FIELD WATER QUALITY INFORMATION ALONG THE PROPOSED TRANS-ALASKA PIPELINE CORRIDOR

SEPTEMBER 1970 THROUGH SEPTEMBER 1972

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-Water Resources Division
Alaska District

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By
Jon W. Nauman and Donald R. Kernodle

BASIC-DATA REPORT

Anchorage, Alaska
1973

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INTRODUCTION

This report presents field water-quality information collected during parts of 1970, 1971, and 1972 along the proposed trans-Alaska pipeline corridor. The data include measurements of water and air temperature, specific conductance, alkalinity, pH, dissolved oxygen, chlorophyll "a," stream discharge, and ice conditions for 69 sites (fig. 1; table 1). At 11 stream sites 24-hour studies were conducted and additional data on barometric pressure, light intensity, percent cloud cover, and wind conditions are presented for these studies (table 2). Seasonal turbidity data are presented in table 3. This information was gathered in connection with studies of the biological characteristics of selected stream sites along the proposed trans-Alaska pipeline corridor. Laboratory data on the inorganic chemical and biological characteristics will appear in future data reports.

DATA COLLECTION

Two different sampling approaches were used in the 2 years of data collection. During the first year (September 1970 to September 1971), a large number of streams were sampled both above and below the proposed pipeline crossings. During the second year (September 1971 to September 1972), a smaller number of streams were intensively sampled to

determine trends in water quality in streams in different climatic (Searby, 1968) and physiographic (Wahrhaftig, 1965) areas.

Data on air and water temperatures, specific conductance, alkalinity, pH, dissolved oxygen, chlorophyll "a," turbidity, and water transparency are reported for the first year.

During the second year, seasonal and diurnal (diel) studies were conducted at nine sites on three separate occasions, which for this report were considered to represent spring, summer, and fall conditions for 1972.

At two additional stream sites, the Atigun River in the summer of 1971 and the Middle Fork of the Koyukuk River in the spring of 1972, 24-hour studies were conducted. Barometric pressure, wind speed and direction, percent cloud cover, relative light intensity, water stage, and discharge were noted in addition to data collected during the first year. At these sites sampling began an hour before sunrise and extended an hour after sundown. Sampling intervals varied, but generally were hourly to bihourly between the hours of 0600 and 2000.

INSTRUMENTATION AND ANALYTICAL METHODS

Water temperature was measured to the nearest 0.1°C using a bucket thermometer. Specific conductance was measured with an Industrial Instrument Model RM 3* solu

*The use of brand and model names in this report does not imply endorsement by the U.S. Geological Survey.

bridge equipped with an 0.2 cell constant. Alkalinity (Brown, 1970) was determined on 50-ml (milliliter) water samples, titrated with 0.01639N H_2SO_4 with methyl red indicator. The pH was measured with an Instrumentation Laboratory Porto-Matic Model 175 pH meter and combination electrode.

Dissolved oxygen was determined by the Winkler method (American Public Health Assoc., 1965). Chlorophyll "a" was determined by filtering 500 ml of stream water in the field through 0.45-mm (millimeter) Whatman GF/C glass filters. The fluorometric method of Strickland and Parson (1968) for chlorophyll extraction was followed in laboratory analysis (chlorophyll is an indication of the photosynthetic potential of a water body at a given time [Odum, 1959]). Water transparency was measured with a Secchi disk, and turbidity was determined in the laboratory with a Hellige turbidimeter calibrated in Jackson turbidity units (JTU).

Barometric pressure was measured with a Short and Mason Surveying Aneroid altimeter. Wind speed was measured with a hand-held Dwyer wind meter. Air temperature was measured with a Taylor maximum-minimum thermometer. Cloud cover was estimated as the percentage of the sky covered by clouds.

Relative light intensity measurements, in foot-candles, were made with a hand-held General Electric Model 8DW5Y4 exposure meter. The meter was mounted at the end of a dark hard paper trough (constructed from a dark green file drawer divider) measuring 3.0 x 5.5 x 25.0 cm and aimed at a target of the same material at the opposite end of the trough. The distance between the meter and the target measured 25 cm. The target measured 3.0 x 9.0 cm. The axis of the target was placed at right angles to the brightest area of the sky to obtain the highest relative light readings. Although nonquantitative in terms of radiant energy, the measurements were consistent and indicated relative changes of light intensities.

During the Atigun River 24-hour study, light intensity was measured in Luxes with a hand-held Gossen Luna-Pro light meter.

Water stage during the 24-hour studies was measured to the nearest .01 foot with a temporary staff gage. These measurements show only the rise and fall of the water surface at the time of the study and do not represent total discharges except at the Putuligayuk River and Hess Creek where stage-discharge relationships are available. Measured discharges were obtained using standard U.S. Geological Survey procedures (Buchanan and Somers, 1969).

During the Atigun River study and during the last field trip, September 7-29, 1972, water temperature, specific conductance, pH, and dissolved oxygen were measured with a Martek Mark II Model A insitu water-quality monitor. Prior to this trip, pH was measured with either an Orion Specific-ion Model 404 or an Instrumentation Laboratory Porto-Matic Model 175 pH meter. Alkalinity was determined on a measured 50-ml water sample titrated with 0.01639N H_2SO_4 to pH 4.3. Dissolved oxygen was measured with a Yellow Springs Instrument Model 54 dissolved-oxygen meter.

Water transparency was measured with a Secchi disc, when stage and suspended solids were high. Turbidity was analyzed on a Hach Model DR3450 B turbidimeter in the field and in the laboratory on a Hach 2100 A turbidimeter. Turbidity values collected during the summer and fall 24-hour studies of 1972 were analyzed in the field. Other sampling sites and the data presented in table 3 are data that were analyzed on the Hach 2100 A turbidimeter.

DEFINITION OF TERMS

The methods of field analysis used by the U.S. Geological Survey to obtain the data listed in this report are equivalent or similar to those outlined in Rainwater and Thatcher (1960) and Strickland and Parsons (1968). Many of the terms used in the fields of water quality and hydrology are defined in texts and reports such as those by Brown and Others (1970), American Public Health Association and Others (1965), and U.S. Geological Survey (1972).

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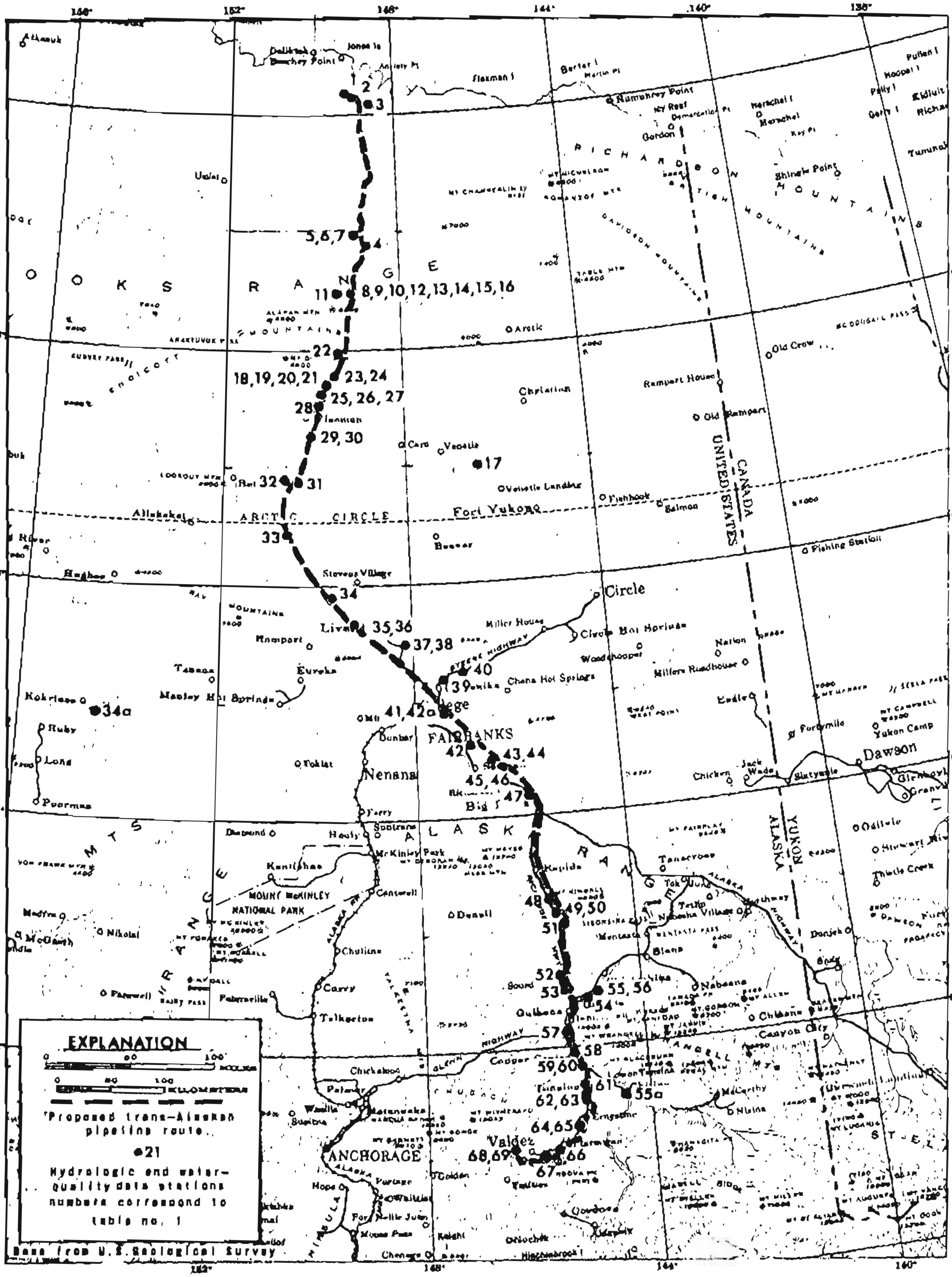

Figure 1.--Proposed trans-Alaska pipeline corridor with water-quality sampling sites.

Table 1.--*Water quality along the proposed trans-Alaska pipeline corridor - Prudhoe Bay to Valdez.*

Map no.	Drainage area (sq mi)	Date	Time	Discharge (cfs)	Ice thickness (m)	Air temperature (°C)	Water temperature (°C)	Specific conductance (umhos at 25°C)	Alkalinity HCO_3 (mg/l)	pH	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Chlorophyll "a" (ug/l)
					Kuparuk River near Deadhorse - Latitude 70°16'54", Longitude 148°57'35"								
1	3,130	Sept.5, 1970	1610	-	-	0	2.0	100	-	-	13.5	97	-
		Nov.20, 1970	1115	-	0.7	-16.7	0	340	131	7.7	9.0	62	-
		June 4, 1971	1700	77,000	floating ice	-	0.7	90	18	7.9	13.8	96	-
		Aug.13, 1971	1330	654	-	3.3	5.6	110	>50	8.1	12.0	95	0.0
		Oct.15, 1971	1630	-	.10	-10.0	0.0	190	-	7.6	-	-	.1
		Mar.18, 1972	0915	-	1.5	-32.0	.2	310	-	7.8	7.8	56	0
					Putuligayuk River near Prudhoe Bay - Latitude 70°16'08", Longitude 148°37'11"								
2	176	Sept.5, 1970	0900	.60	-	-1.0	2.0	325	1.54	8.3	11.0	79	-
		Nov.19, 1970	1350	0.0	ice	-23	-	-	-	-	-	-	-
		June 3, 1971	1330	58.1	some ice	7.2	0.4	120	44	7.0	12.4	86	-
		Aug.13, 1971	1130	20	-	3.3	5.6	-	186	7.6	12.0	95	0.4
		Oct.15, 1971	1520	-	-	-10.0	0	-	316	-	14.9	102	.3
		Mar.18, 1972				No water							
		June24, 1972	1100	-	-	6.1	6.7	185	108	8.1	11.5	94	.4
		Aug.15, 1972	1100	15.6	-	5.0	8.9	290	180	8.2	11.0	95	.4
		Sept10, 1972	1700	78.9	-	-0.6	1.8	354	210	8.3	12.9	92	.2
					Sagavanirktok River west channel at Prudhoe Bay - Latitude 70°16'42", Longitude 148°14'44"								
3	5,420	Sept.6, 1970	-	-	-	-2.0	1.0	223	-	8.2	13.3	94	-
		Nov.20, 1970	1430	-	0.9	15.6	0.0	175	95	7.4	8.0	55	-
		Mar.18, 1972	1100	1.7	2.0	-32.0	.2	-	-	7.7	-	-	0
					Sagavanirktok River near Sagwon - Latitude 69°05'20", Longitude 148°45'10"								
4	2,208	Nov.15, 1970	1300	249	0.7	-33.0	0.0	190	160	7.3	9.0	63	-
		June 5, 1971	1710	7,370	-	22.2	8.0	120	70	7.8	11.8	103	-
		Aug.12, 1971	1430	2,600	-	6.7	5.6	50	142	8.1	11.2	92	0
		Oct.16, 1971	0840	-	layered rotten ice	0.0	0.0	270	166	8.3	13.8	97	0
		Mar.17, 1972	1100	1.70	open lead	-22.0	.5	270	-	8.0	8.4	-	0
		June22, 1972	1600	-	-	11.7	9.0	140	84	8.4	11.0	97	.1
					Happy Valley Creek above camp - Latitude 69°09'05", Longitude 148°51'00"								
5	29	Aug.13, 1971	0813	-	-	-	6.1	<50	18	7.2	11.2	93	0.4
		Oct.15, 1971	2030	-	bridged	-4.0	0.0	60	32	7.3	13.3	94	.1
		Mar.17, 1972				No water							
		June21, 1972	1900	41.2	-	10.0	10.7	21	11.0	7.0	10.2	94	.3
		Aug.13, 1972	1100	55	-	12.2	9.3	21	13.0	6.8	10.6	94	.7
		Sept.8, 1972	1500	49	-	3.3	5.3	38	14	6.9	11.7	87	.3
					Happy Valley Creek below camp - Latitude 69°09'05", Longitude 148°51'00"								
6	29	Aug.13, 1972	1130	55	-	8.9	9.3	30	18	6.9	-	-	0.7
					Happy Valley Camp at sewage pond - Latitude 69°09'05", Longitude 148°51'00"								
7	29	June21, 1972	1930	-	-	11.1	14.0	650	230	9.7	12.2	121	115.0
					Tributary right bank Atigun River in Atigun Canyon - Latitude 68°28'00", Longitude 149°16'20"								
8	4	Aug.26, 1972	1230	-	-	12.7	5.6	220	112	8.7	12.0	113	-
					Atigun River in Atigun Canyon - Latitude 68°28'20", Longitude 149°17'20"								
9	338	Aug. 25, 1971	1500	-	-	17.0	8.0	140	84	8.4	10.7	98	-
		Mar.16, 1972				No water							
					Atigun River below Galbraith Lake - Latitude 68°21'51", Longitude 149°20'08"								
10	338	Aug.25, 1971	1335	-	-	14	7.9	-	-	-	11.0	101	-
		Oct.16, 1971	1030	-	0.3	-1.0	0.0	240	142	-	13.4	99	0.3
					Galbraith Lake - Latitude 68°27'33", Longitude 149°24'49"					-			
11	32	Mar.16, 1972	1430	-	2.0	-20	0.2	160	-	7.7	13.0	97	0.1
					Atigun River above Galbraith Lake fifth main stream - Latitude 68°21'51", Longitude 149°20'54"								
12	279	Aug.24, 1971	1800	-	-	11.0	8.9	140	72	8.3	10.2	95	-

