HORIZON COAL CORPORATION
Spring Monitoring Report
Geologic Formation Issuance

Formation	No. Issuing Springs Sampled
Upper Blackhawk	42
Star Point	3
Castlegate	67
Price River	15
Price River/Castlegate	8
Castlgate/Blackhawk	2

9/13/96

HORIZON COAL CORPORATION
Spring Water Monitoring Report

SPRING NUMBER/NAME	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
SP-1 *	Apr 1989 - Sep 1996 (7.5 yrs)	58
SP-2 *	Apr 1989 - Sep 1996 (7.5 yrs)	58
SP-4 *	Jul 1989 - Sep 1996 (7.5 yrs)	55
SP-6 *	Jul 1989 - Dec 1995 (7 yrs)	46
SP-9 or SP-5-W *	1979 - 1983 May - Sep 1996 (5.5 yrs)	16 5
SP-2-W or Homestead *	1980 - 1983 Jun - Aug 1996 (4.5 yrs)	9 2
Marakis * GV-70	Jul 1995 May - Aug 1996 (.5 yr)	1 4
	Total Samples	254

* Upper Blackhawk Formation
\# Star Point Formation
\+ Castlegate Formation
@ Price River Formation
/ Water issues at joint of two formations
F Issues at potential fault

9/13/96

HORIZON WATER MONITORING RECORD

Monitoring Station	Type of Station	Period of Record
1	Spring	Apr - Nov 1989 May - Dec 1990 May - Nov 1991 May - Dec 1992 May - Nov 1993 Jun - Dec 1994 May - Dec 1995 May - Sep 1996
2	Spring	Apr - Nov 1989 May - Dec 1990 May - Nov 1991 May - Dec 1992 May - Nov 1993 Jun - Dec 1994 May - Dec 1995 May - Sep 1996
3	Stream	Apr - Nov 1989 May - Dec 1990 May - Nov 1991 + May - Dec 1992 + May - Nov 1993 Jun - Dec 1994 + May - Dec 1995 May - Sep 1996
4	Spring	Jul - Nov 1989 * May - Dec 1990 May - Nov 1991 May - Dec 1992 May - Nov 1993 Jun - Dec 1994 May - Dec 1995 May - Sep 1996
5	Stream	Jul - Nov 1989 * May - Dec 1990 May - Nov 1991 May - Dec 1992 May - Nov 1993 Jun - Dec 1994 May - Dec 1995 May - Sep 1996

HORIZON WATER MONITORING RECORD

Monitoring Station	Type of Station	Period of Record
6	Spring	Jul - Nov 1989 + May - Nov 1990 + May - Nov 1991 + May - Dec 1992 + May - Nov 1993 + Jun - Dec 1994 + May - Dec 1995 +
7	Stream	May - Nov 1991 May - Dec 1992 + May - Nov 1993 Jun - Dec 1994 + May - Dec 1995 May - Sep 1996
8	Stream	May - Nov 1991 May - Dec 1992 + May - Nov 1993 Jun - Dec 1994 + May - Dec 1995 May - Sep 1996
9	Spring	May - Sep 1996
10	Stream	May - Aug 1996
11	Stream	May - Aug 1996

Laboratory samples submitted quarterly unless noted otherwise.

* Laboratory sample(s) not submitted due to inaccessibility or the site was frozen.

\+ Laboratory sample(s) not submitted due to insufficient water.

HORIZON WATER MONITORING RECORD

Monitoring Station	Type of Station	Period of Record
LMC 1	Well	Feb - Dec 1992 + May - Nov 1993 + Jun - Dec 1994 + May - Oct 1995 +
LMC 3	Well	Feb - Dec 1992 + May - Nov 1993 + Jun - Dec 1994 + May - Oct 1995 +
LMC 4	Well	Feb - Dec 1992 + May - Nov 1993 + Jun - Dec 1994 + May - Oct 1995 +
HZ-95-1	Well	Nov - Dec 1995 Jul - Sep 1996
HZ-95-1S	Well	Oct - Dec 1995 Jul - Sep 1996
HZ-95-2	Well	Oct - Dec 1995 Jul - Sep 1996
HZ-95-3	Well	Nov - Dec 1995 Jul - Sep 1996
Blazon No. 1, In-mine	Groundwater	Apr - Nov 1989 May - Dec 1990 May - Nov 1991 May - Dec 1992# May - Nov 1993 Jun - Dec 1994 Nov - Dec 1995#

Laboratory samples submitted quarterly unless noted otherwise.

* Laboratory sample(s) not submitted due to inaccessibility or the site was frozen.

\+ Laboratory sample(s) not submitted due to insufficient water.

\# Laboratory sample only submitted in this year.

