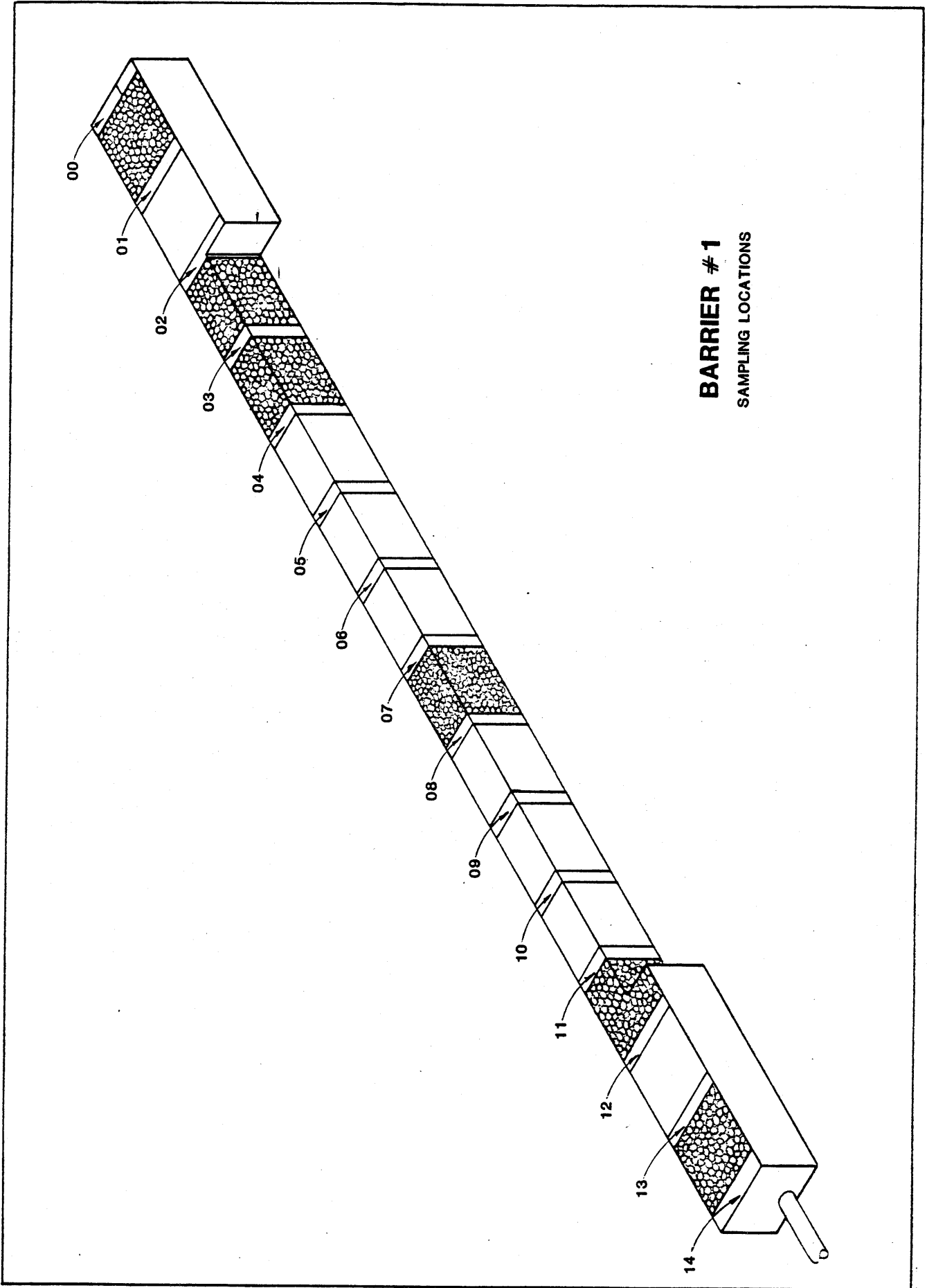


APPENDIX C

PROTOTYPE OPERATIONS DATA

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BARRIER #1
SAMPLING LOCATIONS

BARRIER #1

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
						mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
1 7/10/79 10:00 AM	0.50	0	3.40			3.60	30	82	0	180	1.97			
		1	4.40	0.29	4.40	4	60	0	205	1.50				
		2	4.70	0.30	4.50	0	58	0	190	0.85				
		3	4.70	0.35										
		4	4.75	0.39										
		5	4.80	0.35										
		6	4.85	0.34										
		7	5.00	0.31										
		8	5.15	0.37										
		9	5.40	0.34										
		10	5.40	0.30										
		11	5.65	0.30										
		12	5.65	0.26										
		13	5.70	0.32										
14	5.80	0.26			6.50	0	0	40	205	0.25				
2 8/30/79 10:00 AM	0.50	0	3.70		3.70	68	86	0	165	1.87	18.0	11.52		
		1	4.30	0.30	4.00	44	78	0	190	1.10	22.0	11.40		
		2	4.50	0.35	4.20	28	72	4	195	1.11	24.0	10.80		
		3	4.50	0.36	4.40	12	72	6	195	0.32	26.0	10.20		
		4	4.80	0.42	4.50	0	64	6	195	0.56	28.4	12.12		
		5	4.90	0.38	4.50	0	62	6	195	0.34	29.5	11.04		
		6	4.70	0.33	4.50	0	54	4	195	0.26	30.8	10.44		
		7	4.90	0.33	4.60	0	50	8	195	0.20	33.7	10.20		
		8	5.00	0.40	4.60	0	42	6	195	0.16	37.0	8.88		
		9	5.30	0.41	4.60	0	36	6	190	0.13	37.9	11.60		
		10	4.90	0.35	4.70	0	32	8	195	0.13	39.5	7.08		
		11	5.20	0.36	4.70	0	28	6	195	0.11	41.9	6.00		
		12	5.40	0.29	4.80	0	22	8	200	0.10	41.7	5.28		
		13	5.40	0.42	4.90	0	16	8	200	0.08	44.5	4.08		
14	5.40	0.33	5.10	0	4	10	205	0.08	49.0	3.48				
3 9/6/79 10:00 AM	0.52	0	3.70		3.70	28	70	0	115	8.37	18.1	11.64		
		1	4.25	0.32	4.20	10	62	2	105	7.31	13.9	10.44		
		2	4.40	0.34	4.40	4	58	6	130	7.26	14.6	10.68		
		3	4.70	0.45	4.50	0	50	6	120	6.19	15.5	10.20		
		4	4.70	0.40	4.50	0	50	6	115	4.48	16.3	9.72		
		5	4.80	0.41	4.60	0	38	8	110	4.62	16.2	8.40		
		6	4.90	0.36	4.60	0	34	6	105	3.97	17.4	6.84		
		7	4.95	0.37	4.60	0	34	8	105	3.48	17.7	6.48		
		8	5.00	0.52	4.70	0	24	8	105	2.69	11.7	5.76		
		9	4.90	0.28	4.70	0	20	6	100	2.37	19.0	6.36		
		10	5.20	0.38	4.80	0	14	8	100	1.59	19.4	4.44		
		11	5.50	0.38	5.00	0	10	10	100	1.41	21.6	2.66		
		12	5.60	0.37	5.40	0	4	12	100	0.82	21.0	1.94		
		13	6.10	0.42	5.90	0	4	16	100	0.85	21.9	1.86		
14	6.20	0.35	6.20	0	2	20	100	0.78	22.4	2.10				
4 9/10/79 10:00 AM	0.55	0	3.60		3.70	30	90	0	150	1.30	14.4	9.90		
		1	3.90	0.34	4.20	12	80	4	175	4.13	19.3	9.90		
		2	4.10	0.42	4.10	16	78	2	180	0.97	18.0	9.68		
		3	4.15	0.48	4.20	12	74	4	175	0.93	19.5	9.57		
		4	4.20	0.49	4.30	8	74	4	190	0.60	16.2	9.35		
		5	4.20	0.43	4.40	0	76	6	195	0.46	20.9	8.80		
		6	4.30	0.42	4.40	0	70	6	185	0.47	20.9	9.02		
		7	4.35	0.38	4.50	0	72	8	185	0.35	22.8	8.91		
		8	4.20	0.45	4.50	0	70	8	185	0.25	22.7	9.24		
		9	4.40	0.42	4.50	0	64	6	170	0.26	23.6	9.02		
		10	4.35	0.39	4.50	0	62	6	180	0.25	25.2	8.14		
		11	4.35	0.43	4.50	0	64	6	180	0.18	25.1	7.81		
		12	4.30	0.36	4.50	0	64	6	185	0.17	27.2	8.03		
		13	4.20	0.44	4.60	0	56	6	185	0.14	25.9	7.92		
14	4.50	0.41	4.60	0	52	8	185	0.22	28.0	9.24				

