/7	62/28/7
Sulfate	31/38/11	1.0/12/5.0	16.1/21/7.6	61/28/6	62/28/7
Total Dissolved Solids	140/174/90	55/133/53	93/154/66	43/18/6	43/18/6
Total Suspended Solids	2620/76/1330	7/1/120	740/12/621	56/10/13	56/11/13
Turbidity, NTU	180/.70/29	42/.10/29	126/.40/29	5/2/1	5/2/1
Uranium	.33/-/-	.12/-/-	.25/-/-	3/0/0	3/0/0
Radioactivity, Gross Alpha, pCi/l	1.8/-/-	0.5/-/-	1.3/-/-	3/0/0	3/0/0
Total Organic Carbon	2.6/5.5/10.0	1.4/1.1/1.8	2.0/2.6/5.9	2/3/2	2/3/2
Total Inorganic Carbon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Organic Chemicals					
Endrin	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Lindane	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.8 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: GOLD CREEK 1949 - 1982
Elevation: 676.5 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Methoxychlor	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Toxaphene	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
2, 4-D	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
2, 4, 5-TP Silvex	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Elements (Dissolved)					
Ag, Silver	.000/.001/-	.000/.001/-	.000/.001/-	2/1/0	3/1/0
Al, Aluminum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
As, Arsenic	.002/.002/-	.001/.002/-	.001/.002/-	3/1/0	3/1/0
Au, Gold	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
B, Boron	-/-/-	-/-/-	-/-/-	0/0/-	0/0/0
Ba, Barium	.031/.060/-	.000/.060/-	.010/.060/-	3/1/0	3/1/0
Bi, Bismuth	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ca, Calcium	37/39/18	11/24/9.9	20/30/13	62/28/7	62/28/7
Cd, Cadmium.	.001/-/-	.001/-/-	.001/-/-	2/0/0	3/1/0
Co, Cobalt	.000/.001/-	.000/.001/-	.000/.001/-	1/1/0	3/1//0
Cr, Chromium	.010/-/-	.000/-/-	.005/-/-	2/0/0	3/1/0
Cu, Copper	.005/.001/-	.003/.001/-	.004/.001/-	3/1/0	3/1/0
Fe, Iron	.14/.015/-	.04/.015/-	.10/.015/-	6/1/0	6/1/0
Hg, Mercury	.0002/-/-	.0000/-/-	.0001/-/-	2/0/0	3/1/0

TABLE 2.8 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: GOLD CREEK 1949 - 1982
Elevation: 676.5 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
K, Potassium	4.4/5.0/1.7	1.0/1.2/1.2	2.4/2.3/1.4	52/22/5	52/22/5
Mg, Magnesium	7.8/8.3/2.8	1.2/3.6/0.3	3.2/5.4/1.7	62/28/7	62/28/7
Mn, Manganese	.18/.003/-	.00/.003/-	.036/.003/-	7/1/0	7/1/0
Mo, Molybdenum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Na, Sodium	6.5/17/3.8	2.4/5.2/2.8	4.1/11.3/3.1	52/22/5	52/22/5
Ni, Nickel	.000/.001/-	.000/.001/-	.000/.001/-	2/1/0	3/1/0
Pb, Lead	.001/.003/-	.000/.003/-	.000/.003/-	3/1/0	3/1/0
Pt, Platinum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sb, Antimony	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Se, Selenium	.001/-/-	.000/-/-	.000/-/-	3/0/0	3/1/0
Si, Silicon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sn, Tin	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sr, Strontium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ti, Titanium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
W, Tungstem	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
V, Vanadium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Zn, Zinc	.014/-/-	.006/-/-	.010/-/-	3/0/0	3/1/0
Zr, Zirconium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.9

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: SUNSHINE 1971 - 1982
Elevation: 270 FT.

	Summer/Winter/Break-Up				
	Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Field Parameters (1)					
Dissolved Oxygen	13.3/13.8/-	10.6/13.0/-	12.0/13.4/-	5/3/0	5/3/0
Percent Saturation	107/94/-	99/90/-	103/92/-	2/3/0	2/3/0
pH, pH Units	7.7/7.3/-	7.1/6.2/-	7.4/6.9/-	7/3/0	7/3/0
Conductivity, umhos/cm @ 25°C	170/242/-	61/225/-	115/232/-	9/3/0	9/3/0
Temperature, °C	12.0/0.0/9.2	3.8/0.0/9.2	8.6/0.0/9.2	9/3/1	9/3/1
Free Carbon Dioxide	3.9/-/-	2.1/-/-	3.1/-/-	3/0/0	3/0/0
Alkalinity, as $CaCO_3$	43/71/-	25/63/-	36/68/-	6/2/0	6/2/0
Settleable Solids, ml/l	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Laboratory Parameters (1)					
Ammonia Nitrogen	.37/.06/-	.08/.03/-	.19/.05/-	6/3/0	6/4/0
Organic Nitrogen	1.10/.42/-	.19/.18/-	.63/.29/-	6/3/0	6/3/0
Kjeldahl Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Nitrate Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Nitrite Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Nitrogen	2.30/.72/-	.71/.42/-	1.17/.61/-	5/4/0	5/4/0
Ortho-Phosphate	.04/.04/-	.00/.04/-	.02/.04/-	3/1/0	3/1/0
Total Phosphorus	.33/.01/-	.05/.01/-	.15/.01/-	6/2/0	6/4/0

TABLE 2.9 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: SUNSHINE 1971 - 1982
Elevation: 270 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Alkalinity, as $CaCO_3$	48/74/-	28/63/-	41/70/-	6/3/0	6/3/0
Chemical Oxygen Demand	-/-/-	-/-/-	---	0/0/0	0/0/0
Chloride	7.3/21/-	2.2/16/-	3.7/18/-	9/4/0	9/4/0
Conductivity, umhos/cm @ 25°C	129/233/-	82/222/-	115/229/-	6/3/0	6/3/0
True Color, Color Units	100/0/-	8/0/-	44/0/-	3/1/0	3/1/0
Hardness, as $CaCO_3$	72/96/-	33/87/-	50/91/-	9/4/0	9/4/0
Sulfate	13/18/-	3/16/-	10/17/-	9/4/0	9/4/0
Total Dissolved Solids	101/141/-	54/130/-	70/134/-	8/4/0	8/4/0
Total Suspended Solids	3510/2/508	288/1/508	1485/2/508	5/2/1	5/2/1
Turbidity, NTU	300/1.3/-	160/.20/-	233/.67/-	6/3/0	6/3/0
Uranium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Radioactivity, Gross Alpha, pCi/l	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Organic Carbon	3.2/0.8/-	2.9/0.4/-	3.0/0.6/-	2/2/0	2/2/0
Total Inorganic Carbon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Organic Chemicals					
Endrin	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Lindane	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.9 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: SUNSHINE 1971 - 1982
Elevation: 270 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Methoxychlor	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Toxaphene	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
2, 4-D	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
2, 4, 5-TP Silvex	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Elements (Dissolved)					
Ag, Silver	.000/.000/-	.000/.000/-	.000/.000/-	2/1/0	3/1/0
Al, Aluminum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
As, Arsenic	.003/.001/-	.002/.001/-	.002/.001/-	3/1/0	3/1/0
Au, Gold	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
B, Boron	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ba, Barium	.070/.040/-	.000/.040/-	.032/.040/-	3/1/0	3/1/0
Bi, Bismuth	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ca, Calcium	23/31/-	11/28/-	16/29/-	9/4/0	9/4/0
Cd, Cadmium.	.000/-/-	.000/-/-	.000/-/-	1/0/0	3/1/0
Co, Cobalt	.000/-/-	.000/-/-	.000/-/-	1/0/0	3/1/0
Cr, Chromium	.020/.010/-	.000/.010/-	.010/.010/-	3/1/0	3/1/0
Cu, Copper	.005/.004/-	.003/.004/-	.004/.004/-	3/1/0	3/1/0
Fe, Iron	.250/.040/-	.060/.010/-	.180/.025/-	5/2/0	5/2/0
Hg, Mercury	.0001/.0001/-	.0000/.0001/-	.0001/.0001/-	2/1/0	3/1/0

TABLE 2.9 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: US. GEOLOGICAL SURVEY
Station: SUNSHINE 1971 - 1982
Elevation: 270 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
K, Potassium	2.8/2.1/-	1.1/1.8/-	1.5/1.9/-	9/4/0	9/4/0
Mg, Magnesium	3.5/4.5/-	1.4/4.1/-	2.3/4.3/-	9/4/0	9/4/0
Mn, Manganese	.020/.004/-	.000/.000/-	.009/.002/-	5/2/0	5/2/0
Mo, Molybdenum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Na, Sodium	4.4/11/-	1.9/10/-	2.8/11/-	9/4/0	9/4/0
Ni, Nickel	.002/.002/-	.000/.002/-	.001/.002/-	3/1/0	3/1/0
Pb, Lead	.001/.008/-	.000/.008/-	.000/.008/-	3/1/0	3/1/0
Pt, Platinum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sb, Antimony	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Se, Selenium	.000/.000/-	.000/.000/-	.000/.000/-	2/1/0	3/1/0
Si, Silicon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sn, Tin	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sr, Strontium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ti, Titanium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
W, Tungsten	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
V, Vanadium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Zn, Zinc	.020/.030/-	.006/.030/-	.012/.030/-	3/1/0	3/1/0
Zr, Zirconium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.10

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: SUSITNA 1955 - 1982
Elevation: 40 FT.

	Summer/Winter/Break-Up				
	Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Field Parameters (1)					
Dissolved Oxygen	12.8/13.5/12.4	10.5/10.6/11.4	11.5/11.6/12.1	13/14/4	13/14/4
Percent Saturation	100/94/99	90/74/97	97/80/98	9/7/2	9/7/2
pH, pH Units	8.3/7.9/7.8	7.0/6.8/6.5	7.7/7.3/7.2	26/20/7	26/20/7
Conductivity, umhos/cm @ 25°C	160/225/116	90/182/85	122/205/93	27/22/7	27/22/7
Temperature, °C	12.5/0.5/7.0	2.0/0.0/3.4	8.4/0.04/5.8	25/22/7	25/22/7
Free Carbon Dioxide	8/17/19	0.6/1.8/1.1	2.5/7.8/6.5	15/15/5	15/15/5
Alkalinity, as $CaCO_3$	57/75/39	36/60/30	44/69/34	21/19/6	21/19/6
Settleable Solids, ml/l	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Laboratory Parameters (1)					
Ammonia Nitrogen	.19/.09/.21	.00/.00/.01	.04/.04/.08	12/10/3	12/10/3
Organic Nitrogen	1.5/.46/.70	.16/.00/.16	.60/.27/.43	12/9/2	12/9/2
Kjeldahl Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Nitrate Nitrogen	.00/.19/-	.00/.19/-	.00/.19/0	1/1/0	1/1/0
Nitrite Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Nitrogen	1.70/.99/1.20	.26/.24/.67	.72/.55/.92	22/17/4	22/17/4
Ortho-Phosphate	.02/-/.02	.02/-/.02	.02/-/.02	1/0/1	1/2/1
Total Phosphorus	1.10/.38/.29	.03/.00/.01	.40/.05/.14	23/20/7	23/20/7

TABLE 2.10 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: SUSITNA 1955 - 1982
Elevation: 40 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Alkalinity, as $CaCO_3$	49/76/34	46/63/27	47/71/30	3/4/2	3/4/2
Chemical Oxygen Demand	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Chloride	6.7/18/4.6	1.2/5.7/3.1	2.7/13/3.7	24/21/7	24/21/7
Conductivity, umhos/cm @ 25°C	133/222/104	114/208/94	122/217/99	4/4/2	4/4/2
True Color, Color Units	10/0/-	10/0/-	10/0/-	2/2/0	4/4/0
Hardness, as $CaCO_3$	66/96/48	44/73/36	54/85/39	25/21/7	25/21/7
Sulfate	20.7/20/10	1.0/15/3.7	13.2/17.3/6.7	25/21/7	25/21/7
Total Dissolved Solids	114/139/71	56/109/51	73/123/65	24/20/7	24/20/7
Total Suspended Solids	2367/12/683	158/2/257	745/5/461	21/19/5	21/19/5
Turbidity, NTU	790/3.0/160	21/1.0/25	233/1.5/69	18/13/5	18/13/5
Uranium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Radioactivity, Gross Alpha, pCi/l	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Total Organic Carbon	11.0/4.0/9.1	2.7/0.4/3.8	4.4/1.6/6.0	7/9/4	7/9/4
Total Inorganic Carbon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Organic Chemicals					
Endrin	-/-/-	-/-/-	-/-/-	0/0/0	7/10/4
Lindane	-/-/-	-/-/-	-/-/-	0/0/0	7/10/4

TABLE 2.10 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: SUSITNA 1955 - 1982
Elevation: 40 FT.

	Summer/Winter/Break-Up				
Laboratory Parameters (1)	Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
(Continued)					
Methoxychlor	-/-/-	-/-/-	-/-/-	0/0/0	7/10/4
Toxaphene	-/-/-	-/-/-	-/-/-	0/0/0	7/9/4
2, 4-D	-/-/-	-/-/-	-/-/-	0/0/0	2/6/2
2, 4, 5-TP Silvex	-/-/-	-/-/-	-/-/-	0/0/0	2/6/2
Elements (Dissolved)					
Ag, Silver	.000/.000/-	.000/.000/-	.000/.000/-	4/2/0	8/6/3
Al, Aluminum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
As, Arsenic	.003/.003/.001	.001/.000/.001	.002/.001/.001	13/8/3	13/9/6
Au, Gold	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
B, Boron	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ba, Barium	.200/.040/.020	.027/.040/.020	.068/.040/.020	7/4/1	8/6/3
Bi, Bismuth	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ca, Calcium	22/31/15	14/23/11	17/27/13	25/21/7	25/21/7
Cd, Cadmium	.001/-/-	.001/-/-	.001/-/-	1/0/0	13/9/6
Co, Cobalt	.007/.002/.001	.001/.002.001	.003/.002/.001	5/1/1	13/9/6
Cr, Chromium	.030/.010/.005	.000/.000/.005	.010/.005/.005	5/2/1	13/9/5
Cu, Copper	.007/.004/.006	.003/.000/.004	.004/.002/.005	7/7/4	13/9/6
Fe, Iron	.460/.060/.190	.020/.060/.110	.096/.088/.152	12/9/6	13/9/6
Hg, Mercury	.0002/.0000/-	.0000/.0000/-	.0001/.0000/-	5/2/0	13/9/6

TABLE 2.10 - continued

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: U.S. GEOLOGICAL SURVEY
Station: SUSITNA 1955 - 1982
Elevation: 40 FT.

Laboratory Parameters (1) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
K, Potassium	1.8/2.5/1.4	1.0/1.4/0.8	1.4/1.7/1.0	25/21/7	25/21/7
Mg, Magnesium	3.7/4.9/2.6	2.0/3.7/1.6	2.5/4.3/1.9	25/21/7	25/21/7
Mn, Manganese	.020/.030/.011	.004/.017/.008	.008/.023/.010	7/8/2	13/9/6
Mo, Molybdenum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Na, Sodium	4.0/9.0/3.2	1.8/4.9/2.4	2.7/7.7/2.9	25/21/7	25/21/7
Ni, Nickel	.004/.003/.002	.000/.002/.002	.001/.002/.002	5/2/1	5/3/1
Pb, Lead	.009/.004/.011	.002/.000.003	.004/.002/.006	8/6/4	13/9/6
Pt, Platinum	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sb, Antimony	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Se, Selenium	.001/.001/-	.000/.000/-	.0004/.0008/-	7/6/0	13/9/6
Si, Silicon	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sn, Tin	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Sr, Strontium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Ti, Titanium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
W, Tungsten	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
V, Vanadium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0
Zn, Zinc	.020/.003/.020	.004/.003/.020	.008/.003/.020	5/1/2	13/9/6
Zr, Zirconium	-/-/-	-/-/-	-/-/-	0/0/0	0/0/0

TABLE 2.11
TURBIDITY AND SUSPENDED SEDIMENT ANALYSIS OF
THE SUSITNA, CHULITNA AND TALKEETNA RIVERS

Location	Date[1] Sampled	Date Analysed	Turbidity[2] (NTU)	Suspended[3] Sediment Concentration (mg./l.)	Discharge[4] (CFS)
Susitna at Sunshine	6/3/82	6/11/82	164	847	71,000
Parks Highway Bridge	6/10/82	6/24/82	200	414	64,500
(RM. 83.3)	6/17/82	6/24/82	136	322	50,800
	6/21/82	8/3/82	360	755	78,300
	6/28/82	8/18/82	1056	668	75,700
	7/6/82	8/3/82	352	507	46,600
	7/12/82	8/3/82	912	867	59,800
	7/19/82	8/18/82	552	576	60,800
	7/26/82	8/18/82	696	1180	96,800
	8/2/82	8/18/82	544	704	62,400
	8/9/82	8/26/82	720	746	54,000
	8/16/82	8/26/82	784	728	47,800
	8/23/82	9/14/82	552	496	38,600
	8/30/82	9/14/82	292	439	39,800
	9/17/82	10/12/82	784	1290	86,500
Susitna Below Talkeetna	5/26/82*	5/29/82	98		
(RM 91)	5/28/82*	6/2/82	256		43,600
	5/29/82*	6/2/82	140		42,900
	5/30/82*	6/2/82	65		38,400
	5/31/82*	6/2/82	130		39,200
	6/1/82*	6/2/82	130		47,000
Susitna at LRX-4 (RM 99)	5/26/82*	5/29/82	81		
Susitna near Chase	6/3/82	6/11/82	140	769	35,800
(R.R. Mile 232, RM 103)	6/8/82	6/24/82	130	547	44,400
	6/15/82	6/24/82	94	170	24,200
	6/22/82	8/3/82	74	426	37,000
	6/30/82	8/18/82	376	392	30,200
	7/8/82	8/18/82	132	156	20,700
	7/14/82	8/3/82	728	729	30,800
	7/21/82	8/18/82	316	232	24,900
	7/28/82	8/18/82	300	464	30,800
	8/4/82	8/18/82	352	377	22,700
	8/10/82	8/26/82	364	282	20,000
	8/18/82	8/26/82	304	275	17,700
	8/25/82	9/14/82	244	221	16,800
	8/31/82	9/14/82	188	252	19,300
	9/19/82	10/12/82	328	439	28,700