Table 1.--*Water quality along the proposed trans-Alaska pipeline corridor - Prudhoe Bay to Valdez--Continued.*

Map no.	Drainage area (sq mi)	Date	Time	Discharge (cfs)	Ice thickness (m)	Air temperature (°C)	Water temperature (°C)	Specific conductance (umhos at 25°C)	Alkalinity HCO_3 (mg/l)	pH	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Chlorophyll "a" (ug/l)
		Atigun River fourth tributary - Latitude 68°15'51", Longitude 149°28'16"											
13	59	Aug.24, 1971	1600	-	-	12.0	7.0	150	78	8.3	10.4	97	-
		Atigun River third tributary - Latitude 68°11'27", Longitude 149°41'19"											
14	23	Aug.24, 1971	1400	-	-	11.0	6.7	160	76	8.3	10.1	93	-
		Atigun River first tributary - Latitude 68°08'37", Longitude 149°48'23"											
15	2	Aug.24, 1971	1200	-	-	9.0	2.6	125	64	8.3	11.3	98	-
		Atigun River second tributary - Latitude 68°08'37", Longitude 149°47'25"											
16	6	Aug.24, 1971	0930	-	-	6.0	2.2	115	64	8.5	11.6	95	-
		Chandalar River near Venetie - Latitude 67°05'49", Longitude 147°11'04"											
17	9,330	Nov.14, 1970	1000	756	0.6	-20	0	-	178	7.1	11.5	81	-
		Kuyuktuvuk Creek first tributary - Latitude 68°03'08", Longitude 149°59'55"											
18	12.1	Aug.23, 1971	1400	-	-	8.3	2.2	120	68	8.6	11.4	98	-
		Kuyuktuvuk Creek second tributary - Latitude 68°03'31", Longitude 149°50'54"											
19	36.0	Aug.23, 1971	1100	-	-	10.0	4.8	185	108	8.5	11.2	97	-
		Kuyuktuvuk Creek third tributary - Latitude 68°00'08", Longitude 149°55'33"											
20	81.2	Aug.23, 1971	1600	-	-	14.0	7.2	310	166	8.8	10.8	98	-
		Kuyuktuvuk Creek fourth tributary - Latitude 67°56'29", Longitude 149°52'04"											
21	181	Aug.23, 1971	1900	-	-	15.0	8.2	380	172	8.4	10.7	96	-
		Mar.15, 1972	0930	1.33	open	-20.0	1.5	380	234	7.9	11.6	88	0
		Dietrich River near Kuyuktuvuk Creek - Latitude 67°55'03", Longitude 149°50'17"											
22	342	Aug.23, 1971	0900	113	-	7.0	5.6	420	206	8.6	11.4	95	-
		Mar.15, 1972	0845	-	open	-20.0	0.0	260	196	7.6	-	-	0
		Upper Lake near confluence of Bettles and Dietrich Rivers - Latitude 67°39'26", Longitude 149°43'41"											
23	.77	Sept.11,1970	1600	-	trace shore ice	6	7.0	300	-	-	9.0	68	-
		Nov.15, 1970	0830	-	0.7	-32.0	0.0	503	320	8.1	10.0	72	-
		Mar.15, 1972	1215	-	.5	-6.0	.4	630	572	7.4	0.0	0	0.3
		Lower Lake near confluence of Bettles and Dietrich Rivers - Latitude 67°39'31", Longitude 149°43'18"											
24	.77	Sept.11,1970	1400	-	trace shore ice	5.0	2.0	300	-	-	11.0	83	-
		Nov.14, 1970	1430	-	0.6	-32.0	0.0	373	240	7.4	7.0	50	-
		Mar.15, 1972	1245	-	.7	-6.0	.0	270	-	7.4	0.0	0	0.6
		Middle Fork Koyukuk River near Wiseman - Latitude 67°26'35", Longitude 150°03'40"											
25	1,426	Sept.10,1970	1625	690	-	8.0	3.0	420	-	7.9	11.0	85	-
		Nov.13, 1970	1430	71.2	0.7	-23.0	0.0	520	250	7.3	8.0	57	0
		Mar.15, 1972	1430	<0.1	.1	-15.0	.2	320	-	7.8	6.8	49	-
		Minnie Creek above pipeline crossing near Wiseman - Latitude 67°25'20", Longitude 150°03'53"											
26	54	June12, 1971	1710	-	-	16.1	8.5	75	28	7.9	11.0	98	-
		Aug.11, 1971	1510	-	-	18.9	11.0	<50	-	8.2	10.4	98	0.1
		Oct.15, 1971	1100	-	0.1	-6.0	0.0	140	98	-	14.9	107	.2
		Mar.15, 1972	-			No water							
		Minnie Creek below pipeline crossing near Wiseman - Latitude 67°25'20, Longitude 150°05'51											
27	54	Aug.11, 1971	-			No measurement made							
		Oct.15, 1971	1200	-	open	-2.0	1.0	200	100	-	13.1	96	0
		Mar.15, 1972	-			No water							

Table 1.--*Water quality along the proposed trans-Alaska pipeline corridor - Prudhoe Bay to Valdez--Continued.*

Map no.	Drainage area (sq mi)	Date	Time	Discharge (cfs)	Ice thickness (m)	Air temperature (°C)	Water temperature (°C)	Specific conductance (µmhos at 25°C)	Alkalinity HCO_3 (mg/l)	pH	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Chlorophyll "a" (ug/l)
				Wiseman Creek at Wiseman - Latitude 67°24'40", Longitude 150°06'00" -									
28	49.2	Sept.10,1970	0945	23	slush ice	-6.7	0.0	300	-	-	-	-	-
		June12, 1971	1530	66.4	-	14.4	10.1	125	52	8.0	11.0	102	-
		Aug.11, 1971	1200	13	-	15.6	10.0	-	114	8.2	11.8	109	0.1
		Oct.15, 1971	0935	-	0.30	-6.0	0.0	340	130	-	14.4	103	.6
		Mar.15, 1972	1530	overflow	overflow	-10.0	.0	750	-	8.3	-	-	0
				Middle Fork Koyukuk River at Coldfoot - Latitude 67°16'26", Longitude 150°11'48"									
29	1,650	June20, 1972	1415	-	-	15.6	9.6	240	114	8.4	10.4	94	0.1
				Slate Creek at Coldfoot - Latitude 67°15'45", Longitude 150°11'20"									
30	78	Aug.11, 1970				No measurement made							
		Aug.28, 1971	0810	-		7.2	5.6	105	34	7.5	11.6	95	-
		Mar.15, 1972	1600	0.21	open	-12.0	0.8	360	-	7.1	7.4	53	0
		June19, 1972	1900	204	-	15.0	8.5	57	19	7.3	11.0	98	0.1
		June20, 1972	1000	152	-	11.7	4.5	60	20	7.1	12.1	96	.1
		Aug.11, 1972	2000	31.7	-	16.1	11.2	100	38	7.1	9.4	88	.1
		Sept.7, 1972	0800	180	-	5.6	4.7	84	24	7.1	12.2	98	.1
				Prospect Creek near Prospect Camp - Latitude 66°47'29", Longitude 150°41'27"									
31	113	Sept.14,1970	1300	-	-	-	2.0	<50	-	6.9	12.0	88	-
		Nov.12, 1970	1530	-	0.6	-23.0	0.0	<50	14	7.3	9.0	62	-
		June 9, 1971	1730	-	-	22.5	8.0	<50	8	7.2	-	-	-
		Aug.11, 1971	0900	-	-	14.0	7.0	<50	16.0	7.9	11.6	97	0.1
		Oct.14, 1971	1710	-	shore ice	-4.0	0.0	80	18.0	7.1	14.1	98	.2
		Mar.16, 1972	0945	overflow	overflow	-12.0	.2	230	-	6.5	-	-	0
				Jim River near Bettles - Latitude 66°47'05, Longitude 150°52'10"									
32	465	Nov.13, 1970	0930	76.1	0.4	-17.0	0	90	48	7.3	9.0	62	-
		Mar.16, 1972	0830	5.5	-	-14.0	0.7	80	-	6.9	5.0	35	0
				Kanuti River at pipeline crossing - Latitude 66°27'06", Longitude 150°37'17"									
33	157	Mar.14, 1972	1530	-	0.6	-10.0	0	-	64	7.2	7.8	55	0
				Yukon River at pipeline crossing - Latitude 65°52'28", Longitude 149°38'33"									
34	196,000	Sept.15,1970	1500	-	-	8.0	7.5	220	-	7.4	10.5	87	-
		Nov.12, 1970	1100	-	0.3	-10.0	0.0	255	74	7.5	10.0	69	-
		May 6, 1971	1830	-	-	3.9	.1	320	136	7.5	8.4	57	0.4
		Mar.14, 1972	1200	-	1.0	-16.0	.5	-	132	7.7	7.2	50	0
				Hess Creek above pipeline crossing - Latitude 65°40'54", Longitude 149°05'42"									
35	662	June14, 1971	1340	119	-	18.9	12.4	110	54	7.1	9.2	87	-
		Aug.10, 1971	1700	3,270	-	17.2	-	-	-	-	-	-	0.9
		Oct.14, 1971	1425	58.8	0.2	2.0	0.0	160	64	7.3	13.2	92	.9
				Hess Creek near Livengood - Latitude 65°39'55", Longitude 149°05'47"									
36	662	Sept.15,1970	1730	970	-	7.5	3.0	98	-	7.2	11.5	87	-
		Nov.17, 1970	1400	1.5	0.3	-21.0	0.0	95	48	-	6.0	42	-
		May 6, 1971	1300	10est	-	3.9	.3	60	20	7.3	13.0	91	0.8
		June14, 1971	1230	119	-	16.7	10.6	115	48	7.1	8.6	77	-
		Aug.10, 1971	1530	3,270	-	17.2	9.0	68	34	7.6	10.2	89	.9
		Oct.14, 1971	1130	58.8	.2	-4.0	0.2	150	58	7.3	13.2	92	.6
		Mar.14, 1972	1100	<1	.3	-14	0	-	106	7.5	0.0	0	0
		May 29, 1972	1700	2,310	-	20.0	6.9	<50	20	7.1	11.0	92	.4
		July30 1972	1630	36.8	-	24.4	17.3	118	68	7.5	7.9	83	.5
		Sept.28,1972	1430	115	-	-1.1	2.3	106	58	7.5	10.7	79	.4
				Tolovana River on Elliott Highway - Latitude 65°28'29", Longitude 148°16'14"									
37	140	Sept.15,1970	2200	-	-	-	2.0	80	-	7.0	11.0	79	-
		Nov.11, 1970	1130	-	0.2	-13.0	0.0	205	74	6.4	6.0	41	-
		May 6, 1971	1200	-	-	9.4	.2	160	48	7.6	13.4	92	0.4
				Tolovana River at pipeline crossing - Latitude 65°28'29", Longitude 148°33'26"									
38	140	Mar.14, 1972	0930	8.33	open	-14.0	0.4	-	194	7.7	0.4	3	0

Table 1.--*Water quality along the proposed trans-Alaska pipeline corridor - Prudhoe Bay to Valdez--Continued.*

Map no.	Drainage area (sq mi)	Date	Time	Discharge (cfs)	Ice thickness (m)	Air temperature (°C)	Water temperature (°C)	Specific conductance (µmhos at 25°C)	Alkalinity HCO_3 (mg/l)	pH	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Chlorophyll "a" (µg/l)
		Chatanika River at pipeline crossing - Latitude 65°04'06", Longitude 147°49'52"											
39	578	June14, 1971	1550	-	-	20.0	7.8	100	36	7.4	11.0	93	-
		Aug.10, 1971	1015	-	-	13.9	8.5	-	42	7.5	10.6	90	1.2
		Oct.14, 1971	0945	-	-	-3.0	0.5	160	52	7.6	13.6	94	0.6
		Feb.17, 1972	1400	-	-	-	.1	-	-	-	-	-	.6
		Caribou Creek near Chatanika - Latitude 65°04'00", Longitude 147°33'05"											
40	9.0	Sept.16,1970	1600	19	-	-	3.0	74	-	7.2	13.5		-
		Nov.10, 1970	1245	3.6	0.4	-19.0	0.1	60	8	-	11.0	72	-
		May 5, 1971	1440	5.0	-	3.9	.1	-	16.0	7.2	12.9	90	0.1
		June 8, 1971	1420	15.6	-	32.2	5.6	65	24	7.5	11.8	95	-
		Aug.10, 1971	1145	37.5	-	12.8	4.0	<50	20	7.6	13.8	91	.2
		Oct.13, 1971	1040	-	-	-2.2	0	70	30	7.8	14.3	99	.2
		Chena River at Wrights Landing - Latitude 64°50'52', Longitude 147°20'48"											
41	33.7	Sept.17,1970	1700	1,150	-	-	6.0	180	-	7.3	12.5	100	-
		Nov. 9, 1970	1500	420	0.3	-7.0	0.0	180	70	7.6	9.0	62	-
		May 3, 1971	1230	800	.6	12.2	.2	180	76	7.5	12.0	83	0.3
		June 7, 1971	1515	540	-	25.0	9.6	120	36	7.7	10.6	93	-
		Aug. 8, 1971	2030	1,700	-	13.5	10.5	145	72	7.5	10.0	89	.7
		Oct.11, 1971	1150	700	-	1.7	2.0	160	76	7.3	13.5	97	.8
		Chena River below pipeline crossing - Latitude 64°51'18", Longitude 147°25'29"											
42	39.6	June 7, 1971	1945	-	-	22.2	9.6	120	38	7.6	10.8	95	-
		Aug. 8, 1971	2230	-	-	12.8	10.0	170	-	7.7	-	-	-
		Oct.11, 1971	1445	-	-	2.2	2.0	165	74	7.4	13.6	98	0.8
		Mar.13, 1972	1215	-	0.6	-18.0	0.2	-	92	6.7	4.0	28	0
		Salcha River at pipeline crossing - Latitude 64°29'16", Longitude 146°39'00"											
43	2,128	June14, 1971	1930	11,200	-	20	8.8	115	40	7.4	11.0	96	-
		Aug. 9, 1971	1515	4,060	-	-	9.5	115	52	-	10.6	94	0.7
		Oct.13, 1971	1540	-	-	0.0	1.5	145	60	7.1	14.2	102	.3
		Feb.17, 1972	-	-	-	-	0.1	-	-	-	-	-	-
		Salcha River near Salchaket - Latitude 64°28'22", Longitude 146°55'26"											
44	2,170	Feb.17, 1972	1230	-	-	-	0.1	-	-	-	-	-	0
		Left tributary Minton Creek near Salchaket - Latitude 64°24'14", Longitude 146°16'45"											
45	3.5	Aug.22, 1971	0945	-	-	12.8	3.5	105	34	6.9	11.8	88	-
		Right tributary Minton Creek near Salchaket - Latitude 64°24'09", Longitude 146°16'00"											
46	6.5	Aug.22, 1971	1015	-	-	12.8	3.8	175	56	7.3	-	-	-
		Shaw Creek near Delta Junction - Latitude 64°16'05", Longitude 146°06'37"											
47	406	June14, 1971	1820	-	-	22.0	11.5	228	58	7.5	10.2	94	-
		Aug. 9, 1971	1730	-	-	17.8	10.0	-	34	7.8	10.6	94	1.3
		Sept.24,1971	1300	-	-	5.6	4.0	-	80	7.7	12.8	99	0.8
		Feb.17, 1972	1100	-	-	-	0.0	198	-	-	-	-	0
		May 31, 1972	1600	-	-	13.3	6.3	72	32	7.2	10.6	87	2.1
		Aug. 1, 1972	1500	-	-	25.6	11.9	115	60	7.4	9.2	86	.7
		Sept.26,1972	1600	-	-	0.0	0.3	150	83	7.5	11.0	77	.5
		Oct. 3, 1972	1300	74.1	-	2.0	0	-	-	-	-	-	-
		Phelan Creek near Paxson - Latitude 63°40'00", Longitude 145°40'11"											
48	12.2	Feb.17, 1972	0830	-	-	-	0.5	-	-	-	-	-	0
		Fish Creek near Paxson - Latitude 63°06'10", Longitude 145°29'04"											
49	11	Sept.30,1970	1700	-	-	1.0	3.0	60	-	-	10.8	90	-
		Dec. 4, 1970	1300	-	bridged	-28.0	0.0	100	48	6.8	10.8	83	-
		Apr. 9, 1971	1400	-	-	10.0	.1	150	64	7.9	12.2	95	-
		May 27, 1971	1400	-	-	6.1	.5	90	32	7.1	12.2	96	-
		July24, 1971	1420	-	-	10.0	9.4	100	30	7.4	10.0	98	0
		Sept.25,1971	1200	-	-	6.1	3.2	<50	36	7.7	13.4	113	-
		Feb.17, 1972	0700	-	bridged	-33.0	1.0	80	60	7.4	-	-	0.2
		May 27, 1972	1800	24.5	-	9.4	1.8	51	28	7.7	11.1	90	2.9
		July28, 1972	1700	15.2	-	11.1	12.0	58	36	7.6	8.9	93	2.9
		Sept.25,1972	1600	13.3	-	2.8	4.0	73	38	7.6	10.6	91	1.0