RUN NO. 1

BARRIER #1

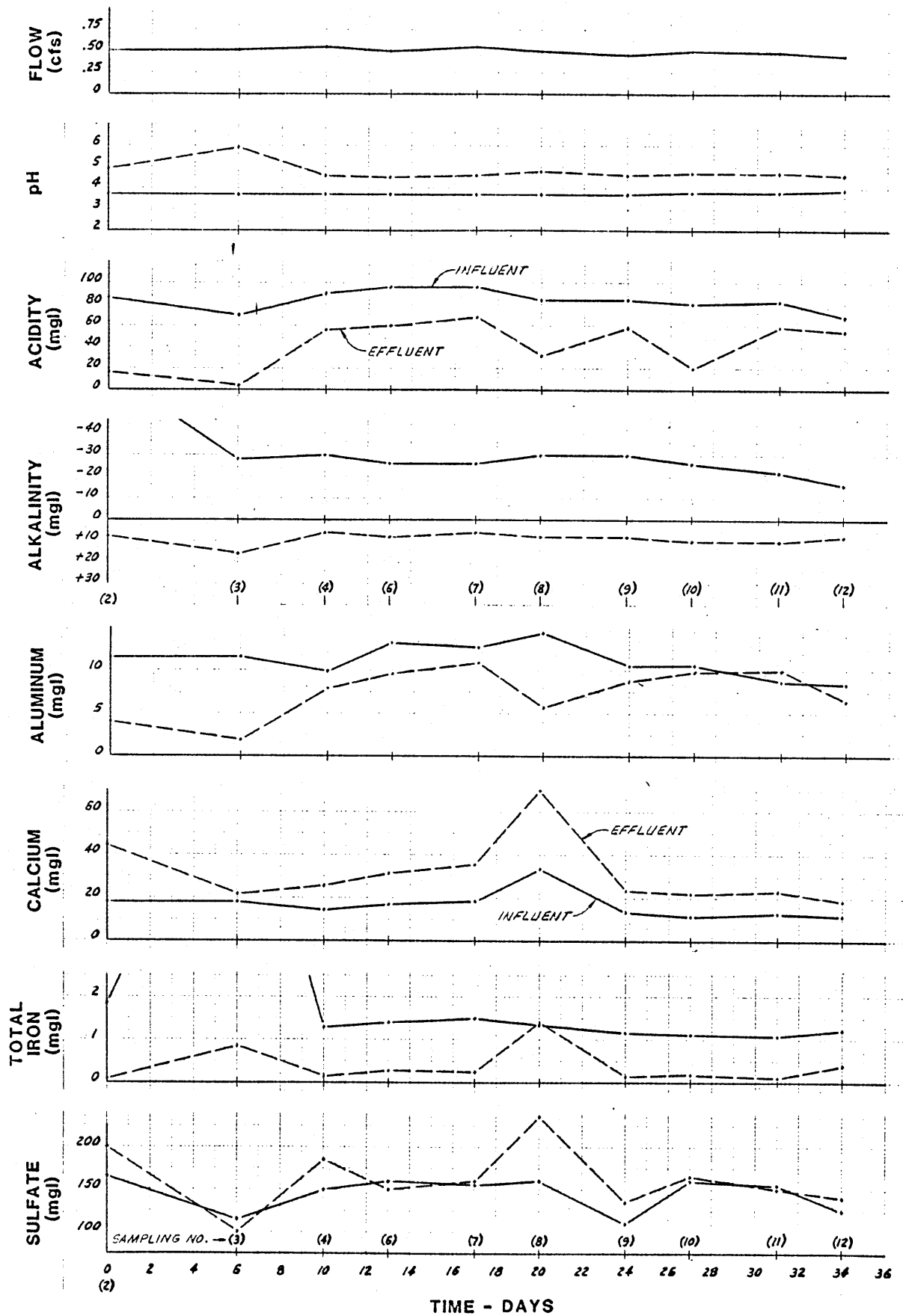
SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
						mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
6 9/13/79 10:00 AM	0.50	0	3.65		3.70	26	96	0			17.0	13.20		
		1	3.90	0.31	3.90	22	86	0	165	1.78	16.8	12.12		
		2	4.10	0.42	4.00	18	92	0	185	1.06	22.2	12.12		
		3	4.40	0.50	4.40	4	76	6	150	2.67	26.5	13.90		
		4	4.30	0.50	4.30	6	76	6	155	0.85	25.5	12.12		
		5	4.55	0.44	4.40	4	74	6	155	0.95	26.2	11.52		
		6	4.50	0.47	4.50	0	74	6	155	0.95	25.7	13.20		
		7	4.50	0.38	4.50	0	72	8	155	0.82	28.5	11.64		
		8	4.60	0.46	4.50	0	72	6	150	0.54	27.5	12.36		
		9	4.55	0.52	4.40	4	68	4	150	0.41	29.5	13.68		
		10	4.50	0.37	4.50	0	72	8	130	0.29	28.5	13.56		
		11	4.55	0.43	4.50	0	64	6	145	0.30	29.7	10.32		
		12	4.60	0.36	4.50	0	62	8	150	0.33	30.5	10.80		
		13	4.60	0.45	4.50	0	60	8	150	0.28	31.2	9.60		
14	4.70	0.30	4.60	0	56	8	150	0.52	34.0	13.80				
7 9/17/79 10:00 AM	0.55	0	3.70		3.70	26	96	0	155	1.50	18.7	12.72		
		1	3.90	0.35	3.90	16	90	0	175	1.37	25.5	12.00		
		2	4.00	0.44	4.10	10	84	2	180	2.83	26.7	12.60		
		3	4.20	0.50	4.20	10	80	2	180	1.45	29.0	12.84		
		4	4.30	0.54	4.30	6	80	4	180	1.65	31.5	12.12		
		5	4.30	0.47	4.30	4	80	4	165	0.72	30.5	12.48		
		6	4.35	0.44	4.40	2	76	4	170	0.52	30.7	11.88		
		7	4.40	0.46	4.40	2	76	6	165	0.45	32.0	11.76		
		8	4.40	0.48	4.50	0	76	6	170	0.58	31.7	11.76		
		9	4.45	0.47										
		10	4.55	0.41	4.50	0	72	6	165	0.30	32.5	10.80		
		11	4.45	0.43	4.50	0	70	6	165	0.30	32.7	11.04		
		12	4.50	0.38	4.50	0	70	6	170	0.25	35.2	10.80		
		13	4.50	0.47	4.60	0	68	6	160	0.25	35.7	10.92		
14	4.45	0.43	4.60	0	70	6	160	0.21	35.0	10.32				
8 9/20/79 10:00 AM	0.50	0	3.65		3.70	30	84	0	160	1.33	33.8	14.40		
		1	3.95	0.31	4.00	16	84	0	185	1.16	37.8	12.72		
		2	4.15	0.42	4.20	10	82	2	190	0.98	48.6	11.64		
		3	4.30	0.45	4.40	4	78	4	180	0.75	49.6	10.80		
		4	4.45	0.52	4.40	2	70	6	180	0.61	42.0	10.80		
		5	4.50	0.44	4.50	0	66	8	185	0.58	45.6	10.44		
		6	4.50	0.42	4.50	0	64	6	180	0.48	53.4	10.20		
		7	4.50	0.38	4.60	0	60	8	175	0.46	53.6	8.28		
		8	4.55	0.46	4.60	0	54	6	185	0.49	57.0	8.76		
		9	4.55	0.42	4.60	0	52	8	175	0.49	57.0	8.76		
		10	4.40	0.39	4.70	0	48	8	175	0.72	62.2	8.16		
		11	4.60	0.38	4.70	0	42	8	185	0.97	73.6	6.72		
		12	4.60	0.36	4.70	0	36	6	215	1.15	88.6	6.36		
		13	4.70	0.42	4.80	0	32	8	235	1.34	109.8	5.76		
14	4.70	0.40	4.80	0	24	6	295	2.52	165.4	5.04				
9 9/24/79 10:00 AM	0.46	0	3.70		3.70	30	84	0	110	1.15	13.3	10.56		
		1	4.15	0.26	4.00	14	76	0	130	2.53	16.8	10.20		
		2	4.10	0.32	4.10	10	76	2	135	0.77	17.5	10.44		
		3	4.10	0.38	4.20	8	72	2	135	0.64	19.2	10.56		
		4	4.25	0.44	4.40	4	68	4	140	0.50	19.9	9.96		
		5	4.30	0.39	4.50	0	70	4	140	0.37	20.1	10.80		
		6	4.40	0.33	4.50	0	70	4	140	0.33	20.7	9.96		
		7	4.40	0.29	4.50	0	66	4	120	0.23	20.3	9.72		
		8	4.40	0.37	4.50	0	64	6	135	0.19	21.8	9.72		
		9	4.45	0.35	4.50	0	60	6	135	0.18	22.0	9.96		
		10	4.35	0.33	4.60	0	58	8	135	0.19	23.3	9.60		
		11	4.40	0.31	4.60	0	60	8	135	0.14	22.4	9.12		
		12	4.40	0.26	4.60	0	60	8	135	0.13	22.3	9.36		
		13	4.40	0.32	4.60	0	58	8	135	0.13	23.2	8.88		
14	4.45	0.30	4.60	0	58	6	135	0.13	23.7	8.28				

RUN NO. 1

BARRIER #1

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
				ft		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l			
10 9/27/79 10:00 AM	0.50	0	3.80		3.80	26	80	0	160	1.11	11.5	10.66		
		1	4.00	0.36	4.00	14	72	0	160	1.08	14.4	11.05		
		2	4.00	0.32	4.20	8	70	2	165	0.84	16.0	11.05		
		3	4.20	0.40	4.30	4	70	4	165	0.67	15.6	10.53		
		4	4.40	0.45	4.50	0	64	6	165	0.53	18.9	10.66		
		5	4.40	0.34	4.50	0	66	8	165	0.40	16.6	10.40		
		6	4.45	0.30	4.50	0	64	8	165	0.36	18.5	10.14		
		7	4.45	0.28	4.60	0	64	8	165	0.32	18.0	10.14		
		8	4.40	0.36	4.60	0	60	8	165	0.29	17.4	10.40		
		9	4.45	0.32	4.60	0	60	8	155	0.25	20.2	9.75		
		10	4.50	0.32	4.70	0	58	10	165	0.23	10.1	9.75		
		11	4.50	0.33	4.70	0	58	10	165	0.20	21.8	9.75		
		12	4.40	0.31	4.70	0	56	8	165	0.20	16.8	10.66		
		13	4.60	0.30	4.70	0	20	10	165	0.19	22.0	9.87		
14	4.50	0.30	4.70	0	52	8	165	0.16	21.0	8.97				
11 10/1/79 10:00 AM	0.48	0	3.80		3.80	22	82	0	155	1.07	12.8	8.76		
		1	4.00	0.26	4.10	10	70	2	145	7.39	16.6	10.08		
		2	4.40	0.32	4.10	10	74	2	160	0.99	17.9	10.20		
		3	4.15	0.37	4.30	6	68	4	160	0.71	15.1	9.12		
		4	4.40	0.44	4.40	2	68	6	165	0.52	19.7	9.12		
		5	4.50	0.33	4.50	0	68	6	160	0.31	19.4	9.24		
		6	4.40	0.29	4.60	0	68	8	160	0.27	19.6	8.64		
		7	4.65	0.29	4.60	0	66	10	160	0.23	22.3	8.28		
		8	4.50	0.35	4.70	0	64	10	160	0.17	22.6	9.72		
		9	4.45	0.35	4.60	0	62	8	160	0.17	21.1	9.24		
		10	4.50	0.29	4.70	0	62	10	145	0.13	22.3	9.72		
		11	4.45	0.30	4.70	0	62	5	160	0.13	23.5	8.46		
		12	4.70	0.26	4.70	0	58	10	160	0.08	19.8	8.52		
		13	4.70	0.36	4.70	0	58	10	150	0.11	22.9	9.96		
14	4.60	0.30	4.70	0	56	10	150	0.13	23.2	9.00				
12 10/4/79 10:00 AM	0.44	0	3.90		3.90	16	68	0	125	1.22	11.8	8.40		
		1	4.00	0.31	4.10	8	66	2	140	1.05	0.0	7.44		
		2	4.10	0.37	4.30	4	62	4	140	2.31	14.7	9.12		
		3	4.25	0.45	4.40	2	60	6	140	1.24	14.6	8.16		
		4	4.30	0.50	4.40	2	60	6	140	0.57	15.5	7.92		
		5	4.35	0.44	4.50	0	58	6	140	0.46	16.4	7.32		
		6	4.40	0.37	4.50	0	58	6	140	0.43	17.0	7.56		
		7	4.35	0.36	4.60	0	54	8	140	0.36	17.6	7.32		
		8	4.45	0.41	4.60	0	54	8	140	0.42	17.5	8.64		
		9	4.35	0.37	4.60	0	54	8	140	0.38	17.6	7.44		
		10	4.45	0.32	4.60	0	52	8	140	0.46	18.6	8.04		
		11	4.45	0.33	4.60	0	52	8	140	0.35	18.8	6.60		
		12	4.45	0.31	4.60	0	52	6	140	0.33	17.9	6.24		
		13	4.40	0.35	4.60	0	54	8	140	0.40	18.3	6.48		
14	4.40	0.30	4.60	0	54	8	140	0.43	19.6	6.24				
13 11/12/79 10:00 AM	0.50	0	3.70		3.70	22	74	0	120	2.02	13.5	9.20		
		1	4.50	0.29	4.10	8	66	2	130	0.80	16.3	9.10		
		2	5.00	0.32	4.50	0	50	4	135	0.74	18.0	7.60		
		3	5.00	0.43	4.70	0	34	6	145	2.84	27.0	7.60		
		4	5.00	0.51	4.90	0	12	6	155	5.03	32.9	8.30		
		5	5.10	0.44	5.00	0	16	8	155	1.07	35.6	5.00		
		6	5.30	0.45	5.40	0	4	12	165	1.14	40.8	4.80		
		7	5.30	0.41	5.70	0	4	10	170	1.34	45.3	5.10		
		8	5.70	0.49	6.00	0	3	18	180	1.57	49.7	6.50		
		9	5.80	0.45	6.20	0	4	16	180	0.67	52.5	3.30		
		10	5.80	0.42	6.30	0	2	20	185	1.22	64.5	3.80		
		11	5.90	0.43	6.40	0	3	20	195	0.78	53.4	3.10		
		12	6.20	0.37	6.40	0	2	22	205	0.60	68.1	2.30		
		13	6.00	0.46	6.50	0	2	24	210	0.90	79.0	3.40		
14	6.00	0.46	6.50	0	2	24	220	1.08	85.8	5.90				

