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1990

STAR POINT MINES

ACT/007/006

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Annual Hydrologic Report

1990

Star Point Mines

Permit ACT/007/006

Volume I

Cyprus Plateau Mining Corporation
P.O. Drawer PMC
Price, Utah 84501

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SUMMARY

No significant trends were observed in the 1990 data except for station M-8. No impacts on spring or well flow or water quality were detected. The USGS-DOGM study of the North Fork of the Right Fork of Miller Creek, on which station M-8 lies, will be the subject of continuing study to determine mining impacts. No impacts on stream water quality were detected.

TABLES

TABLE I

SUMMARY OF MONITORING LOCATIONS

Station Name	Station Number	Location Twn	Rng	Sc	Quart.	Sampling Frequency Regular	1 Year
Underground Mine Related Flows							
Mine Discharge							
Mudwater Discharge	NSMUD	15S	8E	8	SWSWNW	X	
Mine Inflows							
1st West 4	1W4	15S	8E	7	SENWSE	X	
1st West North 6	1WN6	15S	8E	7	SWNWSW	X	
9th Left 12	9L12	15S	7E	13	NESENE	X	
Sediment Ponds							
Treatment Site 1	NSP1	15S	8E	16	NWNWNW	X	
Sediment Pond 2	NSP2	15S	8E	16	NWNENE	X	
Sediment Pond 3	NSP3	15S	8E	16	SESWNE	X	
Sediment Pond 4	NSP4	15S	8E	10	SENESW	X	
Sediment Pond 5	NSP5	15S	8E	15	NWNWNE	X	
Sediment Pond 6	NSP6	15S	8E	10	NESESE	X	
Sediment Pond 7	NSP7	15S	8E	10	SENESE	X	
Sediment Pond 8	NSP8	15S	8E	15	SWNENE	X	
Sediment Pond 9	NSP9	15S	8E	15	NESESW	X	
Water Tank Discharge	NSTNK	15S	8E	16	NENENE	X	
Wells (Blackhawk Formation)							
85-35-1 Tie Fork	85351	15S	7E	35	SENWSW	X	
86-35-2 Lower City*	86352	15S	7E	35	NWSW	X	
86-35-3 Upper City*	86353	15S	7E	35	NWSW	X	
86-35-2-3	863523	15S	7E	35	NWSW		X
86-18-2	86182	15S	8E	18	SENW	X	
P-86-01-TD (U.G.)	P8601TD	15S	8E	07	SWSE	X	
P-86-02-HD (U.G.)	P8602HD	15S	7E	12	SESE	X	
P-86-03-WD (U.G.)	P8603WD	15S	7E	13	SENE	X	
86-26-6	86266	15S	7E	26	NWSE	X	
Well (North Horn Formation)							
86-26-4	86264	15S	7E	26	NWSE	X	

Note: *86-35-2-3 (863523) is combined flow from 86-35-2 and 86-35-3

TABLE I
(continued)

SUMMARY OF MONITORING LOCATIONS

Frequency Station Name Year Springs	Station Number	Location Twn	Rng	Sc	Quart.	Sampling Regular	1
Blackhawk Formation							
530	530	15S	7E	11	SWNW	X	
Castlegate Sandstone							
238	238	15S	8E	18	SWNW	X	
494	494	15S	8E	18	NENW	X	
492	492	15S	8E	7	SESW	X	
Price River Formation							
S14-9	S149	15S	7E	15	NESESE	X	
S18-2	S182	15S	8E	18	SENWNE	X	
229	229	15S	8E	18	SWNW	X	
500	500	15S	7E	26	NWNESW		X
North Horn Formation							
S11-1	S111	15S	7E	11	SESWNE	X	
232	232	15S	7E	13	NENENE	X	
429	429	15S	7E	14	NWSW		X
444	444	15S	7E	15	NESE		X
518	518	15S	7E	14	SESENE	X	
748 Gentry Spring	748	15S	7E	14	SESWNE	X	
749 West Gentry Spring	749	15S	7E	14	SWNWSW	X	
751 Gentry Pasture Sp.	751	15S	7E	14	SENENE	X	
753	753	15S	7E	13	SENWNE	X	
971	971	15S	7E	12	SWSE	X	
978 Humble Pond Spring	978	15S	7E	13	NENWSE	X	
85-26-1	85261	15S	7E	26	SWSESW	X	

TABLE I
(continued)

SUMMARY OF MONITORING LOCATIONS

Frequency Year	Station Name	Station Number	Location Twn	Rng	Sc	Quart.	Sampling Regular	1
Streams								
5-1	Mud Water Creek	51MW	14S	8E	29	NENENE	X	
10-1	Sage Brush Canyon	101	15S	8E	10	SWNWSE	X	
34-1	Wild Cattle Hollow	341	15S	7E	34	NWSESE	x	
34-2	Gentry Hollow Creek	342	15S	7E	34	NWSESE	X	
36-1	So. Fk. Corner Cyn.	361	14S	7E	36	SENESW	X	
ST-1	No. Fk. of Rt. Fk. Miller Creek	ST1	15S	8E	20	SWSWNE	X	
ST-2	So. Fk. of Rt. Fk. Miller Creek	ST2	15S	8E	20	SWSWNE	X	
M-8	No. Fk. of Rt. Fk. Miller Creek	M8	15S	8E	18	NESE	X	

TABLE 2
WATER QUALITY PARAMETER LIST
SURFACE WATERS, SPRINGS, MINE INFLOWS, GROUND WATERS

Parameter	Units	All	Annual	
Field				
Temperature	Deg. C	x	x	
Conductivity	umhos/cm	x	x	
pH	pH units	x	x	
Laboratory				
Acidity	mg/L as CaCO3	x	x	
Alkalinity	mg/L as CaCO3	x	x	
Conductivity	umhos/cm	x	x	
pH	pH units	x	x	
Solids, dissolved	mg/L	x	x	
Solids, suspended	mg/L	x	x	not for ground water
SAR	-			
Sulphide	mg/L as S	x	x	
Calcium	mg/L	x	x	
Magnesium	mg/L	x	x	
Sodium	mg/L	x	x	
Potassium	mg/L	x	x	
Bicarbonate	mg/L as HCO3	x	x	
Carbonate	mg/L as CO3	x	x	
Chloride	mg/L	x	x	
Sulphate	mg/L	x	x	
Arsenic, diss.	ug/L		x	
Barium, diss.	ug/L		x	
Cadmium, diss.	ug/L		x	
Chromium, total	ug/L		x	
Lead, total	ug/L	x	x	
Mercury, total	ug/L		x	
Selenium, total	ug/L		x	
Copper, total	ug/L		x	
Iron, dissolved	ug/L	x	x	
Iron, total	ug/L		x	
Manganese, dissolved	ug/L	x	x	
Manganese, total	ug/L		x	
Zinc, total	ug/L	x	x	
Aluminum, diss.	ug/L	x	x	
Boron, total	ug/L		x	
Molybdenum, diss.	ug/L	x	x	
Nickel, total	ug/L		x	
Nitrogen, nitrate	mg/L as N	x	x	
Nitrogen, nitrite	mg/L as N	x	x	
Oil & Grease mg/L		x	x	
Phosphorus, total	mg/L as P		x	

TABLE 3

WATER QUALITY PARAMETER LIST
NPDES DISCHARGE POINTS

Laboratory

Parameter	Units
Solids, dissolved	mg/L
Solids, suspended	mg/L
Solids, settleable	ml/L
Oil & grease	mg/L
Iron, total	ug/L
Manganese, total	ug/L
Manganese, dissolved	ug/L

TABLE 4

WATER QUALITY MONITORING DATA - FIELD DATA

DATE: 02/13/91

BLACKHAWK FORMATION WELLS AND SPRINGS, 1990

STATION NUMBER	DATE	TIME HH:MM	AIR TEMP. DEG. C	WATER DEPTH FEET	FLOW RATE	UNIT	TEMP DEG C	EC FIELD UMHOS/CM	PH FLD	TURB. FIELD NTU	OIL+GR VISBL. 1=Y 2=N	DO MG/L
				WELLS								
85351	06/02/90	12:30			0.0450	CFS	11.0	600.0	7.0			
85351	07/06/90	13:15			0.0270	CFS	10.0	620.0	7.3			
85351	08/22/90	9:10			0.0270	CFS	10.0	570.0	7.5			
85351	09/24/90	11:15			0.0180	CFS	7.0	510.0	8.2			
863523	06/02/90	12:20			0.2090	CFS	9.0	610.0	7.4			
863523	07/06/90	13:15			0.2040	CFS	10.0	600.0	7.4			
863523	08/22/90	9:00			0.2030	CFS	8.0	530.0	8.5			
863523	09/24/90	11:00			0.2000	CFS	6.0	520.0	7.4			
				SPRINGS								
530	06/02/90	10:30			0.0070	CFS	6.0	560.0	7.5			
530	08/22/90	15:15			0.0020	CFS	11.0	530.0	8.4			
530	10/03/90	14:00			0.0050	CFS	6.0	470.0	8.0			

WATER LEVEL OF 0.001 = 0, FLOW RATE OF 0.0001 = 0
NEGATIVE WATER LEVEL IN A WELL IS ABOVE GROUND SURFACE

TABLE 5

SUMMARY OF WATER QUALITY DATA

BLACKHAWK FORMATION WELLS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	10.060	1.701	14.200	6.000	DEGREES C	40	9/85- 9/90
CONDUCTIVITY	FIELD	522.538	118.914	820.000	255.000	UMHOS/CM	39	10/86- 9/90
CONDUCTIVITY	LAB	590.782	72.524	679.000	315.000	UMHOS/CM	23	8/85- 9/87
PH	FIELD	7.462	0.387	8.540	6.820	PH	36	6/87- 9/90
PH	LAB	7.533	0.339	8.070	6.800	PH	20	8/85- 8/87
EH	FIELD	<7.800	4.063	<12.400	<4.700	MILLIVOLTS	3	6/87
ALKALINITY	TOTAL	277.097	23.333	312.000	182.000	MG/L	41	8/85- 9/90
ACIDITY	AS CACO3	<1.000	0.000	<1.000	0.000	MG/L	23	8/85- 9/89
HARDNESS	TOTAL	327.193	32.610	379.000	250.000	MG/L	31	4/86- 9/90
SOLIDS	DISSOLVED	330.219	23.153	374.000	288.000	MG/L	41	8/85- 9/90
SOLIDS	SUSPENDED	<1.900	1.387	3.500	<0.500	MG/L	5	8/85- 4/86
SAR		0.083	0.014	0.115	0.049		38	8/85- 9/90
CATIONS								
CALCIUM	DISSOLVED	75.600	13.262	96.000	46.000	MG/L	30	6/87- 9/90
CALCIUM	TOTAL	77.454	7.047	84.000	62.000	MG/L	11	8/85-10/86
MAGNESIUM	DISSOLVED	33.500	2.239	38.000	30.000	MG/L	30	6/87- 9/90
MAGNESIUM	TOTAL	31.709	1.497	34.000	29.000	MG/L	11	8/85-10/86
SODIUM	DISSOLVED	3.500	0.682	5.000	2.000	MG/L	30	6/87- 9/90
SODIUM	TOTAL	3.409	0.364	4.000	3.000	MG/L	11	8/85-10/86
POTASSIUM	DISSOLVED	2.033	0.490	3.000	1.000	MG/L	30	6/87- 9/90
POTASSIUM	TOTAL	2.027	0.445	2.800	1.000	MG/L	11	8/85-10/86
ANIONS								
BICARBONATE	AS HCO3	341.097	21.553	381.000	281.000	MG/L	41	8/85- 9/90
CARBONATE	AS CO3	<1.000	0.000	<1.000	<1.000	MG/L	7	8/85-10/86
CHLORIDE		3.787	0.938	6.000	2.000	MG/L	41	8/85- 9/90
SULFATE		39.804	7.698	55.000	19.000	MG/L	41	8/85- 9/90

U = MICRO
WELLS 85-35-1 AND 86-35-23 (COMBINED FLOW FROM 86-35-2 & 86-35-3)

TABLE 5 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

BLACKHAWK FORMATION WELLS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
MINOR								
FLUORIDE		0.291	0.151	0.500	0.110	MG/L	10	4/86- 8/87
GASES								
SULPHIDE	TOTAL	<0.208	0.028	0.300	<0.200	MG/L	12	6/87- 9/87
PRIMARY								
ARSENIC	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	9	6/87- 8/87
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	7	8/85-10/86
BARIUM	DISSOLVED	55.555	8.819	70.000	40.000	UG/L	9	6/87- 8/87
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	7	8/85-10/86
CADMIUM	DISSOLVED	<5.222	0.666	7.000	<5.000	UG/L	9	6/87- 8/87
CADMIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	7	8/85-10/86
CHROMIUM	TOTAL-TOTA	<27.500	20.493	<50.000	<10.000	UG/L	16	8/85- 8/87
LEAD	TOTAL	<31.052	14.867	<50.000	<20.000	UG/L	19	8/85- 9/87
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	16	8/85- 8/87
SELENIUM	TOTAL	<2.750	2.049	<5.000	<1.000	UG/L	16	8/85- 8/87
SECONDARY								
COPPER	TOTAL	<16.250	6.191	30.000	<10.000	UG/L	16	8/85- 8/87
ZINC	TOTAL	<13.315	13.017	60.000	<5.000	UG/L	19	8/85- 9/87
IRON	DISSOLVED	<126.585	222.222	840.000	<20.000	UG/L	41	8/85- 9/90
IRON	TOTAL	<648.780	792.629	3050.000	20.000	UG/L	41	8/85- 9/90
MANGANESE	DISSOLVED	<17.142	9.873	40.000	<10.000	UG/L	35	8/85- 9/90
MANGANESE	TOTAL	<23.902	24.786	160.000	<10.000	UG/L	41	8/85- 9/90

U = MICRO
WELLS 85-35-1 AND 86-35-23 (COMBINED FLOW FROM 86-35-2 & 86-35-3)

TABLE 5 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

BLACKHAWK FORMATION WELLS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	3	9/87
ALUMINUM	TOTAL	<75.555	45.582	160.000	<50.000	UG/L	9	6/87- 8/87
BORON	DISSOLVED	<16.666	5.000	<20.000	<10.000	UG/L	9	6/87- 8/87
BORON	TOTAL	135.714	45.039	190.000	90.000	UG/L	7	8/85-10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	3	9/87
MOLYBDENUM	TOTAL	<50.000	0.000	<50.000	<50.000	UG/L	9	6/87- 8/87
NICKEL	TOTAL	<34.375	15.478	70.000	<20.000	UG/L	16	8/85- 8/87
NUTRIENTS								
NITROGEN	AMMIUM-TOT	<0.041	0.023	0.090	<0.020	MG/L	9	6/87- 8/87
NITROGEN	NITRATE	<0.050	0.041	0.140	<0.010	MG/L	19	8/85- 9/87
NITROGEN	NITRITE	<0.010	0.000	<0.010	<0.010	MG/L	3	6/87
NITROGEN	KJELDAHL	0.074	0.029	0.130	0.050	MG/L	7	8/85-10/86
NITROGEN	NO3+NO2	<0.050	0.043	0.140	<0.020	MG/L	12	6/87- 9/87
PHOSPHATE	TOTAL-TOTA	0.082	0.028	0.110	0.040	MG/L	7	8/85-10/86
PHOSPHATE	ORTHO-DISS	<0.010	0.000	<0.010	<0.010	MG/L	9	6/87- 8/87
ORGANICS								
OIL&GREASE		<1.077	0.717	2.100	<0.500	MG/L	9	8/85-10/86

U = MICRO
WELLS 85-35-1 AND 86-35-23 (COMBINED FLOW FROM 86-35-2 & 86-35-3)

TABLE 6

SUMMARY OF WATER QUALITY DATA
1990
BLACKHAWK FORMATION WELLS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	8.875	1.726	11.000	6.000	DEGREES C	8	6/90- 9/90
CONDUCTIVITY	FIELD	570.000	44.077	620.000	510.000	UMHOS/CM	8	6/90- 9/90
PH	FIELD	7.590	0.508	8.540	7.020	PH	8	6/90- 9/90
ALKALINITY	TOTAL	298.333	9.157	312.000	287.000	MG/L	6	6/90- 9/90
HARDNESS	TOTAL	347.833	22.807	379.000	316.000	MG/L	6	6/90- 9/90
SOLIDS	DISSOLVED	357.000	12.049	374.000	342.000	MG/L	6	6/90- 9/90
SAR		0.077	0.013	0.098	0.067		6	6/90- 9/90
CATIONS								
CALCIUM	DISSOLVED	87.166	7.250	96.000	77.000	MG/L	6	6/90- 9/90
MAGNESIUM	DISSOLVED	31.666	1.505	34.000	30.000	MG/L	6	6/90- 9/90
SODIUM	DISSOLVED	3.333	0.516	4.000	3.000	MG/L	6	6/90- 9/90
POTASSIUM	DISSOLVED	1.833	0.408	2.000	1.000	MG/L	6	6/90- 9/90
ANIONS								
BICARBONATE	AS HCO3	363.833	11.409	381.000	350.000	MG/L	6	6/90- 9/90
CHLORIDE		4.000	0.894	5.000	3.000	MG/L	6	6/90- 9/90
SULFATE		36.333	10.092	49.000	23.000	MG/L	6	6/90- 9/90
SECONDARY								
IRON	DISSOLVED	<166.666	298.641	770.000	<20.000	UG/L	6	6/90- 9/90
IRON	TOTAL	556.666	409.959	970.000	40.000	UG/L	6	6/90- 9/90
MANGANESE	DISSOLVED	<16.666	8.164	30.000	<10.000	UG/L	6	6/90- 9/90
MANGANESE	TOTAL	<20.000	10.954	30.000	<10.000	UG/L	6	6/90- 9/90

U = MICRO
WELLS 85-35-1 AND 86-35-23 (COMBINED FLOW FROM 86-35-2 & 86-35-3)

TABLE 7

SUMMARY OF WATER QUALITY DATA

SPRING 530, BLACKHAWK FORMATION

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	8.643	2.562	13.000	5.500	DEGREES C	16	10/86-10/90
CONDUCTIVITY	FIELD	503.375	155.859	920.000	230.000	UMHOS/CM	16	10/86-10/90
CONDUCTIVITY	LAB	560.666	68.061	627.000	491.000	UMHOS/CM	3	10/86- 9/87
PH	FIELD	7.978	0.349	8.360	7.280	PH	15	5/87-10/90
PH	LAB	7.785	0.403	8.070	7.500	PH	2	10/86- 8/87
EH	FIELD	<25.600	0.000	<25.600	<25.600	MILLIVOLTS	1	5/87
ALKALINITY	TOTAL	256.181	12.270	273.000	239.000	MG/L	11	10/86-10/90
ACIDITY	AS CACO3	<1.000	0.000	<1.000	0.000	MG/L	4	10/86- 9/89
HARDNESS	TOTAL	299.444	29.077	337.000	238.000	MG/L	9	8/87-10/90
SOLIDS	DISSOLVED	306.400	19.340	344.000	276.000	MG/L	10	10/86-10/90
SOLIDS	SUSPENDED	1.000	0.000	1.000	1.000	MG/L	1	10/86
SAR		0.127	0.014	0.152	0.105		11	10/86-10/90
CATIONS								
CALCIUM	DISSOLVED	69.900	13.118	85.000	41.000	MG/L	10	8/87-10/90
CALCIUM	TOTAL	66.000	0.000	66.000	66.000	MG/L	1	10/86
MAGNESIUM	DISSOLVED	31.444	1.589	33.000	29.000	MG/L	9	8/87-10/90
MAGNESIUM	TOTAL	31.100	2.687	33.000	29.200	MG/L	2	10/86- 6/88
SODIUM	DISSOLVED	5.000	0.471	6.000	4.000	MG/L	10	8/87-10/90
SODIUM	TOTAL	5.900	0.000	5.900	5.900	MG/L	1	10/86
POTASSIUM	DISSOLVED	<1.000	0.000	1.000	<1.000	MG/L	10	8/87-10/90
POTASSIUM	TOTAL	1.900	0.000	1.900	1.900	MG/L	1	10/86
ANIONS								
BICARBONATE	AS HCO3	312.363	14.451	333.000	292.000	MG/L	11	10/86-10/90
CARBONATE	AS CO3	<1.500	0.707	2.000	<1.000	MG/L	2	10/86- 6/90
CHLORIDE		4.945	1.128	7.400	3.000	MG/L	11	10/86-10/90
SULFATE		28.000	6.082	40.000	21.000	MG/L	11	10/86-10/90

U = MICRO

TABLE 7 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

SPRING 530, BLACKHAWK FORMATION

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
MINOR								
FLUORIDE		0.175	0.095	0.300	0.100	MG/L	4	8/87- 9/88
GASES								
SULPHIDE	TOTAL	<0.184	0.101	0.300	0.020	MG/L	5	8/87- 9/88
PRIMARY								
ARSENIC	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	4	8/87- 9/88
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	1	10/86
BARIUM	DISSOLVED	60.000	35.590	110.000	30.000	UG/L	4	8/87- 9/88
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	1	10/86
CADMIUM	DISSOLVED	<5.000	0.000	<5.000	<5.000	UG/L	4	8/87- 9/88
CADMIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	1	10/86
CHROMIUM	TOTAL-DISS	<10.000	0.000	<10.000	<10.000	UG/L	3	6/88- 9/88
CHROMIUM	TOTAL-TOTA	<30.000	28.284	<50.000	<10.000	UG/L	2	10/86- 8/87
LEAD	TOTAL	<25.000	12.247	<50.000	<20.000	UG/L	6	10/86- 9/88
MERCURY	DISSOLVED	<0.133	0.057	<0.200	<0.100	UG/L	3	6/88- 9/88
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	2	10/86- 8/87
SELENIUM	DISSOLVED	1.000	0.000	1.000	1.000	UG/L	3	6/88- 9/88
SELENIUM	TOTAL	<3.000	2.828	<5.000	1.000	UG/L	2	10/86- 8/87

U = MICRO

TABLE 7 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

SPRING 530, BLACKHAWK FORMATION

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
SECONDARY								
COPPER	DISSOLVED	<10.000	0.000	10.000	<10.000	UG/L	3	6/88- 9/88
COPPER	TOTAL	<20.000	0.000	20.000	<20.000	UG/L	2	10/86- 8/87
ZINC	TOTAL	<13.166	7.756	29.000	<10.000	UG/L	6	10/86- 9/88
IRON	DISSOLVED	<22.727	9.045	<50.000	<20.000	UG/L	11	10/86-10/90
IRON	TOTAL	<129.090	183.926	660.000	<20.000	UG/L	11	10/86-10/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	8	10/86-10/90
MANGANESE	TOTAL	<11.818	6.030	30.000	<10.000	UG/L	11	10/86-10/90
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	4	9/87- 9/88
ALUMINUM	TOTAL	<50.000	0.000	<50.000	<50.000	UG/L	1	8/87
BORON	DISSOLVED	<45.000	50.000	120.000	<20.000	UG/L	4	8/87- 9/88
BORON	TOTAL	100.000	0.000	100.000	100.000	UG/L	1	10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	4	9/87- 9/88
MOLYBDENUM	TOTAL	<50.000	0.000	<50.000	<50.000	UG/L	1	8/87
NICKEL	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	3	6/88- 9/88
NICKEL	TOTAL	<30.000	14.142	<40.000	<20.000	UG/L	2	10/86- 8/87
NUTRIENTS								
NITROGEN	AMMIUM-TOT	<0.022	0.005	0.030	<0.020	MG/L	4	8/87- 9/88
NITROGEN	AMMIA-FREE	<0.001	0.000	<0.001	<0.001	MG/L	3	6/88- 9/88
NITROGEN	NITRATE	1.213	0.590	1.670	0.080	MG/L	6	10/86- 9/88
NITROGEN	KJELDAHL	0.110	0.000	0.110	0.110	MG/L	1	10/86
NITROGEN	NO3+NO2	1.436	0.225	1.670	1.120	MG/L	5	8/87- 9/88
PHOSPHATE	TOTAL-DISS	<0.010	0.000	<0.010	<0.010	MG/L	1	7/88
PHOSPHATE	TOTAL-TOTA	0.090	0.000	0.090	0.090	MG/L	1	10/86
PHOSPHATE	ORTHO-DISS	<0.013	0.005	0.020	<0.010	MG/L	3	8/87- 9/88

U = MICRO

TABLE 7 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

SPRING 530, BLACKHAWK FORMATION

PARAMETER	MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ORGANICS							
OIL&GREASE	<0.500	0.000	<0.500	<0.500	MG/L	1	10/86

U = MICRO

TABLE 8

SUMMARY OF WATER QUALITY DATA
1990
SPRING 530, BLACKHAWK FORMATION

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	7.666	2.886	11.000	6.000	DEGREES C	3	6/90-10/90
CONDUCTIVITY	FIELD	520.000	45.825	560.000	470.000	UMHOS/CM	3	6/90-10/90
PH	FIELD	7.940	0.425	8.360	7.510	PH	3	6/90-10/90
ALKALINITY	TOTAL	271.500	2.121	273.000	270.000	MG/L	2	6/90-10/90
HARDNESS	TOTAL	312.000	19.798	326.000	298.000	MG/L	2	6/90-10/90
SOLIDS	DISSOLVED	331.000	18.384	344.000	318.000	MG/L	2	6/90-10/90
SAR		0.123	0.004	0.126	0.120		2	6/90-10/90
CATIONS								
CALCIUM	DISSOLVED	76.500	9.192	83.000	70.000	MG/L	2	6/90-10/90
MAGNESIUM	DISSOLVED	29.500	0.707	30.000	29.000	MG/L	2	6/90-10/90
SODIUM	DISSOLVED	5.000	0.000	5.000	5.000	MG/L	2	6/90-10/90
POTASSIUM	DISSOLVED	<1.000	0.000	<1.000	<1.000	MG/L	2	6/90-10/90
ANIONS								
BICARBONATE	AS HCO3	329.000	5.656	333.000	325.000	MG/L	2	6/90-10/90
CARBONATE	AS CO3	2.000	0.000	2.000	2.000	MG/L	1	6/90
CHLORIDE		4.000	0.000	4.000	4.000	MG/L	2	6/90-10/90
SULFATE		32.000	9.899	39.000	25.000	MG/L	2	6/90-10/90
SECONDARY								
IRON	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	2	6/90-10/90
IRON	TOTAL	365.000	417.193	660.000	70.000	UG/L	2	6/90-10/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	2	6/90-10/90
MANGANESE	TOTAL	<20.000	14.142	30.000	<10.000	UG/L	2	6/90-10/90

U = MICRO

TABLE 9
WATER QUALITY MONITORING DATA - FIELD DATA
CASTLEGATE SANDSTONE SPRINGS, 1990

DATE: 02/13/91

STATION NUMBER	DATE	TIME HH:MM	AIR TEMP. DEG. C	WATER DEPTH FEET	FLOW RATE	UNIT	TEMP DEG C	EC FIELD UMHOS/CM	PH FLD	TURB. FIELD NTU	OIL+GR VISBL. 1=Y 2=N	DO MG/L
238	05/30/90	15:15			0.0270	CFS	6.0	400.0	7.2			
238	07/06/90	14:30			0.0080	CFS	7.0	420.0	7.6			
238	08/22/90	14:00			0.0070	CFS	7.0	370.0	8.6			
238	09/24/90	9:30			0.0110	CFS	7.0	340.0	7.6			
492	06/04/90	10:10			0.0030	CFS	4.0	390.0	7.5			
492	07/07/90	7:55			0.0040	CFS	5.0	440.0	8.0			
492	08/30/90	11:00			0.0030	CFS	5.0	450.0	8.0			
492	09/18/90	9:15			0.0020	CFS	5.0	370.0	8.3			
494	06/04/90	10:30			0.0030	CFS	11.0	450.0	7.7			
494	09/18/90	10:00			0.0020	CFS	6.0	450.0	8.3			

WATER LEVEL OF 0.001 = 0, FLOW RATE OF 0.0001 = 0
NEGATIVE WATER LEVEL IN A WELL IS ABOVE GROUND SURFACE

TABLE 10

SUMMARY OF WATER QUALITY DATA

CASTLEGATE SANDSTONE SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	7.206	2.721	16.000	4.000	DEGREES C	30	10/87- 9/90
CONDUCTIVITY	FIELD	361.033	84.985	525.000	180.000	UMHOS/CM	30	10/87- 9/90
PH	FIELD	8.085	0.402	8.720	7.180	PH	30	10/87- 9/90
ALKALINITY	TOTAL	179.600	22.051	227.000	124.000	MG/L	20	10/87- 9/90
ACIDITY	AS CACO3	0.000	0.000	0.000	0.000	MG/L	1	5/90
HARDNESS	TOTAL	206.444	30.376	270.000	142.000	MG/L	18	10/87- 9/90
SOLIDS	DISSOLVED	222.300	23.263	270.000	190.000	MG/L	20	10/87- 9/90
SAR		0.070	0.027	0.120	0.028		20	10/87- 9/90
CATIONS								
CALCIUM	DISSOLVED	57.200	9.023	77.000	42.000	MG/L	20	10/87- 9/90
MAGNESIUM	DISSOLVED	16.055	4.783	25.000	9.000	MG/L	18	10/87- 9/90
MAGNESIUM	TOTAL	13.500	0.707	14.000	13.000	MG/L	2	6/88
SODIUM	DISSOLVED	2.350	0.988	4.000	1.000	MG/L	20	10/87- 9/90
POTASSIUM	DISSOLVED	<1.050	0.223	2.000	<1.000	MG/L	20	10/87- 9/90
ANIONS								
BICARBONATE	AS HCO3	220.100	26.928	277.000	151.000	MG/L	20	10/87- 9/90
CARBONATE	AS CO3	4.000	2.000	6.000	2.000	MG/L	3	9/89- 7/90
CHLORIDE		<2.050	1.050	4.000	<1.000	MG/L	20	10/87- 9/90
SULFATE		18.100	13.404	41.000	2.000	MG/L	20	10/87- 9/90
MINOR								
FLUORIDE		<0.121	0.042	0.200	<0.100	MG/L	14	6/88- 9/90

U = MICRO
SPRINGS 238, 492 AND 494

TABLE 10 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

CASTLEGATE SANDSTONE SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
GASES								
SULPHIDE	TOTAL	<0.118	0.169	0.500	<0.010	MG/L	16	10/87- 9/90
PRIMARY								
ARSENIC	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	14	6/88- 9/90
BARIUM	DISSOLVED	67.857	73.920	260.000	10.000	UG/L	14	6/88- 9/90
CADMIUM	DISSOLVED	<5.928	1.899	<10.000	<5.000	UG/L	14	6/88- 9/90
CHROMIUM	TOTAL-DISS	<10.000	0.000	<10.000	<10.000	UG/L	14	6/88- 9/90
LEAD	TOTAL	<21.875	7.500	<50.000	20.000	UG/L	16	10/87- 9/90
MERCURY	DISSOLVED	<0.100	0.000	<0.100	<0.100	UG/L	14	6/88- 9/90
SELENIUM	DISSOLVED	<1.071	0.267	2.000	<1.000	UG/L	14	6/88- 9/90
SECONDARY								
COPPER	DISSOLVED	<10.000	0.000	10.000	<10.000	UG/L	14	6/88- 9/90
ZINC	TOTAL	<16.250	9.574	40.000	<10.000	UG/L	16	10/87- 9/90
IRON	DISSOLVED	<35.500	45.128	220.000	<20.000	UG/L	20	10/87- 9/90
IRON	TOTAL	<343.000	373.871	1360.000	<20.000	UG/L	20	10/87- 9/90
MANGANESE	DISSOLVED	<10.000	0.000	10.000	<10.000	UG/L	14	10/87- 9/90
MANGANESE	TOTAL	<12.500	5.501	30.000	<10.000	UG/L	20	10/87- 9/90
TRACE METALS								
ALUMINUM	DISSOLVED	<50.625	2.500	60.000	<50.000	UG/L	16	10/87- 9/90
BORON	DISSOLVED	<20.714	2.672	30.000	<20.000	UG/L	14	6/88- 9/90
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	16	10/87- 9/90
NICKEL	DISSOLVED	<20.000	0.000	20.000	<20.000	UG/L	14	6/88- 9/90

U = MICRO
SPRINGS 238, 492 AND 494

TABLE 11

SUMMARY OF WATER QUALITY DATA
1990
CASTLEGATE SANDSTONE SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	6.300	1.946	11.000	4.000	DEGREES C	10	5/90- 9/90
CONDUCTIVITY	FIELD	408.000	39.944	450.000	340.000	UMHOS/CM	10	5/90- 9/90
PH	FIELD	7.867	0.435	8.580	7.180	PH	10	5/90- 9/90
ALKALINITY	TOTAL	181.833	11.016	190.000	161.000	MG/L	6	5/90- 9/90
ACIDITY	AS CACO3	0.000	0.000	0.000	0.000	MG/L	1	5/90
HARDNESS	TOTAL	203.000	14.899	226.000	183.000	MG/L	6	5/90- 9/90
SOLIDS	DISSOLVED	219.666	13.231	236.000	200.000	MG/L	6	5/90- 9/90
SAR		0.071	0.030	0.120	0.029		6	5/90- 9/90
CATIONS								
CALCIUM	DISSOLVED	57.666	8.547	69.000	47.000	MG/L	6	5/90- 9/90
MAGNESIUM	DISSOLVED	14.333	3.265	19.000	10.000	MG/L	6	5/90- 9/90
SODIUM	DISSOLVED	2.333	1.032	4.000	1.000	MG/L	6	5/90- 9/90
POTASSIUM	DISSOLVED	<1.000	0.000	1.000	<1.000	MG/L	6	5/90- 9/90
ANIONS								
BICARBONATE	AS HCO3	225.833	11.923	240.000	205.000	MG/L	6	5/90- 9/90
CARBONATE	AS CO3	5.000	1.414	6.000	4.000	MG/L	2	5/90- 7/90
CHLORIDE		2.166	0.752	3.000	1.000	MG/L	6	5/90- 9/90
SULFATE		19.500	15.706	35.000	2.000	MG/L	6	5/90- 9/90
MINOR								
FLUORIDE		<0.150	0.070	0.200	<0.100	MG/L	2	6/90- 9/90

U = MICRO
SPRINGS 238, 492 AND 494

TABLE 11 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
CASTLEGATE SANDSTONE SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
GASES								
SULPHIDE	TOTAL	<0.010	0.000	<0.010	<0.010	MG/L	2	6/90- 9/90
PRIMARY								
ARSENIC	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	2	6/90- 9/90
BARIUM	DISSOLVED	20.000	0.000	20.000	20.000	UG/L	2	6/90- 9/90
CADMIUM	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	2	6/90- 9/90
CHROMIUM	TOTAL-DISS	<10.000	0.000	<10.000	<10.000	UG/L	2	6/90- 9/90
LEAD	TOTAL	<35.000	21.213	<50.000	<20.000	UG/L	2	6/90- 9/90
MERCURY	DISSOLVED	<0.100	0.000	<0.100	<0.100	UG/L	2	6/90- 9/90
SELENIUM	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	2	6/90- 9/90
SECONDARY								
COPPER	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	2	6/90- 9/90
ZINC	TOTAL	15.000	7.071	20.000	10.000	UG/L	2	6/90- 9/90
IRON	DISSOLVED	<30.000	20.000	70.000	<20.000	UG/L	6	5/90- 9/90
IRON	TOTAL	205.000	190.236	580.000	70.000	UG/L	6	5/90- 9/90
MANGANESE	DISSOLVED	<10.000	0.000	10.000	<10.000	UG/L	6	5/90- 9/90
MANGANESE	TOTAL	<11.666	4.082	20.000	<10.000	UG/L	6	5/90- 9/90
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	2	6/90- 9/90
BORON	DISSOLVED	<25.000	7.071	30.000	<20.000	UG/L	2	6/90- 9/90
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	2	6/90- 9/90
NICKEL	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	2	6/90- 9/90

U = MICRO
SPRINGS 238, 492 AND 494

TABLE 11 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
CASTLEGATE SANDSTONE SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
NUTRIENTS								
NITROGEN	AMMIUM-TOT	0.060	0.000	0.060	0.060	MG/L	2	6/90- 9/90
NITROGEN	AMMIA-FREE	<0.001	0.000	0.001	<0.001	MG/L	2	6/90- 9/90
NITROGEN	NITRATE	2.530	0.113	2.610	2.450	MG/L	2	6/90- 9/90
NITROGEN	NO3+NO2	2.620	0.254	2.800	2.440	MG/L	2	6/90- 9/90
PHOSPHATE	ORTHO-DISS	0.015	0.010	0.023	0.008	MG/L	2	6/90- 9/90

U = MICRO
SPRINGS 238, 492 AND 494

TABLE 12

WATER QUALITY MONITORING DATA - FIELD DATA

PRICE RIVER FORMATION SPRINGS, 1990

DATE: 02/13/91

STATION NUMBER	DATE	TIME HH:MM	AIR TEMP. DEG. C	WATER DEPTH FEET	FLOW RATE	UNIT	TEMP DEG C	EC FIELD UMHOS/CM	PH FLD	TURB. FIELD NTU	OIL+GR VISBL. 1=Y 2=N	DO MG/L
S149	05/30/90	14:45			0.0760	CFS	7.0	410.0	7.0			
S149	07/07/90	9:40			0.0130	CFS	7.0	500.0	7.1			
S149	08/22/90	10:40			0.0030	CFS	6.0	480.0	8.4			
S149	09/24/90	10:15			0.0100	CFS	5.0	440.0	8.3			
S182	06/04/90	9:45			0.0050	CFS	6.0	340.0	7.4			
S182	07/02/90	8:05			0.0030	CFS	10.0	400.0	7.6			
S182	08/30/90	9:30			0.0010	CFS	12.0	370.0	7.4			
S182	10/03/90	11:10			0.0010	CFS	9.0	310.0	7.1			
229	05/30/90	15:10			0.0001	CFS						
229	07/06/90	14:40			0.0001	CFS						
229	08/22/90	10:55			0.0001	CFS						
229	09/24/90	9:20			0.0001	CFS						
500	06/04/90	9:00			0.0001	CFS						
500	07/06/90	8:30			0.0001	CFS						
500	08/30/90	13:30			0.0001	CFS						
500	09/24/90	8:00			0.0001	CFS						