TABLE 2.11 (continued)

Location	Date[1] Sampled	Date Analysed	Turbidity[2] (NTU)	Suspended[3] Sediment Concentration (mg./l.)	Discharge[4] (CFS)
Susitna at Vee Canyon (RM 223)	6/4/82	6/11/82	82		
	6/30/82	8/3/82	384		
	7/27/82	8/18/82	720		
	8/26/82	9/14/82	320		
Chulitna (Canyon) (RM 18)	6/4/82	6/11/82	272	424	11,500
	6/22/82	8/3/82	680	813	19,500
	6/29/82	8/18/82	1424	1600	29,000
	7/7/82	8/3/82	976	1030	20,700
	7/13/82	8/18/82	1136	1200	22,700
	7/20/82	8/18/82	1392	1250	23,100
	7/27/82	8/18/82	664	1010	31,900
	8/3/82	8/18/82	704	960	23,300
	8/11/82	8/26/82	592	753	21,300
	8/17/82	8/26/82	1296	1250	21,900
	8/24/82	9/14/82	632	843	18,200
	9/1/82	9/14/82	316	523	17,300
	9/18/82	10/12/82	1920	1550	29,200
Chulitna near Confluence (RM 1)	5/26/82*	5/29/82	194		
	5/28/82*	6/2/82	272		
	5/29/82*	6/2/82	308		
	5/30/82*	6/2/82	120		
	5/31/82*	6/2/82	360		
	6/1/82*	6/2/82	324		
Talkeetna at U.S.G.S. Cable (RM 6)	6/2/82	6/11/82	146	1340	17,900
	6/9/82	6/24/82	49	311	14,200
	6/17/82	6/24/82	28	216	11,400
	6/23/82	8/3/82	26	164	12,400
	6/29/82	8/18/82	41	321	10,700
	7/7/82	8/3/82	20	100	6,750
	7/13/82	8/3/82	132	226	8,880
	7/20/82	8/18/82	148	226	8,400
	7/28/82	8/18/82	272		14,200
	8/3/82	8/18/82	49	180	8,980
	8/10/82	8/26/82	53	212	6,980
	8/17/82	8/26/82	82	198	6,230
	8/24/82	9/14/82	68	263	5,920
	8/31/82	9/14/82	37	276	9,120
	9/20/82	10/12/82	34	301	14,800

TABLE 2.11 (Continued)

Location	Date[1] Sampled	Date Analysed	Turbidity[2] (NTU)	Suspended[3] Sediment Concentration (mg./l.)	Discharge[4] (CFS)
Talkeetna at R.R. Bridge (RM 0.5)	5/26/82*	5/29/82	17		5,680
	5/28/82*	6/2/82	39		6,250
	5/29/82*	6/2/82	21		5,860
	5/30/82*	6/2/82	20		5,660
	5/31/82*	6/2/82	44		7,400
	6/1/82*	6/2/82	55		9,560

Note: 1. *Refers to samples collected by R&M Consultants, all other samples were collected by U.S.G.S.

2. R&M Consultants conducted all turbidity measurements.

3. Suspended sediment concentrations are preliminary, unpublished data provided by the U.S. Geological Survey.

4. Discharges for "Susitna at Sunshine" and "Susitna Below Talkeetna" are from the U.S. Geological Survey stream gage at the Parks Highway Bridge at Sunshine.

Discharges for "Susitna at LRX-4" and "Susitna near Chase" are from the U.S.G.S. stream gage at the Alaska Railroad Bridge at Gold Creek.

Discharges for "Chulitna" and "Chulitna near Confluence" are from the U.S.G.S stream gage at the Parks Highway Bridge at Chulitna.

Discharges for "Talkeetna at U.S.G.S. Cable" and "Talkeetna at RR Bridge" are from the U.S.G.S. streamgage near Talkeetna.

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r16/t1

ATTACHMENT A

U.S. GEOLOGICAL SURVEY PRELIMINARY 1982 TEMPERATURE RECORDS FROM DENALI, NEAR CANTWELL (VEE CANYON) AND CHULITNA

WATER TEMP (PARM CODE 00010) IN °C
MAX. (STA CODE 00001)
MIN. (STA CODE 00002)

STATION NAME Susitna R nr Denali, AK

STATION NO. 15291000
WATER YEAR 1982

DAY	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEP	
1	–	–															7	4	6	4	6.5	3.5	4.5	3.5
2																	7	4.5	8.5	4.5	6.5	3	6	4.5
3																	6	2.5	9	4.5	6.5	3.5	5.5	4.5
4																	6.5	3.5	9	5	7	4	5.5	4
5																	6.5	5.0	8.5	5.5	7	4	5.5	4.5
6																	6	4.5	9	5	7	4	5.5	4.5
7																	6	4	9.5	4.5	6.5	3.5	5	5
8																	6	3.5	9.5	4.5	5.5	3.5	5	4.5
9																	6	4	6.5	4.5	5.5	3.5	5	4
10																	5.5	4.5	6	3.5	5	4	5	4
11																	6	4.5	6	4	7	4	4.5	4
12																	7.5	4	5	4	7	3.5	4.5	2
13																	7	4	5.5	4	7	4	4	3.5
14																	7	4	5.5	4	7	4.5	4.5	4
15																	7	4.5	5	3.5	4.5	3.5	7	4.5
16																	4.5	3.5	5	4	6	3	7	5.5
17																	6	3.5	5.5	4	6	4.5	4.5	3.5
18															–	–	6	4	7	4	6	3	4	3.5
19															2	1	6.5	4	8	4	7	4	4	4
20															2	1.5	6.5	4	8	4	7	4	4	3
21															4	1.5	5.5	3.5	7.5	4	6.5	4.5	4	3.5
22															5	2	5.5	4	4	3.5	7	4.0	4	3
23															6	2.5	9.5	4	3.5	3	7	5	3.5	2.5
24															6	3	9.5	5.5	3.5	3	6	4.	3	1.5
25															5	3	9.5	4.5	3.5	3	6	4	4	2
26															4	2	8.5	5	5.5	3	6	4	4	3
27															5	1.5	8	4.5	6.5	3.5	5.5	3	3	2.5
28															4.5	2	8	5.5	6	3.5	5.5	3	–	–
29															3.5	1.5	6.5	4	5.5	4	5	4	–	–
30															5.5	2	6	3.5	4	3	4	3.5	–	–
31															7.5	2.5	–	–	6.5	3.5	4.5	3.5	–	–

PROVISIONAL RECORDS SUBJECT TO REVISION

A-1

mav 95 Jul 79

cpd GLS 10/28/82

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-03-82

DIST

15291500
SUSITNA R NR CANTWELL AK
WATER TEMP (DEG C)

RT NO 01 TEST DIFF 10

PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

PROVISIONAL RECORDS
SUBJECT TO REVISION

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	6-04	7.6	6.3	7.1*	AM												
					PM			6.6	6.3	6.6	6.8	7.2	7.3	7.6	7.4	7.4	7.5
	6-05	8.1	6.8	7.4	AM	7.4	7.3	7.2	7.1	6.9	6.9	6.8	6.9	6.9	7.0	7.1	7.1
					PM	7.2	7.4	7.6	7.8	7.9	8.0	8.0	8.0	8.1	8.0	8.1	7.9
	6-06	8.3	6.6	7.5	AM	7.9	7.8	7.5	7.3	7.1	6.9	6.8	6.7	6.7	6.6	6.7	6.9
					PM	7.2	7.6	7.7	8.0	8.1	8.1	8.2	8.3	8.3	8.3	8.3	8.1
	6-07	8.0	6.1	6.8	AM	8.0	7.7	7.3	6.9	6.6	6.4	6.2	6.1	6.1	6.1	6.2	6.4
					PM	6.5	6.6	6.7	6.9	7.1	7.1	7.2	7.2	7.2	7.2	7.2	6.9
	6-08	7.0	5.3	6.2	AM	6.8	6.7	6.4	6.1	5.8	5.6	5.4	5.3	5.3	5.4	5.5	5.7
					PM	5.7	5.9	6.0	6.3	6.5	6.7	6.8	6.8	6.8	6.9	6.9	6.9
	6-09	6.9	6.0	6.5	AM	6.9	6.9	6.8	6.7	6.5	6.4	6.3	6.2	6.2	6.1	6.1	6.0
					PM	6.0	6.1	6.3	6.5	6.6	6.8	6.9	6.9	6.9	6.8	6.8	6.7
	6-10	7.1	6.0	6.6	AM	6.6	6.5	6.5	6.4	6.3	6.3	6.2	6.1	6.1	6.1	6.2	6.3
					PM	6.5	6.6	6.8	6.9	6.9	7.0	7.1	7.1	7.1	7.1	7.1	7.1
	6-11	7.5	6.3	6.9	AM	7.0	6.9	6.7	6.6	6.5	6.4	6.7	6.3	6.3	6.4	6.5	6.9
					PM	7.2	7.2	7.3	7.4	7.5	7.6	7.5	7.3	7.2	7.1	7.0	6.9
	6-12	7.2	6.0	6.7	AM	6.8	6.7	6.6	6.4	6.3	6.1	6.1	6.0	6.0	6.1	6.4	6.4
					PM	6.5	6.7	7.0	7.1	7.2	7.1	7.1	7.2	7.2	7.2	7.2	7.2
	6-13	7.9	6.3	7.1	AM	7.2	7.1	7.0	6.9	6.7	6.5	6.5	6.3	6.5	6.5	6.8	6.9
					PM	7.0	7.2	7.1	7.4	7.5	7.6	7.7	7.8	7.9	7.9	7.9	7.9
	6-14	8.2	7.3	7.8	AM	7.8	7.7	7.6	7.4	7.3	7.3	7.3	7.4	7.5	7.5	7.7	7.8
					PM	8.0	8.0	8.1	8.1	8.2	8.1	8.2	8.2	8.2	8.2	8.2	8.1
	6-15	8.0	6.6	7.3	AM	8.0	7.9	7.8	7.7	7.6	7.5	7.4	7.4	7.4	7.3	7.3	7.2
					PM	7.2	7.1	7.1	7.1	7.1	7.1	7.0	7.1	6.9	6.8	6.8	6.6
	6-16	7.1	5.8	6.4	AM	6.5	6.4	6.7	6.3	6.2	6.1	6.0	5.9	5.9	5.8	5.8	5.9
					PM	5.9	6.0	6.1	6.3	6.6	6.7	6.8	6.9	7.0	7.1	7.1	7.1
	6-17	8.3	6.7	7.5	AM	7.1	7.0	7.1	6.9	6.9	6.8	6.8	6.7	6.7	6.9	7.0	7.4
					PM	7.5	7.6	7.8	8.1	8.3	8.2	8.0	8.0	8.0	8.1	8.1	8.2
	6-18	8.5	7.4	7.8	AM	8.3	8.5	8.4	8.3	8.2	8.0	7.9	7.8	7.8	7.8	7.8	7.7
					PM	7.6	7.5	7.4	7.4	7.5	7.6	7.6	7.7	7.7	7.7	7.5	7.4
	6-19	7.8	6.1	7.0	AM	7.2	7.0	6.9	6.7	6.5	6.3	6.2	6.1	6.1	6.3	6.7	6.5
					PM	6.9	7.1	7.3	7.2	7.4	7.6	7.7	7.7	7.7	7.8	7.8	7.8
	6-20	7.9	6.8	7.3	AM	7.8	7.8	7.7	7.6	7.4	7.3	7.2	7.1	6.9	6.8	6.8	7.1
					PM	7.1	7.3	7.3	7.3	7.3	7.2	7.3	7.3	7.3	7.2	7.2	7.2
	6-21	8.1	6.7	7.3	AM	7.2	7.1	7.0	6.9	6.9	6.8	6.8	6.7	6.7	6.8	6.8	6.8
					PM	7.0	7.2	7.3	7.5	7.7	7.8	7.9	7.9	8.0	8.0	8.1	8.1
	6-22	9.7	8.0	8.7	AM	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.0	8.1	8.2	8.3	8.4
					PM	8.4	8.5	8.7	8.9	9.2	9.4	9.4	9.7	9.7	9.6	9.6	9.4
	6-23	11.4	8.7	9.9	AM	9.3	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.8	8.9	9.1	9.2
					PM	9.5	9.8	10.1	10.4	10.7	10.9	11.1	11.2	11.3	11.3	11.4	11.3
	6-24	13.1	10.4	11.7	AM	11.3	11.3	11.3	11.0	10.8	10.5	10.4	10.7	10.4	10.5	10.8	11.0
					PM	11.4	11.7	12.1	12.3	12.6	12.8	13.0	13.1	13.0	13.0	13.0	12.9
	6-25	13.5	11.5	12.5	AM	12.8	12.5	12.3	12.1	12.0	11.8	11.7	11.5	11.5	11.7	11.7	11.9
					PM	12.2	12.5	12.6	12.9	13.1	13.2	13.2	13.3	13.4	13.5	13.5	13.4

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST

PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS

15291500 DATA PROCESSED 11-03-82 RT NO 01 TEST DIFF 10

SUSITNA R NR CANTWELL AK

WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	6-26	13.3	10.9	12.0	AM	13.3	12.9	12.6	12.2	11.8	11.5	11.2	11.1	10.9	10.9	11.0	11.3
					PM	11.4	11.7	12.0	12.1	12.5	12.6	12.6	12.8	12.7	12.7	12.7	12.6
	6-27	12.7	11.2	12.0	AM	12.4	12.2	12.0	11.8	11.5	11.3	11.2	11.2	11.3	11.2	11.3	11.4
					PM	11.5	11.7	11.9	12.2	12.5	12.7	12.7	12.7	12.7	12.7	12.6	12.5
	6-28	12.4	10.9	11.5	AM	12.4	12.3	12.1	11.9	11.6	11.3	11.1	10.9	10.9	11.0	11.1	11.2
					PM	11.4	11.5	11.7	11.7	11.7	11.6	11.6	11.6	11.5	11.3	11.2	11.0
	6-29	10.9	9.2	10.0	AM	10.8	10.6	10.4	10.3	10.2	10.1	9.9	9.7	9.4	9.2	9.3	9.3
					PM	9.4	9.6	9.7	10.0	10.0	10.2	10.2	10.3	10.3	10.3	10.1	10.0
	6-30	9.9	9.2	9.4*	AM	9.9	9.8	9.6	9.4	9.3	9.2	9.2	9.2	9.2	9.2		
					PM												
	PERIOD	13.5	5.3														

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS

A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE

R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM

* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY

\# - UNIT VALUES RECORD WRITTEN

PROVISIONAL RECORDS
SUBJECT TO REVISION

SHIFT PRORATED FROM	0.00 ON	6-30 TO	-0.70 ON	7-27
SHIFT PRORATED FROM	-0.70 ON	7-27 TO	0.50 ON	8-26
SHIFT PRORATED FROM	0.50 ON	8-26 TO	0.30 ON	10-01

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-03-82

DIST

RT NO 01 TEST DIFF 10

15291500
SUSITNA R NR CANTWELL AK
WATER TEMP (DEG C)

PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

PROVISIONAL RECORDS
SUBJECT TO REVISION

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	6-30	9.9	9.4	9.7*	AM											9.5	9.4
					PM	9.6	9.9	9.6	9.6	9.7	9.8	9.8	9.8	9.9	9.8	9.9	9.7
	7-01	9.6	8.6	9.0	AM	9.5	9.3	9.1	9.0	8.9	8.9	8.9	8.8	8.8	8.8	8.7	8.8
					PM	8.9	9.0	9.2	9.3	9.2	9.3	9.2	9.1	9.1	9.1	8.9	8.6
	7-02	10.0	7.9	9.9	AM	8.6	8.6	8.4	8.3	8.2	8.1	8.1	8.0	8.0	8.1	8.3	8.5
					PM	8.6	8.8	9.2	9.4	9.7	9.6	9.8	10.0	9.9	9.9	9.9	9.8
	7-03	11.5	9.0	10.1	AM	9.6	9.5	9.4	9.3	9.2	9.1	9.0	9.0	9.0	9.2	9.3	9.5
					PM	9.7	10.0	10.3	10.6	10.8	11.0	11.2	11.4	11.5	11.5	11.5	11.5
	7-04	11.8	10.7	11.3	AM	11.4	11.3	11.2	11.1	11.0	10.9	10.8	10.8	10.7	10.8	11.0	11.1
					PM	11.3	11.5	11.6	11.6	11.6	11.6	11.7	11.7	11.8	11.7	11.6	11.5
	7-05	11.6	10.1	10.9	AM	11.3	11.2	11.0	10.8	10.7	10.5	10.3	10.2	10.1	10.2	10.3	10.6
					PM	10.6	10.8	11.0	11.1	11.2	11.2	11.3	11.4	11.5	11.5	11.4	11.3
	7-06	12.2	10.5	11.3	AM	11.2	11.1	11.0	10.8	10.7	10.6	10.5	10.5	10.5	10.7	10.9	11.0
					PM	11.3	11.4	11.5	11.6	12.0	12.1	12.1	12.1	12.2	12.2	12.2	12.1
	7-07	13.2	11.0	12.1	AM	11.8	11.7	11.6	11.5	11.3	11.1	11.0	11.0	11.0	11.2	11.4	11.7
					PM	12.0	12.3	12.6	12.7	12.9	13.1	13.2	13.2	13.2	13.2	13.2	13.2
	7-08	13.2	12.0	12.6	AM	13.1	13.0	13.0	12.8	12.6	12.6	12.4	12.3	12.2	12.0	12.0	12.1
					PM	12.2	12.5	12.8	13.0	13.0	13.0	13.0	13.0	12.9	12.9	12.7	12.5
	7-09	12.4	10.1	10.8	AM	12.2	11.9	11.7	11.4	11.2	11.0	10.8	10.6	10.5	10.4	10.4	10.4
					PM	10.4	10.4	10.5	10.5	10.4	10.4	10.4	10.5	10.5	10.4	10.3	10.1
	7-10	10.0	8.4	8.9	AM	9.9	9.7	9.6	9.5	9.4	9.2	9.1	9.0	8.9	8.8	8.8	8.8
					PM	8.7	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.5	8.5	8.4	8.4
	7-11	9.7	7.9	8.7	AM	8.2	8.2	8.3	8.2	8.2	8.1	7.9	7.9	7.9	7.9	8.1	8.2
					PM	8.4	8.7	9.0	9.3	9.4	9.5	9.5	9.4	9.5	9.5	9.6	9.7
A	7-12	9.7	8.6	8.8	AM	9.7	8.6	9.6	9.3	9.2	8.9	8.8	8.7	8.5	8.4	8.2	8.2
					PM	8.4	8.7	8.9	9.1	9.2	9.3	9.2	9.1	9.0	8.9	8.9	8.8
	7-13	8.7	8.1	8.4	AM	8.7	8.6	8.6	8.5	8.5	8.4	8.4	8.3	8.2	8.1	8.1	8.1
					PM	8.3	8.4	8.4	8.3	8.4	8.5	8.6	8.6	8.6	8.7	8.7	8.6
	7-14	9.0	8.1	8.5	AM	8.6	8.6	8.6	8.4	8.2	8.1	8.1	8.1	8.1	8.1	8.2	8.3
					PM	8.4	8.6	8.6	8.8	8.9	9.0	9.0	9.0	8.9	8.9	8.8	8.7
	7-15	8.5	7.9	8.2	AM	8.5	8.4	8.4	8.3	8.2	8.1	8.1	7.9	7.9	8.0	8.0	8.0
					PM	8.1	8.2	8.3	8.4	8.5	8.5	8.4	8.3	8.1	8.0	7.9	7.9
	7-16	8.0	7.0	7.5	AM	7.8	7.8	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	7.1	7.1
					PM	7.2	7.4	7.5	7.7	7.9	8.0	7.9	7.9	7.9	7.9	7.8	7.8
	7-17	8.9	7.3	7.9	AM	7.7	7.6	7.5	7.5	7.4	7.3	7.3	7.3	7.3	7.4	7.5	7.7
					PM	7.8	8.0	8.1	8.1	8.3	8.3	8.4	8.5	8.7	8.7	8.5	8.3
	7-18	9.5	8.2	8.9	AM	8.3	8.5	8.8	8.8	8.9	8.8	8.7	8.7	8.6	8.6	8.6	8.8
					PM	8.8	8.8	8.8	8.9	9.0	9.2	9.2	9.4	9.5	9.4	9.3	9.3
	7-19	11.3	8.5	9.7	AM	9.2	9.1	9.0	8.9	8.7	8.5	8.5	8.5	8.7	8.8	9.0	9.2
					PM	9.4	9.6	9.9	10.2	10.5	10.7	11.0	11.1	11.2	11.2	11.2	11.2
	7-20	12.3	10.3	11.2	AM	11.1	11.0	10.9	10.7	10.6	10.4	10.3	10.3	10.4	10.5	10.7	10.9
					PM	11.1	11.3	11.6	11.7	12.0	12.1	12.2	12.3	12.1	12.1	11.9	11.8
	7-21	11.7	10.7	11.2	AM	11.6	11.4	11.2	11.0	11.0	10.9	10.9	10.8	10.7	10.8	11.0	11.2
					PM	11.3	11.3	11.3	11.4	11.5	11.5	11.6	11.6	11.5	11.4	11.2	11.2