RUN NO. 1



BARRIER NO. 1 SAMPLING 1 THRU 12

BARRIER #1

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
						mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
15 11/13/79 10:00 AM	0.50	0	3.80											
		1	4.00	0.35										
		2	4.20	0.41										
		3	4.30	0.50										
		4	4.60	0.57										
		5	4.70	0.48										
		6	4.70	0.47										
		7	4.80	0.42										
		8	4.80	0.52										
		9	4.70	0.48										
		10	4.80	0.45										
		11	4.70	0.44										
		12	4.70	0.39										
		13	4.90	0.51										
14	4.90	0.47												
16 11/13/79 5:00 PM	0.52	0	3.80		3.70	20	76	0	110	0.90	12.5	9.90		
		1	4.00	0.38	3.90	14	72	0	125	1.00	14.3	9.50		
		2	4.20	0.43	4.40	2	62	4	135	8.00	16.7	13.10		
		3	4.60	0.49	4.60	0	56	8	140	18.70	20.1	24.40		
		4	4.65	0.57	4.50	0	60	6	140	2.50	17.8	10.40		
		5	4.70	0.48	4.50	0	60	8	140	0.50	20.1	9.00		
		6	4.90	0.49	4.60	0	56	8	140	1.30	19.8	12.10		
		7	4.80	0.43	4.60	0	58	6	140	0.20	19.0	8.90		
		8	4.90	0.54	4.60	0	52	8	140	0.30	20.6	8.90		
		9	4.80	0.50	4.60	0	50	8	140	0.30	20.3	9.20		
		10	4.80	0.42	4.60	0	46	8	125	0.50	22.4	11.00		
		11	4.80	0.45	4.70	0	44	8	135	0.20	23.3	8.10		
		12	4.90	0.38	4.70	0	40	8	135	0.30	24.2	9.20		
		13	4.90	0.52	4.90	0	18	8	140	1.80	29.0	15.60		
14	4.90	0.50	4.80	0	24	8	140	0.90	26.3	17.80				
17 11/13/79 11:00 PM	0.50	0	3.80											
		1	3.90	0.31										
		2	4.10	0.47										
		3	4.35	0.50										
		4	4.40	0.55										
		5	4.70	0.54										
		6	4.70	0.52										
		7	4.70	0.43										
		8	4.80	0.46										
		9	4.80	0.47										
		10	4.80	0.47										
		11	4.75	0.43										
		12	4.90	0.36										
		13	4.90	0.50										
14	4.90	0.50												
18 11/14/79 8:00 AM	0.52	0	3.80											
		1	4.20	0.34										
		2	4.30	0.39										
		3	4.40	0.44										
		4	4.60	0.57										
		5	4.80	0.51										
		6	4.80	0.47										
		7	4.70	0.43										
		8	4.85	0.51										
		9	4.90	0.45										
		10	4.90	0.42										
		11	4.90	0.42										
		12	4.95	0.37										
		13	4.90	0.52										
14	4.90	0.49												

RUN NO. 2

BARRIER #1

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
														cfs
19 11/14/79 3:00 PM	0.52	0	3.90		3.70	20	76	0	140	1.00	12.3	11.10		
		1	4.10	0.35	4.00	10	70	0	140	1.00	14.1	11.50		
		2	4.40	0.45	4.00	10	70	0	140	0.70	14.5	11.20		
		3	4.50	0.50	4.20	4	66	2	140	0.60	14.7	11.10		
		4	4.70	0.55	4.40	2	64	6	140	0.40	16.1	11.70		
		5	4.62	0.47	4.40	2	62	4	135	0.30	16.6	11.20		
		6	4.90	0.49	4.50	0	60	6	140	0.20	18.0	10.30		
		7	5.00	0.42	4.60	0	60	6	145	0.20	19.2	10.90		
		8	4.85	0.53	4.60	0	58	8	150	0.10	18.6	10.40		
		9	4.85	0.49	4.60	0	56	8	145	0.10	18.8	10.10		
		10	4.80	0.44	4.60	0	54	8	145	0.10	21.5	10.60		
		11	5.00	0.45	4.60	0	52	8	145	0.20	20.5	9.90		
		12	4.70	0.38	4.70	0	52	8	145	0.20	21.8	9.40		
		13	4.90	0.51	4.70	0	44	8	145	0.40	23.7	11.40		
14	4.90	0.49	4.80	0	24	8	145	1.30	26.5	22.50				
20 11/14/79 11:00 PM	0.50	0	3.80											
		1	3.85	0.36										
		2	4.20	0.47										
		3	4.30	0.45										
		4	4.50	0.53										
		5	4.60	0.59										
		6	4.60	0.52										
		7	4.70	0.48										
		8	4.75	0.61										
		9	4.70	0.47										
		10	4.80	0.52										
		11	4.80	0.53										
		12	4.80	0.41										
		13	4.85	0.60										
14	4.60	0.55												
21 11/15/79 8:00 AM	0.57	0	3.90											
		1	4.00	0.37										
		2	4.20	0.45										
		3	4.30	0.53										
		4	4.70	0.57										
		5	4.70	0.49										
		6	4.60	0.70										
		7	4.80	0.46										
		8	4.80	0.56										
		9	4.90	0.49										
		10	4.90	0.47										
		11	4.90	0.48										
		12	4.80	0.41										
		13	4.80	0.52										
14	4.90	0.51												
22 11/15/79 5:00 PM	0.63	0	4.00		3.70	24	76	0	126	1.10	12.6	9.40		
		1	4.10	0.31	4.40	2	64	4	145	18.00	17.8	17.30		
		2	4.30	0.37	4.00	14	68	0	145	1.30	16.0	9.80		
		3	4.50	0.55	4.20	6	68	4	155	0.80	17.1	9.50		
		4	4.70	0.60	4.40	2	66	4	155	2.00	18.0	10.20		
		5	4.80	0.54	4.40	2	64	4	150	5.00	17.5	14.20		
		6	4.90	0.47	4.40	2	62	4	150	1.10	18.3	10.30		
		7	5.00	0.48	4.50	0	60	6	150	1.20	19.4	11.50		
		8	5.00	0.51	4.50	0	58	4	150	0.60	20.3	10.70		
		9	5.00	0.47	4.50	0	58	4	145	0.10	19.4	9.70		
		10	5.10	0.47	4.50	0	58	4	135	0.30	20.5	8.90		
		11	5.10	0.43	4.50	0	56	6	145	0.10	20.6	8.70		
		12	5.10	0.41	4.60	0	52	8	145	0.10	20.6	8.30		
		13	5.00	0.50	4.60	0	54	6	145	0.10	21.5	8.60		
14	5.00	0.45	4.60	0	52	6	145	0.40	21.1	11.10				

RUN NO. 2

BARRIER #1

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
						mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
24 11/16/79 10:00 AM	0.52	0	3.90											
		1	4.00	0.36										
		2	4.10	0.46										
		3	4.40	0.51										
		4	4.60	0.62										
		5	4.70	0.51										
		6	4.60	0.50										
		7	5.00	0.42										
		8	4.80	0.54										
		9	4.90	0.50										
		10	5.00	0.45										
		11	5.00	0.44										
		12	5.00	0.40										
		13	4.90	0.52										
14	5.10	0.50												
25 11/16/79 5:00 PM	0.52	0	3.85		3.70	22	80	0	145	1.00	12.3	9.40		
		1	4.00	0.37	3.80	20	76	0	150	4.40	15.3	10.50		
		2	4.20	0.44	4.00	12	72	0	150	0.80	16.3	9.60		
		3	4.40	0.55	4.10	8	72	2	150	2.60	16.7	10.40		
		4	4.50	0.57	4.20	6	72	4	145	1.30	17.4	9.60		
		5	4.60	0.52	4.30	4	68	4	135	0.90	17.6	9.60		
		6	4.80	0.51	4.40	2	66	4	145	0.30	17.6	9.20		
		7	4.70	0.44	4.50	0	66	6	145	0.70	18.4	9.90		
		8	4.85	0.53	4.50	0	62	6	145	0.20	18.7	8.80		
		9	4.85	0.50	4.50	0	62	6	145	0.20	19.7	9.00		
		10	4.80	0.44	4.50	0	60	6	145	0.10	19.6	8.80		
		11	4.70	0.47	4.50	0	62	6	150	0.10	20.9	8.30		
		12	4.75	0.42	4.50	0	60	6	145	0.10	21.2	8.60		
		13	4.75	0.55	4.50	0	54	6	145	0.20	20.5	8.60		
14	4.95	0.51	4.50	0	54	6	145	0.10	20.3	8.10				
27 11/17/79 8:00 AM	0.52	0	3.80											
		1	4.10	0.38										
		2	4.20	0.47										
		3	4.30	0.58										
		4	4.50	0.59										
		5	4.70	0.51										
		6	4.80	0.49										
		7	4.80	0.43										
		8	4.80	0.56										
		9	4.80	0.50										
		10	4.90	0.45										
		11	5.00	0.45										
		12	4.90	0.40										
		13	4.90	0.52										
14	5.00	0.50												
28 11/17/79 4:00 Pm	0.56	0	3.95		3.70	22	78	0	130	1.10	12.2	9.90		
		1	4.05	0.36	3.90	14	74	0	145	1.40	15.7	10.20		
		2	4.10	0.45	3.90	14	72	0	150	0.90	17.3	9.90		
		3	4.35	0.53	4.10	10	70	2	150	0.80	17.7	9.80		
		4	4.40	0.65	4.20	6	68	4	150	0.90	17.5	10.10		
		5	4.50	0.54	4.30	4	66	4	150	0.50	18.4	9.70		
		6	4.70	0.50	4.40	2	64	6	150	0.40	19.3	9.50		
		7	4.65	0.46	4.40	2	62	6	150	0.70	19.1	10.30		
		8	4.80	0.56	4.50	0	62	6	150	0.30	21.6	9.60		
		9	4.80	0.44	4.50	0	60	6	150	0.30	24.8	10.00		
		10	4.80	0.44	4.50	0	62	6	135	0.20	20.0	9.20		
		11	4.70	0.48	4.60	0	60	6	145	0.20	20.2	9.60		
		12	4.85	0.43	4.60	0	58	6	145	0.10	20.8	8.90		
		13	4.85	0.57	4.60	0	56	6	150	0.10	21.2	8.70		
14	4.87	0.55	4.60	0	54	6	150	0.20	21.7	10.00				