WATER LEVEL OF 0.001 = 0, FLOW RATE OF 0.0001 = 0

NEGATIVE WATER LEVEL IN A WELL IS ABOVE GROUND SURFACE

TABLE 13

SUMMARY OF WATER QUALITY DATA

PRICE RIVER FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	7.326	2.718	17.000	3.500	DEGREES C	65	9/79-10/90
CONDUCTIVITY	FIELD	377.250	108.607	690.000	195.000	UMHOS/CM	52	9/86-10/90
CONDUCTIVITY	LAB	387.545	87.735	535.000	195.000	UMHOS/CM	33	9/79- 9/87
PH	FIELD	7.645	0.517	8.980	6.440	PH	51	6/86-10/90
PH	LAB	7.471	0.501	8.180	6.500	PH	29	9/79- 8/87
EH	FIELD	<22.450	24.130	<57.700	<3.000	MILLIVOLTS	4	5/87
ALKALINITY	TOTAL	181.766	40.637	264.000	114.000	MG/L	50	9/80-10/90
ACIDITY	AS CACO3	<3.894	4.748	18.000	0.000	MG/L	30	9/80- 9/89
HARDNESS	TOTAL	214.384	46.634	320.000	132.000	MG/L	26	7/87-10/90
SOLIDS	DISSOLVED	222.941	38.141	294.000	147.000	MG/L	51	9/80-10/90
SOLIDS	SUSPENDED	<5.867	8.100	29.000	<0.050	MG/L	14	9/80-10/86
SOLIDS	SETTLEABLE	<0.200	0.000	<0.200	<0.200	ML/L	1	6/88
SAR		0.103	0.053	0.336	0.029		53	9/80-10/90
CATIONS								
CALCIUM	DISSOLVED	60.290	13.976	95.000	34.000	MG/L	31	5/87-10/90
CALCIUM	TOTAL	59.009	10.932	80.000	40.000	MG/L	22	9/80-10/86
MAGNESIUM	DISSOLVED	15.275	4.643	23.000	6.000	MG/L	29	5/87-10/90
MAGNESIUM	TOTAL	12.727	5.015	26.400	5.280	MG/L	24	9/80- 6/88
SODIUM	DISSOLVED	2.838	1.185	6.000	1.000	MG/L	31	5/87-10/90
SODIUM	TOTAL	4.031	1.926	10.800	1.500	MG/L	22	9/80-10/86
POTASSIUM	DISSOLVED	<1.032	0.179	2.000	<1.000	MG/L	31	5/87-10/90
POTASSIUM	TOTAL	1.948	2.810	9.600	0.300	MG/L	22	9/80-10/86

U = MICRO
SPRINGS S149, S182, 229 AND 500

TABLE 13 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

PRICE RIVER FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ANIONS								
BICARBONATE	AS HCO3	222.966	47.949	306.000	139.000	MG/L	53	9/80-10/90
CARBONATE	AS CO3	<1.000	0.000	<1.000	<1.000	MG/L	6	10/83-10/86
CHLORIDE		<3.015	1.542	8.000	0.650	MG/L	53	9/80-10/90
SULFATE		<20.132	17.022	91.000	<2.000	MG/L	53	9/80-10/90
MINOR								
FLUORIDE		<0.255	0.153	0.500	<0.100	MG/L	15	9/80- 6/89
GASES								
SULPHIDE	TOTAL	<0.216	0.075	0.300	0.020	MG/L	13	7/87- 9/88

U = MICRO
SPRINGS S149, S182, 229 AND 500

TABLE 13 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

PRICE RIVER FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PRIMARY								
ARSENIC	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	15	5/87- 6/89
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	7	9/80-10/86
BARIUM	DISSOLVED	56.428	26.196	110.000	20.000	UG/L	14	5/87- 6/89
BARIUM	TOTAL	<92.857	18.898	<100.000	50.000	UG/L	7	9/80-10/86
CADMIUM	DISSOLVED	<5.214	0.578	7.000	<5.000	UG/L	14	5/87- 6/89
CADMIUM	TOTAL	<10.000	15.066	44.000	<1.000	UG/L	7	9/80-10/86
CHROMIUM	TOTAL-DISS	<10.000	0.000	<10.000	<10.000	UG/L	5	6/88- 6/89
CHROMIUM	TOTAL-TOTA	<24.437	20.568	<50.000	<1.000	UG/L	16	9/80- 8/87
LEAD	TOTAL	<28.000	13.717	<50.000	12.000	UG/L	24	9/80- 6/89
MERCURY	DISSOLVED	<0.120	0.044	<0.200	<0.100	UG/L	5	6/88- 6/89
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	16	9/80- 8/87
SELENIUM	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	5	6/88- 6/89
SELENIUM	TOTAL	<2.268	1.927	<5.000	<0.300	UG/L	16	9/80- 8/87
SILVER	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	1	9/80
SECONDARY								
COPPER	DISSOLVED	<10.000	0.000	10.000	<10.000	UG/L	5	6/88- 6/89
COPPER	TOTAL	<15.000	7.302	30.000	10.000	UG/L	16	9/80- 8/87
ZINC	TOTAL	<11.625	10.545	60.000	<5.000	UG/L	24	9/80- 6/89
IRON	DISSOLVED	<35.641	26.814	140.000	10.000	UG/L	53	9/80-10/90
IRON	TOTAL	<161.811	295.488	1490.000	<20.000	UG/L	53	9/80-10/90
MANGANESE	DISSOLVED	<9.454	2.180	<10.000	<1.000	UG/L	33	12/80-10/90
MANGANESE	TOTAL	<12.811	12.473	80.000	<1.000	UG/L	53	9/80-10/90

U = MICRO
SPRINGS S149, S182, 229 AND 500

TABLE 13 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

PRICE RIVER FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	8	9/87- 6/89
ALUMINUM	TOTAL	<265.555	370.712	1150.000	<50.000	UG/L	9	5/87- 8/87
BORON	DISSOLVED	<26.428	13.926	70.000	<20.000	UG/L	14	5/87- 6/89
BORON	TOTAL	116.000	66.272	230.000	12.000	UG/L	7	9/80-10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	8	9/87- 6/89
MOLYBDENUM	TOTAL	<50.000	0.000	<50.000	<50.000	UG/L	9	5/87- 8/87
NICKEL	DISSOLVED	<20.000	0.000	20.000	<20.000	UG/L	5	6/88- 6/89
NICKEL	TOTAL	<30.000	10.000	40.000	<20.000	UG/L	15	10/83- 8/87
NUTRIENTS								
NITROGEN	AMMIUM-TOT	<0.026	0.016	0.080	<0.020	MG/L	14	5/87- 6/89
NITROGEN	AMMIA-FREE	<0.001	0.000	0.001	<0.001	MG/L	5	6/88- 6/89
NITROGEN	NITRATE	<1.295	0.784	2.510	<0.010	MG/L	25	9/80- 6/89
NITROGEN	KJELDAHL	<0.162	0.224	0.500	<0.050	MG/L	4	9/85-10/86
NITROGEN	NO3+NO2	1.621	0.567	2.500	0.780	MG/L	18	5/87- 6/89
PHOSPHATE	TOTAL-DISS	<0.115	0.148	0.220	<0.010	MG/L	2	6/88
PHOSPHATE	TOTAL-TOTA	0.081	0.038	0.150	0.020	MG/L	9	9/80-10/86
PHOSPHATE	ORTHO-TOTA	0.060	0.000	0.060	0.060	MG/L	1	9/80
PHOSPHATE	ORTHO-DISS	<0.009	0.001	0.010	0.005	MG/L	13	5/87- 6/89
ORGANICS								
OIL&GREASE		<0.566	0.239	1.200	0.400	MG/L	9	9/80-10/86
PHENOL		<2.333	2.309	5.000	<1.000	UG/L	3	9/80-10/80

U = MICRO·
SPRINGS S149, S182, 229 AND 500

TABLE 14

SUMMARY OF WATER QUALITY DATA
1990
PRICE RIVER FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	7.750	2.375	12.000	5.000	DEGREES C	8	5/90-10/90
CONDUCTIVITY	FIELD	406.250	65.886	500.000	310.000	UMHOS/CM	8	5/90-10/90
PH	FIELD	7.523	0.529	8.350	6.990	PH	8	5/90-10/90
ALKALINITY	TOTAL	156.000	10.148	165.000	145.000	MG/L	3	6/90-10/90
HARDNESS	TOTAL	185.000	18.083	202.000	166.000	MG/L	3	6/90-10/90
SOLIDS	DISSOLVED	210.666	17.243	226.000	192.000	MG/L	3	6/90-10/90
SAR		0.128	0.006	0.135	0.123		3	6/90-10/90
CATIONS								
CALCIUM	DISSOLVED	55.333	5.507	61.000	50.000	MG/L	3	6/90-10/90
MAGNESIUM	DISSOLVED	11.333	1.154	12.000	10.000	MG/L	3	6/90-10/90
SODIUM	DISSOLVED	4.000	0.000	4.000	4.000	MG/L	3	6/90-10/90
POTASSIUM	DISSOLVED	<1.000	0.000	1.000	<1.000	MG/L	3	6/90-10/90
ANIONS								
BICARBONATE	AS HCO3	190.333	12.220	201.000	177.000	MG/L	3	6/90-10/90
CHLORIDE		3.333	0.577	4.000	3.000	MG/L	3	6/90-10/90
SULFATE		26.000	12.529	39.000	14.000	MG/L	3	6/90-10/90
SECONDARY								
IRON	DISSOLVED	<23.333	5.773	30.000	<20.000	UG/L	3	6/90-10/90
IRON	TOTAL	76.666	46.188	130.000	50.000	UG/L	3	6/90-10/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	3	6/90-10/90
MANGANESE	TOTAL	<10.000	0.000	<10.000	<10.000	UG/L	3	6/90-10/90

U = MICRO
SPRINGS S149, S182, 229 AND 500

TABLE 15
WATER QUALITY MONITORING DATA - FIELD DATA
NORTH HORN FORMATION SPRINGS, 1990

DATE: 02/13/91

STATION NUMBER	DATE	TIME HH:MM	AIR TEMP. DEG. C	WATER DEPTH FEET	FLOW RATE	UNIT	TEMP DEG C	EC FIELD UMHOS/CM	PH FLD	TURB. FIELD NTU	OIL+GR VISBL. 1=Y 2=N	DO MG/L
S111	06/02/90	10:30			0.0070	CFS	6.0	350.0	7.4			
S111	07/02/90	12:00			0.0010	CFS	14.0	380.0	7.5			
S111	08/22/90	14:45			0.0010	CFS	14.0	300.0	7.4			
S111	09/24/90	14:45			0.0010	CFS	9.0	320.0	7.4			
232	05/30/90	15:45			0.0080	CFS	6.0	280.0	7.6			
232	07/06/90	15:00			0.0010	CFS	8.0	350.0	7.9			
232	08/22/90	14:00			0.0010	CFS	14.0	310.0	7.8			
232	09/24/90	9:40			0.0001	CFS						
429	05/30/90	14:15			0.0050	CFS	5.0	350.0	7.6			
429	07/07/90	9:00			0.0001	CFS						
429	08/22/90	10:20			0.0001	CFS						
429	09/24/90	9:45			0.0001	CFS						
444	05/30/90	14:35			0.0170	CFS	6.0	420.0	8.2			
444	07/07/90	9:30			0.0130	CFS	7.0	490.0	8.4			
444	08/22/90	10:30			0.0100	CFS	6.0	420.0	8.4			
444	09/24/90	10:00			0.0090	CFS	5.0	420.0	8.4			
518	05/30/90	10:30			0.0330	CFS	4.0	430.0	7.0			
518	07/02/90	10:20			0.0080	CFS	7.0	510.0	7.9			
518	08/30/90	10:30			0.0010	CFS	8.0	460.0	7.7			
518	10/03/90	12:30			0.0020	CFS	5.0	450.0	7.1			
748	05/30/90	10:10			0.0130	CFS	4.0	400.0	7.8			
748	07/02/90	10:00			0.0040	CFS	9.0	450.0	7.8			
748	08/30/90	10:15			0.0030	CFS	9.0	410.0	8.4			
748	10/03/90	12:15			0.0020	CFS	6.0	380.0	8.3			

WATER LEVEL OF 0.001 = 0, FLOW RATE OF 0.0001 = 0
NEGATIVE WATER LEVEL IN A WELL IS ABOVE GROUND SURFACE

TABLE 15 (CONTINUED)
WATER QUALITY MONITORING DATA - FIELD DATA
NORTH HORN FORMATION SPRINGS, 1990

DATE: 02/13/91

STATION NUMBER	DATE	TIME HH:MM	AIR TEMP. DEG. C	WATER DEPTH FEET	FLOW RATE	UNIT	TEMP DEG C	EC FIELD UMHOS/CM	PH FLD	TURB. FIELD NTU	OIL+GR VISBL. 1=Y 2=N	DO MG/L
749	05/30/90	14:30			0.0130	CFS	4.0	440.0	7.5			
749	07/07/90	9:15			0.0050	CFS	6.0	510.0	7.5			
749	08/22/90	10:15			0.0010	CFS	5.0	450.0	7.7			
749	09/24/90	9:50			0.0020	CFS	6.0	420.0	8.3			
751	05/30/90	9:50			0.0080	CFS	4.0	530.0	7.2			
751	07/02/90	9:35			0.0060	CFS	8.0	430.0	8.0			
751	08/30/90	10:30			0.0010	CFS	9.0	470.0	7.6			
751	10/03/90	12:00			0.0010	CFS	6.0	370.0	7.9			
753	05/30/90	8:55			0.0010	CFS	2.0	370.0	7.9			
753	07/02/90	8:40			0.0010	CFS	8.0	440.0	8.0			
753	08/30/90	10:00			0.0001	CFS						
753	09/24/90	8:30			0.0001	CFS						
971	05/30/90	16:15			0.0010	CFS	4.0	170.0	7.2			
971	07/07/90	8:00			0.0001	CFS						
971	08/22/90	10:50			0.0001	CFS						
971	09/24/90	9:00			0.0001	CFS						
978	05/30/90	9:20			0.0450	CFS	5.0	430.0	7.9			
978	07/02/90	9:00			0.0200	CFS	6.0	460.0	7.8			
978	08/30/90	13:00			0.0060	CFS	6.0	480.0	7.5			
978	10/03/90	11:35			0.0030	CFS	4.0	380.0	7.1			
85261	05/30/90	15:00			0.0270	CFS	7.0	430.0	7.5			
85261	07/06/90	13:50			0.0220	CFS	7.0	440.0	7.5			
85261	08/22/90	9:45			0.0150	CFS	5.0	430.0	8.3			
85261	09/24/90	11:00			0.0170	CFS	5.0	420.0	8.3			

WATER LEVEL OF 0.001 = 0, FLOW RATE OF 0.0001 = 0
NEGATIVE WATER LEVEL IN A WELL IS ABOVE GROUND SURFACE

TABLE 16

SUMMARY OF WATER QUALITY DATA

NORTH HORN FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	6.599	2.593	18.000	2.000	DEGREES C	147	9/79-10/90
CONDUCTIVITY	FIELD	398.743	97.370	708.000	170.000	UMHOS/CM	121	9/86-10/90
CONDUCTIVITY	LAB	396.000	71.244	608.000	210.000	UMHOS/CM	51	9/79- 9/87
PH	FIELD	7.700	0.482	8.800	5.380	PH	122	6/86-10/90
PH	LAB	7.522	0.377	8.170	6.900	PH	41	9/79- 8/87
EH	FIELD	<53.337	57.239	158.600	<9.900	MILLIVOLTS	8	5/87
ALKALINITY	TOTAL	215.626	28.615	277.000	110.000	MG/L	101	12/80-10/90
ACIDITY	AS CACO3	<2.296	2.219	8.000	0.000	MG/L	54	12/80- 5/90
HARDNESS	TOTAL	236.550	36.552	305.000	102.000	MG/L	60	7/87-10/90
SOLIDS	DISSOLVED	232.178	28.585	298.000	124.000	MG/L	101	9/79-10/90
SOLIDS	SUSPENDED	<4.648	9.566	48.000	<0.050	MG/L	25	9/80- 6/88
SOLIDS	SETTLEABLE	<0.200	0.000	<0.200	<0.200	ML/L	2	6/88
SAR		<0.076	0.061	0.432	0.025		105	9/79-10/90
CATIONS								
CALCIUM	DISSOLVED	67.739	12.890	93.000	36.000	MG/L	69	5/87-10/90
CALCIUM	TOTAL	58.400	11.252	92.000	28.000	MG/L	39	9/79-10/86
MAGNESIUM	DISSOLVED	16.887	5.204	29.000	3.000	MG/L	62	5/87-10/90
MAGNESIUM	TOTAL	18.141	5.676	33.120	7.680	MG/L	46	9/79- 6/88
SODIUM	DISSOLVED	<2.405	1.320	9.000	<1.000	MG/L	69	5/87-10/90
SODIUM	TOTAL	3.099	2.888	14.000	1.000	MG/L	39	9/79-10/86
POTASSIUM	DISSOLVED	<1.072	0.601	6.000	<1.000	MG/L	69	5/87-10/90
POTASSIUM	TOTAL	1.108	1.303	6.800	0.370	MG/L	39	9/79-10/86

U = MICRO
SPRINGS 232, 429, 444, 518, 748, 749, 751, 971, 978, AND 85-26-1

TABLE 16 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

NORTH HORN FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ANIONS								
BICARBONATE	AS HCO3	261.194	35.196	338.000	134.000	MG/L	108	9/79-10/90
CARBONATE	AS CO3	<1.000	0.000	<1.000	<1.000	MG/L	12	10/83-10/86
CHLORIDE		<1.920	1.283	8.000	0.100	MG/L	108	9/79-10/90
SULFATE		<9.574	8.556	52.000	1.000	MG/L	108	9/79-10/90
MINOR								
FLUORIDE		<0.162	0.115	0.600	<0.100	MG/L	32	5/87- 7/90
GASES								
SULPHIDE	TOTAL	<0.160	0.112	0.380	<0.010	MG/L	36	7/87- 7/90
PRIMARY								
ARSENIC	DISSOLVED	<1.000	0.000	1.000	<1.000	UG/L	32	5/87- 7/90
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	12	10/83-10/86
BARIUM	DISSOLVED	81.875	39.630	240.000	30.000	UG/L	32	5/87- 7/90
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	12	10/83-10/86
CADMIUM	DISSOLVED	<5.625	1.518	<10.000	<5.000	UG/L	32	5/87- 7/90
CADMIUM	TOTAL	<205.416	694.263	2410.000	<5.000	UG/L	12	10/83-10/86
CHROMIUM	TOTAL-DISS	<10.000	0.000	<10.000	<10.000	UG/L	25	6/88- 7/90
CHROMIUM	TOTAL-TOTA	<35.263	19.823	<50.000	<10.000	UG/L	19	10/83- 8/87
LEAD	TOTAL	<27.450	12.937	<50.000	<20.000	UG/L	51	10/83- 7/90
MERCURY	DISSOLVED	<0.128	0.045	<0.200	<0.100	UG/L	25	6/88- 7/90
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	19	10/83- 8/87
SELENIUM	DISSOLVED	<1.000	0.000	1.000	<1.000	UG/L	25	6/88- 7/90
SELENIUM	TOTAL	<3.031	2.141	<5.000	<0.300	UG/L	19	10/83- 8/87

U = MICRO
SPRINGS 232, 429, 444, 518, 748, 749, 751, 971, 978, AND 85-26-1

TABLE 16 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

NORTH HORN FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
SECONDARY								
COPPER	DISSOLVED	<10.400	2.000	20.000	<10.000	UG/L	25	6/88- 7/90
COPPER	TOTAL	<16.315	4.955	<20.000	10.000	UG/L	19	10/83- 8/87
ZINC	TOTAL	<11.509	7.214	40.000	<5.000	UG/L	51	10/83- 7/90
IRON	DISSOLVED	<39.186	48.958	460.000	<1.000	UG/L	107	9/80-10/90
IRON	TOTAL	<285.869	828.071	6200.000	<20.000	UG/L	107	9/80-10/90
MANGANESE	DISSOLVED	<10.736	8.561	80.000	<1.000	UG/L	72	12/80-10/90
MANGANESE	TOTAL	<18.130	29.003	240.000	<1.000	UG/L	107	9/80-10/90
TRACE METALS								
ALUMINUM	DISSOLVED	<63.750	34.148	170.000	<50.000	UG/L	32	9/87- 7/90
ALUMINUM	TOTAL	<762.857	1570.081	4310.000	<50.000	UG/L	7	5/87- 8/87
BORON	DISSOLVED	<35.312	49.837	270.000	<20.000	UG/L	32	5/87- 7/90
BORON	TOTAL	143.333	121.680	480.000	60.000	UG/L	12	10/83-10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	32	9/87- 7/90
MOLYBDENUM	TOTAL	<50.000	0.000	<50.000	<50.000	UG/L	7	5/87- 8/87
NICKEL	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	25	6/88- 7/90
NICKEL	TOTAL	<32.631	9.911	<40.000	<20.000	UG/L	19	10/83- 8/87
NUTRIENTS								
NITROGEN	AMMIUM-TOT	<0.124	0.358	1.870	0.010	MG/L	32	5/87- 7/90
NITROGEN	AMMIA-FREE	<0.001	0.002	0.011	<0.001	MG/L	25	6/88- 7/90
NITROGEN	NITRATE	<0.998	0.724	2.970	<0.010	MG/L	50	10/83- 7/90
NITROGEN	KJELDAHL	<0.576	0.662	1.530	<0.050	MG/L	8	9/85-10/86
NITROGEN	NO3+NO2	<1.128	0.724	3.000	<0.020	MG/L	39	5/87- 7/90
PHOSPHATE	TOTAL-TOTA	0.085	0.042	0.150	0.020	MG/L	17	9/80-10/86
PHOSPHATE	ORTHO-DISS	<0.012	0.009	0.060	<0.005	MG/L	32	5/87- 7/90

U = MICRO
SPRINGS 232, 429, 444, 518, 748, 749, 751, 971, 978, AND 85-26-1

TABLE 16 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

NORTH HORN FORMATION SPRINGS

PARAMETER	MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ORGANICS							
OIL&GREASE	<0.720	0.768	3.300	<0.050	MG/L	15	10/83-10/86
PHENOL	<3.000	4.000	9.000	<1.000	UG/L	4	9/80-10/80

U = MICRO
SPRINGS 232, 429, 444, 518, 748, 749, 751, 971, 978, AND 85-26-1

TABLE 17

SUMMARY OF WATER QUALITY DATA
1990
NORTH HORN FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	6.242	2.062	14.000	4.000	DEGREES C	33	5/90-10/90
CONDUCTIVITY	FIELD	417.878	69.944	530.000	170.000	UMHOS/CM	33	5/90-10/90
PH	FIELD	7.791	0.411	8.410	6.980	PH	33	5/90-10/90
ALKALINITY	TOTAL	214.333	36.578	268.000	110.000	MG/L	15	5/90-10/90
ACIDITY	AS CACO3	0.000	0.000	0.000	0.000	MG/L	4	5/90
HARDNESS	TOTAL	228.866	45.284	302.000	102.000	MG/L	15	5/90-10/90
SOLIDS	DISSOLVED	227.466	37.867	280.000	124.000	MG/L	15	5/90-10/90
SAR		<0.054	0.016	0.086	<0.028		15	5/90-10/90
CATIONS								
CALCIUM	DISSOLVED	68.200	14.780	93.000	36.000	MG/L	15	5/90-10/90
MAGNESIUM	DISSOLVED	14.266	5.391	23.000	3.000	MG/L	15	5/90-10/90
SODIUM	DISSOLVED	<1.866	0.516	3.000	<1.000	MG/L	15	5/90-10/90
POTASSIUM	DISSOLVED	<1.000	0.000	1.000	<1.000	MG/L	15	5/90-10/90
ANIONS								
BICARBONATE	AS HCO3	261.400	44.684	327.000	134.000	MG/L	15	5/90-10/90
CHLORIDE		1.533	0.516	2.000	1.000	MG/L	15	5/90-10/90
SULFATE		<10.000	8.417	25.000	<2.000	MG/L	15	5/90-10/90
MINOR								
FLUORIDE		0.100	0.000	0.100	0.100	MG/L	3	5/90- 7/90

U = MICRO
SPRINGS 232, 429, 444, 518, 748, 749, 751, 971, 978, AND 85-26-1

TABLE 17 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
NORTH HORN FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
GASES								
SULPHIDE	TOTAL	<0.010	0.000	<0.010	<0.010	MG/L	3	5/90- 7/90
PRIMARY								
ARSENIC	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	3	5/90- 7/90
BARIUM	DISSOLVED	70.000	17.320	90.000	60.000	UG/L	3	5/90- 7/90
CADMIUM	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	3	5/90- 7/90
CHROMIUM	TOTAL-DISS	<10.000	0.000	<10.000	<10.000	UG/L	3	5/90- 7/90
LEAD	TOTAL	<20.000	0.000	<20.000	<20.000	UG/L	3	5/90- 7/90
MERCURY	DISSOLVED	<0.100	0.000	<0.100	<0.100	UG/L	3	5/90- 7/90
SELENIUM	DISSOLVED	<1.000	0.000	1.000	<1.000	UG/L	3	5/90- 7/90
SECONDARY								
COPPER	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	3	5/90- 7/90
ZINC	TOTAL	16.666	11.547	30.000	10.000	UG/L	3	5/90- 7/90
IRON	DISSOLVED	<30.666	29.390	130.000	<20.000	UG/L	15	5/90-10/90
IRON	TOTAL	<174.666	269.864	1030.000	<20.000	UG/L	15	5/90-10/90
MANGANESE	DISSOLVED	<14.666	18.073	80.000	<10.000	UG/L	15	5/90-10/90
MANGANESE	TOTAL	<18.000	20.770	90.000	<10.000	UG/L	15	5/90-10/90
TRACE METALS								
ALUMINUM	DISSOLVED	<100.000	55.677	160.000	<50.000	UG/L	3	5/90- 7/90
BORON	DISSOLVED	<23.333	5.773	30.000	<20.000	UG/L	3	5/90- 7/90
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	3	5/90- 7/90
NICKEL	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	3	5/90- 7/90

U = MICRO
SPRINGS 232, 429, 444, 518, 748, 749, 751, 971, 978, AND 85-26-1

TABLE 17 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
NORTH HORN FORMATION SPRINGS

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
NUTRIENTS								
NITROGEN	AMMIUM-TOT	<0.706	1.010	1.870	<0.050	MG/L	3	5/90- 7/90
NITROGEN	AMMIA-FREE	<0.004	0.005	0.011	<0.001	MG/L	3	5/90- 7/90
NITROGEN	NITRATE	0.703	0.431	1.170	0.320	MG/L	3	5/90- 7/90
NITROGEN	NO3+NO2	0.693	0.431	1.160	0.310	MG/L	3	5/90- 7/90
PHOSPHATE	ORTHO-DISS	0.015	0.001	0.017	0.014	MG/L	3	5/90- 7/90

U = MICRO
SPRINGS 232, 429, 444, 518, 748, 749, 751, 971, 978, AND 85-26-1

TABLE 18
WATER QUALITY MONITORING DATA - FIELD DATA
SURFACE WATER STATIONS, 1990

DATE: 02/13/91

STATION NUMBER	DATE	TIME HH:MM	AIR TEMP. DEG. C	WATER DEPTH FEET	FLOW RATE	UNIT	TEMP DEG C	EC FIELD UMHOS/CM	PH FLD	TURB. FIELD NTU	OIL+GR VISBL. 1=Y 2=N	DO MG/L
51MW	05/30/90	13:45			0.0930	CFS	9.0	1740.0	7.7			
51MW	07/06/90	16:35			0.0001	CFS						
51MW	08/22/90	8:00			0.0001	CFS						
51MW	09/24/90	14:30			0.0001	CFS						
101	05/30/90	14:00			0.0001	CFS						
101	07/06/90	7:00			0.0001	CFS						
101	08/30/90	7:00			0.0001	CFS						
101	09/24/90	7:00			0.0001	CFS						
341	06/02/90	12:00			0.4760	CFS	5.0	490.0	7.5			
341	07/06/90	13:00			0.1540	CFS	7.0	500.0	7.8			
341	08/22/90	9:20			0.1480	CFS	7.0	500.0	8.5			
341	09/24/90	11:30			0.1520	CFS	7.0	520.0	7.9			
342	06/02/90	12:10			0.7140	CFS	7.0	520.0	7.7			
342	07/06/90	13:15			0.2860	CFS	8.0	540.0	8.0			
342	08/22/90	9:25			0.1950	CFS	8.0	530.0	8.5			
342	09/24/90	11:30			0.2280	CFS	7.0	510.0	7.1			
361	05/30/90	13:30			0.0670	CFS	8.0	680.0	7.1			
361	07/06/90	16:15			0.0090	CFS	16.0	730.0	8.6			
361	08/22/90	8:10			0.0110	CFS	7.0	730.0	8.7			
361	09/24/90	14:15			0.0210	CFS	10.0	640.0	8.5			

WATER LEVEL OF 0.001 = 0, FLOW RATE OF 0.0001 = 0
NEGATIVE WATER LEVEL IN A WELL IS ABOVE GROUND SURFACE

TABLE 18 (CONTINUED)
WATER QUALITY MONITORING DATA - FIELD DATA
SURFACE WATER STATIONS, 1990

DATE: 02/13/91

STATION NUMBER	DATE	TIME HH:MM	AIR TEMP. DEG. C	WATER DEPTH FEET	FLOW RATE	UNIT	TEMP DEG C	EC FIELD UMHOS/CM	PH FLD	TURB. FIELD NTU	OIL+GR VISBL. 1=Y 2=N	DO MG/L
ST1	06/02/90	9:00			0.0990	CFS	7.0	1730.0	7.6			
ST1	07/04/90	12:25			0.0760	CFS	15.0	1710.0	8.3			
ST1	08/22/90	13:40			0.0540	CFS	13.0	1560.0	8.2			
ST1	09/24/90	13:30			0.0750	CFS	11.0	1400.0	8.3			
ST2	06/02/90	9:30			0.1820	CFS	6.0	860.0	7.9			
ST2	07/04/90	12:30			0.0540	CFS	13.0	850.0	8.5			
ST2	08/22/90	13:45			0.0750	CFS	12.0	860.0	8.4			
ST2	09/24/90	14:00			0.0750	CFS	10.0	850.0	8.4			
M8	05/30/90	17:00			0.0370	CFS	8.0	1660.0	7.2			
M8	07/04/90	10:35			0.0680	CFS	16.0	1810.0	8.3			
M8	08/22/90	13:10			0.0070	CFS	10.0	1750.0	8.5			
M8	09/18/90	11:30			0.0130	CFS	8.0	1640.0	8.3			

WATER LEVEL OF 0.001 = 0, FLOW RATE OF 0.0001 = 0
NEGATIVE WATER LEVEL IN A WELL IS ABOVE GROUND SURFACE

TABLE 19

SUMMARY OF WATER QUALITY DATA

MUD WATER CREEK, STATION 5-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	14.090	6.307	27.000	4.000	DEGREES C	22	4/81- 5/90
CONDUCTIVITY	FIELD	1542.857	585.389	2100.000	320.000	UMHOS/CM	14	10/86- 5/90
CONDUCTIVITY	LAB	1960.769	1277.709	5700.000	800.000	UMHOS/CM	13	4/81- 9/87
PH	FIELD	8.475	0.292	8.980	7.650	PH	14	6/86- 5/90
PH	LAB	7.959	0.378	8.500	7.200	PH	11	4/81-10/86
EH	FIELD	<50.000	0.000	<50.000	<50.000	MILLIVOLTS	1	5/87
ALKALINITY	TOTAL	233.400	43.092	316.000	128.000	MG/L	20	4/81- 5/90
ACIDITY	AS CACO3	<1.732	3.091	11.500	0.000	MG/L	20	4/81- 5/90
HARDNESS	TOTAL	1063.000	93.114	1173.000	907.000	MG/L	6	9/87- 5/90
SOLIDS	DISSOLVED	1463.550	821.021	4531.000	550.000	MG/L	20	4/81- 5/90
SOLIDS	SUSPENDED	<3448.416	13548.064	57710.000	<0.500	MG/L	18	4/81- 5/90
SOLIDS	SETTLEABLE	<0.900	1.813	4.600	<0.100	ML/L	6	9/87- 5/90
SAR		1.318	1.280	5.712	0.148		20	4/81- 5/90
CATIONS								
CALCIUM	DISSOLVED	157.000	11.015	174.000	147.000	MG/L	7	5/87- 5/90
CALCIUM	TOTAL	149.138	96.980	430.000	40.000	MG/L	13	4/81-10/86
MAGNESIUM	DISSOLVED	150.142	37.293	180.000	74.000	MG/L	7	5/87- 5/90
MAGNESIUM	TOTAL	128.901	55.147	230.000	55.680	MG/L	13	4/81-10/86
SODIUM	DISSOLVED	84.857	25.373	118.000	43.000	MG/L	7	5/87- 5/90
SODIUM	TOTAL	109.576	152.403	590.000	8.000	MG/L	13	4/81-10/86
POTASSIUM	DISSOLVED	9.571	1.133	11.000	8.000	MG/L	7	5/87- 5/90
POTASSIUM	TOTAL	9.719	5.212	19.400	2.600	MG/L	13	4/81-10/86

U = MICRO

TABLE 19 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

MUD WATER CREEK, STATION 5-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ANIONS								
BICARBONATE	AS HCO3	278.496	46.239	361.120	156.000	MG/L	20	4/81- 5/90
CARBONATE	AS CO3	<1.000	0.000	<1.000	<1.000	MG/L	4	10/83-10/86
CHLORIDE		46.750	24.333	80.300	8.000	MG/L	20	4/81- 5/90
SULFATE		826.750	531.921	2790.000	220.000	MG/L	20	4/81- 5/90
GASES								
OXYGEN	DISSOLVED	6.890	1.224	8.010	5.500	MG/L	6	8/88- 9/89
SULPHIDE	TOTAL	0.300	0.000	0.300	0.300	MG/L	1	9/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	1.000	<1.000	UG/L	4	10/83-10/86
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	4	10/83-10/86
CADMIUM	TOTAL	<233.750	457.500	920.000	<5.000	UG/L	4	10/83-10/86
CHROMIUM	TOTAL-TOTA	<50.000	0.000	<50.000	<50.000	UG/L	4	10/83-10/86
LEAD	TOTAL	<60.000	41.231	130.000	<20.000	UG/L	5	10/83- 9/87
MERCURY	TOTAL	<0.155	0.089	<0.200	<0.020	UG/L	4	10/83-10/86
SELENIUM	TOTAL	<3.825	2.349	<5.000	<0.300	UG/L	4	10/83-10/86
SECONDARY								
COPPER	TOTAL	<20.000	0.000	20.000	<20.000	UG/L	3	10/83-10/86
ZINC	TOTAL	<13.000	9.082	25.000	<5.000	UG/L	5	10/83- 9/87
IRON	DISSOLVED	<874.500	3449.008	15500.000	20.000	UG/L	20	4/81- 5/90
IRON	TOTAL	55450.000	204252.215	912000.000	30.000	UG/L	20	4/81- 5/90
MANGANESE	DISSOLVED	<18.000	15.675	60.000	<10.000	UG/L	15	4/81- 5/90
MANGANESE	TOTAL	<720.950	2685.147	12100.000	<10.000	UG/L	20	4/81- 5/90

U = MICRO

TABLE 19 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

MUD WATER CREEK, STATION 5-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
BORON	TOTAL	200.000	107.082	340.000	80.000	UG/L	4	10/83-10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
NICKEL	TOTAL	<40.000	0.000	<40.000	<40.000	UG/L	4	10/83-10/86
NUTRIENTS								
NITROGEN	NITRATE	0.178	0.214	0.520	0.020	MG/L	5	10/83- 9/87
NITROGEN	KJELDAHL	0.515	0.629	0.960	0.070	MG/L	2	9/85-10/86
NITROGEN	NO3+NO2	0.020	0.000	0.020	0.020	MG/L	1	9/87
PHOSPHATE	TOTAL-TOTA	0.105	0.031	0.140	0.070	MG/L	4	10/83-10/86
ORGANICS								
OIL&GREASE		<1.258	0.719	3.100	<0.500	MG/L	12	10/83- 5/90

U = MICRO

TABLE 20

WATER QUALITY DATA

STATION NUMBER: 51MW SAMPLE DATE: 05/30/90 TIME: 13:45
WATER LEVEL: FEET
FLOW RATE: 0.0930 CFS

PARAMETER		VALUE	UNITS
TEMPERATURE	FIELD	9.000	DEGREES C
CONDUCTIVITY	FIELD	1740.000	UMHOS/CM
PH	FIELD	7.650	PH
ALKALINITY	TOTAL	228.000	MG/L
ACIDITY	AS CACO3	0.000	MG/L
HARDNESS	TOTAL	907.000	MG/L
SOLIDS	DISSOLVED	1406.000	MG/L
SOLIDS	SUSPENDED	1340.000	MG/L
SOLIDS	SETTLEABLE	4.600	ML/L
SAR		1.010	
CALCIUM	DISSOLVED	148.000	MG/L
MAGNESIUM	DISSOLVED	131.000	MG/L
SODIUM	DISSOLVED	70.000	MG/L
POTASSIUM	DISSOLVED	8.000	MG/L
BICARBONATE	AS HCO3	278.000	MG/L
CHLORIDE		52.000	MG/L
SULFATE		778.000	MG/L
IRON	DISSOLVED	40.000	UG/L
IRON	TOTAL	29000.000	UG/L
MANGANESE	DISSOLVED	-10.000	UG/L
MANGANESE	TOTAL	590.000	UG/L
OIL&GREASE		2.000	MG/L

TABLE 21

SUMMARY OF WATER QUALITY DATA

SOUTH FORK, CORNER CANYON CREEK, STATION 36-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	9.204	4.109	16.000	0.000	DEGREES C	26	10/80- 9/90
CONDUCTIVITY	FIELD	741.062	328.275	1600.000	300.000	UMHOS/CM	16	10/86- 9/90
CONDUCTIVITY	LAB	998.066	398.569	2150.000	490.000	UMHOS/CM	15	10/80- 9/87
PH	FIELD	8.581	0.457	9.100	7.080	PH	16	6/86- 9/90
PH	LAB	7.786	0.325	8.300	7.200	PH	13	10/80-10/86
EH	FIELD	129.200	0.000	129.200	129.200	MILLIVOLTS	1	5/87
ALKALINITY	TOTAL	269.300	18.558	300.000	224.000	MG/L	20	8/80- 9/90
ACIDITY	AS CACO3	<3.959	8.014	28.000	0.000	MG/L	19	8/80- 5/90
HARDNESS	TOTAL	436.142	39.036	488.000	363.000	MG/L	7	9/87- 9/90
SOLIDS	DISSOLVED	596.347	207.932	1400.000	440.000	MG/L	23	8/80- 9/90
SOLIDS	SUSPENDED	41.545	44.952	154.000	2.000	MG/L	22	8/80- 9/90
SOLIDS	SETTLEABLE	<0.233	0.081	<0.400	<0.200	ML/L	6	9/87- 5/90
SAR		0.454	0.275	1.150	0.214		22	8/80- 9/90
CATIONS								
CALCIUM	DISSOLVED	77.250	5.700	87.000	71.000	MG/L	8	5/87- 9/90
CALCIUM	TOTAL	85.586	32.068	160.000	18.400	MG/L	15	8/80-10/86
MAGNESIUM	DISSOLVED	57.250	8.497	66.000	44.000	MG/L	8	5/87- 9/90
MAGNESIUM	TOTAL	76.941	22.752	141.600	55.200	MG/L	15	8/80-10/86
SODIUM	DISSOLVED	14.875	4.969	26.000	10.000	MG/L	8	5/87- 9/90
SODIUM	TOTAL	27.840	19.165	82.800	12.000	MG/L	15	8/80-10/86
POTASSIUM	DISSOLVED	3.250	0.462	4.000	3.000	MG/L	8	5/87- 9/90
POTASSIUM	TOTAL	6.279	6.070	26.100	3.000	MG/L	15	8/80-10/86