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SP-1 (Previously Station #1)
Type: Spring
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/16	6/8	7/10	8/7	9/11	10/	11/	12/
Flow (gpm)	40	21	25*	13	10*			
pH	7.90	8.22	7.64	8.07	8.45			
Sp. Cond. (ohms)	500	488	413	403	345			
Temp. (C)	6	7	7	7	7			

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SP-2 (Previously Station #2)
Type: Spring
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/16	6/14	7/10	8/7	9/11	10/	11/	12/
Flow (gpm)	1	3	1	2	1*			
pH	8.21	8.43	7.36	7.14	8.52			
Sp. Cond. (ohms)	681	565	679	631	599			
Temp. (C)	6	6	6	6	7			

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SP-4 (Previously Station #4)
Type: Spring
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/16	6/14	7/10	8/7	9/11	10/	11/	12/
Flow (gpm)	6	4	4	2	1*			
pH	8.01	9.71	7.55	8.23	8.38			
Sp. Cond. (ohms)	723	705	681	439	547			
Temp. (C)	5	6	5	12	8			

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SP-9
Type: Spring
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/22	6/8	7/10	8/7	9/	10/	11/	12/
Flow (gpm)	60	45	45	5	5*			
pH	7.55	8.32	7.83	7.82	8.35			
Sp. Cond. (ohms)	414	555	423	388	378			
Temp. (C)	4	3	4	4	8			

Logging has become heavier each month through the summer.

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: Homestead Spring (2-6-W)
Type: Spring
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	6/8	8/7	9/	10/	11/	12/
Flow (gpm)	30	8				
pH	8.09	7.48				
Sp. Cond. (ohms)	375	396				
Temp. (C)	9	14				

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: GV-70 Marakis Spring
Type: Spring
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/22	6/14	7/10	8/27	9/11	10/	11/	12/
Flow (gpm)	60	60	40	8	12*			
pH	7.95	9.05	7.53	8.04	8.30			
Sp. Cond. (ohms)	688	634	697	718	587			
Temp. (C)	3	6	6	6	6			

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: Blue Blaze No. 1, In-mine
Type: Groundwater
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/16	6/14		
Flow (gpm)	*	*		
pH	8.65	8.36		
Sp. Cond. (ohms)	560	544		
Temp. (C)	8	9		

* Water was standing at elevation 7587 on 5/16/96, water level on 6/14/96 at elevation 7585.

HORIZON COAL CORPORATION
Water Monitoring Report

FIELD MEASUREMENTS

SPRING NUMBER	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
GV-1 *	May - Aug 1996	2
GV-2 +	May - Aug 1996	2
GV-3 +	May - Aug 1996	2
GV-3A +	Aug 1996	1
GV-4 +	May - Aug 1996	2
GV-5 +	May 1996	1
GV-6 +	May 1996	1
GV-7 +	May 1996	1
GV-8 +	May 1996	1
GV-9 +	May 1996	1
GV-10 @/+	May 1996	1
GV-11 @	May 1996	1
GV-12 @	May 1996	1
GV-13 @/+	May - Aug 1996	2
GV-14 +	May - Aug 1996	2
GV-15 +	May 1996	1
GV-16 +	May 1996	1
GV-21 +	May - Aug 1996	2
GV-22 +	May 1996	1
GV-23 +/F	May - Aug 1996	2
GV-23A +/F	Aug 1996	1
GV-24 +	May 1996	1
GV-25 +	May - Aug 1996	2
GV-26 +	May - Aug 1996	2
GV-27 +	May - Aug 1996	2
GV-28 +	May - Aug 1996	2

HORIZON COAL CORPORATION
Water Monitoring Report

FIELD MEASUREMENTS

SPRING NUMBER	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
GV-29 +/*	May - Aug 1996	2
GV-30 *	May - Aug 1996	2
GV-31 +/*	May - Aug 1996	2
GV-32 +	May - Aug 1996	2
GV-32A +	Aug 1996	1
GV-34 *	Aug 1996	1
GV-34A *	Aug 1996	1
GV-34B *	Aug 1996	1
GV-70 *	May 1996	1
GV-71 *	May - Aug 1996	2
GV-72 *	May 1996	1

HORIZON COAL CORPORATION
Water Monitoring Report

FIELD MEASUREMENTS

SPRING NUMBER	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
CV-1 *	July 1996	1
CV-2 *	July 1996	1
CV-3 *	July 1996	1
CV-4 *	July 1996	1
CV-5 *	July 1996	1
CV-6 *	July 1996	1
CV-7 *	July 1996	1
CV-8 *	July - Aug 1996	2
CV-30 *	July 1996	1
CV-31 *	July - Aug 1996	2
CV-32 *	July - Aug 1996	2
CV-34 *	Aug 1996	1
CV-40 @/F	Aug 1996	1
CV-41 @/F	Aug 1996	1
CV-42 @/F	Aug 1996	1
CV-43 @/F	Aug 1996	1
CV-44 @	Aug 1996	1
CV-45 @	Aug 1996	1
CV-46 @	Aug 1996	1
CV-47 @	Aug 1996	1
CV-48 @/+	Aug 1996	1

HORIZON COAL CORPORATION
Water Monitoring Report

FIELD MEASUREMENTS

SPRING NUMBER	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
CVG-1 +	Aug 1996	1
CVG-2 +	Aug 1996	1
CVG-3 *	Aug 1996	1
CVG-4 +/F	Aug 1996	1
CVG-5 +/F	Aug 1996	1
CVG-6 +/F	Aug 1996	1
CVG-7 @/F	Aug 1996	1
CVG-8 @/F	Aug 1996	1
CVG-9 +/@	Aug - Sept 1996	2
CVG-10 +/@	Aug - Sept 1996	2
CVG-11 +/F	Aug 1996	1