Table 1.--*Water quality along the proposed trans-Alaska pipeline corridor - Prudhoe Bay to Valdez--Continued.*

Map no.	Drainage area (sq mi)	Date	Time	Discharge (cfs)	Ice thickness (m)	Air temperature (°C)	Water temperature (°C)	Specific conductance (µmhos at 25°C)	Alkalinity HCO_3 (mg/l)	pH	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Chlorophyll "a" (ug/l)
		Fish Creek above pipeline crossing near Paxson - Latitude 63°09'13", Longitude 145°29'01"											
50	11	July24, 1971	1600	-	-	-	9.4	-	-	-	-	-	-
		Sept.25,1971	0920	-	-	2.2	1.5	55	34	7.8	12.8	103	2.1
		Gulkana River above Paxson at Mile 186 Richardson Highway - Latitude 63°04'16", Longitude 145°31'18"											
51	122	Apr. 9, 1971	1300	-	open	-9.4	2.3	115	64	7.6	11.4	93	-
		Gulkana River above pipeline crossing - Latitude 62°32'29", Longitude 145°32'19"											
52	1,785	May 27, 1971	0945	-	-	7.2	2.0	90	34	7.3	12.8	97	-
		July24, 1971	0900	-	-	11.1	12.0	140	78	7.8	9.8	95	0
		Sept.25,1971	1530	-	-	15.6	5.2	130	64	7.7	11.9	98	2.0
		Gulkana River below pipeline crossing - Latitude 62°32'07", Longitude 145°31'34"											
53	1,785	Sept.30,1970	1400	-	-	5.4	4.0	160	-	-	12.9	103	-
		Dec. 4, 1970	1100	429	0.4	-40.0	0.0	165	136	7.3	8.2	59	-
		Apr. 9, 1971	1020	-	.9	-5.0	.1	-	104	-	10.2	73	-
		July24, 1971	1045	-	-	11.1	12.0	-	76	7.6	-	-	0
		Sept.25,1971	1645	-	-	15.6	5.5	122	64	8.0	12.8	107	2.1
		Feb.16, 1972	1500	-	1.2	18.0	0.1	260	130	7.8	-	-	0.1
		May 26, 1972	1400	130	-	15.6	4.9	61	34	7.7	11.5	94	1.6
		July27, 1972	1500	-	-	9.7	14.3	142	78	7.9	9.3	94	1.7
		Sept.24,1972	1500	34	-	7.8	2.0	145	74	8.1	12.3	93	2.3
		Gulkana River at Gulkana - Latitude 62°16'15", Longitude 145°23'04"											
54	1,966	Sept.30,1970	1400	-	-	6.8	3.0	190	-	-	13.3	103	-
		Dec. 4, 1970	0930	239	0.7	-46.0	0.0	265	160	7.9	7.4	53	-
		Copper River at Gakona - Latitude 62°18'06", Longitude 145°18'25"											
55	3,840	Oct. 1, 1970	1030	-	-	9.3	3.2	-	-	-	12.7	99	-
		Gakona River at Gakona - Latitude 62°18'13", Longitude 145°18'02"											
56	620	Oct. 1, 1970	1100	-	-	9.3	4.0	-	-	-	12.5	100	-
		Dec. 3, 1970	1600	177	0.2	-40.0	0.0	<50	186	-	8.4	60	-
		Tazlina River near Glennallen - Latitude 62°03'31" Longitude 145°26'00"											
57	2,670	Sept.28,1970	1445	3,490	-	8.2	4.0	128	-	-	11.7	92	-
		Nov.30, 1970	1500	791	0.3	-21.7	0.0	<50	64.0	7.7	12.4	87	-
		Feb.14, 1972	1100	-	open	-20.0	.1	160	-	8.0	-	-	0.1
		Pippin Lake near Tonsina - Latitude 61°42'54", Longitude 145°10'20"											
58	2	Sept.28,1970	1200	-	-	4.0	5.2	210	-	7.2	11.7	98	-
		Dec. 3, 1970	1100	-	1.0	-29.0	0.0	200	184	-	8.0	58	-
		Apr. 8, 1971	1520	-	1.2	-2.2	.6	325	200	8.2	1.0	7	-
		Feb.14, 1972	1530	-	0.9	-28.0	.1	280	178	7.4	-	-	0.7
		Squirrel Creek at Tonsina - Latitude 61°40'05", Longitude 145°10'26"											
59	70.5	Sept.26,1970	1830	21	-	0.9	3.5	160	-	-	12.1	97	-
		Dec. 3, 1970	0930	11.7	0.3	-40.0	0.0	175	110	7.4	13.8	101	-
		Apr. 6, 1971	1345	13	.8	3.9	.3	192	106	8.4	13.5	99	-
		July23, 1971	1830	21	-	15.6	8.7	150	90	7.7	-	-	0
		Sept.26,1971	1420	22	-	7.2	2.5	180	98	8.2	13.6	106	1.1
		Feb.14, 1972	1615	-	bridged	-12.5	0.1	200	90	7.4	-	-	0.1
		Squirrel Creek above pipeline crossing - Latitude 61°41'43", Longitude 145°12'39"											
60	70.5	May 26, 1971	1410	66	-	13.9	3.4	80	46	7.8	13.6	108	-
		July23, 1971	1630	-	-	15.6	8.7	150	88	7.8	10.6	98	
		Sept.26,1971	1000	-	-	4.4	2.0	175	98	8.2	13.2	101	2.1
		Williams Spring at Tonsina - Latitude 61°39'10", Longitude 145°10'52"											
61	-	Sept.27,1970	-	0.67	-	-	3.8	125	-	-	9.3	75	-

Table 1.--*Water quality along the proposed trans-Alaska pipeline corridor - Prudhoe Bay to Valdez--Continued.*

Map no.	Drainage area (sq mi)	Date	Time	Discharge (cfs)	Ice thickness (m)	Air temperature (°C)	Water temperature (°C)	Specific conductance (µmhos at 25°C)	Alkalinity HCO_3 (mg/l)	pH	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Chlorophyll "a" (ug/l)
		Little Tonsina River near Tonsina - Latitude 61°29'27", Longitude 145°09'24"											
62	78	Sept.27,1970	1015	-	-	-	2.4	110	-	-	12.7	102	-
		Dec. 2, 1970	1320	-	0.5	-28.9	0.0	130	28	6.9	8.4	64	-
		Apr. 6, 1971	1530	-	1.5	3.9	.5	128	68	8.0	11.2	85	-
		July23, 1971	1230	-	-	14	5.4	45	32	6.8	-	59	-
		Sept.21,1971	1400	-	-	7.2	5.0	110	50	7.9	10.1	87	0.8
		Feb.14, 1972	1700	-	0.1	-16.0	0.1	140	78	-	-	-	.1
		May 25, 1972	0800	61.5	-	2.8	1.5	79	42	7.3	11.0	86	.3
		July26, 1972	1100	52.8	-	18.9	7.6	65	34	7.4	10.9	101	.4
		Sept.21,1972	1000	18.9	-	0.0	0.8	85	50	7.5	11.1	86	.3
		Little Tonsina River above pipeline crossing - Latitude 61°29'07", Longitude 145°08'56"											
63	78	May 26, 1971	1215	-	-	7.2	1.0	80	50	7.1	10.8	84	-
		July21, 1971	1430	-	-	17.0	6.8	55	28	6.7	11.4	102	0
		Sept.21,1971	1630	-	-	7.2	-	110	48	7.7	-	-	0.5
		Stuart Creek near Tonsina - Latitude 61°15'54", Longitude 145°17'38"											
64	38	Sept.26,1970	1445	-	-	8	4.0	75	-	-	12.3	96	-
		Dec. 2, 1970	1045	-	0.1	-23.3	0.0	98	50	7.1	14.1	99	-
		Feb.16, 1972	1030	-	-	-17.0	.1	-	50	8.0	-	-	0
		Tsina River near Tsaina Lodge - Latitude 61°16'03", Longitude 145°17'16"											
65	165	Sept.26,1970	1215	-	-	7.9	3.2	115	-	6.9	12.7	98	-
		Dec. 2, 1970	1130	-	0.1	-23.3	0.0	190	70	6.9	14.2	100	-
		Feb.16, 1972	1130	-	.4	-17.0	.1	180	86	7.8	-	-	0
		Sheep Creek near Valdez - Latitude 61°07'33", Longitude 145°48'57"											
66	47	Feb.16, 1972	0915	-	-	-13.0	0.3	250	96	7.7	-	-	0
		Lowe River near Valdez - Latitude 61°06'24", Longitude 145°51'56"											
67	201	Sept.25,1970	1000	417	-	3.7	1.9	120	-	8.7	11.7	84	-
		Dec. 2, 1970	0830	-	0.1	-11.7	0.0	125	50	7.2	13.2	90	-
		Feb.16, 1972	0800	-	open channel	-13.0	.1	190	74	7.6	-	-	0
		Solomon Gulch near Valdez - Latitude 61°05'12", Longitude 146°18'20"											
68	19	May 25, 1971	1445	46.7	-	5.6	1.7	65	16	8.5	13.6	97	-
		July22, 1971	1630	-	-	14.4	4.9	120	10	7.2	13.6	106	0
		Sept.23,1971	1120	-	-	10.0	5.5	<50	12	7.4	13.4	106	0.2
		Feb.15, 1972	1615	-	open channel	-1.0	0.1	70	10	6.9	-	-	.4
		Allison Creek near Valdez - Latitude 61°05'06", Longitude 146°21'11"											
69	7.76	Sept.23,1971	1645	-	-	11.1	5.0	<50	16	7.6	13.2	103	0.5
		Feb.15, 1972	1335	-	open channel	-1.0	1.0	-	20	7.8	-	-	.1
		May 23, 1972	0900	10.8	-	6.1	2.6	50	20	7.5	14.3	104	.4
		July24, 1972	1700	143	-	20.0	6.9	37	18	7.4	12.1	99	.4
		Sept.22,1972	1700	39.9	-	7.8	4.0	54	20	7.6	12.4	94	.3