RUN NO. 2

BARRIER #1

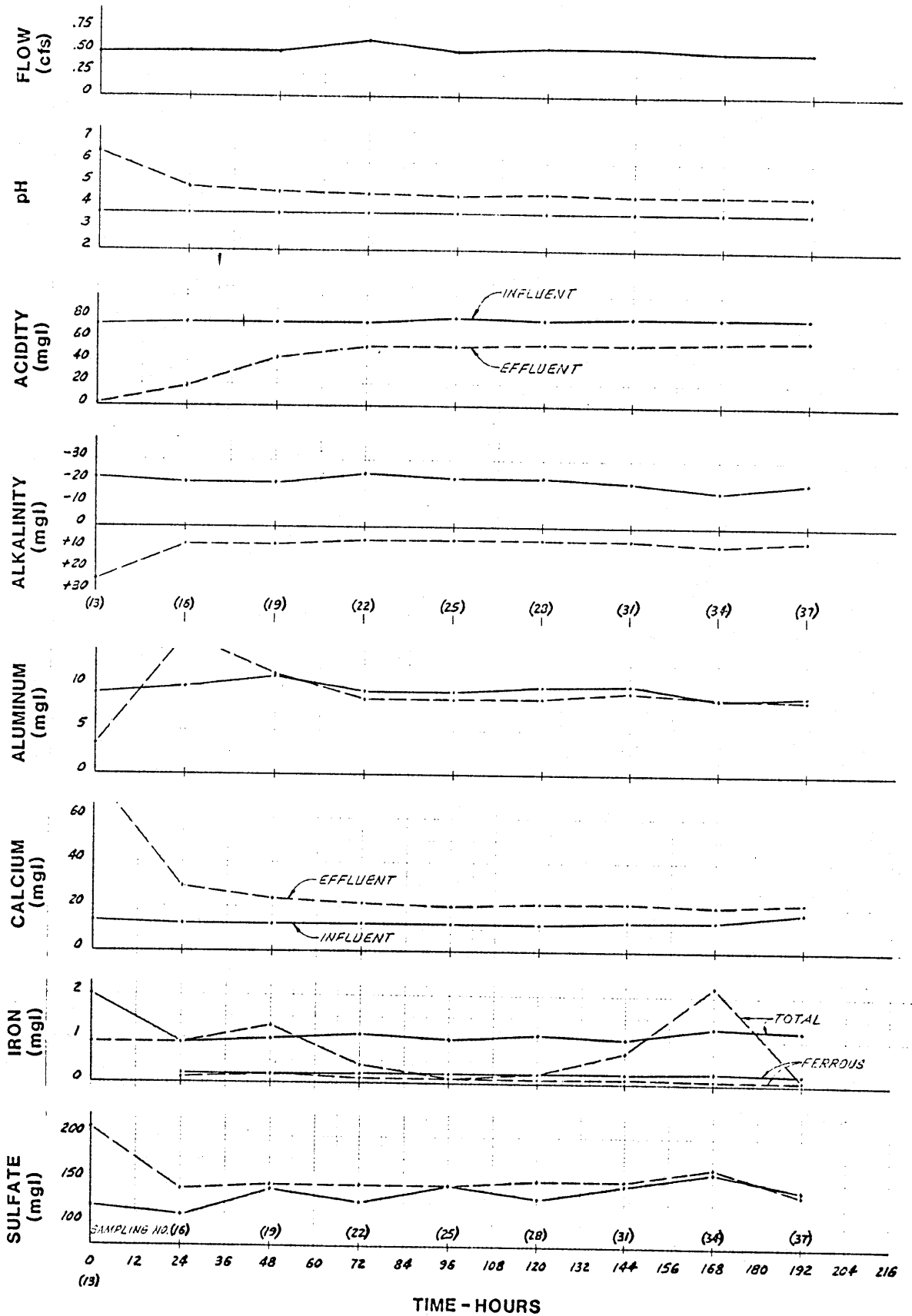
SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
						mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
30 11/18/79 10:00 AM	0.55	0	3.80											
		1	4.00	0.37										
		2	4.10	0.48										
		3	4.30	0.54										
		4	4.50	0.60										
		5	4.55	0.52										
		6	4.70	0.50										
		7	4.70	0.54										
		8	4.80	0.50										
		9	4.60	0.48										
		10	4.70	0.44										
		11	4.90	0.41										
		12	4.70	0.52										
		13	4.80	0.50										
		14	4.80	0.50										
31 11/18/79 4:40 PM	0.54	0	3.70		3.70	20	80	0	145	1.00	13.1	10.10		
		1	4.20	0.38	3.90	14	78	0	150	2.50	15.5	10.70		
		2	4.05	0.47	4.00	14	74	0	150	2.80	16.3	10.70		
		3	4.15	0.55	4.10	8	72	2	150	1.50	17.1	10.50		
		4	4.35	0.60	4.20	8	70	4	150	1.20	19.1	10.50		
		5	4.50	0.54	4.30	4	66	4	135	0.90	18.6	10.60		
		6	4.55	0.57	4.40	2	64	4	145	0.70	17.7	10.50		
		7	4.60	0.48	4.50	0	62	6	150	0.50	19.2	10.30		
		8	4.70	0.56	4.50	0	60	6	150	0.40	19.5	10.70		
		9	4.75	0.49	4.50	0	60	6	150	0.20	20.9	10.40		
		10	4.70	0.47	4.50	0	62	6	150	0.10	20.2	10.10		
		11	4.80	0.43	4.50	0	60	6	150	0.20	20.2	9.60		
		12	4.80	0.41	4.60	0	58	8	150	0.10	21.4	9.60		
		13	4.80	0.55	4.50	0	56	6	150	0.10	21.5	9.30		
		14	4.85	0.50	4.50	0	56	6	150	0.70	22.6	14.40		
33 11/19/79 8:00 AM	0.55	0	3.80											
		1	3.95	0.41										
		2	3.95	0.50										
		3	4.20	0.56										
		4	4.30	0.61										
		5	4.50	0.53										
		6	4.60	0.53										
		7	4.60	0.44										
		8	4.60	0.55										
		9	4.60	0.51										
		10	4.80	0.45										
		11	4.80	0.46										
		12	4.70	0.40										
		13	4.80	0.53										
		14	4.80	0.51										
34 11/19/79 5:00 PM	0.50	0	3.80		3.70	16	80	0	160	1.30	13.5	8.60		
		1	3.85	0.36	3.80	14	76	0	160	1.60	16.2	10.30		
		2	3.95	0.42	3.90	12	74	0	165	1.50	15.7	9.20		
		3	4.10	0.50	4.10	10	70	2	165	1.60	16.3	9.00		
		4	4.25	0.55	4.20	8	70	2	165	1.80	18.0	9.10		
		5	4.45	0.47	4.30	6	68	4	165	1.90	19.3	9.20		
		6	4.50	0.45	4.40	2	68	6	165	1.80	18.0	9.00		
		7	4.60	0.46	4.40	2	66	6	165	2.10	21.0	9.40		
		8	4.70	0.51	4.50	0	64	6	165	2.10	21.0	9.70		
		9	4.70	0.47	4.50	0	64	6	165	1.90	19.4	10.00		
		10	4.70	0.47	4.50	0	62	8	160	2.00	20.3	9.20		
		11	4.70	0.48	4.50	0	62	8	165	2.00	20.5	11.00		
		12	4.75	0.41	4.50	0	58	6	165	2.00	20.9	9.00		
		13	4.75	0.50	4.50	0	58	8	165	2.00	20.3	8.70		
		14	4.70	0.47	4.50	0	58	6	165	2.20	22.4	7.80		

RUN NO. 2

BARRIER #1

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
														cfs
36 11/20/79 8:00 AM	0.50	0	3.85											
		1	3.80	0.38										
		2	4.00	0.50										
		3	4.15	0.58										
		4	4.35	0.60										
		5	4.35	0.40										
		6	4.55	0.52										
		7	4.55	0.43										
		8	4.60	0.51										
		9	4.65	0.47										
		10	4.65	0.44										
		11	4.65	0.43										
		12	4.75	0.41										
		13	4.65	0.55										
14	4.75	0.47												
37 11/20/79 4:30 PM	0.50	0	3.75		3.70	20	80	0	140	1.20	17.4	8.90		
		1	4.05	0.36	3.80	14	78	0	155	2.30	19.3	9.50		
		2	4.05	0.45	3.90	10	74	0	160	0.90	16.9	9.40		
		3	4.80	0.55	4.10	8	72	2	165	3.60	18.1	9.50		
		4	4.35	0.60	4.20	6	70	2	165	0.90	16.6	9.50		
		5	4.45	0.52	4.30	4	66	4	165	0.60	19.6	9.20		
		6	4.50	0.52	4.40	2	66	6	165	0.20	19.6	9.00		
		7	4.70	0.38	4.40	2	64	6	165	0.40	20.0	9.30		
		8	4.70	0.51	4.50	0	64	6	165	0.30	19.0	8.80		
		9	4.70	0.49	4.50	0	64	6	165	0.20	20.0	8.90		
		10	4.70	0.42	4.50	0	58	6	150	0.20	21.0	8.70		
		11	4.75	0.48	4.50	0	62	6	160	0.10	21.9	8.40		
		12	4.70	0.38	4.50	0	60	6	160	0.10	20.6	8.50		
		13	4.85	0.50	4.50	0	60	6	135	0.20	21.9	8.40		
14	4.80	0.50	4.50	0	60	6	150	0.10	22.6	8.30				
39 11/21/79 8:00 AM	0.55	0	3.80											
		1	3.90	0.39										
		2	4.20	0.47										
		3	4.20	0.55										
		4	4.50	0.58										
		5	4.40	0.53										
		6	4.50	0.52										
		7	4.60	0.44										
		8	4.65	0.50										
		9	4.70	0.48										
		10	4.70	0.46										
		11	4.80	0.48										
		12	4.80	0.41										
		13	4.80	0.53										
14	4.80	0.45												

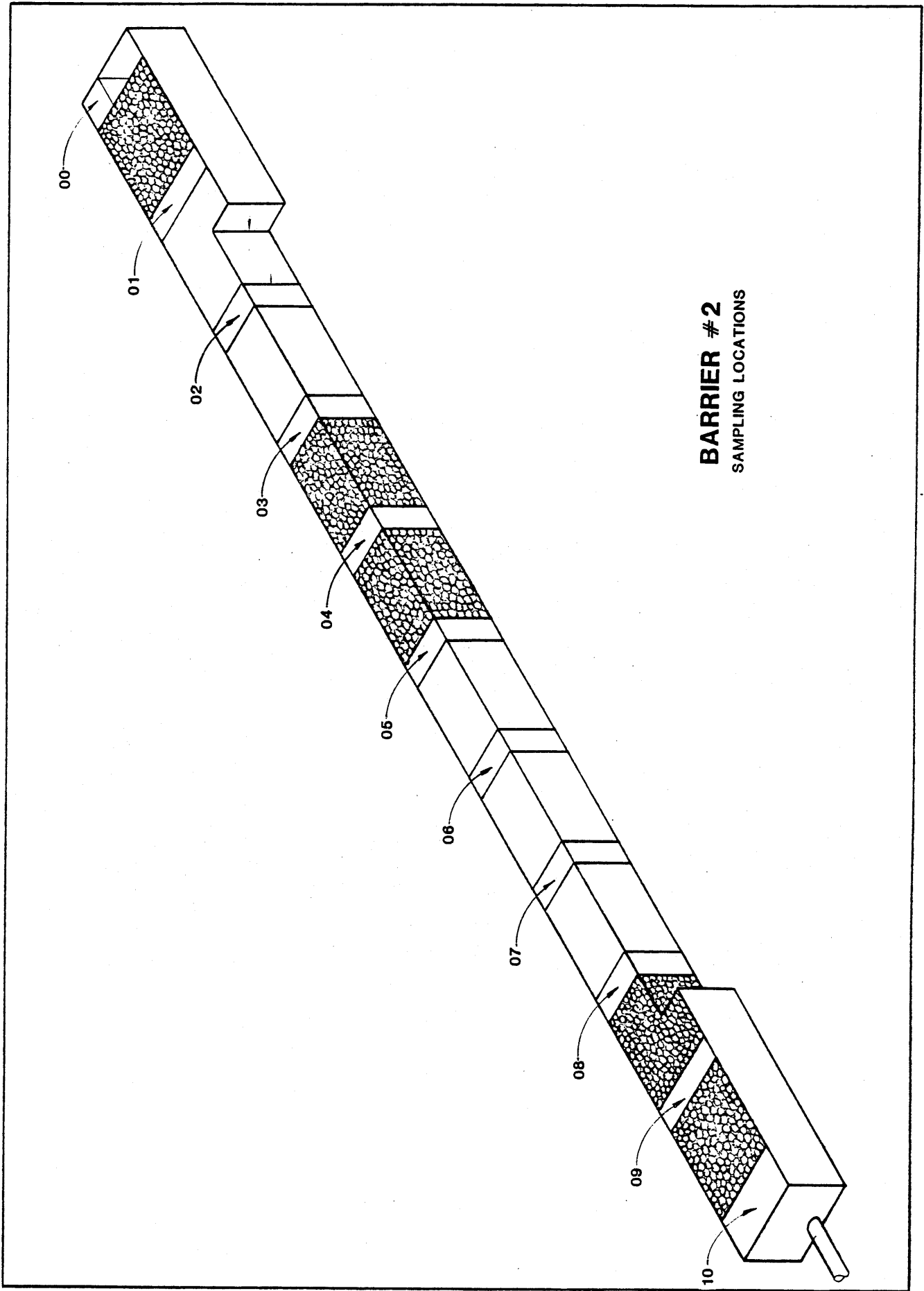
RUN NO. 2



BARRIER NO. 1 SAMPLING 13 THRU 39

BARRIER 1

SAMPLING NO.	LOCATION	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM	SILICA	CHLORIDE	TOTAL SOLIDS	REMARKS
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
2	0	20.30	3.08	1.16	4.9	19.750	5.0	490	SPECIAL TESTS
2	14	20.70	2.99	1.18	4.7	19.500	5.0	450	
3	0	11.20	1.85	2.68	3.4	33.070	4.0	426	
3	14	11.00	1.83	1.38	2.7	10.430	3.0	252	
4	0	18.80	2.51	1.54	4.2	19.500		378	
4	14	19.80	2.59	1.48	4.5	18.140	4.0	366	
6	0		2.31	1.40	5.1	19.670	5.0	400	
6	14	17.60	2.30	1.44	4.9	25.530	5.0	406	
7	0	18.26	2.67	1.68	4.7	9.412	4.0	470	
7	14	18.28	2.64	1.38	4.8	9.370	4.0	464	
8	0		2.57	1.30	4.9	4.920	5.0	358	
8	14		2.58	1.44	5.0	3.990	5.0	516	
9	0	23.00	2.17	1.30	5.3	8.350	5.0	358	
9	14	22.00	2.13	1.30	4.9	8.350	5.0	368	
10	0	18.00	2.10	1.56	5.1	7.900	6.0	408	
10	14	19.80	2.17	1.52	4.4	7.630	6.0	388	
11	0	20.10	2.13	1.08	3.8	8.180	4.0	452	
11	14	20.90	2.19	1.08	4.1	7.460	4.0	432	