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HORIZON COAL CORPORATION
Water Monitoring Report

FIELD MEASUREMENTS

SPRING NUMBER	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
VB-1 +	Aug 1996	1
VB-2 +	Aug 1996	1
VB-3 +	Aug 1996	1
VB-4 +	Aug 1996	1
VB-5 +	Aug 1996	1
VB-6 +	Aug 1996	1
VB-7 */F	Aug 1996	1
VB-8 */F	Aug 1996	1
VB-9 *	Aug 1996	1
VB-10 *	Aug 1996	1
VB-11 *	Aug 1996	1
VB-12 *	Aug 1996	1

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HORIZON COAL CORPORATION
Water Monitoring Report

FIELD MEASUREMENTS

SPRING NUMBER	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
CC-1 #	July 1996	1
CC-2 *	July 1996	1
CC-3 *	July 1996	1
CC-4 *	July 1996	1
CC-5 #	July 1996	1
CC-6 #	July - Aug 1996	2
BC-1 @	Aug 1996	1
BC-30 +	Aug 1996	1
BC-31 @	Aug 1996	1
BC-32 @	Aug 1996	1

HORIZON COAL CORPORATION
Water Monitoring Report

FIELD MEASUREMENTS

SPRING NUMBER	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
VC-1 +	Aug 1996	1
VC-2 @/+	Aug 1996	1
VC-3 +/F	Aug 1996	1
VC-4 +/F	Aug 1996	1
VC-5 +	Aug 1996	1
VC-6 +/F	Aug 1996	1
VC-7 +	Aug 1996	1
VC-8 +/F	Aug 1996	1
VC-9 +	Aug 1996	1
VC-10 +	Aug 1996	1
VC-11 +	Aug 1996	1
VC-12 +	Aug 1996	1
VC-13 +	Aug 1996	1
VC-14 +	Aug 1996	1
VC-15 +	Aug 1996	1
VC-16 +	Aug 1996	1
VC-17 +	Aug 1996	1
VC-20 +/F	Aug 1996	1
VC-21 +/F	Aug 1996	1
VC-22 @/+	Aug 1996	1
VC-23 +	Aug 1996	1
VC-24 @/+	Aug 1996	1
VC-25 +	Aug 1996	1
VC-26 +	Aug 1996	1

HORIZON COAL CORPORATION
Water Monitoring Report

FIELD MEASUREMENTS

SPRING NUMBER	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
VC-27 +	Aug 1996	1
VC-28 +	Aug 1996	1
VC-29 +	Aug 1996	1
VC-30 +	Aug 1996	1
VC-31 +	Aug 1996	1
VC-32 +	Aug 1996	1
VC-33 +	Aug 1996	1
VC-34 +	Aug 1996	1
VC-35 +	Aug 1996	1
VC-36 +	Aug 1996	1

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HORIZON COAL CORPORATION
Water Monitoring Report

FIELD MEASUREMENTS

SPRING NUMBER	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
MC-1 *	Aug 1996	1
MC-2 *	Aug 1996	1
MC-3 *	Aug 1996	1
MC-3A*	Aug 1996	1
MC-4 *	Aug 1996	1

* Upper Blackhawk Formation
\# Star Point Formation
\+ Castlegate Formation
@ Price River Formation
/ Water issues at joint of two formations
F Issues at potential fault

9/13/96

HORIZON COAL CORPORATION
Surface Water Monitoring Report

STREAM NUMBER/NAME	PERIOD OF RECORD	NO. SAMPLES TAKEN DURING PERIOD OF RECORD
UPPER NFGC	Aug - Sept 1996	2
LOWER NFGC	Aug - Sept 1996	2
VC STREAM	Aug 1996	1
SS-3	Apr 1989 - Sep 1996 (7.5 yrs)	58
SS-5	Jul 1989 - Sep 1996 (7.5 yrs)	55
SS-7	May 1991 - Sep 1996 (5.5 yrs)	42
SS-8	May 1991 - Sep 1996 (5.5 yrs)	42
SS-10	May - Aug 1996	2
SS-11	May - Aug 1996	2
	Total Samples 206	

9/13/96

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SS-3 (Previously Station #3)
Type: Stream
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/16	6/14	7/10	8/7	9/11	10/	11/	12/
Flow (gpm)	15	14	5	3#	2*			
Dissolved Oxygen PPM (mg/l)	4	5	5	8	5			
pH	8.39	9.19	7.70	8.18	8.55			
Sp. Cond. (ohms)	576	540	544	562	486			
Temp. (C)	15	12	18	10	14			

* Precipitation could have effected flow
\# Channel was dry at 3:00 p.m., flows only in the a.m.