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST

PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS

15291500 DATA PROCESSED 11-03-82 RT NO 01 TEST DIFF 10

SUSITNA R NR CANTWELL AK

WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	7-22	10.6	8.7	9.4	AM	10.4	10.2	10.0	9.8	9.7	9.5	9.4	9.2	9.2	9.2	9.3	9.1
					PM	9.2	9.2	9.3	9.4	9.4	9.2	9.1	9.0	9.0	8.9	8.9	8.7
	7-23	8.7	7.7	8.0	AM	8.6	8.5	8.3	8.2	8.1	8.0	7.9	7.8	7.8	7.7	7.8	7.8
					PM	7.8	8.0	8.1	8.1	8.1	8.1	8.2	8.1	8.0	7.9	7.9	7.8
	7-24	8.6	7.6	8.2	AM	7.8	7.7	7.7	7.6	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3
					PM	8.4	8.4	8.5	8.5	8.6	8.5	8.5	8.6	8.5	8.4	8.4	8.3
	7-25	8.3	7.5	7.9	AM	8.3	8.3	8.3	8.3	8.2	8.1	7.9	7.8	7.6	7.5	7.5	7.5
					PM	7.5	7.6	7.7	7.9	8.1	8.2	8.2	8.1	7.9	7.8	7.9	7.9
	7-26	9.8	6.8	7.7	AM	7.7	7.5	7.3	7.2	7.0	6.9	6.9	6.8	6.9	7.0	7.1	7.2
					PM	7.4	7.7	7.9	8.0	8.2	8.3	8.4	8.5	8.5	8.6	8.7	8.8
	7-27	9.0	8.3	8.6*	AM	8.7	8.6	8.5	8.4	8.4	8.3	8.3	8.5	8.6	8.8	9.0	
					PM												
	PERIOD	13.2	0.6														

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS

A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE

R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM

* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY

& - UNIT VALUES RECORD WRITTEN

PROVISIONAL RECORDS SUBJECT TO REVISION

SHIFT PRORATED FROM 0.00 ON 6-30 TO -0.70 ON 7-27

SHIFT PRORATED FROM -0.70 ON 7-27 TO 0.50 ON 8-26

SHIFT PRORATED FROM 0.50 ON 8-26 TO 0.30 ON 10-01

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-03-82

DIST

15291500
SUSITNA R NR CANTWELL AK
WATER TEMP (DEG C)

RT NO 01 TEST DIFF 10

PARAMETER CODE 00010 STORE STATISTICS 00001,00002,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

SUBJECT TO REVISION

DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
7-27	10.3	9.1	10.3*	AM												9.2
				PM	9.5	9.8	10.0	10.4	10.5	10.7	10.8	10.8	10.9	10.8	10.8	10.7
7-28	10.8	9.6	10.2	AM	10.7	10.6	10.5	10.3	10.1	10.0	9.8	9.8	9.8	9.7	9.6	9.6
				PM	9.9	9.9	10.0	10.0	10.3	10.4	10.5	10.7	10.7	10.6	10.5	10.5
7-29	10.6	9.1	9.9	AM	10.5	10.4	10.3	10.1	10.0	9.9	9.7	9.6	9.5	9.6	9.7	9.8
				PM	9.9	9.9	10.0	10.0	10.0	10.1	10.0	9.9	9.6	9.5	9.3	9.1
7-30	9.0	7.5	8.0	AM	8.9	8.8	8.6	8.4	8.2	8.1	8.1	8.0	8.0	7.9	7.8	7.8
				PM	7.9	8.0	7.9	7.8	7.8	7.8	7.9	7.9	7.8	7.7	7.6	7.5
7-31	8.2	6.9	7.6	AM	7.6	7.5	7.5	7.4	7.4	7.2	7.2	7.1	7.0	6.9	7.0	7.1
				PM	7.3	7.5	7.7	7.9	8.1	8.1	8.2	8.2	8.2	8.1	8.1	8.1
8-01	9.3	7.9	8.5	AM	8.1	8.0	8.0	8.0	8.0	8.0	7.9	7.9	7.9	8.1	8.3	8.4
				PM	8.4	8.6	8.6	8.7	8.9	9.0	9.2	9.3	9.2	9.2	9.1	8.9
8-02	9.2	7.8	8.6	AM	8.7	8.6	8.4	8.2	8.1	7.9	7.8	7.8	7.9	8.1	8.3	8.4
				PM	8.7	8.9	8.9	9.0	9.1	9.1	9.2	9.2	9.2	9.1	9.1	9.0
8-03	10.3	8.6	9.4	AM	9.0	8.9	8.7	8.6	8.6	8.6	8.6	8.6	8.7	8.8	9.0	9.4
				PM	9.7	9.7	9.9	10.1	10.1	10.3	10.3	10.3	10.1	10.1	10.1	10.0
8-04	10.6	8.9	9.7	AM	9.8	9.5	9.3	9.2	9.1	9.0	8.9	8.9	9.0	9.1	9.3	9.5
				PM	9.7	9.9	10.0	10.1	10.2	10.4	10.5	10.5	10.3	10.3	10.3	10.3
8-05	10.4	9.5	10.0	AM	10.4	10.4	10.1	9.9	9.8	9.6	9.5	9.5	9.5	9.6	9.8	10.0
				PM	10.1	10.2	10.3	10.3	10.3	10.4	10.3	10.3	10.2	10.2	10.1	10.0
8-06	10.5	8.6	9.6	AM	9.7	9.6	9.4	9.2	9.0	8.8	8.7	8.7	8.7	8.9	9.1	9.3
				PM	9.6	9.7	9.9	10.1	10.4	10.5	10.4	10.4	10.5	10.4	10.3	10.2
8-07	10.2	8.6	8.9	AM	10.1	9.9	9.7	9.5	9.3	9.2	9.2	9.1	9.1	9.1	9.2	9.4
				PM	9.6	9.7	9.7	8.6	8.6	9.6	9.6	9.6	9.5	9.4	9.3	9.1
8-08	9.1	7.9	8.3	AM	9.0	8.8	8.5	8.3	8.2	8.0	8.0	7.9	7.9	7.9	8.0	8.1
				PM	8.1	8.2	8.2	8.2	8.2	8.4	8.4	8.4	8.4	8.4	8.4	8.1
8-09	8.3	7.2	7.8	AM	7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.2	7.2	7.3	7.5	7.7
				PM	8.0	8.1	8.2	8.1	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.2
8-10	8.6	7.6	8.2	AM	8.2	8.2	8.1	8.0	7.8	7.7	7.6	7.7	7.8	8.0	8.2	8.2
				PM	8.3	8.3	8.4	8.5	8.5	8.6	8.6	8.6	8.6	8.6	8.6	8.5
8-11	9.0	7.8	8.4	AM	8.3	8.2	8.0	8.0	7.9	7.9	7.9	7.8	7.8	7.8	7.8	8.0
				PM	8.2	8.5	8.6	8.8	8.8	8.9	8.9	9.0	9.0	8.9	9.0	9.0
8-12	10.2	8.1	9.2	AM	8.9	8.8	8.6	8.4	8.2	8.1	8.1	8.1	8.3	8.5	8.8	9.1
				PM	9.4	9.7	9.8	9.9	10.0	10.0	10.0	10.0	10.1	10.1	10.2	10.1
8-13	10.9	9.1	10.2	AM	10.3	10.0	9.9	9.7	9.5	9.3	9.2	9.2	9.2	9.4	9.6	9.8
				PM	10.1	10.3	10.5	10.7	10.8	10.9	10.9	10.9	10.9	10.9	10.9	10.9
8-14	10.9	10.2	10.6	AM	10.8	10.8	10.7	10.5	10.4	10.3	10.2	10.3	10.2	10.3	10.7	10.7
				PM	10.6	10.8	10.7	10.7	10.7	10.7	10.7	10.8	10.8	10.9	10.9	10.8
8-15	10.7	8.1	9.4	AM	10.6	10.5	10.3	10.0	9.8	9.8	9.6	9.5	9.5	9.5	9.4	9.4
				PM	9.4	9.4	9.3	9.1	8.9	8.8	8.8	8.8	8.7	8.5	8.3	8.1
8-16	8.5	7.4	8.0	AM	8.1	7.8	7.7	7.6	7.5	7.4	7.4	7.4	7.4	7.7	7.8	7.9
				PM	8.2	8.3	8.4	8.5	8.5	8.5	8.4	8.2	8.2	8.2	8.2	8.3
8-17	8.6	8.0	8.2	AM	8.2	8.1	8.1	8.1	8.1	8.1	8.0	8.0	8.0	8.0	8.0	8.1
				PM	8.3	8.4	8.4	8.5	8.6	8.5	8.5	8.4	8.4	8.4	8.4	8.4
8-18	8.6	7.4	8.1	AM	8.4	8.3	8.2	8.1	8.0	7.8	7.6	7.5	7.5	7.5	7.6	7.9

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST

PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS

DATA PROCESSED 11-03-82 RT NO 01 TEST DIFF 10

15291500

SUSITNA R NR CANTWELL AK

WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		1.	2	3	4	5	6	7	8	9	10	11	12
					PM	8.1	8.2	8.4	8.5	8.6	8.5	8.4	8.5	8.5	8.5	8.4	8.4
	8-19	10.0	8.2	9.1	AM	8.4	8.4	8.4	8.4	8.4	8.3	8.3	8.2	8.4	8.6	8.9	9.2
					PM	9.5	9.7	9.9	10.0	9.9	10.0	9.9	9.8	9.6	9.5	9.4	9.5
	8-20	10.5	9.2	9.7	AM	9.4	9.4	9.3	9.3	9.2	9.2	9.2	9.2	9.3	9.3	9.4	9.6
					PM	9.8	10.0	10.3	10.4	10.5	10.5	10.4	10.0	10.0	9.9	9.8	9.9
A	8-21	10.6	1.2	9.7	AM	9.8	9.8	9.7	9.7	9.6	9.5	9.4	9.4	9.5	9.5	9.6	9.8
					PM	10.1	10.5	10.5	10.5	10.4	10.4	10.3	1.2	10.2	10.1	9.9	9.7
	8-22	10.6	8.6	9.7	AM	9.7	9.6	9.5	9.3	9.1	8.9	8.7	8.6	8.6	8.8	9.0	9.3
					PM	9.7	9.9	10.1	10.3	10.4	10.4	10.4	10.5	10.5	10.5	10.6	10.6
A	8-23	10.9	1.3	10.2	AM	10.6	10.5	10.2	10.1	10.0	10.0	9.9	9.9	9.8	9.9	10.1	10.3
					PM	10.4	10.6	10.7	10.7	10.8	10.7	10.7	10.7	10.7	10.7	10.9	10.8
	8-24	10.8	9.6	9.9	AM	10.7	10.7	10.4	10.3	10.0	9.9	9.8	9.6	9.6	9.6	9.7	9.7
					PM	9.8	9.8	9.8	9.9	9.9	9.8	9.8	9.7	9.7	9.6	9.6	9.6
	8-25	9.7	8.9	9.2	AM	9.6	9.4	9.3	9.2	9.1	9.0	9.0	8.9	8.9	9.0	9.1	9.3
					PM	9.2	9.2	9.3	9.5	9.5	9.5	9.5	9.4	9.3	9.2	9.1	9.0
	8-26	9.1	8.0	8.4*	AM	9.0	8.9	8.8	8.6	8.4	8.2	8.1	8.1	8.0	8.0	8.1	8.3
					PM	8.5	8.6	8.7									
	PERIOD	10.9	0.6														

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS

A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE

B - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM

* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY

† - UNIT VALUES RECORD WRITTEN

PROVISIONAL DATA SUBJECT TO REVISION

SHIFT PRORATED FROM 0.00 ON 6-30 TO -0.70 ON 7-27

SHIFT PRORATED FROM -0.70 ON 7-27 TO 0.50 ON 8-26

SHIFT PRORATED FROM 0.50 ON 8-26 TO 0.30 ON 10-01

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST ..
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-03-82 RT NO 01 TEST DIFF 10

15291500
SUSITNA R NR CANTWELL AK
WATER TEMP (DEG C)

PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	8-26	9.1	8.6	8.9*	AM												
					PM				8.6	8.8	8.8	8.7	8.8	9.0	9.0	9.1	9.1
	8-27	10.0	8.6	9.3	AM	9.1	9.0	9.0	8.9	8.8	8.8	8.6	8.6	8.7	8.9	9.1	9.3
					PM	9.6	9.8	9.9	10.0	10.0	10.0	9.7	9.6	9.4	9.3	9.1	9.0
	8-28	8.9	7.7	8.4	AM	8.9	8.9	8.7	8.4	8.1	7.9	7.7	7.7	7.7	7.9	8.1	8.3
					PM	8.4	8.5	8.7	8.8	8.8	8.9	8.8	8.4	8.3	8.3	8.3	8.3
	8-29	8.4	7.7	7.9	AM	8.3	8.3	8.0	7.9	7.9	7.9	7.8	7.8	7.7	7.8	7.8	7.9
					PM	7.9	8.0	8.0	8.0	8.0	7.9	7.9	7.9	7.8	7.7	7.7	7.7
	8-30	7.7	6.8	7.3	AM	7.7	7.6	7.6	7.6	7.5	7.4	7.3	7.3	7.2	7.2	7.2	7.2
					PM	7.3	7.3	7.4	7.4	7.3	7.2	7.1	7.0	6.9	6.9	6.8	6.8
	8-31	7.5	6.6	7.0	AM	6.8	6.7	6.7	6.7	6.6	6.6	6.6	6.7	6.6	6.8	6.8	6.8
					PM	7.0	7.2	7.3	7.5	7.5	7.5	7.4	7.3	7.2	7.2	7.3	7.3
	9-01	7.7	6.9	7.3	AM	7.3	7.3	7.3	7.3	7.2	7.2	7.1	7.0	6.9	6.9	7.1	7.2
					PM	7.2	7.4	7.5	7.7	7.6	7.5	7.5	7.6	7.6	7.6	7.5	7.4
	9-02	8.1	7.2	7.6	AM	7.4	7.4	7.5	7.4	7.4	7.3	7.2	7.2	7.2	7.3	7.4	7.6
					PM	7.8	7.8	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
	9-03	8.2	7.1	7.6	AM	8.2	8.2	8.0	8.0	7.8	7.6	7.5	7.5	7.5	7.4	7.5	7.5
					PM	7.5	7.7	7.7	7.7	7.7	7.6	7.4	7.3	7.2	7.1	7.1	7.1
	9-04	7.4	6.6	7.0	AM	7.1	7.0	7.2	6.8	6.7	6.6	6.6	6.6	6.6	6.8	6.7	6.9
					PM	7.2	7.2	7.3	7.4	7.4	7.3	7.2	7.2	7.0	7.0	7.0	7.0
	9-05	7.7	6.5	7.1	AM	7.0	6.9	6.9	6.7	6.6	6.5	6.5	6.6	6.6	6.7	6.7	6.9
					PM	7.1	7.3	7.4	7.6	7.6	7.7	7.6	7.5	7.4	7.3	7.3	7.2
	9-06	8.1	7.0	7.5	AM	7.2	7.2	7.2	7.2	7.1	7.1	7.1	7.0	7.1	7.2	7.3	7.5
					PM	7.7	7.7	7.9	7.9	8.1	8.0	8.0	8.0	7.9	7.9	7.8	7.8
	9-07	8.1	7.5	7.8	AM	7.7	7.7	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.7	7.8
					PM	7.9	8.0	8.0	8.1	8.0	8.0	7.9	7.8	7.8	7.7	7.6	7.5
	9-08	7.5	6.8	7.2	AM	7.5	7.5	7.4	7.5	7.4	7.3	7.3	7.2	7.1	7.1	7.1	7.2
					PM	7.2	7.3	7.3	7.3	7.3	7.2	7.2	7.1	7.0	6.9	6.9	6.8
	9-09	6.8	6.4	6.6	AM	6.8	6.7	6.7	6.7	6.6	6.5	6.5	6.4	6.4	6.4	6.5	6.5
					PM	6.5	6.5	6.6	6.6	6.7	6.7	6.6	6.5	6.5	6.5	6.4	6.4
	9-10	6.5	5.9	6.2	AM	6.3	6.2	6.2	6.1	6.1	6.0	6.1	5.9	5.9	5.9	6.0	6.0
					PM	6.1	6.2	6.3	6.4	6.4	6.5	6.4	6.4	6.4	6.3	6.3	6.2
	9-11	6.5	5.5	5.9	AM	6.1	6.1	6.0	5.9	5.8	5.7	5.6	5.6	5.6	5.6	5.8	5.9
					PM	6.1	6.4	6.3	6.2	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.5
	9-12	5.5	4.6	5.1	AM	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.7	4.6	4.7	4.8
					PM	5.0	5.1	5.2	5.3	5.3	5.3	5.4	5.4	5.4	5.4	5.4	5.4
	9-13	5.8	5.2	5.5	AM	5.4	5.4	5.5	5.4	5.4	5.4	5.3	5.3	5.3	5.3	5.3	5.4
					PM	5.5	5.6	5.7	5.8	5.8	5.8	5.8	5.8	5.7	5.7	5.6	5.6
	9-14	6.3	5.6	6.0	AM	5.6	5.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.9	6.0
					PM	6.1	6.2	6.2	6.3	6.2	6.3	6.2	6.2	6.3	6.2	6.3	6.3
	9-15	8.3	6.1	7.0	AM	6.3	6.3	6.7	6.2	6.2	6.2	6.2	6.1	6.2	6.3	6.4	6.6
					PM	6.7	7.1	7.4	7.6	7.7	8.0	8.0	8.0	8.1	8.2	8.2	8.3
	9-16	8.4	7.2	7.8	AM	8.4	8.3	8.3	8.2	8.1	8.1	8.0	7.9	7.7	7.7	7.6	7.6
					PM	7.7	7.8	7.9	7.9	7.8	7.8	7.7	7.7	7.6	7.5	7.4	7.2