U = MICRO

TABLE 21 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

SOUTH FORK, CORNER CANYON CREEK, STATION 36-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ANIONS								
BICARBONATE	AS HCO3	330.878	35.203	448.960	273.000	MG/L	23	8/80- 9/90
CARBONATE	AS CO3	<4.285	4.644	13.000	<1.000	MG/L	7	10/83- 9/90
CHLORIDE		20.245	10.633	58.850	8.000	MG/L	23	8/80- 9/90
SULFATE		215.373	150.496	810.000	33.600	MG/L	23	8/80- 9/90
MINOR								
FLUORIDE		0.300	0.000	0.300	0.300	MG/L	1	8/80
GASES								
OXYGEN	DISSOLVED	7.696	1.096	8.680	5.960	MG/L	5	8/88- 9/89
SULPHIDE	TOTAL	0.500	0.000	0.500	0.500	MG/L	1	9/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	5	8/80-10/86
BARIUM	TOTAL	<88.800	25.043	<100.000	44.000	UG/L	5	8/80-10/86
CADMIUM	TOTAL	<18.600	32.692	77.000	<1.000	UG/L	5	8/80-10/86
CHROMIUM	TOTAL-TOTA	<40.200	21.913	<50.000	<1.000	UG/L	5	8/80-10/86
LEAD	TOTAL	<38.000	18.973	<50.000	8.000	UG/L	6	8/80- 9/87
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	5	8/80-10/86
SELENIUM	TOTAL	<3.260	2.395	<5.000	<0.300	UG/L	5	8/80-10/86
SILVER	TOTAL	3.000	0.000	3.000	3.000	UG/L	1	8/80

U = MICRO

TABLE 21 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

SOUTH FORK, CORNER CANYON CREEK, STATION 36-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
SECONDARY								
COPPER	TOTAL	<16.400	8.049	<20.000	2.000	UG/L	5	8/80-10/86
ZINC	TOTAL	<12.000	9.121	24.000	<5.000	UG/L	6	8/80- 9/87
IRON	DISSOLVED	<45.000	43.386	210.000	<1.000	UG/L	22	8/80- 9/90
IRON	TOTAL	<394.739	489.809	2160.000	<50.000	UG/L	23	8/80- 9/90
MANGANESE	DISSOLVED	<11.500	8.546	40.000	<1.000	UG/L	14	5/81- 9/90
MANGANESE	TOTAL	<22.304	19.751	90.000	<10.000	UG/L	23	8/80- 9/90
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
BORON	TOTAL	128.400	113.326	310.000	2.000	UG/L	5	8/80-10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
NICKEL	TOTAL	<40.000	0.000	40.000	<40.000	UG/L	4	10/83-10/86
NUTRIENTS								
NITROGEN	NITRATE	0.336	0.376	1.010	0.040	MG/L	6	8/80- 9/87
NITROGEN	KJELDAHL	0.180	0.169	0.300	0.060	MG/L	2	9/85-10/86
NITROGEN	NO3+NO2	0.050	0.000	0.050	0.050	MG/L	1	9/87
PHOSPHATE	TOTAL-TOTA	0.122	0.068	0.220	0.030	MG/L	7	10/80-10/86
PHOSPHATE	ORTHO-TOTA	<0.010	0.000	<0.010	<0.010	MG/L	1	8/80
ORGANICS								
OIL&GREASE		<1.232	1.810	7.400	<0.010	MG/L	14	8/80- 9/90
PHENOL		<4.000	5.196	10.000	<1.000	UG/L	3	8/80-10/80

U = MICRO

TABLE 22

SUMMARY OF WATER QUALITY DATA
1990
SOUTH FORK, CORNER CANYON CREEK, STATION 36-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	10.250	4.031	16.000	7.000	DEGREES C	4	5/90- 9/90
CONDUCTIVITY	FIELD	695.000	43.588	730.000	640.000	UMHOS/CM	4	5/90- 9/90
PH	FIELD	8.230	0.771	8.730	7.080	PH	4	5/90- 9/90
ALKALINITY	TOTAL	263.500	23.334	280.000	247.000	MG/L	2	5/90- 9/90
ACIDITY	AS CACO3	0.000	0.000	0.000	0.000	MG/L	1	5/90
HARDNESS	TOTAL	390.500	38.890	418.000	363.000	MG/L	2	5/90- 9/90
SOLIDS	DISSOLVED	472.000	45.254	504.000	440.000	MG/L	2	5/90- 9/90
SOLIDS	SUSPENDED	24.000	5.656	28.000	20.000	MG/L	2	5/90- 9/90
SOLIDS	SETTLEABLE	<0.200	0.000	<0.200	<0.200	ML/L	1	5/90
SAR		0.264	0.013	0.274	0.255		2	5/90- 9/90
CATIONS								
CALCIUM	DISSOLVED	77.500	6.363	82.000	73.000	MG/L	2	5/90- 9/90
MAGNESIUM	DISSOLVED	48.000	5.656	52.000	44.000	MG/L	2	5/90- 9/90
SODIUM	DISSOLVED	12.000	0.000	12.000	12.000	MG/L	2	5/90- 9/90
POTASSIUM	DISSOLVED	3.000	0.000	3.000	3.000	MG/L	2	5/90- 9/90
ANIONS								
BICARBONATE	AS HCO3	302.000	38.183	329.000	275.000	MG/L	2	5/90- 9/90
CARBONATE	AS CO3	9.500	4.949	13.000	6.000	MG/L	2	5/90- 9/90
CHLORIDE		16.000	2.828	18.000	14.000	MG/L	2	5/90- 9/90
SULFATE		122.500	13.435	132.000	113.000	MG/L	2	5/90- 9/90

U = MICRO

TABLE 22 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
SOUTH FORK, CORNER CANYON CREEK, STATION 36-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
SECONDARY								
IRON	DISSOLVED	25.000	7.071	30.000	20.000	UG/L	2	5/90- 9/90
IRON	TOTAL	245.000	49.497	280.000	210.000	UG/L	2	5/90- 9/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	2	5/90- 9/90
MANGANESE	TOTAL	<10.000	0.000	<10.000	<10.000	UG/L	2	5/90- 9/90
ORGANICS								
OIL&GREASE		1.000	0.000	1.000	1.000	MG/L	2	5/90- 9/90

U = MICRO

TABLE 23

SUMMARY OF WATER QUALITY DATA

SAGE BRUSH CANYON CREEK, STATION 10-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	9.287	6.568	22.000	2.000	DEGREES C	16	10/80- 9/88
CONDUCTIVITY	FIELD	2034.375	830.849	3180.000	900.000	UMHOS/CM	8	3/86- 9/88
CONDUCTIVITY	LAB	2722.166	1124.571	5100.000	970.000	UMHOS/CM	18	10/80- 9/87
PH	FIELD	8.784	0.245	9.210	8.500	PH	7	3/86- 9/88
PH	LAB	7.665	0.309	8.110	7.100	PH	17	10/80- 3/87
EH	FIELD	<75.500	0.000	<75.500	<75.500	MILLIVOLTS	1	5/87
ALKALINITY	TOTAL	258.072	70.460	374.000	99.000	MG/L	18	3/81- 9/88
ACIDITY	AS CACO3	<1.393	2.016	8.000	0.000	MG/L	18	3/81- 9/88
HARDNESS	TOTAL	1995.000	29.715	2029.000	1974.000	MG/L	3	9/87- 9/88
SOLIDS	DISSOLVED	2127.333	867.767	3340.000	689.000	MG/L	21	10/80- 9/88
SOLIDS	SUSPENDED	<411.450	905.743	3318.000	<2.000	MG/L	20	10/80- 9/88
SOLIDS	SETTLEABLE	<0.166	0.057	<0.200	<0.100	ML/L	3	9/87- 9/88
SAR		1.395	0.549	2.466	0.147		19	10/80- 9/88
CATIONS								
CALCIUM	DISSOLVED	234.250	51.622	263.000	157.000	MG/L	4	5/87- 9/88
CALCIUM	TOTAL	202.612	93.290	380.000	78.000	MG/L	16	10/80- 3/87
MAGNESIUM	DISSOLVED	285.500	85.191	335.000	158.000	MG/L	4	5/87- 9/88
MAGNESIUM	TOTAL	184.666	106.519	344.000	0.620	MG/L	16	10/80- 3/87
SODIUM	DISSOLVED	124.250	70.414	164.000	19.000	MG/L	4	5/87- 9/88
SODIUM	TOTAL	116.391	59.740	215.000	9.850	MG/L	17	10/80- 3/87
POTASSIUM	DISSOLVED	10.000	0.816	11.000	9.000	MG/L	4	5/87- 9/88
POTASSIUM	TOTAL	9.760	2.257	13.000	5.000	MG/L	16	10/80- 3/87

U = MICRO

TABLE 23 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

SAGE BRUSH CANYON CREEK, STATION 10-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ANIONS								
BICARBONATE	AS HCO3	313.069	82.292	456.000	121.000	MG/L	20	10/80- 9/88
CARBONATE	AS CO3	<1.000	0.000	<1.000	<1.000	MG/L	4	10/83- 9/86
CHLORIDE		132.025	83.017	256.000	3.200	MG/L	20	10/80- 9/88
SULFATE		1208.350	556.296	2080.000	328.000	MG/L	20	10/80- 9/88
GASES								
OXYGEN	DISSOLVED	9.540	1.074	10.300	8.780	MG/L	2	8/88- 9/88
SULPHIDE	TOTAL	<0.200	0.000	<0.200	<0.200	MG/L	1	9/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	4	10/83- 9/86
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	4	10/83- 9/86
CADMIUM	TOTAL	<9.750	9.500	24.000	<5.000	UG/L	4	10/83- 9/86
CHROMIUM	TOTAL-TOTA	<50.000	0.000	<50.000	<50.000	UG/L	4	10/83- 9/86
LEAD	TOTAL	<44.000	13.416	<50.000	<20.000	UG/L	5	10/83- 9/87
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	4	10/83- 9/86
SELENIUM	TOTAL	<3.825	2.349	<5.000	<0.300	UG/L	4	10/83- 9/86
SECONDARY								
COPPER	TOTAL	<20.000	0.000	<20.000	<20.000	UG/L	4	10/83- 9/86
ZINC	TOTAL	<23.800	26.281	66.000	<5.000	UG/L	5	10/83- 9/87
IRON	DISSOLVED	<173.157	521.448	2320.000	20.000	UG/L	19	10/80- 9/88
IRON	TOTAL	<3289.200	11999.831	54000.000	<20.000	UG/L	20	10/80- 9/88
MANGANESE	DISSOLVED	<10.909	3.015	20.000	<10.000	UG/L	11	10/83- 9/87
MANGANESE	TOTAL	<127.700	263.511	1130.000	<10.000	UG/L	20	10/80- 9/88

U = MICRO

TABLE 23 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

SAGE BRUSH CANYON CREEK, STATION 10-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
BORON	TOTAL	202.500	122.848	350.000	60.000	UG/L	4	10/83- 9/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
NICKEL	TOTAL	<40.000	0.000	<40.000	<40.000	UG/L	4	10/83- 9/86
NUTRIENTS								
NITROGEN	NITRATE	1.232	1.213	3.200	0.190	MG/L	5	10/83- 9/87
NITROGEN	KJELDAHL	2.925	3.641	5.500	0.350	MG/L	2	9/85- 9/86
NITROGEN	NO3+NO2	1.440	0.000	1.440	1.440	MG/L	1	9/87
PHOSPHATE	TOTAL-TOTA	1.330	2.558	5.900	0.050	MG/L	5	10/80- 9/86
PHOSPHATE	ORTHO-TOTA	0.110	0.000	0.110	0.110	MG/L	1	9/84
ORGANICS								
OIL&GREASE		<1.130	0.714	2.400	0.000	MG/L	11	10/83- 9/88
PHENOL		<5.500	6.363	10.000	<1.000	UG/L	2	10/80

U = MICRO

TABLE 24

SUMMARY OF WATER QUALITY DATA

WILD CATTLE HOLLOW CREEK, STATION 34-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	7.675	3.375	13.000	1.000	DEGREES C	32	10/80- 9/90
CONDUCTIVITY	FIELD	432.777	92.207	560.000	263.000	UMHOS/CM	18	6/84- 9/90
CONDUCTIVITY	LAB	450.450	144.720	980.000	265.000	UMHOS/CM	20	10/80- 9/87
PH	FIELD	8.276	0.351	8.930	7.460	PH	18	6/84- 9/90
PH	LAB	7.930	0.351	8.500	7.100	PH	18	10/80-10/86
EH	FIELD	<68.500	0.000	<68.500	<68.500	MILLIVOLTS	1	6/87
ALKALINITY	TOTAL	229.554	35.042	304.000	152.300	MG/L	24	12/80- 9/90
ACIDITY	AS CACO3	<1.825	2.056	7.600	0.000	MG/L	22	12/80- 9/89
HARDNESS	TOTAL	280.250	34.623	317.000	228.000	MG/L	8	6/87- 9/90
SOLIDS	DISSOLVED	269.111	63.203	540.000	202.000	MG/L	27	10/80- 9/90
SOLIDS	SUSPENDED	<10.676	17.520	88.000	<0.100	MG/L	26	10/80- 9/90
SOLIDS	SETTLEABLE	<0.160	0.054	<0.200	0.100	ML/L	5	9/87- 9/89
SAR		0.182	0.213	1.032	0.050		25	10/80- 9/90
CATIONS								
CALCIUM	DISSOLVED	63.500	8.035	76.000	54.000	MG/L	8	6/87- 9/90
CALCIUM	TOTAL	60.831	19.668	124.000	18.400	MG/L	19	10/80-10/86
MAGNESIUM	DISSOLVED	29.625	4.206	34.000	22.000	MG/L	8	6/87- 9/90
MAGNESIUM	TOTAL	25.617	3.686	31.680	19.000	MG/L	19	10/80-10/86
SODIUM	DISSOLVED	4.375	0.916	6.000	3.000	MG/L	8	6/87- 9/90
SODIUM	TOTAL	7.738	9.022	32.000	2.000	MG/L	18	10/80-10/86
POTASSIUM	DISSOLVED	<1.000	0.000	1.000	<1.000	MG/L	8	6/87- 9/90
POTASSIUM	TOTAL	1.971	2.432	9.000	0.600	MG/L	19	10/80-10/86

U = MICRO

TABLE 24 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

WILD CATTLE HOLLOW CREEK, STATION 34-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
BORON	TOTAL	140.000	79.372	230.000	80.000	UG/L	3	9/83-10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
NICKEL	TOTAL	<40.000	0.000	<40.000	<40.000	UG/L	3	9/83-10/86
NUTRIENTS								
NITROGEN	NITRATE	<0.416	0.311	0.740	<0.010	MG/L	5	9/83- 9/87
NITROGEN	KJELDAHL	<1.207	1.151	2.360	<0.050	MG/L	4	9/83-10/86
NITROGEN	NO3+NO2	0.290	0.000	0.290	0.290	MG/L	1	9/87
PHOSPHATE	TOTAL-TOTA	0.080	0.046	0.160	0.040	MG/L	7	10/80-10/86
ORGANICS								
OIL&GREASE		<0.843	0.462	2.100	<0.050	MG/L	15	9/83- 9/90
PHENOL		<2.000	1.414	3.000	<1.000	UG/L	2	10/80

U = MICRO

TABLE 24 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

WILD CATTLE HOLLOW CREEK, STATION 34-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ANIONS								
BICARBONATE	AS HCO3	283.034	41.350	370.880	185.100	MG/L	27	10/80- 9/90
CARBONATE	AS CO3	<2.000	2.000	5.000	<1.000	MG/L	4	9/83- 6/90
CHLORIDE		4.375	1.949	8.000	0.300	MG/L	27	10/80- 9/90
SULFATE		<32.814	57.610	317.000	<3.000	MG/L	27	10/80- 9/90
GASES								
OXYGEN	DISSOLVED	8.291	0.575	9.010	7.400	MG/L	6	8/88- 9/89
SULPHIDE	TOTAL	<0.200	0.000	<0.200	<0.200	MG/L	1	9/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	3	9/83-10/86
BARIUM	TOTAL	<110.000	17.320	130.000	<100.000	UG/L	3	9/83-10/86
CADMIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	3	9/83-10/86
CHROMIUM	TOTAL-TOTA	<50.000	0.000	<50.000	<50.000	UG/L	3	9/83-10/86
LEAD	TOTAL	<42.500	15.000	<50.000	<20.000	UG/L	4	9/83- 9/87
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	3	9/83-10/86
SELENIUM	TOTAL	<8.666	6.350	16.000	<5.000	UG/L	3	9/83-10/86
SECONDARY								
COPPER	TOTAL	<20.000	0.000	<20.000	<20.000	UG/L	3	9/83-10/86
ZINC	TOTAL	<6.750	2.362	<10.000	<5.000	UG/L	4	9/83- 9/87
IRON	DISSOLVED	<55.730	93.918	<500.000	<1.000	UG/L	26	10/80- 9/90
IRON	TOTAL	<129.222	124.979	450.000	<20.000	UG/L	27	10/80- 9/90
MANGANESE	DISSOLVED	<11.800	9.064	<50.000	5.000	UG/L	20	12/80- 9/90
MANGANESE	TOTAL	<13.740	12.148	70.000	<1.000	UG/L	27	10/80- 9/90

U = MICRO

TABLE 25

SUMMARY OF WATER QUALITY DATA
1990
WILD CATTLE HOLLOW CREEK, STATION 34-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	6.500	1.000	7.000	5.000	DEGREES C	4	6/90- 9/90
CONDUCTIVITY	FIELD	502.500	12.583	520.000	490.000	UMHOS/CM	4	6/90- 9/90
PH	FIELD	7.922	0.449	8.540	7.460	PH	4	6/90- 9/90
ALKALINITY	TOTAL	262.500	14.849	273.000	252.000	MG/L	2	6/90- 9/90
HARDNESS	TOTAL	297.500	27.577	317.000	278.000	MG/L	2	6/90- 9/90
SOLIDS	DISSOLVED	308.000	22.627	324.000	292.000	MG/L	2	6/90- 9/90
SOLIDS	SUSPENDED	<2.000	0.000	<2.000	<2.000	MG/L	2	6/90- 9/90
SAR		0.114	0.022	0.130	0.098		2	6/90- 9/90
CATIONS								
CALCIUM	DISSOLVED	69.000	9.899	76.000	62.000	MG/L	2	6/90- 9/90
MAGNESIUM	DISSOLVED	30.500	0.707	31.000	30.000	MG/L	2	6/90- 9/90
SODIUM	DISSOLVED	4.500	0.707	5.000	4.000	MG/L	2	6/90- 9/90
POTASSIUM	DISSOLVED	1.000	0.000	1.000	1.000	MG/L	2	6/90- 9/90
ANIONS								
BICARBONATE	AS HCO3	315.500	24.748	333.000	298.000	MG/L	2	6/90- 9/90
CARBONATE	AS CO3	5.000	0.000	5.000	5.000	MG/L	1	6/90
CHLORIDE		5.500	0.707	6.000	5.000	MG/L	2	6/90- 9/90
SULFATE		29.000	8.485	35.000	23.000	MG/L	2	6/90- 9/90

U = MICRO

TABLE 25 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
WILD CATTLE HOLLOW CREEK, STATION 34-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
SECONDARY								
IRON	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	2	6/90- 9/90
IRON	TOTAL	85.000	21.213	100.000	70.000	UG/L	2	6/90- 9/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	2	6/90- 9/90
MANGANESE	TOTAL	<10.000	0.000	<10.000	<10.000	UG/L	2	6/90- 9/90
ORGANICS								
OIL&GREASE		<1.000	0.000	<1.000	<1.000	MG/L	2	6/90- 9/90

U = MICRO

TABLE 26

SUMMARY OF WATER QUALITY DATA

GENTRY HOLLOW CREEK, STATION 34-2

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	8.475	3.317	14.300	3.000	DEGREES C	32	10/80- 9/90
CONDUCTIVITY	FIELD	466.529	88.610	590.000	288.000	UMHOS/CM	17	10/86- 9/90
CONDUCTIVITY	LAB	464.650	153.424	990.000	275.000	UMHOS/CM	20	10/80- 9/87
PH	FIELD	8.184	0.479	8.900	7.140	PH	17	6/86- 9/90
PH	LAB	7.825	0.343	8.500	7.200	PH	18	10/80-10/86
EH	FIELD	<69.600	0.000	<69.600	<69.600	MILLIVOLTS	1	6/87
ALKALINITY	TOTAL	233.100	36.224	308.000	154.400	MG/L	24	12/80- 9/90
ACIDITY	AS CACO3	<1.768	2.092	7.600	0.000	MG/L	22	12/80- 9/89
HARDNESS	TOTAL	299.750	44.618	351.000	236.000	MG/L	8	6/87- 9/90
SOLIDS	DISSOLVED	300.037	117.480	760.000	212.000	MG/L	27	10/80- 9/90
SOLIDS	SUSPENDED	<13.634	15.855	57.000	1.000	MG/L	26	10/80- 9/90
SOLIDS	SETTLEABLE	<0.160	0.054	<0.200	<0.100	ML/L	5	9/87- 9/89
SAR		0.146	0.142	0.781	0.071		26	10/80- 9/90
CATIONS								
CALCIUM	DISSOLVED	67.750	11.360	81.000	54.000	MG/L	8	6/87- 9/90
CALCIUM	TOTAL	62.252	23.267	143.000	21.600	MG/L	19	10/80-10/86
MAGNESIUM	DISSOLVED	31.750	4.713	38.000	24.000	MG/L	8	6/87- 9/90
MAGNESIUM	TOTAL	27.237	5.120	36.000	18.480	MG/L	19	10/80-10/86
SODIUM	DISSOLVED	3.750	0.707	5.000	3.000	MG/L	8	6/87- 9/90
SODIUM	TOTAL	6.252	5.528	25.000	3.000	MG/L	19	10/80-10/86
POTASSIUM	DISSOLVED	1.625	0.517	2.000	1.000	MG/L	8	6/87- 9/90
POTASSIUM	TOTAL	2.024	2.249	8.550	0.360	MG/L	19	10/80-10/86

U = MICRO

TABLE 26 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

GENTRY HOLLOW CREEK, STATION 34-2

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ANIONS								
BICARBONATE	AS HCO3	287.981	42.626	375.760	183.370	MG/L	27	10/80- 9/90
CARBONATE	AS CO3	<1.000	0.000	<1.000	<1.000	MG/L	3	9/83-10/86
CHLORIDE		<3.807	2.073	10.000	<0.100	MG/L	27	10/80- 9/90
SULFATE		37.774	56.371	313.900	13.000	MG/L	27	10/80- 9/90
GASES								
OXYGEN	DISSOLVED	8.245	0.547	8.960	7.420	MG/L	6	8/88- 9/89
SULPHIDE	TOTAL	<0.200	0.000	<0.200	<0.200	MG/L	1	9/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	3	9/83-10/86
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	3	9/83-10/86
CADMIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	3	9/83-10/86
CHROMIUM	TOTAL-TOTA	<50.000	0.000	<50.000	<50.000	UG/L	3	9/83-10/86
LEAD	TOTAL	<42.500	15.000	<50.000	<20.000	UG/L	4	9/83- 9/87
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	3	9/83-10/86
SELENIUM	TOTAL	<11.666	11.547	25.000	<5.000	UG/L	3	9/83-10/86
SECONDARY								
COPPER	TOTAL	<20.000	0.000	<20.000	<20.000	UG/L	3	9/83-10/86
ZINC	TOTAL	<14.500	13.820	35.000	<5.000	UG/L	4	9/83- 9/87
IRON	DISSOLVED	<42.846	25.773	120.000	10.000	UG/L	26	10/80- 9/90
IRON	TOTAL	225.111	164.233	580.000	30.000	UG/L	27	10/80- 9/90
MANGANESE	DISSOLVED	<11.842	5.058	30.000	<10.000	UG/L	19	12/80- 9/90
MANGANESE	TOTAL	<17.555	11.181	60.000	<1.000	UG/L	27	10/80- 9/90

U = MICRO

TABLE 26 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

GENTRY HOLLOW CREEK, STATION 34-2

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
BORON	TOTAL	163.333	56.862	210.000	100.000	UG/L	3	9/83-10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
NICKEL	TOTAL	<40.000	0.000	<40.000	<40.000	UG/L	3	9/83-10/86
NUTRIENTS								
NITROGEN	NITRATE	0.222	0.283	0.640	0.020	MG/L	4	9/83- 9/87
NITROGEN	KJELDAHL	<0.110	0.084	0.170	<0.050	MG/L	2	8/85-10/86
NITROGEN	NO3+NO2	0.080	0.000	0.080	0.080	MG/L	1	9/87
PHOSPHATE	TOTAL-TOTA	0.090	0.036	0.160	0.050	MG/L	6	10/80-10/86
ORGANICS								
OIL&GREASE		<0.943	0.768	3.500	<0.050	MG/L	15	9/83- 9/90
PHENOL		10.000	0.000	10.000	10.000	UG/L	1	10/80

U = MICRO

TABLE 27

SUMMARY OF WATER QUALITY DATA
1990
GENTRY HOLLOW CREEK, STATION 34-2

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	7.500	0.577	8.000	7.000	DEGREES C	4	6/90- 9/90
CONDUCTIVITY	FIELD	525.000	12.909	540.000	510.000	UMHOS/CM	4	6/90- 9/90
PH	FIELD	7.845	0.578	8.540	7.140	PH	4	6/90- 9/90
ALKALINITY	TOTAL	268.000	21.213	283.000	253.000	MG/L	2	6/90- 9/90
HARDNESS	TOTAL	312.500	36.062	338.000	287.000	MG/L	2	6/90- 9/90
SOLIDS	DISSOLVED	333.000	29.698	354.000	312.000	MG/L	2	6/90- 9/90
SOLIDS	SUSPENDED	<7.000	7.071	12.000	<2.000	MG/L	2	6/90- 9/90
SAR		0.087	0.022	0.103	0.071		2	6/90- 9/90
CATIONS								
CALCIUM	DISSOLVED	72.500	12.020	81.000	64.000	MG/L	2	6/90- 9/90
MAGNESIUM	DISSOLVED	32.000	1.414	33.000	31.000	MG/L	2	6/90- 9/90
SODIUM	DISSOLVED	3.500	0.707	4.000	3.000	MG/L	2	6/90- 9/90
POTASSIUM	DISSOLVED	1.500	0.707	2.000	1.000	MG/L	2	6/90- 9/90
ANIONS								
BICARBONATE	AS HCO3	327.000	25.455	345.000	309.000	MG/L	2	6/90- 9/90
CHLORIDE		4.500	0.707	5.000	4.000	MG/L	2	6/90- 9/90
SULFATE		31.000	0.000	31.000	31.000	MG/L	2	6/90- 9/90
SECONDARY								
IRON	DISSOLVED	<35.000	21.213	50.000	<20.000	UG/L	2	6/90- 9/90
IRON	TOTAL	320.000	155.563	430.000	210.000	UG/L	2	6/90- 9/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	2	6/90- 9/90
MANGANESE	TOTAL	20.000	0.000	20.000	20.000	UG/L	2	6/90- 9/90

U = MICRO

TABLE 27 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
GENTRY HOLLOW CREEK, STATION 34-2

PARAMETER	MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ORGANICS							
OIL&GREASE	<1.000	0.000	<1.000	<1.000	MG/L	2	6/90- 9/90

U = MICRO

TABLE 28

SUMMARY OF WATER QUALITY DATA

NORTH FORK, RIGHT FORK, MILLER CREEK, STATION ST-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	<9.706	5.014	18.800	<1.000	DEGREES C	29	1/81- 9/90
CONDUCTIVITY	FIELD	1304.277	350.393	1730.000	492.000	UMHOS/CM	18	3/86- 9/90
CONDUCTIVITY	LAB	1285.555	404.088	1900.000	370.000	UMHOS/CM	18	8/80- 9/87
PH	FIELD	8.240	0.414	8.920	7.130	PH	17	6/86- 9/90
PH	LAB	7.861	0.296	8.400	7.400	PH	17	8/80-10/86
EH	FIELD	<59.000	0.000	<59.000	<59.000	MILLIVOLTS	1	5/87
ALKALINITY	TOTAL	281.471	41.734	365.000	204.900	MG/L	21	4/81- 9/90
ACIDITY	AS CACO3	<4.800	7.204	24.000	0.000	MG/L	23	8/80- 9/89
HARDNESS	TOTAL	889.285	195.101	1033.000	494.000	MG/L	7	9/87- 9/90
SOLIDS	DISSOLVED	949.200	325.208	1472.000	240.000	MG/L	25	8/80- 9/90
SOLIDS	SUSPENDED	<13.840	9.745	34.000	<2.000	MG/L	25	8/80- 9/90
SOLIDS	SETTLEABLE	<0.160	0.054	<0.200	<0.100	ML/L	5	9/87- 9/89
SAR		0.153	0.020	0.189	0.089		20	4/81- 9/90
CATIONS								
CALCIUM	DISSOLVED	138.625	33.619	180.000	86.000	MG/L	8	5/87- 9/90
CALCIUM	TOTAL	123.400	36.414	176.000	60.000	MG/L	13	4/81-10/86
MAGNESIUM	DISSOLVED	121.500	34.309	153.000	68.000	MG/L	8	5/87- 9/90
MAGNESIUM	TOTAL	90.447	37.311	137.000	20.000	MG/L	13	4/81-10/86
SODIUM	DISSOLVED	10.500	2.138	14.000	7.000	MG/L	8	5/87- 9/90
SODIUM	TOTAL	9.261	2.730	13.000	3.100	MG/L	13	4/81-10/86
POTASSIUM	DISSOLVED	5.500	1.309	7.000	3.000	MG/L	8	5/87- 9/90
POTASSIUM	TOTAL	4.763	2.066	7.400	0.880	MG/L	13	4/81-10/86

U = MICRO

TABLE 28 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

NORTH FORK, RIGHT FORK, MILLER CREEK, STATION ST-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ANIONS								
BICARBONATE	AS HCO3	342.847	50.695	445.000	250.000	MG/L	21	4/81- 9/90
CARBONATE	AS CO3	<2.300	2.906	7.500	<1.000	MG/L	5	10/83-10/86
CHLORIDE		11.667	4.976	25.700	0.130	MG/L	24	8/80- 9/90
SULFATE		439.160	238.878	840.000	27.000	MG/L	25	8/80- 9/90
GASES								
OXYGEN	DISSOLVED	6.776	1.395	8.500	5.070	MG/L	6	8/88- 9/89
SULPHIDE	TOTAL	0.300	0.000	0.300	0.300	MG/L	1	9/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	4	10/83-10/86
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	4	10/83-10/86
CADMIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	4	10/83-10/86
CHROMIUM	TOTAL-TOTA	<50.000	0.000	<50.000	<50.000	UG/L	4	10/83-10/86
LEAD	TOTAL	<44.000	13.416	<50.000	<20.000	UG/L	5	10/83- 9/87
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	4	10/83-10/86
SELENIUM	TOTAL	<3.825	2.349	<5.000	<0.300	UG/L	4	10/83-10/86
SECONDARY								
COPPER	TOTAL	<20.000	0.000	<20.000	<20.000	UG/L	4	10/83-10/86
ZINC	TOTAL	<12.000	11.379	32.000	<5.000	UG/L	5	10/83- 9/87
IRON	DISSOLVED	<55.880	28.213	120.000	20.000	UG/L	25	8/80- 9/90
IRON	TOTAL	<256.120	138.626	630.000	<50.000	UG/L	25	8/80- 9/90
MANGANESE	DISSOLVED	<12.222	4.277	20.000	<10.000	UG/L	18	4/81- 9/90
MANGANESE	TOTAL	<25.120	15.428	70.000	2.000	UG/L	25	8/80- 9/90

U = MICRO

TABLE 28 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

NORTH FORK, RIGHT FORK, MILLER CREEK, STATION ST-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
BORON	TOTAL	227.500	236.555	570.000	60.000	UG/L	4	10/83-10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
NICKEL	TOTAL	<40.000	0.000	<40.000	<40.000	UG/L	4	10/83-10/86
NUTRIENTS								
NITROGEN	NITRATE	0.454	0.336	0.920	0.090	MG/L	9	8/80- 9/87
NITROGEN	KJELDAHL	0.135	0.021	0.150	0.120	MG/L	2	9/85-10/86
NITROGEN	NO3+NO2	0.220	0.000	0.220	0.220	MG/L	1	9/87
PHOSPHATE	TOTAL-TOTA	0.135	0.097	0.280	0.070	MG/L	4	10/83-10/86
ORGANICS								
OIL&GREASE		<0.815	0.397	1.800	<0.010	MG/L	20	8/80- 9/90

U = MICRO

TABLE 29

SUMMARY OF WATER QUALITY DATA
1990
NORTH FORK, RIGHT FORK, MILLER CREEK, STATION ST-1

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	11.500	3.415	15.000	7.000	DEGREES C	4	6/90- 9/90
CONDUCTIVITY	FIELD	1600.000	153.405	1730.000	1400.000	UMHOS/CM	4	6/90- 9/90
PH	FIELD	8.115	0.331	8.310	7.620	PH	4	6/90- 9/90
ALKALINITY	TOTAL	351.500	19.091	365.000	338.000	MG/L	2	6/90- 9/90
HARDNESS	TOTAL	1028.500	6.363	1033.000	1024.000	MG/L	2	6/90- 9/90
SOLIDS	DISSOLVED	1416.000	79.195	1472.000	1360.000	MG/L	2	6/90- 9/90
SOLIDS	SUSPENDED	11.000	1.414	12.000	10.000	MG/L	2	6/90- 9/90
SAR		0.169	0.028	0.189	0.149		2	6/90- 9/90
CATIONS								
CALCIUM	DISSOLVED	172.000	11.313	180.000	164.000	MG/L	2	6/90- 9/90
MAGNESIUM	DISSOLVED	146.000	8.485	152.000	140.000	MG/L	2	6/90- 9/90
SODIUM	DISSOLVED	12.500	2.121	14.000	11.000	MG/L	2	6/90- 9/90
POTASSIUM	DISSOLVED	6.000	0.000	6.000	6.000	MG/L	2	6/90- 9/90
ANIONS								
BICARBONATE	AS HCO3	428.500	23.334	445.000	412.000	MG/L	2	6/90- 9/90
CHLORIDE		16.000	0.000	16.000	16.000	MG/L	2	6/90- 9/90
SULFATE		679.500	26.162	698.000	661.000	MG/L	2	6/90- 9/90
SECONDARY								
IRON	DISSOLVED	<25.000	7.071	30.000	<20.000	UG/L	2	6/90- 9/90
IRON	TOTAL	520.000	155.563	630.000	410.000	UG/L	2	6/90- 9/90
MANGANESE	DISSOLVED	<15.000	7.071	20.000	<10.000	UG/L	2	6/90- 9/90
MANGANESE	TOTAL	40.000	0.000	40.000	40.000	UG/L	2	6/90- 9/90

U = MICRO

TABLE 29 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
NORTH FORK, RIGHT FORK, MILLER CREEK, STATION ST-1

PARAMETER	MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ORGANICS							
OIL&GREASE	<1.000	0.000	1.000	<1.000	MG/L	2	6/90- 9/90

U = MICRO

TABLE 30

SUMMARY OF WATER QUALITY DATA

SOUTH FORK, RIGHT FORK, MILLER CREEKK, STATION ST-2

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	<8.914	4.295	17.000	1.000	DEGREES C	27	1/81- 9/90
CONDUCTIVITY	FIELD	743.111	291.280	1600.000	328.000	UMHOS/CM	18	3/86- 9/90
CONDUCTIVITY	LAB	656.785	168.382	960.000	390.000	UMHOS/CM	14	1/81- 9/87
PH	FIELD	8.374	0.348	9.030	7.790	PH	17	6/86- 9/90
PH	LAB	7.919	0.310	8.400	7.300	PH	13	1/81-10/86
EH	FIELD	<66.900	0.000	<66.900	<66.900	MILLIVOLTS	1	5/87
ALKALINITY	TOTAL	259.457	40.176	328.000	202.000	MG/L	19	6/82- 9/90
ACIDITY	AS CACO3	<1.809	2.383	7.600	0.000	MG/L	18	1/81- 9/89
HARDNESS	TOTAL	382.285	167.837	514.000	50.000	MG/L	7	9/87- 9/90
SOLIDS	DISSOLVED	401.238	112.806	610.000	241.000	MG/L	21	1/81- 9/90
SOLIDS	SUSPENDED	<25.833	42.079	146.000	<0.500	MG/L	21	1/81- 9/90
SOLIDS	SETTLEABLE	<0.140	0.054	<0.200	<0.100	ML/L	5	9/87- 9/89
SAR		0.789	2.801	12.013	0.086		18	6/82- 9/90
CATIONS								
CALCIUM	DISSOLVED	68.750	29.148	99.000	7.000	MG/L	8	5/87- 9/90
CALCIUM	TOTAL	67.272	9.487	80.000	49.000	MG/L	11	6/82-10/86
MAGNESIUM	DISSOLVED	48.125	22.054	67.000	8.000	MG/L	8	5/87- 9/90
MAGNESIUM	TOTAL	40.254	14.113	60.800	23.000	MG/L	11	6/82-10/86
SODIUM	DISSOLVED	29.875	67.140	196.000	4.000	MG/L	8	5/87- 9/90
SODIUM	TOTAL	5.545	1.779	8.700	3.100	MG/L	11	6/82-10/86
POTASSIUM	DISSOLVED	6.500	11.135	34.000	1.000	MG/L	8	5/87- 9/90
POTASSIUM	TOTAL	2.218	1.038	4.700	0.900	MG/L	11	6/82-10/86