BARRIER #2

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
						mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
	cfs			ft										
1 7/10/79 10:30 AM	0.10	0	3.40		3.60	34	88	0	180	1.90				
		1	4.40	0.92	4.30	6	6	0	195	1.13				
		2	4.95	0.80	4.70	0	62	0	195	0.37				
		3	5.60	0.92										
		4	6.05	0.84										
		5	6.15	0.91										
		6	6.30	0.89										
		7	6.45	0.91										
		8	6.55	0.60										
		9	6.65	0.78										
		10	6.70	1.45	7.10	0	0	66	210	0.06				
2 8/30/79 10:30 AM	0.10	0	3.70		3.70	60	94	0	185	1.10	18.3	13.92		
		1	5.50	1.43	5.80	0	2	18	220	0.08	49.0	1.84		
		2	6.40	1.10	6.20	0	0	38	220	0.02	59.2	0.66		
		3	6.30	0.98	6.40	0	0	52	215	0.04	66.0	0.42		
		4	6.80	1.01	6.60	0	0	60	210	0.04	71.0	0.34		
		5	6.50	0.88	6.70	0	0	66	210	0.03	71.0	0.24		
		6	6.80	0.88	6.80	0	0	72	210	0.05	75.8	0.36		
		7	6.50	0.83	7.10	0	2	76	210	0.03	80.8	0.24		
		8	6.60	0.61	7.10	0	0	78	210	0.06	76.3	0.10		
		9	6.90	0.78	7.10	0	0	80	210	0.04	79.4	0.14		
		10	6.70	1.09	7.20	0	0	84	210	0.06	78.7	0.12		
3 9/6/79 10:30 AM	0.10	0	3.75		3.80	22	70	0	105	8.40	11.5	12.72		
		1	5.30	1.05	4.90	0	14	8	115	1.64	23.2	3.84		
		2	6.50	1.42	6.40	0	2	36	125	0.19	34.5	1.08		
		3	6.70	0.98	6.70	0	0	44	115	0.14	38.2	1.04		
		4	6.60	0.97	6.90	0	0	46	110	0.12	39.9	0.44		
		5	6.80	0.87	7.00	0	0	50	110	0.08	41.5	0.44		
		6	6.90	0.83	7.20	0	0	54	110	0.07	42.6	0.60		
		7	7.00	0.82	7.10	0	0	54	110	0.05	44.9	0.32		
		8	6.90	0.56	7.40	0	0	54	105	0.04	47.7	0.42		
		9	7.30	0.73	7.50	0	0	58	110	0.04	49.2	0.40		
		10	6.90	0.97	7.50	0	0	58	115	0.14	57.5	1.10		
4 9/10/79 10:30 AM	0.10	0	3.60		3.70	24	92	0	185	1.35	13.8	10.80		
		1	4.30	1.05	4.50	0	60	8	190	1.68	26.3	9.24		
		2	4.60	0.56	4.70	0	32	8	190	1.31	34.7	7.68		
		3	5.70	1.61	6.00	0	2	20	205	0.12	47.9	1.94		
		4	6.15	1.19	6.30	0	0	34	210	0.05	57.3	0.64		
		5	6.30	0.92	6.50	0	0	44	205	0.05	57.6	0.86		
		6	6.30	0.81	6.50	0	0	52	200	0.04	61.0	0.58		
		7	6.30	0.80	6.60	0	0	58	205	0.07	67.3	0.44		
		8	6.40	0.57	6.70	0	0	62	200	0.08	68.9	0.20		
		9	6.40	0.75	6.80	0	0	66	205	0.08	68.8	0.36		
		10	6.30	0.47	6.80	0	0	68	200	0.04	68.0	0.10		
6 9/13/79 10:30 AM	0.06	0	3.65		3.70	28	94	0	155	1.32	17.0	11.64		
		1	4.45	1.02	4.40	4	60	4	155	0.92	31.2	8.76		
		2	4.75	0.60	4.70	0	32	8	150	0.59	43.0	7.20		
		3	5.00	1.11	4.90	0	12	8	160	0.32	52.2	4.08		
		4	6.00	0.64	6.20	0	0	24	170	0.17	67.5	0.98		
		5	6.20	1.06	6.40	0	0	38	165	0.23	75.0	1.40		
		6	6.30	0.77	6.40	0	0	44	165	0.17	75.5	0.94		
		7	6.40	0.81	6.60	0	0	50	165	0.05	77.0	0.64		
		8	6.40	0.59	6.70	0	4	58	165	0.08	82.0	0.34		
		9	6.40	0.68	6.80	0	4	62	160	0.10	84.6	0.30		
		10	6.40	1.16	6.80	0	0	66	165	0.05	84.0	0.36		

RUN NO. 1

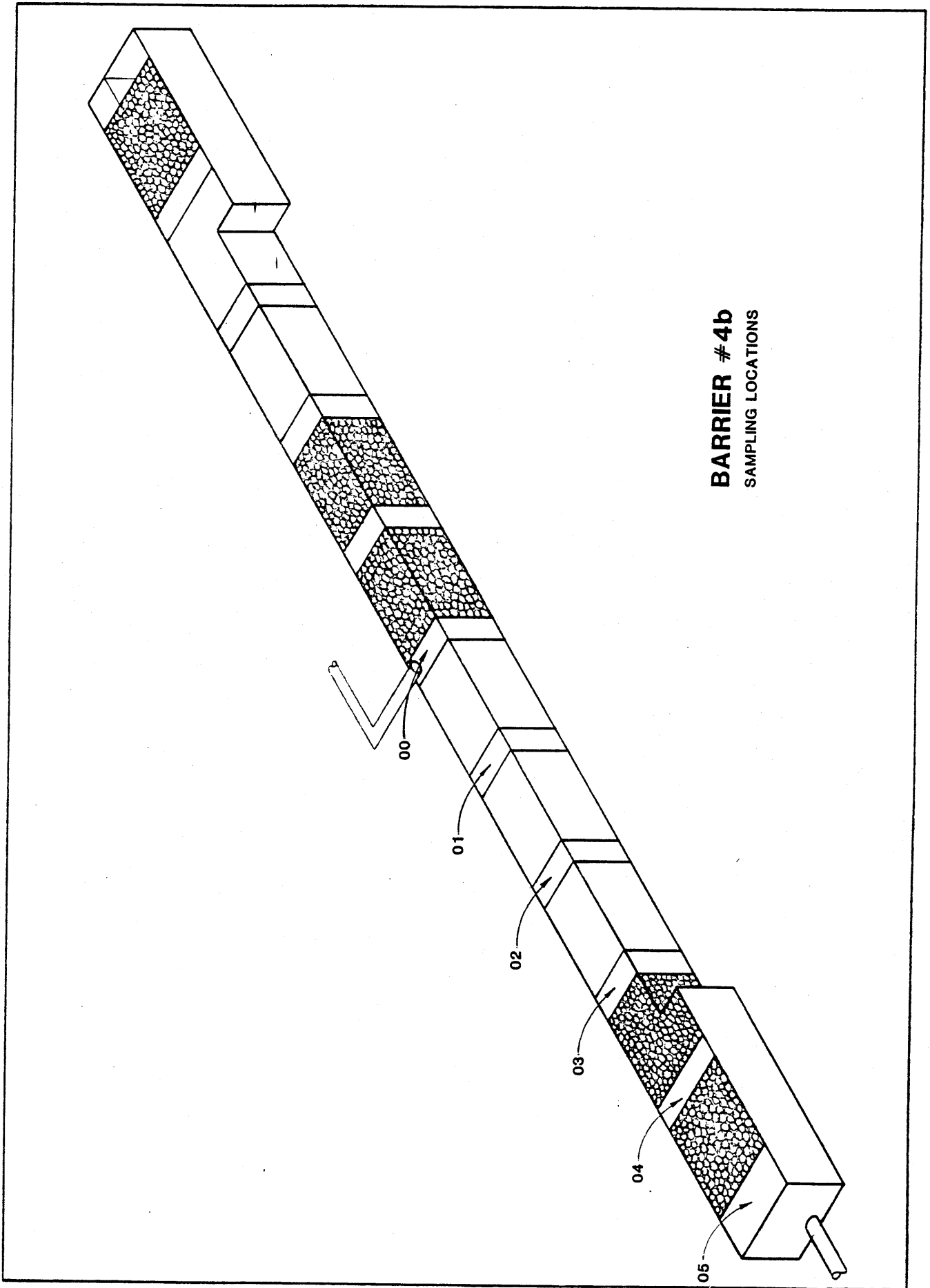
BARRIER #2

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINIUM	REMARKS
						cts	ft	mg/l	mg/l	mg/l	mg/l	mg/l	
7 9/17/79 10:30 AM	0.10	0	3.80		3.70	26	96	0	145	1.43	20.5	11.88	
		1	4.15	1.02	4.00	10	82	0	160	1.03	29.5	9.96	
		2	4.35	0.59	4.30	4	66	4	165	0.99	35.2	9.84	
		3	4.70	0.94	4.60	0	44	8	165	0.67	46.7	7.68	
		4	5.10	0.94	4.90	0	12	8	175	0.35	58.7	4.32	
		5	5.75	1.82	6.10	0	4	24	190	0.21	71.2	1.28	
		6	6.10	0.89	6.30	0	0	34	185	0.14	76.2	0.72	
		7	6.00	0.84	6.40	0	2	42	190	0.09	81.7	0.38	
		8	6.00	0.59	6.50	0	4	50	185	0.11	88.5	0.38	
		9	6.00	0.74	6.70	0	4	54	190	0.88	87.2	0.28	
10	6.20	1.11	6.70	0	2	58	190	0.05	89.5	0.14			
8 9/20/79 10:30 AM	0.10	0	3.80		3.70	30	96	0	175	1.28	32.0	14.28	
		1	4.20	1.05	4.10	10	74	2	200	0.98	54.8	13.56	
		2	4.95	0.61	4.80	0	34	10	205	0.69	87.0	8.52	
		3	5.20	0.98	5.30	0	4	12	210	0.38	108.2	5.28	
		4	6.10	0.94	6.20	0	2	30	250	0.19	134.2	2.34	
		5	5.90	1.88	6.40	0	2	36	215	0.09	126.0	1.42	
		6	6.30	0.95	6.50	0	0	42	220	0.07	134.0	0.84	
		7	6.20	0.86	6.60	0	0	50	225	0.10	142.2	1.32	
		8	6.30	0.59	6.70	0	0	54	235	0.05	161.0	0.70	
		9	6.30	0.68	6.70	0	0	58	245	0.04	173.8	0.72	
10	6.30	1.16	6.70	0	0	56	260	0.07	182.6	0.86			
9 9/24/79 10:30 AM	0.10	0	3.80		3.80	22	84	0	135	1.11	14.1	9.72	
		1	4.00	1.02	4.10	12	74	2	130	0.84	18.5	7.80	
		2	4.30	0.59	4.40	2	64	6	145	0.95	22.7	10.32	
		3	4.55	0.95	4.60	0	62	8	165	0.95	24.9	10.08	
		4	4.50	0.90	4.60	0	50	8	170	0.65	29.8	8.40	
		5	4.70	0.94	4.80	0	28	8	175	0.48	36.6	6.12	
		6	5.65	1.72	5.80	0	4	18	185	0.08	48.8	0.96	
		7	6.00	1.08	6.10	0	4	28	185	0.05	51.9	0.56	
		8	5.85	0.69	6.40	0	4	38	185	0.04	55.0	0.46	
		9	6.10	0.78	6.50	0	2	46	185	0.33	63.1	3.24	
10	6.10	1.08	6.60	0	2	50	185	0.02	64.3	0.46			
10 9/27/79 10:30 AM	0.06	0	3.80		3.90	20	80	0	170	1.07	13.6	10.01	
		1	4.15	1.00	4.10	10	70	2	170	0.94	34.5	10.10	
		2	4.50	0.64	4.50	0	58	6	160	0.89	42.1	8.84	
		3	4.70	0.98	4.80	0	24	10	155	4.85	64.8	8.25	
		4	4.85	0.94	4.80	0	24	10	155	2.24	29.4	11.05	
		5	5.10	0.96	5.70	0	4	14	160	0.41	39.1	4.03	
		6	5.85	1.77	6.20	0	2	22	160	0.18	44.9	1.94	
		7	6.00	1.11	6.30	0	4	32	160	0.13	46.8	1.11	
		8	6.10	0.79	6.40	0	0	38	160	0.12	49.9	0.72	
		9	6.20	0.83	6.50	0	0	42	160	0.09	51.3	0.74	
10	6.35	1.11	6.60	0	0	48	160	0.14	54.6	2.04			
11 10/1/79 10:30 AM	0.08	0	3.95		3.90	20	82	0	150	1.10	13.1	8.88	
		1	4.05	1.02	4.10	10	74	2	155	0.98	20.9	9.48	
		2	4.20	0.56	4.50	0	64	6	155	1.46	24.5	8.76	
		3	4.55	0.96	4.60	0	62	8	155	2.82	60.0	10.08	
		4	4.50	0.91	4.70	0	54	10	140	1.47	27.2	9.12	
		5	4.70	0.92	4.80	0	46	10	150	1.31	26.0	9.24	
		6	4.70	0.95	5.00	0	16	12	155	1.01	20.8	6.72	
		7	5.70	1.92	6.10	0	4	20	170	0.12	36.6	0.90	
		8	5.70	0.74	6.30	0	2	32	165	0.07	54.5	0.40	
		9	5.70	0.73	6.50	0	0	38	165	0.04	56.7	0.28	
10	5.70	1.14	6.60	0	0	42	160	0.05	59.7	0.40			