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST

PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS

15291500 DATA PROCESSED 11-03-82 RT NO 01 TEST DIFF 10

SUSITNA R NR CANTWELL AK

WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	9-17	7.2	5.5	6.1	AM	7.1	7.0	6.8	6.7	6.5	6.3	6.2	6.1	6.0	5.9	5.8	5.8
					PM	5.8	5.9	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5
	9-18	5.7	5.1	5.4	AM	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.2	5.3
					PM	5.4	5.5	5.5	5.5	5.5	5.6	5.7	5.7	5.7	5.7	5.7	5.7
	9-19	6.2	5.5	5.8	AM	5.6	5.6	5.6	5.6	5.6	5.5	5.6	5.6	5.6	5.6	5.7	5.7
					PM	5.8	5.9	5.9	6.0	6.1	6.1	6.2	6.2	6.2	6.2	6.2	6.1
	9-20	6.1	5.5	5.8	AM	6.1	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.7	5.6	5.7	5.8
					PM	5.8	5.8	5.9	5.8	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5
	9-21	5.7	5.2	5.5	AM	5.5	5.4	5.4	5.4	5.4	5.3	5.3	5.2	5.2	5.2	5.3	5.3
					PM	5.4	5.5	5.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
	9-22	5.7	5.1	5.5	AM	5.7	5.7	5.6	5.5	5.4	5.3	5.3	5.2	5.1	5.3	5.2	5.4
					PM	5.5	5.5	5.6	5.6	5.7	5.6	5.6	5.7	5.6	5.6	5.6	5.5
	9-23	5.7	4.8	5.2*	AM	5.4	5.3	5.1	5.0	4.9	5.3	5.7					
					PM												
	PERIOD	10.0	4.6														

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS

A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE

R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM

* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY

& - UNIT VALUES RECORD WRITTEN

PROVISIONAL RECORDS SUBJECT TO REVISION

SHIFT PRORATED FROM 0.00 ON 6-30 TO -0.70 ON 7-27
SHIFT PRORATED FROM -0.70 ON 7-27 TO 0.50 ON 8-26
SHIFT PRORATED FROM 0.50 ON 8-26 TO 0.30 ON 10-01

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-03-82

15292400 -
CHULITNA R NR TALKEETNA AK
WATER TEMP (DEG C)

RT NO 01 TEST DIFF 1

PARAMETER CODE 00010 STORE STATISTICS 00001,00002,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	5-24	5.0	4.6	4.7*	AM												
					PM										5.0	4.6	4.6
	5-25	5.6	4.9	5.3	AM	5.1	5.3	5.3	5.3	5.3	5.3	5.2	5.2	5.2	5.2	5.2	5.2
					PM	5.3	5.3	5.3	5.4	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.5
	5-26	5.6	5.0	5.3	AM	5.4	5.3	5.3	5.2	5.1	5.1	5.1	5.0	5.0	5.0	5.0	5.1
					PM	5.2	5.3	5.4	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.5
	5-27	5.9	5.3	5.6	AM	5.5	5.4	5.4	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.4	5.5
					PM	5.6	5.7	5.7	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.8
	5-28	6.0	5.5	5.7	AM	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.5	5.5	5.5	5.5	5.5
					PM	5.6	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.0	6.0	6.0
	5-29	6.0	5.5	5.8	AM	5.9	5.9	5.8	5.8	5.7	5.6	5.6	5.5	5.5	5.5	5.5	5.6
					PM	5.8	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
	5-30	6.0	5.8	5.9*	AM	5.9	5.9	5.9	5.9	5.9	5.8	5.8	5.8	5.8	5.8	5.9	6.0
					PM	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
	PERIOD	6.0	4.6														

RECORDER CLOCK RUNNING 15.0 MINUTES PER DAY FAST. RECORD ADJUSTED.

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS
A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE
R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM
* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY
# - UNIT VALUES RECORD WRITTEN

SHIFT PRORATED FROM -1.80 ON 6-03 TO -3.80 ON 6-29
SHIFT PRORATED FROM -3.80 ON 6-29 TO -3.70 ON 7-26
SHIFT PRORATED FROM -3.70 ON 7-26 TO -3.70 ON 8-27
SHIFT PRORATED FROM -3.70 ON 8-27 TO -4.00 ON 9-10
SHIFT PRORATED FROM -4.00 ON 9-10 TO -4.10 ON 9-27
SHIFT PRORATED FROM -4.10 ON 9-27 TO -4.10 ON 10-14

PROVISIONAL RECORDS SUBJECT TO REVISION

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-03-82

DIS

15292400 RT NO 01 TEST DIFF 1
CHULITNA R NR TALKEETNA AK
WATER TEMP (DEG C)

PARAMETER CODE 00010 STORE STATISTICS 00001,00002,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	6-03	8.9	8.1	8.6*	AM												
					PM									8.9	8.7	8.5	8.1
	6-04	8.4	6.3	7.3	AM	7.7	7.4	7.1	6.8	6.5	6.3	6.3	6.3	6.4	6.6	6.8	7.1
					PM	7.4	7.7	8.0	8.3	8.4	8.4	8.3	8.0	7.8	7.6	7.5	7.2
	6-05	7.1	5.7	6.1	AM	7.1	6.9	6.8	6.7	6.5	6.4	6.3	6.1	6.0	5.9	5.9	5.8
					PM	5.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
	6-06	6.3	5.3	5.6	AM	5.5	5.5	5.5	5.4	5.4	5.4	5.3	5.3	5.3	5.3	5.3	5.3
					PM	5.4	5.5	5.5	5.6	5.7	5.8	6.0	6.1	6.3	6.3	6.2	6.2
	6-07	7.1	6.0	6.4	AM	6.1	6.1	6.1	6.0	6.0	6.0	6.0	6.0	6.0	6.1	6.1	6.3
					PM	6.3	6.3	6.5	6.6	6.8	7.0	7.0	7.1	7.1	7.1	7.0	6.9
	6-08	9.1	6.0	7.4	AM	6.7	6.6	6.4	6.3	6.1	6.0	6.0	6.0	6.0	6.1	6.5	6.8
					PM	7.3	7.6	8.0	8.3	8.7	9.1	9.1	9.1	9.1	9.1	8.9	8.7
	6-09	8.4	7.1	7.6	AM	8.3	8.1	7.9	7.7	7.5	7.3	7.2	7.1	7.1	7.1	7.1	7.1
					PM	7.2	7.2	7.4	7.5	7.6	7.8	7.9	7.9	7.9	7.9	7.8	7.6
	6-10	7.9	6.9	7.4	AM	7.5	7.3	7.2	7.1	7.0	7.0	7.0	6.9	6.9	6.9	7.0	7.1
					PM	7.2	7.5	7.6	7.7	7.8	7.9	7.9	7.9	7.9	7.8	7.7	7.5
	6-11	7.6	6.5	7.0	AM	7.3	7.1	7.0	6.8	6.7	6.6	6.6	6.5	6.5	6.5	6.5	6.6
					PM	6.7	6.9	7.1	7.3	7.5	7.6	7.6	7.6	7.6	7.6	7.5	7.3
	6-12	7.9	6.3	7.1	AM	7.1	7.0	6.9	6.7	6.6	6.5	6.4	6.3	6.3	6.3	6.5	6.7
					PM	7.0	7.3	7.6	7.7	7.8	7.9	7.9	7.7	7.7	7.6	7.4	7.2
	6-13	8.6	5.9	7.1	AM	7.0	6.8	6.6	6.4	6.3	6.1	6.0	5.9	5.9	5.9	6.1	6.3
					PM	6.7	7.1	7.3	7.7	8.0	8.3	8.5	8.6	8.6	8.3	8.0	7.7
	6-14	10.0	6.3	8.0	AM	7.4	7.2	6.9	6.8	6.6	6.4	6.3	6.3	6.3	6.5	6.9	7.3
					PM	7.9	8.3	8.9	9.3	9.6	9.9	10.0	10.0	9.8	9.5	9.2	9.0
	6-15	9.7	5.8	6.8	AM	8.6	8.4	8.1	7.9	7.7	7.5	7.3	7.1	7.0	6.8	6.7	6.6
					PM	6.5	6.4	6.4	6.3	6.2	6.2	6.1	6.0	6.0	5.9	5.8	5.8
	6-16	5.6	5.1	5.3	AM	5.6	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.1
					PM	5.1	5.1	5.1	5.1	5.1	5.2	5.3	5.4	5.4	5.4	5.5	5.5
	6-17	8.1	5.1	6.2	AM	5.4	5.4	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.1	5.2
					PM	5.4	5.7	6.1	6.5	7.0	7.4	7.8	8.0	8.1	8.1	8.1	7.9
	6-18	8.3	6.5	7.4	AM	7.7	7.5	7.3	7.0	6.8	6.6	6.5	6.5	6.5	6.6	6.9	7.1
					PM	7.4	7.8	8.0	8.2	8.3	8.3	8.2	8.1	7.9	7.8	7.6	7.5
	6-19	10.1	6.5	8.1	AM	7.2	7.1	7.0	6.9	6.8	6.7	6.6	6.5	6.5	6.5	6.8	7.3
					PM	7.9	8.3	8.8	9.2	9.4	9.9	10.1	10.1	9.9	9.7	9.5	9.3
	6-20	9.1	6.2	7.3	AM	9.0	8.8	8.6	8.4	8.2	8.0	7.8	7.6	7.4	7.3	7.1	7.0
					PM	6.9	6.8	6.7	6.7	6.7	6.7	6.6	6.6	6.5	6.4	6.3	6.2
	6-21	8.2	5.6	6.7	AM	6.0	5.9	5.8	5.7	5.7	5.7	5.6	5.6	5.7	5.9	6.1	6.5
					PM	6.8	7.0	7.2	7.5	7.7	7.9	8.1	8.2	8.2	8.0	7.8	7.6
	6-22	9.1	6.4	7.6	AM	7.4	7.2	7.0	6.8	6.7	6.5	6.4	6.4	6.4	6.5	6.7	7.0
					PM	7.4	7.8	8.2	8.6	8.9	9.1	9.1	9.1	9.0	8.8	8.6	8.3
	6-23	9.6	6.6	8.0	AM	8.0	7.7	7.4	7.1	6.9	6.7	6.6	6.6	6.6	6.6	6.8	7.0
					PM	7.4	7.8	8.3	8.7	9.1	9.4	9.6	9.6	9.6	9.5	9.2	8.9
	6-24	10.1	6.9	8.4	AM	8.4	8.1	7.8	7.5	7.2	7.0	6.9	6.9	6.9	7.1	7.4	7.8
					PM	8.2	8.6	9.0	9.4	9.7	9.9	10.1	10.1	10.0	9.9	9.6	9.3
	6-25	9.4	7.2	8.3	AM	8.9	8.5	8.2	7.9	7.7	7.5	7.3	7.2	7.2	7.2	7.4	7.6

PROVISIONAL RECORDS SUBJECT TO REVISION

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS

15292400 DATA PROCESSED 11-03-82 RT NO 01 TEST DIFF 10
CHULITNA R NR TALKEETNA AK
WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
					PM	7.9	8.2	8.5	8.8	9.1	9.2	9.3	9.4	9.4	9.2	9.0	8.8
	6-26	8.6	7.1	7.8	AM	8.5	8.4	8.0	7.8	7.6	7.4	7.3	7.2	7.1	7.1	7.1	7.3
					PM	7.4	7.6	7.9	8.0	8.2	8.2	8.2	8.2	8.2	8.1	7.9	7.8
	6-27	7.6	6.6	7.0	AM	7.5	7.4	7.2	7.1	6.9	6.8	6.7	6.6	6.6	6.6	6.6	6.7
					PM	6.9	7.0	7.1	7.2	7.3	7.3	7.3	7.3	7.2	7.1	7.1	7.0
	6-28	7.2	6.3	6.8	AM	6.9	6.8	6.7	6.6	6.5	6.4	6.3	6.3	6.3	6.3	6.5	7.0
					PM	6.8	6.9	7.0	7.0	7.1	7.1	7.1	7.2	7.2	7.1	6.9	6.8
	6-29	6.6	5.5	5.9*	AM	6.5	6.3	6.2	6.1	6.0	5.8	5.7	5.6	5.5	5.5	5.6	5.8
					PM	6.0											
	PERIOD	10.1	5.1														

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS
A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE
R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM
* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY
% - UNIT VALUES RECORD WRITTEN

SHIFT PRORATED FROM -1.80 ON 6-03 TO -3.80 ON 6-29
SHIFT PRORATED FROM -3.80 ON 6-29 TO -3.70 ON 7-26
SHIFT PRORATED FROM -3.70 ON 7-26 TO -3.70 ON 8-27
SHIFT PRORATED FROM -3.70 ON 8-27 TO -4.00 ON 9-10
SHIFT PRORATED FROM -4.00 ON 9-10 TO -4.10 ON 9-27
SHIFT PRORATED FROM -4.10 ON 9-27 TO -4.10 ON 10-14

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-03-82 RT NO 01 TEST DIFF 1

15292400
CHULITNA R NR TALKEETNA AK
WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	6-29	7.0	6.2	6.8*	AM												
					PM		6.2	6.3	6.5	6.9	6.9	7.0	7.0	7.0	7.0	6.9	6.7
	6-30	6.7	5.6	6.0	AM	6.6	6.4	6.2	6.1	6.0	5.9	5.8	5.7	5.7	5.6	5.6	5.7
					PM	5.8	6.0	6.2	6.3	6.4	6.4	6.4	6.3	6.2	6.1	5.9	5.8
	7-01	5.9	4.9	5.4	AM	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	5.0	4.9	5.0	5.1
					PM	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.8	5.8	5.7	5.6	5.5
	7-02	6.0	4.8	5.3	AM	5.5	5.4	5.3	5.2	5.1	4.9	4.9	4.8	4.8	4.8	4.8	4.9
					PM	5.0	5.1	5.2	5.5	5.7	5.7	5.9	5.9	6.0	6.0	6.0	6.0
	7-03	7.1	4.9	5.8	AM	5.8	5.7	5.6	5.4	5.3	5.1	5.0	4.9	4.9	4.9	5.0	5.1
					PM	5.4	5.6	5.9	6.1	6.4	6.6	6.9	7.0	7.0	7.0	7.1	6.9
	7-04	7.3	5.5	6.4	AM	6.8	6.6	6.4	6.2	6.0	5.9	5.7	5.6	5.5	5.5	5.5	5.7
					PM	5.9	6.1	6.4	6.6	6.8	7.0	7.1	7.2	7.3	7.2	7.1	6.9
	7-05	7.2	5.6	6.4	AM	6.8	6.6	6.4	6.3	6.1	6.0	5.9	5.7	5.7	5.6	5.6	5.7
					PM	5.9	6.1	6.3	6.5	6.8	7.0	7.1	7.2	7.2	7.2	7.1	6.9
	7-06	6.8	5.5	6.1	AM	6.7	6.6	6.4	6.2	6.1	5.9	5.8	5.7	5.6	5.6	5.5	5.6
					PM	5.7	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.5	6.5	6.5	6.5
	7-07	7.6	5.3	6.3	AM	6.3	6.2	6.0	5.8	5.7	5.5	5.3	5.3	5.3	5.3	5.4	5.6
					PM	5.8	6.1	6.4	6.7	7.0	7.2	7.5	7.6	7.6	7.6	7.6	7.5
	7-08	7.4	6.2	6.7	AM	7.4	7.2	7.0	6.8	6.7	6.5	6.4	6.3	6.2	6.2	6.2	6.3
					PM	6.4	6.6	6.7	6.8	6.8	6.9	6.9	6.9	6.8	6.8	6.7	6.6
	7-09	6.5	5.7	6.0	AM	6.5	6.4	6.3	6.2	6.2	6.1	6.0	5.9	5.9	5.8	5.7	5.7
					PM	5.7	5.7	5.8	5.9	5.9	6.0	6.0	6.0	6.1	6.1	6.1	6.1
	7-10	6.1	5.4	5.6	AM	6.1	6.1	6.1	6.0	5.9	5.8	5.8	5.7	5.6	5.6	5.5	5.5
					PM	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
	7-11	5.4	5.0	5.2	AM	5.4	5.4	5.4	5.4	5.3	5.3	5.2	5.2	5.2	5.2	5.1	5.1
					PM	5.1	5.1	5.1	5.0	5.0	5.1	5.1	5.2	5.2	5.2	5.3	5.3
	7-12	5.3	4.9	5.0	AM	5.3	5.3	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.0	5.0
					PM	5.0	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	7-13	5.1	4.6	4.7	AM	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.6
					PM	4.6	4.6	4.6	4.6	4.7	4.9	4.8	4.9	5.0	5.0	5.0	5.1
	7-14	5.1	4.9	5.0	AM	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.0	5.0	4.9	4.9	4.9
					PM	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.0	5.0	5.0	5.1
	7-15	5.2	5.1	5.1	AM	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.1	5.1
					PM	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
	7-16	5.1	4.9	5.0	AM	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.0	5.0	5.0	4.9	4.9
					PM	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.0
	7-17	5.1	4.9	4.9	AM	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.9	4.9	4.9	4.9	4.9
					PM	4.8	4.8	4.8	4.8	4.9	4.9	4.9	5.0	5.0	5.1	5.1	5.1
	7-18	5.1	5.0	5.1	AM	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
					PM	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	7-19	5.1	4.-	5.0	AM	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.9	4.9	4.9	4.9	4.9
					PM	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.0	5.0	5.1	5.1
	7-20	5.3	5.1	5.2	AM	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
					PM	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.3	5.3	5.3