U = MICRO

TABLE 30 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

SOUTH FORK, RIGHT FORK, MILLER CREEKK, STATION ST-2

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
ANIONS								
BICARBONATE	AS HCO3	318.736	50.990	393.000	246.000	MG/L	19	6/82- 9/90
CARBONATE	AS CO3	<1.600	1.341	4.000	<1.000	MG/L	5	10/83- 6/90
CHLORIDE		7.330	3.442	16.000	1.000	MG/L	21	1/81- 9/90
SULFATE		99.761	53.022	185.000	30.000	MG/L	21	1/81- 9/90
GASES								
OXYGEN	DISSOLVED	7.273	1.641	9.300	5.120	MG/L	6	8/88- 9/89
SULPHIDE	TOTAL	<0.200	0.000	<0.200	<0.200	MG/L	1	9/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	4	10/83-10/86
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	4	10/83-10/86
CADMIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	4	10/83-10/86
CHROMIUM	TOTAL-TOTA	<50.000	0.000	<50.000	<50.000	UG/L	4	10/83-10/86
LEAD	TOTAL	<44.000	13.416	<50.000	<20.000	UG/L	5	10/83- 9/87
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	4	10/83-10/86
SELENIUM	TOTAL	<4.950	0.100	<5.000	4.800	UG/L	4	10/83-10/86
SECONDARY								
COPPER	TOTAL	<20.000	0.000	<20.000	<20.000	UG/L	4	10/83-10/86
ZINC	TOTAL	<10.200	7.463	23.000	<5.000	UG/L	5	10/83- 9/87
IRON	DISSOLVED	<49.714	44.253	210.000	<1.000	UG/L	21	1/81- 9/90
IRON	TOTAL	<248.523	407.581	1750.000	30.000	UG/L	21	1/81- 9/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	16	6/83- 9/90
MANGANESE	TOTAL	<12.809	7.379	30.000	<1.000	UG/L	21	1/81- 9/90

U = MICRO

TABLE 30 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

SOUTH FORK, RIGHT FORK, MILLER CREEKK, STATION ST-2

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
BORON	TOTAL	147.500	99.121	290.000	60.000	UG/L	4	10/83-10/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	9/87
NICKEL	TOTAL	<40.000	0.000	<40.000	<40.000	UG/L	4	10/83-10/86
NUTRIENTS								
NITROGEN	NITRATE	<0.065	0.079	0.210	<0.010	MG/L	7	1/81- 9/87
NITROGEN	KJELDAHL	0.125	0.035	0.150	0.100	MG/L	2	9/85-10/86
NITROGEN	NO3+NO2	<0.020	0.000	<0.020	<0.020	MG/L	1	9/87
PHOSPHATE	TOTAL-TOTA	0.090	0.033	0.140	0.070	MG/L	4	10/83-10/86
ORGANICS								
OIL&GREASE		<0.738	0.354	1.200	<0.010	MG/L	17	1/81- 9/90

U = MICRO

TABLE 31

SUMMARY OF WATER QUALITY DATA
1990
SOUTH FORK, RIGHT FORK, MILLER CREEKK, STATION ST-2

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	10.250	3.095	13.000	6.000	DEGREES C	4	6/90- 9/90
CONDUCTIVITY	FIELD	855.000	5.773	860.000	850.000	UMHOS/CM	4	6/90- 9/90
PH	FIELD	8.280	0.287	8.450	7.850	PH	4	6/90- 9/90
ALKALINITY	TOTAL	323.000	7.071	328.000	318.000	MG/L	2	6/90- 9/90
HARDNESS	TOTAL	282.000	328.097	514.000	50.000	MG/L	2	6/90- 9/90
SOLIDS	DISSOLVED	589.000	29.698	610.000	568.000	MG/L	2	6/90- 9/90
SOLIDS	SUSPENDED	<2.000	0.000	2.000	<2.000	MG/L	2	6/90- 9/90
SAR		6.073	8.399	12.013	0.134		2	6/90- 9/90
CATIONS								
CALCIUM	DISSOLVED	53.000	65.053	99.000	7.000	MG/L	2	6/90- 9/90
MAGNESIUM	DISSOLVED	36.500	40.305	65.000	8.000	MG/L	2	6/90- 9/90
SODIUM	DISSOLVED	101.500	133.643	196.000	7.000	MG/L	2	6/90- 9/90
POTASSIUM	DISSOLVED	18.500	21.920	34.000	3.000	MG/L	2	6/90- 9/90
ANIONS								
BICARBONATE	AS HCO3	390.500	3.535	393.000	388.000	MG/L	2	6/90- 9/90
CARBONATE	AS CO3	4.000	0.000	4.000	4.000	MG/L	1	6/90
CHLORIDE		13.000	4.242	16.000	10.000	MG/L	2	6/90- 9/90
SULFATE		154.000	43.840	185.000	123.000	MG/L	2	6/90- 9/90

U = MICRO

TABLE 31 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
SOUTH FORK, RIGHT FORK, MILLER CREEKK, STATION ST-2

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
SECONDARY								
IRON	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	2	6/90- 9/90
IRON	TOTAL	85.000	7.071	90.000	80.000	UG/L	2	6/90- 9/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	2	6/90- 9/90
MANGANESE	TOTAL	<10.000	0.000	10.000	<10.000	UG/L	2	6/90- 9/90
ORGANICS								
OIL&GREASE		<1.000	0.000	<1.000	<1.000	MG/L	2	6/90- 9/90

U = MICRO

TABLE 32

SUMMARY OF WATER QUALITY DATA

UPSTREAM, NORTH FORK, RIGHT FORK, MILLER CREEK, STATION M-8

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	10.392	4.053	19.000	5.800	DEGREES C	13	6/88- 9/90
CONDUCTIVITY	FIELD	1195.384	623.030	1810.000	248.000	UMHOS/CM	13	6/88- 9/90
CONDUCTIVITY	LAB	1480.000	0.000	1480.000	1480.000	UMHOS/CM	1	4/89
PH	FIELD	8.519	0.530	9.270	7.180	PH	13	6/88- 9/90
ALKALINITY	TOTAL	302.200	83.315	414.000	181.000	MG/L	10	6/88- 9/90
HARDNESS	TOTAL	873.555	358.680	1270.000	251.000	MG/L	9	7/88- 9/90
SOLIDS	DISSOLVED	1004.200	536.763	1602.000	230.000	MG/L	10	6/88- 9/90
SOLIDS	SUSPENDED	14.000	0.000	14.000	14.000	MG/L	2	6/88- 7/90
SOLIDS	SETTLEABLE	<0.185	0.037	<0.200	<0.100	ML/L	7	6/88- 5/90
SAR		0.168	0.173	0.659	0.084		10	6/88- 9/90
CATIONS								
CALCIUM	DISSOLVED	115.400	42.419	164.000	51.000	MG/L	10	6/88- 9/90
MAGNESIUM	DISSOLVED	138.777	66.681	220.000	30.000	MG/L	9	7/88- 9/90
MAGNESIUM	TOTAL	23.000	0.000	23.000	23.000	MG/L	1	6/88
SODIUM	DISSOLVED	11.800	15.053	54.000	3.000	MG/L	10	6/88- 9/90
POTASSIUM	DISSOLVED	4.800	2.898	8.000	1.000	MG/L	10	6/88- 9/90
ANIONS								
BICARBONATE	AS HCO3	370.900	98.858	505.000	221.000	MG/L	10	6/88- 9/90
CARBONATE	AS CO3	9.333	3.785	12.000	5.000	MG/L	3	9/89- 7/90
CHLORIDE		8.200	3.705	12.000	2.000	MG/L	10	6/88- 9/90
SULFATE		493.600	324.830	871.000	35.000	MG/L	10	6/88- 9/90

U = MICRO

TABLE 32 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

UPSTREAM, NORTH FORK, RIGHT FORK, MILLER CREEK, STATION M-8

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
MINOR								
FLUORIDE		0.275	0.148	0.500	0.100	MG/L	8	6/88- 5/90
GASES								
OXYGEN	DISSOLVED	8.278	0.824	9.200	7.260	MG/L	5	8/88- 8/89
SULPHIDE	TOTAL	<0.070	0.114	0.300	<0.010	MG/L	8	6/88- 5/90
PRIMARY								
ARSENIC	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	8	6/88- 5/90
BARIUM	DISSOLVED	<45.000	55.291	180.000	<10.000	UG/L	8	6/88- 5/90
CADMIUM	DISSOLVED	<5.625	1.767	<10.000	<5.000	UG/L	8	6/88- 5/90
CHROMIUM	TOTAL-DISS	<10.000	0.000	10.000	<10.000	UG/L	8	6/88- 5/90
LEAD	TOTAL	<20.000	0.000	<20.000	<20.000	UG/L	2	6/88- 4/89
MERCURY	DISSOLVED	<0.112	0.035	<0.200	<0.100	UG/L	8	6/88- 5/90
SELENIUM	DISSOLVED	<1.375	0.744	3.000	<1.000	UG/L	8	6/88- 5/90
SECONDARY								
COPPER	DISSOLVED	<10.000	0.000	10.000	<10.000	UG/L	8	6/88- 5/90
ZINC	TOTAL	<12.500	7.071	30.000	<10.000	UG/L	8	6/88- 5/90
IRON	DISSOLVED	<21.000	3.162	30.000	<20.000	UG/L	10	6/88- 9/90
IRON	TOTAL	<50.000	55.777	200.000	<20.000	UG/L	10	6/88- 9/90
MANGANESE	DISSOLVED	<11.666	4.082	20.000	<10.000	UG/L	6	6/89- 9/90
MANGANESE	TOTAL	<11.000	3.162	20.000	<10.000	UG/L	10	6/88- 9/90

U = MICRO

TABLE 32 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

UPSTREAM, NORTH FORK, RIGHT FORK, MILLER CREEK, STATION M-8

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	8	6/88- 5/90
BORON	DISSOLVED	<118.750	126.991	410.000	<20.000	UG/L	8	6/88- 5/90
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	8	6/88- 5/90
NICKEL	DISSOLVED	<21.250	3.535	30.000	<20.000	UG/L	8	6/88- 5/90
NUTRIENTS								
NITROGEN	AMMIUM-TOT	<0.055	0.066	0.210	<0.010	MG/L	8	6/88- 5/90
NITROGEN	AMMIA-FREE	<0.002	0.001	<0.004	<0.001	MG/L	8	6/88- 5/90
NITROGEN	NITRATE	<0.090	0.098	0.260	<0.010	MG/L	8	6/88- 5/90
NITROGEN	NO3+NO2	<0.087	0.093	0.250	<0.020	MG/L	8	6/88- 5/90
PHOSPHATE	ORTHO-DISS	<0.009	0.008	0.030	<0.005	MG/L	8	6/88- 5/90
ORGANICS								
OIL&GREASE		<1.125	0.353	2.000	<1.000	MG/L	8	6/88- 7/90

U = MICRO

TABLE 33

SUMMARY OF WATER QUALITY DATA
1990
UPSTREAM, NORTH FORK, RIGHT FORK, MILLER CREEK, STATION M-8

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	10.500	3.785	16.000	8.000	DEGREES C	4	5/90- 9/90
CONDUCTIVITY	FIELD	1715.000	79.372	1810.000	1640.000	UMHOS/CM	4	5/90- 9/90
PH	FIELD	8.070	0.596	8.450	7.180	PH	4	5/90- 9/90
ALKALINITY	TOTAL	336.333	54.884	370.000	273.000	MG/L	3	5/90- 9/90
HARDNESS	TOTAL	1157.000	107.093	1270.000	1057.000	MG/L	3	5/90- 9/90
SOLIDS	DISSOLVED	1534.000	88.453	1602.000	1434.000	MG/L	3	5/90- 9/90
SOLIDS	SUSPENDED	14.000	0.000	14.000	14.000	MG/L	1	7/90
SOLIDS	SETTLEABLE	<0.200	0.000	<0.200	<0.200	ML/L	1	5/90
SAR		0.303	0.308	0.659	0.120		3	5/90- 9/90
CATIONS								
CALCIUM	DISSOLVED	150.000	7.937	159.000	144.000	MG/L	3	5/90- 9/90
MAGNESIUM	DISSOLVED	190.666	26.102	220.000	170.000	MG/L	3	5/90- 9/90
SODIUM	DISSOLVED	24.333	25.696	54.000	9.000	MG/L	3	5/90- 9/90
POTASSIUM	DISSOLVED	6.333	1.527	8.000	5.000	MG/L	3	5/90- 9/90
ANIONS								
BICARBONATE	AS HCO3	421.000	30.512	451.000	390.000	MG/L	3	5/90- 9/90
CARBONATE	AS CO3	11.500	0.707	12.000	11.000	MG/L	2	5/90- 7/90
CHLORIDE		11.333	0.577	12.000	11.000	MG/L	3	5/90- 9/90
SULFATE		809.666	57.492	871.000	757.000	MG/L	3	5/90- 9/90
MINOR								
FLUORIDE		0.300	0.000	0.300	0.300	MG/L	1	5/90

U = MICRO

TABLE 33 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
UPSTREAM, NORTH FORK, RIGHT FORK, MILLER CREEK, STATION M-8

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
GASES								
SULPHIDE	TOTAL	<0.010	0.000	<0.010	<0.010	MG/L	1	5/90
PRIMARY								
ARSENIC	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	1	5/90
BARIUM	DISSOLVED	20.000	0.000	20.000	20.000	UG/L	1	5/90
CADMIUM	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	1	5/90
CHROMIUM	TOTAL-DISS	<10.000	0.000	<10.000	<10.000	UG/L	1	5/90
MERCURY	DISSOLVED	<0.100	0.000	<0.100	<0.100	UG/L	1	5/90
SELENIUM	DISSOLVED	<1.000	0.000	<1.000	<1.000	UG/L	1	5/90
SECONDARY								
COPPER	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	1	5/90
ZINC	TOTAL	<10.000	0.000	<10.000	<10.000	UG/L	1	5/90
IRON	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	3	5/90- 9/90
IRON	TOTAL	53.333	23.094	80.000	40.000	UG/L	3	5/90- 9/90
MANGANESE	DISSOLVED	<13.333	5.773	20.000	<10.000	UG/L	3	5/90- 9/90
MANGANESE	TOTAL	<13.333	5.773	20.000	<10.000	UG/L	3	5/90- 9/90
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	5/90
BORON	DISSOLVED	100.000	0.000	100.000	100.000	UG/L	1	5/90
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	1	5/90
NICKEL	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	1	5/90

U = MICRO

TABLE 33 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
UPSTREAM, NORTH FORK, RIGHT FORK, MILLER CREEK, STATION M-8

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
NUTRIENTS								
NITROGEN	AMMIUM-TOT	0.210	0.000	0.210	0.210	MG/L	1	5/90
NITROGEN	AMMIA-FREE	<0.001	0.000	<0.001	<0.001	MG/L	1	5/90
NITROGEN	NITRATE	<0.020	0.000	<0.020	<0.020	MG/L	1	5/90
NITROGEN	NO3+NO2	<0.020	0.000	<0.020	<0.020	MG/L	1	5/90
PHOSPHATE	ORTHO-DISS	0.007	0.000	0.007	0.007	MG/L	1	5/90
ORGANICS								
OIL&GREASE		<1.500	0.707	2.000	<1.000	MG/L	2	5/90- 7/90

U = MICRO

TABLE 34
WATER QUALITY MONITORING DATA - FIELD DATA
UNDERGROUND MINE INFLOWS, 1990

DATE: 02/13/91

STATION NUMBER	DATE	TIME HH:MM	AIR TEMP. DEG. C	WATER DEPTH FEET	FLOW RATE	UNIT	TEMP DEG C	EC FIELD UMHOS/CM	PH FLD	TURB. FIELD NTU	OIL+GR VISBL. 1=Y 2=N	DO MG/L
1W4	01/16/90	8:55			0.0010	CFS	7.0	1040.0	7.7			
1W4	04/18/90	9:30			0.0010	CFS	8.0	1310.0	8.1			
1W4	07/02/90	9:55			0.0010	CFS	8.0	1260.0	8.0			
1W4	10/24/90	10:00			0.0010	CFS	8.0	1050.0	8.1			
1WN6	01/16/90	10:30			0.0001	CFS						
1WN6	04/18/90	:			0.0001	CFS						
1WN6	07/02/90	:			0.0001	CFS						
1WN6	10/24/90	:			0.0001	CFS						
9L12	01/16/90	10:00			0.0840	CFS	9.0	1340.0	7.3			
9L12	04/18/90	10:30			0.0740	CFS	9.0	1890.0	7.8			
9L12	07/02/90	11:35			0.0840	CFS	9.0	1530.0	7.7			
9L12	10/24/90	10:30			0.0860	CFS	7.0	1330.0	7.8			

WATER LEVEL OF 0.001 = 0, FLOW RATE OF 0.0001 = 0
NEGATIVE WATER LEVEL IN A WELL IS ABOVE GROUND SURFACE

TABLE 35

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE DISCHARGE (NSMUD)

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
CONDUCTIVITY	LAB	1450.000	0.000	1450.000	1450.000	UMHOS/CM	1	3/87
PH	LAB	7.535	0.295	8.150	6.950	PH	42	6/83- 9/87
ALKALINITY	TOTAL	264.000	0.000	264.000	264.000	MG/L	1	3/87
ACIDITY	AS CACO3	0.000	0.000	0.000	0.000	MG/L	1	3/87
SOLIDS	DISSOLVED	789.000	246.585	1330.000	366.000	MG/L	42	6/83- 9/87
SOLIDS	SUSPENDED	<3.838	3.485	19.000	0.050	MG/L	40	6/83- 9/87
SOLIDS	SETTLEABLE	<0.155	0.233	<0.500	<0.010	ML/L	4	6/83
SAR		0.106	0.000	0.106	0.106		1	3/87
CATIONS								
CALCIUM	TOTAL	147.000	0.000	147.000	147.000	MG/L	1	3/87
MAGNESIUM	TOTAL	109.000	0.000	109.000	109.000	MG/L	1	3/87
SODIUM	TOTAL	7.000	0.000	7.000	7.000	MG/L	1	3/87
POTASSIUM	TOTAL	10.000	0.000	10.000	10.000	MG/L	1	3/87
ANIONS								
BICARBONATE	AS HCO3	322.000	0.000	322.000	322.000	MG/L	1	3/87
CHLORIDE		6.000	0.000	6.000	6.000	MG/L	1	3/87
SULFATE		540.000	0.000	540.000	540.000	MG/L	1	3/87

U = MICRO

TABLE 35 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE DISCHARGE (NSMUD)

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PRIMARY								
ARSENIC	TOTAL	<2.000	0.000	<2.000	<2.000	UG/L	1	3/87
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	1	3/87
CADMIUM	TOTAL	<2.000	0.000	<2.000	<2.000	UG/L	1	3/87
CHROMIUM	TOTAL-TOTA	<50.000	0.000	<50.000	<50.000	UG/L	1	3/87
LEAD	TOTAL	<50.000	0.000	<50.000	<50.000	UG/L	1	3/87
MERCURY	TOTAL	<0.500	0.000	<0.500	<0.500	UG/L	1	3/87
SECONDARY								
IRON	DISSOLVED	90.000	0.000	90.000	90.000	UG/L	1	3/87
IRON	TOTAL	<141.904	141.339	820.000	<20.000	UG/L	42	6/83- 9/87
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	5	1/86- 3/87
MANGANESE	TOTAL	<12.692	5.334	30.000	<10.000	UG/L	26	5/84- 3/87
ORGANICS								
OIL&GREASE		<0.889	0.729	3.900	<0.050	MG/L	42	6/83- 9/87

U = MICRO

TABLE 36

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE INFLOW, 1ST WEST NO. 4

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	8.778	3.034	16.000	4.000	DEGREES C	16	6/86-10/90
CONDUCTIVITY	FIELD	1013.571	243.771	1350.000	550.000	UMHOS/CM	14	6/87-10/90
CONDUCTIVITY	LAB	1204.571	35.655	1275.000	1160.000	UMHOS/CM	7	10/85- 4/89
PH	FIELD	8.138	0.332	8.800	7.500	PH	16	9/86-10/90
PH	LAB	7.700	0.357	8.010	7.200	PH	6	10/85- 3/87
ALKALINITY	TOTAL	257.142	57.054	494.000	190.000	MG/L	21	10/85-10/90
ACIDITY	AS CACO3	<1.000	0.000	<1.000	0.000	MG/L	14	10/85- 4/90
HARDNESS	TOTAL	747.285	62.964	915.000	677.000	MG/L	14	9/87-10/90
SOLIDS	DISSOLVED	872.000	56.336	984.000	769.000	MG/L	22	6/85-10/90
SOLIDS	SUSPENDED	7.500	7.778	13.000	2.000	MG/L	2	10/85- 3/86
SAR		0.108	0.104	0.561	0.059		21	10/85-10/90
CATIONS								
CALCIUM	DISSOLVED	130.600	22.070	189.000	107.000	MG/L	15	6/87-10/90
CALCIUM	TOTAL	127.666	5.715	134.000	118.000	MG/L	6	10/85- 3/87
MAGNESIUM	DISSOLVED	102.266	6.273	111.000	87.000	MG/L	15	6/87-10/90
MAGNESIUM	TOTAL	90.666	3.502	96.000	86.000	MG/L	6	10/85- 3/87
SODIUM	DISSOLVED	7.666	8.706	39.000	4.000	MG/L	15	6/87-10/90
SODIUM	TOTAL	5.166	0.686	6.000	4.000	MG/L	6	10/85- 3/87
POTASSIUM	DISSOLVED	4.933	0.798	6.000	4.000	MG/L	15	6/87-10/90
POTASSIUM	TOTAL	5.033	0.637	6.000	4.000	MG/L	6	10/85- 3/87
ANIONS								
BICARBONATE	AS HCO3	323.190	71.514	603.000	279.000	MG/L	21	10/85-10/90
CARBONATE	AS CO3	<1.000	0.000	<1.000	<1.000	MG/L	2	10/85- 9/86
CHLORIDE		8.557	1.283	13.000	7.000	MG/L	21	10/85-10/90
SULFATE		459.666	37.889	512.000	380.000	MG/L	21	10/85-10/90

U = MICRO

TABLE 36 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE INFLOW, 1ST WEST NO. 4

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
GASES								
SULPHIDE	TOTAL	<0.150	0.070	<0.200	<0.100	MG/L	2	9/87-12/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	2	10/85- 9/86
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	2	10/85- 9/86
CADMIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	2	10/85- 9/86
CHROMIUM	TOTAL-TOTA	<50.000	0.000	<50.000	<50.000	UG/L	2	10/85- 9/86
LEAD	TOTAL	<32.000	16.431	<50.000	<20.000	UG/L	5	10/85- 4/88
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	2	10/85- 9/86
SELENIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	2	10/85- 9/86
SECONDARY								
COPPER	TOTAL	<20.000	0.000	<20.000	<20.000	UG/L	2	10/85- 9/86
ZINC	TOTAL	<24.000	26.786	70.000	<5.000	UG/L	5	10/85- 4/88
IRON	DISSOLVED	<31.904	20.400	100.000	<20.000	UG/L	21	10/85-10/90
IRON	TOTAL	<169.523	318.095	1370.000	<20.000	UG/L	21	10/85-10/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	17	10/85-10/90
MANGANESE	TOTAL	<11.904	5.117	30.000	<10.000	UG/L	21	10/85-10/90
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	3	9/87- 4/88
BORON	TOTAL	270.000	98.994	340.000	200.000	UG/L	2	10/85- 9/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	3	9/87- 4/88
NICKEL	TOTAL	<55.000	21.213	70.000	<40.000	UG/L	2	10/85- 9/86

U = MICRO

TABLE 36 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE INFLOW, 1ST WEST NO. 4

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
NUTRIENTS								
NITROGEN	NITRATE	<0.076	0.114	0.280	<0.010	MG/L	5	10/85- 4/88
NITROGEN	KJELDAHL	<0.055	0.007	0.060	<0.050	MG/L	2	10/85- 9/86
NITROGEN	NO3+NO2	<0.110	0.147	0.280	<0.020	MG/L	3	9/87- 4/88
PHOSPHATE	TOTAL-TOTA	0.050	0.014	0.060	0.040	MG/L	2	10/85- 9/86
ORGANICS								
OIL&GREASE		<1.175	0.918	2.000	<0.050	MG/L	6	10/85- 3/87

U = MICRO

TABLE 37

SUMMARY OF WATER QUALITY DATA
1990
UNDERGROUND MINE INFLOW, 1ST WEST NO. 4

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	7.750	0.500	8.000	7.000	DEGREES C	4	1/90-10/90
CONDUCTIVITY	FIELD	1165.000	140.118	1310.000	1040.000	UMHOS/CM	4	1/90-10/90
PH	FIELD	7.960	0.187	8.070	7.680	PH	4	1/90-10/90
ALKALINITY	TOTAL	243.500	9.949	256.000	235.000	MG/L	4	1/90-10/90
ACIDITY	AS CACO3	0.000	0.000	0.000	0.000	MG/L	2	1/90- 4/90
HARDNESS	TOTAL	776.000	23.678	808.000	752.000	MG/L	4	1/90-10/90
SOLIDS	DISSOLVED	942.666	36.018	984.000	918.000	MG/L	3	1/90-10/90
SAR		0.089	0.007	0.095	0.078		4	1/90-10/90
CATIONS								
CALCIUM	DISSOLVED	145.500	7.325	156.000	140.000	MG/L	4	1/90-10/90
MAGNESIUM	DISSOLVED	100.500	7.937	111.000	92.000	MG/L	4	1/90-10/90
SODIUM	DISSOLVED	5.750	0.500	6.000	5.000	MG/L	4	1/90-10/90
POTASSIUM	DISSOLVED	5.000	0.000	5.000	5.000	MG/L	4	1/90-10/90
ANIONS								
BICARBONATE	AS HCO3	297.000	11.860	312.000	287.000	MG/L	4	1/90-10/90
CHLORIDE		8.500	0.577	9.000	8.000	MG/L	4	1/90-10/90
SULFATE		493.250	17.802	512.000	471.000	MG/L	4	1/90-10/90
SECONDARY								
IRON	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	4	1/90-10/90
IRON	TOTAL	<30.000	20.000	60.000	<20.000	UG/L	4	1/90-10/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	4	1/90-10/90
MANGANESE	TOTAL	<10.000	0.000	<10.000	<10.000	UG/L	4	1/90-10/90

U = MICRO

TABLE 38

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE INFLOW, 1ST WEST NORTH NO. 6

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	8.794	4.250	15.000	4.440	DEGREES C	10	6/86- 4/89
CONDUCTIVITY	FIELD	864.777	192.439	1300.000	700.000	UMHOS/CM	9	9/86- 4/89
CONDUCTIVITY	LAB	1061.500	93.507	1230.000	920.000	UMHOS/CM	8	8/85- 4/89
PH	FIELD	8.053	0.330	8.500	7.400	PH	10	9/86- 4/89
PH	LAB	7.681	0.309	8.000	7.150	PH	7	8/85- 3/87
EH	FIELD	<42.700	0.000	<42.700	<42.700	MILLIVOLTS	1	6/87
ALKALINITY	TOTAL	263.125	43.855	317.000	192.000	MG/L	16	8/85- 4/89
ACIDITY	AS CACO3	<1.000	0.000	<1.000	0.000	MG/L	11	8/85- 4/89
HARDNESS	TOTAL	672.000	63.794	769.000	612.000	MG/L	8	9/87- 4/89
SOLIDS	DISSOLVED	734.333	100.838	976.000	572.000	MG/L	18	6/85- 4/89
SOLIDS	SUSPENDED	5.333	2.081	7.000	3.000	MG/L	3	8/85- 3/86
SAR		0.077	0.023	0.105	0.016		16	8/85- 4/89
CATIONS								
CALCIUM	DISSOLVED	121.333	16.770	142.000	102.000	MG/L	9	6/87- 4/89
CALCIUM	TOTAL	105.000	20.289	124.000	68.000	MG/L	7	8/85- 3/87
MAGNESIUM	DISSOLVED	90.555	6.984	104.000	84.000	MG/L	9	6/87- 4/89
MAGNESIUM	TOTAL	72.571	7.367	86.000	64.000	MG/L	7	8/85- 3/87
SODIUM	DISSOLVED	<4.444	1.589	6.000	<1.000	MG/L	9	6/87- 4/89
SODIUM	TOTAL	4.442	1.171	5.500	2.000	MG/L	7	8/85- 3/87
POTASSIUM	DISSOLVED	3.888	0.927	5.000	3.000	MG/L	9	6/87- 4/89
POTASSIUM	TOTAL	5.171	3.883	13.900	3.000	MG/L	7	8/85- 3/87
ANIONS								
BICARBONATE	AS HCO3	321.000	53.547	387.000	234.000	MG/L	16	8/85- 4/89
CARBONATE	AS CO3	<1.000	0.000	<1.000	<1.000	MG/L	3	8/85- 9/86
CHLORIDE		5.675	2.151	12.500	4.000	MG/L	16	8/85- 4/89
SULFATE		354.125	97.583	576.000	225.000	MG/L	16	8/85- 4/89

U = MICRO

TABLE 38 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE INFLOW, 1ST WEST NORTH NO. 6

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
GASES								
SULPHIDE	TOTAL	<0.150	0.070	<0.200	<0.100	MG/L	2	9/87-12/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	3	8/85- 9/86
BARIUM	TOTAL	<100.000	0.000	<100.000	<100.000	UG/L	3	8/85- 9/86
CADMIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	3	8/85- 9/86
CHROMIUM	TOTAL-TOTA	<200.000	259.807	<500.000	<50.000	UG/L	3	8/85- 9/86
LEAD	TOTAL	<35.000	16.431	<50.000	<20.000	UG/L	6	8/85- 4/88
MERCURY	TOTAL	<0.200	0.000	<0.200	<0.200	UG/L	3	8/85- 9/86
SELENIUM	TOTAL	<5.000	0.000	<5.000	<5.000	UG/L	3	8/85- 9/86
SECONDARY								
COPPER	TOTAL	<80.000	103.923	<200.000	<20.000	UG/L	3	8/85- 9/86
ZINC	TOTAL	<15.333	12.355	32.000	<5.000	UG/L	6	8/85- 4/88
IRON	DISSOLVED	<103.750	146.600	570.000	<20.000	UG/L	16	8/85- 4/89
IRON	TOTAL	809.375	1741.445	7240.000	50.000	UG/L	16	8/85- 4/89
MANGANESE	DISSOLVED	<10.833	2.886	20.000	<10.000	UG/L	12	8/85- 4/88
MANGANESE	TOTAL	<16.875	11.383	50.000	<10.000	UG/L	16	8/85- 4/89
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	3	9/87- 4/88
BORON	TOTAL	190.000	40.000	230.000	150.000	UG/L	3	8/85- 9/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	3	9/87- 4/88
NICKEL	TOTAL	<46.666	11.547	60.000	<40.000	UG/L	3	8/85- 9/86

U = MICRO

TABLE 38 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE INFLOW, 1ST WEST NORTH NO. 6

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
NUTRIENTS								
NITROGEN	NITRATE	<0.046	0.041	0.120	<0.010	MG/L	6	8/85- 4/88
NITROGEN	KJELDAHL	<0.053	0.005	0.060	<0.050	MG/L	3	8/85- 9/86
NITROGEN	NO3+NO2	0.070	0.045	0.120	0.030	MG/L	3	9/87- 4/88
PHOSPHATE	TOTAL-TOTA	0.060	0.034	0.100	0.040	MG/L	3	8/85- 9/86
ORGANICS								
OIL&GREASE		<1.271	0.760	2.200	<0.500	MG/L	7	8/85- 3/87

U = MICRO

TABLE 39

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE INFLOW, 9TH LEFT NO. 12

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	9.198	2.979	16.000	4.000	DEGREES C	16	6/86-10/90
CONDUCTIVITY	FIELD	1354.666	269.334	1890.000	1010.000	UMHOS/CM	15	9/86-10/90
CONDUCTIVITY	LAB	1525.000	212.602	1840.000	1200.000	UMHOS/CM	9	8/85-10/89
PH	FIELD	7.489	0.209	7.840	7.100	PH	16	9/86-10/90
PH	LAB	7.277	0.341	8.000	6.900	PH	7	8/85- 3/87
ALKALINITY	TOTAL	355.545	75.558	480.000	262.000	MG/L	22	8/85-10/90
ACIDITY	AS CACO3	<1.000	0.000	<1.000	0.000	MG/L	15	8/85- 4/90
HARDNESS	TOTAL	974.928	50.328	1057.000	887.000	MG/L	14	9/87-10/90
SOLIDS	DISSOLVED	1121.692	209.882	1492.000	717.000	MG/L	26	3/85-10/90
SOLIDS	SUSPENDED	<1.833	1.258	3.000	<0.500	MG/L	3	8/85- 3/86
SAR		0.111	0.058	0.350	0.028		22	8/85-10/90
CATIONS								
CALCIUM	DISSOLVED	214.200	25.942	274.000	177.000	MG/L	15	6/87-10/90
CALCIUM	TOTAL	193.000	49.467	260.000	112.000	MG/L	7	8/85- 3/87
MAGNESIUM	DISSOLVED	110.933	9.917	127.000	88.000	MG/L	15	6/87-10/90
MAGNESIUM	TOTAL	103.171	22.911	130.000	72.000	MG/L	7	8/85- 3/87
SODIUM	DISSOLVED	7.600	4.762	24.000	2.000	MG/L	15	6/87-10/90
SODIUM	TOTAL	8.628	1.168	10.000	7.000	MG/L	7	8/85- 3/87
POTASSIUM	DISSOLVED	11.800	1.612	14.000	9.000	MG/L	15	6/87-10/90
POTASSIUM	TOTAL	12.814	2.683	15.300	7.000	MG/L	7	8/85- 3/87
ANIONS								
BICARBONATE	AS HCO3	433.772	92.104	586.000	320.000	MG/L	22	8/85-10/90
CARBONATE	AS CO3	<1.000	0.000	<1.000	<1.000	MG/L	3	8/85- 9/86
CHLORIDE		6.781	7.333	39.000	2.000	MG/L	22	8/85-10/90
SULFATE		606.545	107.077	768.000	340.000	MG/L	22	8/85-10/90

U = MICRO

TABLE 39 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE INFLOW, 9TH LEFT NO. 12

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
GASES								
SULPHIDE	TOTAL	<0.150	0.070	<0.200	<0.100	MG/L	2	9/87-12/87
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	4	8/85- 1/90
BARIUM	TOTAL	<77.500	45.000	<100.000	10.000	UG/L	4	8/85- 1/90
CADMIUM	TOTAL	<3.850	2.299	<5.000	0.400	UG/L	4	8/85- 1/90
CHROMIUM	TOTAL-TOTA	<152.500	232.432	<500.000	<10.000	UG/L	4	8/85- 1/90
LEAD	TOTAL	<35.000	16.431	<50.000	<20.000	UG/L	6	8/85- 4/88
MERCURY	TOTAL	<0.175	0.049	<0.200	<0.100	UG/L	4	8/85- 1/90
SELENIUM	TOTAL	<5.750	1.500	8.000	<5.000	UG/L	4	8/85- 1/90
SILVER	TOTAL	3.700	0.000	3.700	3.700	UG/L	1	1/90
SECONDARY								
COPPER	TOTAL	<80.000	103.923	<200.000	<20.000	UG/L	3	8/85- 9/86
ZINC	TOTAL	<29.333	15.200	48.000	<5.000	UG/L	6	8/85- 4/88
IRON	DISSOLVED	<30.454	14.301	<50.000	<20.000	UG/L	22	8/85-10/90
IRON	TOTAL	<56.363	70.545	330.000	<20.000	UG/L	22	8/85-10/90
MANGANESE	DISSOLVED	<10.000	0.000	10.000	<10.000	UG/L	18	8/85-10/90
MANGANESE	TOTAL	<13.181	9.454	50.000	<10.000	UG/L	22	8/85-10/90
TRACE METALS								
ALUMINUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	3	9/87- 4/88
BORON	TOTAL	313.333	190.087	500.000	120.000	UG/L	3	8/85- 9/86
MOLYBDENUM	DISSOLVED	<50.000	0.000	<50.000	<50.000	UG/L	3	9/87- 4/88
NICKEL	TOTAL	<46.666	11.547	60.000	<40.000	UG/L	3	8/85- 9/86

U = MICRO

TABLE 39 (CONTINUED)

SUMMARY OF WATER QUALITY DATA

UNDERGROUND MINE INFLOW, 9TH LEFT NO. 12

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
NUTRIENTS								
NITROGEN	NITRATE	0.867	0.369	1.200	0.080	MG/L	7	8/85- 1/90
NITROGEN	KJELDAHL	1.206	1.010	2.100	0.110	MG/L	3	8/85- 9/86
NITROGEN	NO3+NO2	0.992	0.074	1.080	0.900	MG/L	4	9/87- 1/90
PHOSPHATE	TOTAL-TOTA	0.046	0.030	0.080	0.020	MG/L	3	8/85- 9/86
ORGANICS								
OIL&GREASE		<1.083	0.735	<2.000	<0.500	MG/L	6	8/85- 3/87

U = MICRO

TABLE 40

SUMMARY OF WATER QUALITY DATA
1990
UNDERGROUND MINE INFLOW, 9TH LEFT NO. 12

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	8.500	1.000	9.000	7.000	DEGREES C	4	1/90-10/90
CONDUCTIVITY	FIELD	1522.500	261.709	1890.000	1330.000	UMHOS/CM	4	1/90-10/90
PH	FIELD	7.650	0.227	7.840	7.330	PH	4	1/90-10/90
ALKALINITY	TOTAL	280.750	19.032	300.000	262.000	MG/L	4	1/90-10/90
ACIDITY	AS CACO3	0.000	0.000	0.000	0.000	MG/L	2	1/90- 4/90
HARDNESS	TOTAL	988.000	14.966	1008.000	972.000	MG/L	4	1/90-10/90
SOLIDS	DISSOLVED	1289.500	55.048	1346.000	1232.000	MG/L	4	1/90-10/90
SAR		0.093	0.007	0.098	0.083		4	1/90-10/90
CATIONS								
CALCIUM	DISSOLVED	221.750	25.578	259.000	205.000	MG/L	4	1/90-10/90
MAGNESIUM	DISSOLVED	105.750	12.175	115.000	88.000	MG/L	4	1/90-10/90
SODIUM	DISSOLVED	6.750	0.500	7.000	6.000	MG/L	4	1/90-10/90
POTASSIUM	DISSOLVED	11.750	1.707	14.000	10.000	MG/L	4	1/90-10/90
ANIONS								
BICARBONATE	AS HCO3	342.750	23.113	366.000	320.000	MG/L	4	1/90-10/90
CHLORIDE		4.500	0.577	5.000	4.000	MG/L	4	1/90-10/90
SULFATE		723.750	36.335	768.000	679.000	MG/L	4	1/90-10/90

U = MICRO

TABLE 40 (CONTINUED)