Table 2.--*Diurnal 24-hour studies of water quality for 11 streams.*

Map no.	Date	Time	Barometric pressure (inches of mercury)	Reflected light (foot-candle)	Cloud cover (percent)	Wind speed (knots)	Wind direction	Air temperature (°C)	Water temperature (°C)	Conductance (umhos at 25° C)	pH	Alkalinity (mg/l)	Dissolved oxygen (mg/l)	Dissolved oxygen percent saturation	Water transparency (meters)	Turbidity (JTU) Field	Turbidity (JTU) Lab	Chlorophyll "a" (ug/l)	Stage (ft)	Discharge (cfs)
								Putuligayuk River near Prudhoe Bay - Latitude 70°16'08", Longitude 148°37'11"												
2	June 23, 1972	1800	30.74	25	100	10-21	NNE	4.4	6.9	-	8.1	110	11.8	97	-	-	0.2	0.4	18.16	-
		1900	30.77	25	100	9-14	NNE	3.3	6.6	185	8.1	107	11.6	96	-	-	-	.4	18.18	-
		2000	30.78	3	100	7-14	NNE	2.2	6.5	185	7.9	110	11.5	95	-	-	.3	.4	18.18	-
		2100	30.76	15	100	7-12	NNE	2.2	6.1	185	8.0	110	11.4	91	-	-	-	.3	18.19	-
		2200	30.76	8	100	5-14	NNE	2.2	5.9	185	-	114	11.6	93	-	-	-	.4	18.20	-
		2300	30.77	3	100	calm	-	1.7	5.5	185	8.0	112	11.5	90	-	-	.5	.4	18.21	-
	June 24, 1972	0100	30.80	1	100	3-8	NNE	1.1	5.2	185	8.0	110	11.3	88	-	-	.5	.4	18.20	-
		0300	30.79	3	100	0-7	NNE	1.1	5.0	187	8.0	108	11.6	91	-	-	-	.4	18.20	-
		0500	30.80	15	100	3-5	NNE	1.7	5.1	187	8.2	110	11.7	91	-	-	.2	.4	18.20	-
		0600	30.80	25	100	0-5	NNE	1.7	5.2	187	-	-	11.5	90	-	-	-	.4	18.19	-
		0700	30.80	35	100	2-3	NNE	2.8	5.4	185	8.1	102	11.5	90	-	-	-	.4	18.18	-
		0800	30.80	40	100	0-3	NNE	4.4	5.8	185	-	108	11.6	90	-	-	-	.6	18.19	-
		0900	30.81	50	100	2-3	SSE	5.6	6.2	185	-	108	11.8	91	-	-	-	.8	18.20	-
		1000	30.81	40	100	0-3	SSE	4.4	6.5	185	8.1	108	11.5	93	-	-	-	.8	18.16	-
		1100	30.82	20	100	2-4	SSE	6.1	6.7	185	8.1	108	11.5	93	-	-	.8	.3	18.18	-
		1200	30.84	60	100	0-4	SSE	6.7	7.6	185	8.0	106	11.5	96	-	-	-	.3	18.14	-
		1300	30.85	56	100	3-6	NNW	6.7	7.8	185	8.1	105	11.5	96	-	-	-	.3	18.14	-
		1400	30.87	60	100	3-6	NNW	6.7	8.5	185	8.1	112	11.8	97	-	-	.3	.3	18.14	-
		1500	30.87	60	85	3-6	NNW	6.7	8.7	185	8.2	109	11.8	97	-	-	-	.3	18.14	-
		1600	30.90	19	100	3-7	NNW	7.2	9.0	185	8.1	110	11.8	98	-	-	-	.3	18.14	-
		1700	30.97	42	100	5-8	NW	6.7	8.6	189	-	110	11.8	97	-	-	.5	.3	18.15	-
		1800	30.94	15	100	5-8	NW	6.7	8.5	189	8.1	108	11.8	97	-	-	-	.3	18.14	-
	Aug. 14, 1972	1630	29.71	13	95	3-5	N	10.0	10.8	280	8.2	195	11.6	104	-	0	-	.3	17.30	-
	Aug 15, 1972	0520	29.75	1	95	5-7	NNW	3.3	7.7	290	8.2	180	11.0	92	-	0	-	.4	17.31	-
		0800	29.77	8	100	3-7	NNW	5.0	8.0	290	8.1	172	11.1	93	-	0	-	.4	17.31	-
		1000	29.78	27	100	9-12	NNW	3.9	8.4	290	8.1	180	11.1	106	-	0	-	.4	17.31	-
		1100	29.80	27	100	7-9	NNW	6.0	8.9	290	8.1	180	11.2	96	-	4	-	.4	17.31	-
		1300	29.80	27	100	2-7	NNW	6.7	9.8	290	8.2	180	11.2	98	-	0	-	.4	17.31	-
		1400	29.81	33	100	4-8	NNW	7.8	10.3	290	8.2	180	11.2	99	-	3	-	.4	17.31	15.5
		1500	29.81	28	100	6-9	NNW	7.2	10.4	290	8.2	80	11.2	100	-	6	-	.3	17.31	-
		1600	29.82	17	100	7-9	NNW	5.6	10.2	290	8.2	-	11.2	99	-	1	-	.3	17.31	-
		1715	29.83	15	100	6-8	NNW	5.0	9.7	290	8.1	180	11.2	98	-	4	-	.3	17.31	-
		2000	29.87	7	100	4-6	NNW	3.3	8.8	-	-	180	11.2	96	-	1	-	.3	17.33	-
	Aug. 16, 1972	0515	30.00	2	100	3-8	NNE	2.2	6.7	300	8.0	180	11.3	92	-	0	-	.8	17.32	-
		0700	30.02	5	100	2-3	NE	2.2	6.7	300	8.2	194	11.4	92	-	3	-	.3	17.32	-
		2215	30.13	-	100	5-8	NNW	1.1	7.0	300	8.2	190	11.6	95	-	0	-	.3	17.32	-
		2400	30.12	-	100	5-7	NNW	1.7	6.6	300	8.2	190	11.6	94	-	0	-	.4	-	-
	Aug. 17, 1972	0200	30.13	-	100	3-6	NNW	1.1	6.2	300	8.1	190	11.6	93	-	0	-	.3	-	-
	Sept. 9, 1972	1535	30.24	2	100	6-8	NNE	1.1	3.4	370	8.2	215	13.0	97	-	0	-	.2	17.42	-
	Sept. 10, 1972	0700	30.28	3	100	3-8	NNE	0.0	1.1	300	-	-	13.2	93	-	0	-	.2	17.39	-
		0830	30.20	8	100	6-8	NNE	.0	1.2	-	-	215	13.4	98	-	0	-	.2	17.40	-
		0900	30.20	8	100	3-10	N	.0	1.3	370	-	-	13.4	95	-	0	-	.2	17.39	-
		1010	30.22	14	100	5-12	N	.0	1.5	370	8.3	-	13.4	95	-	-	-	.2	17.39	-
		1100	30.23	10	100	4-8	NNE	.6	1.7	370	8.3	-	13.2	94	-	-	-	.2	17.40	-
		1225	30.26	9	100	5-8	N	.5	1.8	370	8.3	-	13.2	95	-	0	-	.2	17.40	-
		1400	30.28	16	100	6-10	NNE	1.1	2.0	360	8.3	210	12.9	93	-	0	-	.2	17.39	-
		1500	30.30	11	100	4-7	NNE	0.6	1.9	370	8.3	-	13.1	94	-	0	-	.2	17.39	-
		1610	30.30	10	100	4-7	N	.6	2.1	370	8.3	-	13.4	96	-	0	-	.2	17.39	-
		1700	30.33	6	100	4-6	N	-.6	1.8	370	8.3	214	12.9	92	-	0	-	.2	17.38	78.9
		1800	30.34	1	100	0-4	NNW	-1.1	1.7	370	8.3	-	13.0	93	-	0	-	.2	17.38	-
		1900	30.34	0	100	3-5	N	1.1	1.7	370	-	-	13.2	94	-	0	-	.2	17.39	-
		2100	30.38	-	100	0-3	NW	-2.2	1.1	370	8.3	-	13.4	94	-	0	-	.2	17.37	-
		2200	30.38	-	100	-	-	-2.8	1.3	370	8.3	214	13.4	95	-	0	-	.2	17.36	-
	Sept. 11, 1972	0510	30.41	-	100	3-6	W	-3.3	0.3	340	8.3	208	13.4	92	-	0	-	.2	17.35	-
		0600	30.40	-	100	4-5	W	-2.8	.8	350	8.2	-	13.2	92	-	0	-	.2	17.36	-
		0800	30.42	7	100	0-6	W	-2.8	.7	350	8.2	-	13.3	93	-	0	-	.2	17.35	-

Table 2.--*Diurnal 24-hour studies of water quality for 11 streams--Continued.*

Map no.	Date	Time	Barometric pressure (inches of mercury)	Reflected light (foot-candle)	Cloud cover (percent)	Wind speed (knots)	Wind direction	Air temperature (°C)	Water temperature (°C)	Conductance (umhos at 25° C)	pH	Alkalinity (mg/l)	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Water transparency (meters)	Turbidity (JTU) Field	Turbidity (JTU) Lab	Chlorophyll "a" (ug/l)	Stage (ft)	Discharge (cfs)
								Happy Valley Creek above camp - Latitude 69°09'05", Longitude 148°51'00"												
5	June 21, 1972	1700	30.03	50	95	2-7	WNW	10.8	10.6	21	6.9	12	10.2	91	-	-	1.0	0.3	9.52	-
		1800	30.03	64	90	0-3	NNW	11.7	10.6	21	6.9	12	10.2	91	-	-	-	.3	9.53	-
		1900	30.03	56	75	2-4	NNE	10.0	10.7	21	7.0	11	10.2	91	-	-	-	.3	9.50	41.2
		2000	30.00	64	50	3-4	NNW	11.7	10.5	21	7.1	12	10.1	90	-	-	1.0	.3	9.52	-
		2100	30.00	30	60	4-7	NNW	11.7	10.5	21	7.0	11	10.1	90	-	-	-	.2	9.50	-
		2200	30.00	14	30	0-4	NNW	8.3	10.1	-	6.9	14	10.4	92	-	-	-	.3	9.50	-
		2300	30.00	15	20	0-4	NNW	6.7	9.6	21	-	10	10.4	93	-	-	-	.2	9.50	-
		2400	30.00	9	25	4-7	NNW	3.9	9.1	27	7.0	10	10.4	90	-	-	-	.2	9.50	-
		0100	30.00	2	100fog	0	-	3.3	8.6	28	7.1	10	10.4	89	-	-	1.0	.2	9.48	-
	June 22, 1972	0215	30.00	3	100fog	0	-	2.8	8.4	29	7.1	-	10.5	89	-	-	-	-	9.48	-
		0400	30.00	30	80	-	-	2.8	7.8	29	7.1	-	11.0	92	-	-	-	.2	9.48	-
		0600	29.98	77	100	-	-	4.4	7.7	23	-	-	11.0	92	-	-	-	.2	9.47	-
		0700	29.96	57	100	-	-	4.4	7.8	23	-	10	10.8	90	-	-	-	.2	9.45	-
		0800	29.96	29	100	4-6	NNW	6.2	7.9	21	7.0	11	10.8	92	-	-	-	.2	9.45	-
		0900	29.96	45	100	4-6	NNW	7.2	8.1	20	6.9	10	10.8	91	-	-	-	.2	9.45	-
		1000	29.94	62	100	0-8	N	7.8	8.5	20	-	10	10.7	91	-	-	-	?	9.44	-
		1100	29.94	55	100	4-7	N	10.0	8.9	20	6.9	12	10.6	91	-	-	-	?	9.44	-
		1200	29.90	30	95	2-5	NNW	10.6	9.3	21	6.9	10	10.6	92	-	-	-	.3	9.42	-
		1300	29.92	50	100	4-8	N	10.7	9.8	21	6.9	10	10.4	92	-	-	-	.3	9.42	-
		1400	29.92	36	100	3-6	N	11.1	10.3	21	-	8	10.4	93	-	-	1.0	.3	9.42	-
		1500	29.91	58	95	3-6	N	11.1	10.4	20	7.1	10	10.3	92	-	-	-	.3	9.42	-
		1620	29.90	36	90	2-6	N	11.7	10.5	20	7.0	12	10.2	91	-	-	-	.2	9.40	-
		1700	29.89	36	95	3-5	N	12.2	10.7	20	7.1	10	10.2	92	-	-	-	.2	9.40	-
	Aug. 13, 1972	0700	28.95	40	50	0-2	N	3.1	8.3	21	6.6	12	10.8	95	-	27	-	.7	9.04	-
		0800	28.98	34	50	2-5	N	6.7	8.9	21	6.8	12	-	-	-	22	-	.7	8.82	-
		0930	28.92	30	100	2-5	N	10.6	8.6	21	6.8	11	10.6	93	-	18	-	.3	8.82	-
		1100	28.89	48	100	0-9	N	12.2	9.3	23	6.8	12	10.6	95	-	21	-	.7	9.02	55.0
		1400	28.86	35	90	2-7	N	13.2	10.0	23	6.9	12	10.4	92	-	24	-	.6	8.98	-
		1615	28.84	-	100	-	-	12.2	10.5	23	6.9	12	10.4	96	-	20	-	.5	8.96	-
		1730	28.82	23	100	4-7	N	11.7	10.7	22	6.8	15	10.2	94	-	19	-	.6	8.86	-
		2000	28.78	17	100	0-8	N	10.0	10.6	22	6.7	13	10.2	94	-	22	-	.6	8.84	-
	Aug. 14, 1972	0200	28.76	0	100	-	-	6.7	10.0	22	6.5	17	10.2	93	-	20	-	.6	8.92	-
		0610	28.74	15	80	-	-	8.9	9.7	23	6.6	13	10.4	94	-	21	-	.5	8.90	-
		0730	28.71	28	95	-	-	12.8	10.1	23	6.7	12	10.3	94	-	20	-	.5	8.88	-
	Sept. 7, 1972	1820	29.14	10	100	5-9	N	1.1	6.6	33	-	-	-	-	-	-	-	-	9.90	-
		1930	29.15	2	100	2-9	N	0.0	6.3	33	7.0	10	-	-	-	-	-	-	9.90	-
	Sept. 8, 1972	0700	29.24	10	100	-	-	-1.7	4.0	27	6.7	14	12.0	94	-	20	-	.1	9.00	-
		0800	29.24	6	100	3-5	N	-0.6	4.0	-	6.8	-	-	-	-	21	-	.3	9.00	-
		0900	29.24	15	100	3-6	N	.0	4.1	27	6.8	14	12.0	94	-	17	-	.3	8.99	-
		1100	29.28	15	100	3-6	N	2.2	4.4	27	6.9	14	11.9	94	-	18	-	.3	9.00	-
		1200	29.28	48	80	3-7	N	1.1	4.7	27	7.0	-	11.9	95	-	21	-	.7	9.00	-
		1400	29.28	25	100	3-7	N	1.7	5.1	28	7.0	14	11.8	95	-	19	-	.4	9.01	-
		1610	29.28	17	100	0-13	N	3.3	5.3	28	7.0	-	11.7	95	-	25	-	.3	9.00	69.1
		1800	29.28	14	100	8-14	N	2.8	5.3	28	7.0	-	12.0	97	-	19	-	.3	9.00	-
		1700	29.28	15	85	4-8	N	2.8	5.0	28	7.0	-	12.0	97	-	20	-	.3	9.00	-
		1800	29.29	6	95	2-9	N	0.0	4.9	28	7.1	-	12.0	97	-	-	-	-	9.00	-
		2000	29.30	-	100	0-7	N	-1.7	4.5	28	7.0	12	12.0	96	-	20	-	.3	9.00	-
		2100	29.30	-	100	5-6	N	-0.6	4.3	27	7.0	14	12.0	94	-	18	-	.3	9.00	-
		2200	29.30	-	50	0-2	N	-2.2	4.0	27	6.9	-	12.1	94	-	21	-	.3	9.00	-
	Sept. 9, 1972	0500	29.30	-	100	0-4	N	-3.9	3.0	27	7.0	14	12.2	93	-	20	-	.3	9.00	-
		0600	29.26	1	100	3-7	N	-3.9	2.9	28	6.9	14	12.5	96	-	18	-	.3	9.01	-
		0710	29.26	3	100	0-5	N	-3.9	2.8	25	6.9	-	12.6	95	-	20	-	.3	9.01	-
								Happy Valley Creek below camp - Latitude 69°09'05", Longitude 148°51'00"												
6	Aug. 13, 1972	1130	28.90	14	100	9-12	N	8.9	-	30	6.9	18	-	-	-	28	-	.7	-	-
		1700	28.87	30	100	3-6	N	12.2	-	26	7.0	15	10.3	94	-	27	-	-	-	-
	Aug. 14, 1972	0630	28.70	-	85	-	-	12.2	-	22	6.6	13	-	-	-	20	-	.6	-	-