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST

PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS

15292400 DATA PROCESSED 11-03-82 RT NO 01 TEST DIFF 10

CHULITNA R NR TALKEETNA AK

WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	7-21	5.4	5.2	5.4	AM	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
					PM	5.4	5.4	5.4	5.4	5.4	5.3	5.3	5.3	5.3	5.3	5.3	5.2
	7-22	5.2	4.8	5.0	AM	5.2	5.2	5.2	5.2	5.1	5.1	5.1	5.1	5.1	5.0	5.0	5.0
					PM	5.0	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.8	4.8	4.8
	7-23	4.8	4.6	4.7	AM	4.8	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.7	4.7	4.7
					PM	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
	7-24	4.6	4.6	4.6	AM	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
					PM	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
	7-25	6.4	4.5	5.1	AM	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.5	4.5
					PM	4.5	4.5	4.5	4.8	6.1	6.3	6.4	6.4	6.5	6.4	6.2	6.2
	7-26	6.5	5.9	6.0*	AM	6.1	6.1	6.1	6.0	6.0	6.0	5.9	5.9	5.9	5.9	5.9	6.0
					PM	6.1	6.4										
	PERIOD	7.6	4.5														

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS
- A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE
- R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM
- * - DAILY SUMMARY IS FOR AN INCOMPLETE DAY
- ‡ - UNIT VALUES RECORD WRITTEN

SHIFT PRORATED FROM -1.80 ON 6-03 TO -3.80 ON 6-29
SHIFT PRORATED FROM -3.80 ON 6-29 TO -3.70 ON 7-26
SHIFT PRORATED FROM -3.70 ON 7-26 TO -3.70 ON 8-27
SHIFT PRORATED FROM -3.70 ON 8-27 TO -4.00 ON 9-10
SHIFT PRORATED FROM -4.00 ON 9-10 TO -4.10 ON 9-27
SHIFT PRORATED FROM -4.10 ON 9-27 TO -4.10 ON 10-14

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-03-82

15292400 RT NO 01 TEST DIFF 10
CHULITNA R NR TALKEETNA AK
WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	7-26	6.9	6.4	6.8*	AM												
					PM				6.8	6.8	6.9	6.9	6.9	6.8	6.7	6.5	6.4
	7-27	7.6	5.6	6.5	AM	6.3	6.2	6.1	6.0	5.8	5.7	5.7	5.6	5.6	5.6	5.6	5.8
					PM	6.0	6.3	6.7	7.0	7.2	7.4	7.6	7.6	7.6	7.4	7.2	7.0
	7-28	7.6	5.8	6.6	AM	6.8	6.6	6.6	6.4	6.2	6.1	5.9	5.9	5.8	5.8	5.8	6.0
					PM	6.3	6.6	7.0	7.2	7.4	7.6	7.6	7.5	7.3	7.2	7.1	7.0
	7-29	6.9	5.8	6.3	AM	6.8	6.7	6.6	6.4	6.3	6.2	6.0	5.9	5.8	5.8	5.8	5.9
					PM	6.1	6.3	6.4	6.5	6.6	6.6	6.7	6.7	6.6	6.5	6.3	6.1
	7-30	6.5	5.5	6.0	AM	6.0	5.9	5.8	5.8	5.7	5.7	5.6	5.5	5.5	5.6	5.6	5.7
					PM	5.9	6.1	6.3	6.4	6.4	6.3	6.3	6.5	6.4	6.4	6.4	6.3
	7-31	6.5	5.7	6.8	AM	6.1	5.9	5.9	5.8	5.7	5.7	5.7	5.7	5.8	5.9	6.0	6.6
					PM	6.8	7.3	7.8	8.2	8.5	8.5	8.3	8.2	8.0	7.6	7.4	7.2
	8-01	9.3	5.6	7.3	AM	7.0	6.8	6.6	6.4	6.1	5.9	5.7	5.6	5.6	5.9	6.2	6.7
					PM	7.3	7.8	8.2	8.7	9.0	9.2	9.3	9.1	8.6	8.2	7.8	7.5
	8-02	9.4	5.6	7.4	AM	7.2	6.9	6.7	6.4	6.1	5.9	5.7	5.6	5.6	5.9	6.2	6.7
					PM	7.2	7.7	8.2	8.6	9.0	9.3	9.4	9.3	8.9	8.5	8.0	7.6
	8-03	9.0	5.5	7.1	AM	7.2	6.9	6.6	6.3	6.0	5.8	5.6	5.5	5.5	5.6	5.9	6.3
					PM	6.9	7.3	7.8	8.3	8.7	8.9	9.0	8.9	8.7	8.4	7.9	7.5
	8-04	7.3	5.5	6.2*	AM	7.1	6.8	6.5	6.2	6.0	5.8	5.6	5.5				
					PM												
	PERIOD	9.4	5.5														

PROVISIONAL RECORDS SUBJECT TO REVISION

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS
A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE
R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM
* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY
& - UNIT VALUES RECORD WRITTEN

SHIFT PRORATED FROM -1.80 ON 6-03 TO -3.80 ON 6-29
SHIFT PRORATED FROM -3.80 ON 6-29 TO -3.70 ON 7-26
SHIFT PRORATED FROM -3.70 ON 7-26 TO -3.70 ON 8-27
SHIFT PRORATED FROM -3.70 ON 8-27 TO -4.00 ON 9-10
SHIFT PRORATED FROM -4.00 ON 9-10 TO -4.10 ON 9-27
SHIFT PRORATED FROM -4.10 ON 9-27 TO -4.10 ON 10-14

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-03-82

15292400 RT NO 01 TEST DIFF 10
CHULITNA R NR TALKEETNA AK
WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	9-10	5.6	5.2	5.4*	AM												
					PM								5.6	5.6	5.4	5.3	5.2
	9-11	5.1	4.4	4.6	AM	5.0	4.9	4.7	4.6	4.6	4.5	4.5	4.4	4.4	4.4	4.4	4.4
					PM	4.4	4.4	4.6	4.7	4.8	4.8	4.8	4.8	4.8	4.7	4.6	4.5
	9-12	5.3	4.1	4.7	AM	4.1	4.5	4.8	5.1	5.3	5.3	5.3	5.3	5.2	5.1	5.0	4.8
					PM	4.7	4.7	4.6	4.6	4.5	4.5	4.4	4.3	4.3	4.3	4.3	4.2
	9-13	4.7	4.2	4.6	AM	4.2	4.2	4.3	4.5	4.6	4.6	4.6	4.7	4.7	4.7	4.7	4.7
					PM	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
	9-14	5.1	4.7	4.9	AM	4.7	4.7	4.8	4.8	4.9	5.0	5.0	5.0	5.0	5.0	5.0	5.0
					PM	5.0	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.0	5.1
	9-15	6.3	5.3	6.0	AM	5.4	5.7	5.9	6.1	6.2	6.3	6.3	6.3	6.3	6.3	6.3	6.3
					PM	6.3	6.2	6.1	6.0	5.9	5.9	5.7	5.6	5.6	5.5	5.5	5.5
	9-16	6.2	4.1	5.2	AM	5.6	5.7	5.8	5.9	6.1	6.2	6.1	5.8	5.6	5.5	5.3	5.1
					PM	5.0	5.0	4.9	4.8	4.6	4.6	4.5	4.4	4.3	4.2	4.2	4.1
	9-17	4.1	3.7	3.9	AM	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.0	4.0	3.9
					PM	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.8	3.9
	9-18	4.4	3.7	4.1	AM	4.1	4.2	4.3	4.4	4.4	4.4	4.4	4.4	4.4	4.3	4.2	4.1
					PM	4.0	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.8	3.9	3.9
	9-19	4.2	3.9	4.2	AM	4.0	4.1	4.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
					PM	4.2	4.2	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.1
	9-20	4.3	3.8	4.0	AM	4.1	4.1	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.1	4.1
					PM	4.0	4.0	4.0	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.9
	9-21	4.2	3.5	3.9	AM	3.9	4.0	4.1	4.1	4.2	4.2	4.2	4.2	4.2	4.1	4.0	4.0
					PM	3.8	3.8	3.7	3.7	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5
	9-22	4.3	2.6	3.6	AM	3.6	3.8	4.1	4.1	4.2	4.3	4.3	4.3	4.0	3.9	3.8	3.7
					PM	3.5	3.4	3.4	3.3	3.2	3.0	2.9	2.6	2.9	3.1	3.5	3.8
	9-23	4.4	2.1	3.1	AM	4.1	4.3	4.4	4.4	4.4	4.1	3.9	3.7	3.4	3.2	3.0	2.9
					PM	2.7	2.6	2.5	2.3	2.2	2.1	2.1	2.1	2.3	2.5	2.8	3.0
	9-24	3.5	2.4	3.0	AM	3.2	3.4	3.5	3.6	3.6	3.6	3.4	3.3	3.2	3.0	3.0	2.9
					PM	2.8	2.7	2.6	2.5	2.4	2.4	2.4	2.5	2.7	3.0	3.2	3.3
	9-25	4.0	3.4	3.6	AM	3.5	3.6	3.7	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.6	3.6
					PM	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.6	3.6	3.7	3.9	4.0
	9-26	4.1	4.0	4.1*	AM	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.0	4.0	4.0		
					PM												
	PERIOD	6.3	2.1														

PROVISIONAL DATA SUBJECT TO REVISION RECORDS

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS
A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE
R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM
* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY
# - UNIT VALUES RECORD WRITTEN

SHIFT PRORATED FROM -1.80 ON 6-03 TO -3.80 ON 6-29
SHIFT PRORATED FROM -3.80 ON 6-29 TO -3.70 ON 7-26

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION DIST

PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS

15292400 DATA PROCESSED 11-03-82 RT NO 01 TEST DIFF 10

CHULITNA R NR TALKEETNA AK

WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN	VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
					SHIFT PRORATED FROM -3.70 ON 7-26 TO -3.70 ON 8-27											
					SHIFT PRORATED FROM -3.70 ON 8-27 TO -4.00 ON 9-10											
					SHIFT PRORATED FROM -4.00 ON 9-10 TO -4.10 ON 9-27											
					SHIFT PRORATED FROM -4.10 ON 9-27 TO -4.10 ON 10-14											

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS

15292400 DATA PROCESSED 11-05-82 RT NO 01 TEST DIFF .

CHULITNA R NR TALKEETNA AK

WATER TEMP (DEG C) PARAMETER CODE 00010 STORE STATISTICS 00001,00002, ,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1982

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	9-27	4.9	4.0	4.6*	AM												
					PM	4.0	4.1	4.4	4.8	4.9	4.9	4.9	4.9	4.8	4.6	4.4	4.1
	9-28	4.0	2.6	3.0	AM	3.9	3.7	3.5	3.3	3.1	3.0	2.9	2.7	2.7	2.6	2.6	2.6
					PM	2.7	2.8	2.9	3.0	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1
	9-29	4.3	3.1	3.6	AM	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.2
					PM	3.4	3.6	3.8	4.1	4.2	4.3	4.3	4.3	4.3	4.3	4.2	4.1
	9-30	4.7	3.8	4.2	AM	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.9
					PM	4.0	4.2	4.3	4.4	4.6	4.6	4.7	4.7	4.7	4.6	4.5	4.4
	PERIOD	4.9	2.6														

RECORDER CLOCK RUNNING 1.8 MINUTES PER DAY SLOW. RECORD ADJUSTED.

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS

A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE

R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM

* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY

& - UNIT VALUES RECORD WRITTEN

SHIFT PRORATED FROM	-1.80 ON	6-03 TO	-3.80 ON	6-29
SHIFT PRORATED FROM	-3.80 ON	6-29 TO	-3.70 ON	7-26
SHIFT PRORATED FROM	-3.70 ON	7-26 TO	-3.70 ON	8-27
SHIFT PRORATED FROM	-3.70 ON	8-27 TO	-4.00 ON	9-10
SHIFT PRORATED FROM	-4.00 ON	9-10 TO	-4.10 ON	9-27
SHIFT PRORATED FROM	-4.10 ON	9-27 TO	-4.10 ON	10-14

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
PRIMARY COMPUTATIONS OF QUALITY OF WATER DIGITAL MONITOR RECORDS
DATA PROCESSED 11-05-82

15232400 CHULITNA R NR TALKEETNA AK — RT NO 01 TEST DIFF .
WATER TEMP (DEG C) — PARAMETER CODE 00010 STORE STATISTICS 00001,00002,

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, (1983)

S	DATE	MAX	MIN	MEAN		VALUES AT INDICATED HOURS 1	2	3	4	5	6	7	8	9	10	11	12
	10-01	4.3	3.6	3.9	AM	4.2	4.1	4.1	4.0	3.9	3.9	3.8	3.8	3.7	3.7	3.7	3.7
					PM	3.8	3.8	3.9	4.0	4.1	4.1	4.1	4.1	4.0	3.8	3.7	3.6
	10-02	3.0	2.7	3.2	AM	3.4	3.3	3.1	3.0	2.9	2.8	2.8	2.7	2.7	2.7	2.7	2.8
					PM	3.0	3.1	3.3	3.4	3.6	3.7	3.7	3.8	3.8	3.6	3.5	3.4
	10-03	3.8	2.6	3.1	AM	3.3	3.2	3.1	3.0	2.9	2.9	2.8	2.7	2.7	2.7	2.7	2.8
					PM	3.0	3.2	3.4	3.5	3.7	3.8	3.8	3.7	3.4	3.2	2.9	2.6
	10-04	2.4	0.9	1.8	AM	2.3	2.1	1.9	1.6	1.4	1.3	1.1	1.0	0.9	0.9	1.4	1.5
					PM	1.7	1.8	2.0	2.2	2.4	2.4	2.4	2.4	2.3	2.1	1.9	1.7
	10-05	1.6	0.5	1.0	AM	1.4	1.2	1.1	0.9	0.8	0.7	0.6	0.5	0.5	0.5	0.8	1.2
					PM	1.3	1.3	1.3	1.5	1.5	1.5	1.4	1.3	1.1	0.9	0.8	0.6
	10-06	0.9	0.0	0.5	AM	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5
					PM	0.7	0.7	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.6
	10-07	0.6	0.2	0.4	AM	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2
					PM	0.2	0.2	0.2	0.3	0.4	0.6	0.5	0.5	0.6	0.6	0.6	0.6
	10-08	1.5	0.5	0.9	AM	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6
					PM	0.8	0.9	1.1	1.3	1.4	1.5	1.5	1.5	1.5	1.4	1.3	1.1
	10-09	2.0	0.6	1.3	AM	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.8	0.9
					PM	1.1	1.3	1.5	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9
	10-10	1.9	1.3	1.6	AM	1.9	1.8	1.7	1.7	1.6	1.6	1.6	1.5	1.4	1.3	1.3	1.3
					PM	1.4	1.6	1.6	1.6	1.7	1.8	1.8	1.8	1.8	1.7	1.6	1.5
	10-11	1.4	0.3	0.8	AM	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.7	0.7	0.6	0.6
					PM	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.3
	10-12	0.9	0.0	0.4	AM	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3
					PM	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.8	0.8	0.9	0.8
	10-13	0.5	0.0	0.0	AM	0.5	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
					PM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10-14	0.0	0.0	0.0*	AM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
					PM	0.0	0.0	0.0									
	PERIOD	4.3	0.0														

RECORDER CLOCK RUNNING 1.8 MINUTES PER DAY SLOW. RECORD ADJUSTED.