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SS-5 (Previously Station #5)
Type: Stream
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/16	6/14	7/10	8/7	9/11	10/	11/	12/
Flow (gpm)	25	20	23*	3#	3*			
Dissolved Oxygen PPM (mg/l)	5	5	6	5	5			
pH	8.37	9.34	7.97	7.51	8.30			
Sp. Cond. (ohms)	565	603	557	497	462			
Temp. (C)	12	9	15	16	12			

* Precipitation could have effected flow
# Channel was dry at 3:00 p.m., flows only in the a.m.

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SS-7 (Previously Station #7)
Type: Stream
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/22	6/8	7/10	8/7	9/11	10/	11/	12/
Flow (gpm)	2765	1767	1150	980	85*			
Dissolved Oxygen PPM (mg/l)	5	5	6	5	6			
pH	7.90	7.90	7.98	7.93	8.30			
Sp. Cond. (ohms)	307	438	378	394	432			
Temp. (C)	12	15	13	10	10			

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SS-8 (Previously Station #8)
Type: Stream
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/22	6/8	7/10	8/7	9/11	10/	11/	12/
Flow (gpm)	2482	2960	1860	1010	65*			
Dissolved Oxygen PPM (mg/l)	5	6	6	6	6			
pH	7.93	8.33	8.04	7.70	8.42			
Sp. Cond. (ohms)	313	345	344	330	408			
Temp. (C)	5	18	18	15	11			

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SS-10 Unnamed Canyon Tributary
Type: Stream
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/22	6/8	7/26	8/22	9/	10/	11/	12/
Flow (gpm)	15	10	dry	dry				
Dissolved Oxygen PPM (mg/l)	4	5						
pH	8.12	8.96						
Sp. Cond. (ohms)	74	110						
Temp. (C)	7	7						

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: SS-11 Sand Gulch
Type: Stream
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	5/22	6/8	7/26	8/22	10/	11/	12/
Flow (gpm)	220	212	28	4			
Dissolved Oxygen PPM (mg/l)	5	7	7	7			
pH	8.20	8.63	7.89	7.66			
Sp. Cond. (ohms)	163	353	242	203			
Temp. (C)	12	19	18	19			

* Precipitation could have effected flow

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: North Fork of Gordon Creek - Below Coal Canyon Tributary
Type: Stream
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	8/7	9/	10/	11/	12/
Flow (gpm)	806				
Dissolved Oxygen PPM (mg/l)	6				
pH	7.84				
Sp. Cond. (ohms)	604				
Temp. (C)	18				

HORIZON COAL CORPORATION
Water Monitoring Report

Property: 1 & 2 Mine
Location: North Fork of Gordon Creek - Below Jewkes Creek Tributary/Above Coal Canyon
Type: Stream
Year Sampled: 1996

FIELD MEASUREMENTS

Date Sampled	8/7	9/	10/	11/	12/
Flow (gpm)	555				
Dissolved Oxygen PPM (mg/l)	6				
pH	7.98				
Sp. Cond. (ohms)	522				
Temp. (C)	15				

TABLE 7-1 (Continued)

WATER-LEVEL DATA OBTAINED FROM
LOCAL MONITORING WELLS

Date	LMC-1		LMC-3		LMC-4	
	Depth (ft)	Elev. (ft)	Depth (ft)	Elev. (ft)	Depth (ft)	Elev. (ft)
6/24/94	>599	<7852	>664	<7556	>217	<7587
7/24/94	>599	<7852	>664	<7556	>217	<7587
8/25/94	>599	<7852	>664	<7556	>217	<7587
9/24/94	>599	<7852	>664	<7556	>217	<7587
10/22/94	>599	<7852	>664	<7556	>217	<7587
11/2/94	>599	<7852	>664	<7556	>217	<7587
12/6/94	>599	<7852	>664	<7556	>217	<7587
5/26/95	>599	<7852	>664	<7556	>217	<7587
8/8/95	>599	<7852	>664	<7556	>217	<7587
10/27/95	>599	<7852	>664	<7556	>217	<7587

Date	HZ-95-1		HZ-95-1S		HZ-95-2		HZ-95-3	
	Depth (ft)*	Elev. (ft)	Depth (ft)*	Elev. (ft)	Depth (ft)*	Elev. (ft)	Depth (ft)*	Elev. (ft)
12/5/95	--	--	135.0	8221.5	828.0	7519.6	--	--
12/13/95	786.0	7570.7	--	--	--	--	--	--
12/21/95	--	--	--	--	--	--	378.8	7522.7
7/9-10/96	771.3	7585.4	133.8	8222.7	830.0	7517.6	380.8	7520.7
8/5/96	770.8	7584.9	133.5	8222.4	829.4	7517.0	387.8	7527.7
9/11/96	769.4	7583.5	132.5	8221.4	829.4	7517.0	387.7	7527.6