RUN NO. 1

BARRIER 2

SAMPLING NO.	LOCATION	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM	SILICA	CHLORIDE	TOTAL SOLIDS	REMARKS
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
2	0	19.90	2.99	1.22	4.9	22.380	5.0	422	SPECIAL TESTS
2	10	20.30	2.57	1.28	5.1	19.240	5.0	516	
3	0	11.40	1.83	2.32	2.8	26.280	3.0	392	
3	10	9.80	0.57	1.18	2.5	5.460	3.0	260	
4	0	19.50	2.58	1.46	4.7	18.480	5.0	356	
4	10	19.40	2.29	1.44	4.5	14.580	5.0	444	
6	0	15.80	2.32	1.38	4.7	20.350	5.0	390	
6	10	16.80	2.08	1.36	5.3	18.140	5.0	434	
7	0	18.12	2.70	1.36	4.9	9.158	4.0	484	
7	10	18.12	2.40	1.34	4.6	7.420	4.0	492	
8	0		2.58	1.34	4.7	5.050	5.0	346	
8	10		2.15	1.34	4.5	2.760	5.0	476	
9	0	24.00	2.11	1.30	5.0	9.580	5.0	356	
9	10	24.00	1.94	1.22	5.4	7.886	5.0	446	
10	0	19.90	2.11	1.36	4.7	7.840	6.0	398	
10	10	18.50	1.88	1.56	4.7	5.830	6.0	374	
11	0	20.40	2.19	1.06	3.4	7.260	4.0	412	
11	10	20.30	1.89	1.22	4.0	5.880	4.0	390	



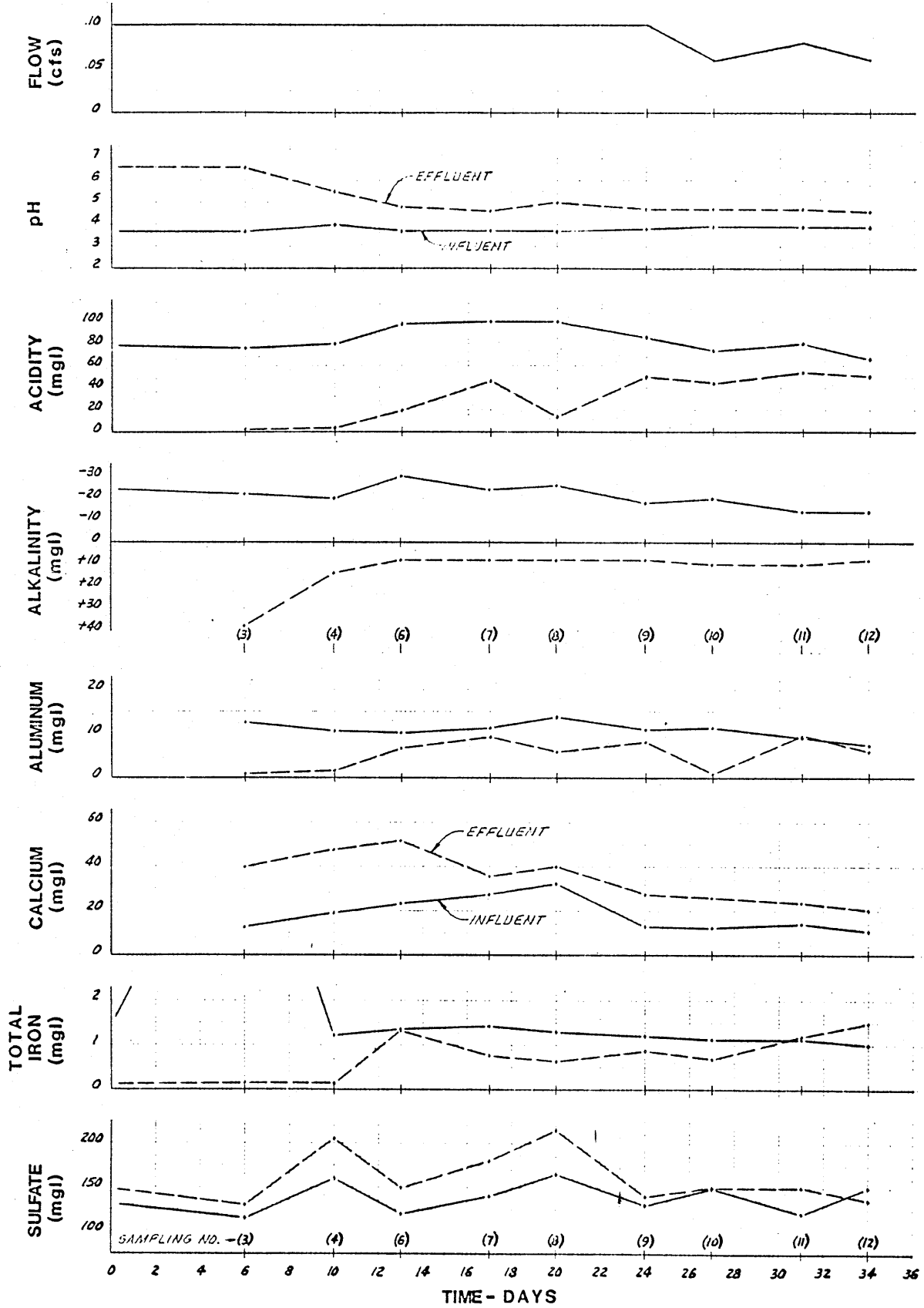
BARRIER #4b

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
						mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
1 7/10/79 11:30 AM	0.10	0	3.40		3.60	30	82	0	180	1.76		17.76		
		1	4.50	0.85	4.30	8	66	0	185	1.07		0.00		
		2	4.75	0.71	4.80		28	46	190	0.47		0.00		
		3	4.60	1.29										
		4	4.60	1.15										
3 9/6/79 11:30 AM	0.10	0	3.70		3.70	22	76	0	115	7.13	12.7	12.48		
		1	4.40	0.71	4.40	4	54	4	115	5.26	20.2	11.80		
		2	4.80	0.71										
		3	5.40	1.35	5.50	0	4	10	135	1.12	32.8	4.08		
		4	6.60	1.12	6.40	0	2	34	140	0.22	38.5	1.22		
4 9/10/79 11:30 AM	0.10	0	3.90		4.00	20	80	0	160	1.22	18.9	10.44		
		1	4.10	0.75	4.20	10	80	2	165	1.74	20.4	12.96		
		2	4.80	0.72	4.50	0	62	8	185	1.32	26.3	10.44		
		3	5.50	1.11	4.50	0	52	6	180	0.89	29.9	9.48		
		4	4.80	0.86	4.70	0	32	10	185	0.42	36.4	6.72		
6 9/13/79 11:30 AM	0.10	0	3.70		3.70	30	98	0	120	1.35	23.2	10.20		
		1	4.00	0.71	3.90	20	88	0	135	1.06	21.0	11.16		
		2	4.30	0.70	4.20	8	70	4	225	0.84	28.2	9.72		
		3	4.50	1.17	4.50	0	56	6	125	4.25	35.2	13.68		
		4	4.70	0.88	4.60	0	36	8	145	2.16	42.7	8.16		
7 9/17/79 11:30 AM	0.10	0	3.65		3.70	24	100	0	140	1.42	27.7	11.28		
		1	3.95	0.77	3.80	20	96	0	170	1.45	19.6	11.28		
		2	3.90	0.73	4.00	12	82	0	175	1.29	22.8	10.92		
		3	4.25	1.15	4.30	6	72	4	180	3.60	25.8	11.28		
		4	4.35	0.89	4.40	4	68	4	180	1.00	27.8	10.32		
8 9/20/79 11:30 AM	0.10	0	3.70		3.70	26	100	0	165	1.30	32.2	13.80		
		1	3.90	0.76	3.90	22	92	0	190	1.21	40.4	13.32		
		2	4.40	0.74	4.20	8	70	2	195	0.98	51.6	11.40		
		3	4.60	1.07	4.70	0	42	8	210	0.66	78.2	8.52		
		4	4.95	1.01	5.00	0	12	8	210	1.24	100.4	8.50		
9 9/24/79 11:30 AM	0.10	0	3.80		3.80	18	86	0	130	1.20	12.9	10.80		
		1	4.00	0.79	4.00	12	80	0	140	0.93	18.0	9.60		
		2	4.10	0.72	4.10	10	70	2	135	1.00	18.8	9.36		
		3	4.30	1.05	4.30	6	62	4	135	0.89	21.3	8.40		
		4	4.40	1.00	4.50	0	58	6	140	0.76	24.6	8.28		
10 9/27/79 11:30 AM	0.06	0	3.80		3.90	20	74	0	150	1.13	12.6	11.31		
		1	4.00	0.78	4.00	14	72	0	150	1.02	15.5	9.60		
		2	4.20	0.77	4.20	8	68	2	160	0.99	17.5	9.36		
		3	4.30	1.04	4.40	2	60	6	155	0.95	20.2	9.48		
		4	4.70	0.96	4.60	0	52	8	150	0.82	22.5	10.68		
5	4.60	1.97	4.70	0	44	10	150	0.68	26.0	0.92				

RUN NO. 1

BARRIER #4b

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS
						ft	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
11 10/1/79 11:30 AM	0.08	0	3.80		3.90	14	80	0	120	1.12	14.1	9.00	RUN NO. 1
		1	3.95	0.76	4.00	12	72	0	145	1.64	17.6	8.52	
		2	4.10	0.76	4.10	8	70	2	135	1.30	17.1	8.16	
		3	4.65	1.09	4.30	4	64	6	150	1.15	20.2	8.28	
		4	4.25	1.00	4.40	2	64	6	150	1.46	19.5	9.24	
5	4.50	1.94	4.70	0	54	10	150	1.19	23.3	9.24			
12 10/4/79 11:30 AM	0.06	0	3.90		3.90	14	66	0	150	1.01	10.7	7.20	
		1	4.00	0.76	4.00	12	62	0	125	0.95	12.3	7.80	
		2	4.10	0.69	4.10	8	60	2	130	0.87	12.3	7.08	
		3	4.25	1.07	4.20	4	54	4	135	0.75	15.5	6.36	
		4	4.30	1.01	4.40	2	52	2	135	0.76	16.9	5.88	
5	4.50	1.95	4.60	0	50	8	135	1.49	20.3	5.72			
13 11/12/79 4:00 PM	0.04	0	3.80		3.80	22	74	0	110	1.03	14.9	8.70	
		1	6.20	0.61	6.40	0	4	46	185	0.39	75.6	2.00	
		2	6.30	0.55	6.50	0	2	62	180	0.24	86.7	1.10	
		3	6.30	0.50	6.70	0	1	66	160	0.12	81.3	0.40	
		4	6.50	0.51	6.80	0	1	70	160	0.08	77.2	0.20	
5	6.20	0.46	7.00	0	0	64	185	0.04	71.9	0.10			
15 11/13/79 10:30 AM	0.04	0	3.80										
		1	5.90	0.05									
		2	6.00	0.91									
		3	6.00	0.53									
		4	6.30	0.48									
5	6.30	0.29											
16 11/13/79 5:30 PM	0.04	0	3.80		3.70	18	76	0	125	1.00	12.7	9.90	
		1	6.10	0.92	6.10	0	2	22	170	0.10	44.5	1.60	
		2	6.30	0.74	6.30	0	0	38	175	0.00	51.4	0.80	
		3	6.30	0.45	6.50	0	0	58	175	0.00	86.4	0.60	
		4	6.20	0.48	6.60	0	0	62	170	0.00	67.5	0.40	
5	6.30	0.26	6.70	0	0	68	165	0.00	66.0	0.20			
17 11/13/79 11:30 PM	0.03	0	3.80										
		1	5.50	1.05									
		2	5.70	0.89									
		3	6.10	0.47									
		4	6.20	0.46									
5	6.20	0.30											
18 11/14/79 8:30 AM	0.03	0	4.60										
		1	5.90	1.10									
		2	6.10	1.00									
		3	6.10	0.52									
		4	6.30	0.45									
5	6.20	0.34											
19 11/14/79 3:30 PM	0.03	0	3.85		3.70	18	76	0	100	1.00	13.7	9.50	
		1	6.70	1.07	5.90	0	2	20	165	0.10	41.2	1.70	
		2	6.10	0.90	6.20	0	0	34	170	0.00	50.7	0.60	
		3	6.20	0.47	6.50	0	0	48	165	0.00	52.1	0.30	
		4	6.30	0.47	6.60	0	0	56	170	0.00	59.4	0.20	
5	6.35	0.27	6.70	0	0	64	175	0.00	63.5	0.20			