NOTE.- SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS
A - SUCCESSIVE RECORDED PUNCH READINGS DIFFER BY MORE THAN THE SPECIFIED ALLOWABLE TEST DIFFERENCE
R - ONE OR MORE INPUT VALUE IS OUTSIDE THE RANGE OF THE CONVERSION TABLE FOR THAT ITEM
* - DAILY SUMMARY IS FOR AN INCOMPLETE DAY
% - UNIT VALUES RECORD WRITTEN

SHIFT PRORATED FROM -1.80 ON 6-03 TO -3.80 ON 6-29
SHIFT PRORATED FROM -3.80 ON 6-29 TO -3.70 ON 7-26
SHIFT PRORATED FROM -3.70 ON 7-26 TO -3.70 ON 8-27
SHIFT PRORATED FROM -3.70 ON 8-27 TO -4.00 ON 9-10
SHIFT PRORATED FROM -4.00 ON 9-10 TO -4.10 ON 9-27
SHIFT PRORATED FROM -4.10 ON 9-27 TO -4.10 ON 10-14

ATTACHMENT B

U.S. GEOLOGICAL SURVEY PRELIMINARY
WATER QUALITY DATA FROM GOLD CREEK (1982),
SUNSHINE (1982), AND SUSITNA STATION (1982)

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
15292000 - SUSITNA RIVER AT GOLD CREEK AK

PROCESS DATE 10/13/82
DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM WIDTH (FT) (00004)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	STREAM STAGE (FT ABOVE DATUM) (00065)	TURBIDITY (NTU) (00076)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)
JAN											
20...	1545	--	--	.0	751	80020	--	--	.70	260	15.8
MAR											
03...	1230	--	--	.0	746	80020	1520	--	.10	--	14.2
03...	1520	--	--	--	--	--	--	--	--	--	--
30...	1430	277	--	--	743	80020	1520	--	.10	--	--
30...	1431	--	182	.0	--	--	--	--	--	268	--
30...	1432	--	212	.0	--	--	--	--	--	265	14.0
30...	1433	--	242	.0	--	--	--	--	--	266	--
MAY											
27...	1745	430	--	--	760	80020	--	--	29	--	--
27...	1746	--	95.0	5.0	--	--	--	--	--	70	13.6
27...	1747	--	165	5.1	--	--	--	--	--	70	13.8
27...	1748	--	210	5.0	--	--	--	--	--	70	14.1
27...	1749	--	255	5.0	--	--	--	--	--	70	14.4
27...	1750	--	330	5.0	--	--	--	--	--	70	14.7
JUL											
01...	1730	--	--	--	743	80020	--	10.39	180	--	--
01...	1731	--	120	10.2	--	--	--	--	--	112	11.8
01...	1732	--	180	10.1	--	--	--	--	--	111	11.8
01...	1733	--	230	9.9	--	--	--	--	--	108	11.9
01...	1734	--	280	9.9	--	--	--	--	--	107	12.0
01...	1735	--	350	9.7	--	--	--	--	--	98	11.9
AUG											
19...	1615	--	--	--	--	80020	--	--	140	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15292000 - SUSITNA RIVER AT GOLD CREEK AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	PH (UNITS) (00400)	PH LAB (UNITS) (00403)	ALKALINITY FIELD (MG/L AS CACO3) (00410)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN DISSOLVED (MG/L AS N) (00602)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
JAN											
20...	110	7.5	7.6	82	.44	.42	.18	.15	.090	.080	.24
MAR											
03...	99	6.7	7.6	--	.47	.45	--	--	<.060	<.060	.25
03...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	7.4	78	.44	.44	.21	.19	.070	.060	.26
30...	--	7.8	--	--	--	--	--	--	--	--	--
30...	98	7.9	--	--	--	--	--	--	--	--	--
30...	--	8.0	--	--	--	--	--	--	--	--	--
MAY											
27...	--	--	7.0	25	--	--	.07	.48	.120	.130	.60
27...	107	8.0	--	--	--	--	--	--	--	--	--
27...	109	8.0	--	--	--	--	--	--	--	--	--
27...	111	8.0	--	--	--	--	--	--	--	--	--
27...	113	8.0	--	--	--	--	--	--	--	--	--
27...	116	8.0	--	--	--	--	--	--	--	--	--
JUL											
01...	--	--	8.0	38	--	--	.37	.60	.100	.230	.70
01...	107	7.7	--	--	--	--	--	--	--	--	--
01...	107	7.7	--	--	--	--	--	--	--	--	--
01...	108	7.7	--	--	--	--	--	--	--	--	--
01...	108	7.7	--	--	--	--	--	--	--	--	--
01...	108	7.5	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	8.2	--	--	--	.31	.41	.090	.090	.50

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITROGEN, NH4 + ORG, SUSP, TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)
JAN											
20...	.02	.26	.18	.18	.09	.010	.010	.030	1.2	--	--
MAR											
03...	.03	.28	.19	.20	.06	.040	.040	.020	1.1	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
30...	.01	.27	.17	.18	--	.010	<.010	--	--	1.6	.1
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
27...	.00	.20	<.10	<.10	--	.090	.040	--	10	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
01...	.00	.60	<.10	<.10	.06	.120	.040	.020	--	2.0	.4
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	.00	.40	<.10	<.10	.06	.230	.040	.020	1.4	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
15292000 - SUSITNA RIVER AT GOLD CREEK AK

PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARDNESS (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	PERCENT SODIUM (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
JAN											
20...	120	39	4.6	15	.6	22	2.1	24	17	.1	12
MAR											
03...	110	35	4.8	17	.7	25	2.2	31	15	.1	12
03...	--	--	--	--	--	--	--	--	--	--	--
30...	100	33	4.5	17	.8	26	2.2	27	13	.1	13
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
27...	30	9.9	1.4	2.9	.2	16	1.2	4.3	<5.0	.1	4.6
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
01...	47	16	1.7	4.2	.3	16	1.5	4.7	9.0	<.1	5.4
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	56	19	2.1	4.5	.3	14	1.9	6.3	13	<.1	5.4

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
JAN											
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
30...	2	0	2	60	40	100	<3	--	<1	<10	10
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
01...	1	3	4	31	200	200	1	0	1	<10	20
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)
JAN											
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
30...	1	0	1	1	1	2	30	40	15	3	0
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
01...	<1	--	5	3	20	23	12000	12000	140	1	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82

15292000 - SUSITNA RIVER AT GOLD CREEK AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SILVER, DISSOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)
JAN											
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
30...	3	7	10	3	1	1	2	1	<1	<12	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
01...	<1	200	210	7	<1	--	22	<1	1	14	40
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15292000 - SUSITNA RIVER AT GOLD CREEK AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
JAN										
20...	--	--	--	152	165	--	.21	.030	.12	.03
MAR										
03...	--	--	--	163	169	669	.22	.010	.08	.12
03...	--	--	--	--	--	--	--	--	--	--
30...	10	<1	<1	160	160	657	.22	--	.09	.03
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
MAY										
27...	--	--	--	64	--	--	.09	--	.15	.28
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
JUL										
01...	50	1	<1	67	67	--	.09	.150	.13	.37
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
AUG										
19...	--	--	--	99	75	--	.13	.080	.12	.71

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITROGEN, TOTAL (MG/L AS NO3) (71887)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SPECIFIC CONDUCTANCE LAB (UMHOS) (90095)	ALKALINITY LAB (MG/L AS CACO3) (90410)	HARDNESS NONCARBONATE (MG/L AS CACO3) (95902)	BICARBONATE IT-FLD (MG/L AS HCO3) (99440)	CARBONATE IT-FLD (MG/L AS CO3) (99445)
JAN										
20...	1.9	--	--	2	--	270	83	33	--	--
MAR										
03...	2.1	--	--	--	--	285	85	22	--	--
03...	--	--	--	1	--	--	--	--	--	--
30...	1.9	<.1	<.1	8	33	266	82	19	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
MAY										
27...	--	--	--	--	--	84	27	3.0	31	.00
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
JUL										
01...	--	<.1	.2	--	--	118	41	6.0	46	.00
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
AUG										
19...	--	--	--	--	--	142	38	18	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15292780 - SUSITNA RIVER AT SUNSHINE AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM WIDTH (FT) (00004)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TURBIDITY (NTU) (00076)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	PH (UNITS) (00400)
MAR												
02...	1650	--	--	.0	759	80020	2660	.20	--	13.8	94	6.2
APR												
09...	1400	--	--	.0	757	80020	3340	.50	225	13.4	92	7.3
JUN												
03...	1330	1015	--	--	759	80020	--	160	--	--	--	--
03...	1331	--	65.0	5.7	--	--	--	--	50	13.5	107	6.9
03...	1332	--	190	6.4	--	--	--	--	59	13.2	107	6.9
03...	1333	--	290	6.4	--	--	--	--	62	13.4	109	7.0
03...	1334	--	415	6.5	--	--	--	--	64	13.1	107	7.3
03...	1335	--	690	6.6	--	--	--	--	69	13.1	107	7.4
JUL												
02...	1630	1010	--	--	754	80020	57100	300	--	--	--	--
02...	1631	--	100	10.6	--	--	--	--	93	--	--	7.2
02...	1632	--	200	9.9	--	--	--	--	99	--	--	7.6
02...	1633	--	275	9.4	--	--	--	--	100	--	--	7.8
02...	1634	--	375	9.2	--	--	--	--	100	--	--	8.0
02...	1635	--	550	8.9	--	--	--	--	102	--	--	8.0
AUG												
17...	1300	--	--	--	--	80020	--	270	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15292780 - SUSITNA RIVER AT SUNSHINE AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PH LAB (UNITS) (00403)	ALKALINITY FIELD (MG/L AS CACO3) (00410)	BICARBONATE FET-FLD (MG/L AS HCO3) (00440)	CARBONATE FET-FLD (MG/L AS CO3) (00445)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN DISSOLVED (MG/L AS N) (00602)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)
MAR												
02...	7.7	--	--	--	.72	.72	--	--	<.060	≤.060	.43	.02
APR												
09...	7.7	--	--	--	.59	.70	.26	.37	.060	.060	.43	.00
JUN												
03...	7.5	26	32	0	.71	.70	.40	.42	.080	.100	.50	.00
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
02...	7.3	39	--	--	1.3	1.2	1.1	1.0	.080	.080	1.1	.10
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
17...	8.2	--	--	--	--	.91	1.1	.64	.160	.230	.80	.50

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15292780 - SUSITNA RIVER AT SUNSHINE AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
MAR												
02...	.45	.27	.29	<.010	<.010	.8	--	96	--	31	4.4	11
APR												
09...	.32	.27	.27	<.010	<.010	.4	--	87	--	28	4.2	10
JUN												
03...	.50	.21	.20	.100	.020	--	6.4	33	7	11	1.4	2.1
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
02...	1.20	.11	.10	.050	.100	--	4.7	52	--	17	2.2	2.7
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
17...	1.30	<.10	.11	.330	.050	3.2	--	54	--	18	2.2	3.0

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82

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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM AD-SORP-TION RATIO (00931)	PERCENT SODIUM (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
MAR												
02...	.5	20	1.9	16	16	.1	9.7	--	--	--	--	--
APR												
09...	.5	20	1.8	16	17	.2	9.8	--	--	--	--	--
JUN												
03...	.2	12	1.2	2.5	6.0	.1	4.2	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
02...	.2	10	1.4	3.2	13	<.1	4.9	2	7	9	25	300
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
17...	.2	10	1.7	3.0	13	.1	4.0	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)
MAR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
02...	300	<1	<1	20	10	30	<1	10	5	25	30	20000
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
17...	--	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, SUS-PENDED RECOV, (UG/L AS MN) (01054)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
MAR											
02...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	20000	220	1	<1	390	400	10	2	31	33	<1
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
AUG											
17...	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)
MAR											
02...	--	--	--	--	--	--	130	136	934	.18	.08
APR											
09...	--	--	--	--	--	--	135	130	1220	.18	.08
JUN											
03...	--	--	--	--	--	--	54	45	--	.07	.10
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	<1	9	70	80	<1	<1	71	72	10900	.10	.10
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
AUG											
17...	--	--	--	--	--	--	101	72	--	.14	.21

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS-PHORUS TOTAL (MG/L AS P04) (71886)	NITRO-GEN, TOTAL (MG/L AS N03) (71887)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS) (90095)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	BICAR-BONATE IT-FLD (MG/L AS HCO3) (99440)	CAR-BONATE IT-FLD (MG/L AS CO3) (99445)
MAR											
02...	--	3.2	--	--	1	7.2	222	74	22	--	--
APR											
09...	--	2.6	--	--	--	--	232	72	15	--	--
JUN											
03...	.31	3.1	--	--	--	--	82	28	5.0	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	.15	5.8	<.1	.2	--	--	119	44	8.0	48	.00
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
AUG											
17...	1.0	--	--	--	--	--	123	44	10	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
15294345 - YENTNA R NR SUSITNA STATION AK

PROCESS DATE 10/13/82
DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM WIDTH (FT) (00004)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	STREAM STAGE (FT ABOVE DATUM) (00065)
JAN							
12...	1530	1220	--	--	760	3840	--
12...	1531	--	120	.0	--	--	--
12...	1532	--	1020	.0	--	--	--
APR							
01...	1530	--	--	--	--	--	--
JUL							
12...	1700	--	--	--	763	42100	--
12...	1701	--	140	9.6	--	--	--
12...	1702	--	340	9.6	--	--	--
12...	1703	--	590	9.6	--	--	--
12...	1704	--	940	9.7	--	--	--
12...	1705	--	1190	9.8	--	--	--
AUG							
11...	1620	1250	--	--	--	39800	12.08
11...	1621	--	140	7.4	--	--	--
11...	1622	--	390	7.4	--	--	--
11...	1623	--	640	7.4	--	--	--
11...	1624	--	940	7.4	--	--	--
11...	1625	--	1140	7.7	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
15294345 - YENTNA R NR SUSITNA STATION AK

PROCESS DATE 10/13/82
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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SPECIFIC CONDUCTANCE (UMHOS) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	PH (UNITS) (00400)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
JAN						
12...	--	--	--	--	4	41
12...	209	11.1	76	7.3	--	--
12...	216	10.9	75	7.1	--	--
APR						
01...	--	--	--	--	7	--
JUL						
12...	--	--	--	--	--	--
12...	103	11.7	102	8.3	--	--
12...	105	11.7	102	8.3	--	--
12...	108	11.7	102	8.3	--	--
12...	109	11.7	102	8.2	--	--
12...	113	--	--	8.3	--	--
AUG						
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
15294350 - SUSITNA RIVER AT SUSITNA STATION AK

PROCESS DATE 10/13/82
DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM WIDTH (FT) (00004)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	STREAM STAGE (FT ABOVE DATUM) (00065)	TURBIDITY (NTU) (00076)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
JAN												
12...	1130	860	--	--	761	80020	9050	--	1.0	210	--	--
12...	1131	--	180	.0	--	--	--	--	--	186	12.7	87
12...	1132	--	300	.0	--	--	--	--	--	203	12.7	87
12...	1133	--	540	.0	--	--	--	--	--	209	12.6	86
12...	1134	--	620	.0	--	--	--	--	--	217	11.2	77
APR												
09...	1500	850	--	--	763	80020	4000	--	1.1	--	--	--
09...	1501	--	50.0	.0	--	--	--	--	--	189	11.8	71
09...	1502	--	500	.0	--	--	--	--	--	195	--	--
09...	1503	--	700	.0	--	--	--	--	--	203	10.5	80
MAY												
19...	0845	1470	--	--	760	80020	--	--	50	--	--	--
19...	0846	--	90.0	3.0	--	--	--	--	--	94	--	--
19...	0847	--	190	2.9	--	--	--	--	--	91	--	--
19...	0848	--	290	3.1	--	--	--	--	--	89	--	--
19...	0849	--	440	3.7	--	--	--	--	--	84	--	--
19...	0850	--	690	4.2	--	--	--	--	--	84	--	--
JUL												
14...	1145	1865	--	--	764	80020	--	13.81	270	--	--	--
14...	1146	--	110	11.3	--	--	--	--	--	109	10.9	97
14...	1147	--	210	11.1	--	--	--	--	--	110	11.0	99
14...	1148	--	335	10.9	--	--	--	--	--	110	11.2	100
14...	1149	--	535	9.8	--	--	--	--	--	111	11.7	103
14...	1150	--	1485	9.1	--	--	--	--	--	114	12.0	103
AUG												
12...	1100	1875	--	--	766	80020	101000	--	120	--	--	--
12...	1101	--	75.0	9.9	--	--	--	--	--	99	--	99
12...	1102	--	200	9.7	--	--	--	--	--	98	--	98
12...	1103	--	325	9.1	--	--	--	--	--	97	--	99
12...	1104	--	575	8.2	--	--	--	--	--	98	--	101
12...	1105	--	1675	8.1	--	--	--	--	--	106	--	103
12-12	1100	--	--	--	--	80020	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82

15294350 - SUSITNA RIVER AT SUSITNA STATION AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PH (UNITS) (00400)	PH LAB (UNITS) (00403)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	HARDNESS (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
JAN												
12...	--	7.6	.070	.23	.27	--	.010	.010	<.010	95	31	4.3
12...	7.3	--	--	--	--	--	--	--	--	--	--	--
12...	7.0	--	--	--	--	--	--	--	--	--	--	--
12...	7.0	--	--	--	--	--	--	--	--	--	--	--
12...	6.9	--	--	--	--	--	--	--	--	--	--	--
APR												
09...	--	7.5	.060	.33	.26	--	<.010	<.010	<.010	91	29	4.5
09...	7.2	--	--	--	--	--	--	--	--	--	--	--
09...	7.2	--	--	--	--	--	--	--	--	--	--	--
09...	7.2	--	--	--	--	--	--	--	--	--	--	--
MAY												
19...	--	7.1	.100	1.30	.23	.06	.190	.040	.020	37	12	1.8
19...	6.5	--	--	--	--	--	--	--	--	--	--	--
19...	6.5	--	--	--	--	--	--	--	--	--	--	--
19...	6.5	--	--	--	--	--	--	--	--	--	--	--
19...	6.5	--	--	--	--	--	--	--	--	--	--	--
19...	6.5	--	--	--	--	--	--	--	--	--	--	--
JUL												
14...	--	8.4	--	--	--	--	--	--	--	57	19	2.4
14...	8.1	--	--	--	--	--	--	--	--	--	--	--
14...	8.2	--	--	--	--	--	--	--	--	--	--	--
14...	8.2	--	--	--	--	--	--	--	--	--	--	--
14...	8.3	--	--	--	--	--	--	--	--	--	--	--
14...	8.3	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	7.9	--	--	--	--	--	--	--	50	16	2.4
12...	7.8	--	--	--	--	--	--	--	--	--	--	--
12...	7.8	--	--	--	--	--	--	--	--	--	--	--
12...	8.0	--	--	--	--	--	--	--	--	--	--	--
12...	8.3	--	--	--	--	--	--	--	--	--	--	--
12...	8.2	--	--	--	--	--	--	--	--	--	--	--
12-12	--	--	.110	1.00	.11	.06	.040	.030	.020	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15294350 - SUSITNA RIVER AT SUSITNA STATION AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	PERCENT SODIUM (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
JAN												
12...	9.0	.4	17	1.6	11	17	.2	10	--	--	--	--
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APR												
09...	7.8	.4	15	1.7	11	17	.2	11	1	0	1	40
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09...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
19...	2.9	.2	14	1.4	4.1	6.0	.2	5.7	1	4	5	20
19...	--	--	--	--	--	--	--	--	--	--	--	--
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JUL												
14...	2.3	.1	8	1.7	2.1	17	.1	4.7	2	8	10	27
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AUG												
12...	2.6	.2	10	1.1	29	13	.1	6.0	--	--	--	--
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UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82