* Depth measured from top of 2" tubing

BEAVER CREEK SEEPAGE EVALUATION
11 SEP 1996

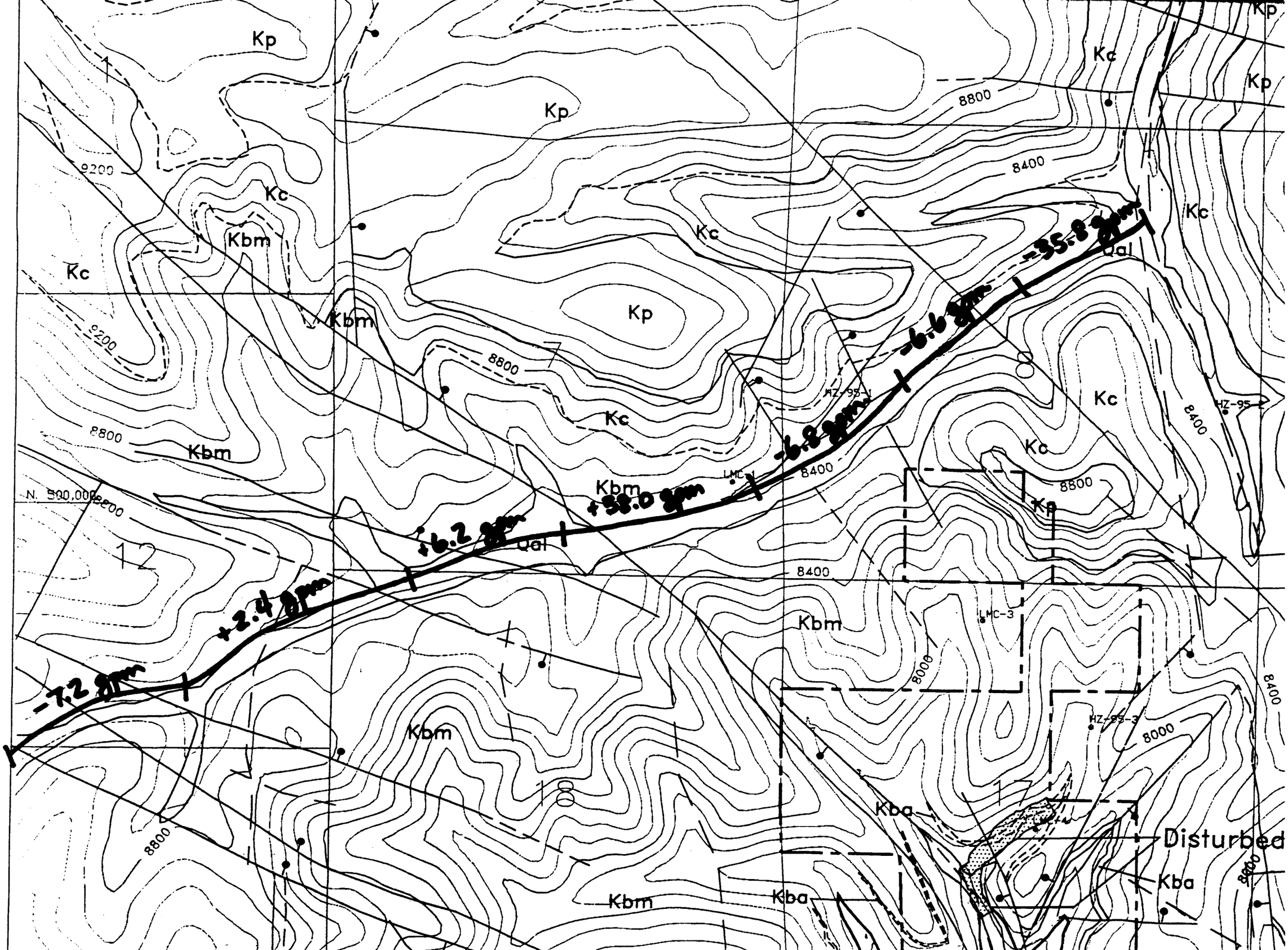
Station	Description	Throat Width[a] (in)	Flow Depth (ft)	Flow Rate	
				(cfs)	(gpm)
HZ-1	Beaver Creek	1	0.20	0.02	9.0
HZ-2	Unnamed tributary	1	0.17	0.01	6.5
HZ-3	Beaver Creek	1	0.44	0.10	43.4
HZ-4	Unnamed spring	1	0.39	0.08	34.1
HZ-5	Unnamed spring	1	--	--	1[b]
HZ-6	SP-9 tributary	1	0.41	0.08	37.7
HZ-7	Beaver Cr. at SS-7	1	0.61	0.19	83.5
HZ-8	Beaver Cr. - south split	1	0.16	0.01	5.7
HZ-9	Beaver Cr. - north split	4	0.30	0.19	84.0
HZ-10	Beaver Cr. by LMC-1	4	0.37	0.28	127.7
HZ-11	Beaver Cr. by HZ-95-1	4	0.36	0.27	120.9
HZ-12	Beaver Cr. at SS-8	4	0.35	0.25	114.3
HZ-13	Beaver Cr. at road crossing	4	0.29	0.17	78.5