Table 2.--*Diurnal 24-hour studies of water quality for 11 streams--Continued.*

Map no.	Date	Time	Barometric pressure (inches of mercury)	Reflected light (foot-candle)	Cloud cover (percent)	Wind speed (knots)	Wind direction	Air temperature (°C)	Water temperature (°C)	Conductance (umhos at 25° C)	pH	Alkalinity (mg/l)	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Water transparency (meters)	Turbidity (JTU) Field	Turbidity (JTU) Lab	Chlorophyll "a" (ug/l)	Stage (ft)	Discharge (cfs)
								Aiguon River in Aiguon Canyon - Latitude 68°28'20", Longitude 149°37'20"												
9	Aug. 25, 1971	1430	27.62	-	8	3-6	NE	15.6	7.8	145	8.4	-	10.7	96	-	-	-	-	-	-
		1500	27.67	-	8	3-6	NE	13.3	8.0	145	8.4	84	10.2	96	-	-	-	-	-	-
		1600	27.68	- 1/	5	3-7	NE	14.4	8.8	148	8.4	-	10.4	95	-	-	-	-	-	-
		1700	27.69	22,000 1/	6	3-7	NE	11.7	8.9	150	8.4	-	10.3	94	-	-	-	-	0.65	-
		1800	27.70	15,000	9	3-6	NE	11.1	8.9	150	8.4	-	10.3	94	-	-	-	-	.65	-
		2100	27.72	550	9	0	-	6.7	8.4	150	8.3	-	10.3	94	-	-	-	-	.68	-
		2200	27.74	5	10	0	-	6.7	8.2	150	8.3	-	10.3	93	-	-	-	-	.71	-
		2300	27.71	<1	8	0	-	2.5	8.0	148	8.2	-	10.5	94	-	-	-	-	.67	-
		2400	27.73	<1	8	0	-	2.8	7.7	148	8.2	84	10.6	95	-	-	-	-	.68	-
	Aug. 26, 1971	0700	27.74	-	8	3	NE	3.8	6.8	140	8.2	-	10.7	94	-	-	-	-	.68	-
		0400	27.75	28	10	3	NE	3.8	5.9	140	8.3	-	10.9	93	-	-	-	-	.68	-
		0600	27.74	3,400	70	3	NE	3.9	5.2	140	8.3	86	11.1	93	-	-	-	-	.67	-
		0700	27.74	1,800	10	3-4	NE	4.4	5.0	140	8.3	-	11.1	92	-	-	-	-	-	-
		0800	27.74	8,500	10	3-4	NE	5.6	5.0	140	8.4	-	11.2	93	-	-	-	-	.68	-
		0900	27.74	33,000	10	0	-	7.9	5.1	140	8.4	-	11.2	93	-	-	-	-	.66	-
		1000	27.74	57,000	10	3	NE	11.3	5.2	140	8.5	-	11.3	93	-	-	-	-	.64	-
		1100	27.75	29,000	10	0	-	11.3	5.5	140	8.5	-	11.3	94	-	-	-	-	.62	-
		1200	27.75	29,000	10	3	NE	11.7	5.8	138	8.5	80	11.0	94	-	-	-	-	.64	-
		1300	27.75	175,000	9	4-6	NE	12.8	6.1	140	8.5	-	11.0	96	-	-	-	-	-	-
		1530	27.89	66,000	9	3-6	NE	12.2	7.5	140	8.5	-	10.6	95	-	-	-	-	.64	-

1/ Measured with a hand-held Bossen Luna-Pro light meter

								Middle Fork Koyukuk River at Coldfoot - Latitude 67°15'26", Longitude 150°11'48"												
29	June 19, 1972	1930	29.75	3	100	-	-	15.0	9.5	200	8.1	-	-	-	-	-	-	0.1	-	-
	June 20, 1972	0200	29.75	2	80	-	-	6.1	7.8	-	-	-	10.2	86	-	-	-	-	-	-
		0710	29.75	10	100	-	-	7.8	7.2	210	-	108	10.4	87	-	-	-	.1	-	-
		1050	29.76	5	100	0-5	S	11.7	7.5	210	-	104	10.4	87	-	-	-	.0	-	-
		1415	29.76	9	70	2-5	S	15.6	9.6	240	8.3	114	10.4	91	-	-	-	.0	-	-
		1710	29.76	8	60	2-7	S	15.0	10.3	240	8.4	119	10.4	93	-	-	-	.0	-	-
		2030	29.77	30	40	2-7	S	10.6	10.2	235	8.2	119	10.4	94	-	-	-	.1	-	-

								Slate Creek at Coldfoot - Latitude 67°15'45", Longitude 150°11'20"												
30	June 19, 1972	1240	29.75	95	50	0-5	SW	16.7	7.7	53	-	-	-	-	-	-	-	-	9.00	-
		1300	28.75	95	60	7	SW	17.2	7.7	53	7.3	16	11.2	94	-	-	-	0.1	8.98	-
		1400	29.75	95	60	0-4	SW	17.2	8.6	54	7.3	18	11.2	96	-	-	0.8	.1	8.98	-
		1500	29.75	74	50	0-6	E	17.2	8.8	55	-	18	11.2	97	-	-	-	.1	8.98	-
		1600	29.75	30	70	0-5	W	13.3	8.7	55	7.3	18	11.1	96	-	-	-	.1	8.96	-
		1700	29.75	60	70	0	-	17.8	8.8	56	7.3	18	10.8	94	-	-	1.6	.1	8.96	-
		1800	29.75	48	95	0-3	W	16.1	8.8	56	7.3	19	10.8	94	-	-	-	.1	8.96	-
		1900	29.75	20	100	0	-	15.0	8.5	57	7.3	19	11.0	96	-	-	-	.1	8.98	204
		2000	29.75	20	95	0-2	SW	13.3	7.8	59	7.3	20	11.4	97	-	-	-	.1	8.95	-
		2100	29.75	23	98	0-6	N	13.3	7.3	57	7.3	20	11.6	97	-	-	0.5	.1	8.94	-
		2200	29.75	3	90	0	-	10.6	6.8	58	7.3	20	11.4	93	-	-	-	.1	8.90	-
		2300	29.75	1	80	0	-	8.9	5.8	57	7.3	19	12.0	97	-	-	-	.2	8.88	-
		2400	29.75	3	100	0	-	8.7	5.2	58	-	19	12.0	95	-	-	-	.1	8.88	-
	June 20, 1972	0100	29.75	2	99	0	-	8.7	4.8	58	-	18	12.0	94	-	-	.5	.1	8.82	-
		0200	29.75	2	80	0-1	SE	8.1	4.2	58	-	19	12.1	93	-	-	-	.1	8.82	-
		0400	29.75	4	100	0	-	8.7	3.8	58	-	19	12.1	92	-	-	-	.1	8.80	-
		0600	29.75	26	100	0	-	8.7	3.6	59	-	19	12.1	92	-	-	.6	.1	8.76	-
		0700	29.75	10	100	0	-	7.8	3.7	60	-	18	12.1	92	-	-	-	.1	8.72	-
		0800	29.76	40	100	0	-	8.9	3.8	61	-	19	12.0	92	-	-	-	.1	8.71	-
		0900	29.75	68	100	0	-	8.9	4.0	60	-	19	12.0	93	-	-	-	.1	8.70	152
		1020	29.76	30	99	0-7	S	11.7	4.5	60	7.1	20	12.0	97	-	-	.6	.1	8.70	-
		1105	29.76	68	95	0-5	S	11.1	4.8	61	7.2	20	11.7	92	-	-	-	-	8.66	-
		1200	29.76	95	80	7-6	S	12.8	5.2	60	7.2	21	11.8	94	-	-	-	.1	8.66	-
		1300	29.76	76	75	2-3	S	13.9	5.9	61	7.3	21	11.5	93	-	-	3	.1	8.68	-
	Aug. 31, 1972	0700	29.04	-	100	0	-	9.4	8.5	101	7.0	37	10.2	89	-	2		.1	8.87	-
		0800	29.03	8	100	0	-	10.7	8.6	101	7.0	36	10.2	89	-	2		.1	8.87	-
		0900	29.03	8	100	0-3	SW	12.6	8.8	101	7.0	38	10.2	90	-	2		.1	8.87	-
		1100	29.01	29	100	3-4	SSW	15.5	9.3	100	7.2	-	10.7	90	-	0		.1	8.87	-
		1200	29.00	28	100	0-7	SSW	16.1	9.6	101	7.2	37	10.1	91	-	0		.1	8.83	-
		1300	29.00	29	99	-	-	18.3	10.1	100	7.2	38	10.0	91	-	0		.1	8.87	-
		1500	28.98	50	50	3-5	SSW	22.8	10.9	101	7.2	38	10.2	93	-	0		.2	8.86	-
		1600	28.96	76	35	0-3	SSW	20.6	11.2	100	7.3	36	10.1	94	-	0		.1	8.86	-
		1800	28.94	39	90	0-3	WSW	19.1	11.6	100	7.1	37	9.6	90	-	0		.1	8.87	-

Table 2.--*Diurnal 24-hour studies of water quality for 11 streams--Continued.*

Map no.	Date	Time	Barometric pressure (inches of mercury)	Reflected light (foot-candle)	Cloud cover (percent)	Wind speed (knots)	Wind direction	Air temperature (°C)	Water temperature (°C)	Conductance (µmhos at 25° C)	pH	Alkalinity (mg/l)	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Water transparency (meters)	Turbidity (JTU) Field	Turbidity (JTU) Lab	Chlorophyll "a" (µg/l)	Stage (ft)	Discharge (cfs)
								Slate Creek at Coldfoot - Latitude 67°15'45", Longitude 150°11'20" -- Continued												
30	Aug. 11, 1972	2000	28.93	6	100	0	-	16.1	11.2	100	7.1	38	9.4	88	-	0	-	0.1	8.87	31.7
		2100	28.93	2	75	0	-	15.0	10.9	100	7.1	38	9.5	89	-	0	-	.1	8.88	-
	Aug. 12, 1972	0200	28.94	0	100	0	-	4.4	9.1	100	7.1	38	9.1	80	-	0	-	.1	8.88	-
		0630	28.90	4	100	2-5	N	8.3	8.1	100	7.2	42	10.2	90	-	15	-	.1	8.88	-
		0715	28.91	7	100	0	-	15.0	8.1	100	7.2	38	10.2	89	-	10	-	.1	8.87	-
	Sept. 6, 1972	1200	28.79	76	25	0-3	SSE	15.6	7.3	44	-	-	11.6	99	-	0	-	.1	8.93	-
		1300	28.78	84	80	0-3	SSE	16	8.0	47	-	24	11.6	102	-	0	-	.1	8.93	-
		1400	28.78	92	90	0-4	S	17.0	8.5	47	7.1	-	11.0	97	-	0	-	.1	8.93	-
		1500	28.78	63	85	0-7	SSE	16.1	9.0	48	7.1	24	11.6	103	-	0	-	.1	8.92	-
		1600	28.78	60	75	0-6	SSE	14.4	9.1	48	7.1	-	10.8	95	-	0	-	.1	8.92	-
		1700	28.78	35	85	3-9	SSE	15.0	9.2	49	7.2	24	10.8	95	-	0	-	.1	8.91	-
		1800	28.78	18	85	2-6	SSE	13.3	9.0	49	7.1	24	10.6	94	-	0	-	.1	8.90	-
		2000	28.80	2	85	0	-	7.8	8.3	48	7.1	24	11.1	97	-	0	-	.1	8.90	-
		2100	28.80	0	100	0	-	8.3	7.8	48	7.1	24	11.2	96	-	0	-	.1	8.89	-
		2200	28.81	-	100	0	-	9.4	7.3	47	7.1	-	11.3	98	-	-	-	-	8.89	-
	Sept. 7, 1972	0215	28.87	-	95	0-3	WSW	7.8	5.7	45	7.1	24	11.2	92	-	0	-	.1	8.89	-
		0600	28.92	-	100	0-6	W	6.1	5.0	44	7.1	24	11.6	93	-	0	-	.1	8.88	-
		0715	28.93	-	100	0	-	5.6	5.0	44	7.1	-	11.6	93	-	0	-	-	8.93	-
		0800	28.94	11	100	0-5	W	5.6	7.7	44	7.1	24	11.6	100	-	-	-	.1	8.94	180
		1000	28.95	15	90	0	-	7.8	5.0	44	7.1	24	11.7	94	-	0	-	.1	8.95	-
		1100	28.96	50	85	3-5	W	8.3	5.3	45	7.2	24	11.6	94	-	0	-	.1	8.96	-
		1200	28.94	55	70	0-4	W	9.4	5.5	45	7.2	-	-	-	-	0	-	.1	8.94	-
								Hess Creek near Livengood - Latitude 65°39'55", Longitude 149°05'47"												
36	May 29, 1972	0700	-	64	40	-	-	23.3	4.4	<50	7.1	18	11.2	87	0.2	-	-	.2	62.48	-
		0800	29.81	116	20	0-1	NW	11.7	4.5	<50	7.1	20	11.5	90	.2	-	-	.2	62.49	-
		0900	29.80	64	10	-	-	13.3	4.6	<50	7.1	22	11.5	90	.2	-	-	.3	62.49	-
		1000	29.80	95	20	-	-	15.6	4.9	<50	7.1	22	11.2	89	.2	-	-	-	62.48	-
		1100	29.78	95	40	0-5	NW	17.2	5.1	<50	7.1	20	11.4	90	.2	-	-	.3	62.47	-
		1200	29.76	95	50	0-3	NW	17.8	5.5	<50	7.1	20	11.4	92	.2	-	-	-	62.46	-
		1300	29.75	95	40	0-5	NW	19.4	5.8	<50	7.1	20	11.3	92	.2	-	-	.3	62.46	-
		1400	29.74	35	50	0-2	NW	20.0	6.1	<50	7.1	20	11.2	91	.2	-	-	-	62.46	-
		1500	29.73	74	50	0-3	NW	20.6	6.5	<50	7.1	20	11.0	91	.2	-	-	.3	62.46	-
		1700	29.70	43	20	-	-	20.0	6.9	<50	7.1	20	11.0	92	.2	-	-	.3	62.45	2,310
		1800	29.66	43	20	-	-	17.8	7.2	<50	7.1	20	11.0	92	-	-	-	-	-	-
		1900	29.66	57	15	0-3	E	16.7	7.2	<50	7.1	20	11.0	92	.2	-	-	.3	62.41	-
		2000	29.64	43	0	0-4	E	15.6	7.2	<50	-	18	11.0	92	-	-	-	.2	62.37	-
		2100	29.63	43	0	0-3	E	15.6	7.0	<50	-	18	11.0	92	.2	-	-	.4	62.34	-
		2200	29.62	0	15	0-4	NE	13.3	6.9	<50	7.0	23	10.9	91	.2	-	-	-	62.29	-
		2300	29.63	2	15	2-4	NE	11.1	6.7	<50	7.1	25	10.8	89	.2	-	-	-	62.25	-
		2400	29.62	1	20	-	-	8.7	6.6	<50	7.2	22	10.8	89	.3	-	-	.3	62.19	-
	May 30, 1972	0100	29.61	0	40	-	-	3.9	6.3	<50	7.2	22	10.8	88	.3	-	-	-	62.12	-
		0200	29.60	0	85	-	-	4.4	6.2	<50	7.0	16	10.8	88	.3	-	-	.2	62.05	-
		0300	29.58	1	80	-	-	4.4	5.0	<50	-	18	10.7	87	.3	-	-	-	61.99	-
		0400	29.56	7	80	-	-	3.3	5.8	<50	-	26	10.7	86	.2	-	-	.2	61.95	-
		0500	29.54	13	90	-	-	5.6	5.7	<50	7.1	22	10.7	86	.2	-	-	-	61.93	-
		0600	29.52	35	85	-	-	9.4	5.8	<50	7.2	24	10.7	86	.3	-	-	.2	61.89	-
	July 30, 1972	0800	29.82	30	100	-	-	12.8	14.9	119	7.2	64	7.8	77	.2	-	-	.5	-	-
		0900	29.82	57	100	0-3	ESE	14.4	14.9	119	7.2	64	7.9	78	.2	-	-	.6	57.48	-
		1000	29.81	63	99	0-4	W	15.0	14.9	118	-	66	7.8	77	.2	-	-	.5	57.47	-
		1100	29.80	74	99	0-3	W	19.4	15.4	118	7.3	62	7.8	78	.2	-	-	.6	57.47	-
		1200	29.79	74	99	3-7	SW	22.8	15.9	118	7.3	64	7.8	79	.2	-	-	.5	57.47	-
		1300	29.80	58	99	0-3	WSW	26.1	15.7	118	7.3	65	7.8	78	.2	-	-	.6	57.47	-
		1500	29.78	13	99	0	-	26.1	16.8	118	7.5	66	7.8	80	.2	-	-	.5	57.46	-
		1700	29.77	41	99	0	-	20.4	17.3	118	7.5	60	7.9	82	.2	-	-	.5	57.46	38.8
		1900	29.76	-	85	0	-	20.6	17.0	119	7.4	64	7.8	80	-	-	-	.6	57.46	-
		2100	29.76	4	90	0	-	18.3	16.9	119	7.3	64	8.2	84	.2	-	-	.5	57.45	-
		2200	29.78	1	100	0	-	16.1	16.8	119	7.3	62	8.2	84	.2	-	-	.5	57.45	-
	July 31, 1972	0200	29.83	-	80	0	-	8.3	16.0	120	7.2	66	7.8	80	.2	-	-	.5	57.44	-
		0600	29.86	15	100	0	-	8.9	15.3	119	7.2	68	7.4	74	.2	-	-	.6	57.43	-
		0700	29.87	30	100	0	-	9.4	15.2	120	7.3	63	7.4	74	.3	-	-	.6	57.43	-
		0800	29.87	23	100	0	-	11.7	15.2	119	7.3	67	7.5	74	.3	-	-	.7	57.43	-
	Sept. 27, 1972	2115	29.50	-	100	0	-	-1.7	2.3	108	-	-	10.7	80	-	-	-	-	-	-
	Sept. 28, 1972	0600	29.37	-	100	0	-	-	1.8	108	7.5	-	10.7	79	-	-	-	-	58.25	-
		0700	29.35	-	100	0	-	-3.9	1.8	108	7.5	60	10.8	80	-	28	-	.4	58.25	-