BARRIER NO. 4 SAMPLING 1 THRU 12

BARRIER #4b

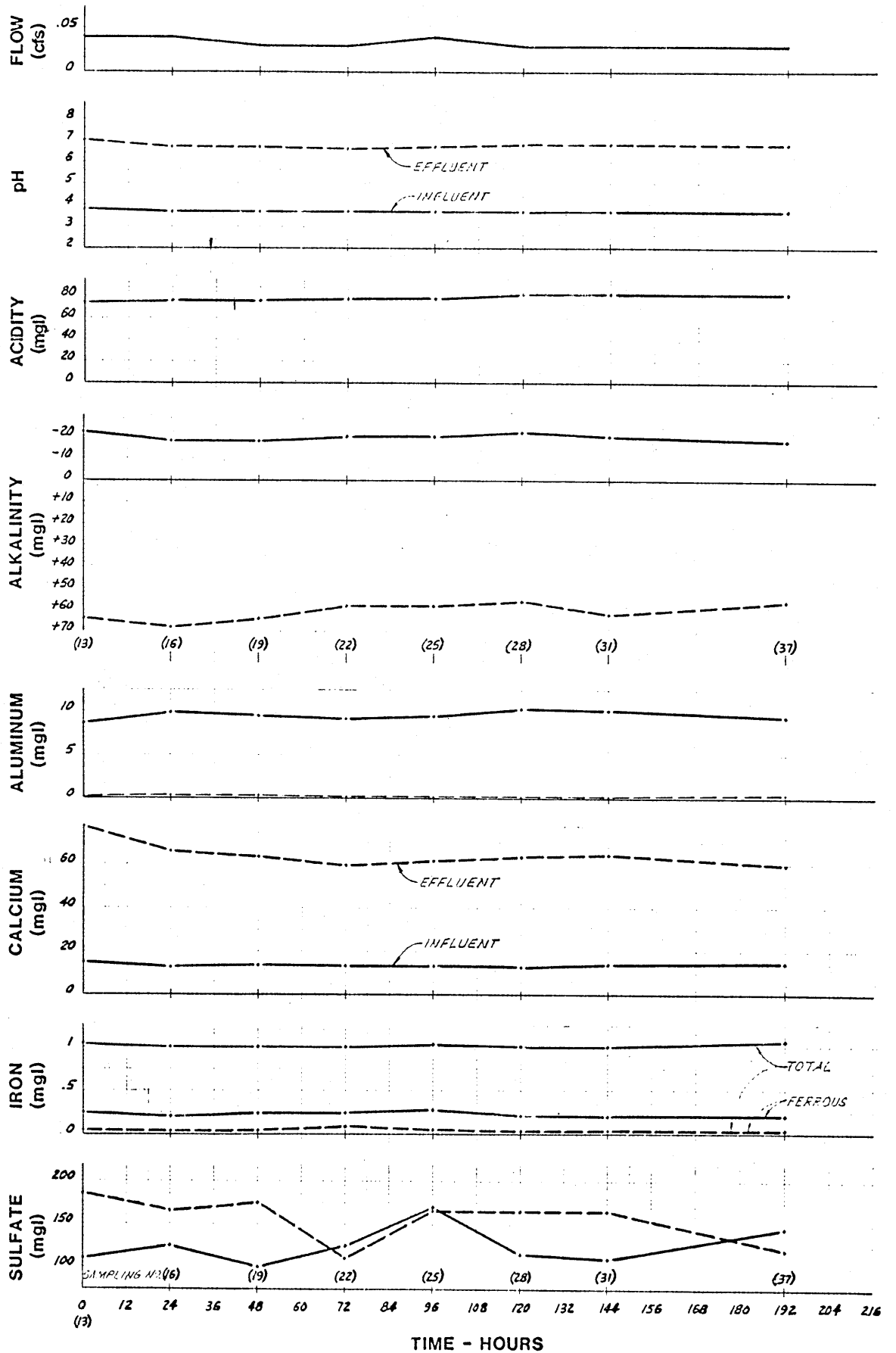
SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
						ft	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
20 11/14/79 11:30 PM	0.03	0	3.70	1										
		1	5.20	1.10										
		2	5.70	0.89										
		3	5.80	0.47										
		4	5.80	0.46										
21 11/15/79 8:30 AM	0.04	0	3.90											
		1	6.10	1.20										
		2	6.40	1.00										
		3	6.20	0.52										
		4	6.20	0.48										
22 11/15/79 5:30 PM	0.03	0	4.00		3.70	20	78	0	125	1.00	13.3	9.20		
		1	5.80	1.20	6.00	0	4	24	165	0.10	48.3	1.20		
		2	6.10	1.04	6.30	0	2	30	165	0.00	45.9	0.60		
		3	6.20	0.52	6.40	0	1	42	165	0.10	64.1	0.40		
		4	6.00	0.46	6.50	0	0	54	165	0.00	54.4	0.10		
23 11/16/79 1:00 AM	0.03	0	3.85		6.60	0	0	58	110	0.00	59.3	0.10		
		1	5.75	1.30										
		2	6.05	1.04										
		3	6.00	0.52										
		4	6.00	0.46										
24 11/16/79 10:30 AM	0.03	0	3.90											
		1	6.10	1.32										
		2	6.30	1.05										
		3	6.35	0.54										
		4	6.40	0.48										
25 11/16/79 5:30 PM	0.04	0	3.85		3.70	20	78	0	170	1.00	13.5	9.50		
		1	5.60	1.31	6.10	0	4	14	165	0.10	85.3	1.30		
		2	5.70	1.09	6.30	0	2	30	165	0.00	45.5	0.50		
		3	6.00	0.50	6.50	0	0	38	165	0.00	50.6	0.30		
		4	6.00	0.50	6.60	0	0	50	165	0.00	56.3	0.10		
27 11/17/79 8:30 AM	0.03	0	3.90		6.70	0	0	58	165	0.00	61.8	0.10		
		1	4.50	1.38										
		2	6.30	1.19										
		3	5.90	0.55										
		4	6.10	0.50										
28 11/17/79 4:00 PM	0.03	0	3.90		3.70	22	82	0	115	1.10	12.7	10.30		
		1	6.00	1.35	6.10	0	4	20	170	0.10	52.5	1.80		
		2	5.85	1.19	6.30	0	2	30	165	0.00	52.6	0.70		
		3	5.80	0.52	6.40	0	1	40	165	0.00	56.7	0.30		
		4	6.35	0.51	6.70	0	0	50	165	0.00	59.1	0.10		
5	6.20	0.30	6.80	0	0	56	165	0.00	63.4	0.10				

RUN NO. 2

BARRIER #4 b

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS
30	0.04	0	3.80										
11/18/79		1	5.90	1.39									
10:30 AM		2	5.90	1.24									
		3	6.00	0.52									
		4	6.00	0.49									
		5	5.90	0.35									
31	0.03	0	3.80		3.70	20	82	0	110	1.00	14.0	10.20	
11/18/79		1	5.60	1.35	5.60	0	6	10	160	0.10	43.9	2.00	
4:40 PM		2	5.90	1.34	6.30	0	4	32	165	0.00	60.2	1.70	
		3	6.20	0.52	6.50	0	0	44	165	0.00	56.2	0.30	
		4	6.20	0.46	6.60	0	0	52	165	0.00	60.4	0.20	
		5	6.45	0.30	6.80	0	0	62	165	0.00	64.1	0.10	
33	0.03	0	3.80										
11/19/79		1	5.70	1.22									
8:30 AM		2	6.00	1.48									
		3	6.20	0.87									
		4	6.25	0.53									
		5	6.20	0.34									
34	0.03	0	3.85										
11/19/79		1	5.10	1.55									
5:30 PM		2	5.80	1.10									
		3	5.80	0.47									
		4	6.15	0.36									
		5	6.15	0.30									
36	0.03	0	3.70										
11/20/79		1	5.55	1.15									
8:30 AM		2	5.85	1.49									
		3	5.95	0.47									
		4	5.85	0.41									
		5	5.80	0.25									
37	0.03	0	3.75		3.70	18	82	0	145	1.10	14.5	9.30	
11/20/79		1	4.95	1.30	4.60	0	36	6	150	0.10	29.7	6.10	
5:00 PM		2	6.00	1.89	6.30	0	2	24	125	0.00	42.5	1.10	
		3	6.20	0.42	6.40	0	2	36	120	0.00	52.6	0.30	
		4	6.20	0.46	6.70	0	0	46	120	0.00	50.9	0.40	
		5	6.60	0.27	6.80	0	0	56	120	0.00	59.5	0.30	
39	0.03	0	3.75										
11/21/79		1	5.30	0.92									
8:30 AM		2	5.85	1.94									
		3	6.20	0.62									
		4	6.00	0.49									
		5	6.20	0.42									