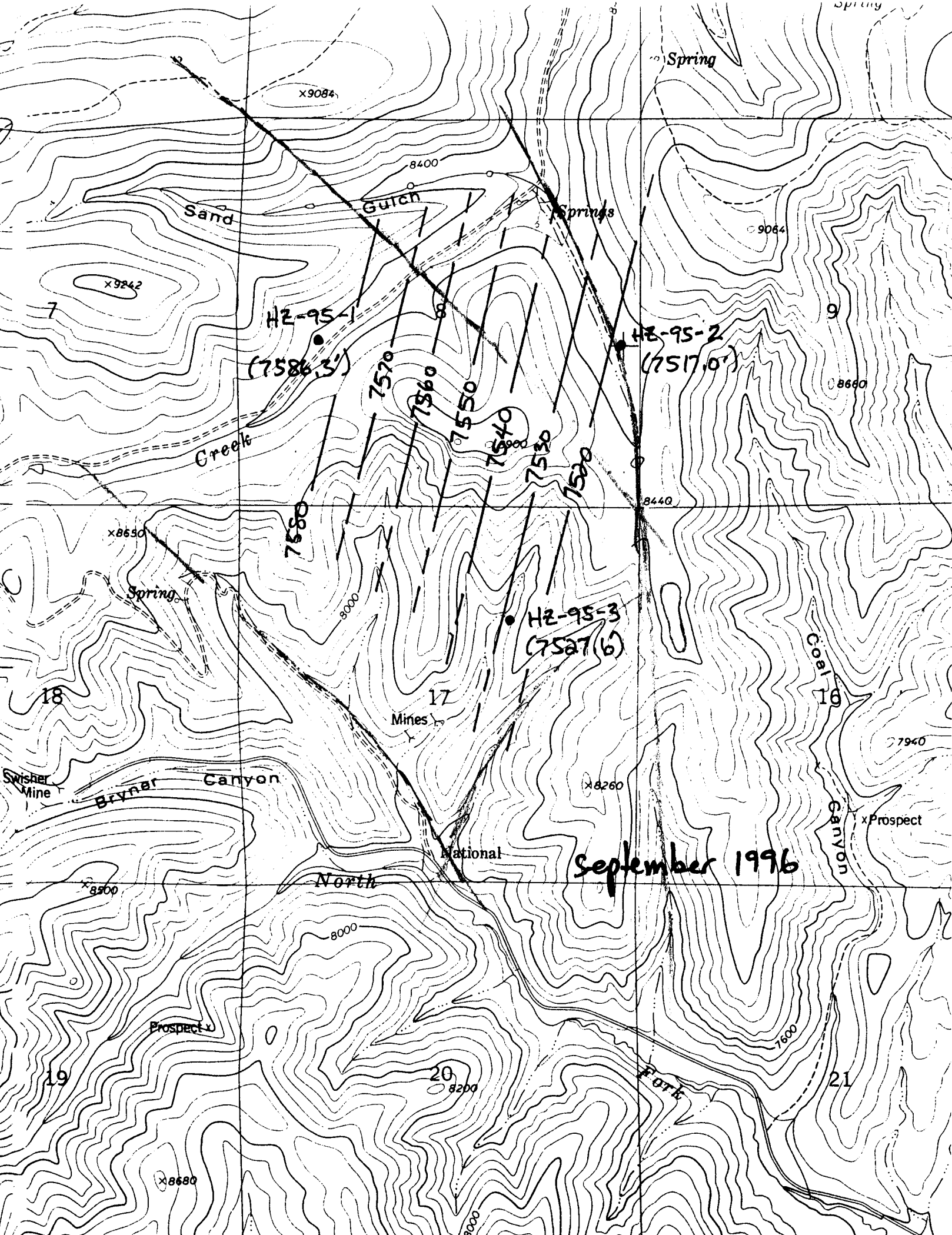
[a] All measurements collected using a portable cutthroat flume.