Table 2.--*Diurnal 24-hour studies of water quality for 11 streams--Continued.*

Map no.	Date	Time	Barometric pressure (inches of mercury)	Reflected light (foot-candle)	Cloud cover (percent)	Wind speed (knots)	Wind direction	Air temperature (°C)	Water temperature (°C)	Conductance (umhos at 25° C)	pH	Alkalinity (mg/l)	Dissolved oxygen (mg/l)	Dissolved oxygen percent saturation	Water transparency (meters)	Turbidity (JTU) Field	Turbidity (JTU) Lab	Chlorophyll "a" (ug/l)	Stage (ft)	Discharge (cfs)
								Moss Creek near Livengood - Latitude 65°38'55", Longitude 148°05'47" -- Continued												
36	Sept.28,1972	0830	-	-	100	-	-	-3.9	1.8	108	7.5	60	10.7	79	-	12	-	0.4	58.25	-
		1000	29.29	2	100	0	-	-1.7	2.1	108	7.4	59	10.8	80	-	12	-	.4	58.24	-
		1230	29.24	8	100	3-8	NW	-1.7	2.1	108	7.5	-	10.8	80	-	17	-	.4	58.25	-
		1400	29.22	-	100	3-8	NW	-1.1	2.2	108	7.5	-	10.7	78	-	-	-	-	58.24	-
		1500	29.19	2	100	3-6	NNE	-1.1	2.2	112	7.5	58	10.7	78	-	25	-	-	58.24	335
		1720	29.16	-	100	-	-	-2.2	2.2	112	7.5	60	10.7	78	-	22	-	4	58.24	-
		1920	29.12	-	100	3-7	N	-2.8	2.2	108	7.5	-	10.9	81	-	-	-	-	58.25	-
	Sept.29,1972	0010	-	-	100	-	-	-3.9	1.7	108	7.5	-	10.8	79	-	-	-	-	58.28	-
		0530	29.00	-	100	0-4	N	-5.6	0.2	108	7.5	-	10.9	77	-	16	-	.3	58.27	-
								Show Creek near Delta Junction - Latitude 64°16'05", Longitude 146°06'37"												
47	May 31, 1972	1200	28.85	64	100	-	-	13.9	6.4	71	7.2	34	10.3	86	-	-	-	1.7	1.84	-
		1300	28.86	84	100	3-6	SE	15.0	6.4	71	7.1	32	10.6	88	-	-	-	1.9	1.85	-
		1400	28.86	57	100	3-6	SE	14.4	6.4	71	7.0	36	10.6	88	-	-	-	-	1.87	-
		1500	28.87	50	100	0-3	SE	13.3	6.3	72	7.2	36	10.6	88	-	-	-	2.1	1.89	-
		1600	28.88	43	100	0-3	SE	13.3	6.3	72	7.1	32	10.6	88	0.4	-	-	-	1.91	-
		1700	28.89	43	100	0-3	S	12.2	6.2	70	7.2	34	10.6	88	.4	-	-	2.3	1.90	-
		1800	28.90	27	100	0	-	12.2	6.1	71	7.2	34	10.6	88	.5	-	-	-	1.92	-
		1900	28.92	18	100	0	-	11.7	6.1	72	7.3	36	10.6	88	-	-	-	2.0	1.93	-
		2000	28.94	7	100	0-3	NE	10.0	6.0	70	7.3	36	10.6	88	.5	-	-	-	1.55	-
		2100	28.86	3	100	0	-	8.9	5.9	71	7.3	36	10.6	88	.4	-	-	-	1.98	-
		2200	28.88	0	100	0	-	6.1	5.8	72	7.3	36	10.6	87	.5	-	-	2.1	1.98	-
		2300	28.90	0	100	0-3	N	5.6	5.8	73	7.3	38	10.6	87	.4	-	-	-	2.00	-
		2400	29.02	0	100	0	-	4.4	5.7	80	7.3	38	10.6	87	.4	-	-	2.0	2.02	-
	June 1, 1972	0200	29.03	0	100	0	-	4.4	5.6	86	7.3	36	10.6	87	.5	-	-	-	2.07	-
		0400	29.04	3	100	0-2	E	3.9	5.5	90	7.3	36	10.6	87	.5	-	-	1.7	2.14	-
		0500	29.03	4	100	0-2	E	3.9	5.4	90	7.4	39	10.6	86	.5	-	-	1.3	2.16	-
		0600	29.02	10	100	0-2	E	3.9	5.4	83	7.3	37	10.6	86	.5	-	-	-	2.16	-
		0700	29.02	50	100	0	-	5.6	5.5	78	7.4	37	10.6	87	.5	-	-	1.6	2.20	-
		0800	29.00	57	100	0	-	6.1	5.5	75	7.3	36	10.6	88	.5	-	-	1.9	2.21	-
		0900	28.98	35	100	0-4	E	6.7	5.6	76	7.3	36	10.6	87	.5	-	-	-	2.22	-
		1000	28.97	50	100	0-3	S	8.3	5.7	79	7.4	38	10.6	87	.4	-	-	1.8	2.23	-
		1100	28.93	50	90	0	-	10.0	5.7	76	7.3	36	10.4	85	.5	-	-	2.0	2.22	-
		1200	28.90	57	70	0-2	S	10.0	5.7	77	7.3	36	10.4	85	.5	-	-	-	2.22	-
	Aug. 1, 1972	0710	29.38	64	1	0-4	A	13.9	10.9	115	-	66	9.8	91	-	28	-	0.9	9.46	-
		0800	29.37	74	3	0	-	16.1	11.3	115	7.3	66	9.6	90	-	29	-	.8	9.46	-
		0900	29.37	84	10	0	-	19.4	11.8	112	7.3	62	9.6	89	-	29	-	.8	9.46	-
		1000	29.37	64	15	0	-	21.7	11.5	115	7.5	60	9.4	89	-	28	-	.9	9.50	-
		1100	29.36	58	-	0-3	A	23.3	11.7	115	7.5	62	9.4	89	-	27	-	1.1	9.51	-
		1300	29.33	58	25	0-3	N	24.4	11.9	115	7.4	62	9.4	89	-	26	-	0.8	9.51	-
		1400	29.32	70	25	0-3	N	25.0	11.9	115	7.1	60	9.4	89	-	25	-	.7	9.50	-
		1500	29.30	78	25	0	-	25.6	11.9	115	7.4	60	9.4	89	-	25	-	.7	9.48	-
		1700	29.28	15	50	0	-	24.7	11.9	115	7.5	64	9.4	88	-	24	-	.7	9.48	-
		1900	29.27	-	40	3-4	N	20.0	11.9	118	-	65	9.2	88	-	25	-	.7	9.36	-
		2000	29.27	28	30	0	-	19.4	11.7	120	7.3	63	9.2	87	-	26	-	.8	9.32	-
		2200	29.28	0	60	3-5	NE	15.6	11.6	120	7.4	65	9.2	87	-	26	-	.8	9.24	-
		2300	29.28	0	50	0	-	14.4	11.6	120	7.4	65	9.2	87	-	26	-	.8	9.19	-
	Aug. 2, 1972	0200	29.29	0	0	3-8	NW	11.1	11.3	120	7.6	64	9.2	86	-	22	-	.8	9.10	-
		0600	29.28	64	0	0	-	11.7	11.2	122	7.5	67	9.2	86	-	24	-	.8	9.11	-
		0700	29.27	74	10	0	-	15.6	11.2	120	7.4	63	9.2	86	-	23	-	.7	9.12	-
	Sept.26, 1972	1130	29.10	5	100	0-4	SE	0.6	0.3	140	-	82	11.4	81	-	10	-	.6	9.54	-
		1200	29.12	3	90	0-8	SSE	.0	.3	140	7.8	-	-	-	-	10	-	.5	9.56	-
		1400	29.18	8	100	0	-	1.1	.3	140	7.5	82	11.3	80	-	11	-	.6	9.56	-
		1600	29.21	2	100	0	-	0.0	.3	140	7.5	83	11.3	80	-	13	-	.5	9.62	-
		1700	29.22	2	95	3-6	SSE	-.0	.3	-	-	-	11.3	80	-	10	-	.5	9.63	-
		1800	29.22	-	-	-	-	-.6	.3	140	7.5	-	-	-	-	9	-	.7	9.63	-
		1900	-	-	0	-	-	-1.1	.2	140	7.5	-	-	-	-	8	-	.6	9.64	-
		2000	29.24	0	100	0	-	-0.6	.2	140	7.5	-	11.1	79	-	8	-	-	9.64	-
		2100	29.24	0	100	0	-	-1.1	.2	140	7.5	82	-	-	-	9	-	.6	9.64	-
	Sept.27, 1972	0500	29.20	0	100	0	-	-1.7	.2	140	7.5	82	10.7	75	-	11	-	.5	9.58	-
		0600	29.17	0	98	0	-	-2.2	.2	140	7.5	-	10.9	77	-	9	-	.5	9.57	-
		0700	29.17	-	100	0	-	-1.7	.2	140	7.5	-	11.4	80	-	8	-	.6	9.57	-
		0800	29.16	1	100	0	-	-1.1	.2	140	7.5	-	11.4	80	-	10	-	-	9.55	-
		0900	29.16	4	80	0	-	-0.6	.2	140	7.5	-	11.4	80	-	8	-	.5	9.56	-
		1000	29.16	7	99	0-2	SSW	+1.1	.2	140	7.5	-	11.4	80	-	7	-	.6	9.58	-
		1100	29.17	8	100	0-2	SSW	+1.1	.3	140	7.5	-	-	-	-	8	-	.5	9.66	-
	Oct. 3, 1972	1330	-	-	-	-	-	2.0	.0	-	-	-	-	-	-	-	-	-	-	74.1