SUMMARY OF WATER QUALITY DATA
1990
UNDERGROUND MINE INFLOW, 9TH LEFT NO. 12

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PRIMARY								
ARSENIC	TOTAL	<1.000	0.000	<1.000	<1.000	UG/L	1	1/90
BARIUM	TOTAL	10.000	0.000	10.000	10.000	UG/L	1	1/90
CADMIUM	TOTAL	0.400	0.000	0.400	0.400	UG/L	1	1/90
CHROMIUM	TOTAL-TOTA	<10.000	0.000	<10.000	<10.000	UG/L	1	1/90
MERCURY	TOTAL	<0.100	0.000	<0.100	<0.100	UG/L	1	1/90
SELENIUM	TOTAL	8.000	0.000	8.000	8.000	UG/L	1	1/90
SILVER	TOTAL	3.700	0.000	3.700	3.700	UG/L	1	1/90
SECONDARY								
IRON	DISSOLVED	<20.000	0.000	<20.000	<20.000	UG/L	4	1/90-10/90
IRON	TOTAL	<32.500	18.929	60.000	<20.000	UG/L	4	1/90-10/90
MANGANESE	DISSOLVED	<10.000	0.000	<10.000	<10.000	UG/L	4	1/90-10/90
MANGANESE	TOTAL	<12.500	5.000	20.000	<10.000	UG/L	4	1/90-10/90
NUTRIENTS								
NITROGEN	NITRATE	1.090	0.000	1.090	1.090	MG/L	1	1/90
NITROGEN	NO3+NO2	1.080	0.000	1.080	1.080	MG/L	1	1/90

U = MICRO

TABLE 41
WATER QUALITY MONITORING DATA - FIELD DATA
SEDIMENT PONDS DISCHARGES, 1990

DATE: 02/13/91

STATION NUMBER	DATE	TIME HH:MM	AIR TEMP. DEG. C	WATER DEPTH FEET	FLOW RATE	UNIT	TEMP DEG C	EC FIELD UMHOS/CM	PH FLD	TURB. FIELD NTU	OIL+GR VISBL. 1=Y 2=N	DO MG/L
NSP4	09/06/90	9:45			0.0050	CFS		950.0	7.9		2	
NSP8	09/06/90	14:30			0.0450	CFS		1200.0	7.8		2	
NSP8	09/19/90	14:00			0.0330	CFS		680.0	7.8		2	
NSP9	03/30/90	8:00			0.0220	CFS		1250.0	8.0		2	
NSP9	09/06/90	9:30			0.0110	CFS		1160.0	8.1		2	

WATER LEVEL OF 0.001 = 0, FLOW RATE OF 0.0001 = 0
NEGATIVE WATER LEVEL IN A WELL IS ABOVE GROUND SURFACE

TABLE 42

SUMMARY OF WATER QUALITY DATA

SEDIMENT POND 4 (NSP4)

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	7.200	0.000	7.200	7.200	DEGREES C	1	4/88
CONDUCTIVITY	FIELD	973.333	335.608	1320.000	650.000	UMHOS/CM	3	9/86- 9/90
CONDUCTIVITY	LAB	830.000	28.284	850.000	810.000	UMHOS/CM	2	9/86
PH	FIELD	8.215	0.403	8.500	7.930	PH	2	4/88- 9/90
PH	LAB	7.036	0.465	7.800	6.400	PH	19	10/83- 4/88
SOLIDS	DISSOLVED	1126.400	1472.433	5571.000	462.000	MG/L	20	10/83- 9/90
SOLIDS	SUSPENDED	41.550	47.346	224.000	6.000	MG/L	20	10/83- 9/90
SOLIDS	SETTLEABLE	<0.131	0.072	<0.400	<0.100	ML/L	20	10/83- 9/90
OIL&GREASE VISI		2.000	0.000	2.000	2.000		1	9/90
SECONDARY								
IRON	TOTAL	<477.500	830.446	3940.000	<50.000	UG/L	20	10/83- 9/90
MANGANESE	DISSOLVED	<22.500	15.811	50.000	<10.000	UG/L	8	2/86-10/86
MANGANESE	TOTAL	92.500	208.374	870.000	20.000	UG/L	16	10/83-10/86
ORGANICS								
OIL&GREASE		<0.690	0.443	2.400	<0.500	MG/L	20	10/83- 9/90

U = MICRO

TABLE 43

WATER QUALITY DATA

STATION NUMBER: NSP4 SAMPLE DATE: 09/06/90 TIME: 9:45
WATER LEVEL: FEET
FLOW RATE: 0.0050 CFS

PARAMETER		VALUE	UNITS
CONDUCTIVITY	FIELD	950.000	UMHOS/CM
PH	FIELD	7.930	PH
SOLIDS	DISSOLVED	682.000	MG/L
SOLIDS	SUSPENDED	30.000	MG/L
SOLIDS	SETTLEABLE	-0.200	ML/L
OIL&GREASE VISIBLE		NONE	
IRON	TOTAL	680.000	UG/L
OIL&GREASE		1.000	MG/L

TABLE 44

SUMMARY OF WATER QUALITY DATA

SEDIMENT POND 8 (NSP8)

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
TEMPERATURE	FIELD	8.100	0.000	8.100	8.100	DEGREES C	1	4/88
CONDUCTIVITY	FIELD	1483.333	976.336	2570.000	680.000	UMHOS/CM	3	4/88- 9/90
CONDUCTIVITY	LAB	1100.000	0.000	1100.000	1100.000	UMHOS/CM	1	10/86
PH	FIELD	8.083	0.534	8.700	7.760	PH	3	4/88- 9/90
PH	LAB	7.374	0.339	7.900	6.900	PH	15	7/85- 9/89
SOLIDS	DISSOLVED	1938.823	1071.713	3913.000	582.000	MG/L	17	7/85- 9/90
SOLIDS	SUSPENDED	<17.705	10.414	43.000	2.000	MG/L	17	7/85- 9/90
SOLIDS	SETTLEABLE	<0.164	0.108	<0.400	<0.100	ML/L	14	7/85- 9/90
OIL&GREASE VISI		2.000	0.000	2.000	2.000		2	9/90
SECONDARY								
IRON	TOTAL	<229.411	129.974	490.000	<50.000	UG/L	17	7/85- 9/90
MANGANESE	DISSOLVED	<24.000	15.055	50.000	<10.000	UG/L	10	2/86-12/86
MANGANESE	TOTAL	<28.333	15.859	50.000	<10.000	UG/L	12	7/85-12/86
ORGANICS								
OIL&GREASE		<0.870	0.739	3.300	<0.500	MG/L	17	7/85- 9/90

U = MICRO

TABLE 45

SUMMARY OF WATER QUALITY DATA
1990
SEDIMENT POND 8 (NSP8)

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
CONDUCTIVITY	FIELD	940.000	367.695	1200.000	680.000	UMHOS/CM	2	9/90
PH	FIELD	7.775	0.021	7.790	7.760	PH	2	9/90
SOLIDS	DISSOLVED	808.000	319.612	1034.000	582.000	MG/L	2	9/90
SOLIDS	SUSPENDED	11.000	12.727	20.000	2.000	MG/L	2	9/90
SOLIDS	SETTLEABLE	<0.200	0.000	<0.200	<0.200	ML/L	2	9/90
OIL&GREASE VISI		2.000	0.000	2.000	2.000		2	9/90
SECONDARY								
IRON	TOTAL	345.000	176.776	470.000	220.000	UG/L	2	9/90
ORGANICS								
OIL&GREASE		1.500	0.707	2.000	1.000	MG/L	2	9/90

U = MICRO

TABLE 46

SUMMARY OF WATER QUALITY DATA

SEDIMENT POND 9 (NSP9)

PARAMETER		MEAN	STD. DEV.	MAX.	MIN.	UNITS.	NO.	PERIOD
PHYSICAL PROPERTIES								
CONDUCTIVITY	FIELD	1205.000	63.639	1250.000	1160.000	UMHOS/CM	2	3/90- 9/90
PH	FIELD	8.060	0.028	8.080	8.040	PH	2	3/90- 9/90
PH	LAB	8.200	0.000	8.200	8.200	PH	1	3/90
SOLIDS	DISSOLVED	967.000	83.438	1026.000	908.000	MG/L	2	3/90- 9/90
SOLIDS	SUSPENDED	25.000	7.071	30.000	20.000	MG/L	2	3/90- 9/90
SOLIDS	SETTLEABLE	<0.200	0.000	<0.200	<0.200	ML/L	1	9/90
OIL&GREASE VISI		2.000	0.000	2.000	2.000		2	3/90- 9/90
SECONDARY								
IRON	TOTAL	445.000	459.619	770.000	120.000	UG/L	2	3/90- 9/90
ORGANICS								
OIL&GREASE		1.000	0.000	1.000	1.000	MG/L	2	3/90- 9/90

U = MICRO

TABLE 47

NORTH FORK RIGHT FORK MILLER CREEK
STREAM BUDGET INVENTORY

FLOW IN GPM

DATE	491	M1	M2	M4	M6	M8	M10	M12	M14	M15
07/02/86	8	14.0	18.0	21.0	40.0	62.0	70.0	62.0	63.0	115.0
07/05/88	4.5	9.0	22.2	18.2		28.0	46.2	57.5		58.3
09/07/88	3.5	8.7	16.5	12.3		15.0	19.2	16.4		37.3
07/03/89	4.3	12.0	11.0	6.0		35.0	34.0	41.8	41.0	85.3
09/07/89	4	15.0	10.0	1.5		17.0	30.0	24.0	30.0	49.4
07/04/90	2.2	8.7	30.5	3.7		30.5	19.7	21.7	13.33	24.2
09/18/90	3.33	9	12.4	3.75		12.2	20	19	30	33.6

SPRING–STREAM BEGINS
491

DATE	TIME	FLOW GPM	TEMP H2O C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		8.0		7.40	267
07/05/88	8:25AM	4.5	4.0	7.58	205
09/07/88	9:00AM	3.5	5.0	8.25	240
07/03/89	8:00AM	4.3	3.0	7.81	420
09/07/89	10:20AM	4.0	5.0	7.38	460
07/04/90	8:10AM	2.2	4.0	7.8	450
09/18/90	9:00AM	3.3	5.0	8.4	420

STREAM STATION
M–1

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		14.0			
10/09/87	9:13AM	4.3	3.2	7.8	240
07/05/88	8:40AM	9.0	5.6	8.0	235
09/07/88	9:15AM	8.7	5.0	8.6	240
07/03/89	8:20AM	12.0	4.0	8.3	400
09/07/89	10:35AM	15.0	6.0	8.1	420
07/04/90	8:10AM	8.7	5.0	8.4	420
09/18/90	9:30AM	9.0	5.0	8.6	380

STREAM STATION
M–2

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		18.0			
10/09/87	9:50AM	20.0	2.6	8.5	360
07/05/88	9:05AM	22.2	6.5	6.9	250
09/07/88	9:45AM	16.5	6.0	8.8	250
07/03/89	8:50AM	11.0	5.0	8.4	360
09/07/89	10:50AM	10.0	6.0	8.2	410
07/04/90	8:55AM	30.5	7.0	8.6	430
09/18/90	10:15AM	12.4	6.0	8.3	340

STREAM STATION
M–4

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		21.0		7.4	356
10/09/87	10:15AM	20.0	3.4	8.6	440
07/05/88	9:35AM	18.2	7.8	8.3	262
09/07/88	10:05AM	12.3	8.0	9.2	280
07/03/89	9:10AM	6.0	5.0	8.6	380
09/07/89	11:10AM	1.5	9.0	8.3	410
07/04/90	9:15AM	3.7	7.5	8.7	430
09/18/90	10:30AM	3.8	5.0	8.3	330

STREAM STATION
M–8

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		62.0		7.8	422
10/09/87	12:25PM	25.0	5.8	8.9	220
07/05/88	11:00AM	28.0	16.2	8.4	398
09/07/88	11:30AM	15.0	12.0	9.6	315
07/03/89	11:00AM	35.0	14.0	8.4	1390
09/07/89	12:50PM	17.0	11.0	8.3	1500
07/04/90	10:35AM	30.5	16.0	8.3	1810
09/18/90	11:40AM	12.2	8.0	8.3	1640

STREAM STATION
M–10

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		70.0		8.0	492
10/09/87	12:50PM	25.0	7.0	8.8	525
07/05/88	11:46AM	46.2	20.0	8.4	600
09/07/88	11:55AM	19.2	14.0	9.4	398
07/03/89	11:30AM	34.0	15.0	8.2	1420
09/07/89	1:10PM	30.0	13.0	8.3	1510
07/04/90	11:00AM	19.7	15.0	8.5	1650
09/18/90	12:05PM	20.0	7.0	8.2	1560

STREAM STATION
M–12

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		62.0		8.1	592
10/09/87	1:00PM	20.0	10.5	8.9	635
07/05/88	12:25PM	57.7	16.8	8.7	680
09/07/88	12:30PM	16.4	15.0	9.1	550
07/03/89	12:00PM	41.8	15.0	8.3	1460
09/07/89	1:25PM	24.0	13.0	8.3	1520
07/04/90	11:25AM	21.7	13.0	8.7	1710
09/18/90	12:05PM	19.0	7.0	8.3	1770

TABLE 47 (Continued)

NORTH FORK RIGHT FORK MILLER CREEK
STREAM BUDGET INVENTORY

STREAM STATION M-14

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		63.0		8.0	592
10/09/87	1:15PM	25.0	7.0	8.8	620
07/03/89	12:10PM	41.8	13.0	8.3	1500
09/07/89	1:35PM	30.0	13.0	8.3	1520
07/04/90	11:55AM	13.3	12.0	8.7	1710
09/18-90	12:15PM	30.0	8.0	8.2	1530

STREAM STATION M-15

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		115.0		8.1	1190
10/09/87	4:09PM	47.0	10.1	8.3	210
07/05/88	12:50PM	58.3	17.2	8.0	980
09/07/88	1:15PM	37.3	16.5	8.8	1090
07/03/89	12:35PM	85.3	16.0	8.0	1670
09/07/89	2:00PM	49.4	15.0	8.1	1630
07/04/90	12:30PM	24.2	13.0	8.5	880
09/18/90	1:30PM	33.7	11.0	8.3	1400

SIDE FLOWS = STREAMS AND SPRINGS FLOWING INTO NFRF MILLER CREEK

492 SPRING

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		2.0		7.3	325
07/05/88	8:35AM	1.0	7.3	6.9	275
09/07/88	9:15AM	1.0	7.5	8.6	270
07/03/89	8:15AM	2.4	4.0	8.1	390
09/07/89	10:30AM	1.3	6.0	7.9	420
07/04/90	8:25AM	1.4	5.0	8.5	410
09/18/90	9:15AM	1.2	5.0	8.3	370

493 SPRING

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		0.5		6.6	359
07/05/88	8:47AM	2.0	5.2	8.0	205
09/07/88	9:20AM	1.5	6.0	8.7	230
07/03/89	8:20AM	0.7	5.0	8.2	410
09/07/89	10:40AM	0.3	6.0	8.0	450
07/04/90	8:30AM	0			
09/18/90	9:45AM	0.1	6.0	8.3	370

494 SPRING

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		3.0		7.2	445
10/09/87	9:30AM	2.0	5.9	8.4	525
07/05/88	8:55AM	2.5	8.2	8.1	288
09/07/88	9:30AM	2.0	8.0	8.9	310
07/03/89	8:40AM	1.3	5.0	8.5	440
09/07/89	10:45AM	1.2	7.0	8.2	460
07/04/90	8:40AM	0.2	8.0	8.6	460
09/18/90	10:00AM	1.0	6.0	8.3	450

M-3 STREAM

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		16.0		7.5	360
10/09/87	10:25AM	6.0	2.8	8.3	400
07/05/88	9:45AM	13.3	8.4	8.5	267
09/07/88	10:10AM	6.0	7.9	9.1	265
07/03/89	9:30AM	0.0			
09/07/89	11:15AM	0.3	5.0	7.9	760
07/04/90	9:30AM	3.7	7.0	8.7	430
09/18/90	10:30AM	0.0			

M-5 STREAM

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		7.0		7.5	382
10/09/87	11:00AM	0.0			
07/03/89	10:AM	0.0			
09/07/89	11:25AM	0.0			
07/04/90	9:30AM	0.0			
09/18/90	10:50AM	0.0			

M-7 STREAM

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		4.0		7.6	567
10/09/87	12:40PM	0.7	11.4	8.5	695
07/05/88	11:05AM	6.5	12.5	8.4	530
09/07/88	11:30AM	0.5	17.0	9.3	630
07/03/89	11:10AM	8.6	10.0	8.6	1530
09/07/89	12:55PM	5.0	17.0	8.2	1400
07/04/90	10:45AM	6.1	11.0	8.4	1320
09/18/90	11:35AM	6.0	8.0	8.5	1300

TABLE 47 (Continued)

NORTH FORK RIGHT FORK MILLER CREEK
STREAM BUDGET INVENTORY

M-9 STREAM

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		4.0		7.8	2046
10/09/87	12:55PM	0.4	11.6	8.2	1250
09/07/88	11:55AM	2.5	14.5	8.8	1500
07/03/89	11:35AM	6.0	10.0	8.0	2020
09/07/89	1:05PM	5.0	13.0	8.1	2000
07/04/90	11:05AM	2.0	12.0	8.4	2110
09/18/90	12:00AM	0.9	7.0	8.4	1770

M-11 STREAM

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		2.0		8.0	1600
10/09/87	12:55PM	0.0			
09/07/88	12:40PM	0.0			
07/03/89	11:55AM	0.0			
09/07/89	1:25PM	0.0			
07/04/90	11:10AM	0.0			
09/18/90	12:10PM	0.0			

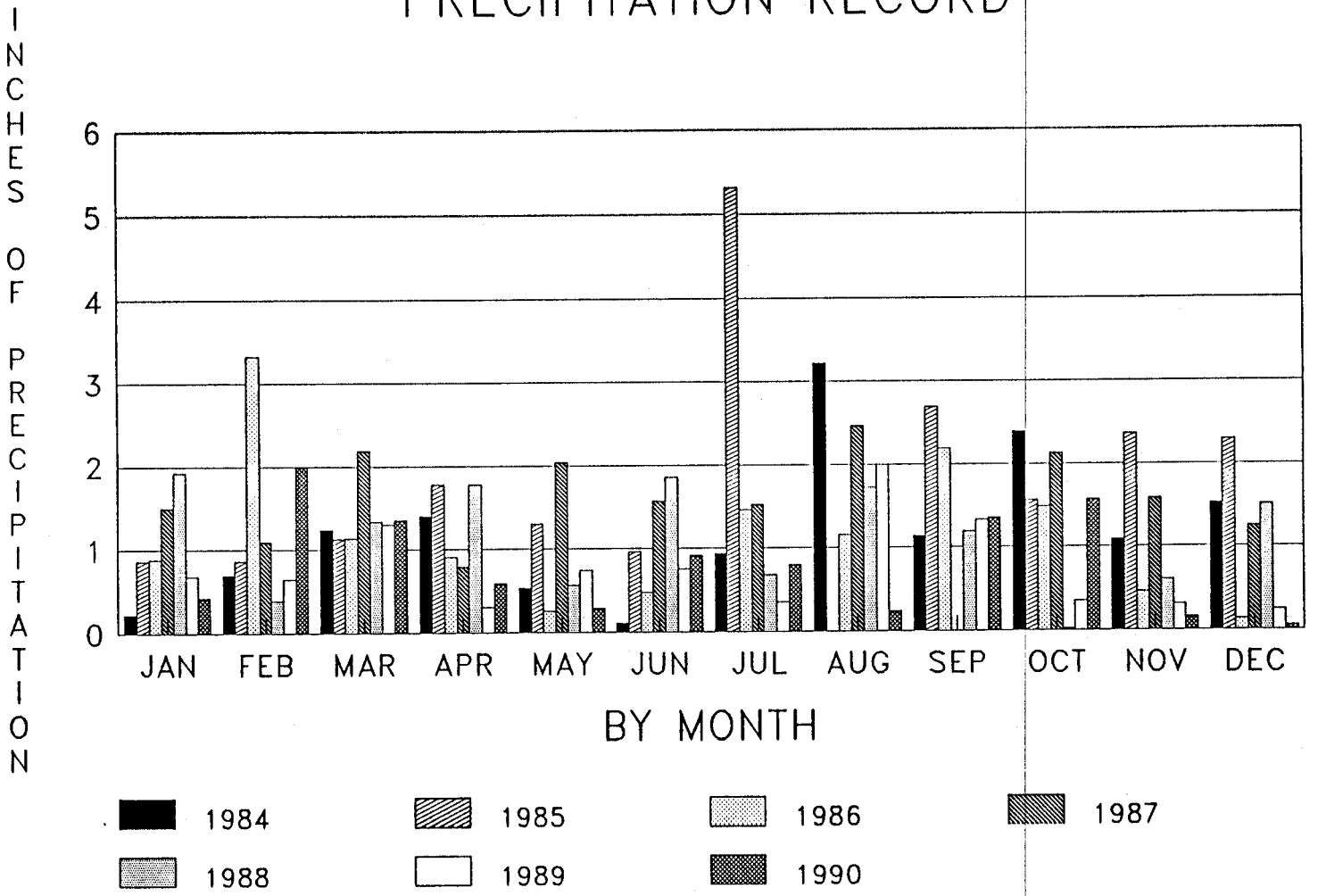
M-13 STREAM

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		1.0		8.0	1073
10/09/87	1:05PM	0.0			
09/07/88	12:12PM	1.8	13.8	8.5	920
07/03/89	12:05PM	0.0			
09/07/89	1:30PM	0.0			
07/04/90	12:00PM	0.0			
09/18/90	12:20PM	0.0			

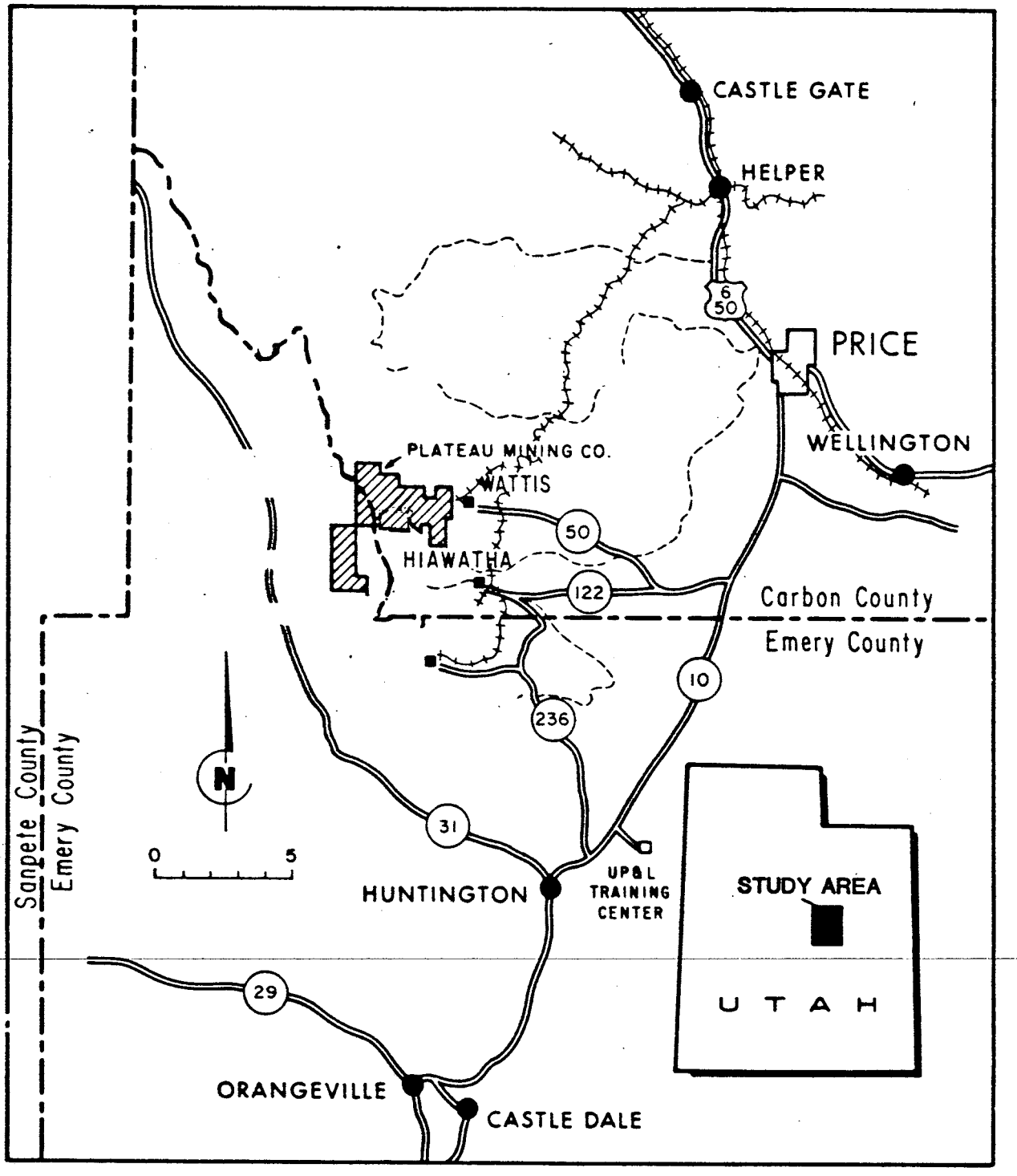
495 SPRING

DATE	TIME	FLOW GPM	TEMP H20 C	pH	CONDUCTIVITY UMHOS/CM
07/02/86		2.0		7.8	1397
10/09/87	4:30PM	1.0			
09/07/88	1:00PM	0.5	17.0	8.1	1650
07/03/89	12:30PM	0.7	17.0	7.6	2330
09/07/89	1:55PM	0.3	17.0	7.8	2400
07/04/90	12:20PM	0.5	14.0	8.0	2300
09/18/90	12:30PM	0.0			