[b] Estimate based on visual observation

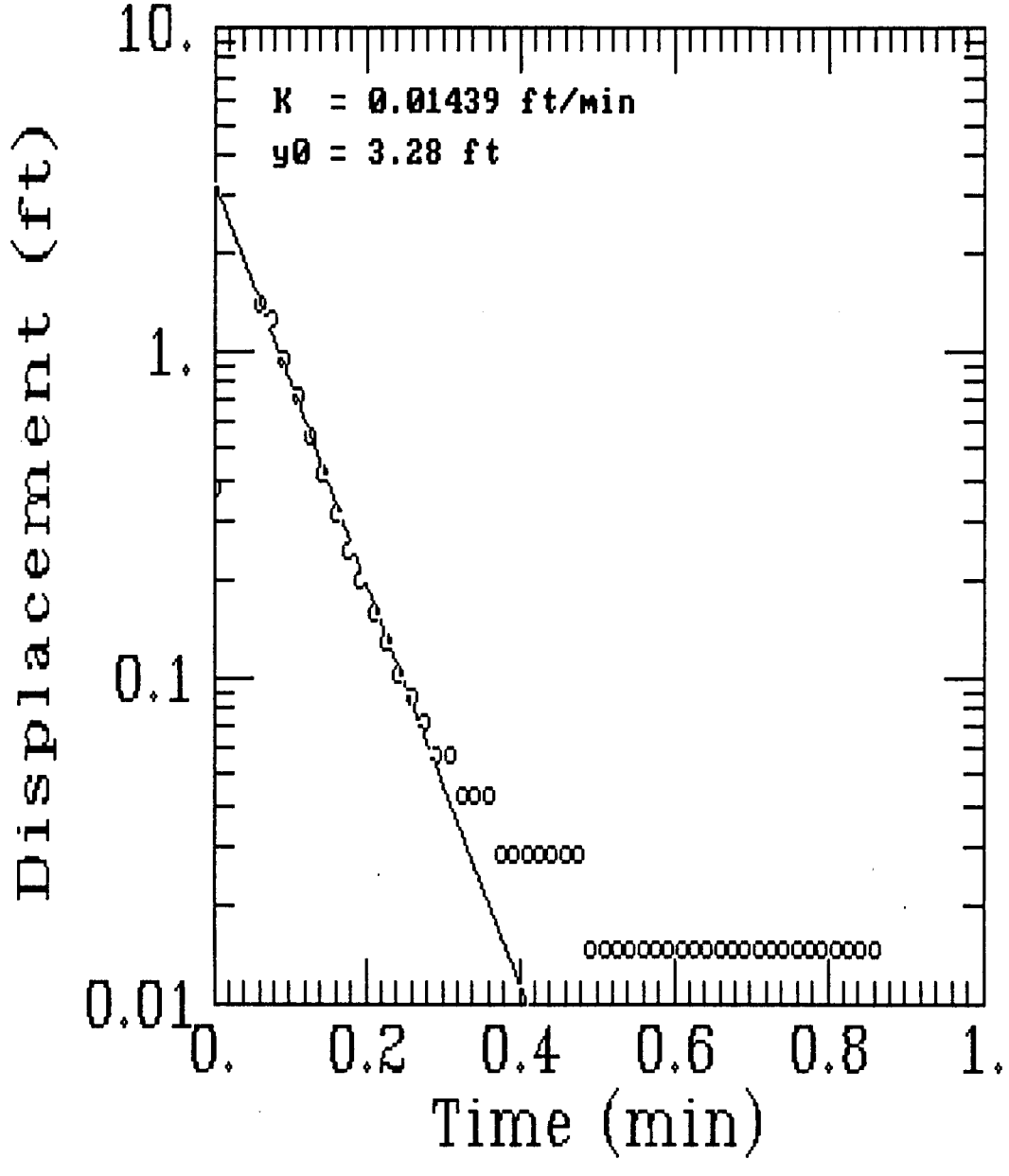
BEAVER CREEK GAIN/LOSS MEASUREMENTS
11 SEP 1996

Upstream Station(s)	Upstream Flow (gpm)	Downstream Station	Downstream Flow (gpm)	Gain/Loss (gpm)	Distance (ft)	Unit Gain/Loss (gpm/100 ft)	Remarks
HZ-1, HZ-2, HZ-4, HZ-5	50.6	HZ-3	43.4	-7.2	2300	-0.3	
HZ-3, HZ-6	81.1	HZ-7	83.5	+2.4	2850	+0.1	Approx. 1.5 gpm est. inflow observed on surface
HZ-7	83.5	HZ-8, HZ-9	89.7	+6.2	1850	+0.3	Downstream from extensive area of abandoned beaver ponds. Broad are of alluvium.
HZ-8, HZ-9	89.7	HZ-10	127.7	+38.0	2300	+1.7	Canyon bottom narrows significantly. Limited alluvium.
HZ-10	127.7	HZ-11	120.9	-6.8	2100	-0.3	Up- and downstream from HZ-95-1 fracture area.
HZ-11	120.9	HZ-12	114.3	-6.6	1750	-0.4	Approx. 0.5 gpm est. inflow observed on surface
HZ-12	114.3	HZ-13	78.5	-35.8	1650	-2.2	Colluvium from Castlegate Sandstone more prevalent.
Net gain/loss	--	--	--	-9.8	14,800	-0.1	


Kp
Kc
Kbm
Kba
Qal
Disturbed
8800
8400
8200
8000
N. 500,000
LMC-1
LMC-3
HZ-95-1
HZ-95-2
HZ-95-3
-35.8 gpm
-6.6 gpm
+38.0 gpm
+6.2 gpm
+2.4 gpm
-7.2 gpm


Spring
Sand
Gulch
Springs
Creek
HZ-95-1
(7586.3')
HZ-95-2
(7517.0')
HZ-95-3
(7587.6)
7580
7570
7560
7550
7540
7530
7520
Spring
Mines
Coal
Canyon
Swisher
Mine
Bryner
Canyon
National
North
Prospect
Prospect
Fork
September 1996
7
8
9
17
18
19
20
21
16
9084
8400
9242
9064
8660
8440
8650
8000
8260
7940
8500
8000
8200
8680
7600
8000

Horizon well 95-1S bail test



AQTESOLV

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Modeling Group

TEST DESCRIPTION

Data set..... bail.aqt
Data set title..... Horizon well 95-1S bail test

Knowns and Constants:
- No. of data points..... 49
- Radius of well casing..... 0.083
- Radius of well..... 0.276
- Aquifer saturated thickness..... 75
- Well screen length..... 10
- Static height of water in well..... 50
- Log(Re/Rw)..... 2.96
- A, B, C..... 2.640, 0.430, 0.000