Table 2.--*Diurnal 24-hour studies of water quality for 11 streams--Continued.*

Map no.	Date	Time	Barometric pressure (inches of mercury)	Reflected light (foot-candle)	Cloud cover (percent)	Wind speed (knots)	Wind direction	Air temperature (°C)	Water temperature (°C)	Conductance (µmhos at 25° C)	pH	Alkalinity (mg/l)	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Water transparency (meters)	Turbidity (JTU) Field	Turbidity (JTU) Lab	Chlorophyll *a* (ug/l)	Stage (ft)	Discharge (cfs)
								Fish Creek near Pearson - Latitude 63°06'10", Longitude 165°29'05"												
49	May 27, 1972	0815	27.00	116	75	3-5	ENE	5.6	1.6	67	7.3	36	12.0	99	-	-	-	0.8	1.08	-
		0900	26.99	130	80	4-7	ENE	6.1	1.9	68	7.3	36	12.2	97	-	-	-	.9	1.08	13.6
		1000	26.98	105	70	0	-	7.8	2.5	66	7.5	37	11.6	93	-	-	-	1.0	1.08	-
		1100	26.97	136	60	2-3	ENE	7.8	3.2	66	7.5	38	11.6	96	-	-	-	1.2	1.08	-
		1200	26.96	136	70	0-3	SE	8.3	3.8	65	7.5	36	11.8	98	-	-	-	1.5	1.08	-
		1300	26.96	194	70	3-4	ENE	7.8	4.1	58	7.6	35	11.0	92	-	-	-	-	1.20	-
		1400	26.94	106	40	0-2	ANE	8.9	1.5	59	7.7	33	11.2	87	-	-	11	1.1	1.30	-
		1500	26.95	177	50	3-5	E	10.0	2.9	68	7.6	33	11.4	93	-	-	-	2.2	1.20	-
		1600	26.94	136	50	4-8	E	10.0	2.8	55	7.6	30	11.3	93	-	-	-	2.0	1.30	-
		1800	26.92	106	80	7-9	E	9.4	1.8	51	7.7	28	11.2	88	-	-	-	2.9	1.38	24.5
		1900	26.91	64	50	8-9	E	8.3	2.3	50	7.7	29	11.3	90	-	-	-	-	1.32	-
		2000	26.91	50	50	3-5	E	6.7	1.9	50	7.7	29	11.5	93	-	-	-	-	1.30	-
		2100	26.92	19	20	2-3	E	5.6	1.2	<50	7.6	26	11.6	90	-	-	-	-	1.31	-
		2200	26.93	3	5	3-5	E	3.9	1.5	<50	7.6	29	11.9	94	-	-	-	-	1.32	-
		2300	26.93	-	10	2-3	E	0.8	1.1	<50	7.5	28	11.9	92	-	-	-	-	1.32	-
		2400	26.93	-	15	0-2	S	.6	1.0	<50	7.5	28	11.9	92	-	-	-	-	1.30	-
	May 28, 1972	0200	26.94	0	70	3-5	ESE	1.7	0.9	<50	7.5	30	11.9	92	-	-	-	-	1.26	-
		0400	26.92	-	10	0	-	-0.6	.6	51	7.6	31	11.9	91	-	-	-	-	1.26	-
		0600	26.90	56	15	3-4	E	3.3	.8	63	-	34	12.0	93	-	-	-	0.9	1.26	-
		0700	26.90	84	5	0-2	E	4.4	1.0	58	7.5	32	12.0	93	-	-	-	.9	1.26	-
		0800	26.88	96	5	4-5	E	5.0	1.4	57	7.6	32	12.0	94	-	-	-	.7	1.24	-
	July 28, 1972	1100	26.88	23	100	0-4	E	10.6	11.1	58	7.6	36	9.1	90	-	5	-	3.0	8.67	-
		1230	26.88	23	100	0-3	E	10.6	11.4	58	7.6	36	9.1	91	-	10	-	2.7	8.66	-
		1400	26.88	23	100	0-2	E	11.1	11.8	58	7.6	-	9.0	91	-	10	-	2.2	-	-
		1500	26.87	29	100	0	-	12.2	11.8	58	7.5	36	8.9	89	-	10	-	2.6	8.64	15.2
		1700	26.88	23	99	0	-	11.1	12.0	58	7.5	36	8.9	90	-	9	-	2.9	8.64	-
		1800	26.88	7	98	0	-	12.0	12.0	58	7.5	36	8.9	90	-	10	-	2.4	8.65	-
		2000	26.89	14	98	0	-	10.6	11.7	59	7.4	36	8.0	80	-	15	-	4.4	8.65	-
		2100	26.90	0	97	0	-	9.4	11.4	58	7.4	35	8.5	85	-	15	-	3.6	-	-
	July 29, 1972	0200	26.93	0	100	0	-	6.7	10.6	58	7.4	36	9.1	89	-	10	-	3.4	8.65	-
		0630	26.96	13	99	0	-	8.3	10.4	59	7.5	38	9.1	89	-	12	-	3.1	8.65	-
		0700	26.96	-	98	0	-	8.9	10.4	58	7.5	36	9.0	88	-	10	-	-	8.65	-
		0800	26.96	23	76	0-2	W	10.0	10.6	58	7.5	36	9.1	89	-	11	-	2.8	8.65	-
		0900	26.96	23	75	0	-	11.1	11.0	58	7.6	36	9.1	90	-	12	-	3.2	8.65	-
		1000	26.96	76	80	0	-	12.2	11.2	58	7.5	38	9.1	90	-	9	-	4.4	8.66	-
		1100	26.96	100	75	0	-	14.4	12.6	58	7.4	36	8.9	90	-	9	-	3.5	8.67	-
	Sept.24, 1972	1900	27.43	0	0	0	-	-5.6	2.9	55	7.4	-	-	-	-	-	-	-	8.84	-
	Sept.25, 1972	0700	27.41	3	100	0	-	-10.5	1.0	55	7.4	-	11.2	85	-	-	-	1.0	8.80	-
		0800	27.41	19	95	0	-	-5.0	1.3	55	7.4	-	11.2	86	-	1	-	1.0	8.77	-
		0900	27.41	17	95	0	-	-1.1	1.8	55	7.5	-	-	-	-	1	-	-	8.77	-
		1000	27.43	39	50	0	-	+1.1	1.8	53	7.5	44	11.0	85	-	6	-	1.2	8.77	-
		1100	27.43	35	75	0	-	+1.7	2.8	55	7.5	-	11.2	90	-	2	-	1.1	8.83	-
		1200	27.43	27	95	0	-	+2.8	3.3	55	7.6	38	10.9	88	-	0	-	1.3	8.81	-
		1300	27.43	25	95	0-3	W	+3.3	3.4	55	7.6	38	10.9	88	-	2	-	1.3	8.87	-
		1435	-	-	50	0	-	4.4	4.0	55	7.6	-	10.7	88	-	-	-	-	8.77	-
		1600	27.42	8	75	0-3	W	2.8	4.0	55	7.6	38	10.6	88	-	0	-	1.0	8.80	13.3
		1715	27.42	1	90	0-3	S	+1.1	3.6	55	7.6	-	10.5	86	-	0	-	1.0	8.77	-
		1800	27.42	0	85	2-7	S	+1.1	3.6	55	7.6	-	10.7	88	-	0	-	1.0	8.77	-
		1900	27.42	0	100	0	-	-1.1	3.4	55	7.6	39	10.7	87	-	0	-	1.0	8.76	-
		2000	27.42	0	90	0	-	-5.0	3.1	55	7.5	-	10.4	84	-	0	-	1.0	8.78	-
		2100	-	0	100	0	-	-1.7	2.8	55	7.5	-	10.4	83	-	0	-	1.0	8.77	-
	Sept.26, 1972	0500	27.42	0	100	0	-	-3.3	1.8	55	7.5	39	10.7	87	-	0	-	0.9	8.80	-
		0600	27.41	0	100	2-4	E	-3.3	1.6	50	7.5	-	10.6	81	-	0	-	-	8.77	-
		0700	27.41	0	100	6	-	-3.9	1.5	50	7.5	-	10.7	82	-	-	-	-	8.77	-
								Gulkana River below pipeline crossing - latitude 62°32'07", Longitude 145°31'34"												
53	May 25, 1972	1800	28.18	56	1	7-21	SSW	11.1	5.0	60	-	-	11.2	93	0.1	-	-	1.3	2.08	-
		1900	28.20	64	1	5-9	SSW	10.0	5.0	60	7.8	32	11.2	93	.1	-	-	-	2.08	-
		2000	28.22	43	1	9-10	SSW	8.9	5.0	60	7.8	-	11.6	97	.1	-	-	1.4	2.10	-
		2100	28.22	19	70	0	-	6.7	4.8	58	7.6	32	-	-	.1	-	-	-	2.08	-
		2200	28.22	3	1	0	-	3.3	4.6	59	7.5	30	11.6	96	.1	-	-	-	2.08	-
		2300	28.28	0	1	0	-	0.0	4.4	60	7.6	32	11.6	95	.1	-	-	1.3	2.10	-
		2400	28.28	0	5	0	-	-1.1	4.2	61	7.6	32	11.5	94	.1	-	-	-	2.10	-

Table 2.--*Diurnal 24-hour studies of water quality for 11 streams--Continued.*

Map no.	Date	Time	Barometric pressure (inches of mercury)	Reflected light (foot-candle)	Cloud cover (percent)	Wind speed (knots)	Wind direction	Air temperature (°C)	Water temperature (°C)	Conductance (µmhos at 25° C)	pH	Alkalinity (mg/l)	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Water transparency (meters)	Turbidity (JTU) Field	Turbidity (JTU) Lab	Chlorophyll "a" (µg/l)	Stage (ft)	Discharge (cfs)
								Gulkana River below pipeline crossing - Latitude 62°32'07", Longitude 145°31'34" -- Continued												
53	May 26, 1972	0900	28.30	0	1	0	-	-4.4	3.8	80	-	30	11.5	93	0.1	-	-	-	-	-
		0800	28.30	50	0	0	-	-4.4	3.2	80	7.6	30	11.8	92	.1	-	-	1.4	2.20	-
		0700	28.27	64	0	0-7	N	+4.6	3.2	59	7.6	30	11.6	92	.7	-	-	-	2.22	-
		0800	28.26	74	8	3	N	11.7	3.5	59	7.8	34	12.6	93	.1	-	-	1.8	2.20	-
		0900	28.21	94	5	3-5	N	12.2	3.7	60	7.8	36	11.6	93	.1	-	-	-	2.26	-
		1000	28.19	78	75	3-5	SSE	12.2	4.0	60	7.7	36	11.5	93	.1	-	-	1.5	2.18	-
		1200	28.19	74	80	3-5	ESE	14.4	4.3	66	7.7	38	11.5	94	.1	-	-	-	2.16	-
		1300	28.16	74	100	3-5	ENE	15.8	4.8	60	7.7	34	11.5	96	.1	-	-	1.6	2.14	-
		1400	28.18	64	100	3-8	E	15.6	4.9	61	7.7	34	11.5	96	.2	-	-	-	2.14	-
		1500	28.16	64	100	3-7	E	14.4	5.2	60	7.7	34	11.4	96	.1	-	-	-	2.16	-
		1600	28.16	56	100	2-6	S	12.2	5.0	61	7.6	34	11.4	96	.1	-	-	1.8	2.16	-
		1700	28.22	27	100	2-6	S	11.1	5.0	60	7.6	32	11.4	95	.1	-	-	-	2.16	-
		1900	28.24	10	100	0	-	10.0	5.8	61	7.6	34	11.4	85	.1	-	-	-	2.18	-
	July 27, 1972	0800	27.98	3	100	0	-	10.6	18.0	185	7.8	80	8.6	93	-	-	-	1.6	9.36	-
		0900	28.01	3	100	0	-	10.0	15.6	143	7.9	79	8.6	92	.1	-	-	1.4	9.35	-
		1000	28.02	3	100	0-6	S	10.8	15.3	143	7.9	80	8.7	93	.3	-	-	1.4	9.36	-
		1100	28.03	3	100	0-6	S	9.6	15.0	142	7.9	78	8.7	92	.3	-	-	1.8	9.37	-
		1200	28.04	3	100	0-6	S	9.6	14.8	142	7.9	80	8.8	94	.3	-	-	1.7	9.37	-
		1300	28.04	3	100	0-6	S	8.8	14.5	142	7.8	76	8.8	93	.1	-	-	1.7	9.38	-
		1500	28.06	3	100	0-6	S	9.6	14.3	142	7.8	78	9.1	95	.3	-	-	1.7	9.40	-
		1600	28.08	3	100	0-3	S	9.6	14.3	142	8.0	78	9.1	95	.2	-	-	1.6	9.41	-
		1800	28.10	3	100	3-6	S	10.0	14.4	142	8.0	78	9.2	96	.1	-	-	1.7	9.41	-
		1900	28.10	3	100	3-6	S	9.7	14.3	142	8.0	78	9.1	95	.1	-	-	1.6	9.41	-
		2100	28.12	2	100	0-3	S	10.6	14.1	142	7.9	78	8.9	92	.1	-	-	1.5	9.42	-
		2200	28.12	0	100	0	-	9.4	14.0	142	7.9	78	8.9	92	.1	-	-	1.7	9.42	-
	July 28, 1972	0200	28.18	0	70	0	-	6.4	13.4	143	7.9	78	8.9	90	.1	-	-	2.0	9.43	-
		0630	28.20	42	60	0	-	6.6	12.8	143	7.9	78	9.6	95	.2	-	-	1.8	9.44	-
		0700	28.20	27	96	0-2	S	7.2	12.8	143	8.0	76	9.5	95	.2	-	-	-	9.44	-
		0830	28.23	50	60	0-2	S	10.0	13.3	142	7.9	76	9.5	95	.3	-	-	1.9	9.44	-
	Sept.23, 1972	1500	-	48	1	0	-	5.6	2.1	158	8.2	74	12.5	95	-	-	-	3.0	8.93	-
		1615	28.85	37	0	0-2	NW	4.4	2.0	-	-	-	-	-	-	5	-	2.8	8.95	1200
		1700	28.84	23	0	0-2	N	5.8	1.8	142	8.1	-	12.3	98	-	5	-	2.5	8.93	-
		1800	28.84	8	0	-	-	0.0	1.4	142	8.0	-	12.2	98	-	5	-	2.8	8.89	-
		1915	28.84	0	8	0	-	-7.8	1.3	142	8.0	-	12.1	89	-	6	-	4.1	8.83	-
		2000	28.86	0	0	0	-	-9.4	1.0	142	8.0	-	12.2	90	-	2	-	-	8.81	-
		2100	28.86	0	0	0	-	-11.1	0.9	142	8.0	-	12.1	89	-	1	-	2.8	8.80	-
	Sept.24, 1972	0500	28.72	0	3	0	-	-17.8	.1	150	8.0	78	12.2	88	-	5	-	3.7	8.79	-
		0600	28.72	0	0	0	-	-18.3	.1	-	8.0	-	12.1	87	-	2	-	3.7	-	-
		0700	28.72	8	0	0	-	-14.4	.2	-	8.0	-	12.1	87	-	6	-	-	8.80	-
		0800	28.72	-	0	0	-	-3.3	.2	-	-	-	-	-	-	5	-	-	8.76	-
		0900	28.71	66	0	0	-	+2.2	.2	-	-	-	-	-	-	3	-	-	8.78	-
		1000	28.71	44	0	0	-	+3.1	.2	140	8.1	-	12.3	88	-	2	-	4.2	8.82	-
		1100	28.71	50	0	0	-	+3.3	.4	142	8.0	-	12.3	90	-	2	-	3.6	8.81	-
		1220	28.70	40	0	0	-	2.8	1.2	145	8.2	76	12.3	91	-	3	-	2.9	8.83	-
		1400	-	60	0	4-5	S	5.6	1.9	146	8.1	-	12.3	93	-	5	-	3.3	8.88	-
		1500	28.33	38	0	0	-	7.8	2.0	150	8.7	-	12.3	93	-	5	-	2.3	8.90	-
								Little Tonsina River near Tonsina - Latitude 61°29'27", Longitude 145°09'24"												
62	May 24, 1972	1200	28.20	-	100	6	SW	8.9	3.5	80	-	38	10.8	86	-	-	-	-	-	-
		1300	28.20	18	100	7	SW	8.9	3.5	60	-	38	11.2	90	0.5	-	-	0.3	1.36	-
		1400	28.20	15	100	5	SW	8.9	3.5	60	7.3	38	11.2	90	.5	-	-	.4	1.36	-
		1500	28.20	12	100	6	SW	8.9	3.6	60	7.3	38	11.1	89	.5	-	-	.4	1.38	-
		1600	28.18	8	100	3	SW	7.8	3.7	60	7.3	36	11.1	89	.5	-	-	.3	1.36	-
		1700	28.18	5	100	0	-	8.3	3.6	80	7.1	44	11.0	89	.5	-	-	.4	1.38	-
		1800	28.18	5	100	3	SW	8.3	3.8	60	7.3	42	11.0	89	.4	-	-	.4	1.40	-
		1900	28.17	2	100	3	SW	7.2	3.7	79	7.3	38	10.8	87	.4	-	-	.4	1.42	-
		2000	28.16	1	100	3	SSW	6.7	3.5	79	7.3	38	10.8	86	.4	-	-	.4	1.44	-
		2100	28.16	-	100	3	E	5.0	3.3	79	7.3	38	10.8	85	-	-	-	-	1.46	-
		2200	28.16	0	100	3	E	3.6	3.0	79	7.3	-	10.8	85	-	-	-	.6	1.48	-
		2400	28.14	0	100	3	E	3.3	2.3	79	7.3	38	11.7	85	-	-	-	.4	1.50	-
	May 25, 1972	0200	28.17	0	100	7	SE	3.3	2.1	77	7.3	37	11.1	85	.4	-	-	.3	1.50	-
		0400	28.16	0	100	3	E	-	1.6	77	7.3	38	11.1	84	.5	-	-	.3	1.42	-
		0600	28.16	2	100	5	SE	-	1.5	80	7.2	50	29.1	83	.6	-	-	.3	1.40	-
		0800	28.18	4	100	5	SE	2.8	1.5	79	7.3	42	33.0	83	-	-	-	.3	1.36	61.5
		1000	28.20	6	100	3	SE	6.7	1.9	80	7.3	42	11.0	84	-	-	-	.4	1.32	-
		1200	28.24	17	100	7-10	SE	8.9	2.6	81	7.2	42	10.8	84	-	-	-	.4	1.30	-