15294350 - SUSITNA RIVER AT SUSITNA STATION AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
JAN												
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APR												
09...	60	100	<3	<1	<10	<10	<1	--	1	1	1	2
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MAY												
19...	80	100	<3	<1	<10	20	1	3	4	5	23	28
19...	--	--	--	--	--	--	--	--	--	--	--	--
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JUL												
14...	200	200	<1	1	<10	50	1	9	10	3	29	32
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AUG												
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UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15294350 - SUSITNA RIVER AT SUSITNA STATION AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)
JAN												
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APR												
09...	260	320	65	<1	--	<1	10	30	17	<1	--	1
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09...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
19...	9700	9900	190	3	11	14	230	240	11	2	15	17
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JUL												
14...	7800	7900	69	<1	--	5	560	570	6	1	52	53
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UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15294350 - SUSITNA RIVER AT SUSITNA STATION AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	PER-THANE TOTAL (UG/L) (39034)	NAPH-THA-LENES, POLY-CHLOR, TOTAL (UG/L) (39250)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39251)
JAN												
12...	--	--	--	--	--	--	--	K1	K8	--	--	--
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APR												
09...	<1	<1	<12	--	10	<1	1	K3	<1	<.10	<.10	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
19...	<1	6	<12	--	60	<1	<1	K14	K30	--	--	<1.0
19...	--	--	--	--	--	--	--	--	--	--	--	--
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JUL												
14...	<1	<1	5	110	110	<1	<1	K20	K26	--	--	--
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UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15294350 - SUSITNA RIVER AT SUSITNA STATION AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)
JAN												
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APR												
09...	<.01	--	<.01	--	<.10	--	<.01	--	<.01	--	<.01	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
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MAY												
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UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15294350 - SUSITNA RIVER AT SUSITNA STATION AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDOSULFAN, TOTAL (UG/L) (39388)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39389)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)
JAN												
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APR												
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MAY												
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12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12-12	--	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82
15294350 - SUSITNA RIVER AT SUSITNA STATION AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	MALATHION, TOTAL (UG/L) (39530)	PARATHION, TOTAL (UG/L) (39540)	DIAZINON, TOTAL (UG/L) (39570)	METHYL PARATHION, TOTAL (UG/L) (39600)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	MIREX, TOTAL (UG/L) (39755)
JAN												
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
09...	--	<.01	--	<.10	--	<.01	<.01	<.01	<.01	<.01	<.01	<.01
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
19...	<.1	--	<.1	--	<1	<.01	<.01	<.01	<.01	<.01	<.01	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12-12	--	--	--	--	--	--	--	--	--	--	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY — PROCESS DATE 10/13/82

15294350 - SUSITNA RIVER AT SUSITNA STATION AK — DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39758)	SILVEX, TOTAL (UG/L) (39760)	TOTAL TRITHION (UG/L) (39786)	METHYL TRITHION, TOTAL (UG/L) (39790)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)
JAN												
12...	--	--	--	--	125	128	3050	.17	.09	.03	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
09...	--	<.01	<.01	<.01	133	128	1440	.18	.08	--	<.1	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
19...	<.1	<.01	<.01	<.01	51	55	--	.07	.13	.58	<.1	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
14...	--	--	--	--	83	79	--	.11	--	--	.2	.0
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	114	76	31100	.16	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12-12	--	--	--	--	--	--	--	--	.14	.12	--	--

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
15294350 - SUSITNA RIVER AT SUSITNA STATION AK

PROCESS DATE 10/13/82
DISTRICT CODE 02

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	PER-THANE IN BOTTOM MATERIL (UG/KG) (81886)	2, 4-DP TOTAL (UG/L) (82183)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS) (90095)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)
JAN								
12...	--	7	171	--	--	208	73	22
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
APR								
09...	<.1	9	97	--	<.01	222	76	15
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
MAY								
19...	.1	--	--	<1.00	<.01	94	34	3.0
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
JUL								
14...	.2	--	--	--	--	133	49	8.0
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
AUG								
12...	--	--	--	--	--	119	10	40
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
12-12	--	--	--	--	--	--	--	--

ATTACHMENT C

PRELIMINARY DISCHARGE RECORDS FROM
THE R&M CONSULTANTS STATION AT WATANA
AND THE U.S. GEOLOGICAL SURVEY STATION
AT GOLD CREEK

Daily Gage Height, in feet, and discharge, in cubic feet per second
Susitna River near Watana Damsite for the year ending September 30, 1982

Day	April		May		June		July		August		September	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1					38.90	23100	38.39	20100	38.84	22700	e	15900
2					39.31	25600	38.25	19300	38.24	19400	37.16	13600
3					39.77	28600	37.71	16400	37.85	17100	36.82	12100
4					39.00	23700	37.45	15100	37.71	16400	36.80	12000
5					38.25	19300	37.45	15100	37.68	16200	36.66	11300
6					38.28	19300	37.40	14800	37.56	15600	36.38	10100
7					39.28	25400	37.31	14400	37.50	15300	36.29	9800
8					40.07	30700	37.62	15900	37.52	15400	36.44	10400
9					39.61	27600	38.30	19600	37.56	15600	36.91	12500
10					38.98	23600	38.67	21700	37.48	15200	37.00	12900
11					38.73	22100	38.82	22600	37.18	13700	36.80	12000
12					38.56	21100	39.30	25600	37.03	13000	36.68	11400
13					38.20	19000	39.46	26600	37.00	12900	36.94	12600
14					37.66	16100	39.34	25800	37.06	13200	37.60	15800
15					37.60	15800	39.02	23800	37.31	14400	38.70	21900
16					38.05	18200	39.10	24300	37.47	15200	39.47	26700
17					38.21	19100	38.95	23400	37.26	14100	39.48	26700
18					38.41	20200	38.90	23100	37.10	13400	38.57	21100
19					38.93	23300	38.85	22800	36.92	12500	37.99	17900
20					39.60	27500	38.56	21100	36.74	11700	38.00	17900
21					40.40	33000	38.41	20200	e	11400	38.26	19400
22					39.48	26700	38.45	20400	e	11400	37.88	17300
23					38.93	23300	38.40	20200	e	11500	37.48	15200
24					38.68	21800	38.48	20600	e	11700	37.09	13300
25					38.89	23000	38.97	23500	e	12500	36.74	11700
26					39.27	25400	39.19	24900	e	12700	36.58	11000
27					39.23	25100	39.12	24400	e	12100	36.45	10400
28					39.60	27500	38.69	21800	e	11600	36.28	9700
29			38.75	22200	39.51	26900	38.46	20500	e	11400	36.18	9300
30			38.30	19600	38.81	22500	38.74	22100	e	12100	36.20	9400
31			38.45	20400			39.22	25100	e	14500		
					704,500		655,200		435,900		431,300	
					23,483		21,135		14,061		14,377	
					33,000		26,600		22,700		26,700	
					15,800		14,400		e 11,400		9,300	
					4.35		4.08		2.71		2.78	
					5.06		4.71		3.13		3.10	

Daily Gage Height, in feet and discharge, in cubic feet per second
Susitna River near Watana Damsite for the year ending September 30,1983

Day	October		November		December		January		February		March		Day
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	
1	36.19	9400	34.67	4100									1
2	36.10	9000	34.84	4600									2
3	36.00	8600	35.03	5200									3
4	35.89	8200	35.08	5400									4
5	35.76	7700	35.07	5300									5
6	35.58	7000	35.12	5500									6
7	35.47	6700	35.10	5400									7
8	35.41	6400	35.09	5400									8
9	35.46	6600	35.16	5600									9
10	35.47	6700	35.03	5200									10
11	35.58	6300	35.21	5800									11
12	35.28	6000											12
13	35.37	6300											13
14	35.21	5800											14
15	34.88	4700											15
16	34.92	4900											16
17	34.91	4800											17
18	34.99	5100											18
19	34.99	5100											19
20	34.98	5100											20
21	34.80	4500											21
22	34.63	4000											22
23	34.26	3100											23
24	34.16	2800											24
25	34.18	2900											25
26	34.47	3600											26
27	34.48	3600											27
28	34.25	3000											28
29	34.39	3400											29
30	34.34	3300											30
31	34.54	3800											31

Year

Total	
Mean	168,400
Maximum	5,432
Minimum	9,400
Cfsm	2800
Runoff in inches	1.04
Acre-feet	1.21

Preliminary,unpublished U.S.G.S. data from Gold Creek.Gage heights are in feet, discharges are in cubic feet per second.

Day	April		May		June		July		August		September	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1			8.20	12,400			10.37	25,000	10.65	26,400	9.31	17,900
2			8.02	11,700			10.13	22,800	10.08	22,500	8.99	16,000
3			7.86	11,000			9.60	19,600	9.64	19,800	8.71	14,600
4			7.73	10,500			9.34	18,000	9.42	18,500	8.67	14,400
5			7.55	9800			9.24	17,400	9.24	17,400	8.50	13,600
6			7.34	8960			9.18	17,100	9.14	16,800	8.16	12,200
7			7.22	8480			9.10	16,600	9.08	16,500	8.02	11,700
8			7.20	8400			9.35	18,100	9.10	16,600	8.07	11,900
9			7.21	8440			9.91	21,500	9.16	17,000	8.44	13,400
10			7.22	8480			10.16	23,000	9.11	16,700	8.67	14,400
11							10.31	24,000	8.85	15,400	8.50	13,600
12							10.67	26,500	8.65	14,400	8.40	13,200
13							10.94	28,400	8.51	13,600	8.83	15,200
14							10.79	27,300	8.50	13,600	9.70	20,200
15							10.55	25,600	8.73	14,800	10.91	28,200
16							10.55	25,600	8.89	15,600	11.45	32,500
17							10.50	25,300	8.80	15,100	11.39	32,000
18							10.51	25,400	8.61	14,200	10.72	27,500
19							10.43	24,900	8.42	13,300	10.33	24,100
20							10.15	22,900	8.22	12,500	10.32	24,000
21							9.98	21,900	8.16	12,200	10.34	24,200
22							10.06	22,400	8.14	12,200	10.05	22,300
23							10.44	24,900	8.17	12,300	9.57	19,400
24							10.72	26,800	8.22	12,500	9.18	17,100
25							11.37	31,900	8.45	13,400	8.78	15,000
26							11.36	31,800	8.51	13,600	8.57	14,000
27							11.02	29,100	8.32	12,900	8.55	13,800
28							10.55	25,600	8.21	12,400	8.32	12,900
29							10.26	23,600	8.16	12,200	8.20	12,400
30							10.65	26,400	8.38	13,100	8.22	12,500
31							10.94	28,400	8.97	16,000		

ATTACHMENT D

PARTICLE SIZE AND CONCENTRATION ANALYSIS OF LAKE AND RIVER SEDIMENTS FROM ALASKA

PARTICLE DATA LABORATORIES, LTD.

115 Hahn Street • Elmhurst, Illinois 60126 • (312) 832-5658

September 14, 1982

R & M Consultants Inc.
5024 Cordova
Box 6087
Anchorage Alaska 99502

Attention: Mr. Brett Jokela

Subject: Particle Size and Concentration Analysis of Lake and River Sediments From Alaska

PDL Project: I-6849

Gentlemen:

Introduction

Seventeen samples of lake and river water were received for a standard electronic particle size and concentration analysis via the Elzone computerized particle size analyzer.

Four samples were subjected to a density gradient analysis to determine the relative density of distribution of the minerals present.

A petrographic analysis was conducted on four samples via polarized light microscopy to determine the relative quantities of the various minerals present. All microscope observations and density determinations were conducted by Mr. M. Bayard.

Results

The results of the petrographic analysis are listed below in Table I. All samples are similar in mineral content except that the lake water has a smaller average partice size distribution than the river water. We would expect this because of sedimentation effects present in the lake water.

Table I
Petrographic Analysis of Susitna River and Eklutna Lake Water Samples

Mineral	Percentile
Augite	5 to 10
Quartz	15
Diatoms	15

Table I

Petrographic Analysis of Susitna River and Eklutna Lake Water Samples

Mineral	Percentile
Muscovite	15 to 20
Mixed Feldspars	25 to 30
Iron Oxides	10 - 15
Illmenite	about 5
Calcite	1 - 2

Table 2

Density Distributions

Sample	Composition Percentage	Density Range
Susitna River Depth Integrated Sampled August 17, 1982	60%	2.7 - 2.9
	15%	2.9 - 3.2
	25%	2.6 - 2.7
Eklutna Lake 2 Jul 82, STA 8, 45M	80%	2.80 - 2.84
	10%	2.90
	10%	2.48 - 2.55
Eklutna Lake 2 Jul 82, STA 8, 5M	70%	2.85 - 2.90
	15%	2.90 - 3.05
	15%	2.65 - 2.85
Eklutna Lake 2 Jul 82, STA 8, 15M	70%	2.74 - 2.80
	25%	<2.74
	5%	2.8 - 3.0

Table 3 summarizes the concentration and size distribution data for each of the required samples. It should be noted that these sample were dispersed in a 4% by weight sodium pyrophosphate electrolyte and ultrasonically treated so as to eliminate an agglomeration that may have occurred between original sampling, transport and final analysis.

Your data appears in two formats:

1) Frequency Data

2) Volume or Mass Data

The frequency data is analagous to a microscope count in which several hundred particles are sized and tabulated by their projected diameters. Standard fine particle mathematics are then used to calculate the various statistical parameters. In an electronic analysis we typically count between 50 thousand and 100 thousand particles per sample.

At your request, we have performed a concentration analysis for each sample. This additional analysis is included with each particle size distribution run. Due to the limitations of the technology, the lowest size measurable is a function of the largest size present in the sample (dynamic range). This limitation in one form or another is present in every type of electronic particle size analysis. The data is reported on the basis of counts/liter of sample over some indicated range. This range must be considered when evaluating data. Since all data is in permanent magnetic storage, it could be possible to normalize data about some common reference point at a later date.

The mass data is analagous to a sieve analysis in which the results are expressed as a weight percent greater than or equal to an indicated sieve (micron size).

Concluding Remarks

Due to the vacation schedule of Mr. Bayard and the arrival of your samples, no photographic work could be completed at this time. Upon his return on September 27, your project will be his primary concern.

If you have any questions regarding data or techniques involved in acquiring your results, please do not hesitate to contact us at Particle Data Laboratories.

Respectfully submitted,

Richard Karuhn/lk

Richard Karuhn
Director

RK/lk

Table 3

Concentration and Particle Size Summary

Sample I.D.	Counts/Liter	Mass Median Size	Count Median Size
1. Susitna River 8/17/82 Depth Integrated	76,814,800	16.67	2.89
2. Lake Inlet 50 Ft. Upstream	34,216,000	46.25	3.44
3. Lake Inlet Creek Mouth	129,360,000	25.46	2.89
4. 18 Jun 82, STA 11, 20M	84,783,000	12.83	1.93
5. 17 Jun 82, STA 4, 24M	60,946,000	3.68	1.53
6. 18 Jun 82, STA 9, 14M	51,786,000	3.10	1.53
7. 17 June 82, STA 4, 19M	104,788,000	3.56	1.53
8. Lake Inlet Surface 200 Ft. into Lake	71,148,000	4.86	1.82
9. 15 Jul 82, STA 9, 1M	129,180,000	3.10	1.53
10. 15 Jul 82, STA 11, 1M	52,254,000	4.09	1.60
11. 15 Jul 82, STA 9, 14M	188,495,000	2.70	1.53
12. 15 Jul 82, STA 11, 28M	19,034,000	33.34	1.59
13. 2 Jul 82, STA 8, 5M	145,691,000	3.56	1.76
14. 2 Jul 82, STA 10, 5M	229,996,000	3.10	1.76
15. 2 Jul 82, STA 8, 15M	191,151,000	3.32	1.68
16. 2 Jul 82, STA 14, 5M	126,603,000	3.32	1.76
17. 2 Jul 82, STA 8,45M	284,282,000	3.95	1.76

CONCENTRATION ANALYSIS BY COMPUTERIZED ELZONE METHOD

R & M CONSULTANTS. INC.