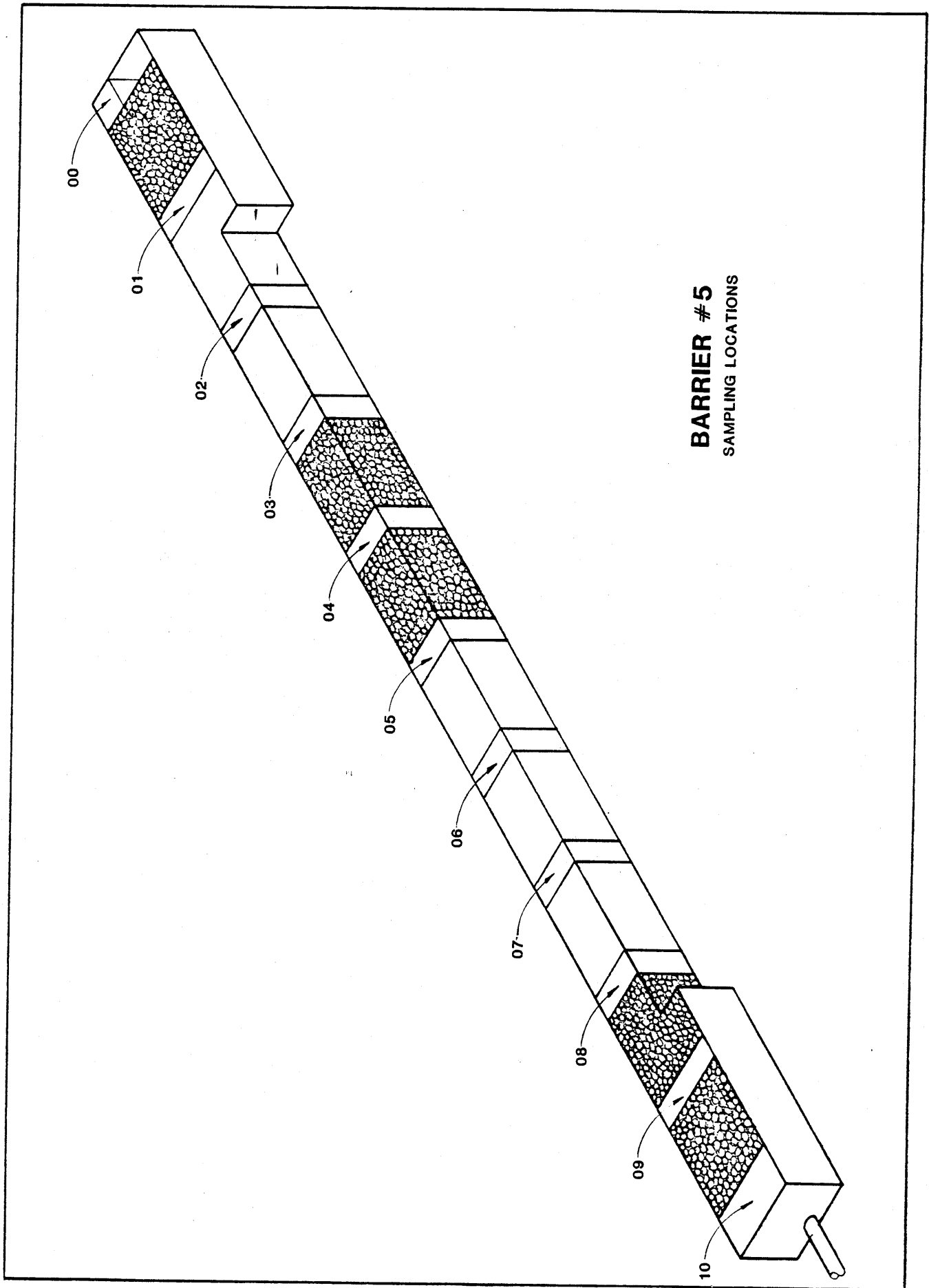
RUN NO. 2



BARRIER NO. 4 SAMPLING 13 THRU 39

BARRIER 4b

SAMPLING NO.	LOCATION	MAGNESIUM	MANGANESE	POTASSIUM	SODIUM	SILICA	CHLORIDE	TOTAL SOLIDS	REMARKS
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
3	0	12.60	1.96	2.82	2.9	31.030	4.0	358	SPECIAL TESTS
3	10	12.10	1.73	1.34	2.6	12.040	4.0	244	
4	0	19.20	2.45	1.52	4.5	18.140	5.0	378	
4	10	18.80	2.49	1.50	4.5	16.620	5.0	370	
6	0	24.80	2.35	1.36	4.9	18.740	5.0	400	
6	10	17.12	2.22	1.26	4.8	20.600	7.0	428	
7	0	29.90	2.59	4.60	4.6	9.200	4.0	480	
7	10		2.63	1.38	4.7	9.290	4.0	476	
9	0	21.00	2.14	1.34	4.9	8.819	5.0	346	
9	10	23.00	2.13	1.32	5.2	8.310	5.0	356	
10	0	19.50	2.19	1.24	4.4	8.020	6.0	410	
10	10	19.70	2.13	1.42	4.6	9.240	6.0	420	
11	0	21.60	2.27	1.08	4.0	6.670	4.0	398	
11	10	20.50	2.19	1.22	3.3	6.890	4.0	390	



BARRIER #5
SAMPLING LOCATIONS

BARRIER #5

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINIUM	REMARKS
						mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
13 11/12/79 5:00 PM	0.40	0	3.80		3.80	20	72	0	105	1.02	13.2	9.40	
		1	5.50	0.47	4.90	0	18	8	140	0.65	39.2	4.80	
		2	6.30	0.47	6.00	0	4	42	160	0.54	50.7	3.30	
		3	6.00	0.39	6.20	0	6	30	165	0.49	50.6	2.60	
		4	6.00	0.42	6.40	0	2	56	160	0.63	78.3	3.00	
		5	6.20	0.38	6.60	0	3	60	155	0.68	77.7	2.80	
		6	6.20	0.51	6.70	0	2	62	155	0.65	88.4	2.40	
		7	6.20	0.44	6.70	0	2	52	155	0.42	56.9	1.80	
		8	5.90	0.46	6.90	0	0	68	155	0.53	93.9	1.90	
		9	6.00	0.35	7.10	0	0	70	160	0.70	118.5	10.80	
10	6.30	0.28	7.00	0	0	56	155	0.21	64.7	0.10			
15 11/13/79 11:00 AM	0.40	0	3.80										
		1	4.80	0.55									
		2	4.80	0.62									
		3	5.10	0.57									
		4	6.20	0.58									
		5	5.90	0.21									
		6	6.00	0.61									
		7	6.20	0.52									
		8	5.90	0.52									
		9	6.20	0.44									
10	6.30												
16 11/13/79 6:00 PM	0.40	0	4.00		3.70	20	76	0	100	0.90	13.6	9.50	
		1	4.70	0.53	4.60	0	52	6	130	0.60	19.2	9.00	
		2	5.00	0.57	4.70	0	38	6	140	0.30	25.5	6.90	
		3	5.10	0.51	4.80	0	22	8	145	0.20	29.3	4.70	
		4	5.50	0.59	5.60	0	4	12	150	0.10	35.8	2.40	
		5	6.00	0.48	5.80	0	4	14	155	0.10	37.0	1.80	
		6	5.90	0.56	6.10	0	4	20	155	0.10	38.5	1.10	
		7	5.95	0.50	6.30	0	2	26	150	0.10	47.7	1.20	
		8	5.95	0.49	6.30	0	2	28	145	0.00	52.2	1.00	
		9	6.10	0.43	6.40	0	1	32	145	0.00	42.6	0.80	
10	6.20	0.32	6.50	0	0	34	140	0.00	47.7	0.80			
17 11/13/79 12:00 AM	0.40	0	3.80										
		1	4.70	0.58									
		2	4.85	0.56									
		3	5.00	0.50									
		4	5.20	0.64									
		5	5.60	0.53									
		6	5.70	0.65									
		7	5.80	0.53									
		8	5.70	0.55									
		9	5.80	0.39									
10	5.70	0.34											
18 11/14/79 9:00 AM	0.40	0	3.90										
		1	4.90	0.58									
		2	4.95	0.65									
		3	5.15	0.58									
		4	5.60	0.69									
		5	5.70	0.63									
		6	5.95	0.68									
		7	6.10	0.52									
		8	6.10	0.56									
		9	6.00	0.47									
10	6.20	0.29											

RUN NO. 1

RUN NO. 2

BARRIER #5

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINUM	REMARKS	
						ft	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
19 11/14/79 4:00 PM	0.40	0	3.85		3.70	20	80	0	95	1.20	12.9	9.70		
		1	4.80	0.59	4.60	0	50	6	125	0.60	23.5	8.80		
		2	4.80	0.63	4.70	0	34	6	125	0.40	26.2	7.80		
		3	5.20	0.56	4.70	0	26	6	125	0.20	25.6	5.60		
		4	5.15	0.69	6.10	0	2	24	155	0.50	46.7	11.30		
		5	5.50	0.65	6.10	0	2	24	150	0.20	41.1	5.70		
		6	6.00	0.64	6.20	0	2	26	145	0.20	45.8	3.30		
		7	6.20	0.54	6.50	0	0	42	150	0.40	67.4	5.80		
		8	5.80	0.54	6.40	0	0	1	26	140	0.00	43.3	1.30	
		9	5.70	0.44	6.40	0	0	2	30	145	0.00	44.4	1.00	
10	6.05	0.34	6.50	0	0	0	36	140	0.00	50.1	0.70			
20 11/14/79 12:00 AM	0.40	0	4.00											
		1	4.50	0.58										
		2	4.90	0.66										
		3	4.95	0.55										
		4	5.00	0.69										
		5	5.15	0.68										
		6	5.35	0.80										
		7	5.60	0.58										
		8	5.50	0.60										
		9	5.50	0.49										
10	5.80	0.34												
21 11/15/79 9:00 AM	0.40	0	3.90											
		1	4.80	0.71										
		2	4.90	0.68										
		3	5.00	0.64										
		4	5.10	0.70										
		5	5.50	0.78										
		6	6.40	0.79										
		7	6.00	0.68										
		8	6.70	0.62										
		9	6.20	0.52										
10	5.80	0.34												
22 11/15/79 6:00 PM	0.40	0	3.90		3.70	20	110	0	110	1.10	12.9	9.70		
		1	4.70	0.63	4.30	4	66	4	135	0.60	18.5	9.10		
		2	5.20	0.66	4.50	0	54	8	140	0.30	22.2	8.70		
		3	5.20	0.60	4.60	0	48	8	145	0.20	24.8	7.60		
		4	5.40	0.69	4.60	0	34	8	145	0.10	29.0	6.00		
		5	5.50	0.73	4.80	0	16	8	150	0.00	33.4	3.40		
		6	5.80	0.75	5.70	0	6	10	160	0.00	40.1	2.40		
		7	5.60	0.73	6.00	0	4	14	165	0.00	40.9	1.30		
		8	5.70	0.65	6.10	0	4	18	165	0.00	41.0	0.80		
		9	5.90	0.54	6.20	0	4	20	165	0.00	42.3	0.80		
10	5.90	0.39	6.50	0	0	46	175	0.00	44.1	0.80				
23 11/16/79 1:15 AM	0.40	0	4.45											
		1	4.60	0.63										
		2	5.00	0.71										
		3	5.05	0.65										
		4	5.00	0.74										
		5	5.15	0.78										
		6	5.50	0.70										
		7	5.65	0.73										
		8	6.00	0.70										
		9	6.35	0.59										
10	6.30	0.39												

RUN NO. 2

BARRIER #5

SAMPLING NO.	FLOW	LOCATION	FIELD pH	HEAD LOSS	LAB pH	FREE ACIDITY	ACIDITY	ALKALINITY	SULFATES	IRON	CALCIUM	ALUMINIUM	REMARKS
	cfs			ft		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
24 11/16/79 11:00 AM	0.40	0	4.90										
		1	4.60	0.72									
		2	5.10	0.71									
		3	4.90	0.63									
		4	5.10	0.70									
		5	5.10	0.80									
		6	5.30	0.72									
		7	6.00	0.81									
		8	6.20	0.74									
		9	6.20	0.54									
10	6.10	0.35											
25 11/16/79 6:00 PM	0.40	0	3.85		3.70	20	76	0	120	1.00	11.7	9.50	
		1	4.60	0.72	4.30	4	62	4	145	0.60	17.4	9.10	
		2	4.80	0.71	4.50	0	58	6	150	0.30	19.7	8.40	
		3	4.80	0.66	4.50	0	50	6	155	0.20	21.3	7.80	
		4	4.95	0.72	4.60	0	34	8	155	0.10	24.1	6.80	
		5	4.95	0.79	4.70	0	26	8	150	0.00	24.2	4.90	
		6	5.00	0.73	4.80	0	18	8	155	0.00	29.3	3.50	
		7	5.15	0.78	5.30	0	8	6	160	0.00	34.0	1.90	
		8	5.20	0.70	5.80	0	4	12	165	0.00	36.9	1.10	
		9	5.50	0.55	6.00	0	4	16	165	0.00	39.7	0.90	
10	5.70	0.36	6.50	0	0	40	165	0.00	35.2	1.00			
27 11/17/79 9:00 AM	0.40	0	3.85										
		1	4.60	0.71									
		2	4.80	0.72									
		3	4.80	0.65									
		4	4.85	0.70									
		5	4.90	0.79									
		6	5.00	0.71									
		7	5.40	0.82									
		8	5.60	0.77									
		9	5.50	0.59									
10	5.80	0.41											
28 11/17/79 4:30 PM	0.40	0	3.85		3.80	18	82	0	170	1.00	10.1	9.90	
		1	4.45	0.73	4.20	6	68	4	125	0.70	15.8	9.90	
		2	4.70	0.71	4.50	0	60	6	150	0.40	18.3	9.30	
		3	4.80	0.67	4.60	0	54	8	150	0.20	18.8	8.50	
		4	5.00	0.74	4.60	0	44	6	145	0.10	20.2	7.80	
		5	5.00	0.83	4.70	0	36	8	150	0.10	24.3	6.20	
		6	5.10	0.70	4.70	0	30	8	155	0.00	27.5	5.30	
		7	5.30	0.83	5.00	0	16	8	160	0.00	33.7	3.00	
		8	5.45	0.83	5.40	0	6	10	165	0.00	29.2	3.00	
		9	5.65	0.61	5.80	0	12	6	165	0.00	33.7	1.30	
10	5.70	0.42	6.00	0	6	18	170	0.00	35.8	0.90			
30 11/18/79 11:00 AM	0.40	0	3.80										
		1	4.30	0.76									
		2	4.60	0.72									
		3	4.90	0.66									
		4	4.90	0.70									
		5	4.90	0.80									
		6	5.00	0.72									
		7	5.30	0.87									
		8	5.30	0.84									
		9	5.50	0.75									
10	5.60	0.43											

RUN NO. 2