TABLE 48
PRECIPITATION RECORD



FIGURES



LOCATION MAP

FIGURE 1

FIGURE 2 IS IN THE BACK OF THE REPORT

Plot of Flow Rate Data – PL TEAU MINING COMPANY
BLACKHAWK FORMATION WELLS

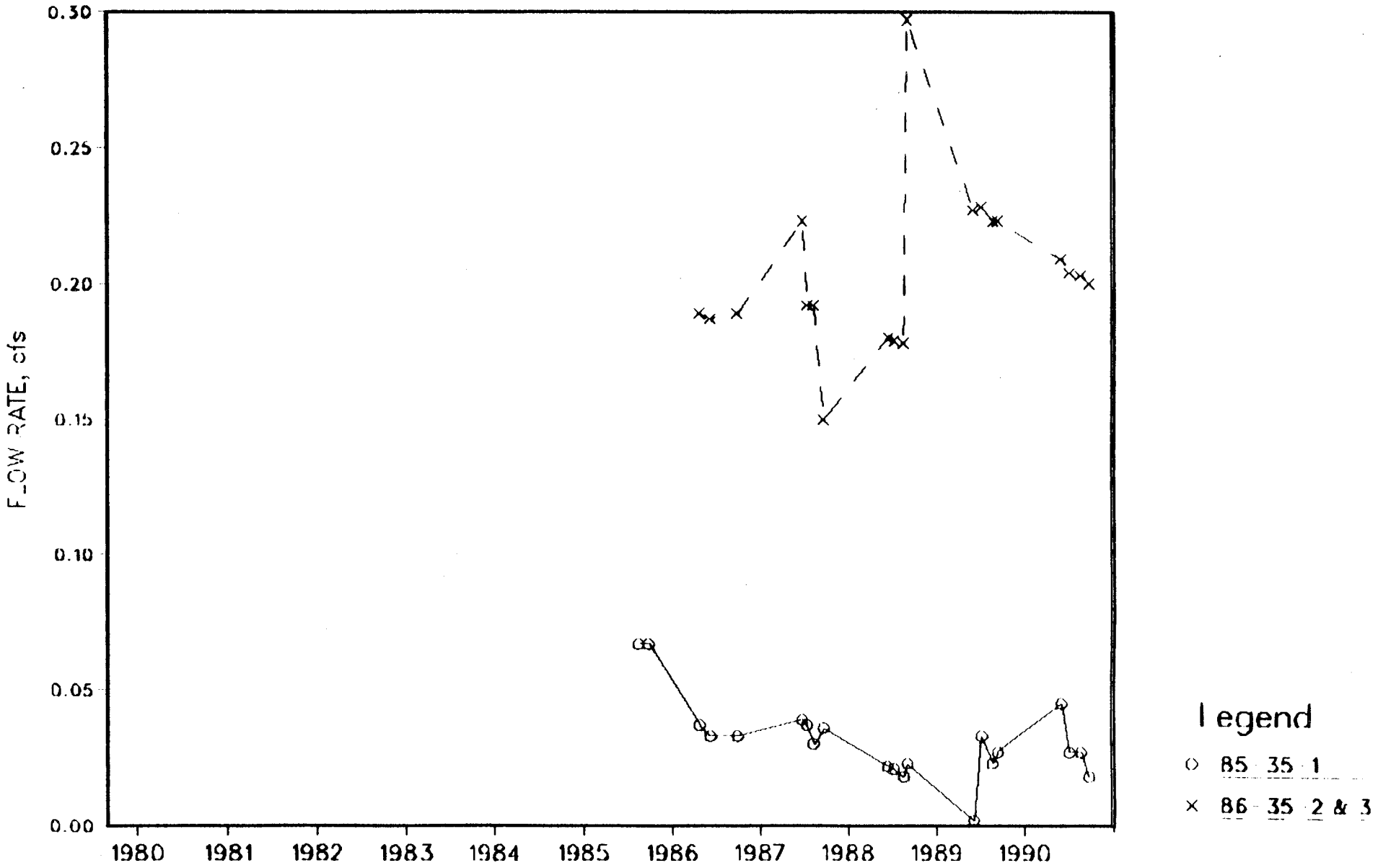


FIGURE 3

PLATEAU MINING COMPANY, BL. KHAWK FORMATION WELLS
SOLIDS, DISSOLVED

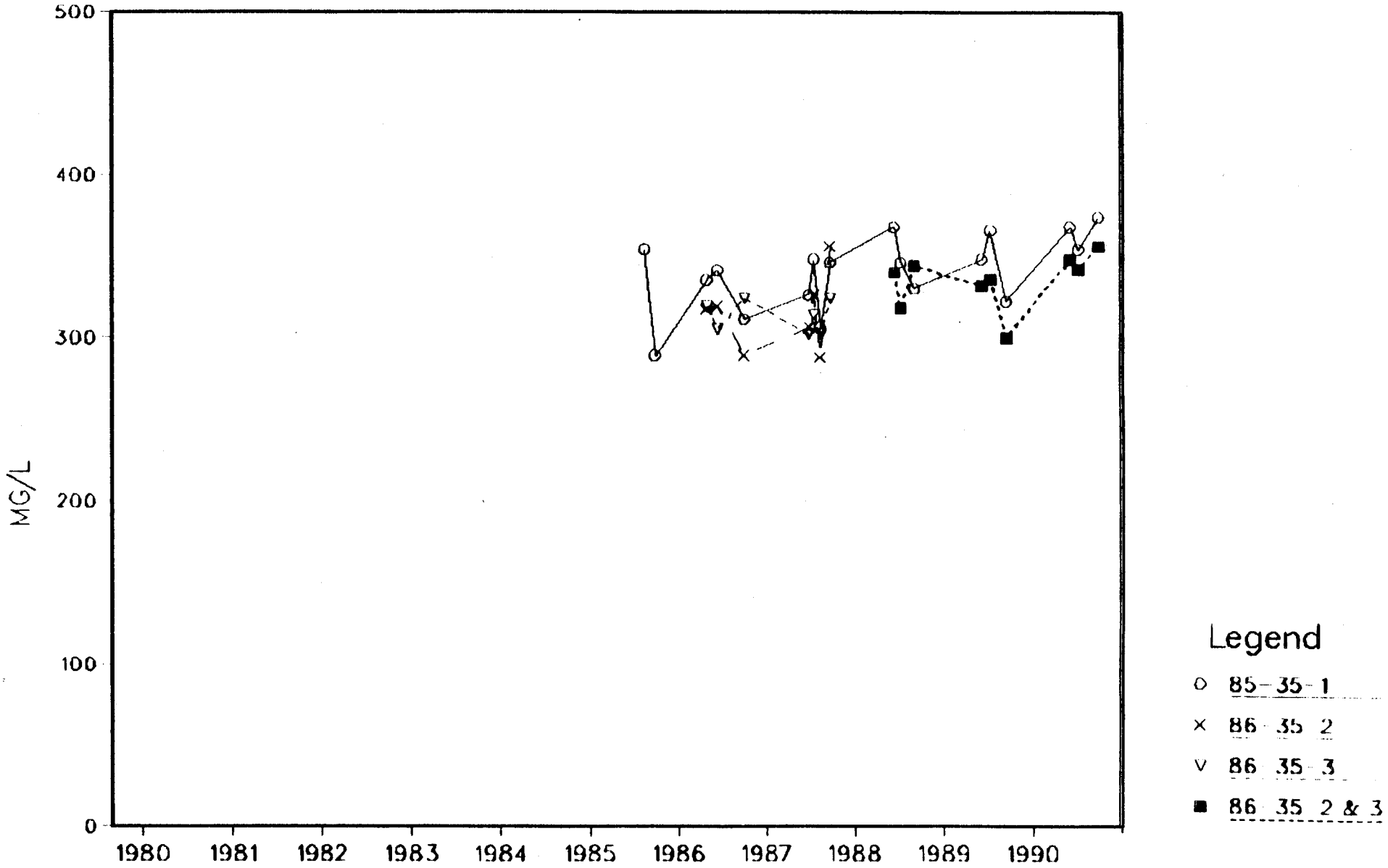


FIGURE 4

Plot of Flow Rate Data – P. TEAU MINING COMPANY
CASTLEGATE FORMATION

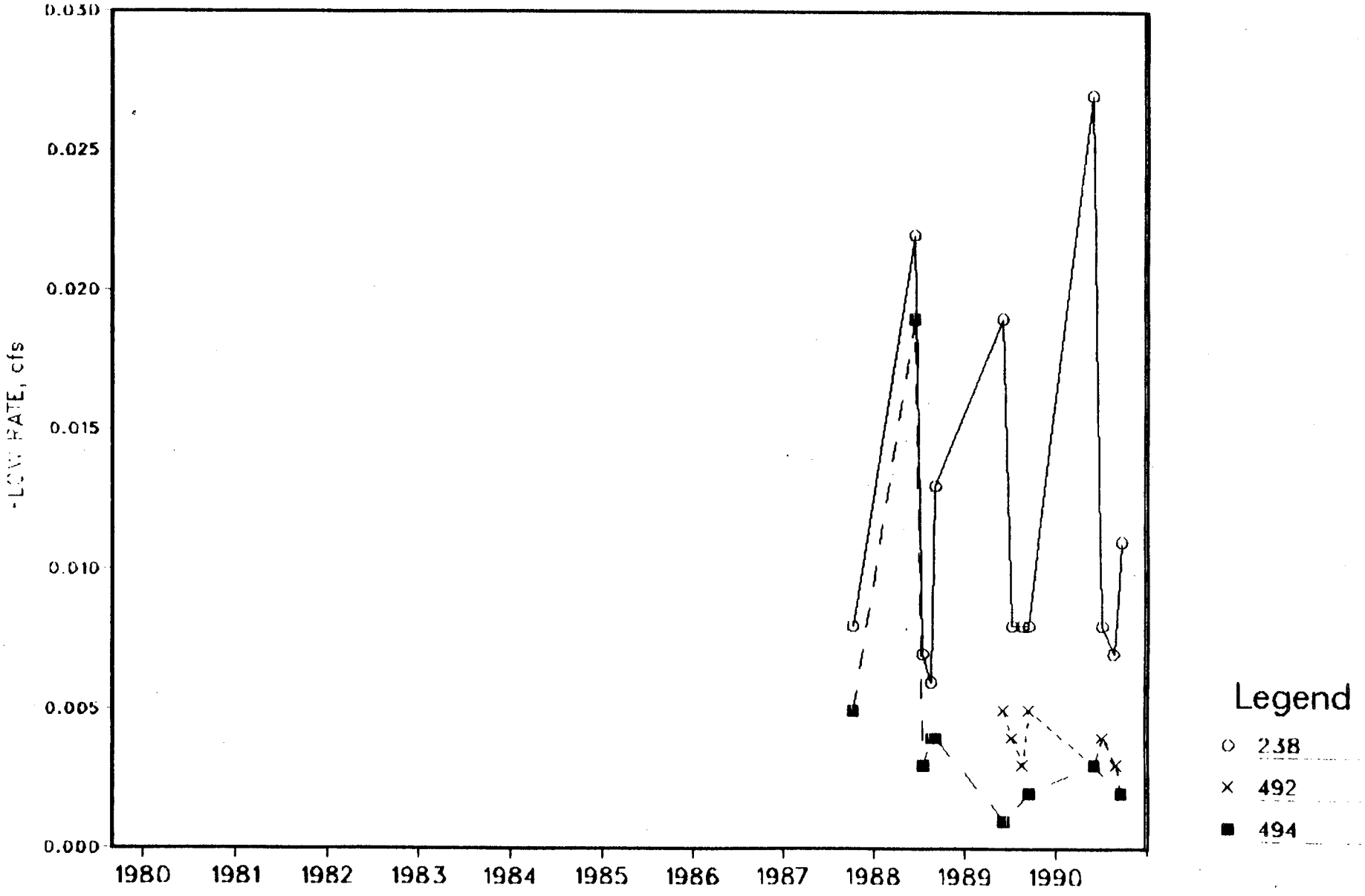


FIGURE 5

PLATEAU MINING COMPANY CASTLEGATE FORMATION
SOLIDS, DISSOLVED

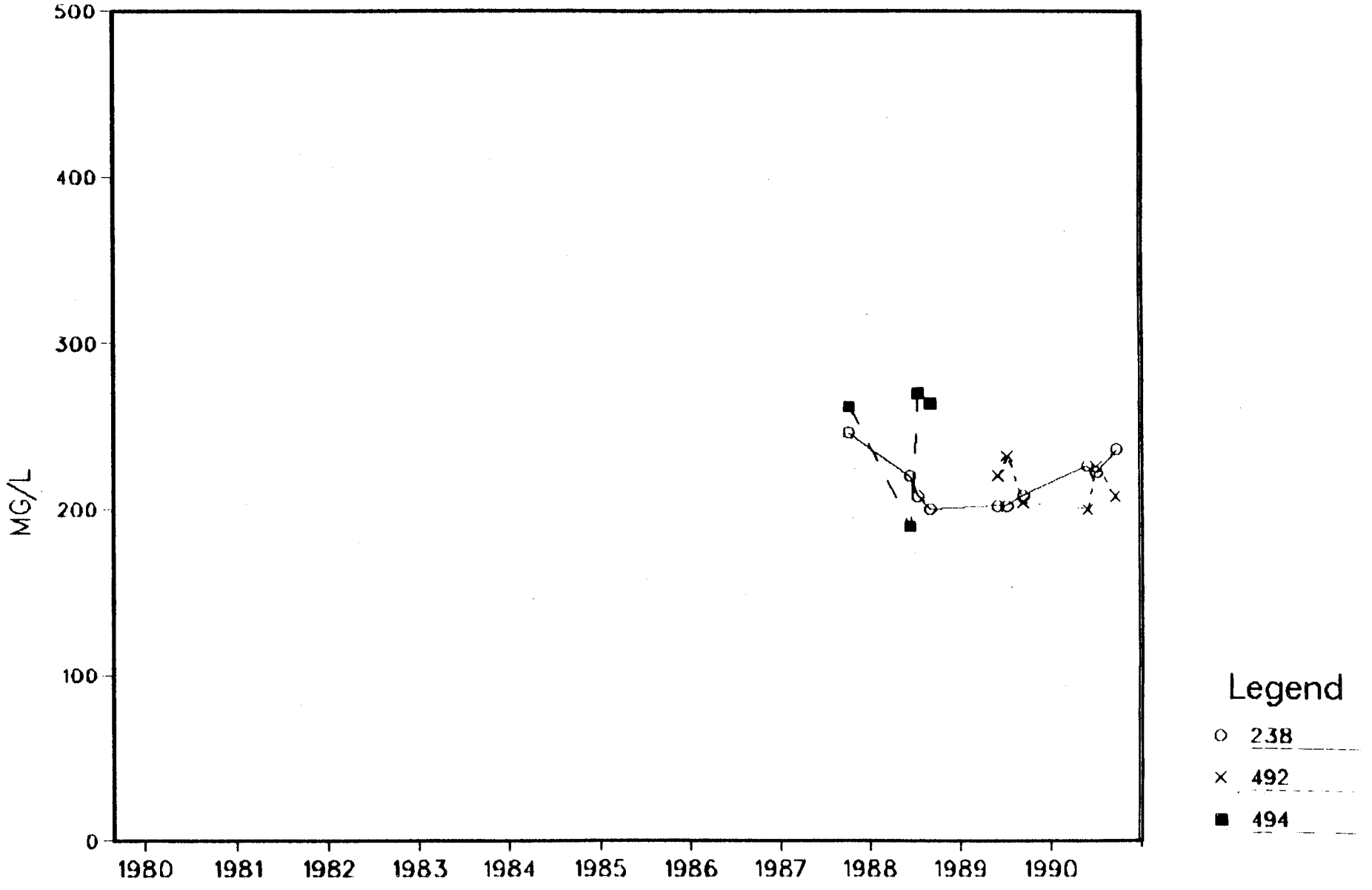


FIGURE 6

Plot of Flow Rate Data – PL TEAU MINING COMPANY
PRICE RIVER FORMATION SPRINGS

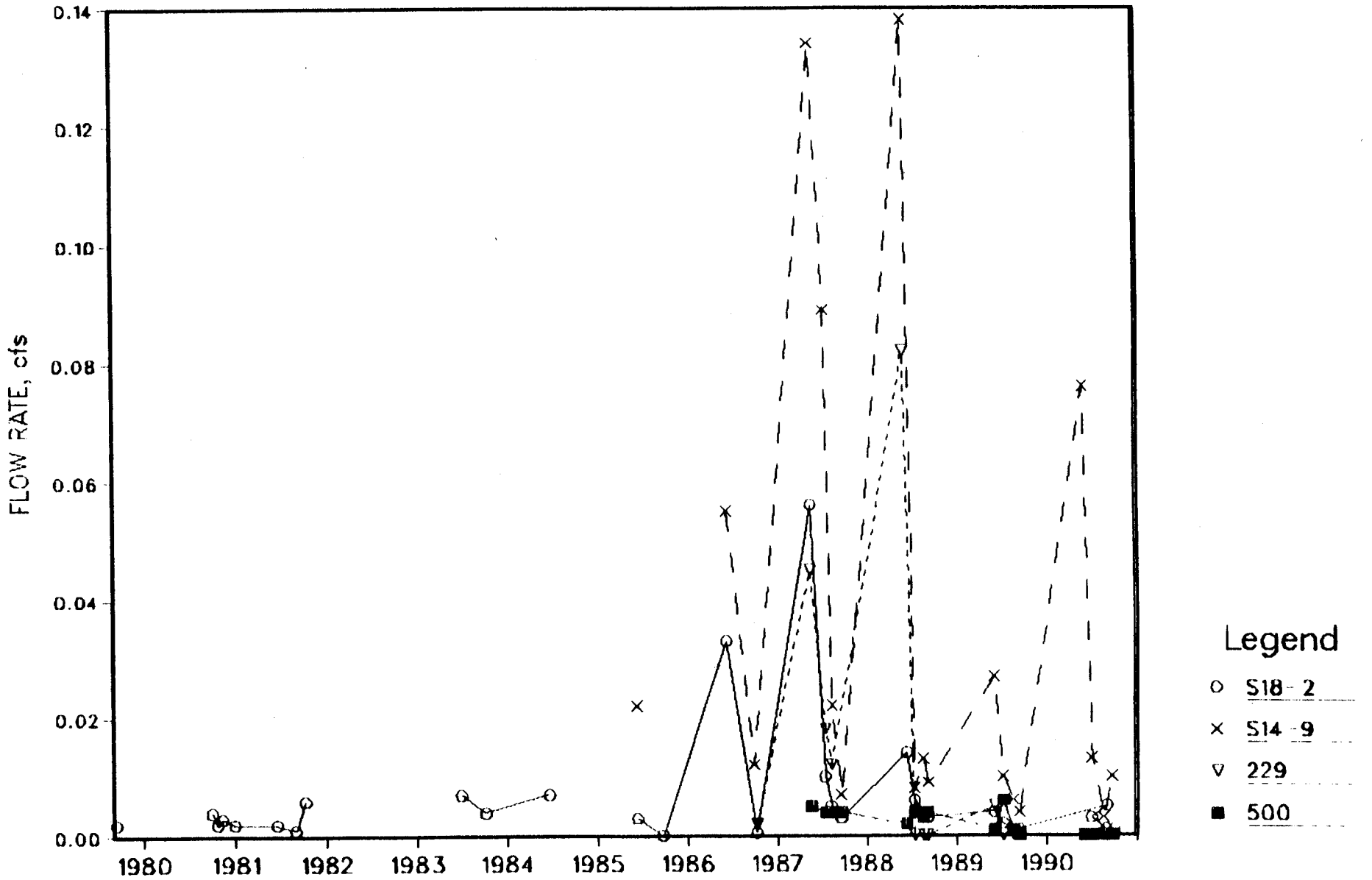


FIGURE 7

LATEAU MINING COMPANY, PRIC RIVER FORMATION SPRINGS
SOLIDS, DISSOLVED

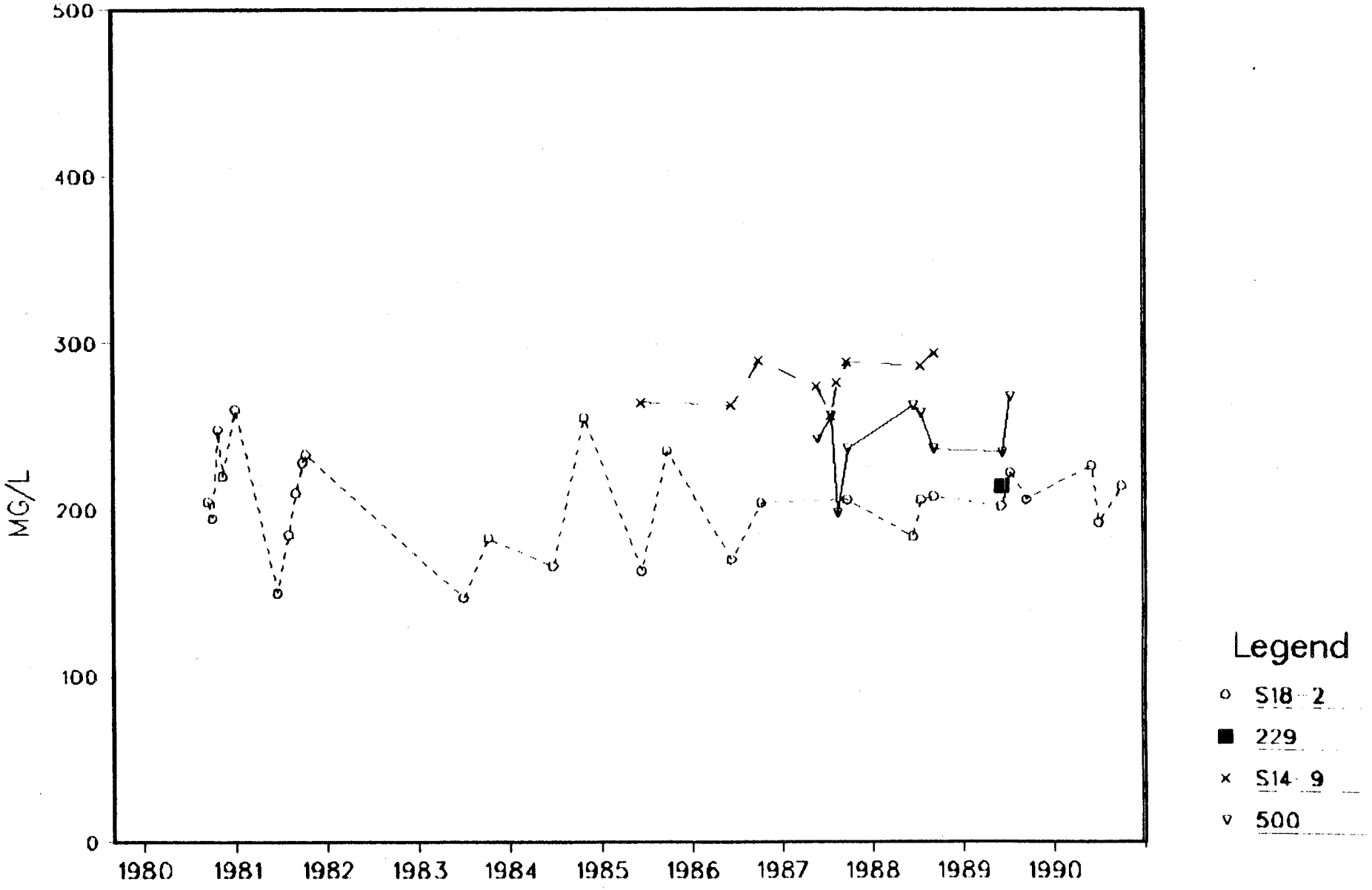


FIGURE 8

Plot of Flow Rate Data – PL TEAU MINING COMPANY
NORTH HORN FORMATION SPRINGS, SECTION 13

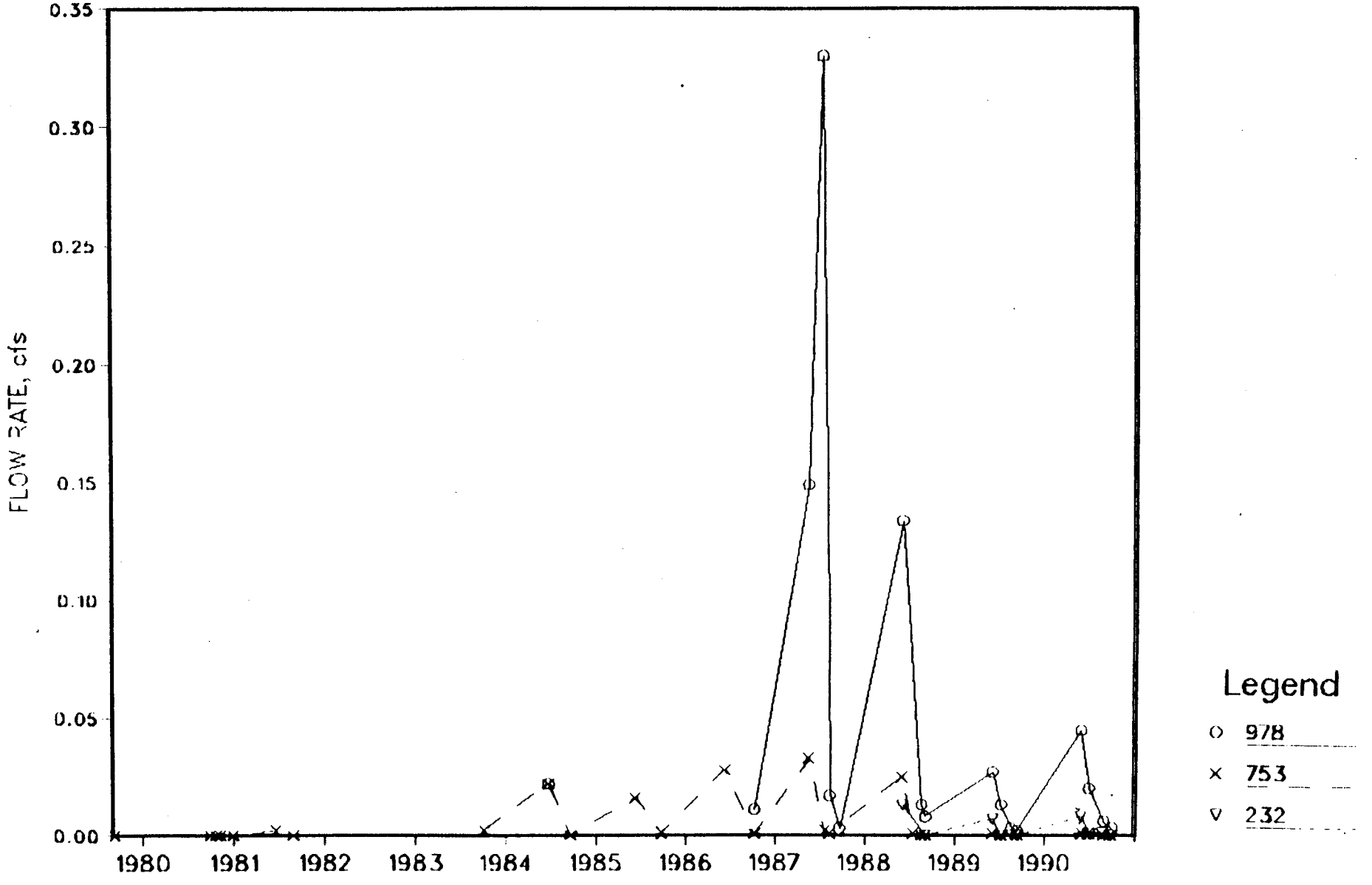


FIGURE 9

Plot of Flow Rate Data – P. .TEAU MINING COMPANY
NORTH HORN FORMATION SPRINGS, SECTION 14

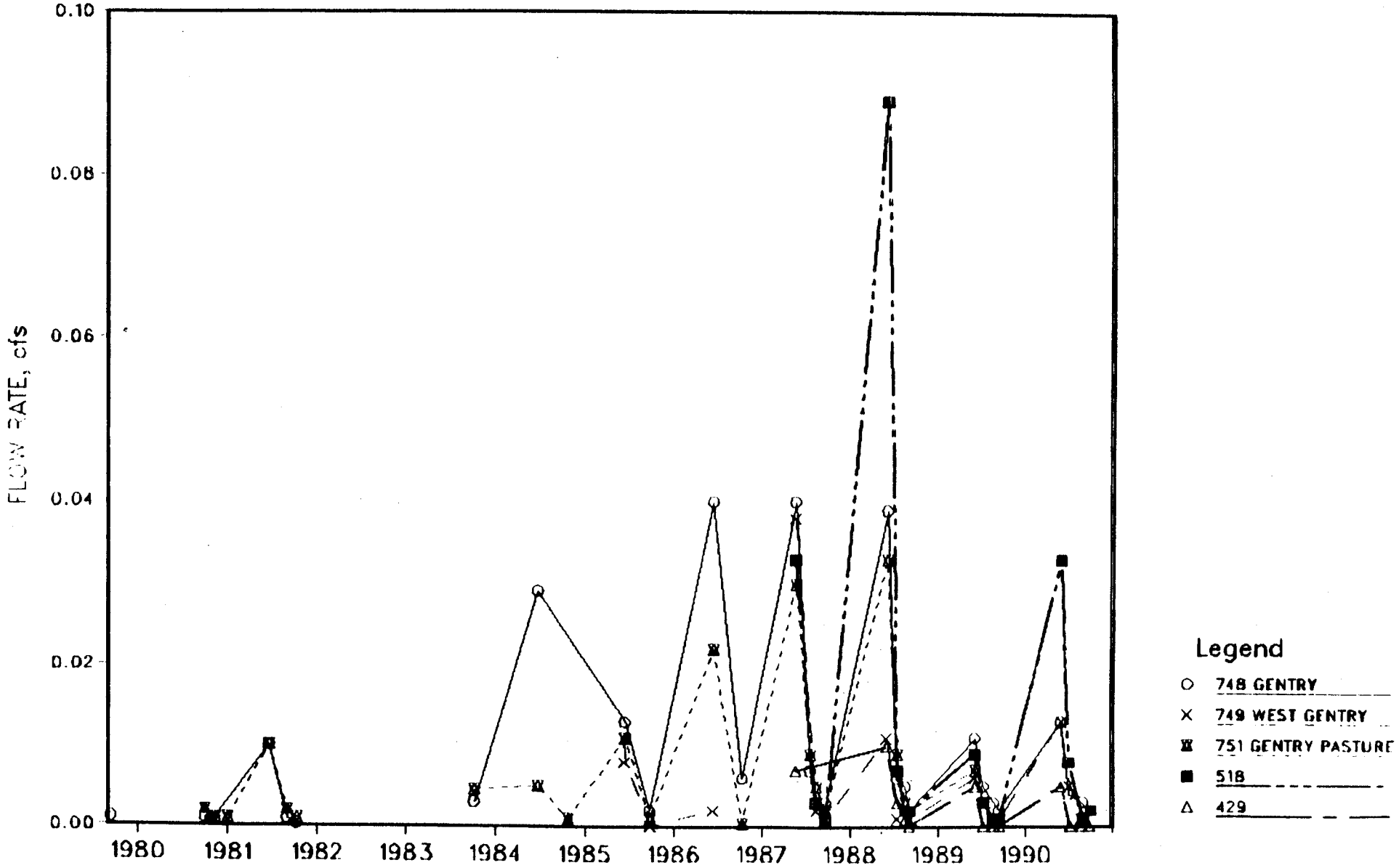


FIGURE 10

Plot of Flow Rate Data – PL TEAU MINING COMPANY
NORTH HORN FORMATION SPRINGS, MISCELLANEOUS

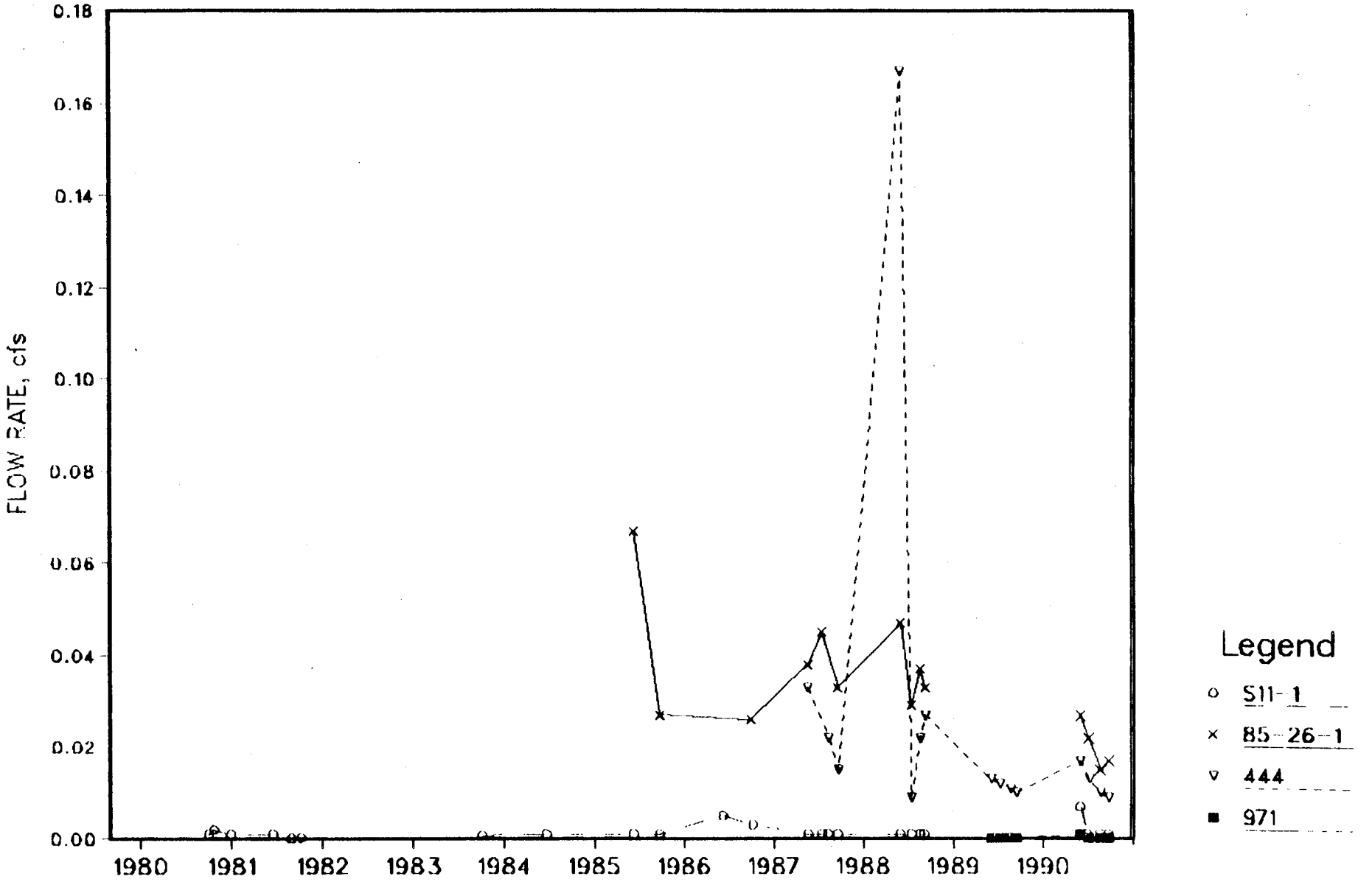


FIGURE 11

PLA AU MINING COMPANY, NORTH H(N FORMATION SPRINGS, SECTION)
SOLIDS, DISSOLVED

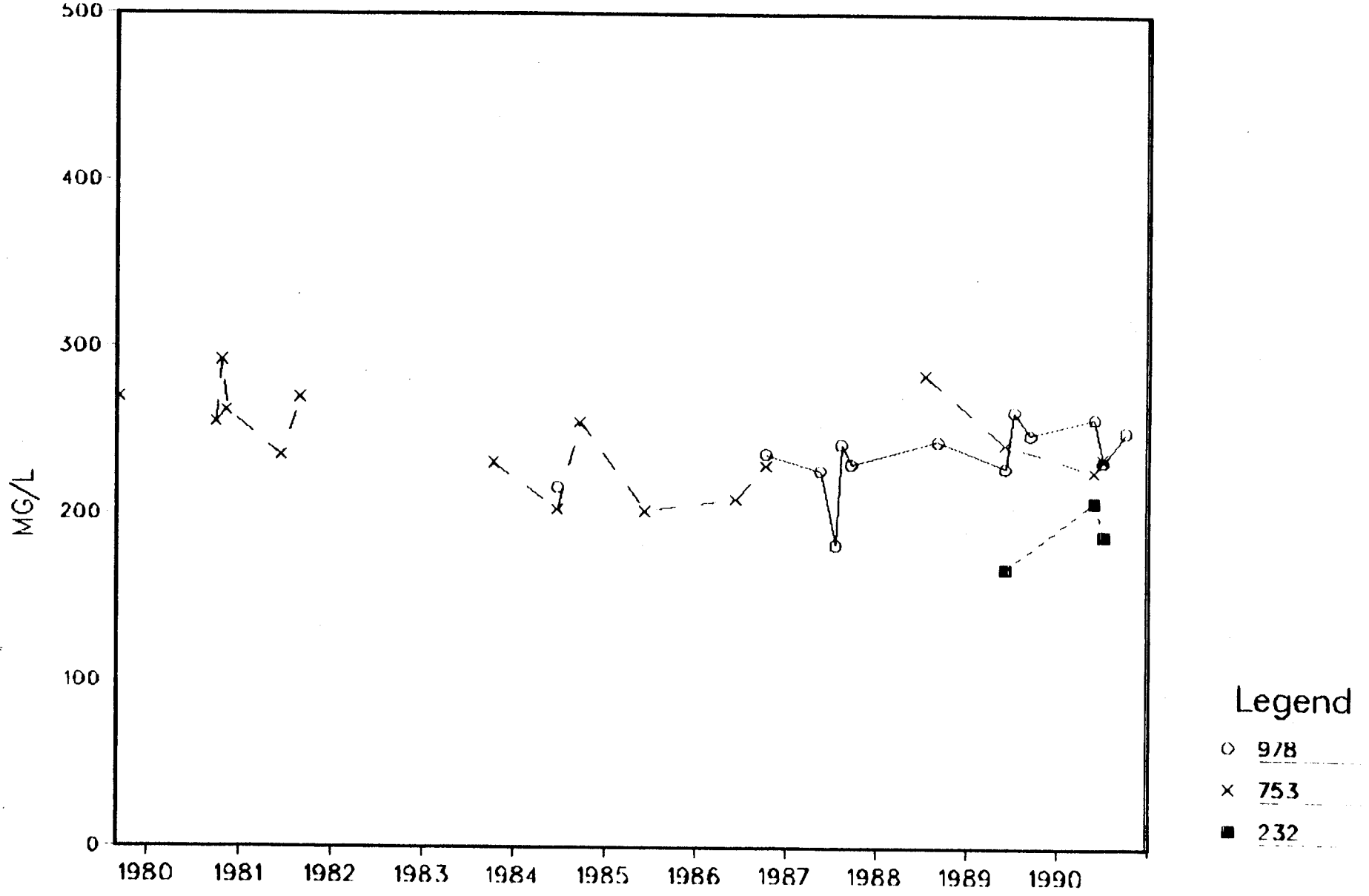


FIGURE 12

_ATEAU MINING CO., NORTH HC ⌄ FM. SPRINGS, SECTION 14
SOLIDS, DISSOLVED

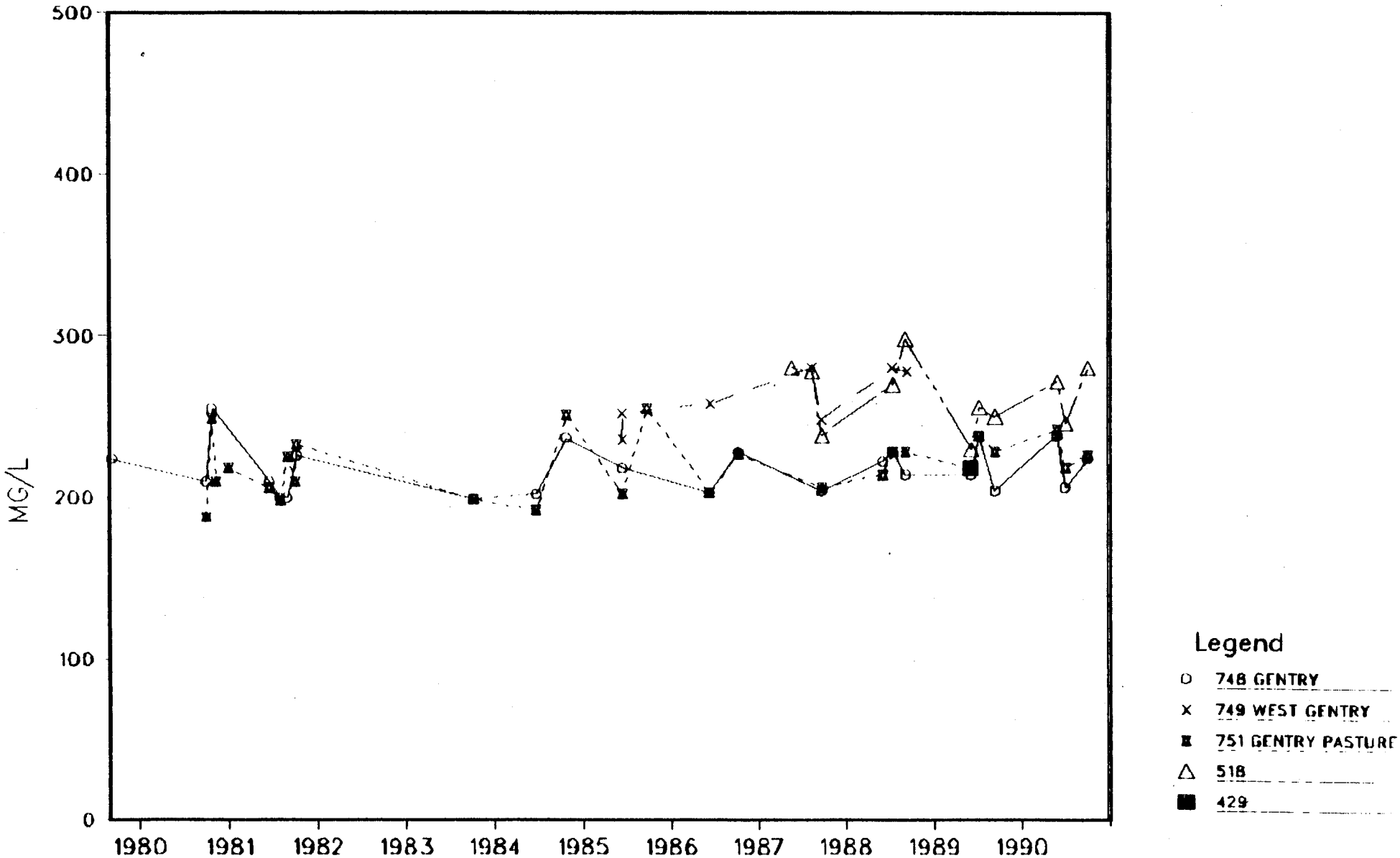


FIGURE 13

PLAT AU MINING CO., NORTH HORN FC MATION SPRINGS, MISCELLANEOU SOLIDS, DISSOLVED

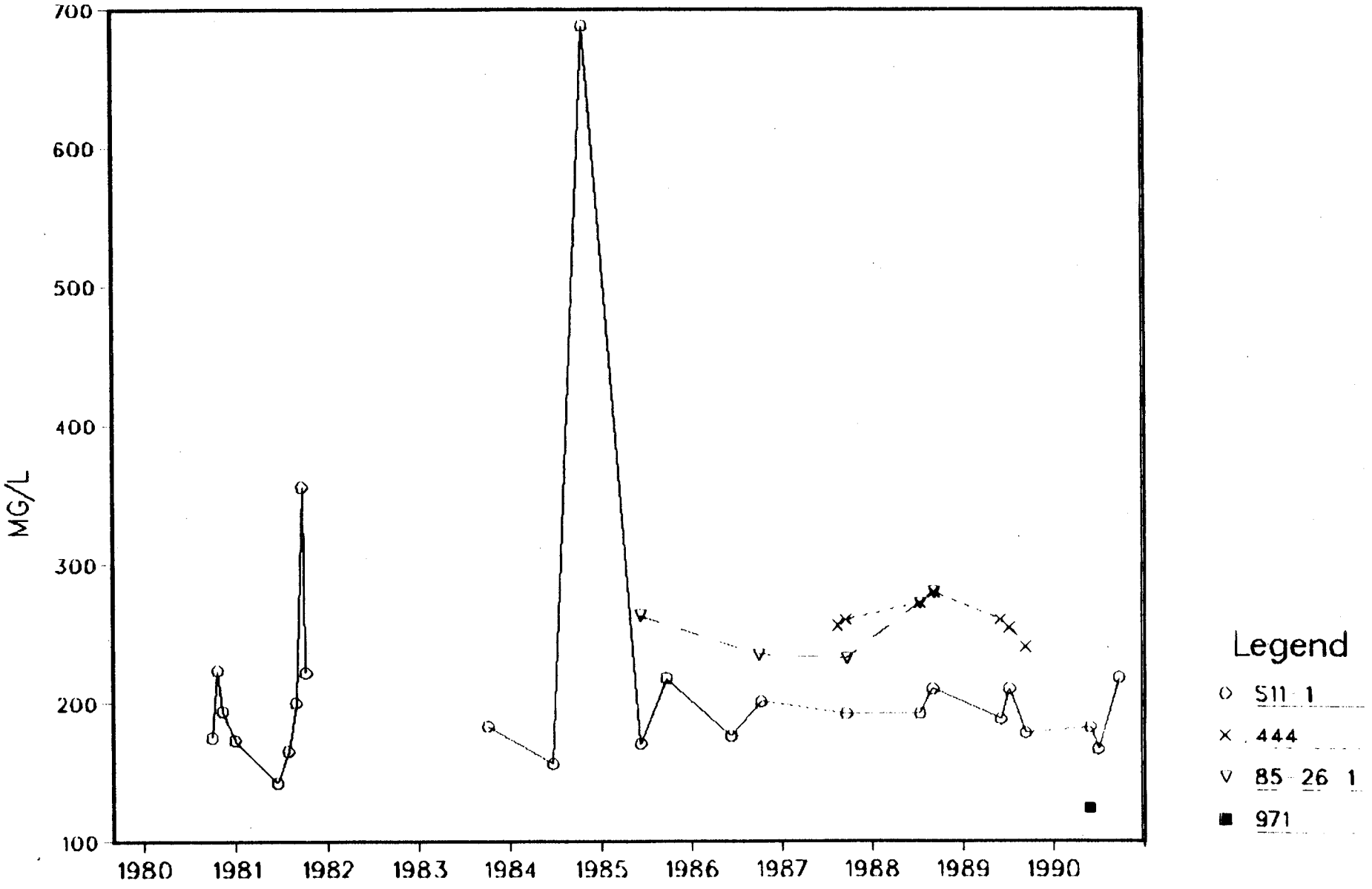


FIGURE 14

Plot of Flow Rate Data – PL .TEAU MINING COMPANY
MUD WATER CREEK AND DISCHARGE (mean)