Table 2.--*Diurnal 24-hour studies of water quality for 11 streams--Continued.*

Map no.	Date	Time	Barometric pressure (inches of mercury)	Reflected light (foot-candle)	Cloud cover (percent)	Wind speed (knots)	Wind direction	Air temperature (°C)	Water temperature (°C)	Conductance (µmhos at 25° C)	pH	Alkalinity (mg/l)	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Water transparency (meters)	Turbidity (JTU) Field	Turbidity (JTU) Lab	Chlorophyll "a" (µg/l)	Stage (ft)	Discharge (cfs)
								Little Tonsina River near Tonsina - Latitude 61°29'27", Longitude 145°09'24" -- Continued												
62	July 25, 1972	1600	28.08	36	75	0-3	ENE	17.2	9.5	66	-	40	10.6	99	-	-	-	0.4	9.34	-
		1700	28.09	28	90	-	-	17.2	9.5	65	7.4	40	10.5	98	-	14	-	-	9.33	-
		1800	28.10	-	90	3-5	N	13.9	9.5	65	7.5	38	10.3	96	-	-	-	.4	9.32	-
		1900	28.11	6	90	0-2	N	15.0	9.3	66	-	38	9.8	91	-	15	-	.4	9.33	-
		2000	28.12	5	75	0	-	13.9	9.1	66	7.4	36	9.8	90	-	-	-	.5	9.32	-
		2100	28.12	2	75	0	-	11.1	8.8	65	7.3	36	9.9	91	-	-	-	-	9.32	-
		2200	28.13	0	100	0	-	8.9	8.6	65	7.3	36	10.2	94	-	16	-	.5	9.30	-
	July 26, 1972	0200	28.14	0	100	0	-	3.3	7.6	65	7.4	34	9.8	87	-	13	-	.4	9.33	-
		0500	28.16	3	86	0	-	2.8	6.7	64	7.4	34	10.0	87	-	12	-	.4	9.33	-
		0730	28.14	74	25	0-3	ENE	11.7	6.6	64	7.3	36	10.8	94	-	14	-	.4	9.34	-
		0900	28.13	28	50	0-3	E	13.9	6.7	64	7.3	36	10.8	94	-	10	-	.5	9.32	-
		1000	28.12	64	40	0	-	18.3	7.0	64	7.4	34	10.9	96	-	15	-	.4	9.33	-
		1100	28.09	97	40	4-8	W	18.9	7.6	65	7.4	34	10.9	97	-	10	-	.4	9.32	52.8
		1200	28.09	106	60	0	-	21.1	8.1	65	7.4	36	10.9	98	-	10	-	.5	9.34	-
		1300	28.08	28	80	0	-	19.4	8.5	65	7.4	36	10.9	99	-	10	-	.4	9.30	-
		1400	28.08	74	80	0-5	S	21.7	9.1	65	7.4	38	10.9	100	-	-	-	.4	9.30	-
		1500	28.07	74	60	0	-	20.0	9.7	66	7.4	34	10.8	101	-	10	-	.4	9.30	-
		1600	28.06	106	60	0-3	ESE	23.9	10.2	65	7.5	38	10.7	101	-	10	-	.4	9.30	-
	Sept.20, 1972	1300	28.46	57	25	0-16	WNW	4.4	2.0	82	7.4	-	-	-	-	0	-	.2	9.15	-
		1400	28.44	48	20	6-17	WNW	3.9	2.1	82	7.4	-	11.6	88	-	0	-	.3	9.16	-
		1500	28.42	45	10	6-22	WNW	4.4	2.1	82	7.4	52	11.6	88	-	0	-	.2	9.16	-
		1600	28.40	48	5	6-10	WNW	3.3	2.2	82	7.4	-	11.6	89	-	0	-	.3	9.15	-
		1700	28.40	36	8	4-10	WNW	2.2	2.1	86	7.5	52	11.4	87	-	1	-	.3	9.15	-
		1800	28.40	1	15	9-17	WNW	1.1	2.1	86	7.4	-	11.1	85	-	1	-	.2	9.16	-
		1900	28.40	0	-	-	-	+0.6	2.0	86	7.4	-	11.1	85	-	0	-	.2	9.14	-
		2000	28.42	0	8	0-5	NNW	- .6	1.9	86	7.4	-	11.0	84	-	0	-	.3	9.14	-
		2100	28.42	0	0	3-6	NNW	-1.1	1.8	86	7.4	-	11.0	83	-	0	-	.3	9.16	-
	Sept.21, 1972	0500	28.37	0	0	0	-	-11.1	0.9	82	7.4	48	10.5	78	-	0	-	.3	9.14	-
		0610	28.34	0	0	0	-	-11.1	.8	82	7.4	-	11.0	81	-	0	-	.3	9.14	-
		0700	28.36	2	0	0	-	-10.6	.7	82	7.4	-	11.0	81	-	0	-	.3	9.12	-
		0800	28.35	41	0	0	-	-6.7	.6	82	7.5	-	11.0	81	-	0	-	.2	9.13	-
		1000	28.36	44	0	5-10	NNW	0.0	.8	82	7.5	-	11.1	82	-	2	-	.2	9.12	18.9
		1130	-	-	0	-	-	+1.7	1.1	84	7.5	-	11.2	83	-	-	-	-	9.13	-
		1300	28.34	50	0	8-4	NNW	2.2	1.4	86	7.5	50	11.2	84	-	0	-	.3	9.13	-
								Allison Creek near Valdez - Latitude 61°05'05", Longitude 146°21'11"												
69	May 22, 1972	1730	30.26	-	90	-	-	6.7	3.2	50	7.5	22	14.2	105	-	-	-	0.6	1.48	-
		2120	30.26	-	-	-	-	3.3	2.3	52	-	24	-	-	-	-	-	.4	1.47	-
	May 23, 1972	0200	30.28	-	100	-	-	3.9	2.4	50	7.5	22	14.4	104	-	-	-	.3	1.47	-
		0400	-	-	-	-	-	6.1	2.0	50	-	-	14.4	103	-	-	-	.4	1.47	-
		0815	30.28	64	80	8	S	6.1	2.6	50	7.5	20	14.3	104	-	-	-	.4	1.47	10.6
		1300	-	-	100	-	-	6.7	3.1	50	7.3	20	14.1	104	-	-	-	.4	1.47	-
		1715	30.24	30	80	4	S	11.7	3.2	53	7.5	22	14.1	105	-	-	-	.4	1.48	-
	July 24, 1972	1000	30.05	43	80	0	-	15.6	5.4	37	7.4	16	12.6	99	-	-	-	-	8.80	-
		1100	30.04	43	60	0	-	12.8	5.6	37	7.4	17	12.4	98	-	11	-	.4	8.80	-
		1200	30.03	106	20	0	-	13.3	5.9	37	7.4	16	12.5	100	-	10	-	-	8.86	-
		1300	30.00	64	80	0	-	15.0	6.3	37	7.4	16	12.3	99	-	-	-	-	8.84	-
		1600	29.98	84	20	7-9	NSW	20.6	6.8	37	7.4	18	12.1	99	-	11	-	.4	8.84	-
		1700	29.97	84	40	3-6	W	20.0	6.9	37	7.4	18	12.1	99	-	-	-	-	8.84	143
		1900	29.97	50	75	0	-	18.9	6.3	37	7.4	18	12.2	98	-	-	-	.3	8.80	-
		2230	29.99	0	90	0	-	10.6	5.5	37	7.4	16	12.5	99	-	-	-	.3	-	-
	July 25, 1972	0530	29.98	0	95	0	-	8.1	5.0	37	7.4	22	12.7	99	-	12	-	.3	8.81	-
		0600	29.97	0	99	0	-	8.3	5.1	37	7.4	20	12.6	98	-	12	-	-	8.80	-
		0720	29.99	3	100	0	-	8.4	5.2	37	7.4	18	12.5	98	-	10	-	.3	8.80	-
		0800	29.98	10	99	0	-	9.4	5.2	37	7.4	18	12.5	98	-	-	-	-	8.80	-
		0900	29.99	15	99	0	-	10.6	5.3	37	7.4	18	12.4	98	-	-	-	.3	8.80	-
		1000	29.99	36	85	0-2	NW	11.1	5.5	37	7.4	18	12.4	98	-	11	-	.3	8.80	-

Table 2.--*Diurnal 24-hour studies of water quality for 11 streams--Continued.*

Map no.	Date	Time	Barometric pressure (inches of mercury)	Reflected light (foot-candle)	Cloud cover (percent)	Wind speed (knots)	Wind direction	Air temperature (°C)	Water temperature (°C)	Conductance (µmhos at 25° C)	pH	Alkalinity (mg/l)	Dissolved oxygen (mg/l)	Dissolved oxygen Percent saturation	Water transparency (meters)	Turbidity (JTU) Field	Turbidity (JTU) Lab	Chlorophyll "a" (µg/l)	Stage (ft)	Discharge (cfs)
										Allison Creek near Valdez - Latitude 61°05'06", Longitude 146°23'13" -- Continued										
69	Sept.22, 1972	0700	30.18	0	20	0-3	ESE	3.9	2.6	46	7.7	20	12.6	92	-	10	-	0.3	8.81	-
		0800	30.20	5	40	0-4	SSE	5.3	2.7	46	7.7	22	12.7	93	-	11	-	.3	8.82	-
		1030	30.20	82	1	0-5	W	7.8	3.3	47	7.2	-	12.6	93	-	10	-	.3	8.81	-
		1100	30.20	53	2	2-8	W	8.3	3.5	38	-	20	12.6	95	-	11	-	.3	8.81	-
		1200	30.20	40	1	3-6	W	7.8	3.8	36	7.8	-	12.2	92	-	10	-	.3	-	-
		1530	30.20	41	0	0	-	15.0	4.3	36	7.7	-	12.2	93	-	10	-	.3	8.79	-
		1600	30.18	35	0	0	-	15.0	4.1	38	7.6	-	-	-	-	12	-	.4	8.78	39.9
		1730	30.20	38	10	0-4	SSE	7.8	3.9	38	7.6	20	12.4	94	-	13	-	.3	8.80	-
		1810	30.22	0	10	0-3	S	3.3	3.8	38	7.6	-	12.3	93	-	12	-	.3	8.80	-
		1910	30.24	0	0	0-1	S	-1.1	3.5	38	7.5	-	12.4	101	-	10	-	.3	8.79	-
		2000	30.24	0	0	0	-	-1.1	3.3	38	7.5	-	12.5	93	-	11	-	.3	8.80	-
		2100	30.28	0	0	0-2	SSW	-1.7	3.1	38	7.5	-	12.5	92	-	10	-	.3	8.79	-
		2200	30.28	0	0	0-2	SSW	-2.8	2.7	38	7.5	-	12.6	93	-	10	-	.4	8.79	-
	Sept.23, 1972	0500	30.24	0	0	0	-	-5.6	2.3	-	7.5	-	12.8	93	-	10	-	.3	8.79	-
		0600	30.32	0	0	0	-	-5.6	2.2	-	7.5	20	12.7	91	-	10	-	.2	8.78	-
		0700	30.34	3	5	0	-	-5.0	2.1	34	7.5	-	12.6	93	-	10	-	.2	8.78	-
		0800	30.34	-	50	0	-	-3.9	2.1	34	7.5	-	12.8	93	-	-	-	-	8.77	-

Table 3.--*Seasonal turbidity ranges, in Jackson turbidity units (JTU), measured on streams along the proposed trans-Alaska pipeline corridor.*

Map no.	Location	Winter Nov-Mar	Spring Apr-June	Summer July-Aug	Fall Sept-Oct	Number samples
1	Kuparuk R nr Deadhorse	2	-	-	-	1
2	Putuligayuk R nr Prudhoe Bay	-	0.5	1	1	3
3	Sagavanirktok R west channel at Prudhoe Bay	4	42*	4*-18*	-	4
4	Sagavanirktok R nr Sagwon	7	-	-	-	1
5	Happy Valley C ab camp	-	1	2	0.6	3
11	Galbraith Lake	1	10*	17*	-	3
17	Chandalar R nr Venetie	3	-	-	-	1
21	Kuyuktuvuk C Fourth Tr	0.5	-	-	-	1
22	Dettrick R main stream	0.5	<1-64	<1*-9*	-	9
23	Upper Lake nr confluence of Bettles and Dettrick R	3	-	-	-	1
25	NF Koyukuk R nr Wiseman	<1-3	1*-52	1*-4*	-	12
28	Wiseman C at Wiseman	<1	-	-	-	1
30	Slate C at Coldfoot	<1	0.5-4	0.5-11	<1	12
31	Prospect C nr Prospect Camp	<1-2	1-32	-	-	8
32	Jim R nr Bettles	0-<1	1-6	0.4*	-	10
33	Kanute R at pipeline crossing	0.4	-	1*	-	2
34	Yukon R at pipeline crossing	6-10	0*-2	48*	22*	7
34a	Yukon R at Ruby	1	-	110	50	3
34b	Yukon R at Eagle	-	35	75-160	1	4
36	Hess C nr Livengood	6-13	4	1-29*	12*-25	9
37	Tolovana R on Elliott Highway	4	4	-	-	3
39	Chatanika R at pipeline crossing	1	2*	3*-6*	4*	5
40	Caribou C nr Chatanika	3	2	-	-	2
42	Chena R bl pipeline crossing	-	3*-4	2*	-	3
42a	Chena R at Fairbanks	0.7-2.0	0.4-8	0	30	12
44	Salcha R nr Salchaket	1	<1*	1*-3*	1*	5
45	Minton C nr Salchaket	-	1*	3*	-	2
47	Shaw C nr Delta Junction	0.9	3-25	1-4	<1	6
49	Fish C nr Paxson	<1*-3	2-11	1-5*	1-2	12
53	Gulkana R bl pipeline crossing	<1*	46	1*-15	3*-19	8
55	Copper R at Gakona	-	88	-	-	1
55a	Copper R nr Chitina	30	-	180-510	25	6
56	Gakona R at Gakona	3	-	-	-	1
57	Tazlina R nr Glennallen	1*-21	-	40*-130	30-60	11
58	Pippin Lake nr Tonsina	3	-	-	-	1
59	Squirrel C at Tonsina	0.6-1*	-	1*-2*	1*	5
62	Little Tonsina R nr Tonsina	4	10	3	2-4*	7
64	Stuart C nr Tonsina	0.5-1	-	2*-4*	1*	5
65	Tsina R nr Tsaina Lodge	2	-	14*	11*	4
67	Lowe R nr Valdez	0.7-3	<1*	22*-56*	5	6
69	Allison C nr Valdez	2	-	3	13	3

< Less than.

* Unpublished data of Alaska Operations Office Region 10, Environmental Protection Agency.