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

STATISTICAL MATCH PARAMETER ESTIMATES

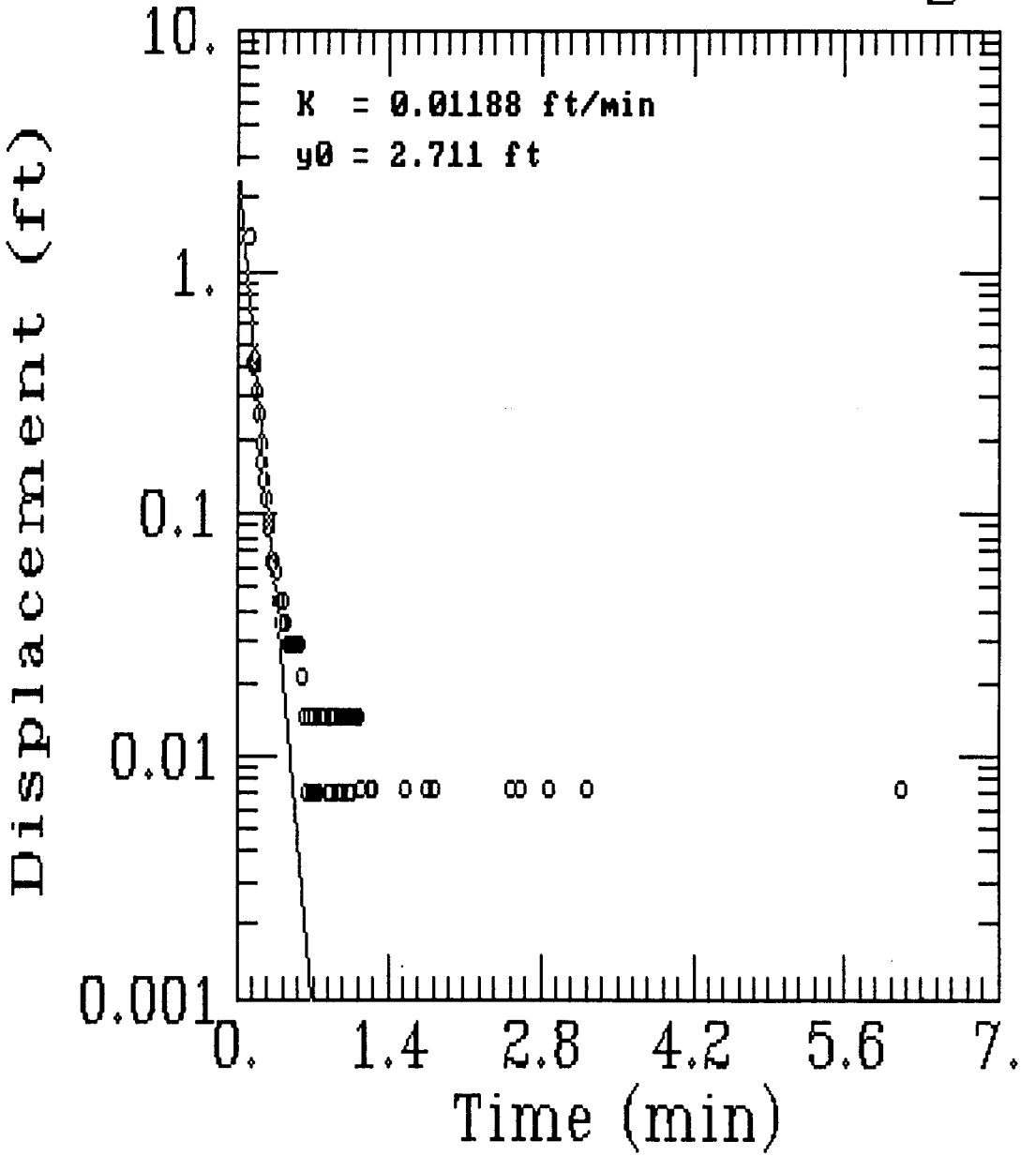
	Estimate		Std. Error
K =	1.4705E-002	+/-	4.9845E-004
y0 =	3.4714E+000	+/-	1.5669E-001

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
- Number of residuals..... 15
- Number of estimated parameters.... 2
- Degrees of freedom..... 13
- Residual mean..... -0.001925
- Residual standard deviation..... 0.03824
- Residual variance..... 0.001462

Horizon well 95-1S slug test



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

TEST DESCRIPTION

Data set..... slug2.aqt
Data set title..... Horizon well 95-1S slug test

Knowns and Constants:
- No. of data points..... 72
- Radius of well casing..... 0.083
- Radius of well..... 0.276
- Aquifer saturated thickness..... 75
- Well screen length..... 10
- Static height of water in well..... 50
- Log(Re/Rw)..... 2.96
- A, B, C..... 2.640, 0.430, 0.000

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	1.1879E-002	+/-	5.0706E-004
y0 =	2.7113E+000	+/-	2.5245E-001

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
- Number of residuals..... 11
- Number of estimated parameters.... 2
- Degrees of freedom..... 9
- Residual mean..... -0.0002351
- Residual standard deviation..... 0.01411
- Residual variance..... 0.000199