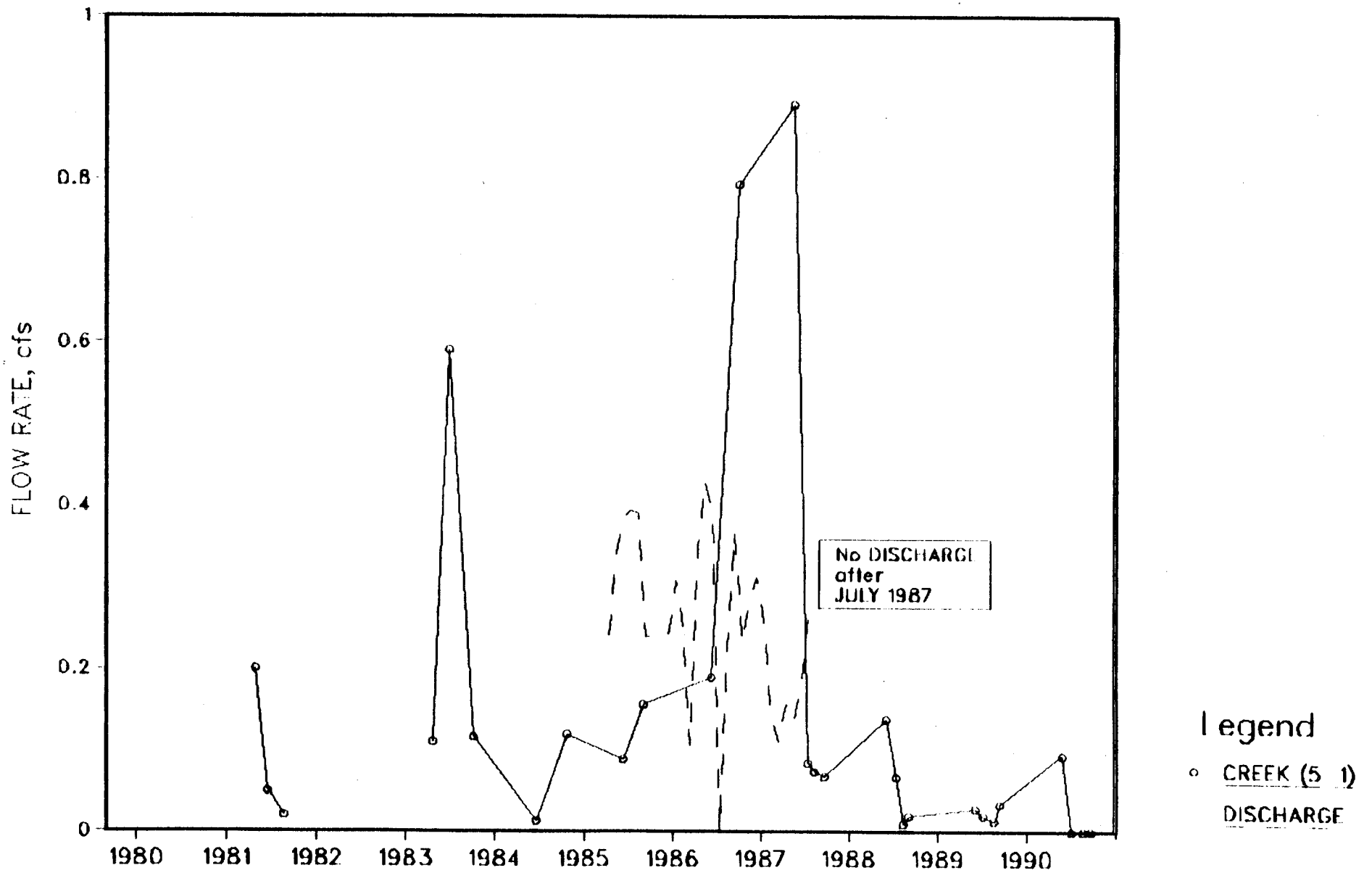


FIGURE 15

Plot of Flow Rate Data – P. .TEAU MINING COMPANY
CORNER CANYON, STATION 36–1

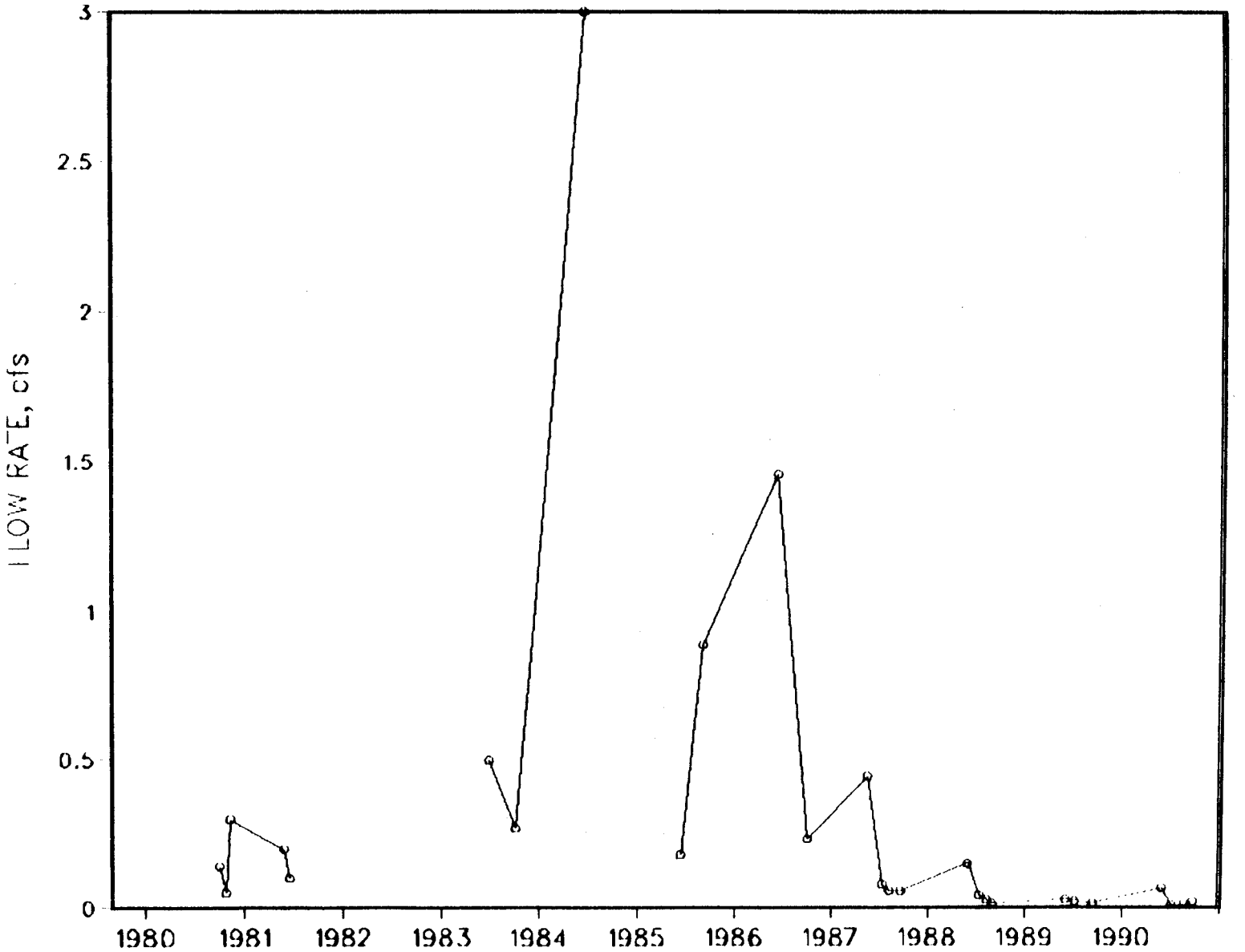


FIGURE 16

Plot of Flow Rate Data – PL .TEAU MINING COMPANY
SAGE BRUSH CANYON, Station 10–1

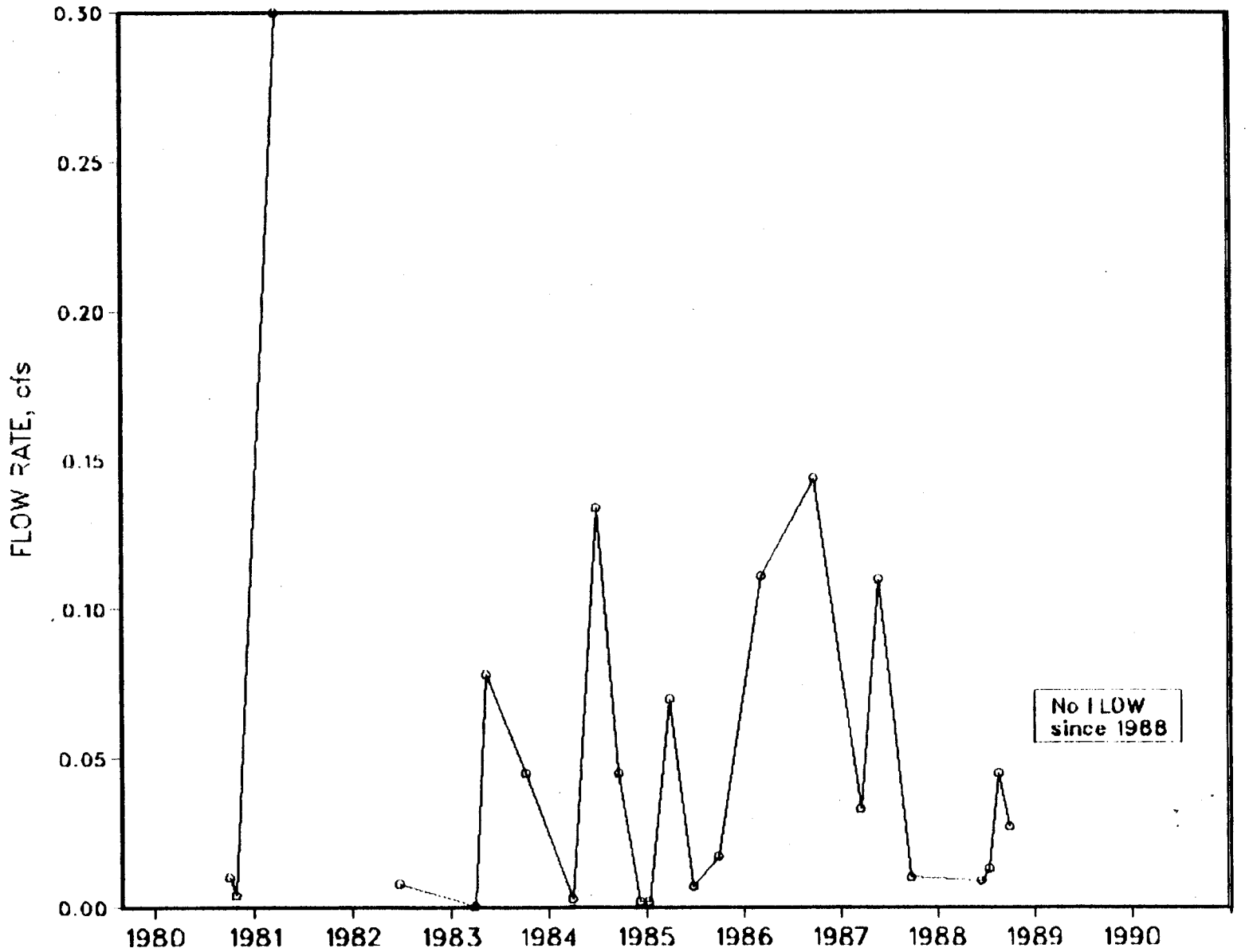


FIGURE 17

Plot of Flow Rate Data – PLATEAU MINING COMPANY
TIE FORK CANYON TRIBUTARIES

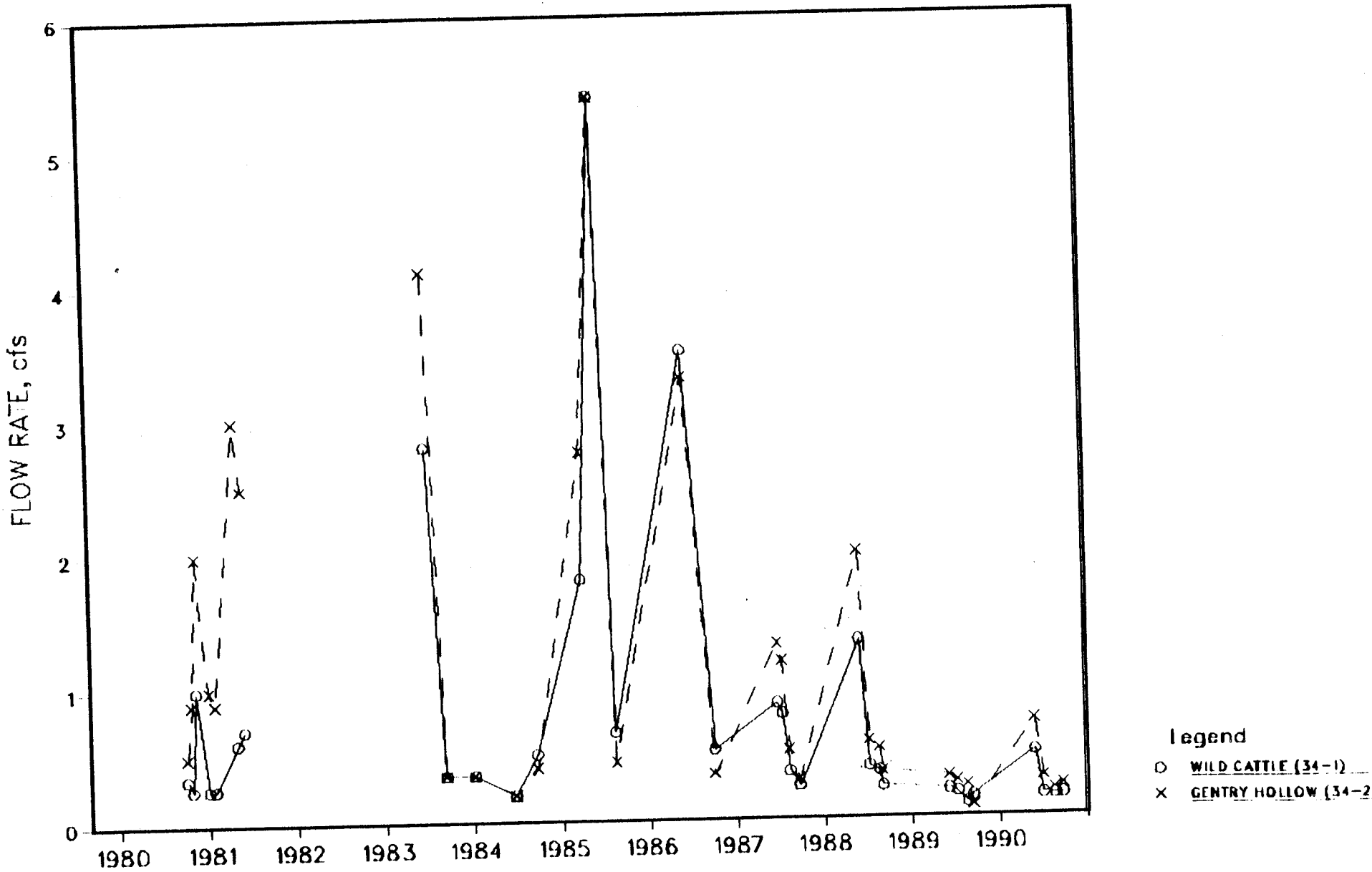


FIGURE 18

Plot of Flow Rate Data – PL ' 'EAU MINING COMPANY
RIGHT FORK OF MILLER CREEK

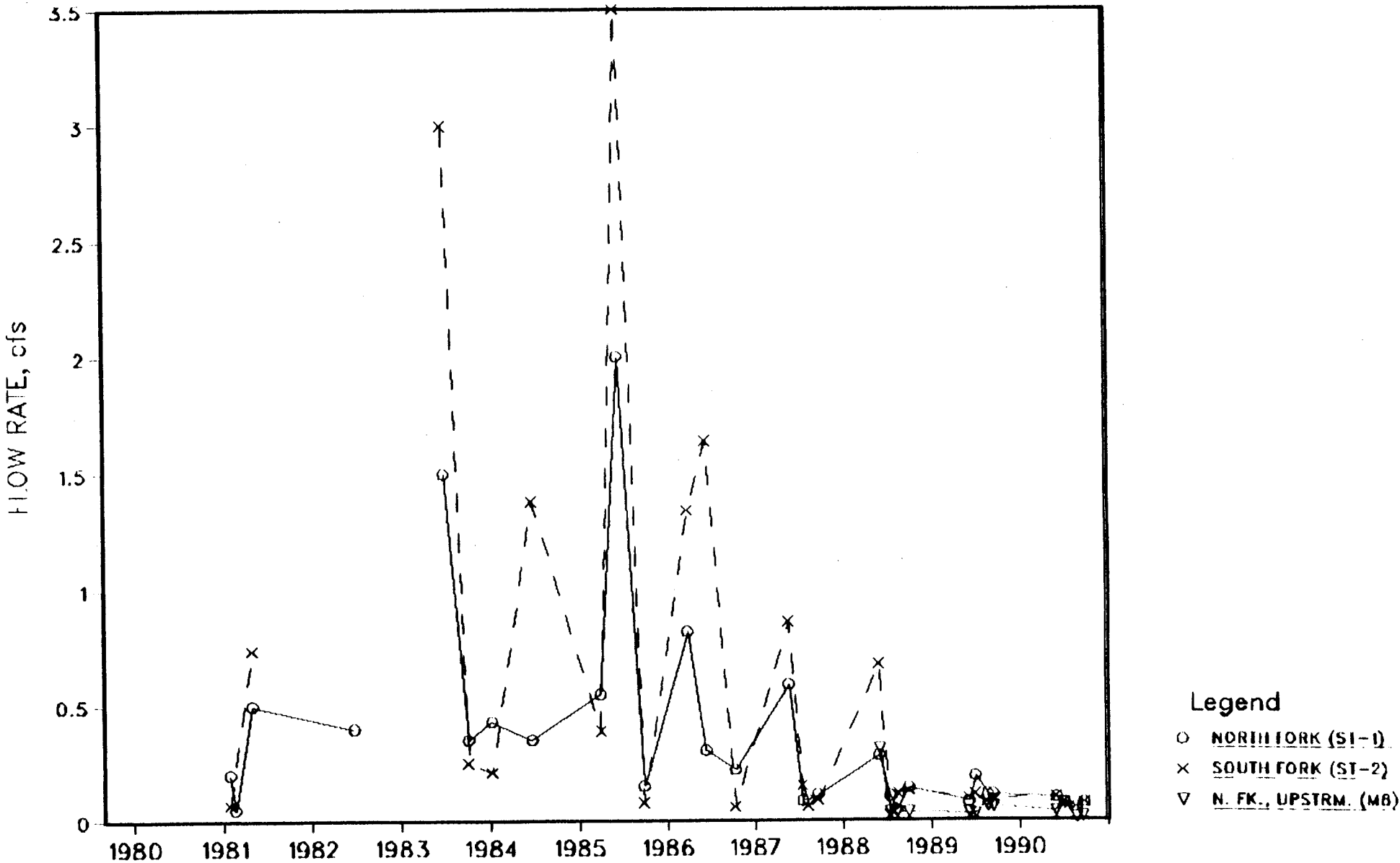


FIGURE 19

I ATEAU MINING COMPANY, MUD ATER CREEK AND DISCHARGE SOLIDS, DISSOLVED

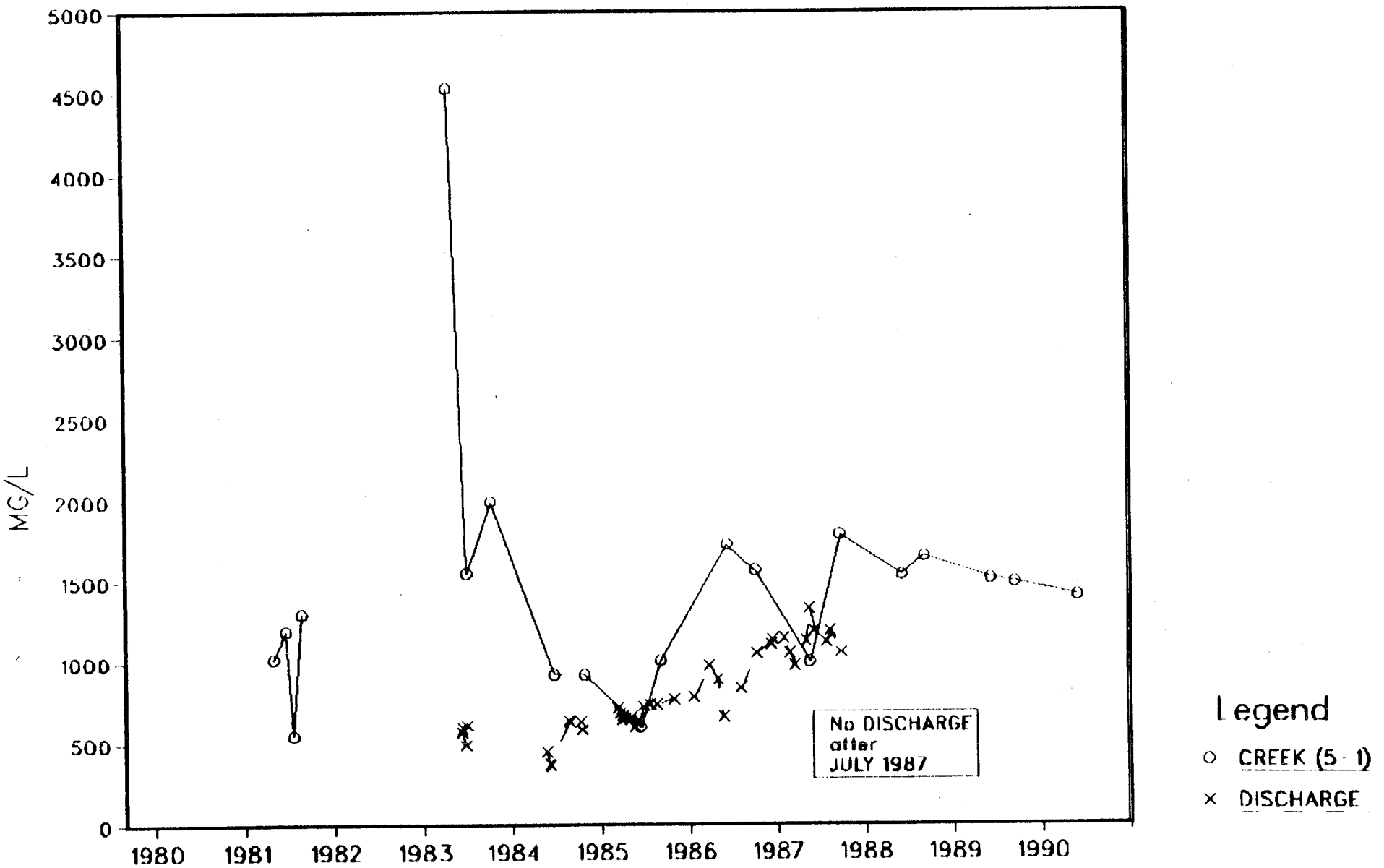


FIGURE 20

PLATEAU MINING COMPANY, CO IER CANYON, STATION 36-1
SOLIDS, DISSOLVED

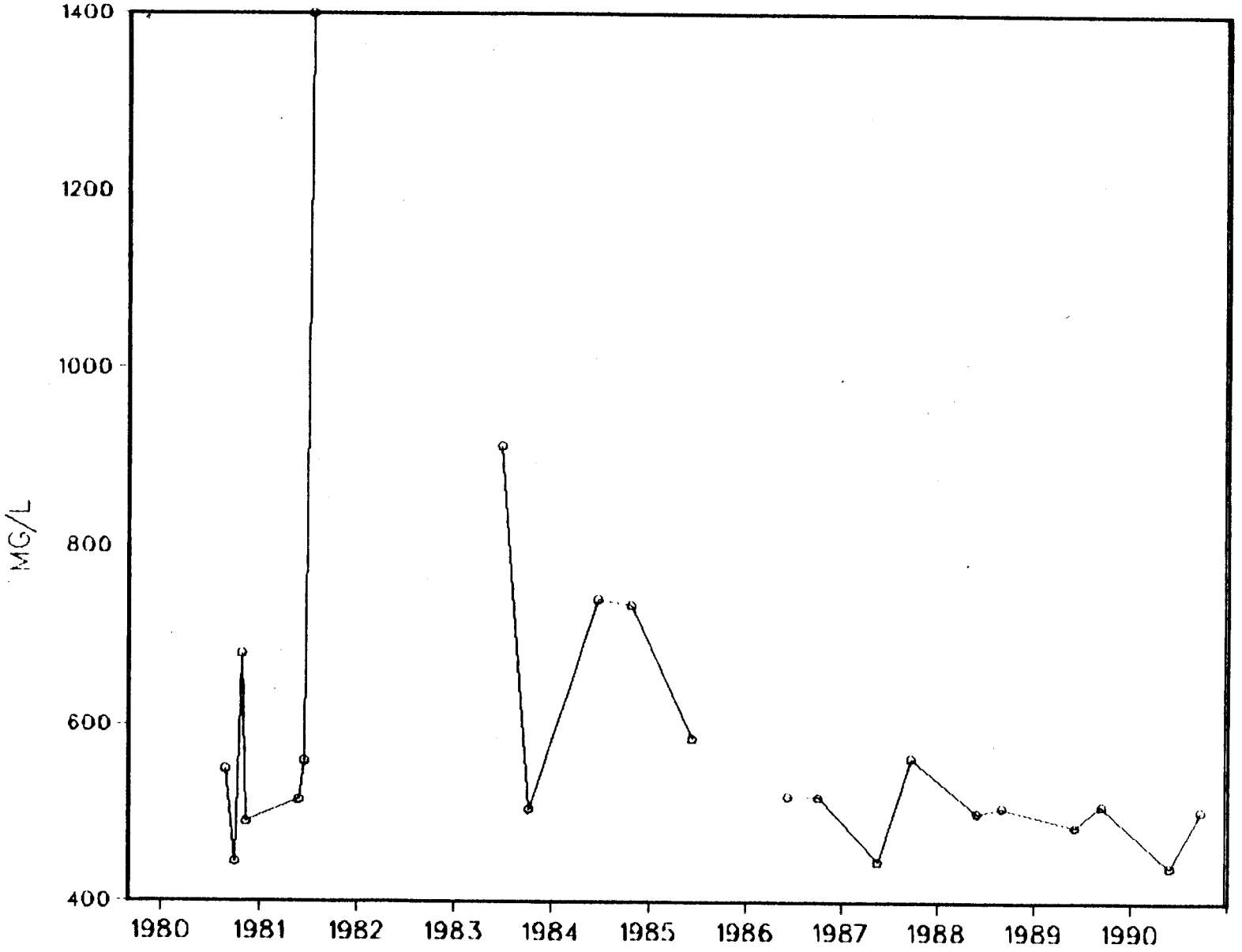


FIGURE 21

F ATEAU MINING COMPANY, SAGE RUSH CANYON, STATION 10-1
SOLIDS, DISSOLVED

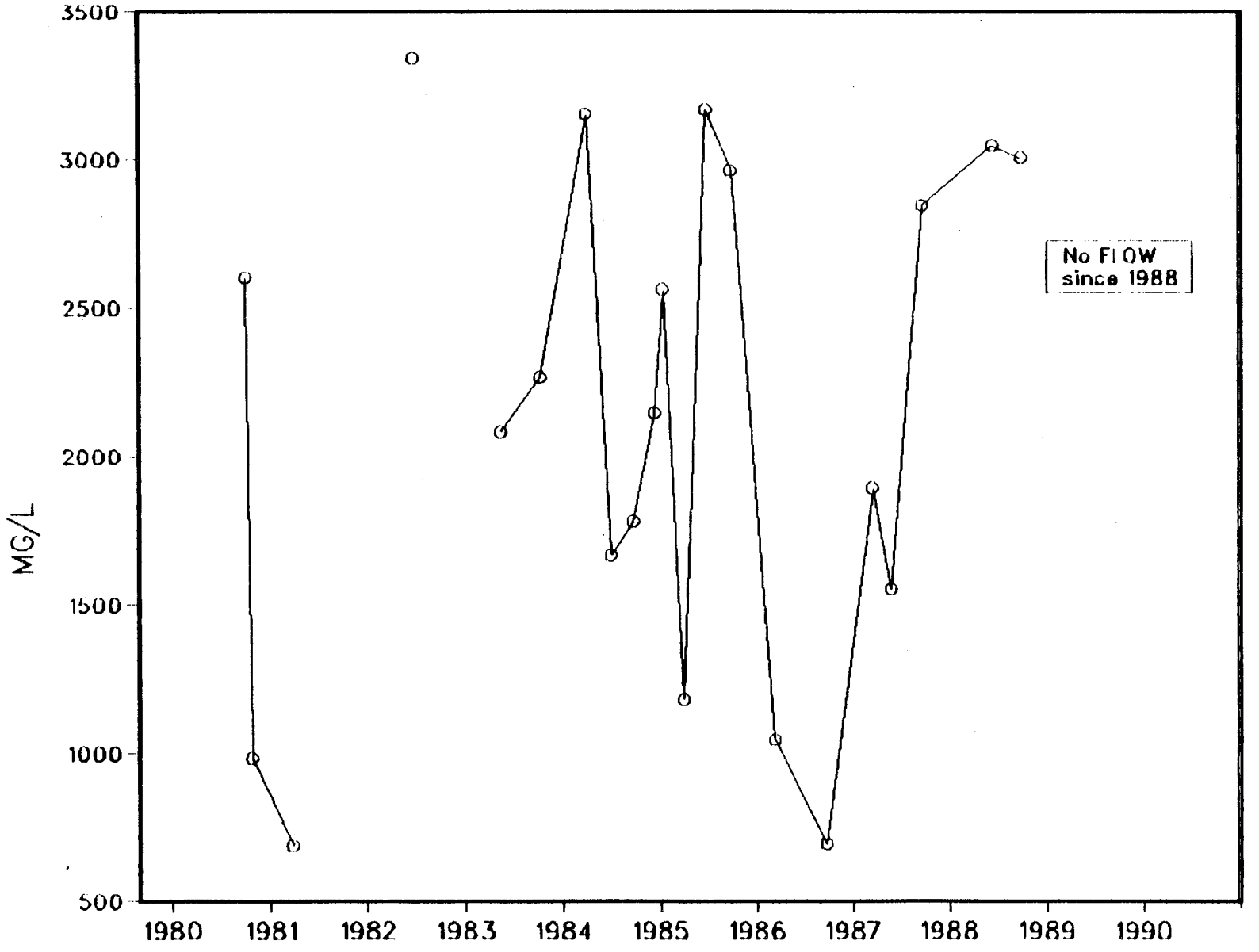


FIGURE 22

PLATEAU MINING COMPANY, TIE ORK CANYON TRIBUTARIES
SOLIDS, DISSOLVED

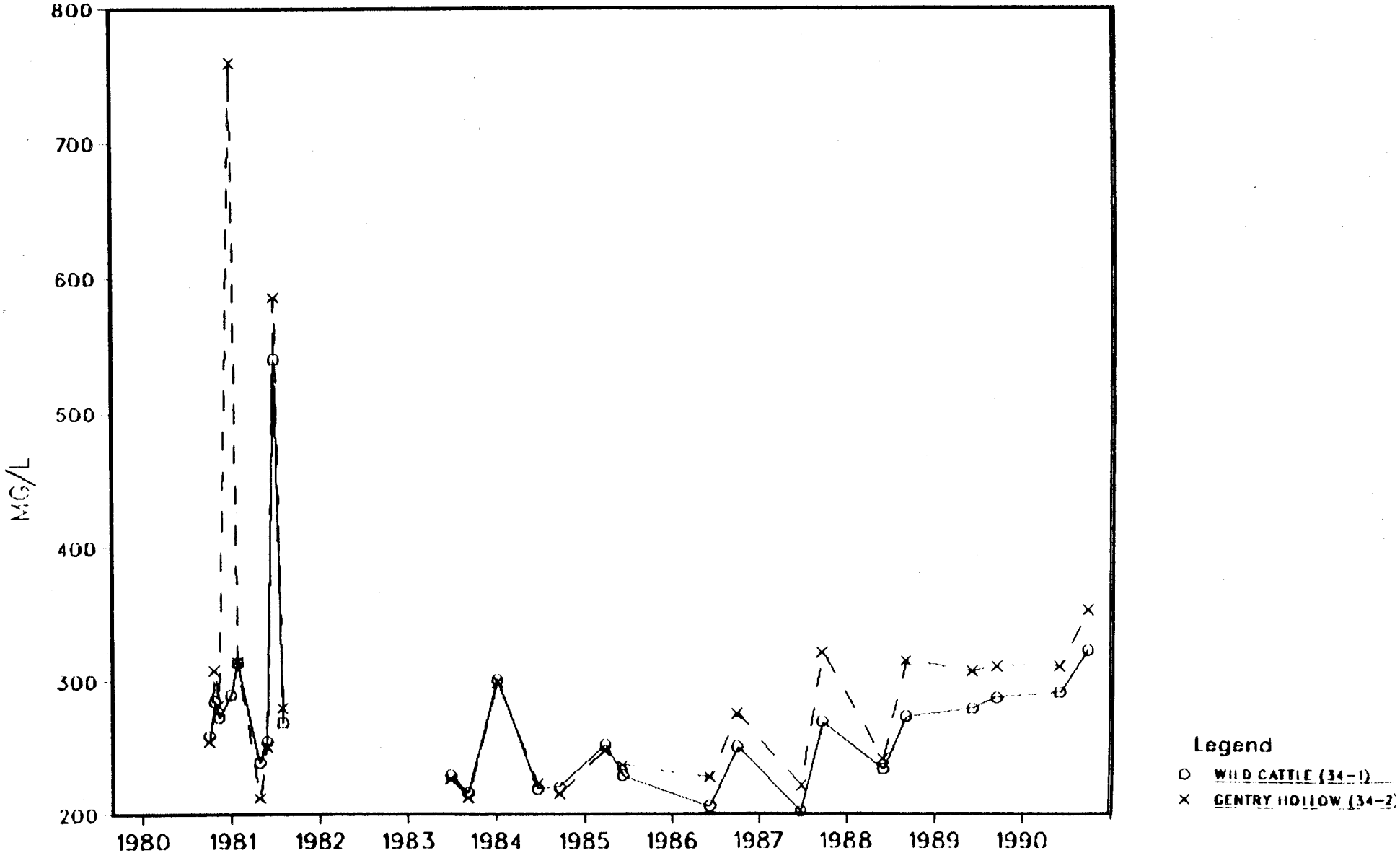


FIGURE 23

PLATEAU MINING COMPANY, RIC T FORK OF MILLER CREEK
SOLIDS, DISSOLVED

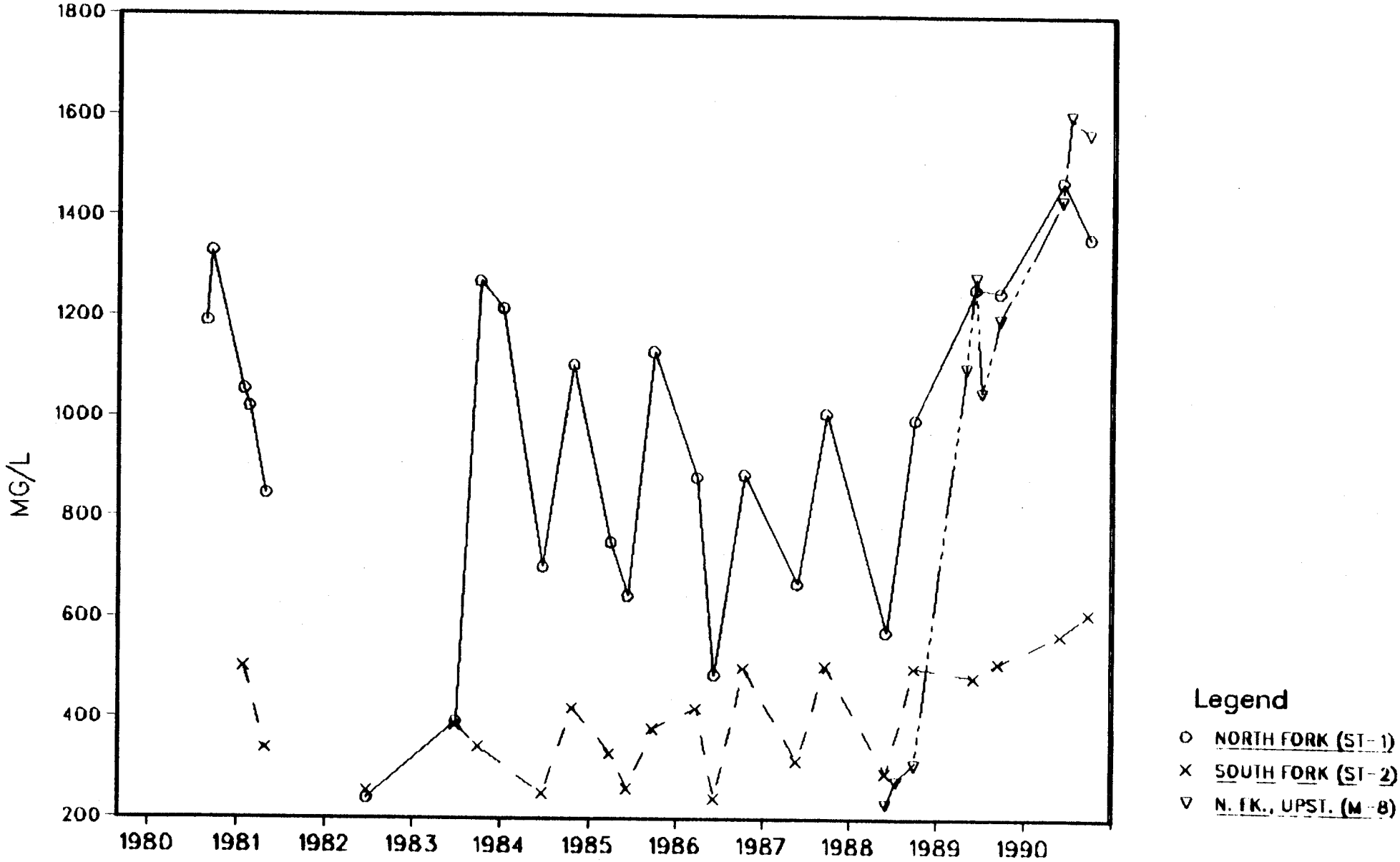


FIGURE 24

Plot of Flow Rate Data – PLA :AU MINING COMPANY
UNDERGROUND MINE FLOWS

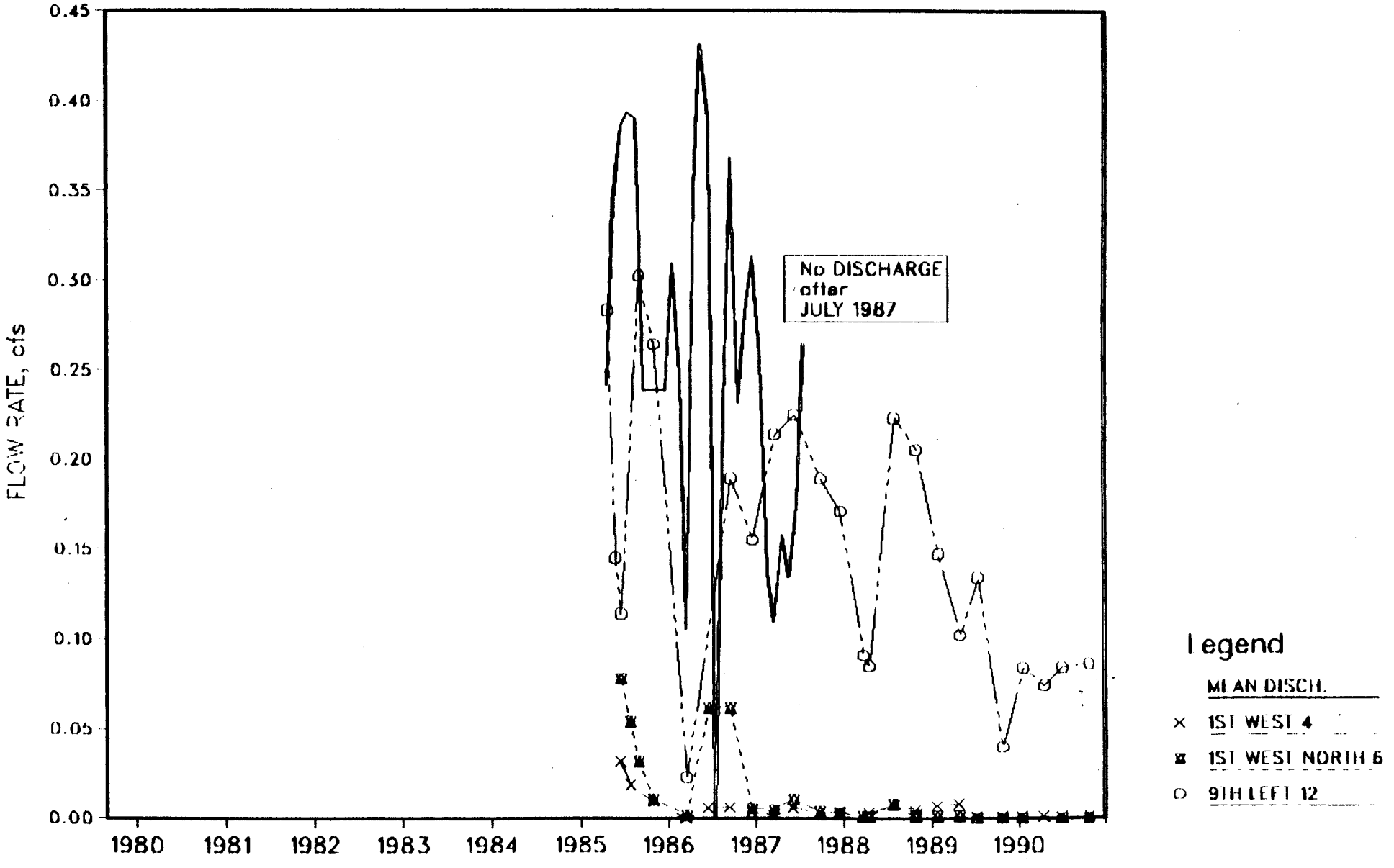


FIGURE 25

PLATEAU MINING COMPANY, U DERGROUND MINE FLOWS
SOLIDS, DISSOLVED

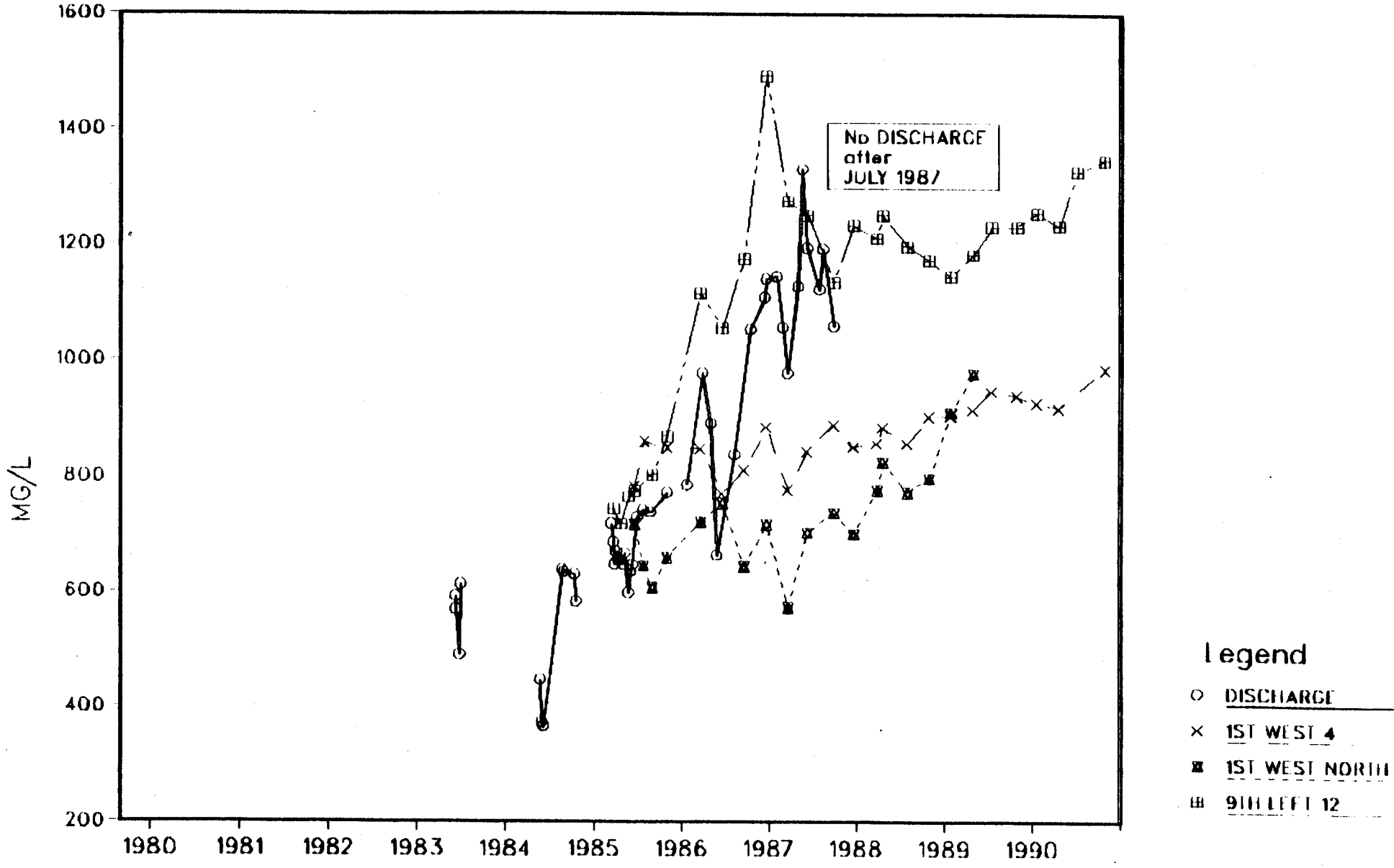


FIGURE 26