SAMPLE I.D. :SUSTINA RIVER DEAPTH INTEGRETED RM 232 BY USGS - Sampled 8/17/82

COUNTS/LITER:76814900(0.96-23.84 MICRONS RANGE)

TABULATION

DATA ID 6849 DATE 9 SEP
SIZE-NORMALIZED COUNT DISTRIBUTION
TOTAL = 768149

CHNL	SIZE	COUNT	CHNL	SIZE	COUNT	CHNL	SIZE	COUNT
18	.95	93	50	2.89	23333	82	8.76	1958
19	.99	47	51	2.99	24496	83	9.07	1612
20	1.02	165	52	3.10	21988	84	9.39	1246
21	1.06	3138	53	3.21	21931	85	9.72	1113
22	1.10	6105	54	3.32	21779	86	10.06	1092
23	1.13	7069	55	3.44	19824	87	10.42	959
24	1.17	6536	56	3.56	18018	88	10.79	891
25	1.22	6872	57	3.68	19199	89	11.17	728
26	1.26	6915	58	3.81	16353	90	11.56	834
27	1.30	7364	59	3.95	15741	91	11.97	499
28	1.35	7553	60	4.09	14761	92	12.39	734
29	1.40	8969	61	4.23	12780	93	12.83	458
30	1.45	8780	62	4.38	11792	94	13.28	478
31	1.50	9592	63	4.54	10915	95	13.75	441
32	1.55	10462	64	4.70	9014	96	14.23	353
33	1.60	10649	65	4.86	10284	97	14.74	306
34	1.66	11539	66	5.03	8917	98	15.26	348
35	1.72	12945	67	5.21	8027	99	15.79	191
36	1.78	14664	68	5.39	7311	100	16.35	178
37	1.84	14944	69	5.58	7053	101	16.93	186
38	1.91	14931	70	5.78	6538	102	17.52	138
39	1.97	17636	71	5.98	5269	103	18.14	137
40	2.04	18526	72	6.20	5101	104	18.78	85
41	2.12	18392	73	6.41	4017	105	19.44	83
42	2.19	19363	74	6.64	4086	106	20.13	93
43	2.27	21562	75	6.87	3738	107	20.84	38
44	2.35	20977	76	7.12	3488	108	21.57	57
45	2.43	22920	77	7.37	3072	109	22.34	33
46	2.52	23553	78	7.63	2778	110	23.12	29
47	2.60	25011	79	7.90	2313	111	23.94	52
48	2.70	23971	80	8.18	2096			
49	2.79	23455	81	8.46	2089			

*

PARTICLE SIZE ANALYSIS BY ELZONE METHOD - PARTICLE DATA LABORATORIES,LDT.
115 HAHN STREET - ELMHURST,IL. 60126 - TELEPHONE:(312)832-5658

CLIENT: R & M CONSULTANTS, INC. 9 SEP 82 :DATE
SAMPLE: SUSTINA RIVER DEAPTH INTEGATED 6849 : JOB NUMBER
Sampled 8/17/82

VOLUME (MASS) DISTRIBUTION FROM DISPLAY AREA: 4

INDICES

VOLUME MODE = 17.32 MEDIAN = 16.67 MICRONS AND LARGER

GEOMETRIC VOLUME MEAN = 15.85 +/- 15.72 (99.21%) SKEWNESS = -.09

ARITHMETIC VOLUME MEAN = 19.56 +/- 12.19 (62.33%) SKEWNESS = .18

FOR PLOTTING PROBABILITY ON LOG PAPER:

PERCENTILE:	00.1%	OF VOLUME	IS AT	64.15	MICRONS AND LARGER
PERCENTILE:	01.0%	OF VOLUME	IS AT	55.00	MICRONS AND LARGER
PERCENTILE:	06.0%	OF VOLUME	IS AT	42.00	MICRONS AND LARGER
PERCENTILE:	22.0%	OF VOLUME	IS AT	27.50	MICRONS AND LARGER
PERCENTILE:	50.0%	OF VOLUME	IS AT	16.67	MICRONS AND LARGER
PERCENTILE:	78.0%	OF VOLUME	IS AT	9.72	MICRONS AND LARGER
PERCENTILE:	94.0%	OF VOLUME	IS AT	4.68	MICRONS AND LARGER
PERCENTILE:	99.0%	OF VOLUME	IS AT	2.63	MICRONS AND LARGER
PERCENTILE:	99.9%	OF VOLUME	IS AT	1.65	MICRONS AND LARGER

COUNT (FREQUENCY) DISTRIBUTION FROM DISPLAY AREA: 5

INDICES

COUNT MODE = 2.79 MEDIAN = 2.99 MICRONS AND LARGER

GEOMETRIC COUNT MEAN = 3.11 +/- 2.69 (86.59%) SKEWNESS = .12

ARITHMETIC COUNT MEAN = 3.87 +/- 3.30 (85.06%) SKEWNESS = .33

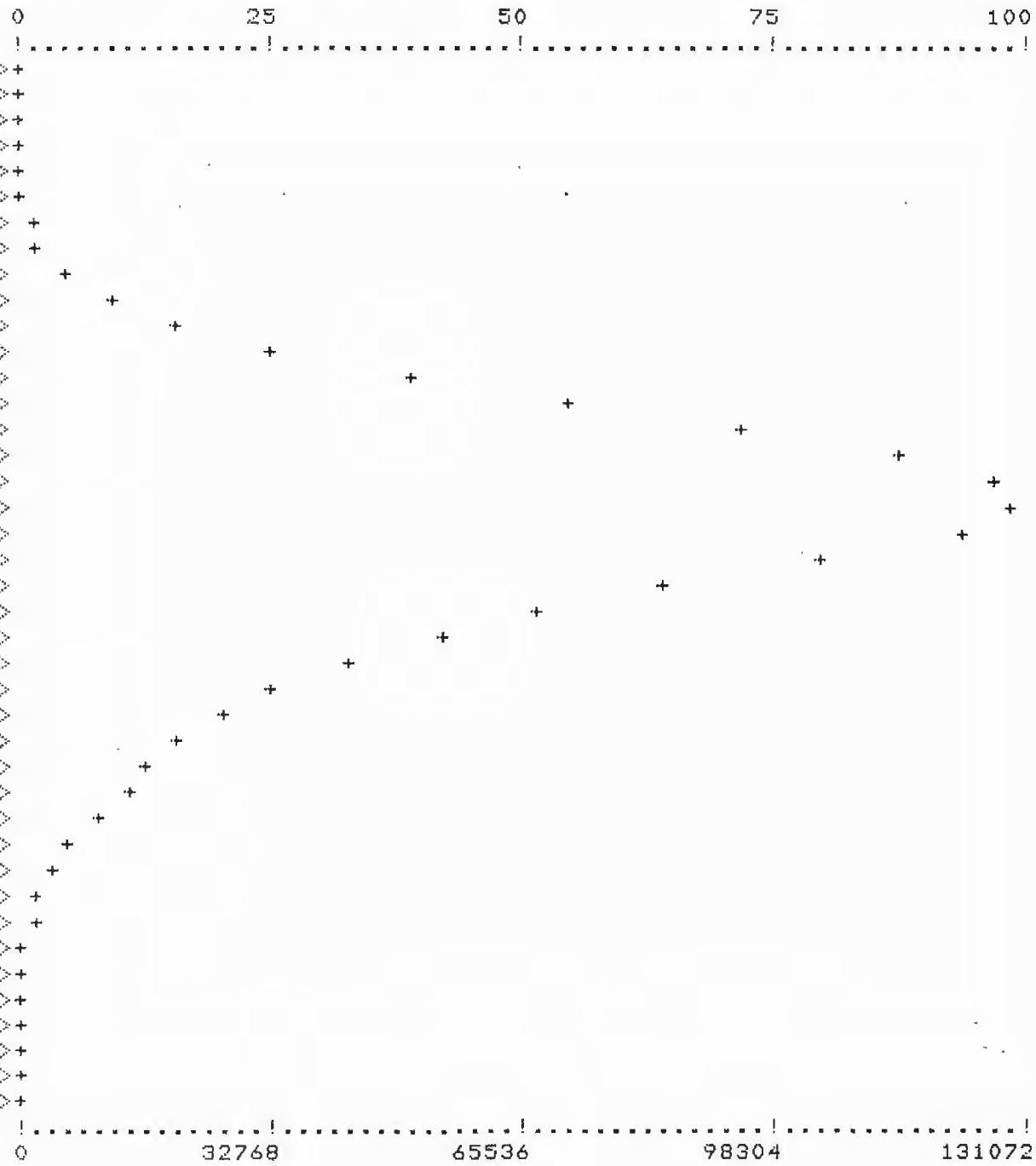
FOR PLOTTING PROBABILITY ON LOG PAPER:

PERCENTILE:	00.1%	OF COUNT	IS AT	31.59	MICRONS AND LARGER
PERCENTILE:	01.0%	OF COUNT	IS AT	16.93	MICRONS AND LARGER
PERCENTILE:	06.0%	OF COUNT	IS AT	9.07	MICRONS AND LARGER
PERCENTILE:	22.0%	OF COUNT	IS AT	4.86	MICRONS AND LARGER
PERCENTILE:	50.0%	OF COUNT	IS AT	2.99	MICRONS AND LARGER
PERCENTILE:	78.0%	OF COUNT	IS AT	1.97	MICRONS AND LARGER
PERCENTILE:	94.0%	OF COUNT	IS AT	1.30	MICRONS AND LARGER
PERCENTILE:	99.0%	OF COUNT	IS AT	.86	MICRONS AND LARGER
PERCENTILE:	99.9%	OF COUNT	IS AT	.61	MICRONS AND LARGER

PARTICLE SIZE ANALYSIS BY ELZONE METHOD - PARTICLE DATA LABORATORIES,LDT.
115 HAHN STREET - ELMHURST,IL. 60126 - TELEPHONE:(312)832-5658

CLIENT: R & M CONSULTANTS, INC. 9 SEP 82 :DATE
SAMPLE: SUSTINA RIVER DEAPTH INTEGATED 6849 : JOB NUMBER
PARTICLE SIZE VS. COUNT (+) AND % OF COUNT LARGER THAN SIZE (%)

GRAPH - FROM : TO : - SKIP: ? = 1



PARTICLE SIZE ANALYSIS BY ELZONE METHOD - PARTICLE DATA LABORATORIES,LDT.
115 HAHN STREET - ELMHURST,IL. 60126 - TELEPHONE:(312)832-5658

CLIENT: R & M CONSULTANTS, INC. 9 SEP 82 :DATE
SAMPLE: SUSTINA RIVER DEAPTH INTEGATED 6849 : JOB NUMBER
8/17/82

"TOTAL IN TABULATION= TOTAL COUNT OR VOLUME IN ANALYSIS
TABULATION

DATA ID 6849 DATE 9 SEP.
SIZE-NORMALIZED COUNT DISTRIBUTION
TOTAL = 2562671

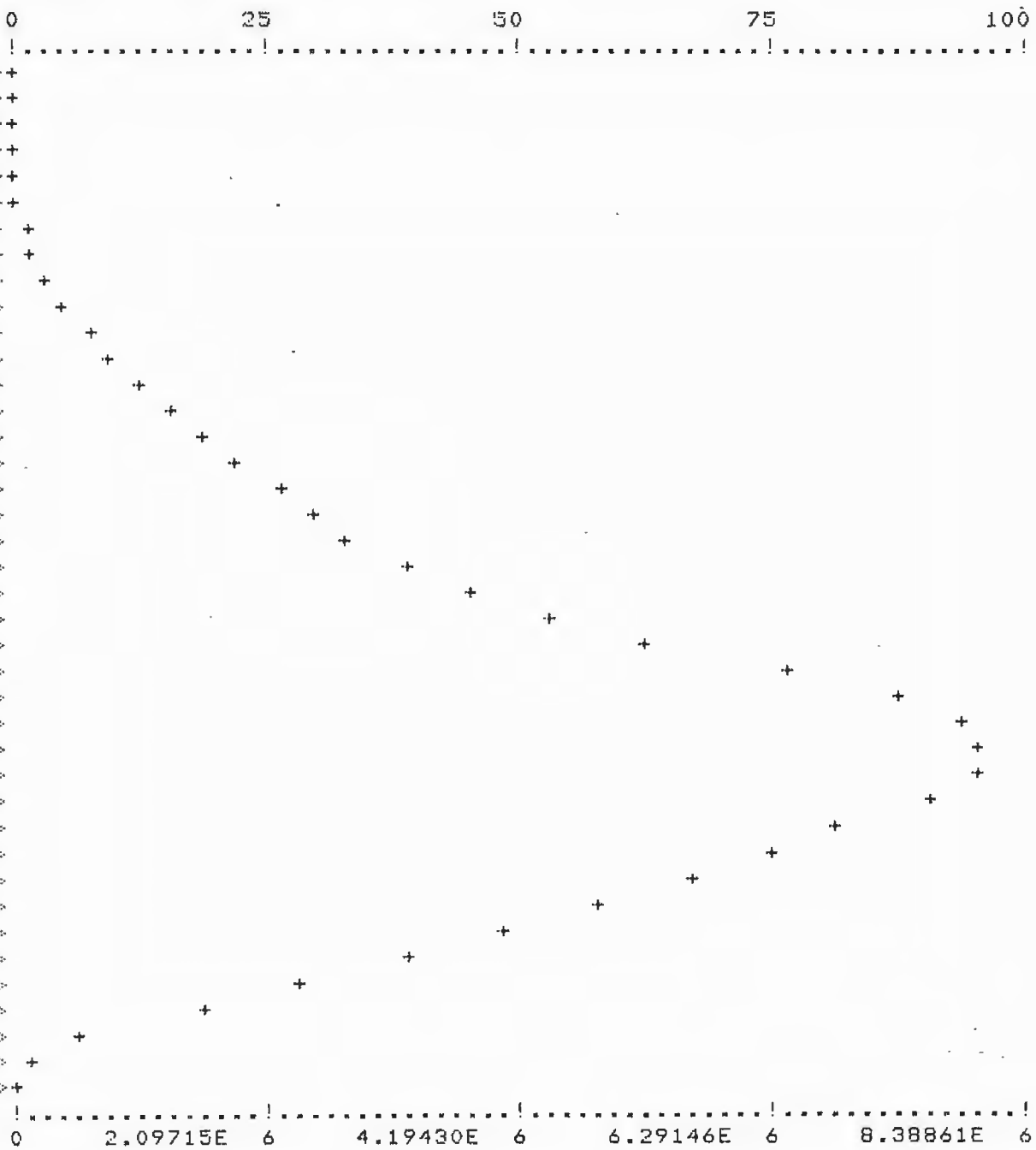
CHNL	SIZE	COUNT	CHNL	SIZE	COUNT	CHNL	SIZE	COUNT
17	.26	2	44	1.72	83684	71	11.17	16695
18	.28	2	45	1.84	95044	72	11.97	15209
19	.30	7	46	1.97	104955	73	12.83	13726
20	.33	13	47	2.12	113761	74	13.75	12011
21	.35	20	48	2.27	121048	75	14.74	10339
22	.37	36	49	2.43	126674	76	15.79	8576
23	.40	61	50	2.60	129700	77	16.93	7061
24	.43	108	51	2.79	130000	78	18.14	5749
25	.46	189	52	2.99	127922	79	19.44	4613
26	.49	310	53	3.21	123576	80	20.84	3629
27	.53	494	54	3.44	116384	81	22.34	2848
28	.57	771	55	3.68	104605	82	23.94	2198
29	.61	1219	56	3.95	93646	83	25.66	1700
30	.65	1894	57	4.23	83757	84	27.50	1287
31	.70	2802	58	4.54	75163	85	29.47	970
32	.75	4057	59	4.86	67722	86	31.59	740
33	.80	5752	60	5.21	61104	87	33.85	552
34	.86	8211	61	5.58	55593	88	36.28	408
35	.92	11483	62	5.98	49383	89	38.89	292
36	.99	15408	63	6.41	42748	90	41.68	207
37	1.06	20258	64	6.87	36863	91	44.67	148
38	1.13	26118	65	7.37	32648	92	47.88	100
39	1.22	33615	66	7.90	29119	93	51.31	66
40	1.30	42359	67	8.46	25859	94	55.00	38
41	1.40	51554	68	9.07	23078	95	58.94	18
42	1.50	61548	69	9.72	20520	96	63.17	8
43	1.60	72106	70	10.42	18528	97	67.71	2

DISPLAY AREA: 4

PARTICLE SIZE ANALYSIS BY ELZONE METHOD - PARTICLE DATA LABORATORIES,LDT.
115 HAHN STREET - ELMHURST,IL. 60126 - TELEPHONE:(312)832-5658

CLIENT: R & M CONSULTANTS, INC. 9 SEP 82 :DATE
SAMPLE: SUSTINA RIVER DEAPTH INTEGATED 6849 : JOB NUMBER
PARTICLE SIZE VS. VOLUME (+) AND % OF VOLUME LARGER THAN SIZE (%)

GRAPH - FROM : TO : - SKIP: ? = 2



PARTICLE SIZE ANALYSIS BY ELZONE METHOD - PARTICLE DATA LABORATORIES,LDT.
115 HAHN STREET - ELMHURST,IL. 60126 - TELEPHONE:(312)832-5658

CLIENT: R & M CONSULTANTS, INC. 9 SEP 82 :DATE
SAMPLE: SUSTINA RIVER DEAPTH INTEGATED 6849 : JOB NUMBER
8/17/82

"TOTAL IN TABULATION= TOTAL COUNT OR VOLUME IN ANALYSIS
TABULATION

DATA ID 6849 DATE 9 SEP
SIZE-NORMALIZED VOLUME DISTRIBUTION
TOTAL =37958937

CHNL	SIZE	VOLUME	CHNL	SIZE	VOLUME	CHNL	SIZE	VOLUME
12	.93	28	51	4.17	1461136	90	18.71	7937483
13	.96	83	52	4.33	1520464	91	19.44	7947236
14	1.00	132	53	4.50	1615831	92	20.21	7853900
15	1.04	2710	54	4.68	1716951	93	21.00	7727175
16	1.08	8325	55	4.86	1819602	94	21.83	7575461
17	1.13	12435	56	5.05	1954195	95	22.68	7281022
18	1.17	13461	57	5.25	2037958	96	23.57	7090060
19	1.22	15742	58	5.46	2198857	97	24.50	6872016
20	1.26	18071	59	5.67	2326588	98	25.46	6659054
21	1.31	21502	60	5.89	2469201	99	26.46	6419549
22	1.36	26292	61	6.12	2517390	100	27.50	6266254
23	1.42	32378	62	6.36	2603621	101	28.58	5990698
24	1.47	37812	63	6.61	2697760	102	29.70	5842865
25	1.53	46650	64	6.87	2795345	103	30.87	5579647
26	1.59	54497	65	7.14	2921287	104	32.08	5327950
27	1.65	65754	66	7.42	3138735	105	33.34	5071671
28	1.72	84213	67	7.72	3262085	106	34.65	4798201
29	1.79	107601	68	8.02	3439966	107	36.01	4543890
30	1.86	122573	69	8.33	3578517	108	37.42	4221621
31	1.93	146675	70	8.66	3773250	109	38.89	3998038
32	2.00	186290	71	9.00	3985998	110	40.41	3737836
33	2.08	213372	72	9.35	4175116	111	42.00	3487012
34	2.17	246935	73	9.72	4400951	112	43.65	3262757
35	2.25	305980	74	10.10	4720822	113	45.36	2854257
36	2.34	342995	75	10.50	4994368	114	47.15	2620499
37	2.43	419729	76	10.91	5259312	115	49.00	2346607
38	2.53	492249	77	11.34	5592651	116	50.92	2132528
39	2.63	573849	78	11.79	5915794	117	52.92	1741967
40	2.73	618739	79	12.25	6386353	118	55.00	1511037
41	2.84	682656	80	12.73	6673118	119	57.16	1180547
42	2.95	785169	81	13.23	7060864	120	59.40	843250
43	3.06	836380	82	13.75	7290997	121	61.73	532023
44	3.18	902038	83	14.29	7671742	122	64.15	296192
45	3.31	1004350	84	14.85	7876144	123	66.67	164476
46	3.44	1033747	85	15.43	7874619	124	69.29	99567
47	3.57	1153894	86	16.04	7906484	125	72.01	21072
48	3.71	1238607	87	16.67	7987280	126	74.84	6287
49	3.86	1305394	88	17.32	8000000	127	77.78	12678
50	4.01	1386599	89	18.00	7928014	128	80.83	9282