'LATEAU MINING COMPANY, UND' 'GROUND MINE DISCHARGE
IRON, TOTAL

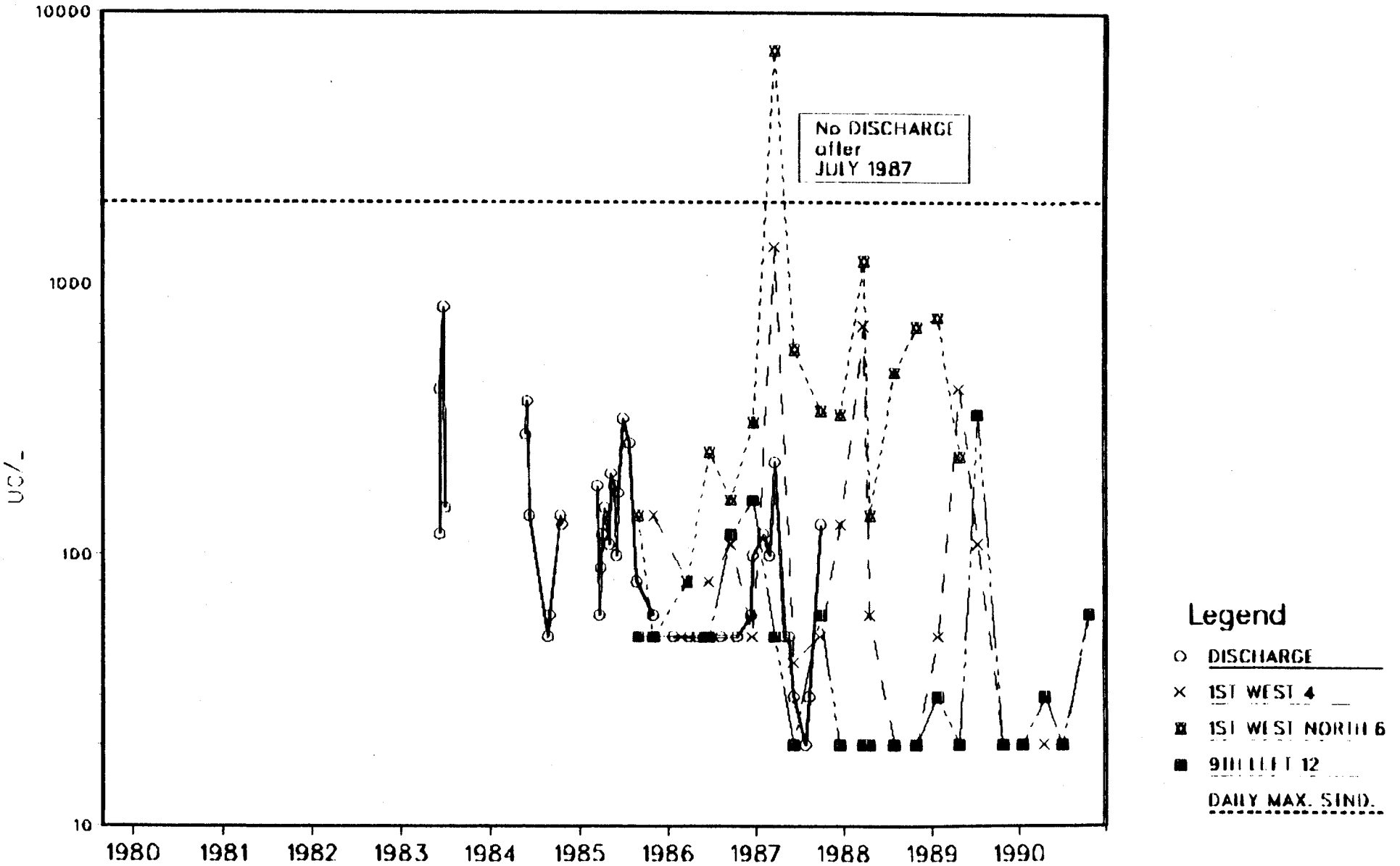


FIGURE 27

FIGURE 28
NFRF MILLER CREEK STREAM FLOW

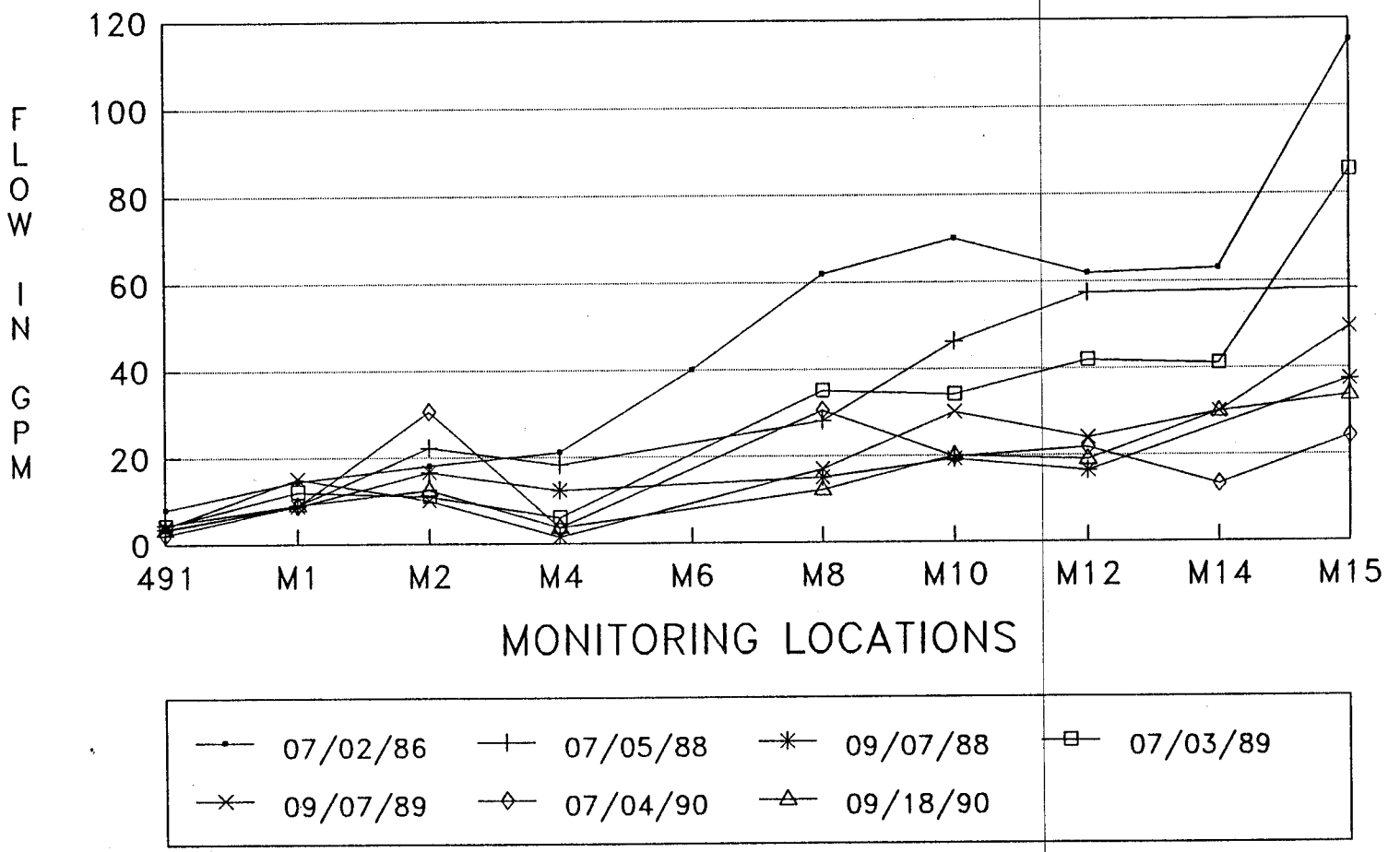
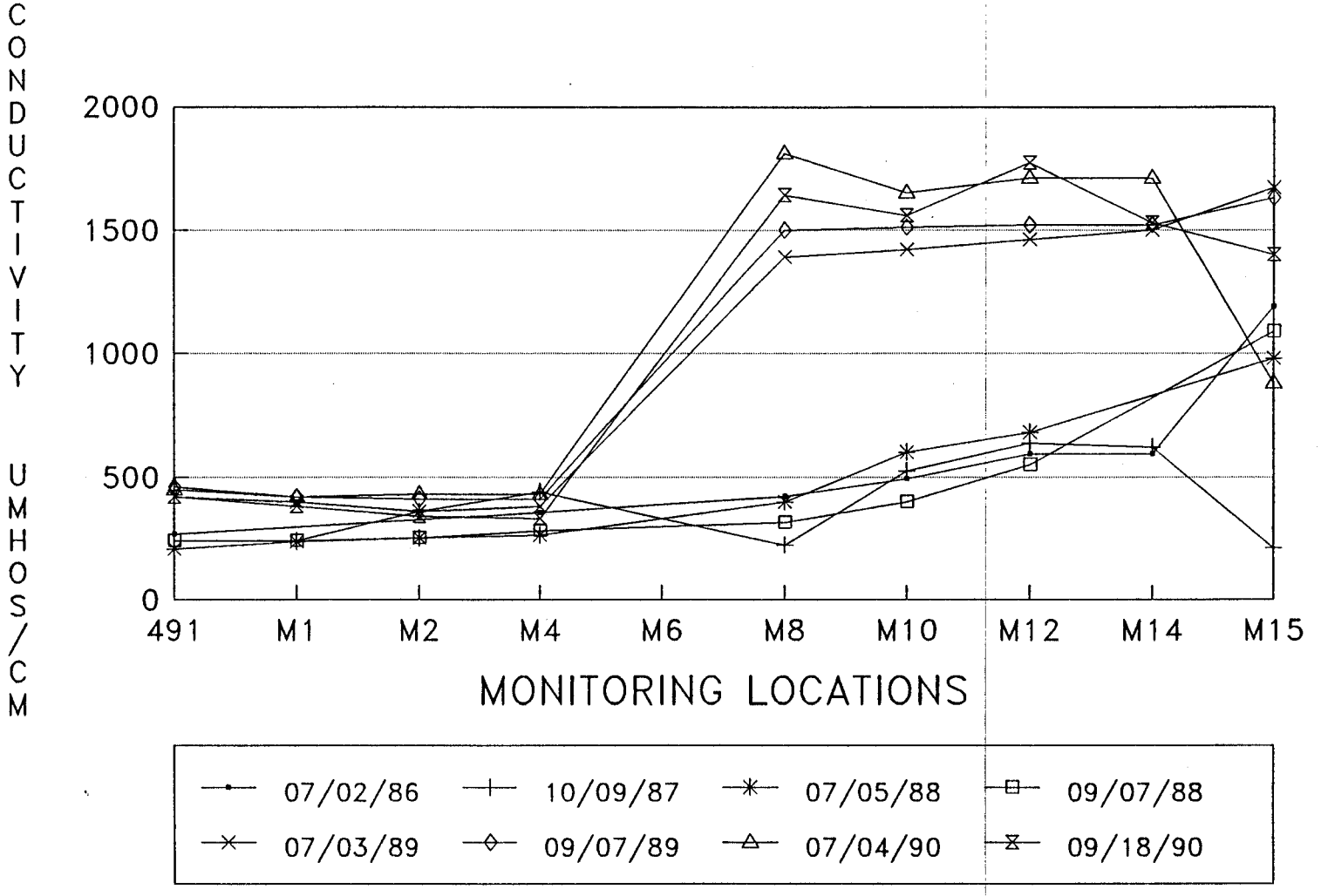
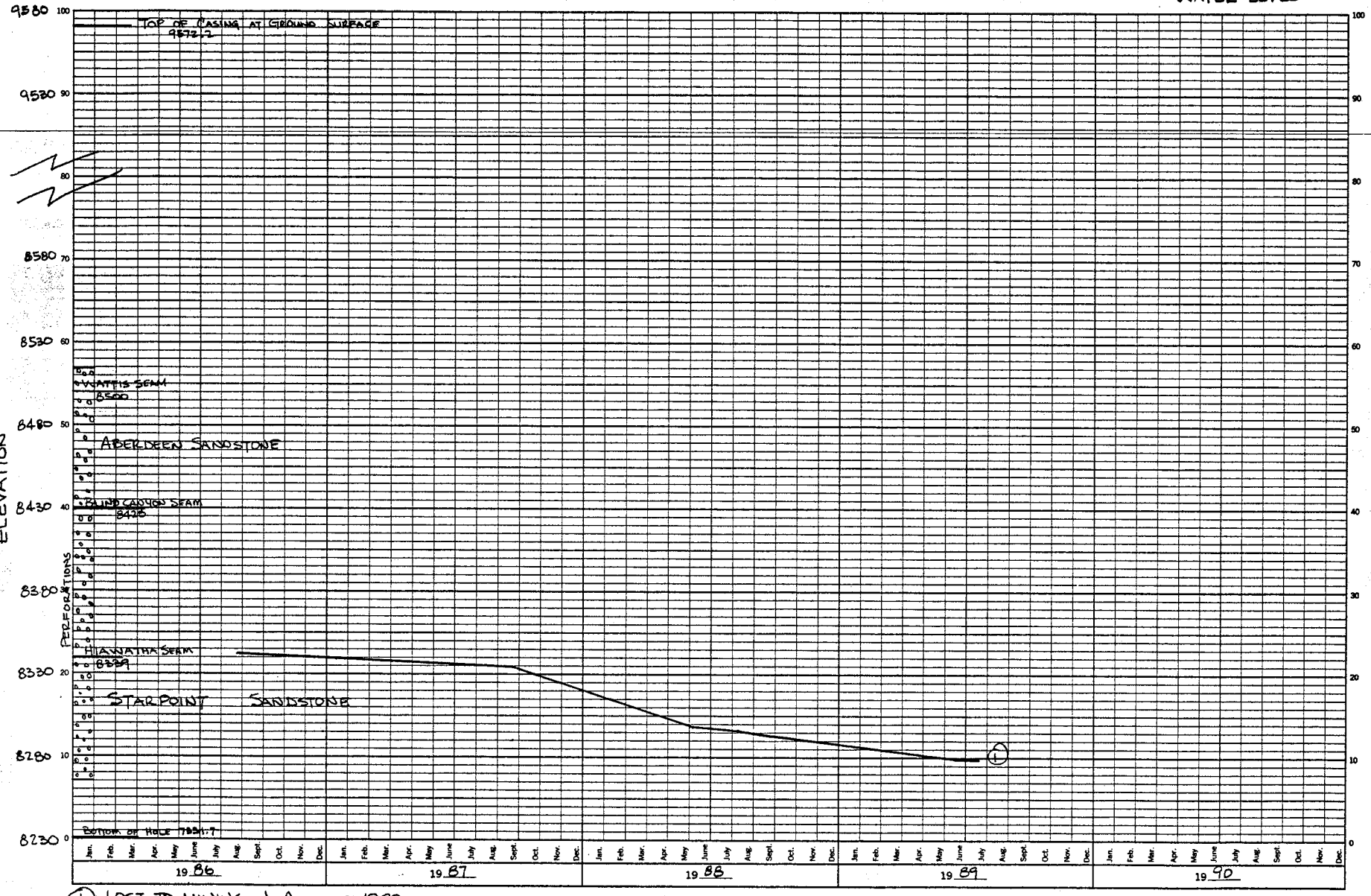


FIGURE 29
NFRF MILLER CREEK CONDUCTIVITY PLOT



WELL 86-18-2

WATER LEVEL



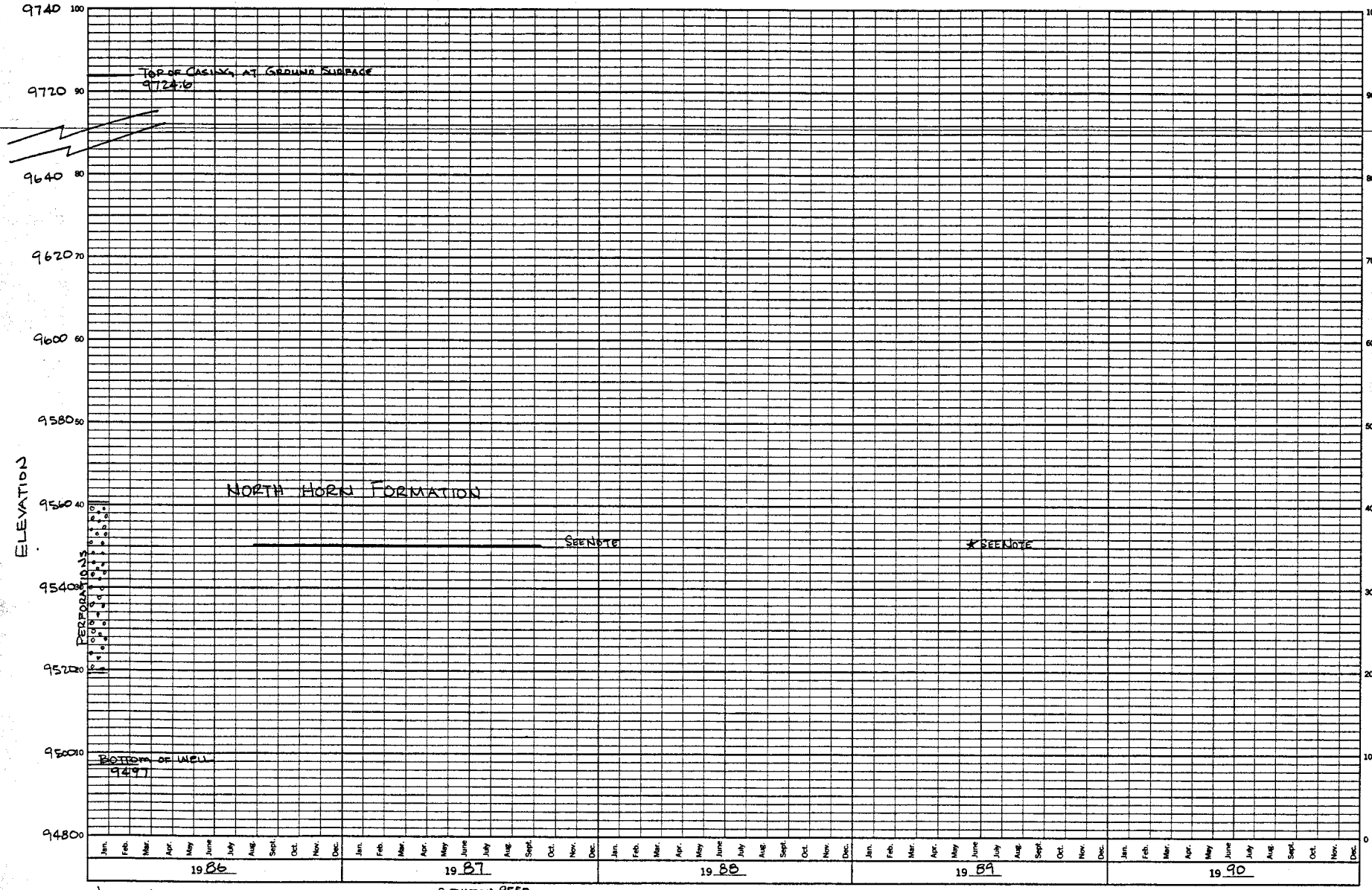
① LOST TO MINING IN AUGUST 1989

FIGURE 30

K+E 5 YEARS BY MONTHS X 100 DIVISIONS KEUFFEL & ESSER CO. MADE IN U.S.A. 47 3650

WELL 86-26-4

WATER LEVEL



NOTE: WELL PLUGGED, COULD NOT GET PROBE BELOW ELEVATION 9550.

FIGURE 31

K+E 5 YEARS BY MONTHS X 100 DIVISIONS KEUFFEL & ESSER CO. MADE IN U.S.A. 47 3650

WELL 86-26-6

WATER LEVEL

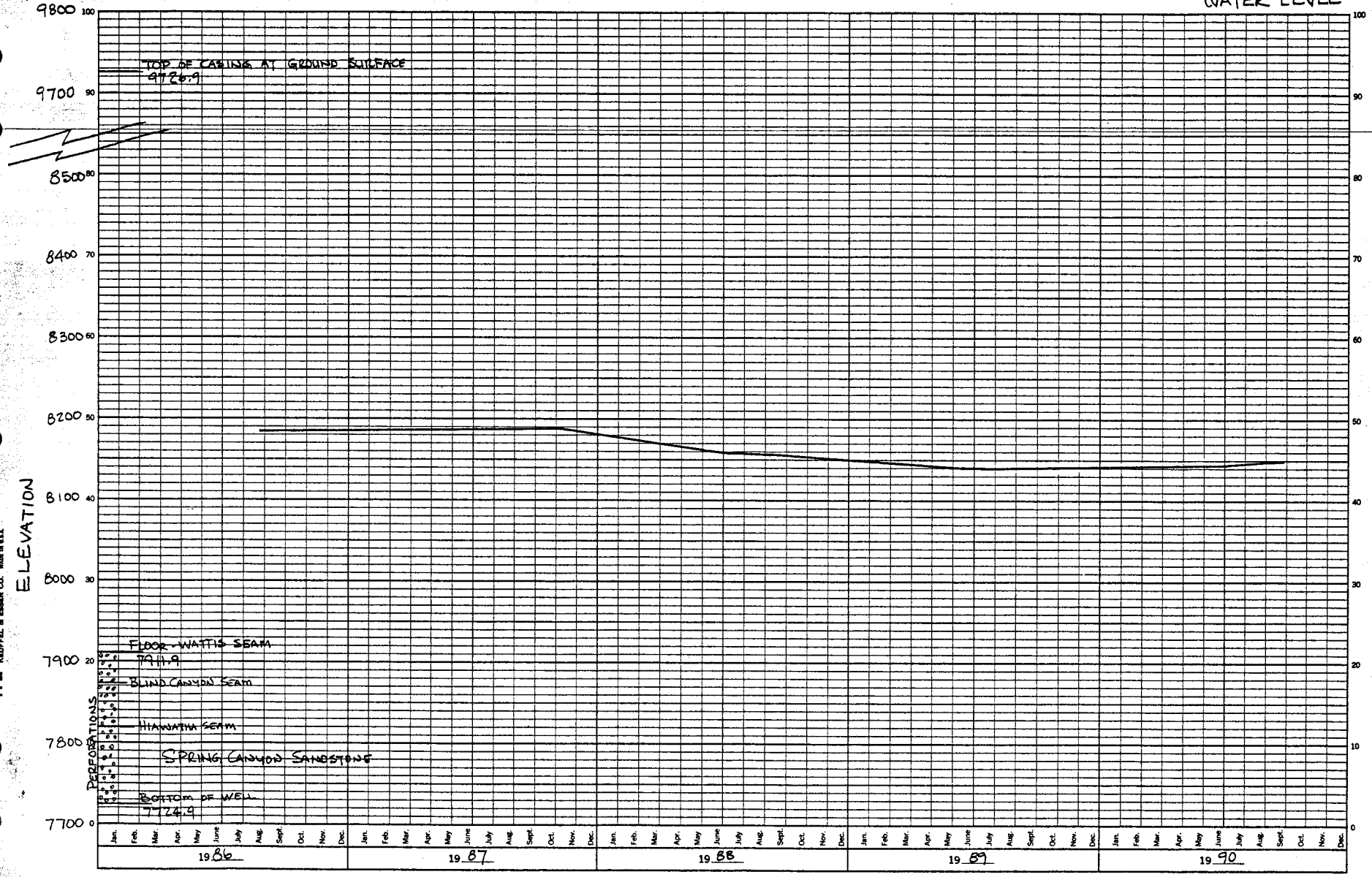


FIGURE 32

K+E 5 YEARS BY MONTHS X 100 DIVISIONS KEUFFEL & ESSER CO. MADE IN U.S.A.
47 3650

WELL P86-01-TD
WATER LEVEL

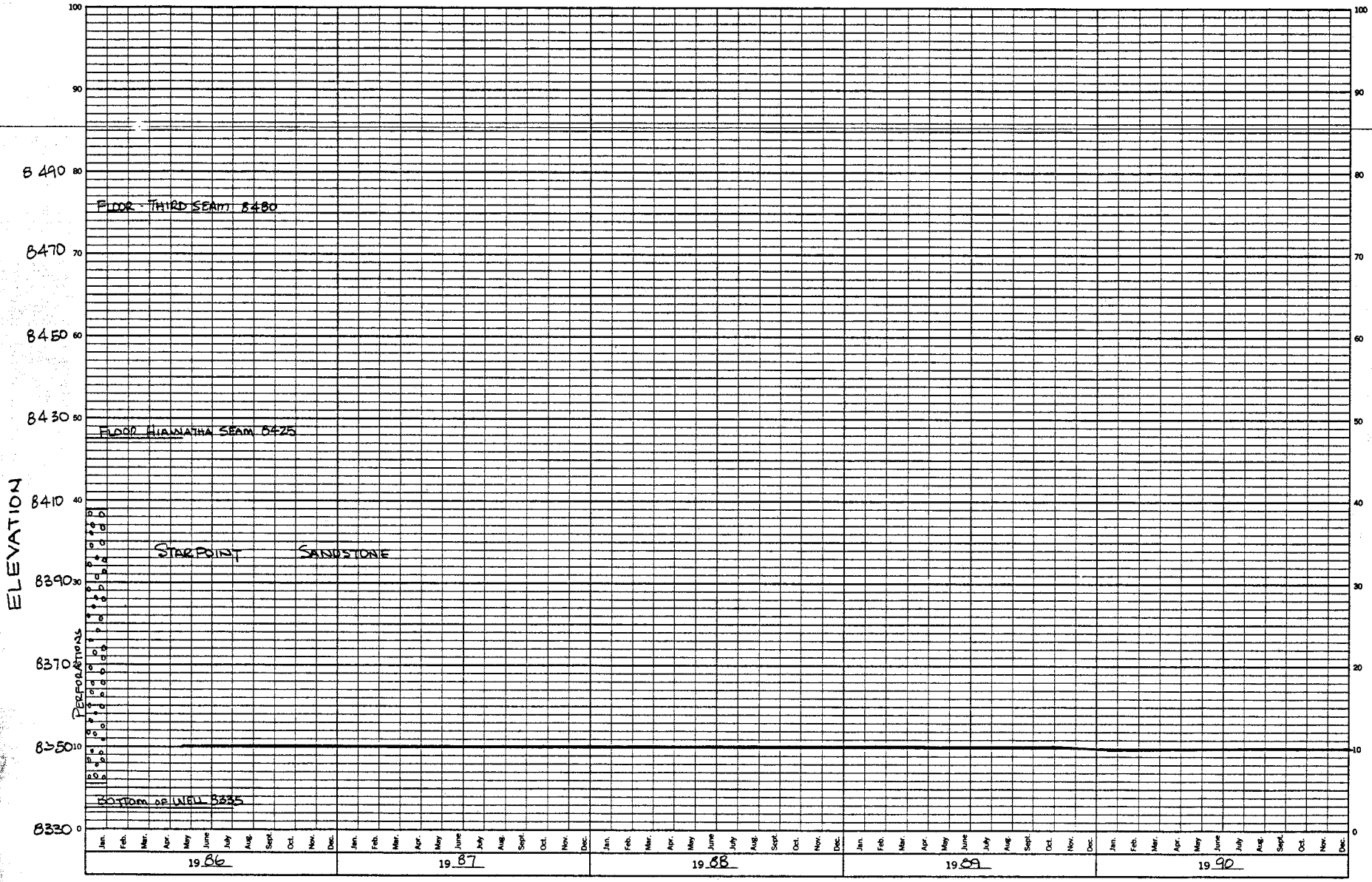


FIGURE 33

K+E 5 YEARS BY MONTHS X 100 DIVISIONS KEUFFEL & ESSER CO. MADE IN U.S.A. 47 3650

WELL P86-02-HD

WATER LEVEL

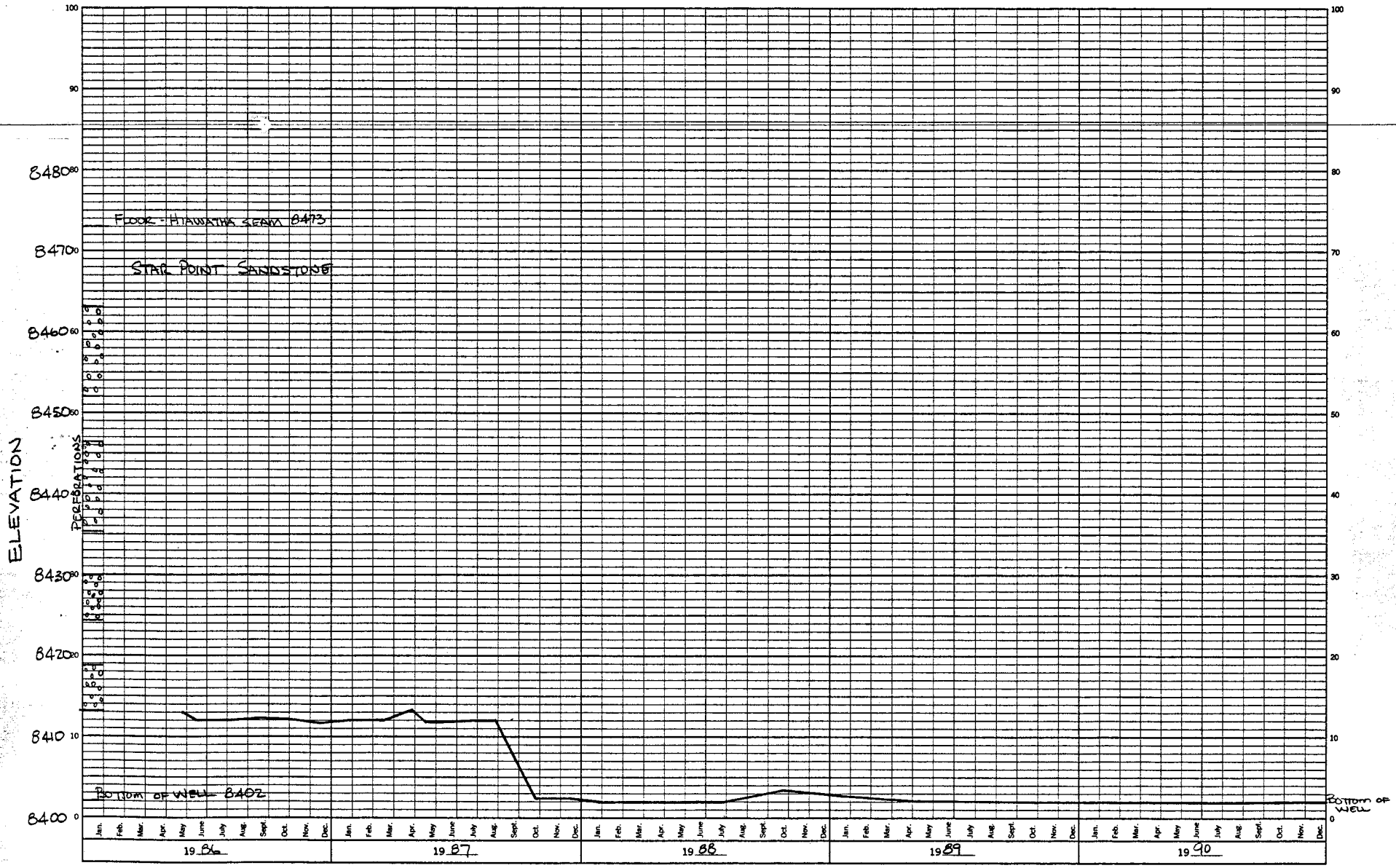
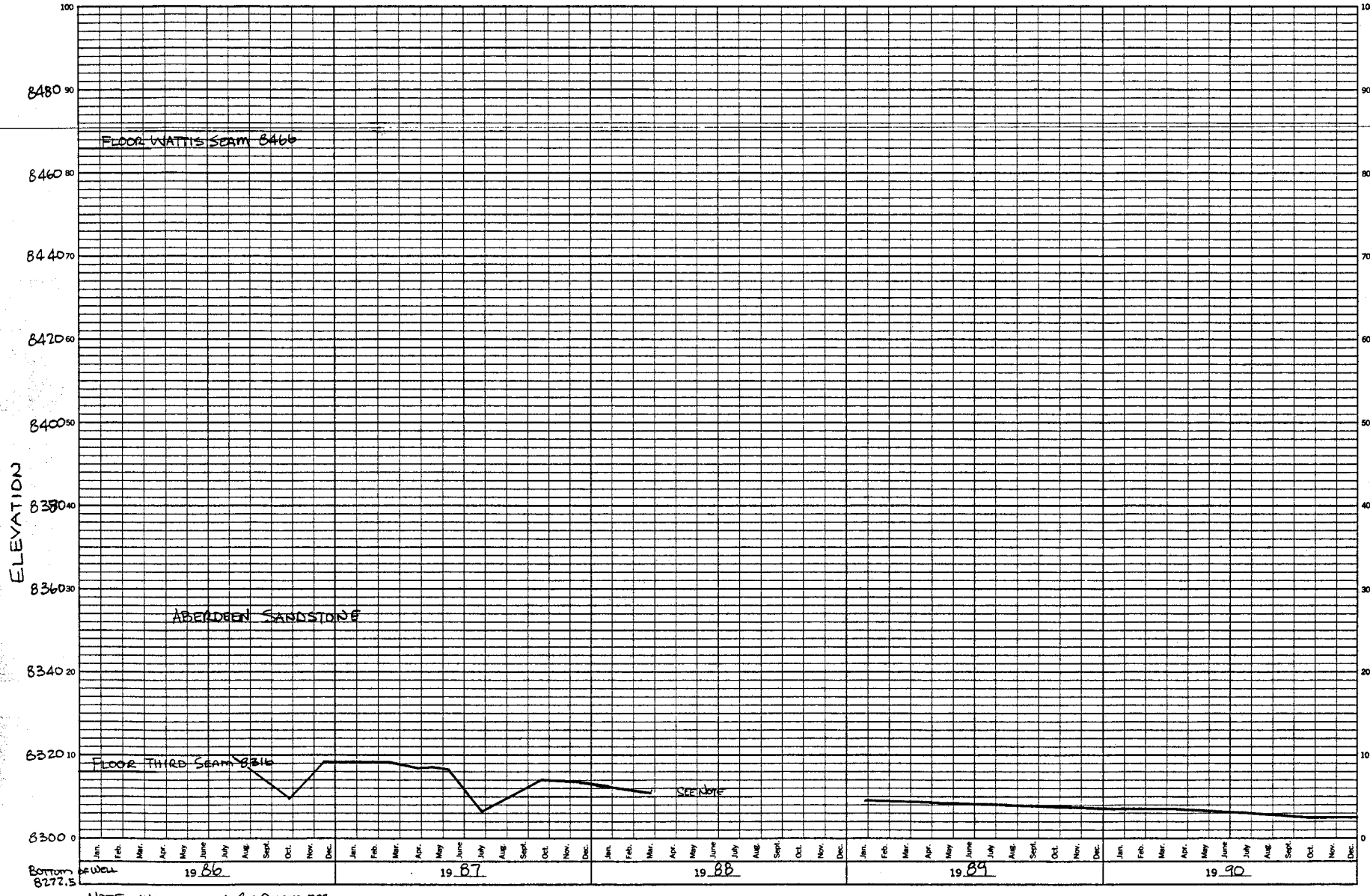


FIGURE 34

K+E 5 YEARS BY MONTHS X 100 DIVISIONS KEUFFEL & ESSER CO. MADE IN U.S.A.
47 3650

WELL P86-03-WD

WATER LEVEL



NOTE: WELL LOST IN 2ND QUARTER 1988
INSTALLED NEW WELL SAME LOCATION, SAME DEPTH IN JAN 1989

FIGURE 35

K+E 5 YEARS BY MONTHS X 100 DIVISIONS KEUFFEL & ESSER CO. MADE IN U.S.A. 47 3650